Appendices

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Appendix A.
Field Sampling Notes

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5.6.13

09:00 Depart John Wayne Marina
R/V Kittiwake
- Charlie Eaton
- Tom Putnam
- Tim Hammermeister
- Will Hafner
- Preston Martin
- cruise out to initiate sampling in Dungeness Bay

1000 Arrive @ Dun-03 to initiate sampling
1004 Collect sample
add weights to grab

1030 Proceed to DUN-06
1050 Collect sample @ DUN-06
1100 Proceed to DUN-07
1110 Sample DUN-~~12~~ T.H 07
1130 Sample DUN-12
1210 Sample DUN-10
1220 Break for Lunch
1328 Sample DUN-13
1346 Sample DUN-05
1425 Sample DUN-09
1446 Sample DUN-04
1509 Sample DUN-02
1549 Sample DUN-11
1613 Sample DUN-01
1638 Sample DUN-08
1645 Return to Marina
1710 Arrive @ Dock unload coolers

NewFields

5/7/13

0830 WH PM and SB met Tom and Charlie at John Wayne departed for DUN-17 at 0850

1230 lunch break and transit to Discovery Bay

~1340 in Discovery Bay at DIS-04

1429 washed out grab at DIS-08
cobble caught in grab
this location is just east of the mouth of Eagle Creek.
Moved southeast along same depth gradient in hopes of a better grab

1640 collected the DIS-09 in discovery Bay
Transit to DUN-08

1800 back to Sequim Bay to unload

5/8/13

0845 Jasper Preston will meet Tom and Charlie at John Wayne Marina for transit to Discovery Bay

During transit we separated the Van Veen ~~into~~ so we can alternate between halfs.
One half has 4 weights, the other has none to ~~better~~ avoid over penetration in soft seds

1055 - switching to unweighted half

1230 stopped for lunch
1320 transit to DUN-13
will try sampling w/out latching gates in hopes of minimizing sediment penetration through the mesh
- wasn't necessary, no over penetration

1600 - back at John Wayne

NewFields

5/9/13

0840 Depart John Wayne Marina Transit to SEQ-05

Crew: Jon N., Jasper, Jay W., Tom & [redacted]

Begin sampling at southern end of Sequim Bay

10:41 Break, organize gear

10:42 Rinsate collected RB13-NOP-ER-3

5/10/13

0845 Will, Jay, John met Tom and Charlie at Hudson Point in Pt. Townsend.

Transit to PT-06

1230 stopped for lunch

1515 transit back to Hudson Point Marina

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Appendix B.
Surface Sediment Grab Logbook

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SURFACE SEDIMENT GRAB COLLECTION AND SAMPLE CONTAINER LOGBOOK

2013 North Olympic Peninsula Regional Background Sediment Characterization

May 2013

NewFields

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Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: Dun-03

Location: Dungeness Bay

Date/Time: 5.6.13/1009

Crew: Charlie Eaton (CE). Tom Putman (TP), Tim Hammermeister (TH) Will Hafner (WH); Preston Martin (PM)

Grab #	Bottom Depth	Penetration Depth	Time
1	11.4m	8.5 - 10cm	10:09
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	Decision to add weight to grab
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	Wet sieve!
Gravel	Brown	Slight	40ml sieved
Sand C M F	Brown surface	Moderate	37ml retained
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	7.5% fines
Woody debris	Other:	H_2S	92.5% coarse
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: DUN-06

Location: Dungeness Bay

Date/Time: 5.6.13 / 1050

Crew: TH, WH, PM, CE, TP

Grab #	Bottom Depth	Penetration Depth	Time
1	19.2 m	13 cm	1050
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	tube
Gravel	Brown	Slight	wet sieve 40 ml
Sand C M F	Brown surface	Moderate	30 ml retain
Silt / Clay	Gray	Strong	75% course
Organic matter	Black	Overwhelming	25% fines
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: DUN-07

Location: Dungeness Bay

Date/Time: 5.6.13/1110

Crew: TH, WH, PM, CE, TP

Grab # 1	Bottom Depth 16.0m	Penetration Depth 12cm	Time 1110
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	1 grab washed
Gravel	Brown	Slight	1 - good
Sand C M F	Brown surface	Moderate	polychaetes
Silt / Clay	Gray	Strong	Wet Sieve 40ml
Organic matter	Black	Overwhelming	40ml
Woody debris	Other:	H_2S	
Shell debris		Petroleum	100% Coarse 0% fines

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: DUW-12

Location: Dungeness Bay

Date/Time: 5.6.13/1130

Crew: TH, WH, PM, CE, TP

Grab # 1	Bottom Depth 7.8m	Penetration Depth 17cm	Time 1130
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:* polychaetes 40 ml 17 retained 42.5% coarse 57.5% fine
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab # ~~2~~	Bottom Depth ~~11.8~~	Penetration Depth	Time ~~1159~~
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Filt.

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: DUN-10

Location: Dungeness Bay

Date/Time: 5.6.13/1210

Crew: TH, WH, PM, CE, TP

Grab # 1	Bottom Depth 11.9m	Penetration Depth 6cm	Time 1153
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	1 grab washed
Gravel	Brown	Slight	1 shallow pen
Sand C M F	Brown surface	Moderate	rejected
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab # 2	Bottom Depth 11.8	Penetration Depth low 6cm	Time 1159
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	1 grab washed
Gravel	Brown	Slight	rejected
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab # 3	Bottom Depth 11.8	Penetration Depth u 6cm	Time 1205
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	washed
Gravel	Brown	Slight	rejected
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab # 4	Bottom Depth 11.9	Penetration Depth 7cm	Time 1210
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	low penetration but good grab
Gravel	Brown	Slight	crab
Sand C M F	Brown surface	Moderate	wet sieve 40ml
Silt / Clay	Gray	Strong	37ml retained
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	93% coarse 7% fines
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: DVN-13

Location: Dungeness Bay

Date/Time: 5·6·13/1328

Crew:

Grab #	Bottom Depth	Penetration Depth	Time
1	13.5	~7cm	1323
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	Reject
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
2	14.6	7cm	1328
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	low penetration but undisturbed
Gravel	Brown	Slight	W.S. 40 ml
Sand C M F	Brown surface	Moderate	40 ml retained
Silt / Clay	Gray	Strong	100% coarse
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by:

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: DUN-05

Location: Dungeness Bay

Date/Time: 5.6.13 / 1346

Crew: TH, WH, PM, CE, TP

Grab # 1	Bottom Depth 25.5	Penetration Depth ?WH 5/16	Time 1346
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	~~Drab olive~~	None	tube QA/QC dup/trip
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	Wet Sieve 40 ml
Organic matter	Black	Overwhelming	73% coarse 29 ml retained
Woody debris	Other:	H_2S	27% fines
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: DUN-09

Location: Dungeness Bay

Date/Time: 5.6.13 / 1425

Crew: TH, WK, PM, CE, TP

Grab # 1	Bottom Depth	Penetration Depth	Time 1422
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	Miss-Fire washed-out rejected
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab # 2	Bottom Depth 8.1m	Penetration Depth 11 cm	Time 1425
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	wet sieve 40ml 40 ml retained 100% coarse
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: DUN-04

Location: Dungeness Bay

Date/Time: 5-6-13 / 1446

Crew: TH, WA, PM, CE, TP

Grab # 1	Bottom Depth 34.5	Penetration Depth ~~34.5~~ T.H. 12cm	Time 1446
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	W.S.: 40 ml
Gravel	Brown	Slight	26 ~~40~~ ml retained T.H.
Sand C M F	Brown surface	Moderate	~~100% coarse~~ T.H.
Silt / Clay	Gray	Strong	65% coarse 35% fines
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: DUN-02

Location: Dungeness Bay

Date/Time: 5.6.13/1509

Crew: T.H., WH, PM, CE, TP

Grab # 1	Bottom Depth 5.5m	Penetration Depth 10cm	Time 1509
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	eelgrass
Gravel	Brown	Slight	wet sieve 40ml
Sand C M F	Brown surface	Moderate	retained 38ml
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	95% coarse 5% fines
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: DUN-11

Location: Dungess Bay

Date/Time: 5.6.13/1549

Crew: TH, WH, PM, CE, TP

Grab # 1	Bottom Depth 5.3	Penetration Depth ~~1549~~ 10cm	Time 1549
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:* pebbles
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	40 ml
Silt / Clay	Gray	Strong	40 ml retained
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	100% coarse

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: DUN-01

Location: Dungeness Bay

Date/Time: 5·6·13 / 1613

Crew: TK, WH, PM, CE, TP

Grab # 1	Bottom Depth 30.0 m	Penetration Depth 16cm	Time 1613
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	2 - full grabs
Gravel	Brown	Slight	N.S. 40 ml
Sand C M F	Brown surface	Moderate	15 ml retained
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	38% coarse 62% fines
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: DUN-08

Location: Dungeness Bay

Date/Time: 5·6·13 / 1638

Crew: _____

Grab # 1	Bottom Depth 21 m	Penetration Depth 11 cm	Time 1638
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:* polychaeta/tube worms
Cobble	Drab olive	None	Wet Sieve Yield
Gravel	Brown	Slight	35 ml/relaxed
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	88% coarse 12% fines
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: _____

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: DUN-17

Location: DUN-17

Date/Time: 5/7/13

Crew: WH PMJB

Grab # 1	Bottom Depth 17.2	Penetration Depth 15cm	Time 902
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	eelgrass
Gravel	Brown	Slight	surface tubes
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	27 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DUN-19

Date/Time: 5/7/13

Crew: WH JB PM

Grab # 1	Bottom Depth 32.9	Penetration Depth 15 cm	Time 0920
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	surface bivalves
Gravel	Brown	Slight	mostly silt
Sand C M F	Brown surface	Moderate	amphipod/polychaete
Silt / Clay	Gray under surface	Strong	tubes
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	8 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: OUN-14

Date/Time: ~~3/4/13~~ 5/7/13

Crew: WH SBPM

Grab # 1	Bottom Depth 31.5	Penetration Depth —	Time 948
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble Gravel Sand C M (F) Silt / Clay Organic matter Woody debris Shell debris	~~Drab olive~~ Brown Brown surface Gray Black Other:	None Slight Moderate Strong Overwhelming H_2S Petroleum	max penetration 9 cm - Trygon
Grab # 2	**Bottom Depth** 31.4	**Penetration Depth** 7-9 cm	**Time** 955
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble Gravel Sand C M (F) Silt / Clay Organic matter Woody debris Shell debris	(Drab olive) Brown Brown surface Gray Black Other:	(None) Slight Moderate Strong Overwhelming H_2S Petroleum	small tubes 37 mL retained
Grab #	**Bottom Depth**	**Penetration Depth**	**Time**
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble Gravel Sand C M F Silt / Clay Organic matter Woody debris Shell debris	Drab olive Brown Brown surface Gray Black Other:	None Slight Moderate Strong Overwhelming H_2S Petroleum	
Grab #	**Bottom Depth**	**Penetration Depth**	**Time**
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble Gravel Sand C M F Silt / Clay Organic matter Woody debris Shell debris	Drab olive Brown Brown surface Gray Black Other:	None Slight Moderate Strong Overwhelming H_2S Petroleum	

NewFields

Completed by: Will

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: 2

Location: DUN-20

Date/Time: 5/7/13

Crew: WH JB PM

Grab # 1	Bottom Depth 23	Penetration Depth 13 cm	Time 1019
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	lots of worm tubes
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	Kelp crab
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	35 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: 2

Location: DUN-16

Date/Time: 5/7/13 1107

Crew: WH JB PM

Grab # 1	Bottom Depth ~~11.2~~ 7.2	Penetration Depth 9.5	Time 1107
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	eelgrass
Gravel	Brown	Slight	bivalves (snails/clams)
Sand C M F	Brown surface	Moderate	shrimp, small sculpin
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	40 mL retained
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: 2

Location: DUN-22

Date/Time: 5/7/13

Crew: WH JB PM

Grab # 1	Bottom Depth 22.6	Penetration Depth 12 cm	Time 1131
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	Some algae on surface
Gravel	Brown	Slight	worm tubes
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black beneath surface	Overwhelming	32 mL retained
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DUN-21

Date/Time: 5/7/13

Crew: WH JB PM

Grab # 1	Bottom Depth 13.8	Penetration Depth 10 cm	Time 1150
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	lots of kelp on surface
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	37 mL recovered
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: ~~DUN-2~~ DUN-15

Date/Time: 5/7/13

Crew: WH JB PM

Grab # 1	Bottom Depth 12	Penetration Depth —	Time 1211
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	washed out
Gravel	Brown	Slight	
Sand C (M) F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab # 2	Bottom Depth 12	Penetration Depth 10 cm	Time 1219
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	(Drab olive)	(None)	shell hash
Gravel	Brown	Slight	algae on surface
Sand C (M) F	Brown surface	Moderate	polychaete tubes
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	37 mL retained
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DIS-04

Date/Time: ~~3/7~~ 5/7/13

Crew: WH PM JB

Grab # 1	Bottom Depth 55.3	Penetration Depth full (17cm)	Time 1342
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive darker beneath	None	Polychaete tubes surface floc
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	13 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [illegible]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DIS-11

Date/Time: 5/7/13

Crew: WHJB PM

Grab # 1	Bottom Depth 53.9	Penetration Depth Full (17cm)	Time 1407
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:* darker layer ~1cm down polychaete tubes 16mL retained
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DIS-06

Date/Time: 5/7/13

Crew: WH JB PM

Grab # 1	Bottom Depth	Penetration Depth ~	Time 1429
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	hatched out w/ large rakes
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab # 2	Bottom Depth 13.8	Penetration Depth ? 5/16 WH	Time 1435
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	Shell debris and algae on surface mm layer of fines on top 29 mL retained
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [illegible]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DIS-06

Date/Time: 5/7/13

Crew: WH JB PM

Grab # 1	Bottom Depth 35.6	Penetration Depth slight overpen	Time 1530
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive some dark	None	~ 1cm overpen. on 1 side, less on the other. All stats taken from less overpen. side
Gravel	Brown	Slight DPM	
Sand C M F	Brown surface EWM	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	10 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DIS-01

Date/Time: 5/7/13

Crew: WH JB PM

Grab # 1	Bottom Depth 33.9	Penetration Depth over	Time 1552
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble Gravel Sand C M F Silt / Clay Organic matter Woody debris Shell debris	Drab olive Brown Brown surface Gray Black Other:	None Slight Moderate Strong Overwhelming H_2S Petroleum	significant overpen. will remove weight and drop to 1 grab and try again tomorrow
Grab #	**Bottom Depth**	**Penetration Depth**	**Time**
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble Gravel Sand C M F Silt / Clay Organic matter Woody debris Shell debris	Drab olive Brown Brown surface Gray Black Other:	None Slight Moderate Strong Overwhelming H_2S Petroleum	
Grab #	**Bottom Depth**	**Penetration Depth**	**Time**
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble Gravel Sand C M F Silt / Clay Organic matter Woody debris Shell debris	Drab olive Brown Brown surface Gray Black Other:	None Slight Moderate Strong Overwhelming H_2S Petroleum	
Grab #	**Bottom Depth**	**Penetration Depth**	**Time**
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble Gravel Sand C M F Silt / Clay Organic matter Woody debris Shell debris	Drab olive Brown Brown surface Gray Black Other:	None Slight Moderate Strong Overwhelming H_2S Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ✓

Location: DIS-09

Date/Time: 5/7/13

Crew: WH JB PM

Grab # 1	Bottom Depth 53.3	Penetration Depth 17cm / 14cm	Time 1640
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	shell debris
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	14mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [illegible]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DuN-18

Date/Time: 5/7/13

Crew: WH JB PM

Grab # 1	Bottom Depth 32.9	Penetration Depth 17cm	Time 1735
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble Gravel Sand C M (F) (Silt) Clay Organic matter Woody debris Shell debris	(Drab olive) Brown Brown surface Gray Black Other:	(None) Slight Moderate Strong Overwhelming H_2S Petroleum	worm tubes mostly silt some fine sand 13mL Retained
Grab #	**Bottom Depth**	**Penetration Depth**	**Time**
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble Gravel Sand C M F Silt / Clay Organic matter Woody debris Shell debris	Drab olive Brown Brown surface Gray Black Other:	None Slight Moderate Strong Overwhelming H_2S Petroleum	
Grab #	**Bottom Depth**	**Penetration Depth**	**Time**
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble Gravel Sand C M F Silt / Clay Organic matter Woody debris Shell debris	Drab olive Brown Brown surface Gray Black Other:	None Slight Moderate Strong Overwhelming H_2S Petroleum	
Grab #	**Bottom Depth**	**Penetration Depth**	**Time**
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble Gravel Sand C M F Silt / Clay Organic matter Woody debris Shell debris	Drab olive Brown Brown surface Gray Black Other:	None Slight Moderate Strong Overwhelming H_2S Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: ~~DIS-02~~ DIS-14

Date/Time: 5/8/13

Crew: WH JB PM

Grab # 1	Bottom Depth 55.2	Penetration Depth full (17cm)	Time 0956
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:* shell debris tubes/polychaete minor sand component 15 mL retained
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DIS-15

Date/Time: 5/8/13

Crew: WH JB PM

Grab # 1	Bottom Depth 65.8	Penetration Depth Full (17cm)	Time 1018
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	~~Drab olive~~	None	Shell debris
Gravel	~~Brown~~	Slight	tubes at surface
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	17mL retained
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DIS-196

Date/Time: 5/8/13

Crew: WH JB PM

Grab # 1	Bottom Depth 52.7	Penetration Depth full (17cm)	Time 1036
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	Tubes on surface
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black and finer	Overwhelming	10 mL retained
Woody debris	Other: 3-4 cm down	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DIS-10

Date/Time: 5/8/13

Crew: WH JB PM

no weights on

Grab # 1	Bottom Depth 48.5	Penetration Depth slight overpen ~ .5cm	Time 1127
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive surface	None	thin dirt layer on top
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	9 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DIS-07

Date/Time: 5/8/13

Crew: WH JB PM

no weights on

Grab # 1	Bottom Depth 45.2	Penetration Depth Slight overpen.	Time 1147
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	15 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [illegible]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DIS-01

Date/Time: 5/8/13

Crew: WH SB PM

no weights

Grab # 1	Bottom Depth 32.2	Penetration Depth slight aerpen	Time 1206
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	13 mL retrieved
Shell debris		Petroleum	

~1330 after lunch, reached w volume was reduced to ~3 mL

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [illegible]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DIS-13

Date/Time: 5/8/13

Crew: WH JB PM

Grab # 2	Bottom Depth 21.9	Penetration Depth 11 cm	Time 1329
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	Surface structures
Gravel	Brown	Slight	shell debris
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	32 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: 2

Location: DES-03

Date/Time: 5/8/13

Crew: WH PM JB

Grab # 2	Bottom Depth 26.6	Penetration Depth 9cm	Time 1344
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	reject – swirling to weighted grab
Gravel	Brown	Slight	
Sand C (M) F	Brown surface	Moderate	
(Silt) / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab # 2	Bottom Depth 26.3	Penetration Depth 12 cm	Time 1357
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	(None)	amphipod and polychaete tubes at surface
Gravel	(Brown)	Slight	
Sand C (M) F	Brown surface	Moderate	39 mL retained
(Silt) / Clay	(Gray)	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: 2

Location: DES-20

Date/Time: 5/8/13

Crew: WH JB PM

Grab # 1	Bottom Depth 37.5	Penetration Depth full penetration	Time 1415
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:* screens/doors were open, prevented over pen poorly consolidated 10 mL retained
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DES-12

Date/Time: 5/8/13

Crew: WH JB PM

Grab # 1	Bottom Depth 28	Penetration Depth 8cm	Time 1435
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:* under pen.
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab # 2	Bottom Depth 28	Penetration Depth 12 cm	Time 1444
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:* polychaete tubes
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	36 mL retained
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: 2

Location: DIS-19

Date/Time: 5/16/13

Crew: WH JB PM

Grab # 1	Bottom Depth 17.9	Penetration Depth 11 cm	Time 1602
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	surface tubes
Gravel	Brown	Slight	homogenous fine sand
Sand C M F	Brown surface	Moderate	algae
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	40 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DIS-02

Date/Time: 5/8/13

Crew: WH JB PM

Grab # 1	Bottom Depth 46.2	Penetration Depth	Time 1521
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	overpen.
Gravel	Brown	Slight	Tried again
Sand C M F	Brown surface	Moderate	w/ screens unlatched
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab # 2	Bottom Depth 48.5	Penetration Depth slight overpen	Time 1529
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	~~None~~	lined fines
Gravel	Brown	Slight	unconsolidated
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black underneath	Overwhelming	
Woody debris	Other:	H_2S	11 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DIS-05

Date/Time: 5/16/13

Crew: WH JB PM

Grab # 1	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	reject - grab collected w/ont proper positioning
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab # 2	Bottom Depth 48.2	Penetration Depth 13cm	Time 1554
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	Shells on surface
Gravel	Brown	Slight	polychaete tubes
Sand C M F	Brown surface	Moderate	slightly darker layer
Silt / Clay	Gray	Strong	beneath surface
Organic matter	Black	Overwhelming	10mL retained
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [illegible]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: _____

Location: DIS-17

Date/Time: 5/16/13

Crew: WH JB PM

Grab # 1	Bottom Depth 48.9	Penetration Depth full (17cm)	Time 1613
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	Some wood debris present
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray underneath	Strong	
Organic matter	Black	Overwhelming	13 mL retained
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: WH

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: DIS-16

Date/Time: 5/8/13

Crew: WH JB PM

Grab # 1	Bottom Depth 50.9	Penetration Depth full (17cm)	Time 1641
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	Shell hash
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	14mL removed
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [illegible]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: SEQ-05

Date/Time: 8:57 5/9/13

Crew: JN, JB, JW

Grab # 1	Bottom Depth 12 m	Penetration Depth 16cm	Time 8:57
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	deep penetration
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	no infauna
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S moderate	16 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: N

Location: SEQ-08

Date/Time: 9:21 5/9/13

Crew: JN, JW, JB

Grab #	Bottom Depth	Penetration Depth	Time
1	13.7 m	17 cm	9:21
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	polychaete tubes on surface
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt Clay	Gray	Strong	
Organic matter	Black	Overwhelming	slight odor
Woody debris	Other:	H_2S slight	19 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: 2

Location: SEQ-02

Date/Time: 5/9/13 9:36

Crew: JN, JB, SW

Grab #	Bottom Depth	Penetration Depth	Time
1	20.9 m	15 cm	9:36
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble Gravel Sand C M F Silt / Clay Organic matter Woody debris Shell debris	Drab olive Brown Brown surface Gray Black Other:	None Slight Moderate Strong Overwhelming H_2S Petroleum	black below 2cm fine sand mixed polychaete tubes on surface, 16 mm retained
Grab #	**Bottom Depth**	**Penetration Depth**	**Time**
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble Gravel Sand C M F Silt / Clay Organic matter Woody debris Shell debris	Drab olive Brown Brown surface Gray Black Other:	None Slight Moderate Strong Overwhelming H_2S Petroleum	
Grab #	**Bottom Depth**	**Penetration Depth**	**Time**
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble Gravel Sand C M F Silt / Clay Organic matter Woody debris Shell debris	Drab olive Brown Brown surface Gray Black Other:	None Slight Moderate Strong Overwhelming H_2S Petroleum	
Grab #	**Bottom Depth**	**Penetration Depth**	**Time**
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble Gravel Sand C M F Silt / Clay Organic matter Woody debris Shell debris	Drab olive Brown Brown surface Gray Black Other:	None Slight Moderate Strong Overwhelming H_2S Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: 2

Location: SEQ-06

Date/Time: 5/9/13 9:52

Crew: JN, JB, JW

Grab #	Bottom Depth	Penetration Depth	Time
1	21 m	17 cm	9:52
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	polychaete tubes on surface
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	10 mL retained

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: 2

Location: SEQ-04

Date/Time: 5/9/13 10:11

Crew: JN, JB, JW

Grab #	Bottom Depth	Penetration Depth	Time
1	24.3 m	? WH 5/16	10:11
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	polychaete tubes
Gravel	Brown	Slight	shell hash on surface
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	10 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: _____

Location: SEQ - 03

Date/Time: 5/9/13 11:04

Crew: JN, JB, JW

Grab #	Bottom Depth	Penetration Depth	Time
1	21.9 m	16 cm	11:04
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	polychaete tubes on surface
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	12 mL retained

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: _____

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: 2

Location: SEQ-07

Date/Time: 5/9/13 11:24

Crew: JN, JB, JW

Grab # 1	Bottom Depth 20.3m	Penetration Depth 15 cm	Time 11:24
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	polychaete tubes
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	9 mL retained

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: 2

Location: SEQ-01

Date/Time: 5/9/13 11:41

Crew: JN, JB, JW

Grab # 1	Bottom Depth 30.2	Penetration Depth 15 cm	Time 11:41
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	consistent color/texture
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	9 mL retained

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: PT-06

Date/Time: 5/10/13

Crew: WH JW JNGR

Grab # 1	Bottom Depth 16.2	Penetration Depth 13cm	Time 909
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	2-3 cm of silt w/ sand below surface ripples
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	29mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: PT-12

Date/Time: 5/10/13

Crew: WH JW JVak

Grab # 1	Bottom Depth 21.9	Penetration Depth 16 cm	Time 926
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	worm tubes
Gravel	Brown	Slight	some algae
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	23 mL recovered
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: PT-09

Date/Time: 5/10/13

Crew: WH JW JNak

Grab # 1	Bottom Depth 26.4	Penetration Depth ~	Time 944
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	9cm penetration
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab # 2	Bottom Depth 26.2	Penetration Depth 11cm	Time 948
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	38 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: ~~PT-04~~ PT-04

Date/Time: 5/10/13

Crew: WH JNak JW

Grab #	Bottom Depth	Penetration Depth	Time
1	21.6	full (17cm)	1008
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	polychaete tubes
Gravel	Brown	Slight	mostly silt w/ some
Sand C M F	Brown surface	Moderate	fine sand and clay
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	16mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: PT-02

Date/Time: 5/10/13

Crew: WH JW JNak

Grab # 1	Bottom Depth 21.7	Penetration Depth –	Time 1025
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	Slight over pen. switch to unweighted grab
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab # 1	Bottom Depth 21.8	Penetration Depth 13 cm	Time 1035
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	lots of nut clams at surface (Ascilla? sp)
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	13 mL retained
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: PT-05

Date/Time: 5/10/13

Crew: WH JW JNaK

Grab # 1	Bottom Depth 24.6	Penetration Depth full (17cm)	Time 1115
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	~~two~~ nut clams on surface
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	Tubes
Organic matter	Black beneath surface	Overwhelming	
Woody debris	Other:	H_2S	15 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: PT-10

Date/Time: 5/10/13

Crew: WH JNak JW

Grab # 1	Bottom Depth 27.8	Penetration Depth 16cm	Time 1133
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	8 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: —

Location: PT-07

Date/Time: 5/10/13

Crew: WH JW JNak

Grab # 1	Bottom Depth 12.5	Penetration Depth —	Time 1152
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	washed out eelgrass and low pen. ~~ad~~ switched to weighted grab
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab # 2	Bottom Depth 12.6	Penetration Depth 13cm	Time 1158
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	no surface debris/no life - previous failed grab had shell hash and eelgrass 40 mL retained
Gravel	Brown	Slight	
Sand C (M) (F)	Brown surface	(Moderate)	
Silt / Clay	Gray	Strong	
Organic matter	(Black)	Overwhelming	
Woody debris	Other:	(H_2S)	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: _____

Location: PT-11

Date/Time: 5/10/13

Crew: WH JW JNak

Grab # 1	Bottom Depth 21.6	Penetration Depth —	Time 1213
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	overpen.
Sand C M F	Brown surface	Moderate	switch to
Silt / Clay	Gray	Strong	unweighted grab
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab # 2	Bottom Depth 21.6	Penetration Depth 16 cm	Time 1221
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	nmt clams
Sand C M F	Brown surface	Moderate	surface tubes
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	11 mL recovered
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: PT-03

Date/Time: 5/10/13

Crew: WH JNak JW

Grab # 1	Bottom Depth 27.6	Penetration Depth ? 5/16/13	Time 1307
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	nut clams
Gravel	Brown	Slight	leaf litter
Sand C M F some fines	Brown surface	Moderate	shell debris
Silt Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	12 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [illegible]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: 2

Location: PT-13

Date/Time: 5/10/13

Crew: WH JNak JW

Grab # 1	Bottom Depth 20.6	Penetration Depth 16cm	Time 1323
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	compsomyax clams
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	11mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: _____

Location: PT-14

Date/Time: 5/10/13

Crew: WH JNak JW

Grab # 1	Bottom Depth 25.1	Penetration Depth 15 cm	Time 1354
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	surface tubes
Gravel	Brown	Slight	~~ha~~ nut clams
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	12 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: PT-08

Date/Time: 5/10/13

Crew: WH JNak JW

Grab # 1	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:* grab dlvn 1+ trip
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab # 2	Bottom Depth 21.3	Penetration Depth 15 cm	Time 1411
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	not clams at surface
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray deeper	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	13 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: ~

Location: PT-15

Date/Time: 5/10/13

Crew: WH JNak JW

Grab # 1	Bottom Depth 17.8	Penetration Depth full (17cm)	Time 1431
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	nut clams
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	12 mL retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Benthic Grab Collection Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization

Station: 2

Location: PT-01

Date/Time: 5/10/13

Crew: WH JNak JW

Grab # 1	Bottom Depth 20.2	Penetration Depth 15 cm	Time 1446
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	compsomyax clam
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	10 mL Retained
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

Grab #	Bottom Depth	Penetration Depth	Time
Sediment Type:	*Sediment Color:*	*Sediment Odor:*	*Comments:*
Cobble	Drab olive	None	
Gravel	Brown	Slight	
Sand C M F	Brown surface	Moderate	
Silt / Clay	Gray	Strong	
Organic matter	Black	Overwhelming	
Woody debris	Other:	H_2S	
Shell debris		Petroleum	

NewFields

Completed by: [signature]

Appendix C.
Sample Container Logbook

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Sample Container Logbook

Page 1

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** DUN-03
Location: Dungeness Bay	**Time/Date Collected:** 1009 5.6.13
Crew: TH, WH, PM, CE, TP	**Time/Date Processed:** 1015 5.6.13
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1351	RB13-Dun-03-S	Grain Size	ARI
1356	"	Conventionals	"
1352	"	Total Sulfides	ARI
1357	"	cPAH	"
1358	"	Metals + Mercury	ARI
1353	"	Dx/F & PCB Congeners	AXYS
1354	"	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Page 2

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** DUN-06
Location: Dungeness Bay	**Time/Date Collected:** 1050 5.6.13
Crew: T.H, WH, PM, CE, TP	**Time/Date Processed:** 1100 5.6.13
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1291	RB13-DUN-06-S	Grain Size	ARI
1296		Conventionals	"
1292		Total Sulfides	ARI
1297		cPAH	"
1298		Metals + Mercury	ARI
1293		Dx/F & PCB Congeners	Axys
1294		Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** DUN-07
Location: Dungeness Bay	**Time/Date Collected:** 5.6.13/1110
Crew: T.B, WH, PM, CE, TP	~~**Time/Date Processed:**~~ T.H.
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1301	RB13-DUN-07-S	Grain Size	ARI
1306		Conventionals	"
1302		Total Sulfides	ARI
1307		cPAH	"
1308		Metals + Mercury	ARI
1303		Dx/F & PCB Congeners	AXYS
1304		Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Page 4

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** DUN-12
Location: Dungeness Bay	**Time/Date Collected:** 5.6.13/1130
Crew: TH, WH, PM, CE, TP	~~**Time/Date Processed:**~~ T.H.
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1391	RB13-DUN-12-S	Grain Size	ARI
TH. ~~1394~~ 1396		Conventionals	"
1392		Total Sulfides	ARI
1397		cPAH	"
1398		Metals + Mercury	ARI
1393		Dx/F & PCB Congeners	AXYS
1394		Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** DUN-10
Location: Dungeness Bay	**Time/Date Collected:** 5.6.13/1210
Crew: TH, WH, PM, CE, TP	~~**Time/Date Processed:**~~ T.H.
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1321	RB13-DUN-10-S	Grain Size	ARI
1326		Conventionals	"
1322		Total Sulfides	ARI
1327		cPAH	"
1328		Metals + Mercury	ARI
1323		Dx/F & PCB Congeners	AXYS
1324		Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

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Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** DUN-13
Location: Dungeness Bay	**Time/Date Collected:** 5.6.13/1328
Crew: TH, WH, PM, CE, TP	~~**Time/Date Processed:**~~ 7.11.
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1401	RB13-DUN-13-S	Grain Size	ARI
1406		Conventionals	"
1402		Total Sulfides	ARI
1407		cPAH	"
1408		Metals + Mercury	ARI
1403		Dx/F & PCB Congeners	AXYS
1404		Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** DUN-05
Location: Dungess Bay	**Time/Date Collected:** 5.6.13/1346
Crew: TH WA PM CE TP	~~**Time/Date Processed:**~~ T.H.
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1281	RB13-DUN-05-S	Grain Size	ARI
1286	"	Conventionals	"
1282	"	Total Sulfides	ARI
1287	"	cPAH	"
1288	"	Metals + Mercury	ARI
1283	"	Dx/F & PCB Congeners	AXYS
1284	"	Archive	NewFields
1289	RB-13-DUN-D	Grain Size	ARI
1409	"	Conventionals	"
1285	"	T. Sulfides	"
1395	"	cPAH	"
1399	"	metals Mercury	"
1400	"	Dx/F + PCBs	AXYS
1405	RB13-DUN-05-T	Grain Size	ARI
1410	"	Conventionals	"
1290	"	T. Sulfides	"

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~~P~~ T.H. DUN-09
Location: Dungeness Bay	**Time/Date Collected:** 5-6-13/1425
Crew: TH, WH, PM, CE, TP	~~**Time/Date Processed:**~~ T.H.
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1311	RB13-DUN09-S	Grain Size	ARI
1316	"	Conventionals	"
1312	"	Total Sulfides	ARI
1317	"	cPAH	"
1318	"	Metals + Mercury	ARI
1313	"	Dx/F & PCB Congeners	AXYS
1314	"	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

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Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** DUN-04
Location: Dungeness Bay	**Time/Date Collected:** 5.6.13 / 1446
Crew: TH, WH, PM, CE, TP	~~**Time/Date Processed**~~**:** T.H.
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1361		Grain Size	ARI
1366		Conventionals	"
1362		Total Sulfides	ARI
1367		cPAH	"
1368		Metals + Mercury	ARI
1363		Dx/F & PCB Congeners	Axys
1364		Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** DUN-02
Location: Dungeness Bay	**Time/Date Collected:** 5.6.13/1509
Crew: TH, WH, PM, CE, TP	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1271	RB13-DUN-02-S	Grain Size	ARI
1276		Conventionals	ARI
1272		Total Sulfides	ARI
1277		cPAH	ARI
1278		Metals + Mercury	ARI
1273		Dx/F & PCB Congeners	Axys
1274		Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

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Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** DUN-11
Location: Dungeness Bay	**Time/Date Collected:** 5·6·13/1549
Crew: TH, WH, PM, CE, TP	~~**Time/Date Processed:**~~ T.H.
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1381	RB13-DUN-11-S	Grain Size	ARI
1386		Conventionals	"
1382		Total Sulfides	ARI
1387		cPAH	"
1388		Metals + Mercury	ARI
1383		Dx/F & PCB Congeners	AXYS
1384		Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** DUN-01
Location: Dungeness Bay	**Time/Date Collected:** 5.6.13/1613
Crew: TH, WG, PM, CE, TP	~~**Time/Date Processed:**~~ T.H.
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1341	RB13-DUN-01-S	Grain Size	ARI
1346		Conventionals	ARI
1342		Total Sulfides	ARI
1347		cPAH	ARI
1348		Metals + Mercury	ARI
1343		Dx/F & PCB Congeners	AXYS
1344		Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** DUN-08
Location: Dungeness Bay	**Time/Date Collected:** 5.6.13/1038
Crew: TH, WH, PM, CE, TP	~~**Time/Date Processed:**~~ TH.
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1371	RB13-DUN-08-S	Grain Size	ARI
1376		Conventionals	ARI
1372		Total Sulfides	ARI
1377		cPAH	ARI
1378		Metals + Mercury	ARI
1373		Dx/F & PCB Congeners	AXYS
1374		Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

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Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** —
Location: DUN-17	**Time/Date Collected:** 5/7/13 902
Crew: WH JB PM	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1441	DUN-17	Grain Size	ARI
1446	DUN-17	Conventionals	NF
1442	DUN-17	Total Sulfides	ARI
1447	DUN-17	cPAH	NF
1448	DUN-17	Metals + Mercury	ARI
1443	DUN-17	Dx/F & PCB Congeners	NF
1444	DUN-17	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** —
Location: DUN-19	**Time/Date Collected:** 5/7/13 920
Crew: WH JB PM	**Time/Date Processed:** —
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1461	DUN-19	Grain Size	ARI
1466	DUN-19	Conventionals	NF
1462	DUN-19	Total Sulfides	ARI
1467	DUN-19	cPAH	NF
1468	DUN-19	Metals + Mercury	ARI
1463	DUN-19	Dx/F & PCB Congeners	NF
1464	DUN-19	Archive	NewFields

Notes:

NewFields

Completed by: [illegible]

Sample Container Logbook

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Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DUN-14	**Time/Date Collected:** 5/9/13 948
Crew: WH PM JB	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1411	DUN 14	Grain Size	ARI
1416	DUN-14	Conventionals	NF
1412	DUN-14	Total Sulfides	ARI
1417	DUN-14	cPAH	NF
1418	DUN-14	Metals + Mercury	ARI
1413	DUN-14	Dx/F & PCB Congeners	NF
1414	DUN-14	Archive	NewFields

Notes:

NewFields

Completed by: Willy

Sample Container Logbook

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Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DUN-20	**Time/Date Collected:** 8/7/13 10AM
Crew: WH JB PM	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1471	DUN-20	Grain Size	ARI
1476	DUN-20	Conventionals	NF
1472	DUN-20	Total Sulfides	ARI
1477	DUN-20	cPAH	NF
1476	DUN-20	Metals + Mercury	ARI
1473	DUN-20	Dx/F & PCB Congeners	NF
1474	DUN-20	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** —
Location: DUN-16	**Time/Date Collected:** 3/5/13 1107
Crew: WH JB PM	**Time/Date Processed:** —
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1431	DUN-16	Grain Size	ARI
1436	DUN-16	Conventionals	NF
1432	DUN-16	Total Sulfides	ARI
1437	DUN-16	cPAH	NF
1436	DUN-16	Metals + Mercury	ARI
1433	DUN-16	Dx/F & PCB Congeners	NF
1434	DUN-16	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DUN-22	**Time/Date Collected:** 5/7/13 1131
Crew: WH JB PM	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1491	DUN-22	Grain Size	ARI
1496	DUN-22	Conventionals	NF
1492	DUN-22	Total Sulfides	ARI
1497	DUN-22	cPAH	NF
1496	DUN-22	Metals + Mercury	ARI
1493	DUN-22	Dx/F & PCB Congeners	NF
1494	DUN-22	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** —
Location: DUN-21	**Time/Date Collected:** 5/7/13 1150
Crew: WH SB PM	**Time/Date Processed:** —
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1481	DuN-21	Grain Size	ARI
1486	DuN-21	Conventionals	NF
1482	DuN-21	Total Sulfides	ARI
1487	DuN-21	cPAH	NF
1488	DuN-21	Metals + Mercury	ARI
1483	DuN-21	Dx/F & PCB Congeners	NF
1484	DuN-21	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** —
Location: DUN-15	**Time/Date Collected:** 5/7/13 12A
Crew: WH JB PM	**Time/Date Processed:** —
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1421	DUN-15	Grain Size	ARI
1426	DUN-15	Conventionals	NF
1422	DUN-15	Total Sulfides	ARI
1427	DUN-15	cPAH	NF
1428	DUN-15	Metals + Mercury	ARI
1423	DUN-15	Dx/F & PCB Congeners	NF
1424	DUN-15	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DIS-04	**Time/Date Collected:** 5/7/13 1342
Crew: WH JB PM	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1111	DIS-04	Grain Size	ARI
1116	DIS-04	Conventionals	T.H. ~~NF~~ ARI
1112	DIS-04	Total Sulfides	ARI
1117	DIS-04	cPAH	T.H. ~~NF~~ ARI
1118	DIS-04	Metals + Mercury	ARI
1113	DIS-04	Dx/F & PCB Congeners	T.H. ~~NF~~ ARI
1114	DIS-04	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DIS-11	**Time/Date Collected:** 5/7/13 1407
Crew: WH JB PM	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1181	DIS-11	Grain Size	ARI
1186	DIS-11	Conventionals	ARI
1182	DIS-11	Total Sulfides	ARI
1187	DIS-11	cPAH	ARI
1188	DIS-11	Metals + Mercury	ARI
1183	DIS-11	Dx/F & PCB Congeners	Axys
1184	DIS-11	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

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Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** 1435 WH
Location: DIS-08	**Time/Date Collected:** 5/7/13 ~~1429~~
Crew: WH JB PM	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1151	DIS-08	Grain Size	ARI
1156	DIS-08	Conventionals	ARI
1152	DIS-08	Total Sulfides	ARI
1157	DIS-08	cPAH	ARI
1158	DIS-08	Metals + Mercury	ARI
1153	DIS-08	Dx/F & PCB Congeners	Axys
1154	DIS-08	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DIS-06	**Time/Date Collected:** 5/7/13 1530
Crew: WH JB PM	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1131	DIS-06	Grain Size	ARI
1136	DIS-06	Conventionals	ARI
1132	DIS-06	Total Sulfides	ARI
1137	DIS-06	cPAH	ARI
1138	DIS-06	Metals + Mercury	ARI
1133	DIS-06	Dx/F & PCB Congeners	ARI
1134	DIS-06	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

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Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** Rinsate
Location: RB13-NOP-RB/ER	**Time/Date Collected:** 5/7/13 1605
Crew: WH JB PM	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
		Grain Size	ARI
		Conventionals	
		Total Sulfides	ARI
		cPAH	
		Metals + Mercury	ARI
		Dx/F & PCB Congeners	
		Archive	NewFields
1425, 1430	NOP-RB	Cd As Hg	ARI
~~1465~~, 1490	NOP-RB	~~Cd As Hg~~ cPAH	ARI
1495, 1500	NOP-ER-1	As Cd Hg	ARI
1435, 1440	NOP-ER-1	cPAH	ARI

Notes:

NewFields

Completed by: [illegible]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** 2
Location: DIS-09	**Time/Date Collected:** 5/7/13 1640
Crew: WH PM JB	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1161	DIS-09	Grain Size	ARI
1166	DIS_09	Conventionals	ARI
1162	DIS-09	Total Sulfides	ARI
1167	DIS-09	cPAH	ARI
1166	DIS-09	Metals + Mercury	ARI
1163	DIS-09	Dx/F & PCB Congeners	AXYS ARI T.H.
1164	DIS-09	Archive	NewFields
1165	DIS-09-D	cPAH	ARI
1169	DIS-09-D	Grain size	ARI
1170	DIS09-T	Grain size	ARI
1135	DIS-09-D	As Cd Hg	ARI
1139	DIS-09-D	Sulfides	ARI
1140	DIS-09-T	Sulfides	ARI
1155	DIS-09-D	Dioxin and PCB	Axys
1159	DIS-09-D	Conventionals	ARI
1160	DIS-09-T	Conventionals	ARI

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:**
Location: DUN-18	**Time/Date Collected:** 5/7/13 1735
Crew: WH JB PM	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1451	DUN-18	Grain Size	ARI
1456	DUN-18	Conventionals	NF
1452	DUN-18	Total Sulfides	ARI
1457	DUN-18	cPAH	NF
1458	DUN-18	Metals + Mercury	ARI
1453	DUN-18	Dx/F & PCB Congeners	NF
1454	DUN-18	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DIS-14	**Time/Date Collected:** 5/8/13 0956
Crew: WH JB PM	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1331	DIS-14	Grain Size	ARI
1336	DIS-14	Conventionals	NF
1332	DIS-14	Total Sulfides	ARI
1337	DIS-14	cPAH	NF
1338	DIS-14	Metals + Mercury	ARI
1333	DIS-14	Dx/F & PCB Congeners	NF
1334	DIS-14	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DIS-15	**Time/Date Collected:** 5/8/13 1018
Crew: WH JB PM	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1211	DIS-15	Grain Size	ARI
1216	DIS-15	Conventionals	NF
1212	DIS-15	Total Sulfides	ARI
1217	DIS-15	cPAH	NF
1218	DIS-15	Metals + Mercury	ARI
1213	DIS-15	Dx/F & PCB Congeners	NF
1214	DIS-15	Archive	NewFields

Notes:

NewFields

Completed by: [illegible]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:**
Location: DIS-18	**Time/Date Collected:** 5/16/13 1036
Crew: WH JB DM	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1241	DIS-18	Grain Size	ARI
1246	DIS-18	Conventionals	NF
1242	DIS-18	Total Sulfides	ARI
1247	DIS-18	cPAH	NF
1248	DIS-18	Metals + Mercury	ARI
1243	DIS-18	Dx/F & PCB Congeners	NF
1244	DIS-18	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DIS-10	**Time/Date Collected:** 5/8/13 1127
Crew: WH JB PM	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1171	DIS-10	Grain Size	ARI
1176	DIS-10	Conventionals	ARI
1172	DIS-10	Total Sulfides	ARI
1177	DIS-10	cPAH	ARI
1178	DIS-10	Metals + Mercury	ARI
1173	DIS-10	Dx/F & PCB Congeners	Axys
1174	DIS-10	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:**
Location: DIS-07	**Time/Date Collected:** 5/8/13 1147
Crew: WH JB PM	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1141	DIS-07	Grain Size	ARI
1146	DIS-07	Conventionals	ARI
1142	DIS-07	Total Sulfides	ARI
1147	DIS-07	cPAH	ARI
1148	DIS-07	Metals + Mercury	ARI
1143	DIS-07	Dx/F & PCB Congeners	Axys
1144	DIS-07	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DIS-01	**Time/Date Collected:** 5/8/13 1206
Crew: WH JB PM	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1061	DIS-01	Grain Size	ARI
1066	DIS-01	Conventionals	ARI
1062	DIS-01	Total Sulfides	ARI
1067	DIS-01	cPAH	ARI
1068	DIS-01	Metals + Mercury	ARI
1063	DIS-01	Dx/F & PCB Congeners	Axys
1064	DIS-01	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DIS-13	**Time/Date Collected:** 5/8/13 1320
Crew: WH JB PM	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1201	DIS-13	Grain Size	ARI
1206	DIS-13	Conventionals	NF
1202	DIS-13	Total Sulfides	ARI
1207	DIS-13	cPAH	NF
1208	DIS-13	Metals + Mercury	ARI
1203	DIS-13	Dx/F & PCB Congeners	NF
1204	DIS-13	Archive	NewFields

Notes:

NewFields

Completed by: Will Gh

Sample Container Logbook

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Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DIS-03	**Time/Date Collected:** 5/8/13 1357
Crew: WH JB PM	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1101	DIS-03	Grain Size	ARI
1106	DIS-03	Conventionals	ARI
1102	DIS-03	Total Sulfides	ARI
1107	DIS-03	cPAH	ARI
1108	DIS-03	Metals + Mercury	ARI
1103	DIS-03	Dx/F & PCB Congeners	Axys
1104	DIS-03	Archive	NewFields

Notes:

NewFields

Completed by: [illegible]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DIS-20	**Time/Date Collected:** 5/8/13 1415
Crew: WH JB PM	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1261	DIS -20	Grain Size	ARI
1266	DIS -20	Conventionals	NF
1262	DIS-20	Total Sulfides	ARI
1267	DIS-20	cPAH	NF
1260	DIS -20	Metals + Mercury	ARI
1263	DIS-20	Dx/F & PCB Congeners	NF
1264	DIS-20	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~ 1444
Location: DIS-12	**Time/Date Collected:** 5/8/13 ~~1435~~ VH
Crew: WH JB PM	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1191	DIS-12	Grain Size	ARI
1196	DIS-12	Conventionals	ARI
1192	DIS-12	Total Sulfides	ARI
1197	DIS-12	cPAH	ARI
1198	DIS-12	Metals + Mercury	ARI
1193	DIS-12	Dx/F & PCB Congeners	Axys
1194	DIS-12	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:**
Location: DIS-19	**Time/Date Collected:** 5/16/13 1502
Crew: WH JB PM	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1251	DIS-19	Grain Size	ARI
1256	DIS-19	Conventionals	NF
1252	DIS-19	Total Sulfides	ARI
1257	DIS-19	cPAH	NF
1258	DIS-19	Metals + Mercury	ARI
1253	DIS-19	Dx/F & PCB Congeners	NF
1254	DIS-19	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DIS-02	**Time/Date Collected:** 5/8/13 1529
Crew: WH JB PM	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1091	DIS-02	Grain Size	ARI
1096	DIS-02	Conventionals	~~NF~~ ARI
1092	DIS-02	Total Sulfides	ARI
1097	DIS-02	cPAH	~~NF~~ ARI
1098	DIS-02	Metals + Mercury	ARI
1093	DIS-02	Dx/F & PCB Congeners	~~NF~~ Axys
1094	DIS-02	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DIS-05	**Time/Date Collected:** 5/8/13 1554
Crew: WH JB PM	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1121	DIS-05	Grain Size	ARI
1126	DIS-05	Conventionals	ARI
1122	DIS-05	Total Sulfides	ARI
1127	DIS-05	cPAH	ARI
1128	DIS-05	Metals + Mercury	ARI
1123	DIS-05	Dx/F & PCB Congeners	Axys
1124	DIS-05	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DIS-17	**Time/Date Collected:** 5/8/13 1613
Crew: WH JB PM	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1231	DIS-17	Grain Size	ARI
1236	DIS-17	Conventionals	NF
1232	DIS-17	Total Sulfides	ARI
1237	DIS-17	cPAH	NF
1233	DIS-17	Metals + Mercury	ARI
1238	DIS-17	Dx/F & PCB Congeners	NF
1234	DIS-17	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** RINSATE
Location: RB13-NOP-ER-2	**Time/Date Collected:** 5/8/13 1629
Crew: WH JB PM	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
		Grain Size	ARI
		Conventionals	
		Total Sulfides	ARI
		cPAH	
		Metals + Mercury	ARI
		Dx/F & PCB Congeners	
		Archive	NewFields
1239, 1240	NOP-ER-2	As Cd Hg	ARI
1129, 1130	NOP-ER-2	cPAH	ARI

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: DIS-16	**Time/Date Collected:** 5/8/13 1644
Crew: WH PM JB	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1221	DIS-16	Grain Size	ARI
1226	DIS-16	Conventionals	NF
1222	DIS-16	Total Sulfides	ARI
1227	DIS-16	cPAH	NF
1228	DIS-16	Metals + Mercury	ARI
1223	DIS-16	Dx/F & PCB Congeners	NF
1224	DIS-16	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** 2
Location: SEQ-05	**Time/Date Collected:** 5/9/13 8:57
Crew: JN, JB, JW	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1041	SEQ-05	Grain Size	ARI
1046	SEQ-05	Conventionals	ARI
1042	SEQ-05	Total Sulfides	ARI
1047	SEQ-05	cPAH	ARI
~~[illegible]~~ 1048	SEQ-05	Metals + Mercury	ARI
1043	SEQ-05	Dx/F & PCB Congeners	Axys
1044	SEQ-05	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: SEQ-08	**Time/Date Collected:** 9:21 5/9/13
Crew: JN, JB, JW	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1071	SEQ-08	Grain Size	ARI
1076	SEQ-08	Conventionals	NF
1072	SEQ-08	Total Sulfides	ARI
1077	SEQ-08	cPAH	NF
1078	SEQ-08	Metals + Mercury	ARI
1073	SEQ-08	Dx/F & PCB Congeners	NF
1074	SEQ-08	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: SEQ-02	**Time/Date Collected:** 5/9/13 9:36
Crew: JN, JB, JW	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1011	SEQ-02	Grain Size	ARI
1016	SEQ-02	Conventionals	ARI
1012	SEQ-02	Total Sulfides	ARI
1017	SEQ-02	cPAH	ARI
1018	SEQ-02	Metals + Mercury	ARI
1013	SEQ-02	Dx/F & PCB Congeners	Axys
1014	SEQ-02	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:**
Location: SEQ - 06	**Time/Date Collected:** 5/9/13 9:52
Crew: JN, JB, JW	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1051	SEQ-06	Grain Size	ARI
1056	SEQ-06	Conventionals	NF
1052	SEQ-06	Total Sulfides	ARI
1057	SEQ-06	cPAH	NF
1058	SEQ-06	Metals + Mercury	ARI
1053	SEQ-06	Dx/F & PCB Congeners	NF
1054	SEQ-06	Archive	NewFields

Notes:

NewFields

Completed by: JN

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** 2
Location: SEQ-04	**Time/Date Collected:** 5/9/13 10:1
Crew: JN, JB, JW	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1031	SEQ-04	Grain Size	ARI
1036	SEQ-04	Conventionals	ARI
1032	SEQ-04	Total Sulfides	ARI
1037	SEQ-04	cPAH	ARI
1038	SEQ-04	Metals + Mercury	ARI
1033	SEQ-04	Dx/F & PCB Congeners	AxyS
1034	SEQ-04	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:**
Location: Rinseate	**Time/Date Collected:** 10:42 5/9/13
Crew: JN, JB, JW	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
		Grain Size	ARI
		Conventionals	
		Total Sulfides	ARI
		cPAH	
		Metals + Mercury	ARI
		Dx/F & PCB Congeners	
		Archive	NewFields
1229	NOP-ER-3	Mercury	ARI
1225	NOP-ER-3	Arsenic, Cadmium	ARI
1230	NOP-ER-3	SIM cPAH (1 of 2)	ARI
1339	NOP-ER-3	SIM cPAH (2 of 2)	ARI

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** 1
Location: SEQ-03	**Time/Date Collected:** 5/9/13 11:04
Crew: JN, JB, JW	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1021	SEQ-03	Grain Size	ARI
1026	SEQ-03	Conventionals	ARI
1022	SEQ-03	Total Sulfides	ARI
1027	SEQ-03	cPAH	ARI
1028	SEQ-03	Metals + Mercury	ARI
1023	SEQ-03	Dx/F & PCB Congeners	Axys
1024	SEQ-03	Archive	NewFields
1029	SEQ-03-D	Grain Size	ARI
1025	SEQ-03-T	Grain Size	ARI
1030	SEQ-03-D	Sulfides	ARI
1019	SEQ-03-T	Sulfides	ARI
1015	SEQ-03-D	Conventionals	ARI
1020	SEQ-03-T	Conventionals	ARI
1079	SEQ-03-D	SIM cPAH	ARI
1075	SEQ-03-D	Metals + Mercury	ARI
1080	SEQ-03-D	Dx/F & PCB cong	Axys

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** 1
Location: SEQ-07	**Time/Date Collected:** 5/9/13 11:24
Crew: JN, JB, JW	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1061		Grain Size	ARI
1066		Conventionals	NF
1062		Total Sulfides	ARI
1067		cPAH	NF
1068		Metals + Mercury	ARI
1063		Dx/F & PCB Congeners	NF
1064		Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** 2
Location: SEQ-01	**Time/Date Collected:** 5/9/13 11:41
Crew: JN, JB, JW	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1001	SEQ-01	Grain Size	ARI
1006	SEQ-01	Conventionals	ARI
1002	SEQ-01	Total Sulfides	ARI
1007	SEQ-01	cPAH	ARI
1008	SEQ-01	Metals + Mercury	ARI
1003	SEQ-01	Dx/F & PCB Congeners	Axys
1004	SEQ-01	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:**
Location: PT-06	**Time/Date Collected:** 5/10/13 909
Crew: WH JW JNoK	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
~~1151~~ 1551	PT-06	Grain Size	ARI
1556	PT-06	Conventionals	ARI
1552	~~PP~~PT-06	Total Sulfides	ARI
1557	PT-06	cPAH	ARI
1558	PT-06	Metals + Mercury	ARI
1553	PT-06	Dx/F & PCB Congeners	Axys
1554	PT-06	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:**
Location: PT-12	**Time/Date Collected:** 5/10/13 926
Crew: WH JW JNak	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1611	PT-12	Grain Size	ARI
1616	PT-12	Conventionals	NF
1612	PT-12	Total Sulfides	ARI
1617	PT-12	cPAH	NF
1618	PT-12	Metals + Mercury	ARI
1613	PT-12	Dx/F & PCB Congeners	NF
1614	PT-12	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: PT-09	**Time/Date Collected:** 5/10/13 948
Crew: WH JW JNak	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1581	PT-09	Grain Size	ARI
1586	PT-09	Conventionals	ARI
1582	PT-09	Total Sulfides	ARI
1587	PT-09	cPAH	ARI
1588	PT-09	Metals + Mercury	ARI
1583	PT-09	Dx/F & PCB Congeners	Axys
1584	PT-09	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: PT-04	**Time/Date Collected:** 5/10/13 1008
Crew: WH JW JNak	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1531	PT-04	Grain Size	ARI
1536	PT-04	Conventionals	ARI
1532	PT-04	Total Sulfides	ARI
1537	PT-04	cPAH	ARI
1538	PT-04	Metals + Mercury	ARI
1533	PT-04	Dx/F & PCB Congeners	Axys
1534	PT-04	Archive	NewFields

Notes:

NewFields

Completed by: [illegible]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: PT-02	**Time/Date Collected:** 5/10/13 1035
Crew: WH JW JNaK	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1511	PT-02	Grain Size	ARI
1516	PT-02	Conventionals	ARI
1512	PT-02	Total Sulfides	ARI
1517	PT-02	cPAH	ARI
1518	PT-02	Metals + Mercury	ARI
1513	PT-02	Dx/F & PCB Congeners	AXYS
1514	PT-02	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: PT-05	**Time/Date Collected:** 5/10/13 1115
Crew: WH JW JNoK	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1541	PT-05	Grain Size	ARI
1546	PT-05	Conventionals	ARI
1542	PT-05	Total Sulfides	ARI
1547	PT-05	cPAH	ARI
1548	PT-05	Metals + Mercury	ARI
1543	PT-05	Dx/F & PCB Congeners	Axys
1544	PT-05	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: PT-10	**Time/Date Collected:** 5/10/13 1133
Crew: WH JW JNak	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1591	PT-10	Grain Size	ARI
1596	PT-10	Conventionals	ARI
1592	PT-10	Total Sulfides	ARI
1597	PT-10	cPAH	ARI
1598	PT-10	Metals + Mercury	ARI
1593	PT-10	Dx/F & PCB Congeners	Axys
1594	PT-10	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: PT-07	**Time/Date Collected:** 5/10/13 1158
Crew: WH JNak JW	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1561	PT-07	Grain Size	ARI
1566	PT-07	Conventionals	ARI
1562	PT-07	Total Sulfides	ARI
1567	PT-07	cPAH	ARI
1568	PT-07	Metals + Mercury	ARI
1563	PT-07	Dx/F & PCB Congeners	~~ARI~~ Axys
1564	PT-07	Archive	NewFields
~			

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: PT-11	**Time/Date Collected:** 5/10/13 1221
Crew: WH JW JNaK	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1601	PT-11	Grain Size	ARI
1606	PT-11	Conventionals	NF
1602	PT-11	Total Sulfides	ARI
1607	PT-11	cPAH	NF
1606	PT-11	Metals + Mercury	ARI
1603	PT-11	Dx/F & PCB Congeners	NF
1604	PT-11	Archive	NewFields
~			

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: PT-03	**Time/Date Collected:** 5/10/13 1307
Crew: WH JNak JW	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1521	PT-03	Grain Size	ARI
1526	PT-03	Conventionals	ARI
1522	PT-03	Total Sulfides	ARI
1527	PT-03	cPAH	ARI
1528	PT-03	Metals + Mercury	ARI
1523	PT-03	Dx/F & PCB Congeners	Axys
1524	PT-03	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:**
Location: PT-13	**Time/Date Collected:** 5/10/13 1323
Crew: WH JNak JW	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1621	PT-13	Grain Size	ARI
1626	PT-13	Conventionals	NF
1622	PT-13	Total Sulfides	ARI
1627	PT-13	cPAH	NF
1626	PT-13	Metals + Mercury	ARI
1623	PT-13	Dx/F & PCB Congeners	NF
1624	PT-13	Archive	NewFields
1625	PT-13-D	Hg	ARI
1629	PT-13-D	Grain Size	ARI
1630	PT-13-T	Grain Size	ARI
1529	PT-13-D	Sulfides	ARI
1530	PT-13-T	Sulfides	ARI

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: PT-14	**Time/Date Collected:** 5/10/13 1354
Crew: WH JNak JW	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1631	PT-14	Grain Size	ARI
1636	PT-14	Conventionals	NF
1632	PT-14	Total Sulfides	ARI
1637	PT-14	cPAH	NF
1636	PT-14	Metals + Mercury	ARI
1633	PT-14	Dx/F & PCB Congeners	NF
1644	PT-14	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:**
Location: PT-08	**Time/Date Collected:** 5/10/13 1411
Crew: WH JNak JW	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1571	PT-08	Grain Size	ARI
1576	PT-08	Conventionals	ARI
1572	PT08	Total Sulfides	ARI
~~1573~~ 1577	PT-08	cPAH	ARI
1578	PT-08	Metals + Mercury	ARI
1573	PT-08	Dx/F & PCB Congeners	Axys
1574	PT-08	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Page 67

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:**
Location: PT-15	**Time/Date Collected:** 5/10/13 1431
Crew: WH SNAK JW	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1641	PT-15	Grain Size	ARI
1646	PT-15	Conventionals	NF
1642	PT-15	Total Sulfides	ARI
1647	PT-15	cPAH	NF
1648	PT-15	Metals + Mercury	ARI
1643	PT-15	Dx/F & PCB Congeners	NF
1644	PT-15	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Page 68

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** [illegible]
Location: RB13-NOP-ER-4	**Time/Date Collected:** 5/10/13 1439
Crew: WH JNak JW	**Time/Date Processed:**
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
~~1649~~	~~NOP-ER-~~	Grain Size	ARI
~~1650~~		Conventionals	
		Total Sulfides	ARI
		cPAH	
		Metals + Mercury	ARI
		Dx/F & PCB Congeners	
		Archive	NewFields
1649	NOP-ER-4	Hg	ARI
1650	NOP-ER-4	Hg	ARI

Notes:

NewFields

Completed by: [signature]

Sample Container Logbook

Project: 2013 North Olympic Peninsula Regional Background Sediment Characterization	**Station:** ~
Location: PT-01	**Time/Date Collected:** 5/10/13 1446
Crew: WH JNoK JW	**Time/Date Processed:** ~
Comments:	

Sample Container Tag Number	Sample ID	Analysis	Laboratory
1501	PT-01	Grain Size	ARI
1502	~~PT-10~~ PT-01	Conventionals	ARI
1502	PT-01	Total Sulfides	ARI
1507	PT-01	cPAH	ARI
1508	PT-01	Metals + Mercury	ARI
1503	PT-01	Dx/F & PCB Congeners	Axys
1504	PT-01	Archive	NewFields

Notes:

NewFields

Completed by: [signature]

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Appendix D.
Chain of Custody Forms

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AXYS | Axys Analytical Services Ltd
Attn: Candice Navarali
2045 Mills Road West TEL: (250) 655-5800
Sidney, British Columbia, Canada V8L 5X2 FAX: (250) 655-5811

CHAIN OF CUSTODY

AXYS CLIENT #: 4273

REPORT TO:
Company: Newfields
Address: 115 2nd Ave N, Edmonds WA 98020
Contact: Will Hafner
Phone: 425-967-5285 Ext 103
FAX:
E-mail: whafner@newfields.com

INVOICE TO:
Company: Newfields - same as report to
Address:
Contact:
Phone:
FAX:
E-mail:

Project Name/Number: North Olympic Peninsula Reg. Background
Sampler's Name:
Signature:

ANALYSIS REQUESTED: Dioxin/Furan Congeners; PCB Congeners

Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	AXYS Lab Sample ID (Lab use only)	Dioxin/Furan Congeners	PCB Congeners			
RB13-DUN-03-S	SED	5.6.13	1009	1 #1353	L19652-1	X	X			
RB13-DUN-06-S	"	"	1050	1 #1293	-2	X	X			
RB13-DUN-07-S	"	"	1110	1 #1303	-3	X	X			
RB13-DUN-12-S	"	"	1130	1 #1393	-4	X	X			
RB13-DUN-10-S	"	"	1210	1 #1323	-5	X	X			
RB13-DUN-13-S	"	"	1328	1 #1403	-6	X	X			
RB-13-DUN-05-S	"	"	1346	1 #1283	-7	X	X			
RB-13-DUN-05-D	"	"	"	1 #1400	-8	X	X			
RB13-DUN-09-S	"	"	1425	1 #1313	-9	X	X			
RB13-DUN-04-S	"	"	1446	1 #1363	-10	X	X			
RB13-DUN-02-S	"	"	1509	1 #1273	-11	X	X			

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
[signature]	5/14/13	13:00	[signature]	15 May 13	10:55
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time

Courier:
Waybill No.:

Sample Receipt

	Cooler
Temp °C	
Custody Seal #	
Seal Intact Y / N	
Sample Tags Y / N	

Remarks:

AXYS | Axys Analytical Services Ltd

2045 Mills Road West TEL: (250) 655-5800
Sidney, British Columbia, Canada V8L 5X2 FAX: (250) 655-5811 90 Candice Navaroli

CHAIN OF CUSTODY

AXYS CLIENT #: 4273

REPORT TO:

Company: Newfields - Will Hafner
Address: 115 2nd Ave N, Edmonds WA 98020
Contact: Will Hafner
Phone: 425-967-5285 Ext 103
FAX:
E-mail: whafner@newfields.com

INVOICE TO:

Company: Newfields - same as report TO
Address:
Contact:
Phone:
FAX:
E-mail:

Project Name/Number: North Olympic Peninsula Reg. Background

Sampler's Name:
Signature:

ANALYSIS REQUESTED: Dioxin/Furan Congeners; PCB Congeners

Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	AXYS Lab Sample ID (Lab use only)	Dioxin/Furan Congeners	PCB Congeners			
RB13-DUN-11-S	SED	5.6.13	1549	1 #1383	L19652-12	X	X			
RB13-DUN-01-S	"	"	1613	1 #1345	-13	X	X			
RB13-DUN-08-S	"	"	1638	1 #1373	-14	X	X			

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Jasper Bauer	5/14/13	13:00	[signature]	15 May 13	10:55
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time

Courier:
Waybill No.:

Remarks:

Sample Receipt

	Cooler
Temp °C	
Custody Seal #	
Seal Intact Y / N	
Sample Tags Y / N	

AXYS | Axys Analytical Services Ltd

2045 Mills Road West TEL: (250) 655-5800
Sidney, British Columbia, Canada V8L 5X2 FAX: (250) 655-5811

Attn: Candice Navaroli

CHAIN OF CUSTODY

AXYS CLIENT #: 4273

REPORT TO:

Company: NewFields
Address: 115 2nd Ave N, Edmonds WA 98020
Contact: Will Hafner
Phone: 425-967-5285 x103
FAX: —
E-mail: whafner@newfields.com

INVOICE TO:

Company: NewFields - same as report to
Address:
Contact:
Phone:
FAX:
E-mail:

Project Name/Number: North Olympic Peninsula Reg. Background

Sampler's Name:
Signature:

ANALYSIS REQUESTED

Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	AXYS Lab Sample ID (Lab use only)	Dioxin/Furan Congeners	PCB congeners (Full suite)	NewFields Jar #		
RB13-PT-06-S	Sed	5/10/13	909	1	L9652-15	X	X	1553		
RB13-PT-09-S	Sed	5/10/13	948	1	-16	X	X	1583		
RB13-PT-04-S	Sed	5/10/13	1008	1	-17	X	X	1533		
RB13-PT-02-S	Sed	5/10/13	1035	1	-18	X	X	1513		
RB13-PT-05-S	Sed	5/10/13	1115	1	-19	X	X	1543		
RB13-PT-10-S	Sed	5/10/13	1133	1	-20	X	X	1593		
RB13-PT-07-S	Sed	5/10/13	1156	1	-21	X	X	1563		
RB13-PT-03-S	Sed	5/10/13	1307	1	-22	X	X	1523	VH	
RB13-PT-08-S	Sed	5/10/13	1411	1	-23	X	X	~~1411~~	1573	
RB13-PT-01-S	Sed	5/10/13	1446	1	-24	X	X	1503		

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Jasper Bauer	5/14/13	13:00		15 May 13	10:55
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time

Remarks

Courier:
Waybill No.:

Sample Receipt

	Cooler
Temp °C	
Custody Seal #	
Seal Intact Y / N	
Sample Tags Y / N	

NEWFIELDS

NewFields Northwest, LLC.
Shipping: 4729 NE View Dr.
Mailing: P.O. Box 216
Port Gamble, WA. 98364
Tel: (360) 297-6040, Fax: (360)297-7268

CHAIN OF CUSTODY

13639 4273

Destination Lab: Axys	Sample Originator: New Fields	Report Results To: Will Hafner	Phone:
Destination Contact: Candice Navarali	Contact Name: Will Hafner	Contact Name:	Fax:
Date: 5/9/13	Address: 115 2nd Ave N Edmonds WA 98020	Address:	Email:
Turn-Around-Time			
Project Name: North Olympic Peninsula Regional Background	Phone: 425-967-5285 x103	Invoicing To:	
Contract/PO:	Fax: ~	Comments or Special Instructions:	
	E-mail: whafner@newfields.com		

No.	Sample ID	Matrix	No. & Type of Container	Date & Time	Dioxin/Furan	PCB Congener					Preservation	Sample Temp Upon Receipt	LAB ID
1	RB13-SEQ-05-S	sed	1	5/9/13 8:57	X	X					L9652-25		1043
2	RB13-SEQ-02-S	sed	1	5/9/13 9:36	X	X					-26		~~1073~~ 1013
3	RB13-SEQ-04-S	sed	1	5/9/13 10:11	X	X					-27		1033
4	RB13-SEQ-03-S	sed	1	5/9/13 11:04	X	X					-28		1023
5	RB13-SEQ-03-D	sed	1	5/9/13 11:04	X	X					-29		1080
6	RB13-SEQ-01-S	sed	1	5/9/13 11:41	X	X					-30		1003
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													

Relinquished by:	Recieved by:	Relinquished by:	Recieved by:
Print Name: Jasper Beans	Print Name: M GIERDEN	Print Name:	Print Name:
Signature: Jasper Beans	Signature:	Signature:	Signature:
Affiliation: New Fields	Affiliation: AXYS	Affiliation:	Affiliation:
Date/Time: 5/14/13 13:00	Date/Time: 15 May 13 10:55	Date/Time:	Date/Time:

Matrix Codes
FW = Fresh Water
WW = Waste Water
SB = Salt & Brackish Water
SS = Soil & Sediment
TS = plant & Animal Tissue
OT = Other

WHITE – return to originator • YELLOW – lab • PINK – retained by originator

AXYS | Axys Analytical Services Ltd

2045 Mills Road West TEL: (250) 655-5800
Sidney, British Columbia, Canada V8L 5X2 FAX: (250) 655-5811

Attn: Candice Navarolli

CHAIN OF CUSTODY

AXYS CLIENT #: 4273

REPORT TO:
Company: Newfields
Address: 115 2nd Ave N
Edmonds WA 98020
Contact: Will Hafner
Phone: 425 967 5265 x 103
FAX:
E-mail: whafner@newfields.com

INVOICE TO:
Company: Newfields - same
Address:
Contact:
Phone:
FAX:
E-mail:

Project Name/Number: North olympic Peninsula reg. Background

Sampler's Name: Will Hafner
Signature:

ANALYSIS REQUESTED

Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	Preservative Y / N	AXYS Lab ID Lab use only	dioxin/furan congeners	PCB congeners (full suite)	Newfields Jar Tag		
RB13-DIS-10-S	Sed	5/8/13	1127	1		L19652-31	X	X	1173		
RB13-DIS-07-S	Sed	5/8/13	1147	1		-32	X	X	1143		
RB13-DIS-01-S	Sed	5/8/13	1083	1		-33	X	X	1083		
RB13-DIS-01-S	Sed	5/8/13	~~1103~~ 1357	1		-34	X	X	1103		
RB13-DIS-12-S	Sed	5/8/13	1435	1		-35	X	X	1193		
RB13-DIS-02-S	Sed	5/8/13	1529	1		-36	X	X	1093		
RB13-DIS-05-S	Sed	5/8/13	1554	1		-37	X	X	1123		

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
[signature]	5/14/13	13:00	[signature]	15 May 13	10:55
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time

Remarks / Type Of Preservative

Courier	Waybill No.
Fedex	799759574788

Sample Receipt

	Cooler
Temp °C	
Custody Seal #	
Seal Intact Y / N	
Sample Tags Y / N	

AXYS | Axys Analytical Services Ltd

2045 Mills Road West TEL: (250) 655-5800
Sidney, British Columbia, Canada V8L 5X2 FAX: (250) 655-5811

Candice Navarali

CHAIN OF CUSTODY

AXYS CLIENT #: 4273

REPORT TO:		INVOICE TO:	
Company	NewFields	Company	NewFields - Will Hafner
Address	115 2nd Ave N Suite 100 Edmonds WA 98020	Address	
Contact	Will Hafner	Contact	
Phone	425-967-5285 x103	Phone	
FAX		FAX	
E-mail	whafner@newfields.com	E-mail	
Project Name/Number:	North Olympic Peninsula Regional Background	Sampler's Name: Signature:	

Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	AXYS Lab Sample ID (Lab use only)	Dioxin Furan congeners	PCB congeners (full suite)			
RB13-DIS-04-S	Sed	5/7/13	1342	1	L19652-38	X	X			
RB13-DIS-11-S	Sed	5/7/13	1407	1	-39	X	X			
RB13-DIS-08-S	Sed	5/7/13	1429	1	-40	X	X			
RB13-DIS-06-S	Sed	5/7/13	1530	1	-41	X	X			
RB13-DIS-09-S	Sed	5/7/13	1640	1	-42	X	X			
RB13-DIS-09-D	Sed	5/7/13	1640	1	-43	X	X			

Relinquished by (Signature)	Date	Time	Received by (Signature)	Courier	Waybill No.
Jennifer Beaus	5/14/13	13:00	Date 15 May 13 Time 10:55	Fedex	799759574788
Relinquished by (Signature)	Date	Time	Received by (Signature) Date Time	Sample Receipt	

Remarks	Cooler
	Temp °C
	Custody Seal #
	Seal Intact Y / N
	Sample Tags Y / N

NEWFIELDS

NewFields Northwest, LLC.
Shipping: 4729 NE View Dr.
Mailing: P.O. Box 216
Port Gamble, WA. 98364
Tel: (360) 297-6040, Fax: (360)297-7268

CHAIN OF CUSTODY

13642

Destination Lab: NewFields - Port Gamble	Sample Originator: NewFields	Report Results To:	Phone:
Destination Contact: Brian Hester	Contact Name: Will Hofner	Contact Name:	Fax:
Date: 5/6/13	Address: 115 2nd Ave N Edmonds WA 98020	Address:	Email:
Turn-Around-Time —			
Project Name: North Olympic Peninsula Regional Background	Phone: 425-967-5265 x103	Analysis	Invoicing To:
	Fax: —		Comments or Special Instructions: samples for archival at -4°C
Contract/PO: —	E-mail: whofner@newfields.com		

No.	Sample ID	Matrix	No. & Type of Container	Date & Time	Archive						Preservation	Sample Temp Upon Receipt	J.. # ~~LAB ID~~
1	RB13-DUN-03-S	Sed	1	5/6/13 1009	X								1354
2	RB13-DUN-06-S	Sed	1	5/6/13 1050	X								1294
3	RB13-DUN-07-S	Sed	1	5/6/13 1110	X								1304
4	RB13-DUN-12-S	Sed	1	5/6/13 1130	X								1394
5	RB13-DUN-10-S	Sed	1	5/6/13 1210	X								1324
6	RB13-DUN-13-S	Sed	1	5/6/13 1326	X								1404
7	RB13-DUN-05-S	Sed	1	5/6/13 1346	X								1284
8	RB13-DUN-09-S	Sed	1	5/6/13 1425	X								1314
9	RB13-DUN-04-S	Sed	1	5/6/13 1446	X								1364
10	RB13-DUN-02-S	Sed	1	5/6/13 1509	X								1274
11	RB13-DUN-11-S	Sed	1	5/6/13 1549	X								1384
12	RB13-DUN-01-S	Sed	1	5/6/13 1613	X								1344
13	RB13-DUN-08-S	Sed	1	5/6/13 1636	X								1374
14													
15													
16													
17													
18													
19													
20													

Relinquished by:	Recieved by:	Relinquished by:	Recieved by:
Print Name: Tim HAMMERMEISTER	Print Name: Brian Hester	Print Name:	Print Name:
Signature:	Signature:	Signature:	Signature:
Affiliation: NewFields	Affiliation: NewFields	Affiliation:	Affiliation:
Date/Time: 5.7.13 0700	Date/Time: 5.7.13 0900	Date/Time:	Date/Time:

Matrix Codes
FW = Fresh Water
WW = Waste Water
SB = Salt & Brackish Water
SS = Soil & Sediment
TS = plant & Animal Tissue
OT = Other

WHITE – return to originator • YELLOW – lab • PINK – retained by originator

NEWFIELDS

NewFields Northwest, LLC.
Shipping: 4729 NE View Dr.
Mailing: P.O. Box 216
Port Gamble, WA. 98364
Tel: (360) 297-6040, Fax: (360)297-7268

CHAIN OF CUSTODY

13637

Destination Lab: NewFields - Port Gamble	Sample Originator: NewFields	Report Results To:	Phone:
Destination Contact: Brian Hester	Contact Name: Will Hafner	Contact Name:	Fax:
Date: 5/7/13	Address: 115 2nd Ave N Ste 100 Edmonds WA 98020	Address:	Email:
Turn-Around-Time: —			
Project Name: North Olympic Peninsula Regional Backyard	Phone: 425-962-5285 x103	Invoicing To:	
	Fax: —	Comments or Special Instructions: Archive at 4°C	
Contract/PO:	E-mail: whafner@newfields.com		

No.	Sample ID	Matrix	No. & Type of Container	Date & Time	Analysis: Conventionals	Analysis: cPAH	Analysis: Dioxin and PCB Congeners	Analysis: Archive			Preservation	Sample Temp Upon Receipt	LAB ID
1	RB13-DUN-17-S	Sed	4	5/7/13 902	X	X	X	X					1446 1447 1443 1444
2	RB13-DUN-19-S	Sed	4	5/7/13 920	X	X	X	X					1466 1467 1463 1464
3	RB13-DUN-14-S	Sed	4	5/7/13 944	X	X	X	X					1416 1417 1413 1414
4	RB13-DUN-20-S	Sed	4	5/7/13 1017	X	X	X	X					1476 1477 1473 1474
5	RB13-DUN-16-S	Sed	4	5/7/13 1107	X	X	X	X					1436 1437 1433 1434
6	RB13-DUN-22-S	Sed	4	5/7/13 1131	X	X	X	X					1496 1497 1493 1494
7	RB13-DUN-21-S	Sed	4	5/7/13 1157	X	X	X	X					1486 1487 1483 1484
8	RB13-DUN-15-S	Sed	4	5/7/13 1219	X	X	X	X					1426 1427 1423 1424
9	~~RB13-DUN~~	—											
10	RB13-DIS-04-S	Sed	~~1~~ 1	5/7/13 1342	X WH	X WH	X WH	X					~~1116~~ ~~1117~~ ~~1113~~ 1114
11	RB13-DIS-11-S	Sed	~~1~~ 1	5/7/13 1407	X	X	X	X					~~1146~~ ~~1147~~ ~~1143~~ 1144
12	RB13-DIS-06-S	Sed	~~1~~ 1	5/7/13 1429	X	X	X	X					1154
13	RB13-DIS-06-S	Sed	1	5/7/13 1530				X					1134
14	RB13-DIS-09-S	Sed	1	5/7/13 1640				X					1164
15	RB13-DUN-18-S	Sed	4	5/7/13 1735				X	?				1454
16													
17													
18													
19													
20													

Relinquished by:	Recieved by:	Relinquished by:	Recieved by:	Matrix Codes
Print Name: Tim Hammerquist	Print Name: Jay Weed	Print Name:	Print Name:	FW = Fresh Water
Signature: [signature]	Signature: [signature]	Signature:	Signature:	WW = Waste Water
Affiliation: NewFields	Affiliation: NewFields	Affiliation:	Affiliation:	SB = Salt & Brackish Water
Date/Time: 5/8/13 8:13	Date/Time: 5/8/13 0813	Date/Time:	Date/Time:	SS = Soil & Sediment
				TS = plant & Animal Tissue
				OT = Other

WHITE – return to originator • YELLOW – lab • PINK – retained by originator

NEWFIELDS

NewFields Northwest, LLC.
Shipping: 4729 NE View Dr.
Mailing: P.O. Box 216
Port Gamble, WA. 98364
Tel: (360) 297-6040, Fax: (360)297-7268

CHAIN OF CUSTODY

13636

Destination Lab: New Fields - Port Gamble	Sample Originator: New Fields	Report Results To:	Phone:
Destination Contact: Brian Hester	Contact Name: Will Hafner	Contact Name:	Fax:
Date: 5/9/13	Address: 115 2nd Ave N Edmonds WA 98020	Address:	Email:
Turn-Around-Time: —			
Project Name: North Olympic Peninsula Reg. Background	Phone: 425-967-5285x103	Invoicing To:	
	Fax: —	Comments or Special Instructions: archive at -18°C	
Contract/PO: —	E-mail: whafner@newfields.com		

No.	Sample ID	Matrix	No. & Type of Container	Date & Time	Conventionals	SIM cPAH	Dioxin and PCB (conf.)	Arsenic			Preservation	Sample Temp Upon Receipt	LAB ID
1	RB13-DIS-14-S	Sed	4	5/8/13 0956	X	X	X	X					1336 1337 1333 1334
2	RB13-DIS-15-S	Sed	4	5/8/13 1018	X	X	X	X					1216 1217 1213 1214
3	RB13-DIS-18-S	Sed	4	5/8/13 1036	X	X	X	X					1246 1247 1243 1244
4	RB13-DIS-10-S	Sed	1	5/8/13 1127				X					1174
5	RB13-DIS-07-S	Sed	1	5/8/13 1147				X					1144
6	RB13-DIS-01-S	Sed	1	5/8/13 1206				X					1084
7	RB13-DIS-13-S	Sed	4	5/8/13 1329	X	X	X	X					1206 1207 1203 1204
8	RB13-DIS-03-S	Sed	1	5/8/13 1357				X					1104
9	RB13-DIS-20-S	Sed	4	5/8/13 1415	X	X	X	X					1266 1267 1263 1264
10	RB13-DIS-12-S	Sed	1	5/8/13 1435				X					1194
11	RB13-DIS-11-S	Sed	4	5/8/13 1502	X	X	X	X					1256 1257 1253 1254
12	RB13-DIS-02-S	Sed	1	5/8/13 1529				X					1094
13	RB13-DIS-05-S	Sed	1	5/8/13 1554				X					1124
14	RB13-DIS-17-S	Sed	4	5/8/13 1613	X	X	X	X					1236 1237 1233 1234
15	RB13-DIS-16-S	Sed	4	5/8/13 1641	X	X	X	X					1226 1227 1223 1224
16													
17													
18													
19													
20													

Relinquished by:	Recieved by:	Relinquished by:	Recieved by:	Matrix Codes
Print Name: Tim Hammerquist	Print Name: Mary Bacon	Print Name:	Print Name:	FW = Fresh Water
Signature: [signature]	Signature: [signature]	Signature:	Signature:	WW = Waste Water
Affiliation: NewFields	Affiliation: NewFields	Affiliation:	Affiliation:	SB = Salt & Brackish Water
Date/Time: 5/9/13 0800	Date/Time: 5/9/13 0810	Date/Time:	Date/Time:	SS = Soil & Sediment
				TS = plant & Animal Tissue
				OT = Other

WHITE – return to originator • YELLOW – lab • PINK – retained by originator

NEWFIELDS

NewFields Northwest, LLC.
Shipping: 4729 NE View Dr.
Mailing: P.O. Box 216
Port Gamble, WA. 98364
Tel: (360) 297-6040, Fax: (360)297-7268

CHAIN OF CUSTODY

13640

Destination Lab: NewFields Port Gamble	Sample Originator: NewFields	Report Results To:	Phone:
Destination Contact: Brian Heger	Contact Name: Will Hafer	Contact Name:	Fax:
Date: 5/17/13	Address: 115 2nd Ave N Edmonds WA 98020	Address:	Email:
Turn-Around-Time: —			
Project Name: North Olympic Peninsula Regional Background	Phone: 425 967 5285 x103	Invoicing To:	
	Fax: —	Comments or Special Instructions: -106	
Contract/PO: —	E-mail: whafer@newfields.com		

No.	Sample ID	Matrix	No. & Type of Container	Date & Time	Archive	Sed Conventionals	SIM PAH	Dioxin Furan PCB			Preservation	Sample Temp Upon Receipt	LAB ID
1	RB13-SEQ-05-S	sed	1	5/9/13 8:57	X								1044
2	RB13-SEQ-08-S	sed	4	5/9/13 9:21	X	X	X	X					1076, 1077, 1073, 1074
3	RB13-SEQ-02-S	sed	1	5/9/13 9:36	X								1014
4	RB13-SEQ-06-S	sed	4	5/9/13 9:52	X	X	X	X					1056, 1057, 1053, 1054
5	RB13-SEQ-04-S	sed	1	5/9/13 10:11	X								1034
6	RB13-SEQ-03-S	sed	1	5/9/13 11:04	X								1024
7	RB13-SEQ-07-S	sed	4	5/9/13 11:24	X	X	X	X					1066, 1067, 1063, 1064
8	RB13-SEQ-01-S	sed	1	5/9/13 11:41	X								1004
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													

Relinquished by:	Recieved by:	Relinquished by:	Recieved by:
Print Name: Will Hafer	Print Name: Jay Ward	Print Name:	Print Name:
Signature: Will Hafer	Signature: Jay Ward	Signature:	Signature:
Affiliation: NewFields	Affiliation: NewFields	Affiliation:	Affiliation:
Date/Time: 5/16/13 0730	Date/Time: 5/16/13 0730	Date/Time:	Date/Time:

Matrix Codes
FW = Fresh Water
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SS = Soil & Sediment
TS = plant & Animal Tissue
OT = Other

WHITE – return to originator • YELLOW – lab • PINK – retained by originator

NEWFIELDS

NewFields Northwest, LLC.
Shipping: 4729 NE View Dr.
Mailing: P.O. Box 216
Port Gamble, WA. 98364
Tel: (360) 297-6040, Fax: (360)297-7268

CHAIN OF CUSTODY

13641

Destination Lab: New Fields Port Gamble	**Sample Originator:** NewFields	**Report Results To:** Will Hofner	Phone:
Destination Contact: Brian Hesley	Contact Name: Will Hofner	Contact Name:	Fax:
Date: 5/10/13	Address: 115 2nd Ave N Edmonds WA 98020	Address:	Email:
Turn-Around-Time: —			
Project Name North olympic Peninsula Reg Background	Phone: 425 967 5295 x103	**Invoicing To:**	
	Fax: —	**Comments or Special Instructions:**	
Contract/PO:	E-mail: whofner@newfields.com		

No.	Sample ID	Matrix	No. & Type of Container	Date & Time	Conventionals	cPAH	Dioxin (incl PCB cong)	Arsenic			Preservation	Sample Temp Upon Receipt	LAB ID
1	RB13-PT-06-S	Sed	1	5/10/13 909				X					1554
2	RB13-PT-12-S	Sed	4	5/10/13 926	X	X	X	X					1616 1617 1613 1614
3	RB13-PT-09-S	Sed	1	5/10/13 948				X					1564
4	RB13-PT-04-S	Sed	1	5/10/13 1006				X					1534
5	RB13-PT-02-S	Sed	1	5/10/13 1035				X					1514
6	RB13-PT-05-S	Sed	1	5/10/13 1115				X					1544
7	RB13-PT-10-S	Sed	1	5/10/13 1133				X					1574
8	RB13-PT-07-S	Sed	1	5/10/13 1158				X					1564
9	RB13-PT-11-S	Sed	4	5/10/13 1221	X	X	X	X					1606 1607 1603 1604
10	RB13-PT-03-S	Sed	1	5/10/13 1307				X					1524
11	RB13-PT-13-S	Sed	4	5/10/13 1323	X	X	X	X					1626 1627 1623 1624
12	RB13-PT-14-S	Sed	4	5/10/13 1354	X	X	X	X					1636 1637 1633 1634
13	RB13-PT-08-S	Sed	1	5/10/13 1411				X					1574
14	RB13-PT-15-S	Sed	4	5/10/13 1431	X	X	X	X					1646 1647 1643 1644
15	RB13-PT-01-S	Sed	1	5/10/13 1446				X					1504
16													
17													
18													
19													
20													

Relinquished by:	Recieved by:	Relinquished by:	Recieved by:
Print Name: Will Hofner	Print Name: Jay Ward	Print Name:	Print Name:
Signature: [signature]	Signature: [signature]	Signature:	Signature:
Affiliation: NewFields	Affiliation: NewFields	Affiliation:	Affiliation:
Date/Time: 5/10/13 1646	Date/Time: 5/10/13 1648	Date/Time:	Date/Time:

Matrix Codes
FW = Fresh Water
WW = Waste Water
SB = Salt & Brackish Water
SS = Soil & Sediment
TS = plant & Animal Tissue
OT = Other

WHITE – return to originator • YELLOW – lab • PINK – retained by originator

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: 15 day
ARI Client Company: New Fields	Phone: 425-967-5285 x103
Client Contact: Will Hafner	
Client Project Name: North Olympic Peninsula Regional Background	
Client Project #:	Samplers: WH TH PM

Page: 1	of 2
Date: 5/6/13	Ice Present?
No. of Coolers:	Cooler Temps:

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Grain Size	Total Solids	Conventionals (Alk, Sulfide, TOC, TVS)	cPAH	As, Cd, Hg				Notes/Comments: Jar #s
RB13-DUN-03-S	5.6.13	1009	SED	5	X	X	X	X	X				1351, 1356, 1352, 1357, 1358
RB13-DUN-06-S	"	1050	"	"	X	X	X	X	X				1291, 1296, 1292, 1297, 1298
RB13-DUN-07-S	"	1110	"	"	X	X	X	X	X				1301, 1306, 1302, 1307, 1308
RB13-DUN-12-S	"	1130	"	"	X	X	X	X	X				1391, 1396, 1392, 1397, 1398
RB13-DUN-10-S	"	1210	"	"	X	X	X	X	X				1321, 1326, 1322, 1327, 1328
RB13-DUN-13-S	"	1328	"	"	X	X	X	X	X				1401, 1406, 1402, 1407, 1408
RB13-DUN-05-S	"	1346	"	"	X	X	X	X	X				1281, 1286, 1282, 1287, 1288
RB13-DUN-05-D	"	1346	"	"	X	X	X	X	X				1289, 1409, 1285, 1395, 1399
RB13-DUN-05-T	"	1346	"	3	X	X	X						1405, 1410, 1290
RB13-DUN-09	"	1425	"	5	X	X	X	X	X				1311, 1316, 1312, 1317, 1318

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: Will Hafner	Printed Name: Rich Hudson	Printed Name:	Printed Name:
	Company: New Fields	Company: ARI	Company:	Company:
	Date & Time: 5/9/13 1200	Date & Time: 5/9/13 1200	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: 15 day
ARI Client Company: Newfields	Phone: 425-967-5285 x103
Client Contact: Will Hafner	
Client Project Name: North Olympic Peninsula Regional Background	
Client Project #:	Samplers: WH TH PM

Page: 2 of 2	
Date: 5/6/13	Ice Present?
No. of Coolers:	Cooler Temps:

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Grain Size	Total Sulfides	Total Solids, TOC, TVS	cPAH	As, Cu, Hg				Notes/Comments
					Analysis Requested								Job #
RB13-DUN-04-S	5-6-13	1446	Sed	5	X	X	X	X	X				1361 1362 1368 1366 1367
RB13-DUN-02-S	"	1509	"	"	X	X	X	X	X				1371 1372 1378 1376 1377
RB13-DUN-11-S	"	1549	"	"	X	X	X	X	X				1381 1382 1386 1386 1387
RB13-DUN-01-S	"	1613	"	"	X	X	X	X	X				1341 1342 1348 1346 1347
RB13-DUN-08-S	"	1638	"	"	X	X	X	X	X				1371 1372 1378 1376 1377

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: Will Hafner	Printed Name: Rich Hudson	Printed Name:	Printed Name:
	Company: Newfields	Company: ARI	Company:	Company:
	Date & Time: 5/7/13 1200	Date & Time: 5/6/13 1200	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

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Chain of Custody Record & Laboratory Analysis Request

Attn: Cherrome Oreiro

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

ARI Assigned Number:	Turn-around Requested: 15 day
ARI Client Company: Newfields	Phone: 425-962-5285 x103
Client Contact: Will Hafner	
Client Project Name: North Olympic Peninsula Regional Background	
Client Project #:	Samplers: WH PM JB

Page: 1 of 2

Date: 5.7.13 Ice Present?

No. of Coolers: Cooler Temps:

Sample ID	Date	Time	Matrix	No. Containers	Grain Size	T. Sulfides	TOC, TVS, T. Solids	Arsenic	cPAH				Notes/Comments
RB13-DUN-17-S	5.7.13	902	SED	3	X	X		X					1441, 1442, 1448
RB13-DUN-19-S	↓	920	↓	3	X	X		X					1461, 1462, 1468
RB13-DUN-14-S	↓	948	↓	3	X	X		X					1411, 1412, 1418
RB13-DUN-20-S	↓	1019	↓	3	X	X		X					1471, 1472, 1478
RB13-DUN-16-S	↓	1107	↓	3	X	X		X					1431, 1432, 1438
RB13-DUN-22-S	↓	1131	↓	3	X	X		X					1491, 1492, 1498
RB13-DUN-21-S	↓	1150	↓	3	X	X		X					1481, 1482, 1488
RB13-DUN-15-S	↓	1219	↓	3	X	X		X					1421, 1422, 1428
RB13-DIS-04-S	↓	1342	↓	5	X	X	X	X	X				1111, 1112, 1118, 1116, 1117
RB13-DIS-11-S	↓	1407	↓	5	X	X	X	X	X				1181, 1182, 1188, 1186, 1187

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: Will Hafner	Printed Name: Rich Hudson	Printed Name:	Printed Name:
	Company: Newfields	Company: ARI	Company:	Company:
	Date & Time: 5/7/13 1200	Date & Time: 5/9/13 1200	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

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Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: 15 day
ARI Client Company: Newfields	Phone: 425 962 5285 x103
Client Contact: Will Hafner	
Client Project Name: North Olympic Peninsula Regional Background	
Client Project #:	Samplers: WH, PM, JB

Page: 2 of 2	
Date: 5.7.13	Ice Present?
No. of Coolers:	Cooler Temps:

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Grain Size	Sulfides	TOC, TVS, Tsolids	Ag, Cd, Hg	PAHs				Notes/Comments
					Analysis Requested								Tag #s
RB13-DIS-11-S	5.7.13	1407	SED	5	X	X	X	X	X				1181 1182 1186 1187 1188
RB13-DIS-08-S	"	1429	"	5	X	X	X	X	X				1151 1152 1156 1157 1158
RB13-DIS-06-S	"	1530	"	5	X	X	X	X	X				1131 1132 1136 1137 1138
RB13-NOP-RB	"	1605	Water	4				X	X				1425 1485 1430 1490
RB13-NOP-ER-1	"	"	"	4				X	X				1495 1435 1500 1440
RB13-DIS-09-S	"	1640	SED	5	X	X	X	X	X				1161 1162 1166 1167 1168
RB13-DIS-09-D	"	"	"	5	X	X	X	X	X				1165 1135 1169 1139 1159
RB13-DIS-09-T	"	"	"	3	X	X	X						1170, 1140, 1160
RB13-DUN-18-S	"	1735	"	3	X	X	X						1451, 1452, 1458

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Will Hafner	Printed Name: Rich Hudson	Printed Name:	Printed Name:
	Company: Newfields	Company: ARI	Company:	Company:
	Date & Time: 5/9/13 1200	Date & Time: 5/9/13 1200	Date & Time:	Date & Time:

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Chain of Custody Record & Laboratory Analysis Request

Attn: Cherrane Orciro

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

ARI Assigned Number:	Turn-around Requested: 15 day
ARI Client Company: Newfields	Phone: 425-867-5285 x103
Client Contact: Will Hafner	
Client Project Name: North Olympic Peninsula Reg Background	
Client Project #:	Samplers: WH PM JB

Page:	of
Date: 5/8/13	Ice Present?
No. of Coolers:	Cooler Temps:

Sample ID	Date	Time	Matrix	No. Containers	Geotech	Conventionals	Sulfides	SIM cPAH	As, Cd	Hg			Notes/Comments
RB13-DIS-14-S	5/8/13	0956	Sed	3	X		X			X			1331 1332 1338
RB13-DIS-15-S	5/8/13	1018	Sed	3	X		X			X			1211 1212 1218
RB13-DIS-16-S	5/8/13	1036	Sed	3	X		X			X			1241 1242 1248
RB13-DIS-10-S	5/8/13	1127	Sed	5	X	X	X	X	X	X			1171 1176 1172 1177 1178
RB13-DIS-07-S	5/8/13	1147	Sed	5	X	X	X	X	X	X			1141 1146 1142 1147 1148
RB13-DIS-01-S	5/8/13	1206	Sed	5	X	X	X	X	X	X			1081 1086 1082 1087 1088
~~RB13-DIS-13-S~~	~~5/8/13~~	~~1329~~	~~Sed~~	~~5~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~				
RB13-DIS-13-S	5/8/13	1329	Sed	3	X		X			X			1201 ~~1206~~ 1202 ~~1207~~ 1208
RB13-DIS-03-S	5/8/13	1357	Sed	5	X	X	X	X	X	X			1101 1106 1102 1107 1108
RB13-DIS-20-S	5/8/13	1415	Sed	3	X		X			X			1261 1262 1268

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
Conventionals = TOC, TVS, Total Solids	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: Will Hafner	Printed Name: Rick Hudson	Printed Name:	Printed Name:
	Company: Newfields	Company: ARI	Company:	Company:
	Date & Time: 5/9/13 1200	Date & Time: 5/9/13 1200	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

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Chain of Custody Record & Laboratory Analysis Request

Attn: Cheronne Oreiro

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

ARI Assigned Number:	Turn-around Requested: 15 day	Page: of	
ARI Client Company: New Fields	Phone: 425-867-5285 x103	Date: 5/8/13	Ice Present?
Client Contact: Will Hafner		No. of Coolers:	Cooler Temps:
Client Project Name: North Olympic Peninsula Reg. Background			
Client Project #:	Samplers: WH PM JB		

Sample ID	Date	Time	Matrix	No. Containers	Grain size	Conventionals	Sulfides	SIM cPAH	As, Cd	Hg			Notes/Comments
RB13-DIS-12-S	5/8/13	1435	Sed	5	X	X	X	X	X	X			1191 1196 1192 1197 1198
RB13-DIS-19-S	5/8/13	1502	Sed	3	X		X			X			1251 1252 1258
RB13-DIS-02-S	5/8/13	1529	Sed	5	X	X	X	X	X	X			1091 1096 1092 1097 1098
RB13-DIS-05-S	5/8/13	1554	Sed	5	X	X	X	X	X	X			1121 1126 1122 1127 1128
RB13-DIS-17-S	5/8/13	1613	Sed	3	X		X			X			1231 1232 1238
RB13-NOP-ER-2	5/8/13	1629	Water	4				X	X	X			1129 1130 1239 1240
RB13-DIS-16-S	5/8/13	1641	Sed	3	X		X			X			1221 1222 1228

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
Conventionals = TOC, TVS, Total Solids	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: Will Hafner	Printed Name: Rich Hudson	Printed Name:	Printed Name:
	Company: New Fields	Company: ARI	Company:	Company:
	Date & Time: 5/9/13 1200	Date & Time: 5/9/13 1200	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

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NEWFIELDS

NewFields Northwest, LLC.
Shipping: 4729 NE View Dr.
Mailing: P.O. Box 216
Port Gamble, WA. 98364
Tel: (360) 297-6040, Fax: (360)297-7268

CHAIN OF CUSTODY

13638

Destination Lab: ARI	**Sample Originator:** NewFields	**Report Results To:** Will Hafner	Phone:
Destination Contact: Christopher Orevio	Contact Name: Will Hafner	Contact Name:	Fax:
Date: 5/9/13	Address: 115 2nd Ave N Edmonds WA 98024	Address:	Email:
Turn-Around-Time: 15 day			
Project Name: North Olympic Peninsula Regional Background	Phone: 425 967 5245 x103	**Invoicing To:**	
	Fax:	**Comments or Special Instructions:**	
Contract/PO:	E-mail: whafner@newfields.com		

No.	Sample ID	Matrix	No. & Type of Container	Date & Time	Grain Size	Sed Conventionals	Total Sulfides	Cadmium Arsenic Mercury	SIM cPAH		Preservation	Sample Temp Upon Receipt	LAB ID
1	RB13-SEQ-05-S	sed	5	5/9/13 8:57	X	X	X	X	X				1041, 1046, 1042, 1047, 1048
2	RB13-SEQ-08-S	sed	3	5/9/13 9:21	X		X	X			* only analyze Hg from metals		1071, 1072, 1078
3	RB13-SEQ-02-S	sed	5	5/9/13 9:36	X	X	X	X	X				1011, 1006, 1012, 1017, 1018
4	RB13-SEQ-06-S	sed	3	5/9/13 9:52	X		X	X			*		1051, 1052, 1058
5	RB13-SEQ-04-S	sed	5	5/9/13 10:11	X	X	X	X	X				1031, 1036, 1032, 1037, 1038
6	RB13-SEQ-03-S	sed	5	5/9/13 11:04	X	X	X	X	X				1021, 1026, 1022, 1027, 1028
7	RB13-SEQ-03-D	sed	5	5/9/13 11:04	X	X	X	X	X				1029, 1030, 1015, 1079, 1075
8	RB13-SEQ-03-T	sed	3	5/9/13 11:04	X	X	X						1025, 1019, 1020
9	RB13-SEQ-07-S	sed	3	5/9/13 11:24	X		X	X			*		1061, 1062, 1068
10	RB13-SEQ-01-S	sed	5	5/9/13 11:41	X	X	X	X	X				1001, 1006, 1002, 1007, 1008
11	RB13-NOP-ER-3	water	4	5/9/13 10:42				X	X				1229, 1225, 1230, 1339
12													
13													
14													
15													
16													
17													
18													
19													
20													

Relinquished by:	Recieved by:	Relinquished by:	Recieved by:
Print Name: Jon Nuwer	Print Name: Taylor Stroeve	Print Name:	Print Name:
Signature: [signature]	Signature: [signature]	Signature:	Signature:
Affiliation: NewFields	Affiliation: ARI	Affiliation:	Affiliation:
Date/Time: 5/10/13 14:40	Date/Time: 5-10-13 1440	Date/Time:	Date/Time:

Matrix Codes
FW = Fresh Water
WW = Waste Water
SB = Salt & Brackish Water
SS = Soil & Sediment
TS = plant & Animal Tissue
OT = Other

WHITE – return to originator • YELLOW – lab • PINK – retained by originator

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: 15 day
ARI Client Company: Newfields	Phone: 425-967-5285 x103
Client Contact: Will Hafner	
Client Project Name: North Olympic Peninsula Reg. Background	
Client Project #:	Samplers: WH JWak JW

Page: 2	of 2
Date: 5/13/13	Ice Present? Y
No. of Coolers: 4	Cooler Temps: 3. 9. 3.6

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Grain Size	Total Solids	TOC, TVS, Tot. Solids	Arsenic, Cadmium	Mercury	cPAH			Notes/Comments
					Analysis Requested								
RBIB-PT-06-S	5/10/13	909	Sed	5	X	X	X	X	X	X			Newfields Jar # 1551 1556 1552 1557 1558
RBIB-PT-12-S	5/10/13	926	Sed	3	X	X			X				1611 1612 1618
RBIB-PT-09-S	5/10/13	944	Sed	5	X	X	X	X	X	X			1581 1586 1582 1587 1588
RBIB-PT-04-S	5/10/13	1008	Sed	5	X	X	X	X	X	X			1531 1536 1532 1537 1538
RBIB-PT-02-S	5/10/13	1035	Sed	5	X	X	X	X	X	X			1511 1516 1512 1517 1518
RBIB-PT-05-S	5/10/13	1115	Sed	5	X	X	X	X	X	X			1541 1546 1542 1547 1548
RBIB-PT-10-S	5/10/13	1133	Sed	5	X	X	X	X	X	X			1591 1596 1592 1597 1598
RBIB-PT-07-S	5/10/13	1158	Sed	5	X	X	X	X	X	X			1561 1566 1562 1567 1568
RBIB-PT-11-S	5/10/13	1221	Sed	3	X	X			X				1601 1602 1608
RBIB-PT-03-S	5/10/13	1307	Sed	5	X	X	X	X	X	X			1521 1526 1522 1527 1528

Comments/Special Instructions				
	Relinquished by: (Signature) Jasper Bous	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Jasper Bous	Printed Name: Taylor Streeter	Printed Name:	Printed Name:
	Company: NewFields	Company: ARI	Company:	Company:
	Date & Time: 5/13/13 13:00	Date & Time: 5.13.13 1300	Date & Time:	Date & Time:

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Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: 15 day
ARI Client Company: New Fields	Phone: 425-967-5285 x103
Client Contact: Will Hafner	
Client Project Name: North Olympic Peninsula Reg. Background	
Client Project #:	Samplers: WH JNak JW

Page: 1	of 2
Date: 5/13/13	Ice Present?
No. of Coolers:	Cooler Temps:

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Grain size	Total Sulfides	TOC, TVS, Tot. Solids	Arsenic, Cadmium	Mercury	cPAH			Notes/Comments
RB13-PT-13-S	5/10/13	1323	Sed	3	X	X			X				New Fields Inv # 1621 1622 1628
RB13-PT-13-D	5/10/13	1323	Sed	3	X	X			X				1625 1629 1539
RB13-PT-13-T	5/10/13	1323	Sed	2	X	X							1530 1630
RB13-PT-14-S	5/10/13	1354	Sed	3	X	X			X				1631 1632 1638
RB13-PT-08-S	5/10/13	1411	Sed	5	X	X	X	X	X	X			1571 1576 1572 1577 1578
RB13-PT-15-S	5/10/13	1431	Sed	3	X	X			X				1641 1642 1648
RB13-PT-01-S	5/10/13	1446	Sed	5	X	X	X	X	X	X			1501 1506 1502 1507 1508
RB13-NOP-ER-4	5/10/13	1439	Water	2					X				1649 1650

Comments/Special Instructions				
	Relinquished by: (Signature) Jasper Boas	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Jasper Boas	Printed Name: Taylor Streiter	Printed Name:	Printed Name:
	Company: New Fields	Company: ARI	Company:	Company:
	Date & Time: 5/13/13 13:00	Date & Time: 5-13-13 1300	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

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Appendix E.
Data Tables

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Table E-1. Summary of Sediment Conventionals, Metals, and Carcinogenic Polycyclic Aromatic Hydrocarbons.

Location ID	DIS-01-S	Q	DIS-02-S	Q	DIS-03-S	Q	DIS-04-S	Q	DIS-05-S	Q	DIS-06-S	Q	DIS-07-S	Q
Date/Time	**3/28/2013 15:48**		**5/8/2013 15:29**		**5/8/2013 13:57**		**5/7/2013 13:42**		**5/8/2013 15:54**		**5/7/2013 15:30**		**5/8/2013 11:47**	
Conventionals														
Total Organic Carbon	3.02	J	1.94	J	0.733	J	2.32		1.97	J	3.8		8.29	J
Total Solids	20.93		25.9		76.01		45.56		47.4		28.93		28.38	
Total Volatile Solids	10.42		8.82		1.31		5.58		5.13		9.5		8.8	
Preserved Total Solids	20.52		21.08		72.37		39.83		36.98		21.81		22.41	
Sulfide	1100		2420		1.54		2.43	U	68.9		1400		1490	
Particle/Grain Size, Phi Scale <-1	0.2		0.1	U	0.1		0.1	U	5.6		0.1	U	0.2	
Particle/Grain Size, Phi Scale -1 to 0	2.1		0.1		1.4		0.5		0.2		1		1.5	
Particle/Grain Size, Phi Scale 0 to 1	1.6		0.3		8.9		1		0.7		1.5		1.4	
Particle/Grain Size, Phi Scale 1 to 2	0.9		1.7		27.6		1.3		1.6		1.3		1	
Particle/Grain Size, Phi Scale 2 to 3	0.9		0.9		42.2		1.1		4.7		0.6		0.6	
Particle/Grain Size, Phi Scale 3 to 4	1.4		0.8		13.9		7		9.1		0.6		0.8	
Particle/Grain Size, Phi Scale 4 to 5	6.2		4.2		0.5		27		16.5		2.3		8.4	
Particle/Grain Size, Phi Scale 5 to 6	19.8		21		0.5		17.2		18.9		15.9		17.8	
Particle/Grain Size, Phi Scale 6 to 7	17.5		18.9		0.8		12.3		12.3		19		17.9	
Particle/Grain Size, Phi Scale 7 to 8	14.3		16.4		0.9		8.6		8.4		17.7		16.1	
Particle/Grain Size, Phi Scale 8 to 9	8.7		10		0.8		5.9		5.6		12.8		10.6	
Particle/Grain Size, Phi Scale 9 to 10	6.9		8.7		0.8		5.5		5.4		8.9		8.6	
Particle/Grain Size, Phi Scale >10	19.4		17		1.6		12.5		11		18.5		15	
Particle/Grain Size, Fines (Silt/Clay)	92.9		96.2		5.9		89		78		95.1		94.5	
Metals (mg/kg DW)														
Arsenic	11.8		10.1		2.2		5.6		6.5		14.2		13.5	
Cadmium	2.6		1		0.15		0.38		0.45		1.9		1.3	
Mercury	0.1		0.09		0.03	U	0.35	J	0.09		0.14	J	0.12	
carcinogenic PAH (ug/kg DW)														
Benzo(a)anthracene	18.8		12.6		1.24		12.1		12.7		20.5		15.3	
Chrysene	28		21.3		1.86		21.4		19.5		31.8		25.2	
Benzo(b)fluoranthene	27.3		16.8		1.74		16.1		14.6		28.5		21	
Benzo(k)fluoranthene	10.8		7.13		0.93		7.58		6.49		14.7		10	
Total Benzofluoranthenes	49.2		30.7		3.41		30.1		27.3		55.4		39.3	
Benzo(a)pyrene	21.8		12.9		1.44		12.2		12.7		23.6		15.5	
Indeno(1,2,3-cd)pyrene	15.7		9.82		0.96		8.8		9.11		18.7		11.5	
Dibenz(a,h)anthracene	3.37		2.51		0.27	J	2.27		2.4		3.96		2.88	
cPAH TEQ (0 DL)	29.7		18		1.97		17.1		17.4		32.6		21.8	
cPAH TEQ (1/2 DL)	29.7		18		1.97		17.1		17.4		32.6		21.8	
cPAH TEQ (1 DL)	29.7		18		1.97		17.1		17.4		32.6		21.8	
cPAH TEQ (KM)	29.7		18		1.97		17.1		17.4		32.6		21.8	

* Insufficient fines were present for the full determination of silt and clay fractions. Only total fines are reported.
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UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate.
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-1. Summary of Sediment Conventionals, Metals, and Carcinogenic Polycyclic Aromatic Hydrocarbons (continued).

Location ID	DIS-08-S	Q	DIS-09-S	Q	DIS-09-D	Q	DIS-09-T	Q	DIS-10-S	Q	DIS-11-S	Q	DIS-12-S	Q
Date/Time	**5/7/2013**	**14:29**	**5/7/2013**	**16:40**	**5/7/2013**	**16:40**	**5/7/2013**	**16:40**	**5/8/2013**	**11:27**	**5/7/2013**	**14:07**	**5/8/2013**	**14:35**
Conventionals														
Total Organic Carbon	2.1		1.19		1.05		1.76		5.79	J	2.29		2.49	J
Total Solids	70.34		54.27		54.3		55.39		26.75		38.05		73.28	
Total Volatile Solids	2.07		4.7		4.59		4.73		8.41		6.98		2.01	
Preserved Total Solids	59.68		45.68		64.83		45.04		20.99		36.46		68.88	
Sulfide	30.9		10.5	J	32.6	J	7.22	J	1690		219		1.4	U
Particle/Grain Size, Phi Scale <-1	1.2		0.1		0.1		0.1		0.4		0.1		1.6	
Particle/Grain Size, Phi Scale -1 to 0	2		0.3		0.5		0.4		0.1		1.5		5	
Particle/Grain Size, Phi Scale 0 to 1	11.3		0.6		0.9		0.6		0.3		1.9		13	
Particle/Grain Size, Phi Scale 1 to 2	36.8		0.8		0.7		0.5		1.1		0.9		32.3	
Particle/Grain Size, Phi Scale 2 to 3	25.1		2.7		2.9		2.7		0.7		1.2		28	
Particle/Grain Size, Phi Scale 3 to 4	3.2		16.1		16.1		16.2		1.1		4		8.6	
Particle/Grain Size, Phi Scale 4 to 5	2.7		27.3		27.3		27.1		7.8		14.1		0.9	
Particle/Grain Size, Phi Scale 5 to 6	4		15.4		16		16.3		24.7		22.7		1.6	
Particle/Grain Size, Phi Scale 6 to 7	3.4		9.7		8.8		9.5		18.2		15.3		1.9	
Particle/Grain Size, Phi Scale 7 to 8	2.9		6.2		5.9		5.7		14.3		12.1		1.8	
Particle/Grain Size, Phi Scale 8 to 9	2.1		4.6		4.9		4.1		9.3		6.1		1.5	
Particle/Grain Size, Phi Scale 9 to 10	1.7		4.6		4.5		5.1		7		6.5		1.2	
Particle/Grain Size, Phi Scale >10	3.6		11.7		11.2		11.8		15		13.5		2.4	
Particle/Grain Size, Fines (Silt/Clay)	20.4		79.5		78.7		79.5		96.2		90.3		11.4	
Metals (mg/kg DW)														
Arsenic	2.3		4.7		4.4		--		8.3		7.2		3.2	
Cadmium	0.13	U	0.28		0.27		--		0.72		0.57		0.15	
Mercury	0.03	UJ	0.07	J	0.07	J	--		0.11		0.09	J	0.03	U
carcinogenic PAH (ug/kg DW)														
Benzo(a)anthracene	2.78		10.9		10.6		--		11.5		11.9		1.96	
Chrysene	4.52		18.1		27.3		--		19.6		20.4		3.13	
Benzo(b)fluoranthene	4.11		13.1		13.9		--		16		16.2		2.98	
Benzo(k)fluoranthene	1.58		5.43		5.2		--		7.33		7.37		1.13	
Total Benzofluoranthenes	7.3		23.9		24.2		--		29.4		29.8		5.27	
Benzo(a)pyrene	2.87		10.7		9.26		--		11.9		12.1		2.08	
Indeno(1,2,3-cd)pyrene	2.29		6.74		6.25		--		8.26		8.7		1.77	
Dibenz(a,h)anthracene	0.54		1.95		1.86		--		2.12		2.2		0.41	J
cPAH TEQ (0 DL)	4.05		14.7		13.3		--		16.6		16.9		2.94	
cPAH TEQ (1/2 DL)	4.05		14.7		13.3		--		16.6		16.9		2.94	
cPAH TEQ (1 DL)	4.05		14.7		13.3		--		16.6		16.9		2.94	
cPAH TEQ (KM)	4.05		14	Avg	--		--		16.6		16.9		2.94	

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L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-1. Summary of Sediment Conventionals, Metals, and Carcinogenic Polycyclic Aromatic Hydrocarbons (continued).

Location ID	DIS-13-S	Q	DIS-14-S	Q	DIS-15-S	Q	DIS-16-S	Q	DIS-17-S	Q	DIS-18-S	Q	DIS-19-S	Q
Date/Time	5/8/2013	13:29	5/8/2013	9:56	5/8/2013	10:18	5/8/2013	16:41	5/8/2013	16:13	5/8/2013	10:36	5/8/2013	15:02
Conventionals														
Total Organic Carbon	--		--		--		--		--		--		--	
Total Solids	--		--		--		--		--		--		--	
Total Volatile Solids	--		--		--		--		--		--		--	
Preserved Total Solids	55.89		46.69		39.99		39.06		29.31		42.07		73.97	
Sulfide	73.7		37.8		2.48	U	180		304		9.56		1.34	U
Particle/Grain Size, Phi Scale <-1	7.3		0.1	U	0.1	U	0.6		0.1		0.3		1	
Particle/Grain Size, Phi Scale -1 to 0	0.8		0.2		0.3		6.3		9		0.2		5.2	
Particle/Grain Size, Phi Scale 0 to 1	4.4		0.4		0.4		3.5		3.5		0.5		15.1	
Particle/Grain Size, Phi Scale 1 to 2	21		0.5		0.4		2.3		2.7		2		30.3	
Particle/Grain Size, Phi Scale 2 to 3	42.9		4.6		0.8		1.7		1.5		4.3		29.8	
Particle/Grain Size, Phi Scale 3 to 4	11.3		17.9		9		4.1		2.2		9.7		12.1	
Particle/Grain Size, Phi Scale 4 to 5	0.3		25.3		27.4		14.2		8.8		24.7		1.8	
Particle/Grain Size, Phi Scale 5 to 6	2.1		17.2		19.3		19.1		17.8		17.2		0.8	
Particle/Grain Size, Phi Scale 6 to 7	2.2		7.7		11.1		14.5		16.1		11.4		0.7	
Particle/Grain Size, Phi Scale 7 to 8	2.3		5.5		7.1		9.6		11.3		7.2		0.7	
Particle/Grain Size, Phi Scale 8 to 9	1.7		5.1		6.4		6.3		7.7		5.6		0.6	
Particle/Grain Size, Phi Scale 9 to 10	1.5		4.5		5.6		5.7		6.4		5.1		0.5	
Particle/Grain Size, Phi Scale >10	2.3		11.1		12.2		12		13		11.7		1.4	
Particle/Grain Size, Fines (Silt/Clay)	12.4		76.4		89.1		81.4		81.1		82.9		6.5	
Metals (mg/kg DW)														
Arsenic	--		--		--		--		--		--		--	
Cadmium	--		--		--		--		--		--		--	
Mercury	0.03		0.05		0.08		0.1		0.12		0.07		0.02	U
carcinogenic PAH (ug/kg DW)														
Benzo(a)anthracene	--		--		--		--		--		--		--	
Chrysene	--		--		--		--		--		--		--	
Benzo(b)fluoranthene	--		--		--		--		--		--		--	
Benzo(k)fluoranthene	--		--		--		--		--		--		--	
Total Benzofluoranthenes	--		--		--		--		--		--		--	
Benzo(a)pyrene	--		--		--		--		--		--		--	
Indeno(1,2,3-cd)pyrene	--		--		--		--		--		--		--	
Dibenz(a,h)anthracene	--		--		--		--		--		--		--	
cPAH TEQ (0 DL)	--		--		--		--		--		--		--	
cPAH TEQ (1/2 DL)	--		--		--		--		--		--		--	
cPAH TEQ (1 DL)	--		--		--		--		--		--		--	
cPAH TEQ (KM)	--		--		--		--		--		--		--	

* Insufficient fines were present for the full determination of silt and clay fractions. Only total fines are reported.
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L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-1. Summary of Sediment Conventionals, Metals, and Carcinogenic Polycyclic Aromatic Hydrocarbons (continued).

Location ID	DIS-20-S	Q	DUN-01-S	Q	DUN-02-S	Q	DUN-03-S	Q	DUN-04-S	Q	DUN-05-S	Q	DUN-05-D	Q
Date/Time	**5/8/2013**	**14:15**	**5/6/2013**	**16:13**	**5/6/2013**	**15:09**	**5/6/2013**	**10:09**	**5/6/2013**	**14:46**	**5/6/2013**	**13:46**	**5/6/2013**	**13:45**
Conventionals														
Total Organic Carbon	--		1.98		0.603		0.875		1.08		0.802		0.887	
Total Solids	--		58		73.76		73.44		64.09		65.11		64.33	
Total Volatile Solids	--		3.86		1.76		1.76		3.19		2.86		2.86	
Preserved Total Solids	21.4		47.58		75.34		72.84		64.15		64.06		62.38	
Sulfide	1480		2.54		6.22		2.6		8.52		2.73		1.82	
Particle/Grain Size, Phi Scale <-1	0.1	U	0.6		7.7		0.1		0.9		0.3		0.2	
Particle/Grain Size, Phi Scale -1 to 0	1		0.6		6.9		1.5		1.3		0.4		0.3	
Particle/Grain Size, Phi Scale 0 to 1	1		1.6		20.4		12.2		3.1		0.5		0.6	
Particle/Grain Size, Phi Scale 1 to 2	0.7		2.3		43.6		40.5		6.5		2.2		1.8	
Particle/Grain Size, Phi Scale 2 to 3	0.7		22.2		15.9		35.5		20.1		27.9		29.1	
Particle/Grain Size, Phi Scale 3 to 4	1		14.9		1.6		4.1		30		36.5		35.6	
Particle/Grain Size, Phi Scale 4 to 5	6.2		14.9		--	U	1.5		9.9		10.2		10.3	
Particle/Grain Size, Phi Scale 5 to 6	17.3		13.7		--	U	1		6.8		5.1		5.7	
Particle/Grain Size, Phi Scale 6 to 7	20.2		7.4		--	U	0.7		4.6		3.4		3.2	
Particle/Grain Size, Phi Scale 7 to 8	16.4		4.9		--	U	0.6		3.6		3		2.9	
Particle/Grain Size, Phi Scale 8 to 9	10.2		3.9		--	U	0.5		2.8		2.4		2.3	
Particle/Grain Size, Phi Scale 9 to 10	8.3		3.8		--	U	0.5		2.9		2.4		2.5	
Particle/Grain Size, Phi Scale >10	16.8		9.1		--	U	1.3		7.5		5.6		5.5	
Particle/Grain Size, Fines (Silt/Clay)	95.5		57.8		4	*	6.1		38.1		32.1		32.3	
Metals (mg/kg DW)														
Arsenic	--		4.2		2.7		2.4		5		2.9		3	
Cadmium	--		0.2		0.12	U	0.13	U	0.15	U	0.14	U	0.14	U
Mercury	0.12		0.06		0.03		0.03	U	0.04		0.04		0.04	
carcinogenic PAH (ug/kg DW)														
Benzo(a)anthracene	--		7.12		0.32	J	0.43	J	4.8		3.32		3.36	
Chrysene	--		13.9		0.82		1.11		9.33		8.49		8.42	
Benzo(b)fluoranthene	--		9.58		0.56		0.8		6.86		5.26		5.21	
Benzo(k)fluoranthene	--		3.66		0.149	U	0.29	J	2.8		1.85	J	1.81	J
Total Benzofluoranthenes	--		17		0.973	U	1.38		12.6		9.03		8.82	
Benzo(a)pyrene	--		6.65		0.27	J	0.46	J	5.2		3.27		3	
Indeno(1,2,3-cd)pyrene	--		4.57		0.15	U	0.29	J	3.21		1.9	J	1.9	J
Dibenz(a,h)anthracene	--		1.29		0.173	U	0.175	U	0.882	U	0.859	U	0.858	U
cPAH TEQ (0 DL)	--		9.41		0.366		0.652		7.06		4.59		4.31	
cPAH TEQ (1/2 DL)	--		9.41		0.39		0.661		7.1		4.63		4.36	
cPAH TEQ (1 DL)	--		9.41		0.413		0.67		7.15		4.67		4.4	
cPAH TEQ (KM)	--		9.41		0.391		0.663		7.15		4.53	Avg	--	

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L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-1. Summary of Sediment Conventionals, Metals, and Carcinogenic Polycyclic Aromatic Hydrocarbons (continued).

Location ID	DUN-05-T	Q	DUN-06-S	Q	DUN-07-S	Q	DUN-08-S	Q	DUN-09-S	Q	DUN-10-S	Q	DUN-11-S	Q
Date/Time	**5/6/2013**	**13:46**	**5/6/2013**	**10:50**	**5/6/2013**	**11:10**	**5/6/2013**	**16:38**	**5/6/2013**	**14:25**	**5/6/2013**	**12:10**	**5/6/2013**	**15:49**
Conventionals														
Total Organic Carbon	0.721		1.06		0.611		0.835		0.521		0.949		0.418	
Total Solids	64.1		66.75		78.35		70.12		77.39		74.35		80.41	
Total Volatile Solids	3.24		2.98		1.08		1.73		1.33		1.71		1.51	
Preserved Total Solids	60.19		60.75		76.91		66.03		78.11		71.8		80.95	
Sulfide	1.61	U	1.63	U	1.19	U	5.53		2.31		26.6		1.33	
Particle/Grain Size, Phi Scale <-1	0.3		0.1		18.6		1		14.8		19		37.5	
Particle/Grain Size, Phi Scale -1 to 0	0.4		0.2		4.7		0.7		14.5		1.3		33.4	
Particle/Grain Size, Phi Scale 0 to 1	0.6		0.6		21.1		1.5		21.5		8.5		18.1	
Particle/Grain Size, Phi Scale 1 to 2	1.7		1.6		41.4		13.7		33.6		36.6		4.6	
Particle/Grain Size, Phi Scale 2 to 3	27.5		29		9.4		62.5		12		29.6		1.3	
Particle/Grain Size, Phi Scale 3 to 4	35.9		31.3		2.1		6.9		0.9		2.2		0.9	
Particle/Grain Size, Phi Scale 4 to 5	10.3		12.9		--	U	2.9		--	U	--	U	1	
Particle/Grain Size, Phi Scale 5 to 6	5.5		5.9		--	U	3		--	U	--	U	0.7	
Particle/Grain Size, Phi Scale 6 to 7	3.5		4		--	U	1.9		--	U	--	U	0.6	
Particle/Grain Size, Phi Scale 7 to 8	3.2		2.9		--	U	1.3		--	U	--	U	0.4	
Particle/Grain Size, Phi Scale 8 to 9	2.5		2.4		--	U	1		--	U	--	U	0.3	
Particle/Grain Size, Phi Scale 9 to 10	2.5		2.7		--	U	1.1		--	U	--	U	0.3	
Particle/Grain Size, Phi Scale >10	6		6.2		--	U	2.5		--	U	--	U	0.9	
Particle/Grain Size, Fines (Silt/Clay)	33.5		37.1		2.8	*	13.7		2.6	*	2.9	*	4.3	
Metals (mg/kg DW)														
Arsenic	--		4.3		3.1		2.6		2		1.9		3.6	
Cadmium	--		0.16		0.13	U	0.14	U	0.12	U	0.13	U	0.12	U
Mercury	--		0.05		0.02	U	0.03	U	0.02	U	0.03	U	0.03	U
carcinogenic PAH (ug/kg DW)														
Benzo(a)anthracene	--		3.04		0.197	U	2.44		0.206	U	0.47	J	0.32	J
Chrysene	--		6.74		0.83		4.42		0.56		1.22		0.89	
Benzo(b)fluoranthene	--		4.53		0.35	J	3.05		0.42	J	0.91		0.62	
Benzo(k)fluoranthene	--		1.56		0.145	U	1.18		0.152	U	0.29	J	0.149	U
Total Benzofluoranthenes	--		7.73		0.948	U	5.36		0.991	U	1.48		0.975	U
Benzo(a)pyrene	--		2.65		0.092	U	2.06		0.096	U	0.43	J	0.33	J
Indeno(1,2,3-cd)pyrene	--		1.79		0.146	U	1.27		0.153	U	0.34	J	0.15	U
Dibenz(a,h)anthracene	--		0.56		0.169	U	0.36	J	0.176	U	0.175	U	0.173	U
cPAH TEQ (0 DL)	--		3.87		0.0433		2.93		0.0476		0.643		0.433	
cPAH TEQ (1/2 DL)	--		3.87		0.122		2.93		0.13		0.652		0.457	
cPAH TEQ (1 DL)	--		3.87		0.201		2.93		0.212		0.661		0.48	
cPAH TEQ (KM)	--		3.87		0.169	L5	2.93		0.166	L5	0.655		0.46	

* Insufficient fines were present for the full determination of silt and clay fractions. Only total fines are reported.
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limit
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UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate.
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-1. Summary of Sediment Conventionals, Metals, and Carcinogenic Polycyclic Aromatic Hydrocarbons (continued).

Location ID	DUN-12-S	Q	DUN-13-S	Q	DUN-14-S	Q	DUN-15-S	Q	DUN-16-S	Q	DUN-17-S	Q	DUN-18-S	Q
Date/Time	**5/6/2013**	**11:30**	**5/6/2013**	**13:28**	**5/7/2013**	**9:48**	**5/7/2013**	**12:19**	**5/7/2013**	**11:07**	**5/7/2013**	**9:02**	**5/7/2013**	**17:35**
Conventionals														
Total Organic Carbon	1.56		0.631		--		--		--		--		--	
Total Solids	56.77		75.51		--		--		--		--		--	
Total Volatile Solids	4.31		1.63		--		--		--		--		--	
Preserved Total Solids	54.19		73.65		70.31		71.58		77.89		60.72		43.41	
Sulfide	26.8		1.31	U	1.38	U	1.38	U	1.28	U	1.64	U	2.27	U
Particle/Grain Size, Phi Scale <-1	0.1		10.4		0.1		3.3		7.6		0.1		0.3	
Particle/Grain Size, Phi Scale -1 to 0	0.7		5.5		0.3		3.6		11.1		0.3		1	
Particle/Grain Size, Phi Scale 0 to 1	1.1		9.2		0.4		7.9		22		0.9		1.4	
Particle/Grain Size, Phi Scale 1 to 2	1.1		20.5		2.3		24.2		41.4		4.8		1.6	
Particle/Grain Size, Phi Scale 2 to 3	7.3		40.7		45.7		44.9		16		40.4		6.1	
Particle/Grain Size, Phi Scale 3 to 4	27.6		6.9		34.8		8.9		0.6		15.7		14.5	
Particle/Grain Size, Phi Scale 4 to 5	25.6		2.8		6.1		1.5		--	U	10.7		21.7	
Particle/Grain Size, Phi Scale 5 to 6	12.3		0.8		2.3		1.1		--	U	8		15.6	
Particle/Grain Size, Phi Scale 6 to 7	7.7		0.6		1.6		0.9		--	U	5.1		9.8	
Particle/Grain Size, Phi Scale 7 to 8	3.9		0.5		1.2		0.7		--	U	3		5.9	
Particle/Grain Size, Phi Scale 8 to 9	2.3		0.4		1		0.6		--	U	2.6		5.2	
Particle/Grain Size, Phi Scale 9 to 10	2.8		0.5		1.2		0.6		--	U	2.4		4.9	
Particle/Grain Size, Phi Scale >10	7.5		1.3		3		1.7		--	U	6.1		12	
Particle/Grain Size, Fines (Silt/Clay)	62.1		6.9		16.4		7.1		1.3	*	37.8		75	
Metals (mg/kg DW)														
Arsenic	5.5		2.4		--		--		--		--		--	
Cadmium	0.28		0.13	U	--		--		--		--		--	
Mercury	0.05		0.03	U	0.03	J	0.03	UJ	0.02	UJ	0.04	J	0.07	J
carcinogenic PAH (ug/kg DW)														
Benzo(a)anthracene	2.5		0.46	J	--		--		--		--		--	
Chrysene	5.92		1.18		--		--		--		--		--	
Benzo(b)fluoranthene	4.23		0.88		--		--		--		--		--	
Benzo(k)fluoranthene	1.47	J	0.28	J	--		--		--		--		--	
Total Benzofluoranthenes	7.11		1.44		--		--		--		--		--	
Benzo(a)pyrene	2.42		0.41	J	--		--		--		--		--	
Indeno(1,2,3-cd)pyrene	1.29	J	0.32	J	--		--		--		--		--	
Dibenz(a,h)anthracene	0.861	U	0.175	U	--		--		--		--		--	
cPAH TEQ (0 DL)	3.43		0.616		--		--		--		--		--	
cPAH TEQ (1/2 DL)	3.47		0.625		--		--		--		--		--	
cPAH TEQ (1 DL)	3.51		0.633		--		--		--		--		--	
cPAH TEQ (KM)	3.49		0.628		--		--		--		--		--	

* Insufficient fines were present for the full determination of silt and clay fractions. Only total fines are reported.
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L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-1. Summary of Sediment Conventionals, Metals, and Carcinogenic Polycyclic Aromatic Hydrocarbons (continued).

Location ID	DUN-19-S	Q	DUN-20-S	Q	DUN-21-S	Q	DUN-22-S	Q	PT-01-S	Q	PT-02-S	Q	PT-03-S	Q
Date/Time	**5/7/2013**	**9:20**	**5/7/2013**	**10:19**	**5/7/2013**	**11:50**	**5/7/2013**	**11:31**	**5/10/2013**	**14:46**	**5/10/2013**	**10:35**	**5/10/2013**	**13:07**
Conventionals														
Total Organic Carbon	--		--		--		--		1.41		1.82		2.79	
Total Solids	--		--		--		--		44.39		45.2		41.01	
Total Volatile Solids	--		--		--		--		5.82		5.88		6.96	
Preserved Total Solids	41.49		66.91		72.14		65.54		40.76		36.67		37.27	
Sulfide	2.4	U	1.49	U	1.34	U	1.5	U	3.16	J	7.99	J	152	J
Particle/Grain Size, Phi Scale <-1	0.1		0.1		5.6		0.1	U	0.3		1.8		0.1	U
Particle/Grain Size, Phi Scale -1 to 0	0.3		0.3		4.8		0.3		0.2		0.2		0.3	
Particle/Grain Size, Phi Scale 0 to 1	0.7		1.4		17.3		0.8		0.3		0.4		1	
Particle/Grain Size, Phi Scale 1 to 2	1		10.9		40.8		3.3		0.3		0.5		1.6	
Particle/Grain Size, Phi Scale 2 to 3	1		42.7		18.8		43.2		0.7		1.7		9.5	
Particle/Grain Size, Phi Scale 3 to 4	7.6		25.5		4.6		23.3		6.3		6.9		8.8	
Particle/Grain Size, Phi Scale 4 to 5	22		5.7		2.6		8.7		18.6		16.5		3.2	
Particle/Grain Size, Phi Scale 5 to 6	20.5		2.8		1.2		4.9		20.3		19.3		13	
Particle/Grain Size, Phi Scale 6 to 7	13.8		2.1		0.9		3.3		12.3		12.4		13.7	
Particle/Grain Size, Phi Scale 7 to 8	8.1		1.7		0.7		2.9		9.4		9.5		12.3	
Particle/Grain Size, Phi Scale 8 to 9	4.4		1.5		0.6		2.2		8.4		7.7		10.1	
Particle/Grain Size, Phi Scale 9 to 10	5.2		1.6		0.5		2		6.4		6.7		8.2	
Particle/Grain Size, Phi Scale >10	15.4		3.7		1.4		5.2		16.5		16.5		18.2	
Particle/Grain Size, Fines (Silt/Clay)	89.3		19.1		8		29.2		91.8		88.6		78.7	
Metals (mg/kg DW)														
Arsenic	--		--		--		--		5.7		6.1		6.4	
Cadmium	--		--		--		--		0.24		0.24		0.46	
Mercury	0.07	J	0.03	UJ	0.02	UJ	0.03	J	0.1		0.08		0.09	
carcinogenic PAH (ug/kg DW)														
Benzo(a)anthracene	--		--		--		--		15.2		17.3		19.4	
Chrysene	--		--		--		--		24.9		28.8		29.8	
Benzo(b)fluoranthene	--		--		--		--		18.5		22		21.4	
Benzo(k)fluoranthene	--		--		--		--		7.46		8.2		11	
Total Benzofluoranthenes	--		--		--		--		33.1		38.3		41	
Benzo(a)pyrene	--		--		--		--		15.2		15.3		17.2	
Indeno(1,2,3-cd)pyrene	--		--		--		--		8.02		10.7		11.4	
Dibenz(a,h)anthracene	--		--		--		--		2.19		2.83		2.9	
cPAH TEQ (0 DL)	--		--		--		--		20.6		21.7		24.1	
cPAH TEQ (1/2 DL)	--		--		--		--		20.6		21.7		24.1	
cPAH TEQ (1 DL)	--		--		--		--		20.6		21.7		24.1	
cPAH TEQ (KM)	--		--		--		--		20.6		21.7		24.1	

* Insufficient fines were present for the full determination of silt and clay fractions. Only total fines are reported.
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L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-1. Summary of Sediment Conventionals, Metals, and Carcinogenic Polycyclic Aromatic Hydrocarbons (continued).

Location ID	PT-04-S	Q	PT-05-S	Q	PT-06-S	Q	PT-07-S	Q	PT-08-S	Q	PT-09-S	Q	PT-10-S	Q
Date/Time	5/10/2013	10:08	5/10/2013	11:15	5/10/2013	9:09	5/10/2013	11:58	5/10/2013	14:11	5/10/2013	9:48	5/10/2013	11:33
Conventionals														
Total Organic Carbon	0.751		2.2		0.978		0.564		2.06		0.851		3.02	
Total Solids	53.57		41.49		61.9		72.56		41.72		75.54		38.66	
Total Volatile Solids	4.38		6.42		3.12		0.87		6.59		1.22		7.84	
Preserved Total Solids	46.4		36.22		51.9		72.57		36.37		72.53		32.36	
Sulfide	7.56	J	120	J	2.64	J	179	J	4.18	J	1.75	J	56.9	J
Particle/Grain Size, Phi Scale <-1	0.1		3.5		0.2		0.1	U	0.6		0.4		0.5	
Particle/Grain Size, Phi Scale -1 to 0	0.2		0.3		0.3		0.1		0.3		0.4		0.2	
Particle/Grain Size, Phi Scale 0 to 1	0.4		0.5		0.4		0.6		0.5		7.3		0.6	
Particle/Grain Size, Phi Scale 1 to 2	0.6		0.6		1		39.1		0.3		35.5		0.6	
Particle/Grain Size, Phi Scale 2 to 3	3.7		3.4		17.9		58.1		0.4		37.4		1.9	
Particle/Grain Size, Phi Scale 3 to 4	29.6		7.7		40.4		0.9		2.9		11		4.2	
Particle/Grain Size, Phi Scale 4 to 5	18.8		14		9.4		--	U	15.3		2.1		5.4	
Particle/Grain Size, Phi Scale 5 to 6	11.9		15.7		7.1		--	U	20.5		1		15.9	
Particle/Grain Size, Phi Scale 6 to 7	7.1		11.7		4.5		--	U	16.3		0.7		17.9	
Particle/Grain Size, Phi Scale 7 to 8	6.3		10.6		3.7		--	U	9.8		0.7		14.6	
Particle/Grain Size, Phi Scale 8 to 9	5.1		8.5		4		--	U	8.4		0.8		10.7	
Particle/Grain Size, Phi Scale 9 to 10	4.4		7.1		3.2		--	U	6.8		0.7		8.7	
Particle/Grain Size, Phi Scale >10	11.8		16.6		8		--	U	18		2		18.7	
Particle/Grain Size, Fines (Silt/Clay)	65.5		84.1		39.9		1.2	*	95.1		8		91.9	
Metals (mg/kg DW)														
Arsenic	5		6		4		1.9		5.1		2.7		6	
Cadmium	0.25		0.37		0.22		0.19		0.23	U	0.13	U	0.41	
Mercury	0.06		0.08		0.04		0.03	U	0.09		0.02	U	0.09	
carcinogenic PAH (ug/kg DW)														
Benzo(a)anthracene	12.6		20.9		5.92		0.45	J	25.7		0.96		19.3	
Chrysene	19.7		32.8		10.5		0.62		41.1		1.71		31.7	
Benzo(b)fluoranthene	15.2		25.2		8.47		0.63		26.1		1.41		22.3	
Benzo(k)fluoranthene	6.44		9.08		3.05		0.25	J	11.6		0.59		11.9	
Total Benzofluoranthenes	27.9		43.2		14.5		1.11		48.4		2.55		43.6	
Benzo(a)pyrene	12.3		17.1		5.91		0.39	J	20.4		0.95		18.4	
Indeno(1,2,3-cd)pyrene	6.26		12		3.16		0.27	J	10.6		0.63		11.9	
Dibenz(a,h)anthracene	1.9		3.06		0.93		0.17	U	2.99		0.171	U	3.07	
cPAH TEQ (0 DL)	16.7		24.5		8.17		0.556		28.5		1.33		25.6	
cPAH TEQ (1/2 DL)	16.7		24.5		8.17		0.565		28.5		1.33		25.6	
cPAH TEQ (1 DL)	16.7		24.5		8.17		0.573		28.5		1.34		25.6	
cPAH TEQ (KM)	16.7		24.5		8.17		0.562		28.5		1.34		25.6	

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L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-1. Summary of Sediment Conventionals, Metals, and Carcinogenic Polycyclic Aromatic Hydrocarbons (continued).

Location ID	PT-11-S	Q	PT-12-S	Q	PT-13-S	Q	PT-13-D	Q	PT-13-T	Q	PT-14-S	Q
Date/Time	5/10/2013	12:21	5/10/2013	9:26	5/10/2013	13:23	5/10/2013	13:23	5/10/2013	13:23	5/10/2013	13:54
Conventionals												
Total Organic Carbon	--		--		--		--		--		--	
Total Solids	--		--		--		--		--		--	
Total Volatile Solids	--		--		--		--		--		--	
Preserved Total Solids	30.52		50.87		32.64		34.95		33.82		34.43	
Sulfide	7.35	J	30.3	J	19.5	J	98.1	J	27	J	3.64	J
Particle/Grain Size, Phi Scale <-1	0.1	U	0.2		0.1	U	0.2		0.1	U	2.7	
Particle/Grain Size, Phi Scale -1 to 0	0.5		0.6		0.1		0.2		0.2		0.3	
Particle/Grain Size, Phi Scale 0 to 1	1.1		0.6		0.5		0.5		0.5		0.3	
Particle/Grain Size, Phi Scale 1 to 2	0.9		1.7		0.5		0.5		0.4		0.3	
Particle/Grain Size, Phi Scale 2 to 3	1.6		21.9		1.7		1.6		1.7		0.5	
Particle/Grain Size, Phi Scale 3 to 4	5.5		25.2		4.2		4.2		4.2		3	
Particle/Grain Size, Phi Scale 4 to 5	6.4		13.7		8.7		9.1		7.6		10.1	
Particle/Grain Size, Phi Scale 5 to 6	14.3		7.3		19.4		17.6		19.1		20.3	
Particle/Grain Size, Phi Scale 6 to 7	17.2		5.3		17.3		17.9		17.8		14.9	
Particle/Grain Size, Phi Scale 7 to 8	14.7		5.3		11.2		11.8		12.1		10.5	
Particle/Grain Size, Phi Scale 8 to 9	10.7		5.1		10.3		10.5		9.9		9.7	
Particle/Grain Size, Phi Scale 9 to 10	8.5		3.9		7.5		7.1		8.1		7.4	
Particle/Grain Size, Phi Scale >10	18.6		9.4		18.7		18.8		18.4		20.1	
Particle/Grain Size, Fines (Silt/Clay)	90.4		49.8		93		92.8		93.1		93	
Metals (mg/kg DW)												
Arsenic	--		--		--		--		--		--	
Cadmium	--		--		--		--		--		--	
Mercury	0.11		0.05		0.09		0.09		--		0.08	
carcinogenic PAH (ug/kg DW)												
Benzo(a)anthracene	--		--		--		--		--		--	
Chrysene	--		--		--		--		--		--	
Benzo(b)fluoranthene	--		--		--		--		--		--	
Benzo(k)fluoranthene	--		--		--		--		--		--	
Total Benzofluoranthenes	--		--		--		--		--		--	
Benzo(a)pyrene	--		--		--		--		--		--	
Indeno(1,2,3-cd)pyrene	--		--		--		--		--		--	
Dibenz(a,h)anthracene	--		--		--		--		--		--	
cPAH TEQ (0 DL)	--		--		--		--		--		--	
cPAH TEQ (1/2 DL)	--		--		--		--		--		--	
cPAH TEQ (1 DL)	--		--		--		--		--		--	
cPAH TEQ (KM)	--		--		--		--		--		--	

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L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-1. Summary of Sediment Conventionals, Metals, and Carcinogenic Polycyclic Aromatic Hydrocarbons (continued).

Location ID	PT-15-S	Q	SEQ-01-S	Q	SEQ-02-S	Q	SEQ-03-S	Q	SEQ-03-D	Q	SEQ-03-T	Q	SEQ-04-S	Q
Date/Time	**5/10/2013**	**14:31**	**5/9/2013**	**11:41**	**5/9/2013**	**9:36**	**5/9/2013**	**11:04**	**5/9/2013**	**11:04**	**5/9/2013**	**11:04**	**5/9/2013**	**10:11**
Conventionals														
Total Organic Carbon	--		1.94		2.73		2.41		1.35		2.12		1.52	
Total Solids	--		27.67		35.96		32.63		32.29		37.75		42.37	
Total Volatile Solids	--		8.01		7.18		7.39		7.47		7.35		7.05	
Preserved Total Solids	35.67		24.74		29.24		31.43		30.27		28.7		36.72	
Sulfide	3.13	J	707		302		443		310		276		212	
Particle/Grain Size, Phi Scale <-1	0.1		0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Particle/Grain Size, Phi Scale -1 to 0	0.4		0.4		0.1	U	0.1	U	0.1		0.1	U	0.4	
Particle/Grain Size, Phi Scale 0 to 1	0.5		0.1	U	0.8		0.2		0.3		0.2		0.5	
Particle/Grain Size, Phi Scale 1 to 2	0.7		1		3.9		0.5		0.7		0.4		1.1	
Particle/Grain Size, Phi Scale 2 to 3	1.1		3.1		4.1		1.8		1.7		1.6		10.6	
Particle/Grain Size, Phi Scale 3 to 4	3.9		4.2		8.7		5.3		5.2		5.1		12.3	
Particle/Grain Size, Phi Scale 4 to 5	14.7		6.2		10.3		11.7		12.1		11.3		7.9	
Particle/Grain Size, Phi Scale 5 to 6	22.3		18.3		15.3		18.6		18.1		18.9		11.7	
Particle/Grain Size, Phi Scale 6 to 7	16.8		15.7		13.2		16.3		15.6		15.9		11.6	
Particle/Grain Size, Phi Scale 7 to 8	10		13.8		10.6		11.6		12.4		12		9.4	
Particle/Grain Size, Phi Scale 8 to 9	8.4		9		9.3		9.1		8.6		9.4		8.9	
Particle/Grain Size, Phi Scale 9 to 10	6.2		8.4		7.6		7.9		7.8		7.7		8	
Particle/Grain Size, Phi Scale >10	14.9		19.9		16.3		16.9		17.4		17.5		17.5	
Particle/Grain Size, Fines (Silt/Clay)	93.3		91.3		82.6		92		92		92.7		75.1	
Metals (mg/kg DW)														
Arsenic	--		7		7.9		8		7.7		--		7.5	
Cadmium	--		1.7		1.4		2.1		1.9		--		1.1	
Mercury	0.09		0.08		0.1		0.09		0.1		--		0.08	
carcinogenic PAH (ug/kg DW)														
Benzo(a)anthracene	--		14.3		13.6		14.7		14		--		11.1	
Chrysene	--		22.9		22		24.2		21.7		--		19.8	
Benzo(b)fluoranthene	--		21		19.7		22.2		23.3		--		16.2	
Benzo(k)fluoranthene	--		10.3		9.37		10.9		8.59		--		7.98	
Total Benzofluoranthenes	--		39.5		36.6		41.8		40.2		--		30.3	
Benzo(a)pyrene	--		15.7		14.2		16		15.4		--		11.4	
Indeno(1,2,3-cd)pyrene	--		10.9		12.4		12.6		11.8		--		9.51	
Dibenz(a,h)anthracene	--		2.68		2.87		3.05		2.84		--		2.37	
cPAH TEQ (0 DL)	--		21.8		20.2		22.6		21.7		--		16.3	
cPAH TEQ (1/2 DL)	--		21.8		20.2		22.6		21.7		--		16.3	
cPAH TEQ (1 DL)	--		21.8		20.2		22.6		21.7		--		16.3	
cPAH TEQ (KM)	--		21.8		20.2		22.1	Avg	--		--		16.3	

* Insufficient fines were present for the full determination of silt and clay fractions. Only total fines are reported.
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limit
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate.
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-1. Summary of Sediment Conventionals, Metals, and Carcinogenic Polycyclic Aromatic Hydrocarbons (continued).

Location ID	SEQ-05-S	Q	SEQ-06-S	Q	SEQ-07-S	Q	SEQ-08-S	Q
Date/Time	**5/9/2013**	**8:57**	**5/9/2013**	**9:52**	**5/9/2013**	**11:24**	**5/9/2013**	**9:21**
Conventionals								
Total Organic Carbon	3.3		--		--		--	
Total Solids	30.47		--		--		--	
Total Volatile Solids	9.23		--		--		--	
Preserved Total Solids	29.33		29.37		24.71		32.3	
Sulfide	341		44.8		974		84.8	
Particle/Grain Size, Phi Scale <-1	0.4		0.1	U	0.1	U	0.1	U
Particle/Grain Size, Phi Scale -1 to 0	0.7		0.2		0.1		0.1	
Particle/Grain Size, Phi Scale 0 to 1	2.2		0.8		0.6		0.4	
Particle/Grain Size, Phi Scale 1 to 2	4.3		2.5		1		2	
Particle/Grain Size, Phi Scale 2 to 3	3.1		3.5		0.9		3.9	
Particle/Grain Size, Phi Scale 3 to 4	3.5		7.8		3.6		5.1	
Particle/Grain Size, Phi Scale 4 to 5	5.5		9.3		7.8		5.8	
Particle/Grain Size, Phi Scale 5 to 6	21.2		15.4		20.9		16.4	
Particle/Grain Size, Phi Scale 6 to 7	19.1		13.7		16.4		17.9	
Particle/Grain Size, Phi Scale 7 to 8	12		11.7		13.3		14	
Particle/Grain Size, Phi Scale 8 to 9	7.9		9		9.1		10	
Particle/Grain Size, Phi Scale 9 to 10	7.4		8.3		8		8.3	
Particle/Grain Size, Phi Scale >10	12.6		17.7		18.2		16.1	
Particle/Grain Size, Fines (Silt/Clay)	85.7		85.1		93.7		88.5	
Metals (mg/kg DW)								
Arsenic	7.7		--		--		--	
Cadmium	3.6		--		--		--	
Mercury	0.09		0.09		0.09		0.1	
carcinogenic PAH (ug/kg DW)								
Benzo(a)anthracene	11.2		--		--		--	
Chrysene	18.5		--		--		--	
Benzo(b)fluoranthene	18.4		--		--		--	
Benzo(k)fluoranthene	7.94		--		--		--	
Total Benzofluoranthenes	33.9		--		--		--	
Benzo(a)pyrene	12.4		--		--		--	
Indeno(1,2,3-cd)pyrene	12.7		--		--		--	
Dibenz(a,h)anthracene	2.74		--		--		--	
cPAH TEQ (0 DL)	17.9		--		--		--	
cPAH TEQ (1/2 DL)	17.9		--		--		--	
cPAH TEQ (1 DL)	17.9		--		--		--	
cPAH TEQ (KM)	17.9		--		--		--	

* Insufficient fines were present for the full determination of silt and clay fractions. Only total fines are reported.
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limit
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate.
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-2. Summary of Dioxin/Furan Congener Data.

Location ID	DIS-01-S	Q	DIS-02-S	Q	DIS-03-S	Q	DIS-04-S	Q	DIS-05-S	Q	DIS-06-S	Q	DIS-07-S	Q	DIS-08-S	Q	DIS-09-S	Q
Date/Time	5/8/2013	12:06	5/8/2013	15:29	5/8/2013	13:57	5/7/2013	13:42	5/8/2013	15:54	5/7/2013	15:30	5/8/2013	11:47	5/7/2013	14:29	5/7/2013	16:40
Dioxin/Furan Congeners (ng/kg DW)																		
2,3,7,8-TCDD	0.348		0.301	U	0.06	U	0.203		0.221		0.438		0.314		0.082	U	0.187	
1,2,3,7,8-PECDD	1.07		1.01		0.087	U	0.599	J	0.736	J	1.56		1.22		0.24	J	0.513	J
1,2,3,4,7,8-HXCDD	0.848	J	0.792	J	0.099	U	0.445	J	0.521	J	1.44	J	0.973		0.185	U	0.415	J
1,2,3,6,7,8-HXCDD	3.71		3.91		0.326	U	2.16		2.87		6.22		4.7		0.872	J	1.92	
1,2,3,7,8,9-HXCDD	3.31		3.62		0.27	J	1.85		2.83		7.39		3.93		0.864	J	2.23	
1,2,3,4,6,7,8-HPCDD	33		31.2		2.56		18.3		22.8		52.2		37.8		6.64		14.5	
OCDD	190		199		15.8		114		138		295		217		36.1		88.7	
2,3,7,8-TCDF	1.72		1.68		0.116	J	1.15		1.23		2.87		2.13		0.468		1.03	
1,2,3,7,8-PECDF	0.593	J	0.39	J	0.058	J	0.277	J	0.335	J	0.801	J	0.563	J	0.108	J	0.278	J
2,3,4,7,8-PECDF	0.913	J	0.698	J	0.077	J	0.465	J	0.467	J	1.23		0.854	J	0.186	J	0.347	J
1,2,3,4,7,8-HXCDF	0.99	J	0.747	J	0.09	U	0.429	J	0.551	J	1.67		0.972		0.234	J	0.437	J
1,2,3,6,7,8-HXCDF	0.624	J	0.46	J	0.0491	U	0.262	J	0.314	J	0.873	J	0.571	J	0.12	J	0.251	J
1,2,3,7,8,9-HXCDF	0.081	U	0.0498	U	0.0491	U	0.0469	U	0.0464	U	0.093	J	0.087	U	0.049	U	0.0467	U
2,3,4,6,7,8-HXCDF	0.581	J	0.478	J	0.061	U	0.271	J	0.357	J	0.935	J	0.579	J	0.113	J	0.274	J
1,2,3,4,6,7,8-HPCDF	8.07		6.85		0.598	J	4.08		5.2		13.3	J	8.71		1.6		3.62	J
1,2,3,4,7,8,9-HPCDF	0.491	J	0.416	J	0.0491	U	0.236	J	0.286	J	0.634	J	0.477	J	0.084	J	0.247	J
OCDF	13.8		11.9		1.16	J	7.22		7.93		15.9		13.9		2.25		5.05	
Dx/F TEQ (0 DL)	3.36		2.85		0.1		1.87		2.3		5.29		3.73		0.661		1.68	
Dx/F TEQ (1/2 DL)	3.37		3		0.208		1.87		2.3		5.29		3.74		0.714		1.68	
Dx/F TEQ (1 DL)	3.37		3.15		0.315		1.87		2.31		5.29		3.74		0.766		1.68	
Dx/F TEQ (KM)	3.37		2.92		0.214	L9	1.87		2.3		5.29		3.74		0.689		1.67	Avg

*total PCBs represents the sum of all detected congeners
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limit
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate.
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-2. Summary of Dioxin/Furan Congener Data (continued).

Location ID	DIS-09-D	Q	DIS-10-S	Q	DIS-11-S	Q	DIS-12-S	Q	DUN-01-S	Q	DUN-02-S	Q	DUN-03-S	Q	DUN-04-S	Q	DUN-05-S	Q
Date/Time	5/7/2013	16:40	5/8/2013	11:27	5/7/2013	14:07	5/8/2013	14:35	5/6/2013	16:13	5/6/2013	15:09	5/6/2013	10:09	5/6/2013	14:46	5/6/2013	13:46
Dioxin/Furan Congeners (ng/kg DW)																		
2,3,7,8-TCDD	0.21		0.303		0.225		0.071	U	0.232		0.051	U	0.052	U	0.163	J	0.152	J
1,2,3,7,8-PECDD	0.473	J	0.896	J	0.714	J	0.18	J	0.643	J	0.061	U	0.096	U	0.418	J	0.254	J
1,2,3,4,7,8-HXCDD	0.39	J	0.745	J	0.557	J	0.14	J	0.433	J	0.049	U	0.06	U	0.312	J	0.208	U
1,2,3,6,7,8-HXCDD	1.94		3.64		2.8		0.616	J	2.25		0.145	U	0.258	U	1.57		0.935	J
1,2,3,7,8,9-HXCDD	1.99		3.11		2.73		0.734	J	1.62		0.127	J	0.211	U	1.21		0.95	J
1,2,3,4,6,7,8-HPCDD	15		31		22.2		5.18		16.5		0.893	J	1.74		10.8		8.18	
OCDD	91.5		176		130		29.4		92.4		5.19		8.55		61.1		46.2	
2,3,7,8-TCDF	1.16		1.52		1.51		0.308		1.04		0.098	J	0.126	J	0.662		0.477	
1,2,3,7,8-PECDF	0.233	J	0.403	J	0.313	J	0.093	U	0.266	J	0.0462	U	0.068	U	0.161	J	0.13	J
2,3,4,7,8-PECDF	0.374	J	0.687	J	0.513	J	0.127	J	0.389	J	0.055	U	0.088	J	0.277	J	0.188	J
1,2,3,4,7,8-HXCDF	0.422	J	0.789	J	0.499	J	0.172	J	0.447	J	0.0462	U	0.06	U	0.312	J	0.231	U
1,2,3,6,7,8-HXCDF	0.253	J	0.48	J	0.316	J	0.141	J	0.285	J	0.0462	U	0.052	J	0.219	J	0.156	J
1,2,3,7,8,9-HXCDF	0.047	U	0.067	J	0.0481	U	0.0474	U	0.068	U	0.0462	U	0.0482	U	0.0481	U	0.0502	U
2,3,4,6,7,8-HXCDF	0.231	J	0.451	J	0.345	J	0.112	J	0.276	J	0.0462	U	0.055	J	0.193	J	0.143	J
1,2,3,4,6,7,8-HPCDF	3.5		6.75		5.26		1.41	J	3.53		0.234	J	0.349	J	2.52		1.67	
1,2,3,4,7,8,9-HPCDF	0.171	J	0.367	J	0.263	J	0.089	J	0.275	J	0.0462	U	0.0482	U	0.11	J	0.16	J
OCDF	5.41		9.6		8.37		1.92		6.61		0.377	U	0.711	J	4		3.5	
Dx/F TEQ (0 DL)	1.66		2.93		2.3		0.517		1.87		0.0353		0.0734		1.27		0.847	
Dx/F TEQ (1/2 DL)	1.66		2.93		2.3		0.556		1.87		0.119		0.18		1.27		0.872	
Dx/F TEQ (1 DL)	1.66		2.93		2.3		0.595		1.87		0.204		0.288		1.28		0.896	
Dx/F TEQ (KM)	--		2.93		2.3		0.537		1.87		0.11	L12	0.191	L9	1.27		0.817	Avg

*total PCBs represents the sum of all detected congeners
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limit
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate.
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-2. Summary of Dioxin/Furan Congener Data (continued).

Location ID	DUN-05-D	Q	DUN-06-S	Q	DUN-07-S	Q	DUN-08-S	Q	DUN-09-S	Q	DUN-10-S	Q	DUN-11-S	Q	DUN-12-S	Q	DUN-13-S	Q
Date/Time	5/6/2013	13:45	5/6/2013	10:50	5/6/2013	11:10	5/6/2013	16:38	5/6/2013	14:25	5/6/2013	12:10	5/6/2013	15:49	5/6/2013	11:30	5/6/2013	13:28
Dioxin/Furan Congeners (ng/kg DW)																		
2,3,7,8-TCDD	0.102	U	0.177	J	0.0478	U	0.099	U	0.045	U	0.0437	U	0.0469	U	0.086	U	0.062	U
1,2,3,7,8-PECDD	0.258	U	0.315	J	0.064	U	0.192	J	0.045	U	0.072	U	0.0469	U	0.213	J	0.099	J
1,2,3,4,7,8-HXCDD	0.196	J	0.373	J	0.075	U	0.179	U	0.045	U	0.076	U	0.0469	U	0.221	U	0.065	U
1,2,3,6,7,8-HXCDD	1.01		1.02		0.164	U	0.583	J	0.102	U	0.251	U	0.117	U	0.602	J	0.243	U
1,2,3,7,8,9-HXCDD	0.961		0.905	J	0.204	J	0.504	J	0.108	J	0.21	U	0.094	J	0.464	J	0.213	J
1,2,3,4,6,7,8-HPCDD	7.76		8.96		1.23		6.91		0.779	J	1.54		0.866	J	4.92		2.14	
OCDD	45.8		39.4		6.21		41.9		3.29		8.16		4.31		27		9.61	
2,3,7,8-TCDF	0.42		0.404		0.06	U	0.273		0.073	J	0.115	J	0.071	J	0.293		0.142	J
1,2,3,7,8-PECDF	0.14	U	0.0914	U	0.0478	U	0.084	J	0.045	U	0.0437	U	0.0469	U	0.064	J	0.0468	U
2,3,4,7,8-PECDF	0.198	J	0.252	J	0.093	J	0.148	J	0.052	U	0.104	J	0.048	U	0.074	U	0.057	J
1,2,3,4,7,8-HXCDF	0.222	J	0.297	J	0.055	U	0.13	J	0.045	U	0.059	U	0.0469	U	0.135	U	0.06	J
1,2,3,6,7,8-HXCDF	0.121	J	0.152	J	0.0478	U	0.098	J	0.045	U	0.0571	U	0.0469	U	0.101	J	0.0468	U
1,2,3,7,8,9-HXCDF	0.0471	U	0.109	U	0.0478	U	0.0484	U	0.045	U	0.0571	U	0.0469	U	0.0475	U	0.0468	U
2,3,4,6,7,8-HXCDF	0.114	J	0.142	J	0.0478	U	0.123	U	0.045	U	0.058	U	0.0469	U	0.115	J	0.0468	U
1,2,3,4,6,7,8-HPCDF	1.9		1.71		0.269	U	1.18		0.165	J	0.419	U	0.182	J	0.981		0.448	J
1,2,3,4,7,8,9-HPCDF	0.149	U	0.106	U	0.0478	U	0.081	J	0.045	U	0.0476	U	0.0469	U	0.06	J	0.0468	U
OCDF	3.14		3.94		0.563	J	2.32		0.28	U	0.777	J	0.301	U	1.86	J	0.725	J
Dx/F TEQ (0 DL)	0.475		1.02		0.0626		0.493		0.0285		0.0608		0.0283		0.441		0.187	
Dx/F TEQ (1/2 DL)	0.66		1.02		0.146		0.56		0.0986		0.16		0.101		0.515		0.241	
Dx/F TEQ (1 DL)	0.845		1.03		0.229		0.627		0.169		0.259		0.174		0.589		0.295	
Dx/F TEQ (KM)	--		1.02		0.137	L12	0.526		0.126	L12	0.149	L12	0.132	L12	0.474		0.207	

*total PCBs represents the sum of all detected congeners
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limit
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate.
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-2. Summary of Dioxin/Furan Congener Data (continued).

Location ID	PT-01-S	Q	PT-02-S	Q	PT-03-S	Q	PT-04-S	Q	PT-05-S	Q	PT-06-S	Q	PT-07-S	Q	PT-08-S	Q	PT-09-S	Q
Date/Time	5/10/2013	14:46	5/10/2013	10:35	5/10/2013	13:07	5/10/2013	10:08	5/10/2013	11:15	5/10/2013	9:09	5/10/2013	11:58	5/10/2013	14:11	5/10/2013	9:48
Dioxin/Furan Congeners (ng/kg DW)																		
2,3,7,8-TCDD	0.279		0.367		0.338		0.245	U	0.482		0.155	U	0.055	U	0.53		0.052	U
1,2,3,7,8-PECDD	1		1.19		1.44		0.644	J	1.55		0.458	J	0.113	J	1.59		0.173	J
1,2,3,4,7,8-HXCDD	0.567	J	0.848	J	1.1		0.521	J	1.59		0.301	J	0.099	U	0.912		0.137	U
1,2,3,6,7,8-HXCDD	3.58		4.61		6.12		2.56		5.53		1.85		0.288	J	6.75		0.466	J
1,2,3,7,8,9-HXCDD	2.23		3.68		3.96		1.95		4.04		1.49		0.2	U	4.55		0.415	J
1,2,3,4,6,7,8-HPCDD	22.8		30.2		33.5		18.2		32.6		14.7		1.38		36.9		3.14	
OCDD	148		184		204	J	116		179		83.3		7.89		215		16.4	
2,3,7,8-TCDF	1.19		1.76		1.35		1.16		1.38		0.76	U	0.097	U	1.56		0.174	J
1,2,3,7,8-PECDF	0.42	J	0.501	J	0.421	J	0.293	J	0.721	J	0.199	J	0.0499	U	0.565	J	0.0476	U
2,3,4,7,8-PECDF	0.568	J	0.776	J	0.742	J	0.469	J	0.924	J	0.356	J	0.117	J	0.832	J	0.112	U
1,2,3,4,7,8-HXCDF	0.665	J	0.763	J	0.66	J	0.476	J	1.48		0.346	U	0.049	U	1.08		0.103	J
1,2,3,6,7,8-HXCDF	0.367	J	0.515	J	0.539	J	0.338	J	1.1		0.241	J	0.068	U	0.685	J	0.076	J
1,2,3,7,8,9-HXCDF	0.114	U	0.053	U	0.136	U	0.057	U	0.661	J	0.0487	U	0.0482	U	0.129	U	0.0476	U
2,3,4,6,7,8-HXCDF	0.394	J	0.504	J	0.608	J	0.292	J	0.896	J	0.222	J	0.086	U	0.683	J	0.094	U
1,2,3,4,6,7,8-HPCDF	4.95		6.78		7.41		3.67		6.72		2.84		0.311	U	9.03		0.786	J
1,2,3,4,7,8,9-HPCDF	0.318	J	0.398	J	0.609	J	0.238	J	0.727	J	0.205	J	0.068	U	0.559	J	0.063	J
OCDF	11.3		10.2		17		7.52		12.2		5.46		0.686	U	14.1		1.34	J
Dx/F TEQ (0 DL)	2.69		3.5		3.93		1.78		4.46		1.19		0.193		4.54		0.342	
Dx/F TEQ (1/2 DL)	2.7		3.51		3.94		1.91		4.46		1.32		0.256		4.55		0.399	
Dx/F TEQ (1 DL)	2.7		3.51		3.94		2.03		4.46		1.46		0.318		4.56		0.457	
Dx/F TEQ (KM)	2.69		3.51		3.94		1.85		4.46		1.26		0.207	L12	4.55		0.37	

*total PCBs represents the sum of all detected congeners
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limit
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate.
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-2. Summary of Dioxin/Furan Congener Data (continued).

Location ID	PT-10-S	Q	SEQ-01-S	Q	SEQ-02-S	Q	SEQ-03-S	Q	SEQ-03-D	Q	SEQ-04-S	Q	SEQ-05-S	Q
Date/Time	5/10/2013	11:33	5/9/2013	11:41	5/9/2013	9:36	5/9/2013	11:04	5/9/2013	11:04	5/9/2013	10:11	5/9/2013	8:57
Dioxin/Furan Congeners (ng/kg DW)														
2,3,7,8-TCDD	0.306		0.239		0.236		0.216		0.22		0.173	J	0.181	J
1,2,3,7,8-PECDD	1.23		0.979	J	0.499	J	0.831	J	0.842	J	0.637	J	0.515	J
1,2,3,4,7,8-HXCDD	0.8	J	1.03		0.429	J	0.764	U	0.78	J	0.511	J	0.435	J
1,2,3,6,7,8-HXCDD	5.57		3.82		1.89		2.81		3.04		1.97		1.39	
1,2,3,7,8,9-HXCDD	3.43		4.19		1.44		2.47		2.61		1.78		1.37	
1,2,3,4,6,7,8-HPCDD	35.6		36.5		20.8		32.6		36.5		24.2		14.8	
OCDD	250		251		148		210		251		166		96.2	
2,3,7,8-TCDF	1.39		1.31		0.691		1.04		0.929		0.78		0.545	
1,2,3,7,8-PECDF	0.453	J	0.486	J	0.228	J	0.255	J	0.349	J	0.252	J	0.232	J
2,3,4,7,8-PECDF	0.765	U	0.633	J	0.347	J	0.526	J	0.574	J	0.322	J	0.386	J
1,2,3,4,7,8-HXCDF	1.02		0.835	U	0.426	J	0.541	J	0.671	J	0.378	U	0.379	J
1,2,3,6,7,8-HXCDF	0.56	J	0.493	J	0.216	J	0.344	J	0.374	J	0.267	J	0.231	J
1,2,3,7,8,9-HXCDF	0.137	U	0.109	J	0.061	J	0.114	U	0.05	J	0.0938	U	0.058	U
2,3,4,6,7,8-HXCDF	0.53	J	0.556	U	0.307	J	0.331	J	0.383	J	0.303	J	0.283	J
1,2,3,4,6,7,8-HPCDF	7.52		7.37		3.66		5.41		5.28		3.79		2.86	
1,2,3,4,7,8,9-HPCDF	0.601	J	0.445	J	0.234	J	0.355	J	0.447	J	0.19	J	0.267	J
OCDF	19		11.6		8.34		11.2		12		9.2		5.86	
Dx/F TEQ (0 DL)	3.4		3.04		1.69		2.42		2.63		1.81		1.49	
Dx/F TEQ (1/2 DL)	3.52		3.11		1.69		2.46		2.63		1.83		1.49	
Dx/F TEQ (1 DL)	3.64		3.18		1.69		2.5		2.63		1.86		1.5	
Dx/F TEQ (KM)	3.46		3.09		1.69		2.54	Avg	--		1.83		1.49	

*total PCBs represents the sum of all detected congeners
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limit
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate.
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-3. Summary of PCB Congener Data.

Location ID	DIS-01-S	Q	DIS-02-S	Q	DIS-03-S	Q	DIS-04-S	Q	DIS-05-S	Q	DIS-06-S	Q
Date/Time	5/8/2013 12:06		5/8/2013 15:29		5/8/2013 13:57		5/7/2013 13:42		5/8/2013 15:54		5/7/2013 15:30	
PCB Congeners (ng/kg DW)												
PCB-001	7.79	J	7.48	J	0.847	J	6.21	J	5.71	J	10.8	J
PCB-002	29.9		42.6		3.75		22.2		22.8		38.1	
PCB-003	8.44	J	8.23	J	1.03	J	5.25	J	5.47	J	13.2	J
PCB-004	10.2		10.3		0.991		8.58		9.11		19.2	
PCB-005	0.532	U	0.455		0.146	U	0.339	J	0.33	U	1.18	
PCB-006	7.35		6.48		0.518		4.46		4.87		15.9	
PCB-007	3.22		2.33		0.249	J	1.38		1.6		7.15	
PCB-008	49.2		38.4		2.73		29.1		29.8		104	
PCB-009	1.53		1.35		0.197	U	0.953		1.04	U	3.54	
PCB-010	0.415		0.356	J	0.137	U	0.269	J	0.329	J	0.991	
PCB-011	40.7		65.2		5.29		44.4		44.3		45.3	
PCB-012/013	9.9	C	10.1	C	1.28	CU	6.37	C	7.05	C	14.4	CUJ
PCB-014	1.22	U	1.32	U	0.201	U	0.638	U	0.733		1.84	U
PCB-015	64		59		4.09		41.1		45.9		141	
PCB-016	17.6		13.6		1.03		10		10.4		41.4	
PCB-017	19.3		16.9		1.43		12.5		14.3		49.1	
PCB-018/030	34.1	C	27.1	CJ	2.41	C	21.1	C	25.9	C	88.2	C
PCB-019	3.36		2.65		0.303	J	2.11		2.2		7.06	
PCB-020/028	153	C	137	C	10.8	C	96.2	C	114	C	386	C
PCB-021/033	43.6	C	42.5	C	2.92	C	31	C	35.7	C	108	C
PCB-022	33.6		33.1		2.53		24.1		26.9		79.6	
PCB-023	0.103	J	0.217	J	0.0495	U	0.0746	U	0.202	U	0.273	J
PCB-024	0.547		0.321	J	0.048	U	0.317	J	0.328	U	1.28	
PCB-025	10.5		9.46		0.701		6.48		7.33		26.6	
PCB-026/029	17.2	C	16.1	C	1.23	C	11.6	C	12.9	C	43.2	C
PCB-027	3.69		3.05		0.259	U	2.21		2.56		7.81	J
PCB-031	87.5		83.7		6.7		59.1		68.4		218	
PCB-032	16.7		14		1.38		10.6		12.9		44.9	
PCB-034	0.631		0.65		0.0472	U	0.359	J	0.534		1.41	
PCB-035	6.13		6.29		0.495		4.36		5.08		13.8	
PCB-036	2.51		3.07		0.251	J	2.12		2.23		3.66	
PCB-037	49.4		50.5		3.71		38.4		44		124	
PCB-038	0.875		0.679		0.268	U	0.447		0.447		1.37	
PCB-039	1.38		1.15		0.117	J	0.815		0.865		3	
PCB-040/041/071	63.5	C	48.2	C	3.48	C	36.9	C	39.1	C	156	C
PCB-042	32.4		24.4		1.99		18.4		19.2		78.8	
PCB-043	3.47		2.49		0.145	J	1.74		2.13	U	8.25	
PCB-044/047/065	120	C	93.6	C	7.49	C	66.4	C	89.1	C	292	C
PCB-045/051	12.7	C	8.38	C	0.784	C	6.25	C	7.21	C	31.9	C
PCB-046	4.74		3.01		0.292	J	2.18		2.38		11.8	
PCB-048	18.2		13.8		1.1		10.6		11		45.7	
PCB-049/069	76.6	C	62.6	C	5.66	C	44.4	C	56.2	C	187	C
PCB-050/053	11.1	C	7.94	C	0.734	C	5.57	C	6.94	C	26.7	C
PCB-052	136		112		9.79		70.6		132		324	
PCB-054	0.145	U	0.235	J	0.0544	U	0.076	U	0.13	U	0.35	J
PCB-055	2.25		1.82		0.149	J	1.59		1.51		6.01	
PCB-056	60.5		58.2		4.42		43.8		50.6		147	
PCB-057	0.946		0.567		0.0801	U	0.486		0.548		2.18	
PCB-058	0.75		0.501		0.0813	U	0.418		0.438		1.82	
PCB-059/062/075	11.2	C	8.28	C	0.704	CU	6.1	C	6.75	C	27.6	C
PCB-060	36.6		35.3		2.79		26.6		29		88.1	
PCB-061/070/074/076	236	C	231	C	19.5	C	166	C	218	C	581	C
PCB-063	6.14		5.23		0.456		3.67		4.59		14.7	
PCB-064	47.7		37.5		3.21		27.6		32.4		113	
PCB-066	124		125		10.1		95.4		113		311	
PCB-067	5.65		4.17		0.338	J	3.15		3.3		13.3	
PCB-068	1.49		1.39		0.143	U	0.962		1.13		3.12	
PCB-072	2.39		1.84		0.193	J	1.28		1.46		5.43	
PCB-073	0.266	J	0.293	J	0.0535	U	0.19	J	0.24	U	0.707	

Location ID	DIS-01-S	Q	DIS-02-S	Q	DIS-03-S	Q	DIS-04-S	Q	DIS-05-S	Q	DIS-06-S	Q
Date/Time	5/8/2013 12:06		5/8/2013 15:29		5/8/2013 13:57		5/7/2013 13:42		5/8/2013 15:54		5/7/2013 15:30	
PCB-077	25		25.3		2.13		17.5		21.6		59.8	
PCB-078	0.129	U	0.208	U	0.0761	U	0.1	U	0.166	U	0.386	U
PCB-079	2.63		2.66		0.279	J	1.84		2.8		6.22	
PCB-080	0.193	J	0.194	U	0.0708	U	0.102	J	0.149	U	0.235	U
PCB-081	1.03	U	0.969	U	0.102	U	0.738	U	0.693	U	2.24	U
PCB-082	22.3		19.5		1.56	J	12.2	J	27.6		53.5	
PCB-083/099	140	C	130	C	12.4	C	82.9	C	148	C	291	C
PCB-084	45.3		36.7		2.95		22.4		52.5		102	
PCB-085/116/117	44.7	C	39.9	C	3.89	C	27.3	C	46.5	C	98.8	C
PCB-087/097/108/119/125	133	C	123	C	10.8	C	75.9	C	161	C	303	C
PCB-088/091	25.2	C	21.4	C	1.94	C	13.3	C	27	C	56.8	C
PCB-089	2.05		1.79		0.162	U	1.29		1.95		5.23	
PCB-090/101/113	205	C	184	C	16.6	C	114	C	235	C	462	C
PCB-092	38		32.3		2.97		19.2		43.7		86.2	
PCB-093/095/098/100/102	151	C	120	C	10.4	C	69.3	C	158	C	328	C
PCB-094	0.967		0.77		0.084	J	0.539		0.772		2.16	
PCB-096	1.11		0.913		0.09	U	0.579	U	1.04	U	2.66	
PCB-103	2.05	U	1.83		0.185	J	1.12		1.76		4.42	
PCB-104	0.0505	U	0.088	J	0.0466	U	0.0469	U	0.11	U	0.05	U
PCB-105	87		95.5		8.85		63.6		115		206	
PCB-106	0.176	U	0.149	U	0.0864	U	0.159	U	0.345	U	0.176	U
PCB-107/124	7.62	C	7.5	C	0.748	C	4.68	C	9.86	C	17.6	C
PCB-109	17		16.8		1.64		10.7		19.4		43.3	
PCB-110/115	210	C	196	C	17.8	C	122	C	261	C	470	C
PCB-111	0.402	J	0.3	J	0.0479	U	0.242	J	0.339	U	0.854	
PCB-112	0.0752	U	0.0697	U	0.0482	U	0.0545	U	0.183	U	0.0977	U
PCB-114	3.91		4.29		0.393		2.81		5.42		9.41	
PCB-118	194		208		19.5		133		255		443	
PCB-120	1.65		1.34		0.134	J	0.914		1.2		3.37	
PCB-121	0.108	J	0.111	J	0.0508	U	0.079	U	0.198	U	0.23	J
PCB-122	2.22		2.39		0.234	J	1.57		2.82		5.61	
PCB-123	4.12		4.25		0.418		2.85		4.8		9.18	
PCB-126	1.53		1.68		0.147	U	1.06		1.45		4.08	
PCB-127	0.258	J	0.574	U	0.0847	U	0.177	U	0.514	J	0.77	
PCB-128/166	38	C	40.7	C	3.72	C	25	C	54.1	C	83.7	C
PCB-129/138/160/163	260	C	251	C	23.7	C	160	C	314	C	592	C
PCB-130	17.4		17		1.52		10.5		21.5		39.9	
PCB-131	2.63		2.28		0.184	U	1.31		3.63		5.48	
PCB-132	68.1		62.1		5.21		38.3		88.5		154	
PCB-133	4.66		4.14		0.356	J	2.69		4.6		10.5	
PCB-134/143	10.7	C	9.29	C	0.967	C	5.84	C	13.5	C	24.1	C
PCB-135/151/154	75.7	C	62.1	C	5.32	C	39.5	C	73.2	C	176	C
PCB-136	25.5		20.6		1.5		12.4		25.7		57.3	
PCB-137	8.46		9.43		0.902		5.12		14.2		16.8	
PCB-139/140	3.79	C	3.7	C	0.365	CJ	2.38	C	5.39	C	8.5	C
PCB-141	25.1		24.9		1.96		14.4		34.6		59.9	
PCB-142	0.207	U	0.142	U	0.0817	U	0.167	U	0.21	U	0.194	U
PCB-144	8.65		7.37		0.616	U	4.92		10.3		20.2	
PCB-145	0.095	J	0.091	J	0.0484	U	0.059	U	0.177	U	0.188	J
PCB-146	42.9	J	39.2	J	4.04		24.1	J	46.5		87	J
PCB-147/149	177	C	152	C	13.7	C	97	C	183	C	400	C
PCB-148	0.507	U	0.548		0.0575	UJ	0.482	UJ	0.643	U	0.935	
PCB-150	0.678		0.484		0.0466	U	0.302	J	0.455		1.47	
PCB-152	0.21	J	0.173	U	0.0466	U	0.118	U	0.237	U	0.394	J
PCB-153/168	223	C	214	C	19.7	C	135	C	238	C	506	C
PCB-155	0.075	J	0.151	U	0.0466	U	0.051	U	0.123	U	0.116	U
PCB-156/157	20.6	C	24.5	C	2.32	C	15	C	36.1	C	47.5	C
PCB-158	18.5		18.6		1.73		11.3		28.1		42.7	
PCB-159	2.33		1.93		0.169	J	1.26		1.85		5.29	
PCB-161	0.138	U	0.0943	U	0.0543	U	0.111	U	0.141	U	0.133	U
PCB-162	1.2		1.12		0.107	U	0.635		1.45		2.4	

Location ID	DIS-01-S	Q	DIS-02-S	Q	DIS-03-S	Q	DIS-04-S	Q	DIS-05-S	Q	DIS-06-S	Q
Date/Time	5/8/2013 12:06		5/8/2013 15:29		5/8/2013 13:57		5/7/2013 13:42		5/8/2013 15:54		5/7/2013 15:30	
PCB-164	14.1		12.8		1.12		8.13		17.4		34.1	
PCB-165	0.469		0.463		0.07	U	0.284	J	0.379	U	0.898	
PCB-167	8.41		9.44		0.904	U	5.67		12.1		19.6	
PCB-169	0.52	U	0.28	U	0.08	U	0.33	U	0.539	U	0.906	U
PCB-170	45.8		44.4		3.83		27.8		47.9		108	
PCB-171/173	16.8	C	15.2	C	1.41	C	10.3	C	17.6	C	37.5	C
PCB-172	9.08		7.89		0.784		4.87		8.73		21.5	
PCB-174	46.1		39.7		3.38		27.3		43.6		110	
PCB-175	2.99		2.42		0.266	J	1.64		2.74		6.8	
PCB-176	7		5.74		0.557	U	4.24		6.46		15.4	
PCB-177	39.6		36.4		3.33		25.6		37.6		85.8	
PCB-178	17		15.4		1.47		10.2		14.5		37.9	
PCB-179	25.8		21.3		1.83		15.3		22		57.4	
PCB-180/193	102	C	88.3	C	7.83	C	53.1	C	87.1	C	235	C
PCB-181	0.457		0.447		0.0672	U	0.225	U	0.582	U	0.837	U
PCB-182	0.519	U	0.485		0.0633	U	0.289	J	0.409	U	1.03	U
PCB-183/185	36.9	C	31.1	C	3.03	C	22.8	C	35.4	C	82.1	C
PCB-184	0.17	J	0.145	J	0.0495	U	0.081	J	0.19	U	0.334	U
PCB-186	0.0505	U	0.0516	U	0.0526	U	0.0505	U	0.202	U	0.107	U
PCB-187	91.8	J	82	J	8.23		57.1	J	80.6		207	
PCB-188	0.328	J	0.249	J	0.0466	U	0.115	U	0.176	U	0.58	U
PCB-189	1.84		2.03		0.252	U	1.18	U	2.25		4.45	
PCB-190	7.41		7.68		0.672	U	4.95		9.44		18.4	
PCB-191	1.66		1.48		0.145	U	1.02		1.86		4.1	
PCB-192	0.0505	U	0.0544	U	0.0555	U	0.0533	U	0.219	U	0.115	U
PCB-194	25		23.3		2.17		13		20.9		60.8	
PCB-195	9.57		9.63		0.78		5.93		9.38		22.7	
PCB-196	14.3		12.7		1.21		7.76		12.5		33.9	
PCB-197/199	4.11	CJ	3.68	CJ	0.407	CUJ	2.75	CJ	4.36	C	9.64	CJ
PCB-198/201	43.6	C	39.9	C	3.64	C	26	C	36.9	C	97.6	C
PCB-200	5.91		5.17		0.436		3.49		4.52		13.2	
PCB-202	11.8		10.6		0.976		6.39		8.78		23.3	
PCB-203	16.9		17.2		1.49		11.3		16.2		42.2	
PCB-204	0.054	U	0.0498	U	0.0466	U	0.0469	U	0.148	U	0.116	U
PCB-205	1.25		1.26		0.113	U	0.874		1.13	U	2.92	
PCB-206	28.4		22.6		2.34		13.7		20.3		52.9	
PCB-207	4.16		3.39		0.35	J	2.03		2.92		8.49	
PCB-208	13.1		9.25		0.998		5.52		7.62		23.2	
PCB-209	30.9		24.8		2.58		13.7		21.9		65.6	
Total PCBs*	4840		4460		385		2950		4810		11100	
PCB TEQ (0 DL)	0.165		0.181		0.00116		0.114		0.16		0.436	
PCB TEQ (1/2 DL)	0.173		0.185		0.00974		0.12		0.168		0.45	
PCB TEQ (1 DL)	0.181		0.19		0.0183		0.125		0.176		0.464	
PCB TEQ (KM)	0.167		0.183		0.016	L	0.116		0.162		0.44	

*total PCBs represents the sum of all detected congeners
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limi
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sampl
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detect
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates
C-see list for co-eluting congeners

Table E-3. Summary of PCB Congener Data (continued).

Location ID	DIS-07-S	Q	DIS-08-S	Q	DIS-09-S	Q	DIS-09-D	Q	DIS-10-S	Q	DIS-11-S	Q
Date/Time	5/8/2013	11:47	5/7/2013	14:29	5/7/2013	16:40	5/7/2013	16:40	5/8/2013	11:27	5/7/2013	14:07
PCB Congeners (ng/kg DW)												
PCB-001	7.64	J	1.97	J	5.05	J	5.59	J	6.52	J	6.49	J
PCB-002	34.6		12.3		15.7		17.5		41.5	J	22	
PCB-003	9.16	J	2.31	J	4.33	J	4.78	J	7.16	J	5.98	J
PCB-004	12.1		2.66		6.72		7.04		9.08	J	11.8	
PCB-005	0.618		0.268	U	0.266	J	0.299	J	0.528	J	0.569	U
PCB-006	7.97		1.1		3.73		4.22		5.84	J	6.35	
PCB-007	3.44		0.536		1.11		1.23		2.16	J	2	
PCB-008	49.9		8.11		24		26.5		37.3	J	40.2	
PCB-009	1.89		0.416		0.937		0.914		1.43	UJ	1.47	
PCB-010	0.41		0.256	U	0.258	U	0.246	J	0.359	J	0.38	U
PCB-011	57.5		15		42.7		45.6		67.2	J	57.7	
PCB-012/013	12	C	1.67	C	5.07	C	5.17	C	9.73	CJ	9.35	C
PCB-014	1.47		0.275	U	0.652	U	0.573	U	1.18	UJ	0.992	U
PCB-015	75.7		11.8		33.9		36.1		53.9		53	
PCB-016	18.7		2.24		8.27		8.42		12.4	J	21	
PCB-017	20.3		3.83		11.3		11.1		15.2	J	23.5	
PCB-018/030	34.6	C	5.84	C	20.1	C	21.4	C	23.9	CJ	44.7	C
PCB-019	3.06		0.736	U	1.57		1.76		2.32	J	4.75	
PCB-020/028	179	C	30.5	C	80.3	C	86.1	C	132	CJ	144	C
PCB-021/033	57.6	C	7.18	C	25.7	C	27.9	C	42.1	CJ	54.2	C
PCB-022	40.9		6.78		20.4		21.4		31.7	J	39.6	
PCB-023	0.214	U	0.115	J	0.0908	U	0.0699	U	0.266	UJ	0.107	J
PCB-024	0.424		0.18	J	0.286	J	0.287	J	0.29	UJ	0.659	
PCB-025	12.5		1.64		5.27		5.62		8.85	J	9.81	
PCB-026/029	19.3	C	3.37	C	9.97	C	10.6	C	15.1	CJ	18.4	C
PCB-027	3.75		0.607		1.97		1.95		2.73	J	3.93	
PCB-031	104		17		50.5		54.4		82.8	J	95.8	
PCB-032	18.2		3.6		8.68		9.05		12.5	J	18.5	
PCB-034	0.716		0.174	J	0.327	J	0.327	J	0.496	UJ	0.528	
PCB-035	7.56		1.29		3.46		3.71		5.77	J	5.94	
PCB-036	3.46		0.705		1.99		2.17		3.21	J	2.67	
PCB-037	65		12.2		31.7		33.4		47.9		53.2	
PCB-038	0.722	U	0.126	J	0.396		0.449	U	0.749	J	0.577	
PCB-039	1.44		0.221	J	0.689		0.673		1.11	J	1.1	
PCB-040/041/071	66.6	C	8.11	C	28.3	C	29.5	C	46.8	C	50.7	C
PCB-042	33		4.9		14		15		23.3		25.1	
PCB-043	3.19		0.381	J	1.42	U	1.6		2.3		3	
PCB-044/047/065	118	C	17.4	C	52.1	C	54.7	C	85	C	87.6	C
PCB-045/051	10.9	C	1.82	C	5.22	C	5.19	C	7.83	C	11.1	C
PCB-046	3.77		0.546		1.81		1.93		2.83		3.87	
PCB-048	18.2		2.63		8.71		9.34		13		16.3	
PCB-049/069	81.2	C	12	C	35.1	C	37.1	C	58.1	C	58.8	C
PCB-050/053	9.53	C	1.61	C	4.64	C	4.99	C	7.14	C	8.62	C
PCB-052	130		19.3		53.8		57.7		93.4		88.6	
PCB-054	0.16	U	0.057	U	0.101	J	0.085	J	0.215	U	0.19	J
PCB-055	2.42		0.431		1.18		1.22		1.61		2.04	
PCB-056	75.7		11.8		33.5		36.5		57.4		61	
PCB-057	0.841		0.122	J	0.403		0.45		0.783		0.735	
PCB-058	0.728		0.108	U	0.315	J	0.347	J	0.537		0.521	
PCB-059/062/075	11.2	C	1.71	C	4.75	C	5.07	C	8.27	C	8.89	C
PCB-060	46.5		7.5		20.3		22.1		35.1		38.1	
PCB-061/070/074/076	294	C	47	C	127	C	138	C	218	C	215	C
PCB-063	6.89		1.2		3		3.27		5.23		5.35	
PCB-064	48.3		7.33		20.8		22.4		34.7		37.6	
PCB-066	166		26.3		76.4		82		129		125	
PCB-067	5.65		0.889		2.47		2.53		4.18		4.41	
PCB-068	1.73		0.315	J	0.753		0.827		1.34		1.26	
PCB-072	2.64		0.405		0.971		1.04		1.63		1.67	
PCB-073	0.361	J	0.093	U	0.159	J	0.247	U	0.214	U	0.135	J

Location ID	DIS-07-S	Q	DIS-08-S	Q	DIS-09-S	Q	DIS-09-D	Q	DIS-10-S	Q	DIS-11-S	Q
Date/Time	5/8/2013 11:47		5/7/2013 14:29		5/7/2013 16:40		5/7/2013 16:40		5/8/2013 11:27		5/7/2013 14:07	
PCB-077	32.3		6.08		14.8		15.3		24		22.8	
PCB-078	0.319	U	0.0976	U	0.121	U	0.114	U	0.361	U	0.168	J
PCB-079	3.26		0.517		1.32		1.23		2.09		1.88	
PCB-080	0.307	U	0.0911	U	0.113	U	0.095	U	0.348	U	0.119	J
PCB-081	1.42	U	0.332	U	0.606	U	0.567	U	0.914	U	0.996	U
PCB-082	23.3		3.9		11.2		11.2		16.4		15.5	
PCB-083/099	151	C	24.4	C	61	C	63.5	C	112	C	98.2	C
PCB-084	40.7		5.35		16.4		16		27.8		24	
PCB-085/116/117	47.1	C	7.76	C	20.2	C	21.1	C	33.3	C	29.9	C
PCB-087/097/108/119/125	136	C	21.9	C	59.3	C	60.1	C	96.4	C	86.6	C
PCB-088/091	25.3	C	3.44	C	9.69	C	9.8	C	17.4	C	15.3	C
PCB-089	2.02		0.266	J	0.852	U	0.867	U	1.49		1.55	
PCB-090/101/113	214	C	33.9	C	86.6	C	89.9	C	146	C	135	C
PCB-092	37.4		6.25		15.1		15.5		25.6		21.8	
PCB-093/095/098/100/102	137	C	19.2	C	52	C	53.7	C	90.1	C	78.5	C
PCB-094	1.02	U	0.159	U	0.357	J	0.523		0.584		0.541	
PCB-096	1.02		0.156	J	0.441		0.428		0.722		0.656	
PCB-103	2.41		0.374	U	0.887		0.913		1.89		1.36	
PCB-104	0.109	U	0.049	U	0.0467	U	0.0484	U	0.184	U	0.0481	U
PCB-105	111		20.1		59.6		54		81.9		76.1	
PCB-106	0.327	U	0.137	U	0.25	U	0.173	U	0.229	U	0.195	U
PCB-107/124	8.85	C	1.41	C	4.28	C	4.05	C	6.18	C	5.78	C
PCB-109	21.4		3.83		9.72		9.67		15.4		13.9	
PCB-110/115	211	C	33.6	C	96.5	C	97.2	C	148	C	139	C
PCB-111	0.353	J	0.079	U	0.251	U	0.183	J	0.23	U	0.285	U
PCB-112	0.142	U	0.0636	U	0.0842	U	0.0545	U	0.223	U	0.0481	U
PCB-114	4.79		0.784		2.65		2.43		3.42		3.19	
PCB-118	239		43.4		119		114		177		159	
PCB-120	1.72		0.343	J	0.757		0.746	U	1.51		1.13	
PCB-121	0.153	U	0.0654	U	0.0865	U	0.056	U	0.24	U	0.087	U
PCB-122	2.87		0.485		1.37		1.31		1.78		1.73	
PCB-123	4.52		0.898		2.23		2.33		3.53		3.13	
PCB-126	2.37		0.505		1.04		0.827		1.67		1.37	
PCB-127	0.327	U	0.135	U	0.248	U	0.209	J	0.229	U	0.349	U
PCB-128/166	45.6	C	8.24	C	26.3	C	20.1	C	34.2	C	30.3	C
PCB-129/138/160/163	301	C	53.8	C	148	C	132	C	223	C	190	C
PCB-130	20.9		3.41		9.21		8.44		14.2		12.6	
PCB-131	2.53	U	0.447		1.01		1.05		1.63		1.46	
PCB-132	74.7		10.5		32.3		31.3		49.8		43.4	
PCB-133	5.57		0.976		2.14		2.01		4.07	U	3.2	
PCB-134/143	11.3	C	1.61	C	4.55	C	4.62	C	7.64	C	6.73	C
PCB-135/151/154	82.8	C	13.3	C	31.9	C	33.3	C	53.4	C	46.4	C
PCB-136	26.5		3.34		8.68		9.32		17		13.9	
PCB-137	9.76		1.73		5.45		4.01		7.57		6.65	
PCB-139/140	4.57	C	0.75	C	1.76	C	1.87	C	3.02	C	2.71	C
PCB-141	26.8		4.03		13.3		12		20.2		16.5	
PCB-142	0.346	U	0.0795	U	0.148	U	0.241	U	0.283	U	0.136	U
PCB-144	8.92		1.43	U	3.84		3.98		6.62		5.38	
PCB-145	0.174	U	0.0579	U	0.0583	U	0.047	U	0.274	U	0.0549	U
PCB-146	47.9	J	9.35		20		20.6		33.7	J	30.6	J
PCB-147/149	188	C	28.6	C	77.3	C	76.8	C	131	C	113	C
PCB-148	0.69		0.177	J	0.712		0.546		0.515	U	0.708	
PCB-150	0.716		0.092	U	0.196	J	0.214	J	0.485	U	0.408	U
PCB-152	0.209	J	0.0542	U	0.078	U	0.091	J	0.254	U	0.124	J
PCB-153/168	272	C	47.4	C	117	C	116	C	196	C	166	C
PCB-155	0.112	U	0.075	U	0.057	J	0.049	J	0.165	U	0.053	J
PCB-156/157	27.2	C	4.59	C	21.4	CJ	12.7	CJ	20.3	C	17.1	C
PCB-158	20.8		3.78		11.4		9.58		15.2		13.4	
PCB-159	2.53		0.324	J	1.06		1.16		1.76		1.54	
PCB-161	0.239	U	0.0546	U	0.102	U	0.166	U	0.195	U	0.0905	U
PCB-162	1.49		0.251	U	0.682		0.579		1.07		0.964	

Location ID	DIS-07-S	Q	DIS-08-S	Q	DIS-09-S	Q	DIS-09-D	Q	DIS-10-S	Q	DIS-11-S	Q
Date/Time	5/8/2013 11:47		5/7/2013 14:29		5/7/2013 16:40		5/7/2013 16:40		5/8/2013 11:27		5/7/2013 14:07	
PCB-164	15.9		2.44		7.84		7.25		10.4		9.09	
PCB-165	0.718		0.111	J	0.169	J	0.198	U	0.447	U	0.35	J
PCB-167	10.8		1.95		6.42		4.82		7.47		6.95	
PCB-169	0.33	U	0.1	U	0.23	U	0.23	U	0.367	U	0.38	U
PCB-170	55.9		9.2		30.1		24		40.1		34.4	
PCB-171/173	19.6	C	3.2	C	9.05	C	8.73	C	13.5	C	12.8	C
PCB-172	9.88		1.74		4.37		4.03		7.32		6.19	
PCB-174	49.7		7.77		23		22.7		35.9		33.6	
PCB-175	3.36		0.596		1.34		1.25		2.11		2.24	
PCB-176	8.02		1.08		3.17		3.28		5.3		5.02	
PCB-177	47.2		7.61		20.3		20.8		35		32.1	
PCB-178	20.1		3.62		7.8		8.34		14.8		13	
PCB-179	29.8		4.1		11		12.1		20.2		18.5	
PCB-180/193	111	C	18.2	C	48.7	C	45	C	81.5	C	65.7	C
PCB-181	0.451		0.0697	U	0.193	U	0.184	J	0.368	U	0.395	
PCB-182	0.708		0.14	J	0.244	J	0.248	J	0.494	U	0.433	
PCB-183/185	41.5	C	7.56	C	18.6	C	18.7	C	31.5	C	28.4	C
PCB-184	0.165	U	0.0514	U	0.099	J	0.09	U	0.272	U	0.09	J
PCB-186	0.172	U	0.056	U	0.0899	U	0.0981	U	0.296	U	0.0619	U
PCB-187	109	J	19.1		44.4		46.1		80.2		71.7	J
PCB-188	0.338	J	0.084	J	0.086	U	0.083	J	0.341	J	0.213	U
PCB-189	2.56		0.524		1.82		1.12		1.97		1.74	
PCB-190	9.09		1.73		5.79		4.81		7.13		6.16	
PCB-191	1.97		0.325	U	0.99		0.886		1.57		1.18	
PCB-192	0.184	U	0.0599	U	0.0961	U	0.105	U	0.316	U	0.0653	U
PCB-194	29		5.27		12		11.9		20.3		17.2	
PCB-195	12		2.02		5.7		5.89		9.13		7.89	
PCB-196	16.7		3.12		6.84		6.98		11.9		10.2	
PCB-197/199	4.87	CJ	0.914	C	2.14	C	2.31	CJ	3.94	CJ	3.48	CJ
PCB-198/201	51.7	C	8.78	C	21.2	C	22	C	37.5	C	33.7	C
PCB-200	7.01		1.1		2.61		2.62		5		4.29	
PCB-202	13.1		2.4		5.17		5.34		9.81		8.73	
PCB-203	21.4		3.75		10.1		10.4		16.5		14.5	
PCB-204	0.174	U	0.049	U	0.0605	U	0.0672	U	0.295	U	0.0481	U
PCB-205	1.5		0.304	J	0.772		0.865		1.11		1.11	
PCB-206	28.2		5.59		11.8		11.8		21.8		18.8	
PCB-207	4.33		0.855		1.56		1.7		3.35		2.85	
PCB-208	11.8		2.17		4.45		4.57		9.05		7.66	
PCB-209	28.3		5.87		12		11.4		23.2		20.9	
Total PCBs*	5420		897		2450		2470		3960		3780	
PCB TEQ (0 DL)	0.252		0.0533		0.112		0.09		0.178		0.147	
PCB TEQ (1/2 DL)	0.257		0.0548		0.115		0.0935		0.184		0.153	
PCB TEQ (1 DL)	0.263		0.0564		0.119		0.097		0.19		0.159	
PCB TEQ (KM)	0.254		0.0536		0.102	Avg	--		0.18		0.149	

*total PCBs represents the sum of all detected congeners
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limi
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sampl
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detect
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates
C-see list for co-eluting congeners

Table E-3. Summary of PCB Congener Data (continued).

Location ID	DIS-12-S	Q	DUN-01-S	Q	DUN-02-S	Q	DUN-03-S	Q	DUN-04-S	Q	DUN-05-S	Q
Date/Time	5/8/2013	14:35	5/6/2013	16:13	5/6/2013	15:09	5/6/2013	10:09	5/6/2013	14:46	5/6/2013	13:46
PCB Congeners (ng/kg DW)												
PCB-001	2.15	J	4.61		0.731	U	0.833	U	4.18		3.02	J
PCB-002	8.35		18		7.28		6.8		12.1		15.1	
PCB-003	2.88	J	4.17		0.93	U	1.7	U	3.26		3.86	U
PCB-004	2.54		6.21		0.499		0.883		4.84		3.5	
PCB-005	0.15	U	0.224	J	0.201	U	3.36		0.178	J	0.147	U
PCB-006	1		3.47		0.272	J	0.447		2.43		1.97	
PCB-007	0.318	U	0.921		0.19	U	0.378	U	0.637		0.529	
PCB-008	6.17		22		1.48	J	0.0924	U	16.4		11.5	J
PCB-009	0.325	U	0.883		0.415	U	0.36	U	0.948		0.74	
PCB-010	0.14	U	0.183	J	0.192	U	0.101	U	0.189	J	0.141	U
PCB-011	9.82		36.5		6.07		7.67		22.4		29	
PCB-012/013	2.73	CU	4.4	C	1.64	CUJ	8.23	CU	3.04	C	3.14	CUJ
PCB-014	0.3	U	0.466	U	0.298	U	0.0994	U	0.265	J	0.282	U
PCB-015	8.74		33.5		2.89		3.65		22.2		15	
PCB-016	2.27		7.69		0.649		0.752		5.9		4.3	
PCB-017	3.36		9.56		0.633		1.14		7.28		4.56	J
PCB-018/030	5.76	C	16.5	C	0.931	CJ	1.92	C	12.3	C	7.28	CJ
PCB-019	0.738		1.5		0.13	U	0.276	J	1.31		0.781	
PCB-020/028	24.1	C	73.2	C	6.75	C	9.69	C	50.9	C	33.8	C
PCB-021/033	6.11	C	23.9	C	1.69	C	2.56	C	16.8	C	12.1	C
PCB-022	5.75		18.9		1.62		2.16		13.6		9.1	
PCB-023	0.0487	U	0.0836	U	0.0786	U	0.0482	U	0.101	U	0.0617	U
PCB-024	0.073	U	0.24	J	0.0571	UJ	0.0482	UJ	0.15	J	0.108	J
PCB-025	1.48		5.18		0.39		0.575		3.25		2.36	
PCB-026/029	2.8	C	9.03	C	0.754	C	1.2	C	6.4	C	4.68	C
PCB-027	0.534		1.58		0.105	J	0.05	J	1.36		0.592	J
PCB-031	14.6		46.4		4.08		5.65		31.8		23.1	
PCB-032	3.15		7.97		0.496		1.29		6.37		3.35	
PCB-034	0.115	U	0.227	J	0.0742	U	0.0482	U	0.196	J	0.127	J
PCB-035	0.981		3.18		0.366	J	0.476		2.28		1.4	
PCB-036	0.566		1.67		0.221	J	0.25	J	1.06		1.05	
PCB-037	8.68		30.4		2.81		3.55		21.3		13	
PCB-038	0.144	J	0.354	J	0.128	J	0.305	J	0.297	J	0.214	J
PCB-039	0.196	J	0.625		0.0691	U	0.089	U	0.418		0.289	J
PCB-040/041/071	7.58	C	26.5	C	1.68	C	2.75	C	21.2	C	12.7	C
PCB-042	4.45		13.3		1		1.67		10.4		6.21	
PCB-043	0.465		1.34		0.149	U	0.169	U	1.1		0.711	
PCB-044/047/065	16.1	C	47.3	C	3.71	C	5.33	C	37.4	C	24.3	C
PCB-045/051	1.88	C	4.78	C	0.363	CJ	0.604	C	4.21	C	2.38	C
PCB-046	0.547	U	1.74		0.15	U	0.219	J	1.5		0.84	
PCB-048	2.39		7.9		0.575		0.911		6.26		3.98	
PCB-049/069	11.4	C	31.7	C	2.45	C	4.07	C	25.1	C	15.8	C
PCB-050/053	1.64	C	4.24	C	0.287	CJ	0.568	C	3.4	C	2.16	C
PCB-052	17.9		49.4		4.06		5.83		38.9		27.1	
PCB-054	0.0474	U	0.091	J	0.0742	U	0.0482	U	0.083	U	0.0502	U
PCB-055	0.365	J	1.23		0.128	U	0.132	U	0.757		0.524	
PCB-056	9.6		36.4		2.43		3.95		23.7		16	
PCB-057	0.156	J	0.346	J	0.12	U	0.0884	U	0.284	J	0.175	J
PCB-058	0.103	U	0.327	J	0.123	U	0.0893	U	0.223	J	0.121	J
PCB-059/062/075	1.5	C	4.29	C	0.29	CJ	0.483	C	3.38	C	2.11	C
PCB-060	6.11		21.3		1.68		2.45		14.2		9.42	
PCB-061/070/074/076	39.3	C	132	C	10.1	C	15.4	C	90.8	C	62.3	C
PCB-063	1.03		3.1		0.246	J	0.401		2.09		1.4	
PCB-064	6.74		19.9		1.53		2.31		15.3		10.1	
PCB-066	22		78.3		5.4		8.46		51.8		34.9	
PCB-067	0.779		2.47		0.198	J	0.32	J	1.77		1.05	
PCB-068	0.278	J	0.767		0.116	U	0.123	J	0.56		0.38	J
PCB-072	0.35	U	0.91		0.109	U	0.145	J	0.747		0.417	
PCB-073	0.048	U	0.0735	U	0.096	U	0.0522	U	0.0824	U	0.0618	U

Location ID	DIS-12-S	Q	DUN-01-S	Q	DUN-02-S	Q	DUN-03-S	Q	DUN-04-S	Q	DUN-05-S	Q
Date/Time	5/8/2013 14:35		5/6/2013 16:13		5/6/2013 15:09		5/6/2013 10:09		5/6/2013 14:46		5/6/2013 13:46	
PCB-077	4.55		14.5		1.29		1.71		10.6		6.23	
PCB-078	0.0784	U	0.137	U	0.117	U	0.0865	U	0.135	U	0.1	U
PCB-079	0.378	J	1.3		0.101	U	0.325	U	1.01		0.656	
PCB-080	0.073	U	0.131	U	0.111	U	0.0789	U	0.129	U	0.0956	U
PCB-081	0.171	U	0.564		0.118	U	0.079	J	0.426		0.247	J
PCB-082	2.93	J	10.3		0.409	UJ	0.811	J	8.15		3.28	J
PCB-083/099	20.8	C	58	C	3.71	C	6.48	C	45	C	26.6	C
PCB-084	5.06		14.7		0.89		1.5		12.1		6.95	
PCB-085/116/117	6.61	C	19.6	C	1.27	C	2.05	C	14.3	C	8.98	C
PCB-087/097/108/119/125	18.4	C	55.3	C	3.62	C	6.21	C	41.3	C	26	C
PCB-088/091	3.35	C	9.27	C	0.616	C	1.02	C	7.69	C	4.41	C
PCB-089	0.268	U	0.925	U	0.0952	U	0.081	U	0.725		0.389	J
PCB-090/101/113	28.6	C	80.9	C	5.31	C	9.13	C	61.1	C	38.1	C
PCB-092	5.06		14.3		0.976		1.66		11		6.67	
PCB-093/095/098/100/102	17.7	C	47.8	C	3.12	C	5.56	C	39.6	C	23.6	C
PCB-094	0.187	U	0.501		0.0992	U	0.0573	U	0.322	J	0.162	J
PCB-096	0.134	U	0.367	U	0.0776	U	0.053	J	0.369	J	0.162	U
PCB-103	0.331	J	0.84		0.0798	U	0.103	U	0.927		0.381	J
PCB-104	0.0474	U	0.0705	U	0.0727	U	0.0482	U	0.0735	U	0.0541	U
PCB-105	15.4		49.7		3.31		5.33		34.4		23.1	
PCB-106	0.0516	U	0.139	U	0.0901	U	0.0596	U	0.121	U	0.08	U
PCB-107/124	1.16	C	3.56	C	0.275	CJ	0.428	C	2.52	C	1.62	C
PCB-109	2.97		8.54		0.656		1.24	U	6.24		3.87	
PCB-110/115	27.8	C	90.4	C	5.57	C	9.31	C	68.4	C	42.9	C
PCB-111	0.069	U	0.19	U	0.0672	U	0.0482	U	0.156	U	0.085	J
PCB-112	0.0474	U	0.0793	U	0.0679	U	0.0482	U	0.121	U	0.0581	U
PCB-114	0.643		2.14		0.161	J	0.216	U	1.61		0.957	
PCB-118	32.9		104		7.56		11.4		73.6		48.9	
PCB-120	0.282	U	0.706		0.066	J	0.076	U	0.556		0.315	U
PCB-121	0.0474	U	0.081	U	0.0685	U	0.0482	U	0.122	U	0.0586	U
PCB-122	0.351	J	1.05		0.102	U	0.103	J	0.918	U	0.441	
PCB-123	0.72		2.35		0.151	U	0.2	J	1.57		0.754	
PCB-126	0.312	J	0.961		0.129	U	0.103	J	0.649		0.399	J
PCB-127	0.0505	U	0.143	U	0.0925	U	0.0589	U	0.172	J	0.0821	U
PCB-128/166	6.44	C	19.9	C	1.24	C	2.31	C	14.3	C	8.68	C
PCB-129/138/160/163	42.3	C	123	C	8.04	C	19.5	C	93	C	56.1	C
PCB-130	2.82		8.14		0.499	U	0.927		6.36		3.58	
PCB-131	0.316	U	0.912		0.137	U	0.129	J	0.826		0.435	
PCB-132	9.04		27.4		1.39		2.68		22.2		12.2	
PCB-133	0.784		2.12		0.156	J	0.272	U	1.75		0.856	
PCB-134/143	1.47	C	4.16	C	0.156	CJ	1.17	C	3.36	C	1.73	C
PCB-135/151/154	10.7	C	28.5	C	1.78	C	2.99	C	27.1	C	14	C
PCB-136	2.89		8.26		0.432		0.758		7.4		3.47	
PCB-137	1.4		3.8		0.245	U	0.425		2.61		1.87	
PCB-139/140	0.593	C	1.85	C	0.126	CU	0.201	CU	1.6	C	0.776	C
PCB-141	3.69		11.4		0.525		1.13		9.15		5.46	
PCB-142	0.117	U	0.177	U	0.14	U	0.0702	U	0.203	U	0.101	U
PCB-144	1.18		3.6		0.183	U	0.38	U	2.95		1.66	
PCB-145	0.0476	U	0.088	U	0.0944	U	0.0531	U	0.11	U	0.068	U
PCB-146	8.07		17.9	J	1.26		2.65		15.6		8.31	J
PCB-147/149	24.5	C	69.7	C	3.8	C	7.98	C	60.5	C	31.3	C
PCB-148	0.084	UJ	0.522		0.121	U	0.0668	U	0.518		0.161	UJ
PCB-150	0.079	U	0.211	U	0.089	U	0.0523	U	0.245	J	0.085	J
PCB-152	0.0474	U	0.08	U	0.0855	U	0.0482	U	0.1	U	0.0616	U
PCB-153/168	36.4	C	105	C	7.09	C	12.6	C	82.3	C	48.9	C
PCB-155	0.0474	U	0.069	U	0.0733	U	0.0482	U	0.0837	U	0.0502	U
PCB-156/157	3.66	C	12.1	C	0.667	CJ	1.23	C	8.8	C	5.43	C
PCB-158	2.92		8.93		0.547		0.961		7.04		4.08	
PCB-159	0.354	U	1.08		0.093	U	0.096	J	0.861		0.439	
PCB-161	0.0776	U	0.119	U	0.0944	U	0.0482	U	0.137	U	0.0679	U
PCB-162	0.223	U	0.615		0.0961	U	0.056	J	0.34	J	0.221	J

Location ID	DIS-12-S	Q	DUN-01-S	Q	DUN-02-S	Q	DUN-03-S	Q	DUN-04-S	Q	DUN-05-S	Q
Date/Time	5/8/2013 14:35		5/6/2013 16:13		5/6/2013 15:09		5/6/2013 10:09		5/6/2013 14:46		5/6/2013 13:46	
PCB-164	1.78		6.67		0.308	J	0.642		5.18		2.95	
PCB-165	0.124	J	0.262	J	0.107	U	0.0556	U	0.254	J	0.0773	U
PCB-167	1.6		4.93		0.286	J	0.544		3.39		2.17	
PCB-169	0.11	U	0.118	U	0.0955	U	0.0505	U	0.149	U	0.083	U
PCB-170	7.37		25.1		1.04	J	2.54		19.8		10.9	
PCB-171/173	2.51	C	9.29	C	0.485	C	0.835	C	7.42	C	3.96	C
PCB-172	1.49		4.71		0.214	J	0.436		3.73		2.08	
PCB-174	6.61		24.3		0.866		2.05		19.1		10.6	
PCB-175	0.456		1.54		0.111	U	0.171	U	1.36		0.644	
PCB-176	1.04		3.24		0.157	J	0.34	U	2.96		1.41	
PCB-177	6.66		21.3		0.992	U	2.17		16.7		9.3	
PCB-178	2.79		8.23		0.42	U	0.781		6.87		3.58	
PCB-179	3.7		11.1		0.542		1.04		10		4.86	
PCB-180/193	15.5	C	48.5	C	2.18	CJ	5.18	C	39.1	C	22.4	C
PCB-181	0.073	U	0.253	J	0.115	U	0.0761	U	0.136	U	0.0719	U
PCB-182	0.084	J	0.303	J	0.111	U	0.0711	U	0.232	J	0.091	J
PCB-183/185	5.89	C	18.9	C	0.94	C	0.0715	CU	15.1	C	8.39	C
PCB-184	0.0474	U	0.0864	U	0.0823	U	0.052	U	0.0976	U	0.061	J
PCB-186	0.0474	U	0.0932	U	0.0887	U	0.0562	U	0.105	U	0.0555	U
PCB-187	16.2		46.4		2.55		4.68		37.1		20.9	
PCB-188	0.054	U	0.155	J	0.075	U	0.0531	U	0.116	J	0.087	J
PCB-189	0.504	U	1.22		0.124	U	0.177	U	0.913		0.513	U
PCB-190	1.39		4.62		0.259	U	0.502		3.63		2.29	
PCB-191	0.271	J	0.921		0.088	U	0.119	U	0.693		0.407	
PCB-192	0.0474	U	0.103	U	0.0977	U	0.0641	U	0.116	U	0.0612	U
PCB-194	4.43		13.2		0.538		1.59		11		5.65	
PCB-195	1.6		5.78		0.261	J	0.637		4.67		2.54	
PCB-196	2.27		7.95		0.292	J	0.72		6.52		3.24	
PCB-197/199	0.88	C	2.06	CJ	0.125	CJ	0.0608	CU	1.88	CJ	0.807	CJ
PCB-198/201	7.76	C	22.1	C	0.968	C	1.83	C	17.1	C	9.2	C
PCB-200	1.05		2.83		0.115	U	0.265	J	2.49		1.2	
PCB-202	2.05		5.21		0.292	J	0.584	U	4.32		2.33	
PCB-203	3.21		9.84		0.378		0.822		7.49		4.47	
PCB-204	0.0474	U	0.0905	U	0.0974	U	0.061	U	0.109	U	0.0559	U
PCB-205	0.28	U	0.651		0.105	U	0.089	J	0.623		0.344	J
PCB-206	4.5		11.7		0.608		1.22		8.93		5.02	
PCB-207	0.691		1.75		0.117	U	0.201	J	1.28		0.743	
PCB-208	1.86		4.51		0.23	J	0.439		3.42		1.78	
PCB-209	4.64		11.2		0.592		1.24		9.39		4.67	
Total PCBs*	740		2270		155		262		1720		1070	
PCB TEQ (0 DL)	0.0333		0.103		0.000489		0.0111		0.0698		0.043	
PCB TEQ (1/2 DL)	0.035		0.105		0.00839		0.0118		0.0721		0.0443	
PCB TEQ (1 DL)	0.0367		0.107		0.0163		0.0126		0.0743		0.0455	
PCB TEQ (KM)	0.0336		0.104		0.0135	L	0.0112		0.0704		0.0462	Avg

*total PCBs represents the sum of all detected congeners
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limi
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sampl
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detect
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicate
C-see list for co-eluting congeners

Table E-3. Summary of PCB Congener Data (continued).

Location ID	DUN-05-D	Q	DUN-06-S	Q	DUN-07-S	Q	DUN-08-S	Q	DUN-09-S	Q	DUN-10-S	Q
Date/Time	5/6/2013	13:45	5/6/2013	10:50	5/6/2013	11:10	5/6/2013	16:38	5/6/2013	14:25	5/6/2013	12:10
PCB Congeners (ng/kg DW)												
PCB-001	2.93		2.02	J	1.12	U	1.65		1.21	J	0.981	U
PCB-002	14.6		17		2.9	J	7.66		4.1		7.15	
PCB-003	3.2		2.91	J	1.59	J	1.85		1.62	J	1.84	J
PCB-004	3.32		3.26		1.94	U	1.79		0.418	U	0.842	
PCB-005	0.191	U	0.105	U	1.36	U	0.14	U	0.208	U	0.084	U
PCB-006	1.89		2.92		1.22	U	0.884		0.237	J	0.467	U
PCB-007	0.498		0.497		1.26	U	0.266	J	0.197	U	0.311	U
PCB-008	11.6		11.3		1.13	U	5.46		1.29	J	2.77	
PCB-009	0.767		0.627		1.21	U	0.554		0.344	U	0.365	U
PCB-010	0.183	U	0.109	J	1.26	U	0.128	U	0.199	U	0.0794	U
PCB-011	29.1		21.8	J	5.7		11.9		4.43		6.92	
PCB-012/013	2.41	C	0.102	CU	8.72	CU	1.26	C	0.498	C	5.74	CUJ
PCB-014	0.295	U	0.633	UJ	1.22	U	0.165	J	0.188	U	0.325	U
PCB-015	14.9		13.5		2.2	U	7.64		2.71		4.16	
PCB-016	4.17		3.64		1.46	U	1.78		0.532		0.873	
PCB-017	5		4.87	J	0.527		2.59		0.582		1.18	
PCB-018/030	9.05	C	8.23	CJ	1.01	C	3.36	CJ	0.829	CJ	1.79	C
PCB-019	0.78		0.94		0.102	J	0.49		0.117	J	0.275	J
PCB-020/028	35.5	C	38.2	C	4.78	C	18.7	C	5.72	C	9.94	C
PCB-021/033	12.1	C	11.4	C	1.4	C	5.64	C	1.43	C	2.52	C
PCB-022	9.85		9.13		1.16		4.59		1.29		2.25	
PCB-023	0.0645	U	0.0489	U	0.0478	U	0.0791	U	0.0622	U	0.0437	U
PCB-024	0.139	J	0.1	U	0.068	J	0.058	J	0.0514	U	0.051	UJ
PCB-025	2.39		3.27		0.305	J	1.16		0.296	J	0.596	
PCB-026/029	4.82	C	6.19	C	0.633	C	2.16	C	0.606	C	1.19	C
PCB-027	0.863		0.501	J	0.0478	U	0.415		0.106	J	0.088	J
PCB-031	23.4		25.7		3.15		11.2		3.42		6.1	
PCB-032	3.26		4.28		0.446		2.17		0.478		1.14	
PCB-034	0.131	J	0.171	J	0.0478	U	0.0758	U	0.0587	U	0.0437	U
PCB-035	1.55		1.49		0.22	J	0.857		0.271	J	0.439	
PCB-036	1.14		0.899		0.172	J	0.473		0.128	J	0.267	J
PCB-037	13.8		13.5		1.86		7.25		2.46		3.76	
PCB-038	0.228	J	0.283	J	0.06	U	0.092	J	0.078	J	0.201	J
PCB-039	0.278	J	0.348	J	0.0478	U	0.174	J	0.0547	U	0.064	J
PCB-040/041/071	12.9	C	14.2	C	1.56	C	6.08	C	1.66	C	2.86	C
PCB-042	6.17		7		0.782		3.39		0.898		1.58	
PCB-043	0.678		0.873		0.125	U	0.3	U	0.104	U	0.166	U
PCB-044/047/065	23.4	C	24.9	C	3.05	C	11.8	C	3.33	C	5.85	C
PCB-045/051	2.11	C	3.07	C	0.358	CJ	1.29	CU	0.392	C	0.695	C
PCB-046	0.794		1.11		0.152	J	0.387	U	0.127	U	0.193	J
PCB-048	3.66		4.47		0.436		1.88		0.47		0.868	
PCB-049/069	15.1	C	17.5	C	1.96	C	8.37	C	2	C	4.05	C
PCB-050/053	2.07	C	2.63	C	0.276	CJ	1.13	C	0.262	CJ	0.569	C
PCB-052	26.6		26.6		3.16		12.3		3.51		5.97	
PCB-054	0.0549	U	0.05	U	0.0478	U	0.057	U	0.0618	U	0.0437	U
PCB-055	0.491		0.438		0.0822	U	0.254	J	0.0756	U	0.106	U
PCB-056	16.6		16.6		1.96		7.79		2.07		3.97	
PCB-057	0.187	J	0.217	J	0.0796	U	0.093	J	0.0706	U	0.103	U
PCB-058	0.13	U	0.169	J	0.0804	U	0.0895	U	0.0725	U	0.104	U
PCB-059/062/075	2.16	C	2.33	C	0.304	CJ	1.09	C	0.281	CJ	0.533	C
PCB-060	9.77		9.94		1.23		4.9		1.47		2.67	
PCB-061/070/074/076	62	C	63.3	C	8.5	C	30.9	C	8.53	C	16	C
PCB-063	1.42		1.52		0.172	J	0.816		0.215	J	0.399	
PCB-064	9.93		10.8		1.36		5.06		1.38		2.52	
PCB-066	34.7		37.1		4.78		18.3		4.48		8.71	
PCB-067	1.1		1.17		0.157	U	0.596		0.183	J	0.317	U
PCB-068	0.354	J	0.413		0.0752	U	0.225	J	0.079	J	0.097	U
PCB-072	0.421		0.474		0.0737	U	0.253	J	0.066	J	0.116	J
PCB-073	0.0551	U	0.0626	U	0.0701	U	0.0565	U	0.0669	U	0.0616	U

Location ID	DUN-05-D	Q	DUN-06-S	Q	DUN-07-S	Q	DUN-08-S	Q	DUN-09-S	Q	DUN-10-S	Q
Date/Time	5/6/2013 13:45		5/6/2013 10:50		5/6/2013 11:10		5/6/2013 16:38		5/6/2013 14:25		5/6/2013 12:10	
PCB-077	6.52		6.26	J	0.993		3.51		1.02		1.87	
PCB-078	0.123	U	0.137	U	0.0779	U	0.0846	U	0.0686	U	0.101	U
PCB-079	0.677		0.613		0.0663	U	0.328	J	0.096	J	0.329	J
PCB-080	0.118	U	0.125	U	0.0711	U	0.0791	U	0.0655	U	0.0917	U
PCB-081	0.276	J	0.315	J	0.0659	U	0.144	J	0.0763	U	0.103	U
PCB-082	5.04		3.06	J	0.376	UJ	2.39		0.402	J	0.581	J
PCB-083/099	27.9	C	26.6	C	3.6	C	15.1	C	3.39	C	6.48	C
PCB-084	7.36		6.56		0.969		3.35		0.858		1.57	
PCB-085/116/117	9.44	C	8.74	C	1.11	C	4.66	C	1.19	C	2.11	C
PCB-087/097/108/119/125	27.3	C	24.6	C	3.9	C	13.7	C	3.44	C	6.15	C
PCB-088/091	4.46	C	4.61	C	0.592	C	2.22	C	0.498	C	1.05	C
PCB-089	0.423		0.364	U	0.07	J	0.216	J	0.103	U	0.127	J
PCB-090/101/113	39.7	C	38.8	C	5.14	C	20.7	C	4.92	C	9.57	C
PCB-092	7.07		6.69		0.901		3.6		0.863		1.68	U
PCB-093/095/098/100/102	24.3	C	23	C	3.16	C	11.5	C	2.93	C	5.53	C
PCB-094	0.172	J	0.224	U	0.0742	U	0.121	U	0.108	U	0.0961	U
PCB-096	0.177	J	0.194	J	0.0478	U	0.12	U	0.0686	U	0.054	J
PCB-103	0.393	J	0.511		0.064	U	0.254	U	0.0864	U	0.116	J
PCB-104	0.0501	U	0.0489	U	0.0483	U	0.0543	U	0.0624	U	0.0437	U
PCB-105	24		21.6		2.99		11.8		2.78		5.38	
PCB-106	0.102	U	0.0888	U	0.0711	U	0.126	U	0.0718	U	0.0944	U
PCB-107/124	1.74	C	1.65	C	0.244	CJ	0.888	C	0.239	CJ	0.454	C
PCB-109	3.97		4.36		0.605		2.49		0.523		1.11	
PCB-110/115	46	C	39.8	C	5.72	C	21.9	C	4.94	C	9.39	C
PCB-111	0.0776	U	0.0501	U	0.0491	U	0.0804	U	0.0728	U	0.0637	U
PCB-112	0.0784	U	0.0504	U	0.0494	U	0.0816	U	0.0736	U	0.064	U
PCB-114	1.06		0.952		0.131	J	0.489		0.136	U	0.239	U
PCB-118	51		45		6.52		25.2		6.15		11.5	
PCB-120	0.36	J	0.322	J	0.0478	U	0.204	J	0.0665	U	0.0582	U
PCB-121	0.0792	U	0.0514	U	0.0504	U	0.0855	U	0.0742	U	0.0654	U
PCB-122	0.577		0.485		0.086	U	0.285	J	0.0812	U	0.124	U
PCB-123	0.992		0.929		0.115	J	0.56		0.098	J	0.267	U
PCB-126	0.454		0.456		0.0853	U	0.282	J	0.102	U	0.12	U
PCB-127	0.104	U	0.0878	U	0.0702	U	0.125	U	0.0738	U	0.0933	U
PCB-128/166	9.41	C	8.61	C	1.24	C	4.63	C	0.852	C	2.12	C
PCB-129/138/160/163	60.8	C	78.1	C	10.8	C	30.8	C	6.87	C	18.5	C
PCB-130	3.85		3.36		0.532	U	2		0.422		0.807	
PCB-131	0.518		0.472		0.111	J	0.297	J	0.113	U	0.115	J
PCB-132	13.7		12		1.71		5.98		1.34		2.44	
PCB-133	1.07		1.01		0.13	U	0.553	U	0.125	U	0.238	U
PCB-134/143	2.01	C	4.28	C	0.631	CU	0.792	C	0.128	CU	0.939	CU
PCB-135/151/154	16.5	C	13	C	1.58	C	8.13	C	1.45	C	3.14	C
PCB-136	4.3		3.37		0.398	U	2.04		0.408		0.71	
PCB-137	1.99		1.56		0.244	U	1.05		0.229	J	0.447	
PCB-139/140	0.802	C	0.819	C	0.114	CU	0.498	C	0.104	CU	0.212	CJ
PCB-141	6.23		5.22		0.755		2.41		0.524		1.16	
PCB-142	0.168	U	0.112	U	0.0827	U	0.169	U	0.116	U	0.0768	U
PCB-144	1.98		0.0707	U	0.0556	U	0.95		0.129	J	0.0726	U
PCB-145	0.087	U	0.0582	U	0.0478	U	0.0649	U	0.0719	U	0.0597	U
PCB-146	9.55		9.46		1.43		5.48	J	1.15		2.48	
PCB-147/149	35.6	C	32.6	C	4.23	C	17.7	C	3.49	C	7.26	C
PCB-148	0.395	J	0.114	UJ	0.0575	U	0.163	U	0.0924	U	0.075	UJ
PCB-150	0.101	U	0.145	U	0.0478	U	0.069	J	0.0677	U	0.0587	U
PCB-152	0.0788	U	0.066	U	0.0478	U	0.0587	U	0.0651	U	0.0542	U
PCB-153/168	52.9	C	50.1	C	7.06	C	26.6	C	5.85	C	11.8	C
PCB-155	0.0631	U	0.0489	U	0.0478	U	0.0484	U	0.0538	U	0.0493	U
PCB-156/157	5.9	C	5.01	C	0.678	CJ	2.9	C	0.601	CJ	1.12	C
PCB-158	4.56		4.01		0.528		2.19		0.427		0.931	U
PCB-159	0.5		0.42	U	0.065	U	0.299	U	0.0768	U	0.1	J
PCB-161	0.113	U	0.0761	U	0.056	U	0.115	U	0.0779	U	0.052	U
PCB-162	0.195	J	0.221	U	0.0609	U	0.152	J	0.0794	U	0.0565	U

Location ID	DUN-05-D	Q	DUN-06-S	Q	DUN-07-S	Q	DUN-08-S	Q	DUN-09-S	Q	DUN-10-S	Q
Date/Time	5/6/2013 13:45		5/6/2013 10:50		5/6/2013 11:10		5/6/2013 16:38		5/6/2013 14:25		5/6/2013 12:10	
PCB-164	3.24		3		0.425		1.47		0.29	U	0.606	
PCB-165	0.129	U	0.089	U	0.0656	U	0.137	U	0.0886	U	0.0609	U
PCB-167	2.31		2.09		0.297	U	1.23		0.231	J	0.548	
PCB-169	0.141	U	0.0834	U	0.0583	U	0.125	U	0.0805	U	0.0559	U
PCB-170	12		11.7		1.51	U	6.08		0.886		2.55	
PCB-171/173	5.01	C	3.97	C	0.483	C	2.07	C	0.36	CJ	0.84	C
PCB-172	2.58		1.91		0.224	U	1.07		0.179	J	0.464	
PCB-174	13		9.82		1.17		5.19		0.974		1.99	
PCB-175	0.769		0.651		0.068	U	0.341	U	0.0939	U	0.151	J
PCB-176	1.74		1.44		0.186	J	0.713		0.153	J	0.331	J
PCB-177	11.1		9.44		1.05		5.18		0.908		1.99	
PCB-178	4.39		3.85		0.461		2.04	U	0.437		0.838	U
PCB-179	6.14		5.03		0.633		2.76		0.472		1.01	
PCB-180/193	24.9	C	22.9	C	3.12	C	12.1	C	1.97	C	5.03	C
PCB-181	0.126	U	0.075	U	0.0718	U	0.0999	U	0.0974	U	0.0907	U
PCB-182	0.121	U	0.099	J	0.0671	U	0.0933	U	0.0939	U	0.0847	U
PCB-183/185	10.3	C	8.5	C	0.94	CU	4.67	C	0.929	C	1.8	C
PCB-184	0.0902	U	0.0495	U	0.0491	U	0.0712	U	0.0698	U	0.062	U
PCB-186	0.0972	U	0.0534	U	0.053	U	0.0758	U	0.0753	U	0.067	U
PCB-187	25.2		21		2.53		11.5		2.32		4.91	
PCB-188	0.0762	U	0.114	J	0.0494	U	0.0654	U	0.0596	U	0.0584	U
PCB-189	0.602		0.516		0.111	J	0.28	J	0.111	U	0.173	J
PCB-190	2.55		2.15		0.271	J	1.09		0.23	J	0.502	
PCB-191	0.515		0.452	U	0.0547	U	0.234	J	0.0747	U	0.081	J
PCB-192	0.107	U	0.0609	U	0.0605	U	0.0876	U	0.0829	U	0.0764	U
PCB-194	6.15		6.44		0.849		3.24		0.512		1.35	
PCB-195	2.65		2.7		0.386		1.53		0.272	J	0.583	
PCB-196	3.51		3.3		0.336	J	1.85		0.27	J	0.619	U
PCB-197/199	1.14	CJ	0.555	C	0.119	CJ	0.594	CJ	0.142	CJ	0.182	CJ
PCB-198/201	10.4	C	9.42	C	1.14	C	5.22	C	0.839	C	1.84	C
PCB-200	1.35		1.19		0.136	J	0.736		0.125	U	0.222	J
PCB-202	2.49		2.7		0.36	J	1.45		0.235	U	0.617	
PCB-203	5.11		4.12		0.486		2.57		0.398		0.797	
PCB-204	0.093	U	0.0607	U	0.06	U	0.0635	U	0.0752	U	0.0617	U
PCB-205	0.387	J	0.397		0.0849	U	0.161	U	0.0913	U	0.0652	U
PCB-206	6.39		4.96		0.719	U	3.01		0.52		1.02	
PCB-207	0.815		0.73		0.107	U	0.526		0.106	J	0.132	U
PCB-208	2.32		1.84		0.261	J	1.14		0.18	J	0.457	
PCB-209	6.74		4.92		0.952		3.04		0.501	U	1.17	
Total PCBs*	1150		1110		138		560		137		261	
PCB TEQ (0 DL)	0.0487		0.0486		0.000416		0.0299		0.000398		0.000749	
PCB TEQ (1/2 DL)	0.0508		0.0499		0.00557		0.0317		0.00672		0.00761	
PCB TEQ (1 DL)	0.0529		0.0511		0.0107		0.0336		0.013		0.0145	
PCB TEQ (KM)	--		0.0489		0.009	L	0.0301		0.0107	L	0.0129	L

*total PCBs represents the sum of all detected congeners
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limi
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sampl
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detect
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicate
C-see list for co-eluting congeners

Table E-3. Summary of PCB Congener Data (continued).

Location ID	DUN-11-S	Q	DUN-12-S	Q	DUN-13-S	Q	PT-01-S	Q	PT-02-S	Q	PT-03-S	Q
Date/Time	5/6/2013 15:49		5/6/2013 11:30		5/6/2013 13:28		5/10/2013 14:46		5/10/2013 10:35		5/10/2013 13:07	
PCB Congeners (ng/kg DW)												
PCB-001	0.569		2.04		0.807		7.6		9.77		6.3	
PCB-002	4.79		19.4		5.48		20.7		58.7		25.1	
PCB-003	0.717	U	3.15		1.02		7.38		9.28		6.69	
PCB-004	0.531		2.03		0.786		10.7		14.2		8.55	
PCB-005	0.135	U	0.113	U	0.112	U	0.448		0.601		0.324	J
PCB-006	0.296	J	1.33		0.414		5.09		7.08		4.16	
PCB-007	0.128	U	0.751		0.215	J	1.58		2.34		1.66	
PCB-008	1.47		7.88		2.66		30.7		42.3		28.9	
PCB-009	0.364	U	0.589		0.423	U	1.19		1.51		1.11	
PCB-010	0.124	U	0.102	U	0.106	U	0.381		0.658		0.441	
PCB-011	6.11		18.2		7.05		58.5		92.7		57.2	
PCB-012/013	0.934	CU	1.93	C	3.38	CUJ	6.61	C	10.7	CU	6.04	C
PCB-014	0.126	U	0.628	U	0.243	U	0.635		1.19	U	0.699	
PCB-015	2.43		11.4		4.19		38.8		56.7		37.9	
PCB-016	0.559		2.92		1.01		10.5		12.6		7.69	
PCB-017	0.57		4.03		1.21		14.4		19.3		11.2	
PCB-018/030	1.19	C	5.95	C	1.89	C	23.5	C	33.8	C	15.8	C
PCB-019	0.125	J	0.615		0.227	J	2.58		3.09		1.85	
PCB-020/028	5.59	C	28.5	C	10.2	C	91.9	C	139	C	87.9	C
PCB-021/033	1.58	C	8.14	C	2.63	C	30.4	C	42.8	C	27.5	C
PCB-022	1.55		6.94		2.47		22.5		32.8		19.7	
PCB-023	0.0842	U	0.0475	U	0.0468	U	0.181	U	0.135	U	0.152	U
PCB-024	0.0598	U	0.076	J	0.0468	U	0.305	U	0.408		0.221	J
PCB-025	0.326	J	1.7		0.601		6.28		8.85		6.03	
PCB-026/029	0.69	C	3.42	C	1.2	C	11.1	C	16.5	C	9.93	C
PCB-027	0.126	J	0.654		0.15	J	2.5		3.26		2.01	
PCB-031	3.62		17.7		6.09		56.4		81.8		50	
PCB-032	0.476		2.71		0.965		12.6		17.6		11.8	
PCB-034	0.0807	U	0.115	J	0.047	U	0.364	J	0.563		0.304	J
PCB-035	0.288	U	1.21		0.531		4.25		6.22		4.13	
PCB-036	0.215	J	0.848		0.306	J	2.58		3.73		2.47	
PCB-037	2.07		10.1		4		33.5		51.4		32.4	
PCB-038	0.0734	U	0.426		0.171	U	0.44		0.712		0.335	J
PCB-039	0.08	J	0.265	J	0.088	J	0.758		1.08		0.693	
PCB-040/041/071	1.6	C	8.55	C	3.25	C	38.9	C	48.1	C	32.3	C
PCB-042	0.966		4.86		1.63		17.5		20.7		14.8	
PCB-043	0.111	J	0.585		0.172	J	1.92		2.24		1.41	
PCB-044/047/065	3.42	C	18.7	C	6.27	C	65.2	C	83.8	C	56	C
PCB-045/051	0.356	CJ	2.14	C	0.681	C	6.96	C	8.93	C	5.79	C
PCB-046	0.117	J	0.548		0.209	J	2.85		3.34		2.23	
PCB-048	0.081	U	2.72		0.899		10.3		14.1		8.3	
PCB-049/069	2.19	C	11.9	C	4.32	C	42.7	C	57.8	C	37.6	C
PCB-050/053	0.249	CJ	1.56	C	0.54	C	6.95	C	8.82	C	5.86	C
PCB-052	3.46		18.5		6.35		70.4		91.7		57.9	
PCB-054	0.0636	U	0.0475	U	0.0468	U	0.14	U	0.267	U	0.13	J
PCB-055	0.0972	U	0.138	U	0.135	J	1.2		1.77		1.02	
PCB-056	2.28		10.8		4.2		38.4		53.7		35.8	
PCB-057	0.0917	U	0.165	U	0.0707	U	0.363	J	0.663		0.374	J
PCB-058	0.0952	U	0.135	U	0.0713	U	0.329	J	0.586		0.272	J
PCB-059/062/075	0.262	CJ	1.57	C	0.647	C	5.92	C	7.46	C	5.02	C
PCB-060	1.58		6.7		2.62		22		30.1		20.3	
PCB-061/070/074/076	9.16	C	43.2	C	17.1	C	146	C	208	C	137	C
PCB-063	0.246	J	1.08		0.446		3.28		5.1		3.2	
PCB-064	0.058	U	7.53		2.68		26.5		32.5		21.8	
PCB-066	4.96		24.3		9.35		83.5		125		83.1	
PCB-067	0.194	J	0.808		0.342	J	2.65		3.99		2.69	
PCB-068	0.0893	U	0.527		0.127	J	0.83		1.41		0.942	
PCB-072	0.0874	U	0.395		0.154	J	1.17		1.84		1.21	
PCB-073	0.0604	U	0.0482	U	0.0468	U	0.128	U	0.237	U	0.0801	U

Location ID	DUN-11-S	Q	DUN-12-S	Q	DUN-13-S	Q	PT-01-S	Q	PT-02-S	Q	PT-03-S	Q
Date/Time	5/6/2013 15:49		5/6/2013 11:30		5/6/2013 13:28		5/10/2013 14:46		5/10/2013 10:35		5/10/2013 13:07	
PCB-077	0.955		4.72		1.89		15.2		24.9		15.3	
PCB-078	0.09	U	0.131	U	0.0692	U	0.233	U	0.201	J	0.142	U
PCB-079	0.105	J	0.563		0.157	J	1.98		2.25		1.82	
PCB-080	0.0841	U	0.119	U	0.0631	U	0.218	U	0.166	U	0.133	U
PCB-081	0.0884	U	0.277	U	0.078	U	0.572		0.94	U	0.562	
PCB-082	0.437	J	2.07		0.815	J	14.5		18.6		11.8	
PCB-083/099	3.46	C	20.8	C	7.3	C	77.1	C	115	C	76.6	C
PCB-084	0.901		4.96		1.73		24.3		28.1		21.4	
PCB-085/116/117	1.24	C	6.39	C	2.37	C	25.8	C	35.3	C	24.8	C
PCB-087/097/108/119/125	3.42	C	17.6	C	6.83	C	80.8	C	101	C	73.9	C
PCB-088/091	0.54	C	3.28	C	1.07	C	13.8	C	17.8	C	13.6	C
PCB-089	0.0889	U	0.24	U	0.115	U	1.19		1.52		1.18	
PCB-090/101/113	4.78	C	28.7	C	10.7	C	114	C	152	C	105	C
PCB-092	0.878		4.92		1.82		20.8		26.3		18.3	
PCB-093/095/098/100/102	2.85	C	16.8	C	5.93	C	78.1	C	89.5	C	70	C
PCB-094	0.0947	U	0.132	U	0.062	U	0.51		0.677		0.527	
PCB-096	0.0619	U	0.14	J	0.059	U	0.55		0.77		0.572	U
PCB-103	0.0784	U	0.331	U	0.12	J	1.28		1.7		1.34	
PCB-104	0.0597	U	0.0475	U	0.0468	U	0.108	U	0.0775	U	0.0676	U
PCB-105	2.99		15.2		5.77		59.8		90.9		60	
PCB-106	0.0874	U	0.0929	U	0.0634	U	0.24	U	0.252	U	0.125	U
PCB-107/124	0.238	CJ	1.12	C	0.435	CU	4.95	C	6.79	C	4.62	C
PCB-109	0.632	U	3.16		1.23		11.3		17.6		11.5	
PCB-110/115	5.06	C	29.5	C	10.5	C	128	C	163	C	116	C
PCB-111	0.0628	U	0.085	U	0.0468	U	0.141	U	0.252	U	0.213	U
PCB-112	0.0637	U	0.0475	U	0.0468	U	0.14	U	0.0995	U	0.0766	U
PCB-114	0.126	U	0.709		0.275	J	2.62		3.59		2.38	
PCB-118	6.28		32.7		13		132		200		131	
PCB-120	0.064	U	0.27	UJ	0.091	J	0.868	U	1.38		0.863	U
PCB-121	0.0667	U	0.0475	U	0.0468	U	0.146	U	0.108	U	0.0804	U
PCB-122	0.0933	U	0.348	J	0.127	J	1.52		2.27		1.51	
PCB-123	0.118	J	0.74		0.252	U	2.54		3.58		2.28	
PCB-126	0.1	U	0.488		0.18	J	0.803		1.96		1.14	
PCB-127	0.0865	U	0.0919	U	0.0627	U	0.251	U	0.364	U	0.13	U
PCB-128/166	1.12	C	6.35	C	2.23	C	26.7	C	38.2	C	28.7	C
PCB-129/138/160/163	7.07	C	54.9	C	20.7	C	155	C	237	C	170	C
PCB-130	0.46	U	2.6		0.949		10.5		15.2		11.3	
PCB-131	0.0992	U	0.267	J	0.116	J	1.48		1.9		1.54	
PCB-132	1.38		8.11		2.92		38.5		53.6		41.9	
PCB-133	0.151	U	0.748		0.286	J	2.43		3.8		2.72	
PCB-134/143	0.211	CU	3.3	C	1.17	CU	5.94	C	7.65	C	6.31	C
PCB-135/151/154	1.69	C	9.22	C	3.36	C	38.7	C	54.8	C	39.3	C
PCB-136	0.0647	U	2.53		0.952		12.4		14.8		12.4	
PCB-137	0.217	J	1.3	U	0.415		5.07		6.78		4.95	
PCB-139/140	0.0879	CU	0.559	C	0.224	CU	2.31	C	3.29	C	2.67	C
PCB-141	0.567	U	2.84		1.22		15.4		19		13.1	
PCB-142	0.0949	U	0.0631	U	0.0745	U	0.316	U	0.24	U	0.175	U
PCB-144	0.243	J	0.969		0.398		5.01		6.49		4.76	
PCB-145	0.0685	U	0.0475	U	0.0468	U	0.138	U	0.11	U	0.0963	U
PCB-146	1.33		6.5		2.77		22.5		38		23.3	
PCB-147/149	3.69	C	23.4	C	8.53	C	95.4	C	134	C	102	C
PCB-148	0.0847	U	0.052	UJ	0.0517	UJ	0.537	U	1.27		0.388	
PCB-150	0.0654	U	0.072	U	0.0468	U	0.304	J	0.402	U	0.31	U
PCB-152	0.0619	U	0.048	U	0.0468	U	0.126	J	0.143	J	0.11	U
PCB-153/168	5.89	C	36.5	C	13.5	C	126	C	204	C	140	C
PCB-155	0.055	U	0.052	U	0.0468	U	0.104	U	0.0814	U	0.0656	U
PCB-156/157	0.654	CJ	3.72	C	1.39	C	14.4	C	20.7	C	14	C
PCB-158	0.483		2.6		1.11		12		17		12.3	
PCB-159	0.0663	U	0.326	J	0.116	U	1.16		1.69		1.33	
PCB-161	0.0644	U	0.0475	U	0.0504	U	0.212	U	0.16	U	0.119	U
PCB-162	0.0671	U	0.207	J	0.06	U	0.573	U	1.11		0.605	U

Location ID	DUN-11-S	Q	DUN-12-S	Q	DUN-13-S	Q	PT-01-S	Q	PT-02-S	Q	PT-03-S	Q
Date/Time	5/6/2013	15:49	5/6/2013	11:30	5/6/2013	13:28	5/10/2013	14:46	5/10/2013	10:35	5/10/2013	13:07
PCB-164	0.283	J	1.88		0.673		8.22		11.5		8.7	
PCB-165	0.0771	U	0.069	U	0.0591	U	0.29	J	0.401		0.276	J
PCB-167	0.295	J	1.46		0.533		5.75		8.72		5.85	
PCB-169	0.0666	U	0.126	U	0.0559	U	0.217	U	0.47	U	0.195	U
PCB-170	1.1		7.51		2.85	U	26.8		40.1		24.5	
PCB-171/173	0.396	CU	2.32	C	0.944	C	9.8	C	14.5	C	10	C
PCB-172	0.21	U	1.38		0.443		4.64		7.05		3.97	
PCB-174	0.906		6.2		2.09		25		34.5		24.5	
PCB-175	0.109	U	0.417		0.172	U	1.59		2.29		1.68	
PCB-176	0.152	U	0.874		0.324	J	3.63		5.14		3.82	
PCB-177	0.986		5.98		2.03		21.4		34.6		23	
PCB-178	0.481	U	2.57		0.899		8.91		14.2		10.2	
PCB-179	0.584		3.1		1.15		13.2		19.1		13.8	
PCB-180/193	2.17	C	15.1	C	5.84	C	54.2	C	80.2	C	48.7	C
PCB-181	0.084	U	0.0675	U	0.0684	U	0.28	J	0.323	J	0.231	J
PCB-182	0.0784	U	0.14	J	0.0639	U	0.173	U	0.41	U	0.343	J
PCB-183/185	0.938	C	0.0635	CU	2	C	20.5	C	31.9	C	21.4	C
PCB-184	0.0598	U	0.0475	U	0.0468	U	0.133	U	0.183	J	0.102	U
PCB-186	0.0637	U	0.0499	U	0.0505	U	0.143	U	0.137	U	0.103	U
PCB-187	2.37		14.3		4.92		50.3		78.5		54	
PCB-188	0.0597	U	0.074	J	0.05	U	0.126	U	0.322	J	0.194	J
PCB-189	0.1	U	0.45	U	0.152	J	1.28		1.86		1.06	
PCB-190	0.228	J	1.4		0.509		5.01		7.24		4.43	
PCB-191	0.0662	U	0.252	J	0.073	U	1.02		1.45		0.871	
PCB-192	0.0737	U	0.0569	U	0.0576	U	0.157	U	0.148	U	0.114	U
PCB-194	0.593		4.17		1.75		14		24		13	
PCB-195	0.303	U	1.67		0.752	U	5.63		9.74		5.55	
PCB-196	0.277	U	2.28		0.578		7.91		12.7		7.8	
PCB-197/199	0.129	CU	0.501	CUJ	0.18	CU	2.47	CJ	4.03	C	2.39	CJ
PCB-198/201	0.966	C	6.3	C	1.76	C	22.2	C	37.3	C	24.2	C
PCB-200	0.126	J	0.863		0.24	U	2.86		5.17		3.56	
PCB-202	0.296	U	1.78		0.828		5.92		10.4		6.98	
PCB-203	0.402		2.92		0.704		10.6		17.8		10.8	
PCB-204	0.0598	U	0.0514	U	0.0618	U	0.127	U	0.086	U	0.0999	U
PCB-205	0.0838	U	0.269	J	0.082	U	0.793		1.34		0.8	
PCB-206	0.623		3.86		1.21		18.9		24.2		16.6	
PCB-207	0.108	U	0.578		0.198	U	2.36		3.4		2.53	
PCB-208	0.213	J	1.44		0.475		7.31		9.7		6.79	
PCB-209	0.582		3.73		1.52	U	23.3		26.4		20.5	
Total PCBs*	137		787		281		2900		4150		2790	
PCB TEQ (0 DL)	0.000406		0.0509		0.0188		0.0885		0.208		0.122	
PCB TEQ (1/2 DL)	0.00642		0.0528		0.0197		0.0918		0.216		0.125	
PCB TEQ (1 DL)	0.0124		0.0548		0.0205		0.0951		0.223		0.128	
PCB TEQ (KM)	0.0105	L	0.0512		0.0189		0.0895		0.21		0.123	

*total PCBs represents the sum of all detected congeners
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limi
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sampl
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detect
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates
C-see list for co-eluting congeners

Table E-3. Summary of PCB Congener Data (continued).

Location ID	PT-04-S	Q	PT-05-S	Q	PT-06-S	Q	PT-07-S	Q	PT-08-S	Q	PT-09-S	Q
Date/Time	5/10/2013 10:08		5/10/2013 11:15		5/10/2013 9:09		5/10/2013 11:58		5/10/2013 14:11		5/10/2013 9:48	
PCB Congeners (ng/kg DW)												
PCB-001	5.56		6.96		3.73		0.516		9.19		1.14	
PCB-002	20.5		26.8		15		2.53		33.3		4.13	
PCB-003	4.85		6.7		3.28		0.757		9.77		1.11	
PCB-004	8.15		10.3		5.31		0.427		13		1.14	
PCB-005	0.309	J	0.438		0.211	J	0.152	U	0.647		0.203	U
PCB-006	3.93		5.11		2.67		0.301	J	6.24		0.628	
PCB-007	1.32		1.84		0.885		0.144	U	2.2		0.244	J
PCB-008	26		36.9		17.8		1.75		40		4.13	
PCB-009	1.06		1.32		0.813		0.281	J	1.81		0.324	J
PCB-010	0.313	J	0.427		0.174	J	0.146	U	0.573		0.187	U
PCB-011	44.9		72.1		32.7		5.34		85.8		7.33	
PCB-012/013	4.78	C	7.36	C	3.7	C	0.5	C	8.65	C	0.755	C
PCB-014	0.552		0.946	U	0.383	J	0.135	U	0.939		0.182	U
PCB-015	30.4		44.1		21.4		3.55		50.1		5.1	
PCB-016	8.27		11.3		6.03		0.693		13.5		1.16	
PCB-017	11.5		15.7		8.48		0.84		17		1.87	
PCB-018/030	18.4	C	22.2	C	11.3	C	1.48	C	27.7	C	2.82	C
PCB-019	2.26		2.43		1.44		0.192	J	3.85		0.312	J
PCB-020/028	78.6	C	113	C	53.8	C	9.32	C	122	C	13.3	C
PCB-021/033	27	C	36.8	C	17.9	C	1.98	C	42.5	C	3.69	C
PCB-022	19.7		26.7		13.9		1.73		31.3		2.82	
PCB-023	0.101	U	0.195	U	0.0862	U	0.0896	U	0.104	U	0.125	U
PCB-024	0.233	U	0.319	U	0.188	J	0.081	U	0.459		0.11	U
PCB-025	5.47		7.65		3.59		0.442		8.35		0.681	
PCB-026/029	10	C	13.6	C	6.53	C	0.833	C	15.6	C	1.33	C
PCB-027	2.01		2.74		1.33		0.148	U	3.14		0.214	J
PCB-031	50		68.7		33.3		4.62		78.1		7.2	
PCB-032	10.5		14.3		6.84		0.773		16.8		1.74	
PCB-034	0.355	J	0.362	J	0.252	J	0.0849	U	0.406		0.121	U
PCB-035	3.47		4.88		2.52		0.369	J	5.67		0.499	
PCB-036	2.17		3.16		1.41		0.198	J	3.61		0.302	J
PCB-037	29		41.4		21.2		3.09		44.9		4.86	
PCB-038	0.423		0.518		0.325	J	0.0775	U	0.547		0.117	U
PCB-039	0.659		0.945		0.47		0.0782	U	0.863		0.114	U
PCB-040/041/071	32.2	C	43.1	C	22.2	C	2.55	C	46.9	C	5.32	C
PCB-042	15.5		20.7		11.1		1.37		21.7		2.3	
PCB-043	1.65		2.17		1.32		0.152	U	2.22		0.223	U
PCB-044/047/065	58.8	C	76.9	C	38.7	C	4.92	C	91.4	C	8.38	C
PCB-045/051	5.99	C	7.82	C	4.2	C	0.46	C	8.48	C	0.866	C
PCB-046	2.23		3.09		1.59		0.15	U	3.24		0.38	J
PCB-048	9.85		12.3		6.85		0.685		13		1.4	
PCB-049/069	40.1	C	53.8	C	27.1	C	3.4	C	57.4	C	6.03	C
PCB-050/053	6.19	C	7.87	C	4.07	C	0.393	C	8.69	C	0.906	C
PCB-052	68.3		81		41.3		5.44		120		8.76	
PCB-054	0.137	J	0.161	J	0.111	J	0.0874	U	0.133	J	0.108	U
PCB-055	1.08		1.45		0.861		0.134	U	1.52		0.223	U
PCB-056	35.9		46.4		24.6		3.17		55.1		5.75	
PCB-057	0.363	J	0.436		0.265	J	0.124	U	0.615		0.213	U
PCB-058	0.259	J	0.398		0.244	J	0.128	U	0.546		0.218	U
PCB-059/062/075	5.14	C	7.03	C	3.67	C	0.536	C	7.55	C	0.835	C
PCB-060	20.6		27.3		14.7		1.91		31.5		3.38	
PCB-061/070/074/076	139	C	183	C	93.9	C	13	C	231	C	21.8	C
PCB-063	3.36		4.23		2.24		0.299	J	4.71		0.476	
PCB-064	23.4		30.4		16.2		2.1		36		3.5	
PCB-066	81.4		109		57.6		6.84		122		13	
PCB-067	2.51		3.43		1.76		0.225	J	3.91		0.31	J
PCB-068	0.894		1.06		0.694		0.121	U	1.11		0.203	U
PCB-072	1.16		1.52		0.894		0.12	U	1.53		0.203	U
PCB-073	0.0748	U	0.125	U	0.0707	U	0.0951	U	0.0676	U	0.13	U

Location ID	PT-04-S	Q	PT-05-S	Q	PT-06-S	Q	PT-07-S	Q	PT-08-S	Q	PT-09-S	Q
Date/Time	5/10/2013 10:08		5/10/2013 11:15		5/10/2013 9:09		5/10/2013 11:58		5/10/2013 14:11		5/10/2013 9:48	
PCB-077	14.3		19.6		10.9		1.65		20.5		2.7	
PCB-078	0.165	U	0.247	U	0.12	U	0.124	U	0.116	U	0.215	U
PCB-079	1.9		2.29		1.01		0.169	J	3		0.266	U
PCB-080	0.155	U	0.232	U	0.112	U	0.116	U	0.109	U	0.207	U
PCB-081	0.47		0.773		0.412		0.118	U	0.699		0.212	U
PCB-082	15		11.4		7.72		0.74	U	24.1		1.71	
PCB-083/099	88.6	C	102	C	50.5	C	6.49	C	133	C	12.3	C
PCB-084	29		25.2		13		1.81		49.5		3.34	
PCB-085/116/117	27.1	C	30.2	C	15.8	C	2.07	C	42	C	4.09	C
PCB-087/097/108/119/125	92.2	C	90.6	C	46.7	C	6.05	C	153	C	11.2	C
PCB-088/091	16.1	C	16.8	C	8.07	C	1.18	C	26.1	C	2.03	C
PCB-089	1.25		1.54		0.788		0.15	U	1.98		0.179	U
PCB-090/101/113	134	C	138	C	69	C	9.58	C	215	C	16.6	C
PCB-092	23.5		24.1		11.7		1.77		37.1		2.98	
PCB-093/095/098/100/102	92.7	C	85.4	C	43.5	C	5.99	C	157	C	9.65	C
PCB-094	0.59		0.799		0.378	U	0.157	U	0.761		0.181	U
PCB-096	0.722		0.666		0.414	U	0.0836	U	0.915		0.119	J
PCB-103	1.31		1.7		0.884		0.128	U	1.61		0.276	J
PCB-104	0.0589	U	0.105	U	0.0574	U	0.0767	U	0.0625	U	0.078	U
PCB-105	64.7		74.6		38.3		5.17		104		9.34	
PCB-106	0.241	U	0.191	U	0.141	U	0.128	U	0.187	U	0.159	U
PCB-107/124	5.62	C	5.83	C	2.95	C	0.372	CJ	9.53	C	0.718	C
PCB-109	12.3		13.9		8.03		1.02		19.3		2.18	
PCB-110/115	142	C	145	C	74.7	C	9.88	C	241	C	17.3	C
PCB-111	0.192	U	0.225	J	0.181	U	0.103	U	0.212	U	0.126	U
PCB-112	0.0864	U	0.158	U	0.0763	U	0.102	U	0.0746	U	0.127	U
PCB-114	3.14		2.54		1.56		0.229	J	4.87		0.312	J
PCB-118	148		166		84.8		11.8		238		20.6	
PCB-120	0.993		1.3		0.659		0.0939	U	1.06		0.21	U
PCB-121	0.0908	U	0.166	U	0.0799	U	0.108	U	0.0783	U	0.131	U
PCB-122	1.71		1.47		0.95		0.144	U	2.94		0.199	J
PCB-123	3.01		3.31		1.49		0.289	J	3.9		0.432	
PCB-126	1.08		1.37		0.749		0.197	J	1.31		0.199	J
PCB-127	0.252	U	0.199	U	0.139	U	0.134	U	0.195	U	0.157	U
PCB-128/166	32.8	C	35.3	C	16	C	2.16	C	50.7	C	5.1	C
PCB-129/138/160/163	197	C	217	C	101	C	13.2	C	296	C	28.1	C
PCB-130	12.9		14.1		6.53		0.812		19.5		1.79	
PCB-131	2.15		1.98		0.874	U	0.148	U	3.62		0.217	U
PCB-132	49.6		51.9		22.3		2.87		81.8		6.29	
PCB-133	3.04		3.67		1.74		0.188	J	4.22		0.198	U
PCB-134/143	8.14	C	7.84	C	3.44	C	0.456	C	13	C	0.966	C
PCB-135/151/154	42.8	C	49.9	C	25.5	C	3.08	C	63.8	C	6.71	C
PCB-136	15.5		15.6		7.71		0.998		24		1.92	
PCB-137	6.99		6.88		2.96		0.352	J	11.4		0.821	
PCB-139/140	3.35	C	3.44	C	1.5	C	0.137	CJ	5.04	C	0.425	C
PCB-141	19.4		17.5		8.58		1.04		32.5		2.41	
PCB-142	0.17	U	0.329	U	0.184	U	0.148	U	0.289	U	0.205	U
PCB-144	5.96		6.31		3.23		0.355	J	9.02		0.787	
PCB-145	0.085	U	0.16	U	0.0762	U	0.0918	U	0.111	U	0.119	U
PCB-146	25.1		29.8		15.9	J	2.1		34.8		5.27	
PCB-147/149	114	C	128	C	60.3	C	7.82	C	177	C	16.6	C
PCB-148	0.604	U	0.225	U	0.465	U	0.113	U	0.671		0.146	U
PCB-150	0.355	J	0.457		0.259	J	0.0879	U	0.449		0.116	U
PCB-152	0.14	J	0.147	U	0.079	U	0.0847	U	0.246	J	0.11	U
PCB-153/168	156	C	181	C	85.3	C	11.2	C	226	C	24.4	C
PCB-155	0.0592	U	0.102	U	0.0538	U	0.0655	U	0.076	J	0.0814	U
PCB-156/157	20.9	C	20.2	C	9.33	C	1.14	C	29.6	C	2.36	C
PCB-158	16.7		16.4		7.1		0.934		25.8		1.89	
PCB-159	1.4		1.91		0.866		0.0988	U	2.46		0.271	J
PCB-161	0.115	U	0.223	U	0.125	U	0.1	U	0.196	U	0.143	U
PCB-162	0.798		0.799	U	0.483		0.1	U	0.911	U	0.145	U

Location ID	PT-04-S	Q	PT-05-S	Q	PT-06-S	Q	PT-07-S	Q	PT-08-S	Q	PT-09-S	Q
Date/Time	5/10/2013 10:08		5/10/2013 11:15		5/10/2013 9:09		5/10/2013 11:58		5/10/2013 14:11		5/10/2013 9:48	
PCB-164	11.2		11.5		5.28		0.603		16.9		1.3	
PCB-165	0.272	J	0.253	U	0.231	U	0.113	U	0.276	U	0.167	U
PCB-167	7.48		8.22		3.98		0.441		10.8		1	
PCB-169	0.314	U	0.525	U	0.242	U	0.101	U	0.316	U	0.135	U
PCB-170	30.1		34.4		18.3		1.78		44		4.78	
PCB-171/173	11	C	13.5	C	6.95	C	0.845	C	16.3	C	1.81	C
PCB-172	5		5.92		3.23		0.342	J	7.56		0.85	
PCB-174	26.8		32.8		16.7		1.95		43.8		4.2	
PCB-175	1.72		2.16		1.11		0.126	U	2.55		0.266	J
PCB-176	3.7		5.01		2.46		0.287	U	6		0.712	U
PCB-177	23.8		30.6		16.2		1.67		34.3		4.14	
PCB-178	9.59		13.2		6.39		0.859		13.2		1.76	
PCB-179	13.2		17.9		9.17		1.21		20.1		2.58	
PCB-180/193	58.4	C	66.4	C	37.4	C	3.56	C	89	C	9.68	C
PCB-181	0.358	U	0.25	J	0.226	U	0.131	U	0.51		0.177	U
PCB-182	0.297	J	0.385	J	0.177	U	0.127	U	0.306	J	0.167	U
PCB-183/185	22.5	C	28.7	C	14.9	C	1.81	C	34.5	C	4.03	C
PCB-184	0.112	J	0.174	J	0.0783	U	0.0957	U	0.118	U	0.133	U
PCB-186	0.0962	U	0.169	U	0.0833	U	0.102	U	0.124	U	0.139	U
PCB-187	51.2		70.1		36.2		4.66		73.8		9.39	
PCB-188	0.236	J	0.262	U	0.141	U	0.08	U	0.195	J	0.115	U
PCB-189	1.58		1.87		0.827		0.199	U	2.07		0.179	U
PCB-190	5.42		6.28		3.52		0.374	J	8.54		0.707	U
PCB-191	1.13		1.29		0.738		0.0977	U	1.78		0.219	J
PCB-192	0.106	U	0.186	U	0.0963	U	0.112	U	0.136	U	0.153	U
PCB-194	15		18.2		10.2		0.979		23		2.91	
PCB-195	6.07		6.95		4.22		0.354	J	8.86		1.23	
PCB-196	8.39		10.5		6.34		0.678		12.3		1.73	
PCB-197/199	2.32	CJ	3.35	CJ	1.8	CJ	0.223	CJ	3.26	CJ	0.637	C
PCB-198/201	23.9	C	32.3	C	17.8	C	2.02	C	33.6	C	4.97	C
PCB-200	3.18		4.38		2.36		0.212	J	4.41		0.69	
PCB-202	6.48		9.08		4.69		0.582		8.48		1.34	
PCB-203	11.2		14.6		8.54		0.716		16.3		2.08	
PCB-204	0.0718	U	0.16	U	0.0787	U	0.0877	U	0.0856	U	0.109	U
PCB-205	0.894		1.14		0.661		0.141	U	1.27		0.183	U
PCB-206	16.1		20.7		12.5		1.37		18.7		3	
PCB-207	2.28		3.2		1.77		0.201	J	2.79		0.486	
PCB-208	5.92		7.85		4.73		0.451		6.86		1.11	
PCB-209	15.1		20.3		12.9		2.44		16.7		2.74	
Total PCBs*	3050		3610		1820		235		4760		446	
PCB TEQ (0 DL)	0.117		0.147		0.0803		0.0204		0.145		0.0212	
PCB TEQ (1/2 DL)	0.122		0.155		0.084		0.022		0.15		0.0233	
PCB TEQ (1 DL)	0.126		0.163		0.0876		0.0235		0.155		0.0253	
PCB TEQ (KM)	0.118		0.149		0.0809		0.0205		0.147		0.0214	

*total PCBs represents the sum of all detected congeners
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limi
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sampl
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detect
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicate
C-see list for co-eluting congeners

Table E-3. Summary of PCB Congener Data (continued).

Location ID	PT-10-S	Q	SEQ-01-S	Q	SEQ-02-S	Q	SEQ-03-S	Q	SEQ-03-D	Q	SEQ-04-S	Q
Date/Time	5/10/2013 11:33		5/9/2013 11:41		5/9/2013 9:36		5/9/2013 11:04		5/9/2013 11:04		5/9/2013 10:11	
PCB Congeners (ng/kg DW)												
PCB-001	9.98		5.12	J	3.56		4.07		4.12		3.64	
PCB-002	30.9		34.1		13.5		17.2		18.6		15.8	
PCB-003	9.97		6.78	J	4.8		5.95		5.93		4.74	
PCB-004	12.1		10.1		8.05		7.33		7.38		7.42	
PCB-005	0.464		0.378	J	0.208	J	0.32	J	0.326	J	0.21	J
PCB-006	5.59		4.74		2.64		3.51		3.37		2.89	
PCB-007	2.63		2.15		1.28		1.5		1.51		1.39	
PCB-008	40.1		36.8		23.1		25.9		26.4		24.5	
PCB-009	1.37		1.25		0.744		1.03		1.03		1	
PCB-010	0.562		0.483		0.345	J	0.295	J	0.313	J	0.332	J
PCB-011	72.1		49.7		26.2		36.3		36		29.3	
PCB-012/013	10.8	CU	7.83	C	4.43	C	6	C	5.88	C	4.89	C
PCB-014	0.995	U	1.17	U	0.625		0.753		0.944	U	0.803	U
PCB-015	46.7		52.7		28.6		41.8		41.8		29.8	
PCB-016	8.73		12		6.23		7.64		8.02		5.69	
PCB-017	11.9		16.2		9.3		10.4		11.8		9.31	
PCB-018/030	18.2	C	23.1	CJ	13.3	C	18	C	15.5	C	12.4	C
PCB-019	2.3		2.34		1.6		1.68		1.69		1.5	
PCB-020/028	96.2	C	138	C	73.2	C	101	C	105	C	76.1	C
PCB-021/033	30.9	C	33.7	C	18.3	C	24	C	24.6	C	17.7	C
PCB-022	22.9		29		15.4		21.1		21.9		15.3	
PCB-023	0.145	U	0.117	U	0.112	U	0.169	U	0.0874	U	0.122	U
PCB-024	0.229	J	0.408	U	0.243	J	0.227	U	0.286	U	0.166	J
PCB-025	6.47		8.56		4.58		6.02		6.32		4.5	
PCB-026/029	11.3	C	14.6	C	7.29	C	10.3	C	10.9	C	7.54	C
PCB-027	1.99		2.83		1.37		1.76		1.79		1.23	
PCB-031	56.5		74.9		38.4		54.6		57.2		40	
PCB-032	13.2		13.8		9.24		9.28		10.1		8.73	
PCB-034	0.394		0.489		0.256	J	0.296	J	0.304	J	0.226	J
PCB-035	4.31		5.33		2.88		4.07		3.98		2.87	
PCB-036	2.8		2.48		1.2		1.71		1.84		1.33	
PCB-037	35		45.9		22.9		33.3		34.9		24.9	
PCB-038	0.367	U	0.575		0.401		0.499	U	0.424		0.323	U
PCB-039	0.66		1.08		0.542		0.793		0.761		0.556	
PCB-040/041/071	33.7	C	37.8	C	20.4	C	26.2	C	28.3	C	17.3	C
PCB-042	15.1		22.4		11.9		15.7		16.9		11.3	
PCB-043	1.7	U	2.08		1.09		1.62		1.75		1.1	
PCB-044/047/065	57	C	80.2	C	42.7	C	55.2	C	60.3	C	41.2	C
PCB-045/051	5.85	C	8.41	C	4.68	C	5.36	C	5.82	C	4.27	C
PCB-046	1.67	U	2.68		1.51		1.72		1.94		1.34	
PCB-048	8.17		12.5		6.56		8.66		9.22		6.22	
PCB-049/069	39.6	C	60.2	C	32.1	C	40.5	C	44.4	C	32.4	C
PCB-050/053	5.03	C	8.29	C	4.29	C	4.81	C	5.47	C	4.35	C
PCB-052	62.5		95.2		48.5		67.1		70.8		46.6	
PCB-054	0.133	U	0.145	U	0.0866	U	0.107	U	0.084	J	0.0999	U
PCB-055	1.42	U	1.67		0.719		1.24		1.07		0.703	
PCB-056	40.7		45.6		23.5		34.9		36.5		24.2	
PCB-057	1.36	U	0.579		0.29	J	0.422		0.398		0.291	J
PCB-058	1.39	U	0.521		0.242	J	0.241	J	0.337	J	0.212	J
PCB-059/062/075	5.68	C	7.84	C	4.26	C	5.3	C	5.87	C	4.13	C
PCB-060	22.3		30.3		15.1		22.5		23.1		16.8	
PCB-061/070/074/076	148	C	202	C	97.7	C	148	C	155	C	107	C
PCB-063	3.47	U	5.24		2.5		3.6		3.72		2.63	
PCB-064	23.9		35		17.6		24.3		26.3		17.5	
PCB-066	90.9		118		58.7		84.9		88.7		64.8	
PCB-067	2.52	J	4.16		2.04		2.77		3		2.09	
PCB-068	1.3	U	1.5		0.695		0.913		1.06		0.825	
PCB-072	1.3	U	2.06		0.913		1.33		1.42		1.1	
PCB-073	1.17	U	0.166	U	0.0793	U	0.0947	U	0.0827	U	0.112	U

Location ID	PT-10-S	Q	SEQ-01-S	Q	SEQ-02-S	Q	SEQ-03-S	Q	SEQ-03-D	Q	SEQ-04-S	Q
Date/Time	5/10/2013 11:33		5/9/2013 11:41		5/9/2013 9:36		5/9/2013 11:04		5/9/2013 11:04		5/9/2013 10:11	
PCB-077	15.8		21.8		10.2		15		15.7		11.8	
PCB-078	1.37	U	0.145	U	0.174	U	0.182	U	0.204	U	0.158	U
PCB-079	1.97	U	2.21		1.14		1.56		1.59		1.1	
PCB-080	1.32	U	0.14	U	0.162	U	0.17	U	0.191	U	0.148	U
PCB-081	0.672		0.816	U	0.34	J	0.551		0.58		0.451	U
PCB-082	9.49		12.9		6.67		10.5		7.39		4.54	
PCB-083/099	75.5	C	106	C	53.8	C	74	C	75.3	C	53.9	C
PCB-084	22.5		27.3		14.7		20.9		21		13.3	
PCB-085/116/117	23.8	C	32.4	C	17.3	C	25	C	24	C	17	C
PCB-087/097/108/119/125	73.8	C	84.6	C	44	C	65.9	C	66.6	C	40.9	C
PCB-088/091	14	C	17.2	C	9.58	C	12.3	C	13.1	C	9.01	C
PCB-089	1.07		1.22		0.629		0.948		0.9		0.466	
PCB-090/101/113	108	C	145	C	74.7	C	108	C	105	C	74.9	C
PCB-092	19.6		25.3		13		19		19		13.2	
PCB-093/095/098/100/102	72.4	C	94.6	C	50.1	C	68.7	C	69.8	C	47.8	C
PCB-094	0.567		0.722		0.419		0.455		0.465		0.368	J
PCB-096	0.476		0.89		0.421		0.526		0.616		0.481	
PCB-103	1.15		1.87		0.995		1.11		1.22		1.01	
PCB-104	0.115	U	0.0715	U	0.079	U	0.104	U	0.0616	U	0.0866	U
PCB-105	60.5		73.7		35.6		55.5		53.6		39.7	
PCB-106	0.302	U	0.169	U	0.15	U	0.182	U	0.173	U	0.211	U
PCB-107/124	4.87	C	5.71	C	2.71	C	4.13	C	3.85	C	2.83	C
PCB-109	11.5		15.7		7.9		11.3		11.1		8.62	
PCB-110/115	120	C	148	C	76.4	C	114	C	108	C	74.3	C
PCB-111	0.156	U	0.385	U	0.17	U	0.224	U	0.24	U	0.153	U
PCB-112	0.155	U	0.0893	U	0.0714	U	0.132	U	0.0736	U	0.0998	U
PCB-114	2.17		3.03		1.49		2.03		1.91		1.45	
PCB-118	134		163		76.5		121		117		85	
PCB-120	0.142	U	1.45		0.734		1.04		0.945		0.752	U
PCB-121	0.163	U	0.0961	U	0.0742	U	0.138	U	0.087	J	0.104	U
PCB-122	1.32		1.47		0.692		0.925		0.921		0.533	
PCB-123	2.49		3.36		1.42		2.47		2.38		1.54	
PCB-126	1.11		1.5		0.71		0.889		1.12		1.06	
PCB-127	0.316	U	0.239	U	0.157	U	0.191	U	0.181	U	0.221	U
PCB-128/166	27.5	C	33.3	C	16.7	C	26.4	C	23.7	C	17.8	C
PCB-129/138/160/163	162	C	224	C	100	C	158	C	150	C	111	C
PCB-130	10.9		14.4		6.9		10.7		10.8		7.41	
PCB-131	1.42		1.77		0.818		1.22		1.35		0.836	
PCB-132	40.9		50.8		23.1		38.1		36.6		23.2	
PCB-133	2.53		4.36		1.89		2.74		2.86		1.97	
PCB-134/143	6.04	C	7.65	C	3.65	C	5.57	C	5.27	C	3.69	C
PCB-135/151/154	37.3	C	54.7	C	26.8	C	38.7	C	37.3	C	27.5	C
PCB-136	11.1		17.4		8.7		12.4		12.3		0.107	U
PCB-137	4.6		6.86		2.39		4.44		3.77		2.52	
PCB-139/140	2.28	C	3.41	C	1.51	C	2.22	C	2.17	C	1.62	C
PCB-141	13.4		16.2		6.94		12.6		12		6.95	
PCB-142	0.469	U	0.23	U	0.213	U	0.308	U	0.261	U	0.215	U
PCB-144	4.65		6.63		3.17		4.58		4.52		3.13	
PCB-145	0.177	U	0.102	U	0.0906	U	0.123	U	0.0902	U	0.115	U
PCB-146	24.1		32.1	J	15.4		23.6		23.2		17.3	
PCB-147/149	95.1	C	132	C	65.2	C	99.1	C	88.2	C	66.6	C
PCB-148	0.218	U	0.529	U	0.356	U	0.386		0.178	U	0.171	U
PCB-150	0.281	J	0.511		0.254	J	0.337	U	0.327	J	0.198	J
PCB-152	0.164	U	0.218	J	0.102	J	0.131	U	0.136	J	0.104	U
PCB-153/168	135	C	189	C	86.7	C	133	C	127	C	95.8	C
PCB-155	0.127	U	0.0722	U	0.0647	U	0.0943	U	0.0616	U	0.0842	U
PCB-156/157	14.5	C	17.8	C	7.84	C	13.3	C	12.8	C	8.9	C
PCB-158	11.8		13.6		5.89		9.96		9.15		5.69	
PCB-159	1.31		1.91		0.733		1.27		1.4		0.921	U
PCB-161	0.319	U	0.159	U	0.143	U	0.206	U	0.175	U	0.144	U
PCB-162	0.478	U	0.975		0.352	J	0.637	U	0.745		0.469	

Location ID	PT-10-S	Q	SEQ-01-S	Q	SEQ-02-S	Q	SEQ-03-S	Q	SEQ-03-D	Q	SEQ-04-S	Q
Date/Time	5/10/2013 11:33		5/9/2013 11:41		5/9/2013 9:36		5/9/2013 11:04		5/9/2013 11:04		5/9/2013 10:11	
PCB-164	8.8		9.82		4.5		7.27		7.69		4.36	
PCB-165	0.361	U	0.426		0.204	J	0.243	U	0.243	J	0.169	U
PCB-167	5.89		6.99		3.22		5.4		4.97		3.48	
PCB-169	0.318	U	0.42	U	0.181	U	0.208	U	0.183	U	0.179	U
PCB-170	25.3		39.8		18.7		29.9		29.7		21	
PCB-171/173	10.8	C	13.7	C	6.68	C	10.2	C	9.45	C	7.14	C
PCB-172	4.45		7.34		3.53		5.38		5.01		3.74	
PCB-174	26.4		33.9		17.6		27.7		25.6		16.8	
PCB-175	1.68		2.56		1.26		1.68		1.59		1.18	
PCB-176	4.14		5.59		2.75		4.25		3.8		2.67	
PCB-177	24		32.1		15.7		23.1		22.1		17.2	
PCB-178	9.96		14.8		7.07		9.97		9.21		7.36	
PCB-179	14		20.1		10		14		13.5		9.93	
PCB-180/193	51.4	C	67.3	C	28.9	C	49.6	C	47.7	C	29.3	C
PCB-181	0.248	U	0.383	J	0.133	J	0.227	U	0.215	J	0.136	U
PCB-182	0.453		0.601		0.295	J	0.306	J	0.375	U	0.13	U
PCB-183/185	0.237	CU	32.1	C	15.2	C	22.6	C	20.8	C	15.3	C
PCB-184	0.181	U	0.153	U	0.0904	U	0.134	U	0.0849	U	0.0994	U
PCB-186	0.193	U	0.101	U	0.0974	U	0.144	U	0.0915	U	0.107	U
PCB-187	54.3		78.3		38.5		57.3		52		39.1	
PCB-188	0.182	J	0.377	J	0.193	J	0.208	J	0.244	J	0.211	U
PCB-189	1.04	U	1.69		0.805		1.25		1.35		1	
PCB-190	4.76		6.48		3.24		5.28		4.6		3.41	
PCB-191	1.05		1.33		0.647		0.942		0.826		0.557	U
PCB-192	0.213	U	0.108	U	0.107	U	0.158	U	0.1	U	0.117	U
PCB-194	14.2		21.4		9.26		17.8		16		11.4	
PCB-195	5.56		8.6		3.71		6.37		5.96		4.45	
PCB-196	8.12		14		5.83		9.53		8.48		6.27	
PCB-197/199	3.31	CJ	3.54	CJ	1.69	CJ	2.6	CJ	2.39	C	1.76	C
PCB-198/201	24.3	C	38.8	C	16.6	C	26.1	C	24	C	17.8	C
PCB-200	3.28		5.39		2.41		3.55		3.28		2.41	
PCB-202	6.91		9.81		4.43		6.76		6.83		5.24	
PCB-203	11.3		15.1		6.85		11.3		9.98		7.51	
PCB-204	0.184	U	0.097	J	0.103	U	0.116	U	0.0921	U	0.117	U
PCB-205	0.766		1.04		0.578		0.66		0.774		0.509	
PCB-206	18.3		20.6		10.2		14		13.6		10.7	
PCB-207	2.5		3.55		1.94		2.7		2.6		2.08	
PCB-208	7.25		8.85		4.45		5.72		5.76		4.58	
PCB-209	21.2		21.9		11		12.4		12.6		11.7	
Total PCBs*	2880		3790		1890		2750		2720		1940	
PCB TEQ (0 DL)	0.119		0.16		0.0759		0.0966		0.12		0.111	
PCB TEQ (1/2 DL)	0.124		0.167		0.0786		0.0997		0.122		0.114	
PCB TEQ (1 DL)	0.129		0.173		0.0814		0.103		0.125		0.117	
PCB TEQ (KM)	0.12		0.162		0.0765		0.109	Avg	--		0.112	

*total PCBs represents the sum of all detected congeners
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limi
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sampl
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detect
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates
C-see list for co-eluting congeners

Table E-3. Summary of PCB Congener Data (continued).

Location ID	SEQ-05-S	Q
Date/Time	5/9/2013 8:57	
PCB Congeners (ng/kg DW)		
PCB-001	2.36	
PCB-002	9.61	
PCB-003	4.05	
PCB-004	3.28	
PCB-005	0.189	J
PCB-006	1.91	
PCB-007	0.65	
PCB-008	15	
PCB-009	0.633	
PCB-010	0.124	J
PCB-011	18.5	
PCB-012/013	3.12	C
PCB-014	0.565	
PCB-015	21.4	
PCB-016	5.97	
PCB-017	6.98	
PCB-018/030	10	C
PCB-019	1.32	
PCB-020/028	56.9	C
PCB-021/033	13.6	C
PCB-022	12.5	
PCB-023	0.113	U
PCB-024	0.193	J
PCB-025	3.58	
PCB-026/029	6.37	C
PCB-027	1.23	
PCB-031	32.2	
PCB-032	5.86	
PCB-034	0.194	J
PCB-035	2.14	
PCB-036	0.905	
PCB-037	14.9	
PCB-038	0.401	
PCB-039	0.501	
PCB-040/041/071	20.4	C
PCB-042	12.1	
PCB-043	1.33	
PCB-044/047/065	41.9	C
PCB-045/051	4.81	C
PCB-046	1.69	
PCB-048	6.58	
PCB-049/069	30.3	C
PCB-050/053	4.01	C
PCB-052	51.7	
PCB-054	0.0839	U
PCB-055	0.749	
PCB-056	19.6	
PCB-057	0.234	J
PCB-058	0.19	J
PCB-059/062/075	3.88	C
PCB-060	13.1	
PCB-061/070/074/076	88.2	C
PCB-063	2.09	
PCB-064	18.6	
PCB-066	46.2	
PCB-067	2	
PCB-068	0.589	
PCB-072	1.05	
PCB-073	0.0804	U

Location ID	SEQ-05-S	Q
Date/Time	5/9/2013	8:57
PCB-077	7.42	
PCB-078	0.111	U
PCB-079	0.99	
PCB-080	0.104	U
PCB-081	0.379	J
PCB-082	5.24	
PCB-083/099	47.8	C
PCB-084	15.5	
PCB-085/116/117	15.9	C
PCB-087/097/108/119/125	44.4	C
PCB-088/091	9.94	C
PCB-089	0.898	
PCB-090/101/113	74.1	C
PCB-092	14	
PCB-093/095/098/100/102	53.3	C
PCB-094	0.473	U
PCB-096	0.484	
PCB-103	0.721	
PCB-104	0.0672	U
PCB-105	29.1	
PCB-106	0.133	U
PCB-107/124	2.49	C
PCB-109	6.37	
PCB-110/115	72.9	C
PCB-111	0.138	J
PCB-112	0.0781	U
PCB-114	1.12	
PCB-118	63.8	
PCB-120	0.63	
PCB-121	0.0812	U
PCB-122	0.674	
PCB-123	1.2	
PCB-126	0.643	
PCB-127	0.14	U
PCB-128/166	13.8	C
PCB-129/138/160/163	88.2	C
PCB-130	5.62	
PCB-131	0.757	
PCB-132	21.9	
PCB-133	1.91	
PCB-134/143	3.48	C
PCB-135/151/154	25.7	C
PCB-136	8.24	
PCB-137	2.87	
PCB-139/140	1.64	C
PCB-141	7.66	
PCB-142	0.121	U
PCB-144	3.12	
PCB-145	0.0822	U
PCB-146	13.9	
PCB-147/149	64.1	C
PCB-148	0.2	J
PCB-150	0.45	
PCB-152	0.192	J
PCB-153/168	77	C
PCB-155	0.0575	U
PCB-156/157	6.69	C
PCB-158	5.85	
PCB-159	0.861	
PCB-161	0.0811	U
PCB-162	0.0838	U

Location ID	SEQ-05-S	Q
Date/Time	5/9/2013	8:57
PCB-164	4.58	
PCB-165	0.191	U
PCB-167	2.81	
PCB-169	0.105	U
PCB-170	15.1	
PCB-171/173	5.44	C
PCB-172	2.72	
PCB-174	14.4	
PCB-175	0.882	
PCB-176	2.25	
PCB-177	10.5	
PCB-178	5.67	
PCB-179	8.33	
PCB-180/193	30.3	C
PCB-181	0.172	J
PCB-182	0.224	J
PCB-183/185	12.7	C
PCB-184	0.094	U
PCB-186	0.101	U
PCB-187	32.9	
PCB-188	0.529	
PCB-189	0.577	
PCB-190	2.59	
PCB-191	0.482	
PCB-192	0.111	U
PCB-194	8.54	
PCB-195	2.88	
PCB-196	4.98	
PCB-197/199	1.28	C
PCB-198/201	12.6	C
PCB-200	1.77	
PCB-202	3.81	
PCB-203	6.02	
PCB-204	0.0833	U
PCB-205	0.388	
PCB-206	9.78	
PCB-207	1.86	
PCB-208	4.1	
PCB-209	11.3	
Total PCBs*	1680	
PCB TEQ (0 DL)	0.0683	
PCB TEQ (1/2 DL)	0.0699	
PCB TEQ (1 DL)	0.0715	
PCB TEQ (KM)	0.0688	

*total PCBs represents the sum of all detected congeners
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limi
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sampl
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detect
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicate
C-see list for co-eluting congeners

Table E-4. Summary of Port Angeles Harbor Carcinogenic Polycyclic Aromatic Hydrocarbon Concentrations.

Location ID	PA_BL06A	Q	PA_BL08A	Q	PA_FT06A	Q	PA_FT10A	Q	PA_FT13A	Q	PA_IE15A	Q	PA_IE16A	Q
Date/Time	**6/11/2008**		**6/9/2008**		**6/12/2008**		**6/12/2008**		**6/11/2008**		**6/9/2008**		**6/9/2008**	
Conventionals														
Total Organic Carbon	1.89		1.46		1.47		1.38		0.879		2.48		4.9	
Total Solids	51.9		55.4		60.4		63.6		67.6		44.4		30.5	
carcinogenic PAH (ug/kg DW)														
Benzo(a)anthracene	33		25		47		28		10	JT	5.8	U	5.9	U
Chrysene	65		44		75		44		20		22		6.6	U
Benzo(b)fluoranthene	47		28		81		42		13	JT	20		9.4	U
Benzo(k)fluoranthene	38		29		40		32		9.2	U	9.1	U	9.2	U
Benzo(a)pyrene	27		8	U	45		26		10	JT	8	U	8.1	U
Indeno(1,2,3-cd)pyrene	8.5	UJG	8.4	UJG	8.4	UJG	8.3	UJG	8.6	U	8.5	UJG	8.5	UJG
Dibenz(a,h)anthracene	8.4	UJG	8.4	UJG	8.4	UJG	8.3	UJG	8.5	U	8.4	UJG	8.5	UJG
cPAH TEQ (0 DL)	39.5		8.64		62.6		36.6		12.5		2.22		0	
cPAH TEQ (1/2 DL)	40.3		13.5		63.4		37.5		13.8		7.81		6.16	
cPAH TEQ (1 DL)	41.1		18.3		64.2		38.3		15.1		13.4		12.3	
cPAH TEQ (KM)	40.8		17.5	L	64.1		37.5		13.1		11.1	L5	10.2	L7

* Insufficient fines were present for the full determination of silt and clay fractions. Only total fines are reported.
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limit
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate.
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Table E-4. Summary of Port Angeles Harbor Carcinogenic Polycyclic Aromatic Hydrocarbon Concentrations (continued).

Location ID	PA_KP07A	Q	PSAMP_SP-1217	PSAMP_SP-1473	PSAMP_SP-1537	PSAMP_SP-41	PSAMP_SP-769	PSAMP_SP-897
Date/Time	**6/11/2008**		**6/19/2013**	**6/19/2013**	**6/18/2013**	**6/10/2002**	**6/20/2013**	**6/18/2013**
Conventionals								
Total Organic Carbon	1.65		2.25	1.41	2.77	1.89	2.78	1.93
Total Solids	60.4		48.4	57.4	48.8	54.4	43.2	53.5
carcinogenic PAH (ug/kg DW)								
Benzo(a)anthracene	15	JT	24.1	47.6	111	34	38.4	59.4
Chrysene	22		50.1	99.6	193	66	76.3	110
Benzo(b)fluoranthene	22		31.4	53.5	132	38	49.7	62.9
Benzo(k)fluoranthene	14	JT	27.9	52.3	129	48	44.5	67
Benzo(a)pyrene	16	JT	27.6	47.4	124	40	41.8	62.7
Indeno(1,2,3-cd)pyrene	8.4	U	17.3	24.7	73.9	24	25.2	35
Dibenz(a,h)anthracene	8.4	U	5.73	7.02	17.5	5.6	7.39	9.66
cPAH TEQ (0 DL)	21.3		38.7	66.9	172	55.6	59.1	87.2
cPAH TEQ (1/2 DL)	22.2		38.7	66.9	172	55.6	59.1	87.2
cPAH TEQ (1 DL)	23		38.7	66.9	172	55.6	59.1	87.2
cPAH TEQ (KM)	21.8		38.7	66.9	172	55.6	59.1	87.2

* Insufficient fines were present for the full determination of silt and clay fractions. Only total fines are reported.
U-the analytie was analyzed for, but was not detected above the reported sample quantitation limit
J-the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample
UJ-the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate.
L-the detection frequency of compounds within a sample was <50%, the numeric value indicates the number of non-detects
KM-Kaplan-Meier DW-dry weight Q-qualifier TEQ-toxicity equivalent DL-detection limit Avg-average of field duplicates

Appendix F.
Analytical Laboratory Reports

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Matrix	Study ID	Location ID	Date	Time	Axys ID	Dioxin/Furan Congeners	PCB Congeners
Sediment	RB13	DUN-03-S	5/6/2013	1009	L19652-1	DPWG43876	DPWG43892
Sediment	RB13	DUN-06-S	5/6/2013	1050	L19652-2	DPWG43876	DPWG43892
Sediment	RB13	DUN-07-S	5/6/2013	1110	L19652-3	DPWG43876	DPWG43892
Sediment	RB13	DUN-12-S	5/6/2013	1130	L19652-4	DPWG43876	DPWG43892
Sediment	RB13	DUN-10-S	5/6/2013	1210	L19652-5	DPWG43876	DPWG43892
Sediment	RB13	DUN-13-S	5/6/2013	1328	L19652-6	DPWG43876	DPWG43892
Sediment	RB13	DUN-05-S	5/6/2013	1346	L19652-7	DPWG43876	DPWG43892
Sediment	RB13	DUN-05-D	5/6/2013	1346	L19652-8	DPWG43876	DPWG43892
Sediment	RB13	DUN-09-S	5/6/2013	1425	L19652-9	DPWG43876	DPWG43892
Sediment	RB13	DUN-04-S	5/6/2013	1446	L19652-10	DPWG43876	DPWG43892
Sediment	RB13	DUN-02-S	5/6/2013	1509	L19652-11	DPWG43876	DPWG43892
Sediment	RB13	DUN-11-S	5/6/2013	1549	L19652-12	DPWG43876	DPWG43892
Sediment	RB13	DUN-01-S	5/6/2013	1613	L19652-13	DPWG43876	DPWG43892
Sediment	RB13	DUN-08-S	5/6/2013	1638	L19652-14	DPWG43876	DPWG43892
Sediment	RB13	PT-06-S	5/10/2013	909	L19652-15	DPWG43876	DPWG43892
Sediment	RB13	PT-09-S	5/10/2013	948	L19652-16	DPWG43876	DPWG43892
Sediment	RB13	PT-04-S	5/10/2013	1008	L19652-17	DPWG43876	DPWG43892
Sediment	RB13	PT-02-S	5/10/2013	1035	L19652-18	DPWG43876	DPWG43892
Sediment	RB13	PT-05-S	5/10/2013	1115	L19652-19	DPWG43876	DPWG43892
Sediment	RB13	PT-10-S	5/10/2013	1133	L19652-20	DPWG43876	DPWG43892
Sediment	RB13	PT-07-S	5/10/2013	1158	L19652-21	DPWG43876	DPWG43892
Sediment	RB13	PT-03-S	5/10/2013	1307	L19652-22	DPWG43876	DPWG43892
Sediment	RB13	PT-08-S	5/10/2013	1411	L19652-23	DPWG43876	DPWG43892
Sediment	RB13	PT-01-S	5/10/2013	1446	L19652-24	DPWG43876	DPWG43892
Sediment	RB13	SEQ-05-S	5/9/2013	857	L19652-25	DPWG43876	DPWG43892
Sediment	RB13	SEQ-02-S	5/9/2013	936	L19652-26	DPWG43876	DPWG43892
Sediment	RB13	SEQ-04-S	5/9/2013	1011	L19652-27	DPWG43876	DPWG43892
Sediment	RB13	SEQ-03-S	5/9/2013	1104	L19652-28	DPWG43876	DPWG43892
Sediment	RB13	SEQ-03-D	5/9/2013	1104	L19652-29	DPWG43876	DPWG43892
Sediment	RB13	SEQ-01-S	5/9/2013	1141	L19652-30	DPWG43876	DPWG43892
Sediment	RB13	DIS-10-S	5/8/2013	1127	L19652-31	DPWG43876	DPWG43892
Sediment	RB13	DIS-07-S	5/8/2013	1147	L19652-32	DPWG43876	DPWG43892
Sediment	RB13	DIS-01-S	5/8/2013	1206	L19652-33	DPWG43876	DPWG43892
Sediment	RB13	DIS-03-S	5/8/2013	1357	L19652-34	DPWG43876	DPWG43892
Sediment	RB13	DIS-12-S	5/8/2013	1435	L19652-35	DPWG43876	DPWG43892
Sediment	RB13	DIS-02-S	5/8/2013	1529	L19652-36	DPWG43876	DPWG43892
Sediment	RB13	DIS-05-S	5/8/2013	1554	L19652-37	DPWG43876	DPWG43892
Sediment	RB13	DIS-04-S	5/7/2013	1342	L19652-38	DPWG43876	DPWG43892
Sediment	RB13	DIS-11-S	5/7/2013	1407	L19652-39	DPWG43876	DPWG43892
Sediment	RB13	DIS-08-S	5/7/2013	1429	L19652-40	DPWG43876	DPWG43892
Sediment	RB13	DIS-06-S	5/7/2013	1530	L19652-41	DPWG43876	DPWG43892
Sediment	RB13	DIS-09-S	5/7/2013	1640	L19652-42	DPWG43876	DPWG43892
Sediment	RB13	DIS-09-D	5/7/2013	1640	L19652-43	DPWG43876	DPWG43892

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AXYS Client No.: 4273

Client Address: Newfields Environmental
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Edmonds, WA, US, 98020

The AXYS contact for these data is Candice Navaroli.

DIOXIN/FURAN ANALYSIS

SOLID SAMPLES

PROJECT NAME: NORTH OLYMPIC PENINSULA REG. BACKGROUND

Contract: 4273
Data Package Identification: DPWG43876

Analysis WG43679, WG43699, WG43721, WG43769 & WG43834

21 June 2013

NEWFIELDS ENVIRONMENTAL
SOLID SAMPLES

DIOXINS AND FURANS ANALYSIS
AXYS METHOD: MLA-013 and MLA-017
4273: L19652-1 to -43 & L19665-1

PROJECT NAME: North Olympic Peninsula Reg. Background

20 June 2013

NARRATIVE

This narrative describes the analysis of forty-four solid samples for the determination of polychlorinated dibenzodioxins and dibenzofurans using high-resolution gas chromatography / high-resolution mass spectrometry (HRGC/HRMS).

SAMPLE RECEIPT AND STORAGE

The samples were received between the 15th and 17th of May 2013. Details of sample conditions on receipt are provided in the Sample Receiving Record forms included in this data package. The samples were stored at -20°C in dark prior to extraction and analysis.

Some documentation discrepancies were noticed between the Chain of Custody record and the sample labels by the analyst during the login of the samples. The client was notified of discrepancies and the details of the action taken have been included in the Sample Documentation section of the data package.

SAMPLE PREPARATION AND ANALYSIS

The solid samples were homogenized as documented on the Solid Sample Preparation Record forms in the data package.

Extraction and analysis procedures were in general accordance with **USEPA Method 1613, Revision B**, as documented in AXYS Method MLA-013 and the associated Method MLA-017. Method summaries (MSU-013 and MSU-017) of the AXYS Methods are included following this narrative.

Samples and QC samples (a procedural blank, a lab-generated reference sample known as the Ongoing Precision and Recovery (OPR) and a sample duplicate) were analyzed in five batches named WG43679, WG43699, WG43721, WG43769 and WG43834. The composition of each batch is shown on the Correlation Table following this narrative and on the Batch Lists accompanying the extraction workup sheets.

The procedural blanks and the OPRs were prepared using sand. Sample SRS1136 (AXYS ID L19665-1) was analyzed as a reference sample in analysis batch WG43679. Samples listed in the following table were analyzed as duplicates in different batches.

Client ID	AXYS ID
RB13-DUN-01-S	L19652-13
RB13-PT-07-S	L19652-21
RB13-DIS-03-S	L19652-34

Approximately 10g equivalent dry weight of each sample was accurately weighed, spiked with ^{13}C-labeled quantification standards and Soxhlet-extracted with 80:20 toluene:acetone. The raw extract was then spiked with labeled cleanup standards and cleaned up using acid/base silica, Florisil, Alumina and carbon celite chromatographic columns. Following cleanup, the extract was reduced in volume and spiked with

^{13}C-labeled recovery (internal) standards prior to instrumental analysis. Final extract volume was 20 µL. 1µL was injected for the DB5 column analysis; 2µL were injected for the DB225 column analysis.

CALCULATIONS

Target analyte concentrations were determined by isotope dilution or internal standard quantification procedures using Waters MassLynx or Micromass OPUSQuan software. Formulae used in the conversion of the raw chromatograms to concentrations are provided in the method summary document.

Sample specific detection limits (SDLs) were determined from the analysis data following the same procedures used to convert target peak responses to concentrations. The SDLs were used as the detection qualifier. In cases when the software selects unrepresentative area for detection limit calculations, the data validation chemists made corrections; these corrections are hand noted on the quantification report pages.

Because of instrument variability and lab background levels, it is AXYS' policy to report detection limits no lower than 0.5 pg absolute (0.05 pg/g or ng/kg on a 10 g sample). In cases where a detection limit is observed to be less than 0.5 pg absolute, the SDL is raised to 0.5 pg absolute.

Homologue totals were obtained by summing the concentration of all detected congeners at each level of chlorination. Toxic Equivalents (TEQ) were calculated using WHO 2005 TEFs. Congener peaks that did not meet the method ion abundance ratio criteria were excluded from the homologue totals and TEQ calculations.

REPORTING CONVENTIONS

The AXYS contract number assigned for internal tracking was 4273. Samples were assigned a unique laboratory identifier of the form L19XXX-X, where 'X' is a numeral. All data reports reference both this unique AXYS ID and the client sample identifier. To assist with locating data, a table correlating AXYS IDs with client sample identifiers is included in this data package. The report forms were generated using a Laboratory Information Management System (LIMS).

Any extra work required and performed after the initial instrumental analysis of a sample extract is given an extra "test suffix" code. This single letter code per extra work performed is added to the AXYS sample ID as a suffix, and is combined with any other applicable test suffix codes. The extra work codes used to report data in this package include:

- R = repeat analysis using fresh sub-sample.
- i = instrumental re-analysis performed on the sample extract
- L = extract was given further cleanup to remove interferences
- (A) = the parent sample for a duplicate pair

The following laboratory qualifier flags were also used in this data package:

- B = analyte found in the sample and the associated blank
- J = indicates an estimated value where the concentration of the analyte is less than the LMCL but greater than the SDL
- K = identifies a target that could not be confirmed by virtue of not satisfying all method required criteria, the reported value may be interpreted as an estimated maximum possible concentration
- U = identifies a compound that was not detected.
- G = disturbance of the mass ion used to monitor instrument performance (lock-mass) present
- V = surrogate recovery is not within method control limits

Final results are reported in concentration units of nanograms per kilogram (ng/kg) dry weight basis. Concentrations and detection limits are provided to three significant figures to a maximum of three decimal places for concentrations and four decimal places for detection limits.

QA/QC NOTES

The QC samples were prepared alongside the field samples in one single analysis batch and carried intact through the entire analytical procedures. The field sample data were evaluated in relation to the batch QC sample data.

- Sample analyte concentrations are not blank corrected. Sample data should be evaluated with consideration of analyte levels in the Lab Blank.
- By virtue of the isotope dilution/internal standard quantification procedures, data are recovery corrected for possible losses during extraction and cleanup procedure.
- All linearity, calibration verification, OPR and labeled compound recovery specifications were met with the following exceptions:

WG43679

In sample SRS1136 (Axys ID L19665-1), the result for 1,2,3,7,8,9-HxCDF fell below the client specified lower acceptance limit, while the result for OCDF exceeded the upper acceptance limit.

WG43699

The recovery of 13C-labeled OCDD in sample RB13-PT-03-S (AXYS ID: L19652-22) did not meet the method criteria; this compound is flagged with a 'V'. As the isotope dilution method of quantification produces data that are recovery corrected, the slight variances from the method acceptance criteria are deemed not to affect the quantification of these analytes. Percent surrogate recoveries are used as a general method performance indicator only.

WG43721

The recovery of 13C-1,2,3,4,7,8-HxCDD and/or 1,2,3,4,6,7,8-HpCDF in samples RB13-DIS-12-S, RB13-DIS-06-S and RB13-DIS-09-S (AXYS ID: L19652-35, -41, -42) did not meet the method criteria; these compounds are flagged with a 'V'. As the isotope dilution method of quantification produces data that are recovery corrected, the slight variances from the method acceptance criteria are deemed not to affect the quantification of these analytes. Percent surrogate recoveries are used as a general method performance indicator only.

A disturbance of the mass ion used to monitor instrument performance (lock-mass) greater than method specifications was observed in sample RB13-DIS-09-D (AXYS ID: L19652-43) near the retention time corresponding to 1,2,3,7,8-PeCDD and has been flagged with a 'G'. Data are not considered significantly affected by this variance.

WG43769

All specifications were met.

WG43834

The recovery of 37Cl-2,3,7,8-TCDD in sample RB13-DUN-05-D (Axys ID: L19652-8) is slightly outside the method acceptance criteria; this compound has been flagged with a 'V'. As the isotope dilution method of quantification produces data that are recovery corrected, the slight variances from the method acceptance criteria are deemed not to affect the quantification of these analytes. Percent surrogate recoveries are used as general method performance indicator only.

ANALYTICAL DISCUSSION

WG43679

Sample RB13-DUN-01-S duplicate (AXYS ID: WG43679-103) was instrumentally re-analyzed on the DB225 column due to instrumental interferences. Sample data is reported from this re-injection (indicated by suffix 'i' on AXYS ID).

WG43699

Sample RB13-PT-09-S (AXYS ID: L19652-16) was instrumentally re-analyzed on the DB5 column to confirm possible instrumental carry-over. The re-analysis data showed that the original analysis data was affected by carry over and the re-analysis data are reported (indicated by the test suffix 'i' added to the AXYS ID).

Sample RB13-PT-04-S (AXYS ID: L19652-17) was instrumentally re-analyzed on the DB225 column due to instrumental interferences. Sample data is reported from this re-injection (indicated by suffix 'i' on AXYS ID)

WG43721

The Lab Blank, OPR and sample RB13-DIS-01-S (AXYS IDs: WG43721-101, -102 and L19652-33) were instrumentally re-analyzed on the DB5 or DB225 column due to instrumental interferences. Sample data is reported from this re-injection (indicated by suffix 'i' on AXYS ID).

The analyst noted that for the Lab Blank (AXYS ID: WG43721-101), they may have added twice the routine quantity of the labeled clean up standards. The determined value for the clean up standard does not confirm the analyst's note and data are considered not affected.

The analyst noted that the extracts for samples RB13-DIS-07-S and RB13-DIS-05-S had gone dry during an extract concentration procedure. Given that the recovery values of the labeled standards were within the method control limits data are not considered significantly affected.

WG43769

Sample RB13-PT-02-S (AXYS ID: L19652-18) was started in batch WG43699, but the sample was inadvertently lost during an extract concentration procedure. A repeat analysis was conducted using a fresh aliquot of sample. The repeat analysis data was successful and is reported, indicated by the test suffix 'R' on the AXYS ID.

The analyst noted that the extract for sample RB13-PT-02-S (AXYS ID: L19652-18) had gone dry during an extract concentration procedure. Given that the recovery values of the labeled standards were within the method control limits data are not considered significantly affected.

WG43834

Sample RB13-DUN-05-D (AXYS ID: L19652-8) was originally included in batch WG43679 and sample RB13-DIS-10-S (AXYS ID: L19652-31) was originally included in batch WG43721 however, analysis results did not meet all method specifications. A repeat of this sample was conducted using a fresh aliquot of sample. The repeat analysis data met method specifications and is reported, indicated by the test suffix 'R' on the AXYS ID.

The OPR (AXYS ID: WG43834-102) was given additional cleanup using acid/base silica silver nitrate column and alumina column to minimize interferences. All targets have been reported from the analysis of the cleaned up extract (indicated by the suffix 'L' on the AXYS ID).

DATA PACKAGE

This data package is assigned a unique identifier, DPWG43876, shown on the front page of this data package. Included in the data package following the narrative is the following documentations:

- Method summaries
- Sample Correlation Tables
- Sample Receiving Documentation
- Sample homogenization records
- Laboratory extraction logs for each sample
- Sample data reports (in order of AXYS sample ID)
- Laboratory QC sample data reports
- Instrumental QC data reports and mass resolution printouts (organized by analysis start date)
- Sample raw data (in order of AXYS sample ID)
- Laboratory QC sample raw data
- Instrumental QC raw data (organized by analysis start date)
- Accreditation Scope

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, except for the conditions detailed above. In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. The following signature, on behalf of AXYS Analytical Services Ltd, authorizes the release of the data contained in this data package.

Signed: Shelley Facchin, Data Validation Chemist

20-Jun-2013
Date Signed

NEWFIELDS ENVIRONMENTAL

CORRELATION TABLE

DIOXIN/FURAN ANALYSIS

Lab Name: AXYS Analytical Services Ltd.	**Project Manager: Candice Navaroli**
Project Name: North Olympic Peninsula Reg. Background	**Contract No: 4273**
	AXYS Method: MLA-013 and MLA-017
Data Package Identification: DPWG43876	**Program: Solid Samples**
Client Sample No.	**Lab Sample ID**
LAB BLANK	WG43679-101
OPR	WG43679-102
RB13-DUN-03-S	L19652-1
RB13-DUN-06-S	L19652-2
RB13-DUN-07-S	L19652-3
RB13-DUN-12-S	L19652-4
RB13-DUN-10-S	L19652-5
RB13-DUN-13-S	L19652-6
RB13-DUN-05-S	L19652-7
RB13-DUN-09-S	L19652-9
RB13-DUN-04-S	L19652-10
RB13-DUN-02-S	L19652-11
RB13-DUN-11-S	L19652-12
RB13-DUN-01-S	L19652-13 WG43679-103 DUPLICATE
RB13-DUN-08-S	L19652-14
RB13-PT-06-S	L19652-15
SRS1136	L19665-1

NEWFIELDS ENVIRONMENTAL

CORRELATION TABLE

DIOXIN/FURAN ANALYSIS

Lab Name: AXYS Analytical Services Ltd.	**Project Manager: Candice Navaroli**
Project Name: North Olympic Peninsula Reg. Background	**Contract No: 4273**
	AXYS Method: MLA-013 and MLA-017
Data Package Identification: DPWG43876	**Program: Solid Samples**
Client Sample No.	**Lab Sample ID**
LAB BLANK	WG43699-101
OPR	WG43699-102
RB13-PT-09-S	L19652-16
RB13-PT-04-S	L19652-17
RB13-PT-05-S	L19652-19
RB13-PT-10-S	L19652-20
RB13-PT-07-S	L19652-21 WG43699-103 DUPLICATE
RB13-PT-03-S	L19652-22
RB13-PT-08-S	L19652-23
RB13-PT-01-S	L19652-24
RB13-SEQ-05-S	L19652-25
RB13-SEQ-02-S	L19652-26
RB13-SEQ-04-S	L19652-27
RB13-SEQ-03-S	L19652-28
RB13-SEQ-03-D	L19652-29

NEWFIELDS ENVIRONMENTAL

CORRELATION TABLE

DIOXIN/FURAN ANALYSIS

Lab Name: AXYS Analytical Services Ltd.	**Project Manager: Candice Navaroli**
Project Name: North Olympic Peninsula Reg. Background	**Contract No: 4273**
	AXYS Method: MLA-013 and MLA-017
Data Package Identification: DPWG43876	**Program: Solid Samples**
Client Sample No.	**Lab Sample ID**
LAB BLANK	WG43721-101
OPR	WG43721-102
RB13-SEQ-01-S	L19652-30
RB13-DIS-07-S	L19652-32
RB13-DIS-01-S	L19652-33
RB13-DIS-03-S	L19652-34 WG43721-103 DUPLICATE
RB13-DIS-12-S	L19652-35
RB13-DIS-02-S	L19652-36
RB13-DIS-05-S	L19652-37
RB13-DIS-04-S	L19652-38
RB13-DIS-11-S	L19652-39
RB13-DIS-08-S	L19652-40
RB13-DIS-06-S	L19652-41
RB13-DIS-09-S	L19652-42
RB13-DIS-09-D	L19652-43

NEWFIELDS ENVIRONMENTAL

CORRELATION TABLE

DIOXIN/FURAN ANALYSIS

Lab Name: AXYS Analytical Services Ltd.	**Project Manager: Candice Navaroli**
Project Name: North Olympic Peninsula Reg. Background	**Contract No: 4273**
	AXYS Method: MLA-013 and MLA-017
Data Package Identification: DPWG43876	**Program: Solid Samples**
Client Sample No.	**Lab Sample ID**
LAB BLANK	WG43769-101
OPR	WG43769-102
RB13-PT-02-S	L19652-18
LAB BLANK	WG43834-101
OPR	WG43834-102
RB13-DUN-05-D	L19652-8
RB13-DIS-10-S	L19652-31

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CHAIN OF CUSTODY

AXYS CLIENT #: 4273

REPORT TO:
Company: Newfields
Address: 115 2nd Ave N, Edmonds WA 98020
Contact: Will Hafner
Phone: 425-967-5285 Ext 103
FAX:
E-mail: whafner@newfields.com

INVOICE TO:
Company: Newfields - same as report to
Address:
Contact:
Phone:
FAX:
E-mail:

Project Name/Number: North Olympic Peninsula Reg. Background
Sampler's Name:
Signature:

ANALYSIS REQUESTED: Dioxin/Furan Congeners; PCB Congeners

Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	AXYS Lab Sample ID (Lab use only)	Dioxin/Furan Congeners	PCB Congeners			
RB13-DUN-03-S	SED	5.6.13	1009	1 #1353	L19652-1	X	X			
RB13-DUN-06-S	"	"	1050	1 #1293	-2	X	X			
RB13-DUN-07-S	"	"	1110	1 #1303	-3	X	X			
RB13-DUN-12-S	"	"	1130	1 #1393	-4	X	X			
RB13-DUN-10-S	"	"	1210	1 #1323	-5	X	X			
RB13-DUN-13-S	"	"	1328	1 #1403	-6	X	X			
RB-13-DUN-05-S	"	"	1346	1 #1283	-7	X	X			
RB-13-DUN-05-D	"	"	"	1 #1400	-8	X	X			
RB13-DUN-09-S	"	"	1425	1 #1313	-9	X	X			
RB13-DUN-04-S	"	"	1446	1 #1363	-10	X	X			
RB13-DUN-02-S	"	"	1509	1 #1273	-11	X	X			

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
[signature]	5/14/13	13:00	[signature]	15 May 13	10:55
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time

Courier:
Waybill No.:

Sample Receipt

	Cooler
Temp °C	
Custody Seal #	
Seal Intact Y / N	
Sample Tags Y / N	

Remarks:

AXYS | Axys Analytical Services Ltd

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Sidney, British Columbia, Canada V8L 5X2 FAX: (250) 655-5811 90 Candice Navaroli

CHAIN OF CUSTODY

AXYS CLIENT #: 4273

REPORT TO:		INVOICE TO:	
Company	Newfields - Will Hafner	Company	Newfields - same as report TO
Address	115 2nd Ave N Edmonds WA 98020	Address	
Contact	Will Hafner	Contact	
Phone	425-967-5285 Ext 103	Phone	
FAX		FAX	
E-mail	whafner@newfields.com	E-mail	

Project Name/Number: North Olympic Peninsula Reg. Background

Sampler's Name:

Signature:

ANALYSIS REQUESTED

Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	AXYS Lab Sample ID (Lab use only)	Dioxin/Furan Congeners	PCB Congeners			
RB13-DUN-11-S	SED	5.6.13	1549	1 #1383	L19652-12	X	X			
RB13-DUN-01-S	"	"	1613	1 #1345	-13	X	X			
RB13-DUN-08-S	"	"	1638	1 #1373	-14	X	X			

Relinquished by (Signature)	Date	Time	Received by (Signature)		Courier	Waybill No.
Jasper Bauer	5/14/13	13:00	Date 15 May 13	Time 10:55		
Relinquished by (Signature)	Date	Time	Received by (Signature) Date	Time	Sample Receipt	
Remarks					Temp °C	Cooler
					Custody Seal #	
					Seal Intact Y / N	
					Sample Tags Y / N	

AXYS | Axys Analytical Services Ltd

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Sidney, British Columbia, Canada V8L 5X2 FAX: (250) 655-5811

Attn: Candice Navaroli

CHAIN OF CUSTODY

AXYS CLIENT #: 4273

REPORT TO:
Company: NewFields
Address: 115 2nd Ave N, Edmonds WA 98020
Contact: Will Hafner
Phone: 425-967-5285 x103
FAX: —
E-mail: whafner@newfields.com

INVOICE TO:
Company: NewFields - same as report to
Address:
Contact:
Phone:
FAX:
E-mail:

Project Name/Number: North Olympic Peninsula Reg. Background

Sampler's Name:
Signature:

ANALYSIS REQUESTED

Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	AXYS Lab Sample ID (Lab use only)	Dioxin/Furan Congeners	PCB congeners (Full suite)	NewFields Jar #		
RB13-PT-06-S	Sed	5/10/13	909	1	L9652-15	X	X	1553		
RB13-PT-09-S	Sed	5/10/13	948	1	-16	X	X	1583		
RB13-PT-04-S	Sed	5/10/13	1008	1	-17	X	X	1533		
RB13-PT-02-S	Sed	5/10/13	1035	1	-18	X	X	1513		
RB13-PT-05-S	Sed	5/10/13	1115	1	-19	X	X	1543		
RB13-PT-10-S	Sed	5/10/13	1133	1	-20	X	X	1593		
RB13-PT-07-S	Sed	5/10/13	1156	1	-21	X	X	1563		
RB13-PT-03-S	Sed	5/10/13	1307	1	-22	X	X	1523	WH	
RB13-PT-08-S	Sed	5/10/13	1411	1	-23	X	X	~~1411~~	1573	
RB13-PT-01-S	Sed	5/10/13	1446	1	-24	X	X	1503		

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Jasper Bauer	5/14/13	13:00		15 May 13	10:55
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time

Remarks

Courier: | Waybill No.:

Sample Receipt

	Cooler
Temp °C	
Custody Seal #	
Seal Intact Y / N	
Sample Tags Y / N	

NEWFIELDS

NewFields Northwest, LLC.
Shipping: 4729 NE View Dr.
Mailing: P.O. Box 216
Port Gamble, WA. 98364
Tel: (360) 297-6040, Fax: (360)297-7268

CHAIN OF CUSTODY

13639 4273

Destination Lab: Axys	Sample Originator: New Fields	Report Results To: Will Hafner	Phone:
Destination Contact: Candice Navarali	Contact Name: Will Hafner	Contact Name:	Fax:
Date: 5/9/13	Address: 115 2nd Ave N Edmonds WA 98020	Address:	Email:
Turn-Around-Time			
Project Name: North Olympic Peninsula Regional Background	Phone: 425-967-5285 x103	Invoicing To:	
Contract/PO:	Fax: ~	Comments or Special Instructions:	
	E-mail: whafner@newfields.com		

No.	Sample ID	Matrix	No. & Type of Container	Date & Time	Dioxin/Furan	PCB Congener					Preservation	Sample Temp Upon Receipt	LAB ID
1	RB13-SEQ-05-S	sed	1	5/9/13 8:57	X	X					L9652-25		1043
2	RB13-SEQ-02-S	sed	1	5/9/13 9:36	X	X					-26		~~1073~~ 1013
3	RB13-SEQ-04-S	sed	1	5/9/13 10:11	X	X					-27		1033
4	RB13-SEQ-03-S	sed	1	5/9/13 11:04	X	X					-28		1023
5	RB13-SEQ-03-D	sed	1	5/9/13 11:04	X	X					-29		1080
6	RB13-SEQ-01-S	sed	1	5/9/13 11:41	X	X					-30		1003
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													

Relinquished by:	Recieved by:	Relinquished by:	Recieved by:
Print Name: Jasper Beers	Print Name: M GIERDEN	Print Name:	Print Name:
Signature: Jasper Beers	Signature:	Signature:	Signature:
Affiliation: New Fields	Affiliation: AXYS	Affiliation:	Affiliation:
Date/Time: 5/14/13 13:00	Date/Time: 15 May 13 10:55	Date/Time:	Date/Time:

Matrix Codes
FW = Fresh Water
WW = Waste Water
SB = Salt & Brackish Water
SS = Soil & Sediment
TS = plant & Animal Tissue
OT = Other

WHITE – return to originator • YELLOW – lab • PINK – retained by originator

AXYS | Axys Analytical Services Ltd
2045 Mills Road West TEL: (250) 655-5800
Sidney, British Columbia, Canada V8L 5X2 FAX: (250) 655-5811

Attn: Candice Navarolli

CHAIN OF CUSTODY

AXYS CLIENT #: 4273

REPORT TO:
Company: Newfields
Address: 115 2nd Ave N, Edmonds WA 98020
Contact: Will Hafner
Phone: 425 967 5265 x 103
FAX:
E-mail: whafner@newfields.com

INVOICE TO:
Company: Newfields - same
Address:
Contact:
Phone:
FAX:
E-mail:

Project Name/Number: North olympic Peninsula reg. Background

Sampler's Name: Will Hafner
Signature:

ANALYSIS REQUESTED

Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	Preservative Y / N	AXYS Lab ID Lab use only	Dioxin/Furan congeners	PCB congeners (full suite)	Newfields Jar Tag		
RB13-DIS-10-S	Sed	5/8/13	1127	1		L19652-31	X	X	1173		
RB13-DIS-07-S	Sed	5/8/13	1147	1		-32	X	X	1143		
RB13-DIS-01-S	Sed	5/8/13	1083	1		-33	X	X	1083		
RB13-DIS-01-S	Sed	5/8/13	~~1103~~ 1357	1		-34	X	X	1103		
RB13-DIS-12-S	Sed	5/8/13	1435	1		-35	X	X	1193		
RB13-DIS-02-S	Sed	5/8/13	1529	1		-36	X	X	1093		
RB13-DIS-05-S	Sed	5/8/13	1554	1		-37	X	X	1123		

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
[signature]	5/14/13	13:00	[signature]	15 May 13	10:55
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time

Remarks / Type Of Preservative

Courier	Waybill No.
Fedex	799759574788

Sample Receipt

	Cooler
Temp °C	
Custody Seal #	
Seal Intact Y / N	
Sample Tags Y / N	

AXYS | Axys Analytical Services Ltd

2045 Mills Road West TEL: (250) 655-5800
Sidney, British Columbia, Canada V8L 5X2 FAX: (250) 655-5811

Candice Navarali

CHAIN OF CUSTODY

AXYS CLIENT #: 4273

REPORT TO:		INVOICE TO:	
Company	NewFields	Company	NewFields - Will Hafner
Address	115 2nd Ave N Suite 100 Edmonds WA 98020	Address	
Contact	Will Hafner	Contact	
Phone	425-967-5285 x103	Phone	
FAX		FAX	
E-mail	whafner@newfields.com	E-mail	
Project Name/Number:	North Olympic Peninsula Regional Background	Sampler's Name: Signature:	

Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	AXYS Lab Sample ID (Lab use only)	ANALYSIS REQUESTED: Dioxin Furan congeners	PCB congeners (full suite)			
RB13-DIS-04-S	Sed	5/7/13	1342	1	L19652-38	X	X			
RB13-DIS-11-S	Sed	5/7/13	1407	1	-39	X	X			
RB13-DIS-08-S	Sed	5/7/13	1429	1	-40	X	X			
RB13-DIS-06-S	Sed	5/7/13	1530	1	-41	X	X			
RB13-DIS-09-S	Sed	5/7/13	1640	1	-42	X	X			
RB13-DIS-09-D	Sed	5/7/13	1640	1	-43	X	X			

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time	Courier	Waybill No.
Jennifer Beaus	5/14/13	13:00		15 May 13	10:55	Fedex	799759574788
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time	Sample Receipt	

Remarks	Sample Receipt	Cooler
	Temp °C	
	Custody Seal #	
	Seal Intact Y / N	
	Sample Tags Y / N	

4273

From: (425) 318-0420
Will Hafner
NewFields Northwest
115 2nd Ave N
Suite 100
Edmonds, WA 98020
UNITED STATES

Origin ID: PAEA

FedEx Express

J13111302120426

Ship Date: 14MAY13
ActWgt: 57.0 LB
CAD: 7698805/INET3370

Dims: 24 X 14 X 14 IN

TotWgt: 167.0 LB

REF: 860.0072.000 Phase 2
DESC-1: 250 ml jars containing sediment samples for chemical analysi
DESC-2:
DESC-3:
DESC-4:
EEI: NO EEI 30.36
COUNTRY MFG: US
CARRIAGE VALUE: 0.00 USD
CUSTOMS VALUE: 215.00 USD
T/C: S 368990728 D/T: S 368990728
SIGN: Will Hafner
EIN/VAT:
PKG TYPE: CUSTOMER

Received
15 May 13 10:55

SHIP TO: (250) 655-5839 BILL SENDER

Candice Navaroli
Axys Analytical Services Ltd
2045 Mills Road

Sidney, BC V8L5X2
CA

1 of 3

AM
INTL PRIORITY

TRK# 7997 5957 4788
0430

MASTER
XQ YYJA

V8L 5X2
BC-CA
YVR

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4273

From: (425) 318-0420
Will Hafner
NewFields Northwest
115 2nd Ave N
Suite 100
Edmonds, WA 98020
UNITED STATES

Origin ID: PAEA

FedEx Express

J131113021204 26

Ship Date: 14MAY13
ActWgt: 57.0 LB
CAD: 7698805/INET3370

Dims: 24 X 13 X 14 IN

TotWgt: 167.0 LB

REF: 860.0072.000 Phase 2

Received
15May13 10:55

SHIP TO: (250) 655-5839 BILL SENDER

Candice Navaroli
Axys Analytical Services Ltd
2045 Mills Road

Sidney, BC V8L5X2
CA

PKG TYPE: CUSTOMER

3 of 3

AM
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MPS# 7997 5957 5063
0441

Mstr# 7997 5957 4788 0430

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4273

From: (425) 318-0420
Will Hafner
NewFields Northwest
115 2nd Ave N
Suite 100
Edmonds, WA 98020
UNITED STATES

Origin ID: PAEA

FedEx Express

J13111302120426

Ship Date: 14MAY13
ActWgt: 53.0 LB
CAD: 7698805/INET3370

Dims: 24 X 14 X 14 IN

TotWgt: 167.0 LB

REF: 860.0072.000 Phase 2

Received 15May13 10:55

SHIP TO: (250) 655-5839 BILL SENDER

Candice Navaroli
Axys Analytical Services Ltd
2045 Mills Road

Sidney, BC V8L5X2
CA

PKG TYPE: CUSTOMER

2 of 3

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MPS# 7997 5957 4870
0441
Mstr# 7997 5957 4788
0430

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AXYS Analytical Services Ltd
SAMPLE RECEIVING RECORD

Waybill : Yes /No — Waybill #: 799759574788
Date Shipped: 14-MAY-13 — Date /Time Received: 15-MAY-13 10:55

AXYS Client & Contract # 4273-NewFields Environmental Forensics

Project Number: — Receipt No: WB14810

Login Number:

Received By: MGIERDEN — Log in by: M. WILMAN — Signature: M. Wilman

Axys Sample ID's: L19652-1 to 14

Matrix Type: 14 Marine Seds

Condition of Shipping Container: Intact.

Temperature upon Receipt: 3.4 Celcius — shipped on wet ice, some left. temp blank present → unable to retrieve from cooler. Thermometer ID: 3290
Corrected Temperature: 3.4 Celcius

Custody Seals: Shipping Containers Yes /No — Intact Yes /No — Seal Numbers Yes /No date & signature
Samples Yes /No — Intact Yes /No — Seal Numbers Yes /No

Chain of Custody or Documents:	Yes /No	Tracking Report /Packing List:	Yes /No
Sample ID's	Yes /No	Sample Tag Numbers	Yes /No
Collection Location	Yes /No	Sample Type	Yes /No
Date & Time Collection	Yes /No	Preservative Added	Yes /No
Collector's Name	Yes /No	Preservation Requested	Yes /No

Sample Tags	Yes /No		
Sample Labels	Yes /No		
Sample Labels Cross Referenced to COC	Yes /No	Information Agrees	Yes /No
Sample Tags Cross Referenced to Sample Labels	Yes /No	Information Agrees	Yes /No
Sample Tags Cross Referenced to COC	Yes /No	Information Agrees	Yes /No

Comments:

RB13-DUN-01-S COC tag # 1345 Label tag # 1343

Action Taken:

AXYS Analytical Services Ltd
SAMPLE RECEIVING RECORD

Waybill : Yes /No
Waybill #: 799759575063
Date Shipped: 14-MAY-13
Date /Time Received: 15-MAY-13 10:55

AXYS Client & Contract # 4273-NewFields Environmental Forensics

Project Number:
Receipt No: WB14811

Login Number:

Received By: MGIERDEN
Log in by: M. WILMAN
Signature: M. Wilman

Axys Sample ID's: L19652-15 to 30

Matrix Type: 16 Marine Seds

Condition of Shipping Container: Intact

Temperature upon Receipt: .7 Celcius shipped on wet ice, some left, temp blank present
Thermometer ID: 3290
unable to retrieve from cooler
Corrected Temperature: .7 Celcius

Custody Seals: Shipping Containers Yes /No Intact Yes /No Seal Numbers Yes /No date & signature.
Samples Yes /No Intact Yes /No Seal Numbers Yes /No

Chain of Custody or Documents: Yes /No
Sample ID's Yes /No
Collection Location Yes /No
Date & Time Collection Yes /No
Collector's Name Yes /No

Tracking Report /Packing List: Yes /No
Sample Tag Numbers Yes /No
Sample Type Yes /No
Preservative Added Yes /No
Preservation Requested Yes /No

Sample Tags Yes /No
Sample Labels Yes /No
Sample Labels Cross Referenced to COC Yes /No Information Agrees Yes /No
Sample Tags Cross Referenced to Sample Labels Yes /No Information Agrees Yes /No
Sample Tags Cross Referenced to COC Yes /No Information Agrees Yes /No

Comments:

Action Taken:

AXYS Analytical Services Ltd
SAMPLE RECEIVING RECORD

Waybill : Yes /No
Waybill #: 799759574870
Date Shipped: 14-MAY-13
Date /Time Received: 15-MAY-13 10:55

AXYS Client & Contract # 4273-NewFields Environmental Forensics

Project Number:
Receipt No: WB14812

Login Number:

Received By: MGIERDEN
Log in by: M. WILMAN
Signature: M. Wilman

Axys Sample ID's: L19652-31 to 43

Matrix Type: 13 Marine Seds

Condition of Shipping Container: Intact.

Temperature upon Receipt: 2.9 Celcius
shipped on wet ice, some left. temp blank present
Thermometer ID: 3290
Corrected Temperature: 2.9 Celcius

Custody Seals: Shipping Containers Yes /No Intact Yes /No Seal Numbers Yes /No
Samples Yes /No Intact Yes /No Seal Numbers Yes /No

Unable to retrieve from cooler date & signature

Chain of Custody or Documents:	Yes /No	Tracking Report /Packing List:	Yes /No
Sample ID's	Yes /No	Sample Tag Numbers	Yes /No
Collection Location	Yes /No	Sample Type	Yes /No
Date & Time Collection	Yes /No	Preservative Added	Yes /No
Collector's Name	Yes /No	Preservation Requested	Yes /No

Sample Tags	Yes /No		
Sample Labels	Yes /No		
Sample Labels Cross Referenced to COC	Yes /No	Information Agrees	Yes /No
Sample Tags Cross Referenced to Sample Labels	Yes /No	Information Agrees	Yes /No
Sample Tags Cross Referenced to COC	Yes /No	Information Agrees	Yes /No

Comments:

RB13-DIS-01-S coctime = 1083 label time = 12:06
logged in as per label time.

COC = RB13-DIS-01-S 5/8/13 13:57 tag # 1103
Label = RB13-DIS-03-S 5/8/13 13:44 tag # 1103
logged in as per label.

RB13-DIS-12-S COC = 14:35 label = 14:44
RB13-DIS-08-S COC = 14:29 Label = 14:35

Action Taken:

See attached client email.

For Scanning CN
14-Jun-13

AXYS

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-1		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-03-S 06-MAY-13 10:09	Project #: PORT GARDNER			
Comments: Tag # 1353				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-2		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-06-S 06-MAY-13 10:50	Project #: PORT GARDNER			
Comments: Tag # 1293				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-3		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-07-S 06-MAY-13 11:10	Project #: PORT GARDNER			
Comments: Tag # 1303				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-4		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-12-S 06-MAY-13 11:30	Project #: PORT GARDNER			
Comments: Tag # 1393				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-5		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-10-S 06-MAY-13 12:10	Project #: PORT GARDNER			
Comments: Tag # 1323				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-6		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-13-S 06-MAY-13 13:28	Project #: PORT GARDNER			
Comments: Tag # 1403				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-7		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-05-S 06-MAY-13 13:46	Project #: PORT GARDNER			
Comments: Tag # 1283				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-8		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-05-D 06-MAY-13 13:46	Project #: PORT GARDNER			
Comments: Tag # 1400				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
Solid	R:7:MOISTURE		:	USD
Solid	R:DX017.1613		:	USD
Solid	R:DX017.1613-2		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-9		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-09-S 06-MAY-13 14:25	Project #: PORT GARDNER			
Comments: Tag # 1313				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-10		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-04-S 06-MAY-13 14:46	Project #: PORT GARDNER			
Comments: Tag # 1363				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-11		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-02-S 06-MAY-13 15:09	Project #: PORT GARDNER			
Comments: Tag # 1273				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-12		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-11-S 06-MAY-13 15:49	Project #: PORT GARDNER			
Comments: Tag # 1343				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-13		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-01-S 06-MAY-13 16:13	Project #: PORT GARDNER			
Comments: Tag # 1345				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-14		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-08-S 06-MAY-13 16:38	Project #: PORT GARDNER			
Comments: Tag # 1373				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-15		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-06-S 10-MAY-13 09:09	Project #: PORT GARDNER			
Comments: Tag # 1553				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-16		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-09-S 10-MAY-13 09:48	Project #: PORT GARDNER			
Comments: Tag # 1583				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-17		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-04-S 10-MAY-13 10:08	Project #: PORT GARDNER			
Comments: Tag # 1533				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-18		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-02-S 10-MAY-13 10:35	Project #: PORT GARDNER			
Comments: Tag # 1513				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
Solid	R:3:MOISTURE		:	USD
Solid	R:DX013.1613		:	USD
Solid	R:DX013.1613-2		:	USD
Solid	R:PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-19		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-05-S 10-MAY-13 11:15	Project #: PORT GARDNER			
Comments: Tag # 1543				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-20		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-10-S 10-MAY-13 11:33	Project #: PORT GARDNER			
Comments: Tag # 1593				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-21		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-07-S 10-MAY-13 11:58	Project #: PORT GARDNER			
Comments: Tag # 1563				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-22		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-03-S 10-MAY-13 13:07	Project #: PORT GARDNER			
Comments: Tag # 1523				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-23		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-08-S 10-MAY-13 14:11	Project #: PORT GARDNER			
Comments: Tag # 1573				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-24		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-01-S 10-MAY-13 14:46	Project #: PORT GARDNER			
Comments: Tag # 1503				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (In01)

Jun. 14, 2013

02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-25		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-SEQ-05-S 09-MAY-13 08:57	Project #: PORT GARDNER			
Comments: Tag # 1043				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-26		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-SEQ-02-S 09-MAY-13 09:36	Project #: PORT GARDNER			
Comments: Tag # 1013				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013

02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-27		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-SEQ-04-S 09-MAY-13 10:11	Project #: PORT GARDNER			
Comments: Tag # 1033				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-28		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-SEQ-03-S 09-MAY-13 11:04	Project #: PORT GARDNER			
Comments: Tag # 1023				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-29		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-SEQ-03-D 09-MAY-13 11:04	Project #: PORT GARDNER			
Comments: Tag # 1080				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-30		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-SEQ-01-S 09-MAY-13 11:41	Project #: PORT GARDNER			
Comments: Tag # 1003				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-31		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-10-S 08-MAY-13 11:27	Project #: PORT GARDNER			
Comments: Tag #1173				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
Solid	R:7:MOISTURE		:	USD
Solid	R:DX017.1613		:	USD
Solid	R:DX017.1613-2		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-32		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-07-S 08-MAY-13 11:47	Project #: PORT GARDNER			
Comments: Tag #1143				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-33		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-01-S 08-MAY-13 12:06	Project #: PORT GARDNER			
Comments: Tag #1083				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-34		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-03-S 08-MAY-13 13:57	Project #: PORT GARDNER			
Comments: Tag #1103				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-35		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-12-S 08-MAY-13 14:44	Project #: PORT GARDNER			
Comments: Tag #1193				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-36		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-02-S 08-MAY-13 15:29	Project #: PORT GARDNER			
Comments: Tag #1093				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-37		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-05-S 08-MAY-13 15:54	Project #: PORT GARDNER			
Comments: Tag #1123				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-38		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-04-S 07-MAY-13 13:42	Project #: PORT GARDNER			
Comments: Tag #				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013

02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-39		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-11-S 07-MAY-13 14:07	Project #: PORT GARDNER			
Comments: Tag #				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-40		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-08-S 07-MAY-13 14:35	Project #: PORT GARDNER			
Comments: Tag #				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013

02:30 PM

Login Number: L19652

Account: 4273 NewFields Environmental Forensics

Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-41		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-06-S 07-MAY-13 15:30	Project #: PORT GARDNER			
Comments: Tag #				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-42		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-09-S 07-MAY-13 16:40	Project #: PORT GARDNER			
Comments: Tag #				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013

02:30 PM

Login Number: L19652

Account: 4273 NewFields Environmental Forensics

Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-43		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-09-D 07-MAY-13 16:40	Project #: PORT GARDNER			
Comments: Tag #				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

Candice Navaroli

From: Will Hafner [whafner@newfields.com]
Sent: Wednesday, May 15, 2013 4:30 PM
To: Candice Navaroli
Subject: RE: FedEx MPS Shipment Notification

DATA PKG.

Candice,
The corrections are included below.
I submitted the form for the SRM. I'll keep you posted on when you can expect it to arrive.
Will

Will Hafner Ph.D.
Environmental Chemist
115 2nd Ave N, Suite 100
Edmonds, WA 98020
Office: 425-967-5285 Ext. 103
Cell: 425-318-0420
www.newfields.com

NewFields
Perspective. Vision. Solutions.

From: Candice Navaroli [mailto:cnavaroli@axys.com]
Sent: Wednesday, May 15, 2013 3:12 PM
To: Will Hafner
Subject: RE: FedEx MPS Shipment Notification

Hi Will,
There are a few sample discrepancies that need to be resolved so that we can successfully complete sample login. Please advise as to which we should use;

1) Client ID on the Chain of Custody form: RB13-DUN-01-S COC tag # = 1345, Sample Jar Label tag # = 1343

It should be 1343 on the COC. With a couple exceptions the dioxin jar tags end in a 3.

2) Client ID and time on the Chain of Custody form: RB13-DIS-01-S, time = 1083 tag # = 12:06, Sample Jar Label tag # = 1083, I think this may have just been a writing in the incorrect column type of error.
Yes, the time should be 1206 for sample RB13-DIS-01-S and the jar tag is 1083.
That COC has RB13-DIS-01-S listed twice. The second listing (fourth line) should be RB13-DIS-03-S.

3) Client ID on the Chain of Custody form: RB13-DIS-12-S, time= 14:35 Sample Label time= 14:44
The time should be 1444

4) Client ID on the Chain of Custody form: RB13-DIS-08-S, time= 14:29 Sample Label time= 14:35
The time should be 1435

Regards,
Candice

Candice Navaroli (B.Sc.)
Project Manager
Tel.: 250-655-5800
Direct: 250-655-5839
Toll free: 1-888-373-0881 Ext.5839
Fax: 250-655-5811
Email: cnavaroli@axys.com

Axys Analytical Services Ltd.

2045 Mills Road
Sidney, BC.
Canada, V8L 5X2

From: Will Hafner [mailto:whafner@newfields.com]
Sent: Tuesday, May 14, 2013 4:26 PM
To: Candice Navaroli
Subject: FW: FedEx MPS Shipment Notification

Candice,
Here is the tracking info for the coolers.
I noticed I screwed up on one of the COCs. The COC that begins with sample RB13-DIS-10-S has two errors.
It has sample RB13-DIS-01-S listed twice. The COC for these two samples should read (the two errors are highlighted):

RB13-DIS-01-S	Sed	5/8/13	1206
RB13-DIS-03-S	Sed	5/8/13	1357

Did you find out anything about the PCB reference materials?
Will

Will Hafner Ph.D.
Environmental Chemist
115 2nd Ave N, Suite 100
Edmonds, WA 98020
Office: 425-967-5285 Ext. 103
Cell: 425-318-0420
www.newfields.com

NewFields
Perspective. Vision. Solutions.

From: trackingupdates@fedex.com [mailto:trackingupdates@fedex.com]
Sent: Tuesday, May 14, 2013 1:27 PM
To: whafner@newfields.com
Subject: FedEx MPS Shipment Notification

This tracking update has been requested by:

Company Name: NewFields Northwest
Name: Will Hafner
E-mail: whafner@newfields.com

Sent to: cnavaroli@axys.com
whafner@newfields.com

Will Hafner of NewFields Northwest sent Candice Navaroli of Axys Analytical Services Ltd 3 FedEx International Priority package(s).

This shipment is scheduled to be sent on 05/14/2013.

Reference information includes:

Reference: 860.0072.000 Phase 2

Special handling/Services:	Deliver Weekday
Master tracking number:	799759574788 (1 of 3)
Tracking number:	799759574870 (2 of 3)
Status:	Shipment information sent to FedEx
Tracking number:	799759575063 (3 of 3)
Status:	Shipment information sent to FedEx

To track the latest status of your shipment, click on the tracking number above, or visit us at fedex.com.

To learn more about FedEx Express, please visit our website at fedex.com.

This tracking update has been sent to you by FedEx on the behalf of the Requestor noted above. FedEx does not validate the authenticity of the requestor and does not validate, guarantee or warrant the authenticity of the request, the requestor's message, or the accuracy of this tracking update. For tracking results and fedex.com's terms of use, go to fedex.com.

Thank you for your business.

Candice Navaroli

From: Candice Navaroli
Sent: Friday, June 14, 2013 2:31 PM
To: 'Will Hafner'; Leah Chad
Subject: RE: Dioxin/Furan Data (4273 WG43699) North Olympic Peninsula Reg. Background

Hi Will,
I will have this revised.
Regards,
Candice

DATA PKG.

Candice Navaroli (B.Sc.)
Project Manager
Tel.: 250-655-5800
Direct: 250-655-5839
Toll free: 1-888-373-0881 Ext.5839
Fax: 250-655-5811
Email: cnavaroli@axys.com

Axys Analytical Services Ltd.
2045 Mills Road
Sidney, BC.
Canada, V8L 5X2

From: Will Hafner [mailto:whafner@newfields.com]
Sent: Friday, June 14, 2013 2:22 PM
To: Leah Chad
Cc: Candice Navaroli
Subject: RE: Dioxin/Furan Data (4273 WG43699) North Olympic Penninsula Reg. Background

Candice,
Can you change RB13-PT01-S to RB13-PT-01-S in your system before the data package is finalized? I just noticed it was missing the dash. I can make the change in the EDD.
Thanks,
Will

Will Hafner Ph.D.
Environmental Chemist
115 2nd Ave N, Suite 100
Edmonds, WA 98020
Office: 425-967-5285 Ext. 103
Cell: 425-318-0420
www.newfields.com

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From: Leah Chad [mailto:lchad@axys.com]
Sent: Tuesday, June 11, 2013 10:09 AM
To: cransom@ecochem.net; whafner@newfields.com
Cc: Candice Navaroli
Subject: Dioxin/Furan Data (4273 WG43699) North Olympic Penninsula Reg. Background

Attached please find dioxin/furan data in .csv and .pdf format sent to you today, 11 June 2013.

Contract: 4273
Batch ID: WG43699
Analysis: Dioxin/Furan
Samples:

L19652-16	RB13-PT-09-S
L19652-17	RB13-PT-04-S
L19652-19	RB13-PT-05-S
L19652-20	RB13-PT-10-S
L19652-21	RB13-PT-07-S
L19652-22	RB13-PT-03-S
L19652-23	RB13-PT-08-S
L19652-24	RB13-PT01-S
L19652-25	RB13-SEQ-05-S
L19652-26	RB13-SEQ-02-S
L19652-27	RB13-SEQ-04-S
L19652-28	RB13-SEQ-03-S
L19652-29	RB13-SEQ-03-D

1. Data are considered final.
2. Data are not blank corrected.

Every effort has been made to ensure the correct transfer of electronic data files. The files have been prepared in a READ ONLY format to prevent inadvertent changes to the data. Should a discrepancy occur between the electronic copy and the signed analysis report, the latter is considered to contain the authorized data. If you have any questions or require further information, please contact Candice Navaroli, Project Manager.

Regards,
AXYS ANALYTICAL SERVICES LTD
lc/kp

Leah Chad
Data Reporter
AXYS Analytical Services Ltd.
2045 Mills Road W, Sidney, BC V8L 5X2
Tel. (250) 655-5800 Ext.1843
lchad@axys.com

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Recipient Copy

CHAIN-OF-CUSTODY RECORD

COC No. 12647

Order Number: SG012084

Date Shipped: 5/16/2013

AirBill No(s): 560847646659 4273

From: QATS LABORATORY
2700 CHANDLER AVENUE, BLDG. B
LAS VEGAS, NV 89120
PHONE: 1-702-895-8712
FAX: 1-702-795-8210

To: Candice Navaroli
AXYS ANALYTICAL SERVICES
2045 MILLS ROAD WEST
SIDNEY BC V8L 5X2
(250)-655-5800

Sample ID	Sigma ID	Qty	Description/Remarks	→ Catalogue Number
SRS1136 L196605-1	SR0431	1	PUGET SOUND SEDIMENT RM	PS-SRM

AC 5/16/13

Please use the enclosed Sample Preparation Instructions. If catalogue number(s) are listed at the top of the Sample Preparation Instructions use the Sample Preparation Instructions with catalogue number(s) matching the catalogue number(s) of each of the samples listed above.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	5/16/13 15:00		17May13 11:15
Custody Seal(s): Present/Absent	Remarks:		
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

QATS Form 20-008F053R01 07-31-2012

4273

ORIGIN ID: LASA (702) 895-8714
ARTHUR CLARKE
SHAW ENVIRONMENTAL INC.
2700 CHANDLER AVE.
SUITE C
LAS VEGAS, NV 89120 US
SIGN: ARTHUR CLARKE

SHIP DATE: 16MAY13
ACTWGT: 1.0 LB MAN
CAD: 0157618/CAFE2608

BILL THIRD PARTY
NO EEI 30.36

TO CANDICE NAVAROLI
AXYS ANALYTICAL SERVICES
2045 MILLS ROAD WEST

SIDNEY BC V8L5X2 (CA)
(250) 655-5800 REF:
INV:
PO: DEPT:

FedEx Express

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TRK# 0430 5608 4764 6659

AM
INTL PRIORITY

XQ YYJA

V8L 5X2
BC-CA YVR

Part # 156148-434 NRIT 8-05

Received 17May13 11:15

AXYS Analytical Services Ltd
SAMPLE RECEIVING RECORD

Waybill : Yes/No
Waybill #: 560847646659
Date Shipped: 16-MAY-13
Date /Time Received: 17-MAY-13 11:15

AXYS Client & Contract # 4273-NewFields Environmental Forensics

Project Number:
Receipt No: WB14819
Login Number:

Received By: MGIERDEN
Log in by: Mgierden
Signature:

Axys Sample ID's: L19665-1

Matrix Type: 1 SRM

Condition of Shipping Container: Intact

Temperature upon Receipt: 20.7 Celcius shipped ambient
Thermometer ID: 3270
Corrected Temperature: 20.7 Celcius

MGI 17May13

Custody Seals: Shipping Containers Yes/No Intact Yes/No Seal Numbers Yes/No date + Initials - See Reverse

Samples Yes/No Intact Yes/No Seal Numbers Yes/No

Chain of Custody or Documents:	Yes/No	Tracking Report /Packing List:	Yes/No
Sample ID's	Yes/No	Sample Tag Numbers	Yes/No
Collection Location	Yes/No	Sample Type	Yes/No
Date & Time Collection	Yes/No	Preservative Added	Yes/No
Collector's Name	Yes/No	Preservation Requested	Yes/No

Sample Tags	Yes/No		
Sample Labels	Yes/No		
Sample Labels Cross Referenced to COC	Yes/No	Information Agrees	Yes/No
Sample Tags Cross Referenced to Sample Labels	Yes/No	Information Agrees	Yes/No
Sample Tags Cross Referenced to COC	Yes/No	Information Agrees	Yes/No

Comments:

Action Taken:

For Scanning CN
21-May-13

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

May. 21, 2013
12:32 PM

Login Number: L19665
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19665-1		17-MAY-13		
	Storage: WIC-2, 5A			
SRS1136				
	Project #: PORT GARDNER			
Client QC Type: REFERENCE MATERIAL	Description: Sigma ID: SR0431 - Puget Sound Reference Material			
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 30 mL glass AMB	USD

4273

PUGET SOUND SEDIMENT REFERENCE MATERIAL (SRM) REQUEST FORM

TO REQUEST PUGET SOUND SRM, PLEASE COMPLETE THIS FORM AND SEND IT TO:	
USEPA Region 10 SRM Manager Attn: Mr. Donald M. Brown 1200 Sixth Avenue, Suite 900 Seattle, WA 98101 **Phone:** (206) 553-0717 **Email:** brown.donaldm@epa.gov	**Special Instructions:**

NOTE: PUGET SOUND SEDIMENT REFERENCE MATERIAL IS USUALLY SHIPPED WITHIN 24 HOURS OF REQUEST.

Date of Request:	5-15-13	Project/Site Name:	NOP Reg. Background
Date SRM Needed:	ASAP	Project/Site Number:	
No. of Bottles Requested:	1	FedEx Account No.:	3689-9072-8

NOTE: PUGET SOUND SEDIMENT REFERENCE MATERIAL IS PACKAGED IN GLASS BOTTLES CONTAINING 30 GRAMS OF MATERIAL.

Ship SRM, SRM request form, and Chain-of-Custody form with sample numbers to:					
Contact Name:	Candice Navaroli	Email:	cnavaroli@axys.com		
Laboratory Name:	Axys Analytical Services Ltd				
Address:	2045 Mills Road				
City:	Sidney	State:	BC	Zip Code:	V8L5X2
Phone:	250-655-5839	Fax No.:	250-655-5811		
Send copies of the SRM request form and Chain-of-Custody form with sample numbers to:					
Contact Name:	Will Hafner	Email:	whafner@newfields.com		
Company:	NewFields				
Address:	115 2nd Avenue N, Suite 100				
City:	Edmonds	State:	WA	Zip Code:	98020
Phone:	425-967-5285 x103	Fax No.:			

For QATS Laboratory Use Only			
No. of Samples Shipped:		Shipped By:	
Shipping Date:		Airbill No.:	
COC No.:			

As an authorized agency requestor, I certify that the Puget Sound SRM requested is to be used for USEPA Region 10 approved activities only.

Laura Inouye	Laura Inouye
Print Name	Authorized Signature
Authorized Agency: Ecology	Phone No: 360-407-6165

QATS Form 20-007F159R00, 03-19-2012

Shaw

4273

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2008 Certified Program"

Instructions for QATS Catalog Number: PS-SRM
Marine Sediment: CDD/CDF/CB Congeners/Aroclors

PUGET SOUND SEDIMENT REFERENCE MATERIAL
QATS LABORATORY INSTRUCTIONS FOR HRGC/HRMS CDD/CDF/CB CONGENER AND GC/ECD AROCLOR ANALYSIS

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocols or your contract, disregard these instructions.

APPLICATION: For the analysis of CDD/CDF and CB Congener analytes using project-specified HRGC/HRMS methods, and Aroclors using project-specified GC/ECD methods.

CAUTION: Read instructions carefully before opening bottles and proceeding with the analyses.

This Sample Contains Chemicals Known or Suspected to Have Serious Human Health Effects.

Material Safety Data Sheets Available Upon Request

(A) *SAMPLE DESCRIPTION*

Enclosed is a Puget Sound (Washington State) Sediment Reference Material (SRM) set for chlorinated dibenzo-p-dioxins / chlorinated dibenzofurans (CDD/CDF), and/or chlorinated biphenyl (CB) Congener analysis using project-specified high resolution gas chromatography/ high resolution mass spectrometry (HRGC/HRMS) methods. This SRM is also suitable for Aroclor analysis using project-specified gas chromatography/electron capture detection (GC/ECD) methods. This set consists of one (1) or more bottles, each with approximately 30 grams of Puget Sound SRM containing CDD/CDF, CB Congener, and/or Aroclor analytes. Check the chain-of-custody record to determine the number of bottles provided for CDD/CDF, CB Congener, and/or Aroclor analysis. None of the bottles are to be opened until SRM preparation/analysis is to occur.

CAUTION: The SRM could contain compounds that are light sensitive and should be protected from light during storage. Store the SRM at 4° C ± 2° C until SRM preparation and analysis is to occur. Allow the bottle(s) to reach ambient temperature before opening.

(B) *BREAKAGE OR MISSING ITEMS*

Check the contents of the shipment carefully for any broken, leaking, or missing items. Refer to enclosed chain-of-custody record. Report any problems to Mr. Keith Strout, Shaw Environmental, Inc. at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
Shaw Environmental, Inc.
2700 Chandler Ave - Bldg C
Las Vegas, NV 89120

(C) *ANALYSIS REQUIREMENTS*

The SRM is to be analyzed as described in the project-specified methods employed for the analysis of CDD/CDF and/or CB Congener analytes using HRGC/HRMS instrumentation and/or Aroclors using GC/ECD instrumentation. These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the project-specified methods, or your contract, disregard these instructions.

(D) *SAMPLE ANALYSIS*

General Instructions

The SRM contains CDD/CDF, CB Congener, and Aroclor analytes which are known or suspected to have severe health effects. Employing appropriate safety precautions, this SRM is to be handled, prepared, and analyzed exactly as you would process samples received from a known or suspected hazardous waste site. The SRM should be handled only by trained and experienced analysts in facilities expressly designed to handle such materials. When calculating the concentrations of analytes, use 0% as the soil moisture content.

Allow the bottle(s) to reach ambient temperature before opening and removing gravimetric amounts for sample preparation. To begin the extraction and analysis procedure, break the seal and open the bottle carefully. Weigh out the appropriate aliquot for extraction and analysis as prescribed in the project-specified methods (typically 10 grams for HRGC/HRMS methods and 30 grams for GC/ECD methods), or in accordance with your contract.

Proceed immediately with the extraction and analysis as described in the project-specified methods or your contract.

(E) *REPORTING*

Report the results for the prepared SRM as received.

Report the analytical results for the SRM to EPA or other appropriate Agency, using the format and other instructions for submission of data packages as specified in your contract.

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-03-S
Sample Collection:
06-May-2013 10:09

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-1
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	30-May-2013 **Time:** 22:50:13	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 4
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	22.6

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K J	0.052	0.0482 (Q)	0.24	1.000
1,2,3,7,8-PECDD [4]	K J	0.096	0.0648 (S)	0.28	1.001
1,2,3,4,7,8-HXCDD	K B J	0.060	0.0482 (Q)	0.97	1.001
1,2,3,6,7,8-HXCDD	B J	0.258	0.0482 (Q)	1.12	1.000
1,2,3,7,8,9-HXCDD	K B J	0.211	0.0482 (Q)	0.74	1.000
1,2,3,4,6,7,8-HPCDD	B	1.74	0.0482 (Q)	0.98	1.000
OCDD	B	8.55	0.0482 (Q)	0.91	1.000
2,3,7,8-TCDF		0.225	0.0482 (Q)	0.86	1.001
1,2,3,7,8-PECDF	K J	0.068	0.0482 (Q)	1.11	1.001
2,3,4,7,8-PECDF	B J	0.088	0.0482 (Q)	1.34	1.001
1,2,3,4,7,8-HXCDF	K B J	0.060	0.0482 (Q)	0.78	1.001
1,2,3,6,7,8-HXCDF	J	0.052	0.0482 (Q)	1.08	1.000
1,2,3,7,8,9-HXCDF	U		0.0482 (Q)		
2,3,4,6,7,8-HXCDF	J	0.055	0.0482 (Q)	1.16	1.001
1,2,3,4,6,7,8-HPCDF	B J	0.349	0.0482 (Q)	0.90	1.000
1,2,3,4,7,8,9-HPCDF	U		0.0482 (Q)		
OCDF	B J	0.711	0.0482 (Q)	1.00	1.002
TOTAL TETRA-DIOXINS		0.218	0.0482 (Q)		
TOTAL PENTA-DIOXINS		0.178	0.0648 (S)		
TOTAL HEXA-DIOXINS	B	2.08	0.0482 (Q)		
TOTAL HEPTA-DIOXINS	B	4.29	0.0482 (Q)		
TOTAL TETRA-FURANS		1.30	0.0482 (Q)		
TOTAL PENTA-FURANS		0.257	0.0482 (Q)		
TOTAL HEXA-FURANS	B	0.623	0.0482 (Q)		
TOTAL HEPTA-FURANS		0.860	0.0482 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:12; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-1_Form1A_DX3M_080S9_SJ1607465.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-03-S
Sample Collection:
06-May-2013 10:09

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-1
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 12:02:29	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_074 S: 8**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_074 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	22.6

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF	J	0.126	0.0482 (Q)	0.73	1.001

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

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Report Filename: 1613_DIOXINS_1613DB225_L19652-1_Form1A_DB33_074S8_SJ1607577.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-06-S
Sample Collection:
06-May-2013 10:50

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-2
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	30-May-2013 **Time:** 23:45:21	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 4
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	30.5

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	J	0.177	0.0510 (S)	0.68	1.000
1,2,3,7,8-PECDD [4]	J	0.315	0.132 (S)	0.53	1.001
1,2,3,4,7,8-HXCDD	B J	0.373	0.146 (S)	1.32	1.000
1,2,3,6,7,8-HXCDD	B	1.02	0.146 (S)	1.07	1.000
1,2,3,7,8,9-HXCDD	B J	0.905	0.146 (S)	1.18	1.000
1,2,3,4,6,7,8-HPCDD	B	8.96	0.246 (S)	0.98	1.000
OCDD	B	39.4	0.399 (S)	0.87	1.000
2,3,7,8-TCDF		0.797	0.0596 (S)	0.72	1.001
1,2,3,7,8-PECDF	U		0.0914 (S)		
2,3,4,7,8-PECDF	B J	0.252	0.0914 (S)	1.51	1.002
1,2,3,4,7,8-HXCDF	B J	0.297	0.109 (S)	1.18	1.000
1,2,3,6,7,8-HXCDF	J	0.152	0.109 (S)	1.29	1.001
1,2,3,7,8,9-HXCDF	U		0.109 (S)		
2,3,4,6,7,8-HXCDF	J	0.142	0.109 (S)	1.40	1.001
1,2,3,4,6,7,8-HPCDF	B	1.71	0.0950 (S)	0.90	1.000
1,2,3,4,7,8,9-HPCDF	K J	0.106	0.0950 (S)	1.34	1.000
OCDF	B	3.94	0.0547 (S)	0.86	1.002
TOTAL TETRA-DIOXINS		3.02	0.0510 (S)		
TOTAL PENTA-DIOXINS		2.91	0.132 (S)		
TOTAL HEXA-DIOXINS	B	10.9	0.146 (S)		
TOTAL HEPTA-DIOXINS	B	20.7	0.246 (S)		
TOTAL TETRA-FURANS		5.08	0.0596 (S)		
TOTAL PENTA-FURANS		2.46	0.0914 (S)		
TOTAL HEXA-FURANS	B	3.06	0.109 (S)		
TOTAL HEPTA-FURANS		4.09	0.0950 (S)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:12; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-2_Form1A_DX3M_080S10_SJ1607456.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-06-S
Sample Collection:
06-May-2013 10:50

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-2
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 12:39:24	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_074 S: 9**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_074 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	30.5

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		0.404	0.0489 (Q)	0.88	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:49; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-2_Form1A_DB33_074S9_SJ1607578.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-07-S
Sample Collection:
06-May-2013 11:10

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-3
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 00:40:30	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 4
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	16.8

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	U		0.0478 (Q)		
1,2,3,7,8-PECDD [4]	K J	0.064	0.0637 (S)	0.29	1.001
1,2,3,4,7,8-HXCDD	B J	0.075	0.0478 (Q)	1.41	1.000
1,2,3,6,7,8-HXCDD	B J	0.164	0.0478 (Q)	1.06	1.001
1,2,3,7,8,9-HXCDD	B J	0.204	0.0478 (Q)	1.23	1.000
1,2,3,4,6,7,8-HPCDD	B	1.23	0.0690 (S)	1.00	1.000
OCDD	B	6.21	0.0675 (S)	0.86	1.000
2,3,7,8-TCDF	J	0.119	0.0478 (Q)	0.73	1.001
1,2,3,7,8-PECDF	U		0.0478 (Q)		
2,3,4,7,8-PECDF	B J	0.093	0.0478 (Q)	1.42	1.001
1,2,3,4,7,8-HXCDF	K B J	0.055	0.0478 (Q)	0.98	1.000
1,2,3,6,7,8-HXCDF	U		0.0478 (Q)		
1,2,3,7,8,9-HXCDF	U		0.0478 (Q)		
2,3,4,6,7,8-HXCDF	U		0.0478 (Q)		
1,2,3,4,6,7,8-HPCDF	K B J	0.269	0.0568 (S)	0.75	1.000
1,2,3,4,7,8,9-HPCDF	U		0.0478 (Q)		
OCDF	B J	0.563	0.0841 (S)	0.79	1.002
TOTAL TETRA-DIOXINS		0.372	0.0478 (Q)		
TOTAL PENTA-DIOXINS	U		0.0637 (S)		
TOTAL HEXA-DIOXINS	B	1.55	0.0478 (Q)		
TOTAL HEPTA-DIOXINS	B	2.76	0.0690 (S)		
TOTAL TETRA-FURANS		0.628	0.0478 (Q)		
TOTAL PENTA-FURANS		0.148	0.0478 (Q)		
TOTAL HEXA-FURANS	B	0.112	0.0478 (Q)		
TOTAL HEPTA-FURANS		0.268	0.0568 (S)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:12; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-3_Form1A_DX3M_080S11_SJ1607457.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DUN-07-S
Sample Collection:
06-May-2013 11:10

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-3
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 13:16:13	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_074 S: 10**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_074 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	16.8

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF	K J	0.060	0.0478 (Q)	1.07	1.001

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Brian Watson_____

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Report Filename: 1613_DIOXINS_1613DB225_L19652-3_Form1A_DB33_074S10_SJ1607579.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-12-S
Sample Collection:
06-May-2013 11:30

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-4
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 01:35:39	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 4
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	37.2

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K J	0.086	0.0622 (S)	0.52	1.001
1,2,3,7,8-PECDD [4]	J	0.213	0.0655 (S)	0.63	1.001
1,2,3,4,7,8-HXCDD	B J	0.221	0.0475 (Q)	1.38	1.001
1,2,3,6,7,8-HXCDD	B J	0.602	0.0475 (Q)	1.30	1.000
1,2,3,7,8,9-HXCDD	B J	0.464	0.0475 (Q)	1.35	1.001
1,2,3,4,6,7,8-HPCDD	B	4.92	0.0636 (S)	1.00	1.000
OCDD	B	27.0	0.0475 (Q)	0.86	1.000
2,3,7,8-TCDF		0.566	0.0475 (Q)	0.69	1.001
1,2,3,7,8-PECDF	J	0.064	0.0476 (S)	1.74	1.002
2,3,4,7,8-PECDF	K B J	0.074	0.0476 (S)	2.06	1.001
1,2,3,4,7,8-HXCDF	K B J	0.135	0.0475 (Q)	1.59	1.000
1,2,3,6,7,8-HXCDF	J	0.101	0.0475 (Q)	1.42	1.001
1,2,3,7,8,9-HXCDF	U		0.0475 (Q)		
2,3,4,6,7,8-HXCDF	J	0.115	0.0475 (Q)	1.42	1.000
1,2,3,4,6,7,8-HPCDF	B	0.981	0.0475 (Q)	0.96	1.000
1,2,3,4,7,8,9-HPCDF	J	0.060	0.0475 (Q)	0.98	1.000
OCDF	B J	1.86	0.0628 (S)	0.82	1.002
TOTAL TETRA-DIOXINS		19.2	0.0622 (S)		
TOTAL PENTA-DIOXINS		7.55	0.0655 (S)		
TOTAL HEXA-DIOXINS	B	7.85	0.0475 (Q)		
TOTAL HEPTA-DIOXINS	B	12.8	0.0636 (S)		
TOTAL TETRA-FURANS		3.79	0.0475 (Q)		
TOTAL PENTA-FURANS		1.53	0.0476 (S)		
TOTAL HEXA-FURANS	B	1.46	0.0475 (Q)		
TOTAL HEPTA-FURANS		2.30	0.0475 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:12; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-4_Form1A_DX3M_080S12_SJ1607458.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-12-S
Sample Collection:
06-May-2013 11:30

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-4
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 13:53:00	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_074 S: 11**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_074 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	37.2

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		0.293	0.0475 (Q)	0.87	1.002

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:49; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-4_Form1A_DB33_074S11_SJ1607580.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DUN-10-S
Sample Collection:
06-May-2013 12:10

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-5
Matrix:	SOLID	**Sample Size:**	11.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 02:30:53	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 13**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 4
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	16.4

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	U		0.0437 (Q)		
1,2,3,7,8-PECDD [4]	K J	0.072	0.0437 (Q)	0.88	1.001
1,2,3,4,7,8-HXCDD	K B J	0.076	0.0668 (S)	2.34	1.000
1,2,3,6,7,8-HXCDD	B J	0.251	0.0668 (S)	1.32	1.000
1,2,3,7,8,9-HXCDD	K B J	0.210	0.0668 (S)	1.62	1.000
1,2,3,4,6,7,8-HPCDD	B	1.54	0.0681 (S)	0.89	1.000
OCDD	B	8.16	0.201 (S)	0.87	1.000
2,3,7,8-TCDF		0.233	0.0437 (Q)	0.66	1.000
1,2,3,7,8-PECDF	U		0.0437 (Q)		
2,3,4,7,8-PECDF	B J	0.104	0.0437 (Q)	1.50	1.001
1,2,3,4,7,8-HXCDF	K B J	0.059	0.0571 (S)	1.67	1.000
1,2,3,6,7,8-HXCDF	U		0.0571 (S)		
1,2,3,7,8,9-HXCDF	U		0.0571 (S)		
2,3,4,6,7,8-HXCDF	K J	0.058	0.0571 (S)	1.87	1.000
1,2,3,4,6,7,8-HPCDF	K B J	0.419	0.0476 (S)	0.79	1.000
1,2,3,4,7,8,9-HPCDF	U		0.0476 (S)		
OCDF	B J	0.777	0.0769 (S)	0.92	1.002
TOTAL TETRA-DIOXINS		0.318	0.0437 (Q)		
TOTAL PENTA-DIOXINS		0.119	0.0437 (Q)		
TOTAL HEXA-DIOXINS	B	1.68	0.0668 (S)		
TOTAL HEPTA-DIOXINS	B	4.03	0.0681 (S)		
TOTAL TETRA-FURANS		1.30	0.0437 (Q)		
TOTAL PENTA-FURANS		0.462	0.0437 (Q)		
TOTAL HEXA-FURANS	B	0.336	0.0571 (S)		
TOTAL HEPTA-FURANS		0.461	0.0476 (S)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:12; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-5_Form1A_DX3M_080S13_SJ1607459.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DUN-10-S
Sample Collection:
06-May-2013 12:10

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-5
Matrix:	SOLID	**Sample Size:**	11.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 14:29:49	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_074 S: 12**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_074 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	16.4

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF	J	0.115	0.0437 (Q)	0.80	1.001

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:49; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-5_Form1A_DB33_074S12_SJ1607581.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-13-S
Sample Collection:
06-May-2013 13:28

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-6
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 03:26:06	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 14**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 4
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.7

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K J	0.062	0.0468 (Q)	0.21	1.001
1,2,3,7,8-PECDD [4]	J	0.099	0.0468 (Q)	0.68	1.002
1,2,3,4,7,8-HXCDD	K B J	0.065	0.0468 (Q)	1.93	1.000
1,2,3,6,7,8-HXCDD	K B J	0.243	0.0468 (Q)	0.89	1.000
1,2,3,7,8,9-HXCDD	B J	0.213	0.0468 (Q)	1.19	1.001
1,2,3,4,6,7,8-HPCDD	B	2.14	0.0468 (Q)	1.07	1.000
OCDD	B	9.61	0.0642 (S)	0.84	1.000
2,3,7,8-TCDF	K	0.277	0.0468 (Q)	0.61	1.001
1,2,3,7,8-PECDF	U		0.0468 (Q)		
2,3,4,7,8-PECDF	B J	0.057	0.0468 (Q)	1.48	1.001
1,2,3,4,7,8-HXCDF	B J	0.060	0.0468 (Q)	1.42	1.001
1,2,3,6,7,8-HXCDF	U		0.0468 (Q)		
1,2,3,7,8,9-HXCDF	U		0.0468 (Q)		
2,3,4,6,7,8-HXCDF	U		0.0468 (Q)		
1,2,3,4,6,7,8-HPCDF	B J	0.448	0.0468 (Q)	0.99	1.000
1,2,3,4,7,8,9-HPCDF	U		0.0468 (Q)		
OCDF	B J	0.725	0.0468 (Q)	0.86	1.002
TOTAL TETRA-DIOXINS		0.512	0.0468 (Q)		
TOTAL PENTA-DIOXINS		0.547	0.0468 (Q)		
TOTAL HEXA-DIOXINS	B	2.29	0.0468 (Q)		
TOTAL HEPTA-DIOXINS	B	4.92	0.0468 (Q)		
TOTAL TETRA-FURANS		1.16	0.0468 (Q)		
TOTAL PENTA-FURANS		0.407	0.0468 (Q)		
TOTAL HEXA-FURANS	B	0.538	0.0468 (Q)		
TOTAL HEPTA-FURANS		0.927	0.0468 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:12; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-6_Form1A_DX3M_080S14_SJ1607460.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DUN-13-S
Sample Collection:
06-May-2013 13:28

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-6
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 15:06:40	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_074 S: 13**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_074 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.7

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF	J	0.142	0.0468 (Q)	0.86	1.001

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:49; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-6_Form1A_DB33_074S13_SJ1607582.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DUN-05-S
Sample Collection:
06-May-2013 13:46

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-7
Matrix:	SOLID	**Sample Size:**	9.97 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 08:11:00	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 19**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 16
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	29.6

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	J	0.152	0.0502 (Q)	0.87	1.001
1,2,3,7,8-PECDD [4]	J	0.254	0.0818 (S)	0.69	1.000
1,2,3,4,7,8-HXCDD	B J	0.208	0.0502 (Q)	1.36	1.000
1,2,3,6,7,8-HXCDD	B J	0.935	0.0502 (Q)	1.30	1.000
1,2,3,7,8,9-HXCDD	B J	0.950	0.0502 (Q)	1.11	1.000
1,2,3,4,6,7,8-HPCDD	B	8.18	0.0712 (S)	1.01	1.000
OCDD	B	46.2	0.107 (S)	0.90	1.000
2,3,7,8-TCDF		0.803	0.0502 (Q)	0.66	1.002
1,2,3,7,8-PECDF	J	0.130	0.0505 (S)	1.51	1.001
2,3,4,7,8-PECDF	B J	0.188	0.0505 (S)	1.52	1.001
1,2,3,4,7,8-HXCDF	K B J	0.231	0.0502 (Q)	0.92	1.001
1,2,3,6,7,8-HXCDF	J	0.156	0.0502 (Q)	1.19	1.000
1,2,3,7,8,9-HXCDF	U		0.0502 (Q)		
2,3,4,6,7,8-HXCDF	J	0.143	0.0502 (Q)	1.06	1.000
1,2,3,4,6,7,8-HPCDF	B	1.67	0.0502 (Q)	0.89	1.000
1,2,3,4,7,8,9-HPCDF	J	0.160	0.0502 (Q)	1.12	1.001
OCDF	B	3.50	0.0502 (Q)	0.87	1.002
TOTAL TETRA-DIOXINS		1.97	0.0502 (Q)		
TOTAL PENTA-DIOXINS		2.00	0.0818 (S)		
TOTAL HEXA-DIOXINS	B	9.61	0.0502 (Q)		
TOTAL HEPTA-DIOXINS	B	19.5	0.0712 (S)		
TOTAL TETRA-FURANS		4.36	0.0502 (Q)		
TOTAL PENTA-FURANS		2.42	0.0505 (S)		
TOTAL HEXA-FURANS	B	1.43	0.0502 (Q)		
TOTAL HEPTA-FURANS		4.11	0.0502 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:12; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-7_Form1A_DX3M_080S19_SJ1607539.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DUN-05-S
Sample Collection:
06-May-2013 13:46

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-7
Matrix:	SOLID	**Sample Size:**	9.97 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 15:43:29	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_074 S: 14**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_074 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	29.6

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		0.477	0.0502 (Q)	0.79	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

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Report Filename: 1613_DIOXINS_1613DB225_L19652-7_Form1A_DB33_074S14_SJ1607583.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DUN-05-D
Sample Collection:
06-May-2013 13:46

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-8 R
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	07-Jun-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Jun-2013 **Time:** 00:22:53	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_087 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_087 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_087 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	29.5

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K J	0.102	0.0471 (Q)	0.55	1.001
1,2,3,7,8-PECDD [4]	K J	0.258	0.0634 (S)	0.40	1.002
1,2,3,4,7,8-HXCDD	J	0.196	0.0471 (Q)	1.42	1.001
1,2,3,6,7,8-HXCDD		1.01	0.0471 (Q)	1.29	1.000
1,2,3,7,8,9-HXCDD		0.961	0.0471 (Q)	1.22	1.000
1,2,3,4,6,7,8-HPCDD		7.76	0.0546 (S)	1.08	1.000
OCDD		45.8	0.0471 (Q)	0.84	1.000
2,3,7,8-TCDF		0.732	0.0471 (Q)	0.70	1.001
1,2,3,7,8-PECDF	K J	0.140	0.0574 (S)	0.87	1.001
2,3,4,7,8-PECDF	J	0.198	0.0574 (S)	1.38	1.000
1,2,3,4,7,8-HXCDF	J	0.222	0.0471 (Q)	1.21	1.000
1,2,3,6,7,8-HXCDF	J	0.121	0.0471 (Q)	1.09	1.000
1,2,3,7,8,9-HXCDF	U		0.0471 (Q)		
2,3,4,6,7,8-HXCDF	J	0.114	0.0471 (Q)	1.11	1.000
1,2,3,4,6,7,8-HPCDF		1.90	0.0471 (Q)	1.03	1.000
1,2,3,4,7,8,9-HPCDF	K J	0.149	0.0471 (Q)	0.70	1.000
OCDF		3.14	0.0676 (S)	0.93	1.002
TOTAL TETRA-DIOXINS		2.34	0.0471 (Q)		
TOTAL PENTA-DIOXINS		2.65	0.0634 (S)		
TOTAL HEXA-DIOXINS		10.4	0.0471 (Q)		
TOTAL HEPTA-DIOXINS		18.9	0.0546 (S)		
TOTAL TETRA-FURANS		4.35	0.0471 (Q)		
TOTAL PENTA-FURANS		2.36	0.0574 (S)		
TOTAL HEXA-FURANS		2.18	0.0471 (Q)		
TOTAL HEPTA-FURANS		4.14	0.0471 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Celine Vaillant_____

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Report Filename: 1613_DIOXINS_1613DB5_L19652-8_Form1A_DX3M_087S10_SJ1611178.html; Workgroup: WG43834; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DUN-05-D
Sample Collection:
06-May-2013 13:46

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-8 R
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	07-Jun-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Jun-2013 **Time:** 11:08:58	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_084 S: 6**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_087 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_084 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	29.5

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		0.420	0.0471 (Q)	0.84	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Celine Vaillant_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 17-Jun-2013 09:57:17; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-8_Form1A_DB33_084S6_SJ1611525.html; Workgroup: WG43834; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-09-S
Sample Collection:
06-May-2013 14:25

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-9
Matrix:	SOLID	**Sample Size:**	11.1 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 10:01:16	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 21**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 16
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	15.0

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	U		0.0450 (Q)		
1,2,3,7,8-PECDD [4]	U		0.0450 (Q)		
1,2,3,4,7,8-HXCDD	U		0.0450 (Q)		
1,2,3,6,7,8-HXCDD	K B J	0.102	0.0450 (Q)	0.80	1.000
1,2,3,7,8,9-HXCDD	B J	0.108	0.0450 (Q)	1.34	1.000
1,2,3,4,6,7,8-HPCDD	B J	0.779	0.0450 (Q)	1.10	1.000
OCDD	B	3.29	0.0615 (S)	0.90	1.000
2,3,7,8-TCDF	J	0.147	0.0450 (Q)	0.68	1.001
1,2,3,7,8-PECDF	U		0.0450 (Q)		
2,3,4,7,8-PECDF	K B J	0.052	0.0450 (Q)	1.17	1.000
1,2,3,4,7,8-HXCDF	U		0.0450 (Q)		
1,2,3,6,7,8-HXCDF	U		0.0450 (Q)		
1,2,3,7,8,9-HXCDF	U		0.0450 (Q)		
2,3,4,6,7,8-HXCDF	U		0.0450 (Q)		
1,2,3,4,6,7,8-HPCDF	B J	0.165	0.0450 (Q)	0.97	1.000
1,2,3,4,7,8,9-HPCDF	U		0.0450 (Q)		
OCDF	B J	0.280	0.0450 (Q)	0.91	1.002
TOTAL TETRA-DIOXINS		0.126	0.0450 (Q)		
TOTAL PENTA-DIOXINS		0.202	0.0450 (Q)		
TOTAL HEXA-DIOXINS	B	0.797	0.0450 (Q)		
TOTAL HEPTA-DIOXINS	B	1.80	0.0450 (Q)		
TOTAL TETRA-FURANS		0.678	0.0450 (Q)		
TOTAL PENTA-FURANS	U		0.0450 (Q)		
TOTAL HEXA-FURANS	B	0.111	0.0450 (Q)		
TOTAL HEPTA-FURANS		0.352	0.0450 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:12; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-9_Form1A_DX3M_080S21_SJ1607541.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-09-S
Sample Collection:
06-May-2013 14:25

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-9
Matrix:	SOLID	**Sample Size:**	11.1 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 16:57:06	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_074 S: 16**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_074 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	15.0

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF	J	0.073	0.0450 (Q)	0.66	1.002

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:49; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-9_Form1A_DB33_074S16_SJ1607585.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-04-S
Sample Collection:
06-May-2013 14:46

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-10
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 10:56:28	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 22**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 16
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	31.2

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	J	0.163	0.0481 (Q)	0.77	1.001
1,2,3,7,8-PECDD [4]	J	0.418	0.0481 (Q)	0.53	1.001
1,2,3,4,7,8-HXCDD	B J	0.312	0.0481 (Q)	1.20	1.000
1,2,3,6,7,8-HXCDD	B	1.57	0.0481 (Q)	1.28	1.000
1,2,3,7,8,9-HXCDD	B	1.21	0.0481 (Q)	1.20	1.000
1,2,3,4,6,7,8-HPCDD	B	10.8	0.0481 (Q)	1.05	1.000
OCDD	B	61.1	0.0481 (Q)	0.88	1.000
2,3,7,8-TCDF		1.25	0.0481 (Q)	0.75	1.001
1,2,3,7,8-PECDF	J	0.161	0.0481 (Q)	1.76	1.002
2,3,4,7,8-PECDF	B J	0.277	0.0481 (Q)	1.56	1.001
1,2,3,4,7,8-HXCDF	B J	0.312	0.0481 (Q)	1.20	1.000
1,2,3,6,7,8-HXCDF	J	0.219	0.0481 (Q)	1.06	1.001
1,2,3,7,8,9-HXCDF	U		0.0481 (Q)		
2,3,4,6,7,8-HXCDF	J	0.193	0.0481 (Q)	1.22	1.000
1,2,3,4,6,7,8-HPCDF	B	2.52	0.0481 (Q)	0.95	1.000
1,2,3,4,7,8,9-HPCDF	J	0.110	0.0481 (Q)	0.93	1.000
OCDF	B	4.00	0.0481 (Q)	0.90	1.002
TOTAL TETRA-DIOXINS		3.95	0.0481 (Q)		
TOTAL PENTA-DIOXINS		4.36	0.0481 (Q)		
TOTAL HEXA-DIOXINS	B	15.2	0.0481 (Q)		
TOTAL HEPTA-DIOXINS	B	25.8	0.0481 (Q)		
TOTAL TETRA-FURANS		7.80	0.0481 (Q)		
TOTAL PENTA-FURANS		3.75	0.0481 (Q)		
TOTAL HEXA-FURANS	B	4.14	0.0481 (Q)		
TOTAL HEPTA-FURANS		6.04	0.0481 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:12; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-10_Form1A_DX3M_080S22_SJ1607542.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DUN-04-S
Sample Collection:
06-May-2013 14:46

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-10
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 17:33:59	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_074 S: 17**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_074 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	31.2

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		0.662	0.0481 (Q)	0.81	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:49; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-10_Form1A_DB33_074S17_SJ1607586.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DUN-02-S
Sample Collection:
06-May-2013 15:09

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-11
Matrix:	SOLID	**Sample Size:**	10.8 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 11:51:37	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 23**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 16
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.1

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K J	0.051	0.0462 (Q)	0.42	1.002
1,2,3,7,8-PECDD [4]	K J	0.061	0.0462 (Q)	0.89	1.000
1,2,3,4,7,8-HXCDD	K B J	0.049	0.0462 (Q)	0.79	1.000
1,2,3,6,7,8-HXCDD	B J	0.145	0.0462 (Q)	1.07	1.001
1,2,3,7,8,9-HXCDD	B J	0.127	0.0462 (Q)	1.09	1.000
1,2,3,4,6,7,8-HPCDD	B J	0.893	0.0462 (Q)	0.92	1.000
OCDD	B	5.19	0.0462 (Q)	0.85	1.000
2,3,7,8-TCDF		0.231	0.0462 (Q)	0.74	1.001
1,2,3,7,8-PECDF	U		0.0462 (Q)		
2,3,4,7,8-PECDF	K B J	0.055	0.0462 (Q)	2.97	1.000
1,2,3,4,7,8-HXCDF	U		0.0462 (Q)		
1,2,3,6,7,8-HXCDF	U		0.0462 (Q)		
1,2,3,7,8,9-HXCDF	U		0.0462 (Q)		
2,3,4,6,7,8-HXCDF	U		0.0462 (Q)		
1,2,3,4,6,7,8-HPCDF	B J	0.234	0.0462 (Q)	1.11	1.000
1,2,3,4,7,8,9-HPCDF	U		0.0462 (Q)		
OCDF	B J	0.377	0.0462 (Q)	0.91	1.002
TOTAL TETRA-DIOXINS		0.169	0.0462 (Q)		
TOTAL PENTA-DIOXINS		0.050	0.0462 (Q)		
TOTAL HEXA-DIOXINS	B	1.23	0.0462 (Q)		
TOTAL HEPTA-DIOXINS	B	2.41	0.0462 (Q)		
TOTAL TETRA-FURANS		1.59	0.0462 (Q)		
TOTAL PENTA-FURANS	U		0.0462 (Q)		
TOTAL HEXA-FURANS	B	0.144	0.0462 (Q)		
TOTAL HEPTA-FURANS		0.516	0.0462 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:12; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-11_Form1A_DX3M_080S23_SJ1607543.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DUN-02-S
Sample Collection:
06-May-2013 15:09

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-11
Matrix:	SOLID	**Sample Size:**	10.8 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 18:10:54	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_074 S: 18**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_074 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.1

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF	J	0.098	0.0462 (Q)	0.80	1.001

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:49; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-11_Form1A_DB33_074S18_SJ1607587.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-11-S
Sample Collection:
06-May-2013 15:49

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-12
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 12:46:45	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 24**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 16
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	14.2

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	U		0.0469 (Q)		
1,2,3,7,8-PECDD [4]	U		0.0469 (Q)		
1,2,3,4,7,8-HXCDD	U		0.0469 (Q)		
1,2,3,6,7,8-HXCDD	B J	0.117	0.0469 (Q)	1.14	1.001
1,2,3,7,8,9-HXCDD	B J	0.094	0.0469 (Q)	1.26	1.000
1,2,3,4,6,7,8-HPCDD	B J	0.866	0.0469 (Q)	0.96	1.000
OCDD	B	4.31	0.0469 (Q)	0.83	1.000
2,3,7,8-TCDF	J	0.103	0.0469 (Q)	0.77	1.001
1,2,3,7,8-PECDF	U		0.0469 (Q)		
2,3,4,7,8-PECDF	K B J	0.048	0.0469 (Q)	2.21	1.001
1,2,3,4,7,8-HXCDF	U		0.0469 (Q)		
1,2,3,6,7,8-HXCDF	U		0.0469 (Q)		
1,2,3,7,8,9-HXCDF	U		0.0469 (Q)		
2,3,4,6,7,8-HXCDF	U		0.0469 (Q)		
1,2,3,4,6,7,8-HPCDF	B J	0.182	0.0469 (Q)	0.99	1.000
1,2,3,4,7,8,9-HPCDF	U		0.0469 (Q)		
OCDF	B J	0.301	0.0469 (Q)	0.78	1.002
TOTAL TETRA-DIOXINS		0.345	0.0469 (Q)		
TOTAL PENTA-DIOXINS		0.139	0.0469 (Q)		
TOTAL HEXA-DIOXINS	B	1.07	0.0469 (Q)		
TOTAL HEPTA-DIOXINS	B	1.98	0.0469 (Q)		
TOTAL TETRA-FURANS		0.485	0.0469 (Q)		
TOTAL PENTA-FURANS	U		0.0469 (Q)		
TOTAL HEXA-FURANS	B	0.062	0.0469 (Q)		
TOTAL HEPTA-FURANS		0.182	0.0469 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:12; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-12_Form1A_DX3M_080S24_SJ1607544.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-11-S
Sample Collection:
06-May-2013 15:49

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-12
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 23:21:44	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_075 S: 7**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_075 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	14.2

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF	J	0.071	0.0469 (Q)	0.71	1.001

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

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Report Filename: 1613_DIOXINS_1613DB225_L19652-12_Form1A_DB33_075S7_SJ1607595.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DUN-01-S
Sample Collection:
06-May-2013 16:13

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-13 (A)
Matrix:	SOLID	**Sample Size:**	9.77 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 13:41:53	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 25**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 16
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	39.6

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD		0.232	0.0512 (Q)	0.68	1.001
1,2,3,7,8-PECDD [4]	J	0.643	0.0512 (Q)	0.66	1.002
1,2,3,4,7,8-HXCDD	B J	0.433	0.0512 (Q)	1.13	1.000
1,2,3,6,7,8-HXCDD	B	2.25	0.0512 (Q)	1.26	1.000
1,2,3,7,8,9-HXCDD	B	1.62	0.0512 (Q)	1.33	1.000
1,2,3,4,6,7,8-HPCDD	B	16.5	0.0836 (S)	1.06	1.000
OCDD	B	92.4	0.0768 (S)	0.88	1.000
2,3,7,8-TCDF		1.71	0.0512 (Q)	0.75	1.001
1,2,3,7,8-PECDF	J	0.266	0.0810 (S)	1.37	1.002
2,3,4,7,8-PECDF	B J	0.389	0.0810 (S)	1.64	1.001
1,2,3,4,7,8-HXCDF	B J	0.447	0.0512 (Q)	1.18	1.001
1,2,3,6,7,8-HXCDF	J	0.285	0.0512 (Q)	1.18	1.001
1,2,3,7,8,9-HXCDF	B J	0.068	0.0512 (Q)	1.10	1.000
2,3,4,6,7,8-HXCDF	J	0.276	0.0512 (Q)	1.32	1.001
1,2,3,4,6,7,8-HPCDF	B	3.53	0.0512 (Q)	0.97	1.000
1,2,3,4,7,8,9-HPCDF	J	0.275	0.0512 (Q)	0.92	1.001
OCDF	B	6.61	0.0512 (Q)	0.91	1.002
TOTAL TETRA-DIOXINS		6.00	0.0512 (Q)		
TOTAL PENTA-DIOXINS		7.41	0.0512 (Q)		
TOTAL HEXA-DIOXINS	B	22.2	0.0512 (Q)		
TOTAL HEPTA-DIOXINS	B	42.7	0.0836 (S)		
TOTAL TETRA-FURANS		10.0	0.0512 (Q)		
TOTAL PENTA-FURANS		3.94	0.0810 (S)		
TOTAL HEXA-FURANS	B	5.62	0.0512 (Q)		
TOTAL HEPTA-FURANS		8.65	0.0512 (Q)		

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

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Report Filename: 1613_DIOXINS_1613DB5_L19652-13_Form1A_DX3M_080S25_SJ1607545.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-01-S
Sample Collection:
06-May-2013 16:13

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-13 (A)
Matrix:	SOLID	**Sample Size:**	9.77 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 23:58:35	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_075 S: 8**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_075 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	39.6

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.04	0.0512 (Q)	0.70	1.002

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:49; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-13_Form1A_DB33_075S8_SJ1607596.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-01-S (Duplicate)
Sample Collection:
06-May-2013 16:13

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	WG43679-103 (DUP L19652-13)
Matrix:	SOLID	**Sample Size:**	10.1 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 14:37:01	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 26**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 16
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	39.1

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	J	0.176	0.0497 (Q)	0.67	1.001
1,2,3,7,8-PECDD [4]	J	0.556	0.0497 (Q)	0.59	1.001
1,2,3,4,7,8-HXCDD	B J	0.374	0.0497 (Q)	1.27	1.000
1,2,3,6,7,8-HXCDD	B	2.16	0.0497 (Q)	1.30	1.000
1,2,3,7,8,9-HXCDD	B	1.68	0.0497 (Q)	1.06	1.000
1,2,3,4,6,7,8-HPCDD	B	18.9	0.0848 (S)	1.05	1.000
OCDD	B	118	0.0497 (Q)	0.89	1.000
2,3,7,8-TCDF		1.60	0.0497 (Q)	0.77	1.001
1,2,3,7,8-PECDF	J	0.212	0.0497 (Q)	1.55	1.001
2,3,4,7,8-PECDF	B J	0.313	0.0497 (Q)	1.49	1.001
1,2,3,4,7,8-HXCDF	B J	0.330	0.0497 (Q)	1.14	1.001
1,2,3,6,7,8-HXCDF	J	0.233	0.0497 (Q)	1.26	1.000
1,2,3,7,8,9-HXCDF	U		0.0497 (Q)		
2,3,4,6,7,8-HXCDF	J	0.216	0.0497 (Q)	1.31	1.000
1,2,3,4,6,7,8-HPCDF	B	3.26	0.0497 (Q)	0.94	1.000
1,2,3,4,7,8,9-HPCDF	J	0.206	0.0497 (Q)	1.13	1.000
OCDF	B	6.77	0.0497 (Q)	0.92	1.002
TOTAL TETRA-DIOXINS		4.70	0.0497 (Q)		
TOTAL PENTA-DIOXINS		5.30	0.0497 (Q)		
TOTAL HEXA-DIOXINS	B	23.1	0.0497 (Q)		
TOTAL HEPTA-DIOXINS	B	63.9	0.0848 (S)		
TOTAL TETRA-FURANS		8.43	0.0497 (Q)		
TOTAL PENTA-FURANS		4.41	0.0497 (Q)		
TOTAL HEXA-FURANS	B	5.24	0.0497 (Q)		
TOTAL HEPTA-FURANS		8.28	0.0497 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:12; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_WG43679-103_Form1A_DX3M_080S26_SJ1607546.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-01-S (Duplicate)
Sample Collection:
06-May-2013 16:13

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	WG43679-103 i (DUP L19652-13)
Matrix:	SOLID	**Sample Size:**	10.1 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 23:29:16	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_079 S: 7**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_079 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	39.1

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.15	0.0562 (S)	0.78	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

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Report Filename: 1613_DIOXINS_1613DB225_WG43679-103_Form1A_DB33_079S7_SJ1608784.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-08-S
Sample Collection:
06-May-2013 16:38

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-14
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 15:32:15	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 27**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 16
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	22.6

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K J	0.099	0.0484 (Q)	0.41	1.001
1,2,3,7,8-PECDD [4]	J	0.192	0.0585 (S)	0.66	1.001
1,2,3,4,7,8-HXCDD	B J	0.179	0.0484 (Q)	1.41	1.000
1,2,3,6,7,8-HXCDD	B J	0.583	0.0484 (Q)	1.26	1.000
1,2,3,7,8,9-HXCDD	B J	0.504	0.0484 (Q)	1.30	1.000
1,2,3,4,6,7,8-HPCDD	B	6.91	0.0531 (S)	0.99	1.000
OCDD	B	41.9	0.0706 (S)	0.86	1.000
2,3,7,8-TCDF		0.473	0.0484 (Q)	0.69	1.001
1,2,3,7,8-PECDF	J	0.084	0.0484 (Q)	1.44	1.000
2,3,4,7,8-PECDF	B J	0.148	0.0484 (Q)	1.70	1.000
1,2,3,4,7,8-HXCDF	B J	0.130	0.0484 (Q)	1.17	1.001
1,2,3,6,7,8-HXCDF	J	0.098	0.0484 (Q)	1.17	1.000
1,2,3,7,8,9-HXCDF	U		0.0484 (Q)		
2,3,4,6,7,8-HXCDF	K J	0.123	0.0484 (Q)	0.79	1.001
1,2,3,4,6,7,8-HPCDF	B	1.18	0.0484 (Q)	1.04	1.000
1,2,3,4,7,8,9-HPCDF	J	0.081	0.0484 (Q)	1.01	1.001
OCDF	B	2.32	0.0484 (Q)	0.88	1.002
TOTAL TETRA-DIOXINS		0.805	0.0484 (Q)		
TOTAL PENTA-DIOXINS		1.62	0.0585 (S)		
TOTAL HEXA-DIOXINS	B	6.15	0.0484 (Q)		
TOTAL HEPTA-DIOXINS	B	19.7	0.0531 (S)		
TOTAL TETRA-FURANS		2.40	0.0484 (Q)		
TOTAL PENTA-FURANS		1.12	0.0484 (Q)		
TOTAL HEXA-FURANS	B	1.68	0.0484 (Q)		
TOTAL HEPTA-FURANS		2.82	0.0484 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:12; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-14_Form1A_DX3M_080S27_SJ1607547.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DUN-08-S
Sample Collection:
06-May-2013 16:38

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-14
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 01:12:10	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_075 S: 10**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_075 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	22.6

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		0.273	0.0484 (Q)	0.72	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

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Report Filename: 1613_DIOXINS_1613DB225_L19652-14_Form1A_DB33_075S10_SJ1607598.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-PT-06-S
Sample Collection:
10-May-2013 09:09

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-15
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 21:13:46	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 33**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 28
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	32.9

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K J	0.155	0.0715 (S)	0.47	1.001
1,2,3,7,8-PECDD [4]	J	0.458	0.0487 (Q)	0.56	1.001
1,2,3,4,7,8-HXCDD	B J	0.301	0.0487 (Q)	1.30	1.001
1,2,3,6,7,8-HXCDD	B	1.85	0.0487 (Q)	1.15	1.000
1,2,3,7,8,9-HXCDD	B	1.49	0.0487 (Q)	1.12	1.001
1,2,3,4,6,7,8-HPCDD	B	14.7	0.0744 (S)	0.97	1.000
OCDD	B	83.3	0.0637 (S)	0.90	1.000
2,3,7,8-TCDF		1.36	0.0487 (Q)	0.81	1.001
1,2,3,7,8-PECDF	J	0.199	0.0487 (Q)	1.37	1.002
2,3,4,7,8-PECDF	B J	0.356	0.0487 (Q)	1.34	1.001
1,2,3,4,7,8-HXCDF	K B J	0.346	0.0487 (Q)	1.69	1.000
1,2,3,6,7,8-HXCDF	J	0.241	0.0487 (Q)	1.16	1.000
1,2,3,7,8,9-HXCDF	U		0.0487 (Q)		
2,3,4,6,7,8-HXCDF	J	0.222	0.0487 (Q)	1.36	1.000
1,2,3,4,6,7,8-HPCDF	B	2.84	0.0487 (Q)	0.97	1.000
1,2,3,4,7,8,9-HPCDF	J	0.205	0.0487 (Q)	0.94	1.000
OCDF	B	5.46	0.0487 (Q)	0.87	1.002
TOTAL TETRA-DIOXINS		5.60	0.0715 (S)		
TOTAL PENTA-DIOXINS		4.61	0.0487 (Q)		
TOTAL HEXA-DIOXINS	B	17.6	0.0487 (Q)		
TOTAL HEPTA-DIOXINS	B	39.7	0.0744 (S)		
TOTAL TETRA-FURANS		8.23	0.0487 (Q)		
TOTAL PENTA-FURANS		4.53	0.0487 (Q)		
TOTAL HEXA-FURANS	B	3.83	0.0487 (Q)		
TOTAL HEPTA-FURANS		6.69	0.0487 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:12; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-15_Form1A_DX3M_080S33_SJ1607552.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-PT-06-S
Sample Collection:
10-May-2013 09:09

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-15
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 22:44:59	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_075 S: 6**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_075 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	32.9

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF	K	0.760	0.0487 (Q)	0.90	1.001

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:49; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-15_Form1A_DB33_075S6_SJ1607594.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-PT-09-S
Sample Collection:
10-May-2013 09:48

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-16 i
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 08:38:26	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_081 S: 25**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_081 S: 22
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.1

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K J	0.052	0.0476 (Q)	0.25	1.002
1,2,3,7,8-PECDD [4]	J	0.173	0.0476 (Q)	0.63	1.001
1,2,3,4,7,8-HXCDD	K J	0.137	0.0476 (Q)	1.81	1.000
1,2,3,6,7,8-HXCDD	J	0.466	0.0476 (Q)	1.25	1.000
1,2,3,7,8,9-HXCDD	J	0.415	0.0476 (Q)	1.36	1.000
1,2,3,4,6,7,8-HPCDD	B	3.14	0.0693 (S)	1.01	1.000
OCDD	B	16.4	0.101 (S)	0.94	1.000
2,3,7,8-TCDF		0.331	0.0476 (Q)	0.84	1.001
1,2,3,7,8-PECDF	U		0.0476 (Q)		
2,3,4,7,8-PECDF	K B J	0.112	0.0476 (Q)	1.99	1.001
1,2,3,4,7,8-HXCDF	J	0.103	0.0476 (Q)	1.39	1.000
1,2,3,6,7,8-HXCDF	J	0.076	0.0476 (Q)	1.19	1.000
1,2,3,7,8,9-HXCDF	U		0.0476 (Q)		
2,3,4,6,7,8-HXCDF	K J	0.094	0.0476 (Q)	0.82	1.001
1,2,3,4,6,7,8-HPCDF	J	0.786	0.0476 (Q)	1.08	1.000
1,2,3,4,7,8,9-HPCDF	J	0.063	0.0476 (Q)	0.94	1.001
OCDF	J	1.34	0.0476 (Q)	0.82	1.002
TOTAL TETRA-DIOXINS		0.439	0.0476 (Q)		
TOTAL PENTA-DIOXINS		1.20	0.0476 (Q)		
TOTAL HEXA-DIOXINS		4.69	0.0476 (Q)		
TOTAL HEPTA-DIOXINS		7.86	0.0693 (S)		
TOTAL TETRA-FURANS		1.84	0.0476 (Q)		
TOTAL PENTA-FURANS		0.599	0.0476 (Q)		
TOTAL HEXA-FURANS		1.31	0.0476 (Q)		
TOTAL HEPTA-FURANS		1.79	0.0476 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:22; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB5_L19652-16_Form1A_DX3M_081S25_SJ1608963.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-09-S
Sample Collection:
10-May-2013 09:48

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-16
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	30-May-2013 **Time:** 23:44:07	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_073 S: 6**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_073 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.1

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF	J	0.174	0.0476 (Q)	0.87	1.001

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:48; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB225_L19652-16_Form1A_DB33_073S6_SJ1607685.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-PT-04-S
Sample Collection:
10-May-2013 10:08

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-17
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 23:59:28	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 36**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 28
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	41.5

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K	0.245	0.0469 (Q)	0.49	1.001
1,2,3,7,8-PECDD [4]	J	0.644	0.0469 (Q)	0.60	1.001
1,2,3,4,7,8-HXCDD	J	0.521	0.0469 (Q)	1.42	1.000
1,2,3,6,7,8-HXCDD		2.56	0.0469 (Q)	1.20	1.000
1,2,3,7,8,9-HXCDD		1.95	0.0469 (Q)	1.23	1.000
1,2,3,4,6,7,8-HPCDD	B	18.2	0.0533 (S)	1.01	1.000
OCDD	B	116	0.121 (S)	0.88	1.000
2,3,7,8-TCDF		1.93	0.0469 (Q)	0.79	1.001
1,2,3,7,8-PECDF	J	0.293	0.0469 (Q)	1.35	1.001
2,3,4,7,8-PECDF	B J	0.469	0.0469 (Q)	1.56	1.001
1,2,3,4,7,8-HXCDF	J	0.476	0.0469 (Q)	1.13	1.000
1,2,3,6,7,8-HXCDF	J	0.338	0.0469 (Q)	1.13	1.000
1,2,3,7,8,9-HXCDF	K J	0.057	0.0469 (Q)	2.24	1.001
2,3,4,6,7,8-HXCDF	J	0.292	0.0469 (Q)	1.19	1.000
1,2,3,4,6,7,8-HPCDF		3.67	0.0469 (Q)	0.99	1.000
1,2,3,4,7,8,9-HPCDF	J	0.238	0.0469 (Q)	1.13	1.000
OCDF		7.52	0.0469 (Q)	0.86	1.002
TOTAL TETRA-DIOXINS		8.57	0.0469 (Q)		
TOTAL PENTA-DIOXINS		8.36	0.0469 (Q)		
TOTAL HEXA-DIOXINS		25.9	0.0469 (Q)		
TOTAL HEPTA-DIOXINS		46.9	0.0533 (S)		
TOTAL TETRA-FURANS		11.3	0.0469 (Q)		
TOTAL PENTA-FURANS		6.77	0.0469 (Q)		
TOTAL HEXA-FURANS		6.56	0.0469 (Q)		
TOTAL HEPTA-FURANS		9.34	0.0469 (Q)		

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:22; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB5_L19652-17_Form1A_DX3M_080S36_SJ1607661.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-04-S
Sample Collection:
10-May-2013 10:08

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-17 i
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	27-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	10-Jun-2013 **Time:** 13:01:29	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_082 S: 5**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_082 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	41.5

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.16	0.0469 (Q)	0.76	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:48; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB225_L19652-17_Form1A_DB33_082S5_SJ1609887.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-PT-02-S
Sample Collection:
10-May-2013 10:35

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-18 R
Matrix:	SOLID	**Sample Size:**	11.0 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	31-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 18:48:32	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_082 S: 29**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_082 S: 27
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_082 S: 22
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	49.7

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD		0.367	0.0456 (Q)	0.82	1.001
1,2,3,7,8-PECDD [4]		1.19	0.0456 (Q)	0.63	1.000
1,2,3,4,7,8-HXCDD	J	0.848	0.0456 (Q)	1.21	1.000
1,2,3,6,7,8-HXCDD		4.61	0.0456 (Q)	1.21	1.000
1,2,3,7,8,9-HXCDD		3.68	0.0456 (Q)	1.23	1.000
1,2,3,4,6,7,8-HPCDD		30.2	0.0527 (S)	0.99	1.000
OCDD	B	184	0.0802 (S)	0.89	1.000
2,3,7,8-TCDF		3.23	0.0456 (Q)	0.72	1.001
1,2,3,7,8-PECDF	J	0.501	0.0456 (Q)	1.72	1.001
2,3,4,7,8-PECDF	J	0.776	0.0456 (Q)	1.54	1.000
1,2,3,4,7,8-HXCDF	J	0.763	0.0456 (Q)	1.17	1.000
1,2,3,6,7,8-HXCDF	J	0.515	0.0456 (Q)	1.25	1.001
1,2,3,7,8,9-HXCDF	K J	0.053	0.0456 (Q)	1.50	1.000
2,3,4,6,7,8-HXCDF	J	0.504	0.0456 (Q)	1.23	1.000
1,2,3,4,6,7,8-HPCDF		6.78	0.0456 (Q)	0.96	1.000
1,2,3,4,7,8,9-HPCDF	J	0.398	0.0456 (Q)	1.08	1.000
OCDF		10.2	0.0456 (Q)	0.90	1.002
TOTAL TETRA-DIOXINS		23.4	0.0456 (Q)		
TOTAL PENTA-DIOXINS		23.9	0.0456 (Q)		
TOTAL HEXA-DIOXINS		52.5	0.0456 (Q)		
TOTAL HEPTA-DIOXINS		76.5	0.0527 (S)		
TOTAL TETRA-FURANS		19.0	0.0456 (Q)		
TOTAL PENTA-FURANS		11.4	0.0456 (Q)		
TOTAL HEXA-FURANS		10.5	0.0456 (Q)		
TOTAL HEPTA-FURANS		15.9	0.0456 (Q)		

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 11:26:59; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-18_Form1A_DX3M_082S29_SJ1610110.html; Workgroup: WG43769; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-02-S
Sample Collection:
10-May-2013 10:35

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-18 R
Matrix:	SOLID	**Sample Size:**	11.0 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	31-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 22:52:27	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_079 S: 6**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_082 S: 27
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_079 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	49.7

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.76	0.107 (S)	0.72	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 11:27:14; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-18_Form1A_DB33_079S6_SJ1610127.html; Workgroup: WG43769; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-PT-05-S
Sample Collection:
10-May-2013 11:15

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-19
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 00:54:36	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 37**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 28
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	56.2

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD		0.482	0.0896 (S)	0.75	1.001
1,2,3,7,8-PECDD [4]		1.55	0.0626 (S)	0.68	1.002
1,2,3,4,7,8-HXCDD		1.59	0.103 (S)	1.21	1.000
1,2,3,6,7,8-HXCDD		5.53	0.103 (S)	1.19	1.000
1,2,3,7,8,9-HXCDD		4.04	0.103 (S)	1.38	1.000
1,2,3,4,6,7,8-HPCDD	B	32.6	0.187 (S)	0.99	1.000
OCDD	B	179	0.117 (S)	0.89	1.000
2,3,7,8-TCDF		3.38	0.0483 (Q)	0.72	1.001
1,2,3,7,8-PECDF	J	0.721	0.0812 (S)	1.40	1.001
2,3,4,7,8-PECDF	B J	0.924	0.0812 (S)	1.33	1.001
1,2,3,4,7,8-HXCDF		1.48	0.0731 (S)	1.26	1.001
1,2,3,6,7,8-HXCDF		1.10	0.0731 (S)	1.16	1.000
1,2,3,7,8,9-HXCDF	J	0.661	0.0731 (S)	1.08	1.000
2,3,4,6,7,8-HXCDF	J	0.896	0.0731 (S)	1.33	1.001
1,2,3,4,6,7,8-HPCDF		6.72	0.0923 (S)	0.99	1.000
1,2,3,4,7,8,9-HPCDF	J	0.727	0.0923 (S)	1.00	1.000
OCDF		12.2	0.0738 (S)	0.79	1.002
TOTAL TETRA-DIOXINS		55.1	0.0896 (S)		
TOTAL PENTA-DIOXINS		25.7	0.0626 (S)		
TOTAL HEXA-DIOXINS		51.8	0.103 (S)		
TOTAL HEPTA-DIOXINS		86.6	0.187 (S)		
TOTAL TETRA-FURANS		22.1	0.0483 (Q)		
TOTAL PENTA-FURANS		12.3	0.0812 (S)		
TOTAL HEXA-FURANS		13.5	0.0731 (S)		
TOTAL HEPTA-FURANS		16.9	0.0923 (S)		

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:22; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB5_L19652-19_Form1A_DX3M_080S37_SJ1607662.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-PT-05-S
Sample Collection:
10-May-2013 11:15

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-19
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 00:57:47	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_073 S: 8**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_073 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	56.2

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.38	0.0483 (Q)	0.87	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:48; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB225_L19652-19_Form1A_DB33_073S8_SJ1607687.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-PT-10-S
Sample Collection:
10-May-2013 11:33

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-20
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 01:49:44	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 38**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 28
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	59.9

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD		0.306	0.0484 (Q)	0.68	1.000
1,2,3,7,8-PECDD [4]		1.23	0.0561 (S)	0.64	1.001
1,2,3,4,7,8-HXCDD	J	0.800	0.112 (S)	1.24	1.000
1,2,3,6,7,8-HXCDD		5.57	0.112 (S)	1.22	1.000
1,2,3,7,8,9-HXCDD		3.43	0.112 (S)	1.37	1.000
1,2,3,4,6,7,8-HPCDD	B	35.6	0.160 (S)	0.98	1.000
OCDD	B	250	0.0707 (S)	0.86	1.000
2,3,7,8-TCDF		3.01	0.0484 (Q)	0.72	1.001
1,2,3,7,8-PECDF	J	0.453	0.0943 (S)	1.54	1.001
2,3,4,7,8-PECDF	K B J	0.765	0.0943 (S)	1.22	1.001
1,2,3,4,7,8-HXCDF		1.02	0.0577 (S)	1.12	1.001
1,2,3,6,7,8-HXCDF	J	0.560	0.0577 (S)	1.37	1.000
1,2,3,7,8,9-HXCDF	K J	0.137	0.0577 (S)	0.83	1.000
2,3,4,6,7,8-HXCDF	J	0.530	0.0577 (S)	1.30	1.001
1,2,3,4,6,7,8-HPCDF		7.52	0.0800 (S)	0.94	1.000
1,2,3,4,7,8,9-HPCDF	J	0.601	0.0800 (S)	0.94	1.000
OCDF		19.0	0.278 (S)	0.90	1.002
TOTAL TETRA-DIOXINS		14.9	0.0484 (Q)		
TOTAL PENTA-DIOXINS		15.8	0.0561 (S)		
TOTAL HEXA-DIOXINS		49.1	0.112 (S)		
TOTAL HEPTA-DIOXINS		95.7	0.160 (S)		
TOTAL TETRA-FURANS		19.5	0.0484 (Q)		
TOTAL PENTA-FURANS		11.1	0.0943 (S)		
TOTAL HEXA-FURANS		13.8	0.0577 (S)		
TOTAL HEPTA-FURANS		20.9	0.0800 (S)		

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:22; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB5_L19652-20_Form1A_DX3M_080S38_SJ1607663.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-10-S
Sample Collection:
10-May-2013 11:33

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-20
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 01:34:33	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_073 S: 9**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_073 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	59.9

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.39	0.0484 (Q)	0.79	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

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Report Filename: 1613_DIOXINS_1613DB225_L19652-20_Form1A_DB33_073S9_SJ1607688.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-PT-07-S
Sample Collection:
10-May-2013 11:58

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-21 (A)
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 06:34:55	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 43**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 40
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.6

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K J	0.055	0.0482 (Q)	0.12	1.001
1,2,3,7,8-PECDD [4]	J	0.113	0.0482 (Q)	0.70	1.001
1,2,3,4,7,8-HXCDD	K J	0.099	0.0482 (Q)	0.90	1.001
1,2,3,6,7,8-HXCDD	J	0.288	0.0482 (Q)	1.13	1.000
1,2,3,7,8,9-HXCDD	K J	0.200	0.0482 (Q)	1.60	1.000
1,2,3,4,6,7,8-HPCDD	B	1.38	0.0589 (S)	1.10	1.000
OCDD	B	7.89	0.0765 (S)	0.77	1.000
2,3,7,8-TCDF	K J	0.166	0.0482 (Q)	0.93	1.002
1,2,3,7,8-PECDF	U		0.0499 (S)		
2,3,4,7,8-PECDF	B J	0.117	0.0499 (S)	1.52	1.001
1,2,3,4,7,8-HXCDF	K J	0.049	0.0482 (Q)	2.05	1.001
1,2,3,6,7,8-HXCDF	K J	0.068	0.0482 (Q)	0.93	1.001
1,2,3,7,8,9-HXCDF	U		0.0482 (Q)		
2,3,4,6,7,8-HXCDF	K J	0.086	0.0482 (Q)	0.73	1.001
1,2,3,4,6,7,8-HPCDF	K J	0.311	0.0482 (Q)	1.33	1.000
1,2,3,4,7,8,9-HPCDF	K J	0.068	0.0482 (Q)	0.77	1.001
OCDF	K J	0.686	0.0482 (Q)	0.57	1.002
TOTAL TETRA-DIOXINS		0.416	0.0482 (Q)		
TOTAL PENTA-DIOXINS		0.328	0.0482 (Q)		
TOTAL HEXA-DIOXINS		0.821	0.0482 (Q)		
TOTAL HEPTA-DIOXINS		3.62	0.0589 (S)		
TOTAL TETRA-FURANS		0.475	0.0482 (Q)		
TOTAL PENTA-FURANS		0.500	0.0499 (S)		
TOTAL HEXA-FURANS		0.438	0.0482 (Q)		
TOTAL HEPTA-FURANS		0.487	0.0482 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:22; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB5_L19652-21_Form1A_DX3M_080S43_SJ1607669.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-PT-07-S
Sample Collection:
10-May-2013 11:58

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-21 (A)
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 02:11:18	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_073 S: 10**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_073 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.6

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF	K J	0.097	0.0482 (Q)	0.37	1.002

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:48; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB225_L19652-21_Form1A_DB33_073S10_SJ1607689.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-07-S (Duplicate)
Sample Collection:
10-May-2013 11:58

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	WG43699-103 (DUP L19652-21)
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 07:30:03	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 44**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 40
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.5

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	U		0.0481 (Q)		
1,2,3,7,8-PECDD [4]	K J	0.088	0.0518 (S)	0.82	1.001
1,2,3,4,7,8-HXCDD	K J	0.057	0.0481 (Q)	0.57	1.000
1,2,3,6,7,8-HXCDD	J	0.287	0.0481 (Q)	1.27	1.000
1,2,3,7,8,9-HXCDD	K J	0.224	0.0481 (Q)	1.73	1.000
1,2,3,4,6,7,8-HPCDD	B	1.52	0.0509 (S)	0.92	1.000
OCDD	B	8.02	0.0481 (Q)	0.97	1.000
2,3,7,8-TCDF	J	0.153	0.0481 (Q)	0.70	1.001
1,2,3,7,8-PECDF	U		0.0481 (Q)		
2,3,4,7,8-PECDF	B J	0.088	0.0481 (Q)	1.74	1.001
1,2,3,4,7,8-HXCDF	J	0.074	0.0481 (Q)	1.10	1.001
1,2,3,6,7,8-HXCDF	K J	0.051	0.0481 (Q)	0.99	1.000
1,2,3,7,8,9-HXCDF	U		0.0481 (Q)		
2,3,4,6,7,8-HXCDF	J	0.072	0.0481 (Q)	1.09	1.000
1,2,3,4,6,7,8-HPCDF	J	0.344	0.0481 (Q)	1.18	1.001
1,2,3,4,7,8,9-HPCDF	U		0.0481 (Q)		
OCDF	K J	0.654	0.0608 (S)	0.68	1.002
TOTAL TETRA-DIOXINS		0.239	0.0481 (Q)		
TOTAL PENTA-DIOXINS		0.341	0.0518 (S)		
TOTAL HEXA-DIOXINS		2.28	0.0481 (Q)		
TOTAL HEPTA-DIOXINS		3.92	0.0509 (S)		
TOTAL TETRA-FURANS		0.688	0.0481 (Q)		
TOTAL PENTA-FURANS		0.427	0.0481 (Q)		
TOTAL HEXA-FURANS		0.389	0.0481 (Q)		
TOTAL HEPTA-FURANS		0.719	0.0481 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:22; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB5_WG43699-103_Form1A_DX3M_080S44_SJ1607670.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-07-S (Duplicate)
Sample Collection:
10-May-2013 11:58

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	WG43699-103 (DUP L19652-21)
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 02:48:05	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_073 S: 11**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_073 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.5

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF	K J	0.079	0.0481 (Q)	1.20	1.002

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

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Report Filename: 1613_DIOXINS_1613DB225_WG43699-103_Form1A_DB33_073S11_SJ1607690.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-03-S
Sample Collection:
10-May-2013 13:07

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-22
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 02:44:53	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 39**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 28
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	57.3

This page is part of a total report that contains information necessary for accreditation compliance.
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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD		0.338	0.0571 (S)	0.86	1.001
1,2,3,7,8-PECDD [4]		1.44	0.131 (S)	0.61	1.001
1,2,3,4,7,8-HXCDD		1.10	0.175 (S)	1.40	1.000
1,2,3,6,7,8-HXCDD		6.12	0.175 (S)	1.18	1.000
1,2,3,7,8,9-HXCDD		3.96	0.175 (S)	1.30	1.000
1,2,3,4,6,7,8-HPCDD	B	33.5	0.481 (S)	0.98	1.000
OCDD	B	204	0.669 (S)	0.86	1.000
2,3,7,8-TCDF		2.91	0.0473 (Q)	0.77	1.001
1,2,3,7,8-PECDF	J	0.421	0.107 (S)	1.33	1.001
2,3,4,7,8-PECDF	B J	0.742	0.107 (S)	1.55	1.001
1,2,3,4,7,8-HXCDF	J	0.660	0.136 (S)	1.28	1.000
1,2,3,6,7,8-HXCDF	J	0.539	0.136 (S)	1.28	1.000
1,2,3,7,8,9-HXCDF	U		0.136 (S)		
2,3,4,6,7,8-HXCDF	J	0.608	0.136 (S)	1.27	1.000
1,2,3,4,6,7,8-HPCDF		7.41	0.267 (S)	1.01	1.000
1,2,3,4,7,8,9-HPCDF	J	0.609	0.267 (S)	1.18	1.000
OCDF		17.0	0.250 (S)	0.85	1.002
TOTAL TETRA-DIOXINS		13.4	0.0571 (S)		
TOTAL PENTA-DIOXINS		12.6	0.131 (S)		
TOTAL HEXA-DIOXINS		55.0	0.175 (S)		
TOTAL HEPTA-DIOXINS		90.4	0.481 (S)		
TOTAL TETRA-FURANS		19.8	0.0473 (Q)		
TOTAL PENTA-FURANS		12.4	0.107 (S)		
TOTAL HEXA-FURANS		12.5	0.136 (S)		
TOTAL HEPTA-FURANS		18.2	0.267 (S)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:22; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB5_L19652-22_Form1A_DX3M_080S39_SJ1607664.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-PT-03-S
Sample Collection:
10-May-2013 13:07

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-22
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 03:24:54	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_073 S: 12**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_073 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	57.3

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.35	0.0815 (S)	0.72	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

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Report Filename: 1613_DIOXINS_1613DB225_L19652-22_Form1A_DB33_073S12_SJ1607691.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-PT-08-S
Sample Collection:
10-May-2013 14:11

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-23
Matrix:	SOLID	**Sample Size:**	11.2 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 08:25:12	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 45**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 40
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	53.7

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD		0.530	0.0752 (S)	0.67	1.002
1,2,3,7,8-PECDD [4]		1.59	0.0600 (S)	0.58	1.000
1,2,3,4,7,8-HXCDD		0.912	0.0879 (S)	1.07	1.000
1,2,3,6,7,8-HXCDD		6.75	0.0879 (S)	1.22	1.000
1,2,3,7,8,9-HXCDD		4.55	0.0879 (S)	1.24	1.000
1,2,3,4,6,7,8-HPCDD	B	36.9	0.126 (S)	1.07	1.000
OCDD	B	215	0.231 (S)	0.90	1.000
2,3,7,8-TCDF		3.83	0.0653 (S)	0.76	1.001
1,2,3,7,8-PECDF	J	0.565	0.0847 (S)	1.54	1.000
2,3,4,7,8-PECDF	B J	0.832	0.0847 (S)	1.35	1.000
1,2,3,4,7,8-HXCDF		1.08	0.0846 (S)	1.12	1.001
1,2,3,6,7,8-HXCDF	J	0.685	0.0846 (S)	1.24	1.001
1,2,3,7,8,9-HXCDF	K J	0.129	0.0846 (S)	1.96	1.000
2,3,4,6,7,8-HXCDF	J	0.683	0.0846 (S)	1.14	1.000
1,2,3,4,6,7,8-HPCDF		9.03	0.0613 (S)	0.95	1.000
1,2,3,4,7,8,9-HPCDF	J	0.559	0.0613 (S)	1.17	1.000
OCDF		14.1	0.0445 (Q)	0.90	1.002
TOTAL TETRA-DIOXINS		19.3	0.0752 (S)		
TOTAL PENTA-DIOXINS		19.5	0.0600 (S)		
TOTAL HEXA-DIOXINS		60.0	0.0879 (S)		
TOTAL HEPTA-DIOXINS		102	0.126 (S)		
TOTAL TETRA-FURANS		23.1	0.0653 (S)		
TOTAL PENTA-FURANS		14.9	0.0847 (S)		
TOTAL HEXA-FURANS		13.0	0.0846 (S)		
TOTAL HEPTA-FURANS		21.4	0.0613 (S)		

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:22; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB5_L19652-23_Form1A_DX3M_080S45_SJ1607671.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-PT-08-S
Sample Collection:
10-May-2013 14:11

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-23
Matrix:	SOLID	**Sample Size:**	11.2 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 04:01:45	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_073 S: 13**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_073 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	53.7

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.56	0.0547 (S)	0.76	1.002

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:48; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB225_L19652-23_Form1A_DB33_073S13_SJ1607692.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-PT-01-S
Sample Collection:
10-May-2013 14:46

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-24
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 09:20:17	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 46**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 40
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	52.3

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD		0.279	0.107 (S)	0.79	1.000
1,2,3,7,8-PECDD [4]		1.00	0.125 (S)	0.67	1.000
1,2,3,4,7,8-HXCDD	J	0.567	0.125 (S)	1.18	1.000
1,2,3,6,7,8-HXCDD		3.58	0.125 (S)	1.21	1.000
1,2,3,7,8,9-HXCDD		2.23	0.125 (S)	1.36	1.000
1,2,3,4,6,7,8-HPCDD	B	22.8	0.230 (S)	1.12	1.000
OCDD	B	148	0.382 (S)	0.85	1.000
2,3,7,8-TCDF		2.56	0.0580 (S)	0.78	1.002
1,2,3,7,8-PECDF	J	0.420	0.124 (S)	1.35	1.001
2,3,4,7,8-PECDF	B J	0.568	0.124 (S)	1.36	1.000
1,2,3,4,7,8-HXCDF	J	0.665	0.114 (S)	1.08	1.000
1,2,3,6,7,8-HXCDF	J	0.367	0.114 (S)	1.20	1.000
1,2,3,7,8,9-HXCDF	U		0.114 (S)		
2,3,4,6,7,8-HXCDF	J	0.394	0.114 (S)	1.19	1.001
1,2,3,4,6,7,8-HPCDF		4.95	0.174 (S)	0.98	1.000
1,2,3,4,7,8,9-HPCDF	J	0.318	0.174 (S)	1.19	1.000
OCDF		11.3	0.120 (S)	0.98	1.002
TOTAL TETRA-DIOXINS		33.8	0.107 (S)		
TOTAL PENTA-DIOXINS		15.9	0.125 (S)		
TOTAL HEXA-DIOXINS		34.4	0.125 (S)		
TOTAL HEPTA-DIOXINS		70.5	0.230 (S)		
TOTAL TETRA-FURANS		17.4	0.0580 (S)		
TOTAL PENTA-FURANS		10.1	0.124 (S)		
TOTAL HEXA-FURANS		9.50	0.114 (S)		
TOTAL HEPTA-FURANS		13.3	0.174 (S)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 14-Jun-2013 14:32:02; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-24_Form1A_DX3M_080S46_SJ1607672.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-PT-01-S
Sample Collection:
10-May-2013 14:46

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-24
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 04:38:30	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_073 S: 14**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_073 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	52.3

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.19	0.0496 (S)	0.85	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

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Report Filename: 1613_DIOXINS_1613DB225_L19652-24_Form1A_DB33_073S14_SJ1607693.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-SEQ-05-S
Sample Collection:
09-May-2013 08:57

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-25
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 10:15:27	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 47**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 40
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	66.1

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	J	0.181	0.0733 (S)	0.76	1.000
1,2,3,7,8-PECDD [4]	J	0.515	0.184 (S)	0.67	1.002
1,2,3,4,7,8-HXCDD	J	0.435	0.108 (S)	1.38	1.000
1,2,3,6,7,8-HXCDD		1.39	0.108 (S)	1.19	1.000
1,2,3,7,8,9-HXCDD		1.37	0.108 (S)	1.26	1.000
1,2,3,4,6,7,8-HPCDD	B	14.8	0.0988 (S)	0.98	1.000
OCDD	B	96.2	0.311 (S)	0.86	1.000
2,3,7,8-TCDF		1.30	0.0536 (S)	0.80	1.001
1,2,3,7,8-PECDF	J	0.232	0.0860 (S)	1.40	1.002
2,3,4,7,8-PECDF	B J	0.386	0.0860 (S)	1.58	1.002
1,2,3,4,7,8-HXCDF	J	0.379	0.0580 (S)	1.21	1.000
1,2,3,6,7,8-HXCDF	J	0.231	0.0580 (S)	1.10	1.000
1,2,3,7,8,9-HXCDF	U		0.0580 (S)		
2,3,4,6,7,8-HXCDF	J	0.283	0.0580 (S)	1.21	1.001
1,2,3,4,6,7,8-HPCDF		2.86	0.0526 (S)	0.91	1.000
1,2,3,4,7,8,9-HPCDF	J	0.267	0.0526 (S)	0.91	1.000
OCDF		5.86	0.0769 (S)	0.82	1.002
TOTAL TETRA-DIOXINS		4.73	0.0733 (S)		
TOTAL PENTA-DIOXINS		5.33	0.184 (S)		
TOTAL HEXA-DIOXINS		15.0	0.108 (S)		
TOTAL HEPTA-DIOXINS		39.7	0.0988 (S)		
TOTAL TETRA-FURANS		10.8	0.0536 (S)		
TOTAL PENTA-FURANS		3.85	0.0860 (S)		
TOTAL HEXA-FURANS		4.96	0.0580 (S)		
TOTAL HEPTA-FURANS		6.90	0.0526 (S)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:22; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB5_L19652-25_Form1A_DX3M_080S47_SJ1607673.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-SEQ-05-S
Sample Collection:
09-May-2013 08:57

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-25
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 05:15:17	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_073 S: 15**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_073 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	66.1

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		0.545	0.0484 (Q)	0.76	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:48; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB225_L19652-25_Form1A_DB33_073S15_SJ1607694.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-SEQ-02-S
Sample Collection:
09-May-2013 09:36

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-26
Matrix:	SOLID	**Sample Size:**	11.0 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 11:10:35	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 48**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 40
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	60.0

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD		0.236	0.0455 (Q)	0.88	1.001
1,2,3,7,8-PECDD [4]	J	0.499	0.0781 (S)	0.59	1.001
1,2,3,4,7,8-HXCDD	J	0.429	0.0724 (S)	1.08	1.000
1,2,3,6,7,8-HXCDD		1.89	0.0724 (S)	1.17	1.000
1,2,3,7,8,9-HXCDD		1.44	0.0724 (S)	1.32	1.000
1,2,3,4,6,7,8-HPCDD	B	20.8	0.141 (S)	0.98	1.000
OCDD	B	148	0.0455 (Q)	0.86	1.000
2,3,7,8-TCDF		1.50	0.0609 (S)	0.74	1.001
1,2,3,7,8-PECDF	J	0.228	0.0889 (S)	1.45	1.001
2,3,4,7,8-PECDF	B J	0.347	0.0889 (S)	1.33	1.000
1,2,3,4,7,8-HXCDF	J	0.426	0.0480 (S)	1.33	1.000
1,2,3,6,7,8-HXCDF	J	0.216	0.0480 (S)	1.12	1.001
1,2,3,7,8,9-HXCDF	J	0.061	0.0480 (S)	1.18	1.001
2,3,4,6,7,8-HXCDF	J	0.307	0.0480 (S)	1.23	1.001
1,2,3,4,6,7,8-HPCDF		3.66	0.0960 (S)	1.02	1.000
1,2,3,4,7,8,9-HPCDF	J	0.234	0.0960 (S)	1.20	1.000
OCDF		8.34	0.112 (S)	0.84	1.002
TOTAL TETRA-DIOXINS		4.90	0.0455 (Q)		
TOTAL PENTA-DIOXINS		3.52	0.0781 (S)		
TOTAL HEXA-DIOXINS		19.5	0.0724 (S)		
TOTAL HEPTA-DIOXINS		58.7	0.141 (S)		
TOTAL TETRA-FURANS		10.9	0.0609 (S)		
TOTAL PENTA-FURANS		5.17	0.0889 (S)		
TOTAL HEXA-FURANS		5.69	0.0480 (S)		
TOTAL HEPTA-FURANS		10.1	0.0960 (S)		

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:22; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB5_L19652-26_Form1A_DX3M_080S48_SJ1607674.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-SEQ-02-S
Sample Collection:
09-May-2013 09:36

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-26
Matrix:	SOLID	**Sample Size:**	11.0 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 05:52:07	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_073 S: 16**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_073 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	60.0

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		0.691	0.0455 (S)	0.77	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

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Report Filename: 1613_DIOXINS_1613DB225_L19652-26_Form1A_DB33_073S16_SJ1607695.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-SEQ-04-S
Sample Collection:
09-May-2013 10:11

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-27
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 12:05:43	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 49**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 40
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	56.2

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	J	0.173	0.0477 (Q)	0.85	1.000
1,2,3,7,8-PECDD [4]	J	0.637	0.0503 (S)	0.69	1.001
1,2,3,4,7,8-HXCDD	J	0.511	0.0639 (S)	1.32	1.001
1,2,3,6,7,8-HXCDD		1.97	0.0639 (S)	1.17	1.000
1,2,3,7,8,9-HXCDD		1.78	0.0639 (S)	1.15	1.000
1,2,3,4,6,7,8-HPCDD	B	24.2	0.162 (S)	0.96	1.000
OCDD	B	166	0.176 (S)	0.85	1.000
2,3,7,8-TCDF		1.52	0.0477 (Q)	0.73	1.002
1,2,3,7,8-PECDF	J	0.252	0.0620 (S)	1.35	1.002
2,3,4,7,8-PECDF	B J	0.322	0.0620 (S)	1.51	1.001
1,2,3,4,7,8-HXCDF	K J	0.378	0.0938 (S)	0.88	1.001
1,2,3,6,7,8-HXCDF	J	0.267	0.0938 (S)	1.19	1.000
1,2,3,7,8,9-HXCDF	U		0.0938 (S)		
2,3,4,6,7,8-HXCDF	J	0.303	0.0938 (S)	1.41	1.000
1,2,3,4,6,7,8-HPCDF		3.79	0.0833 (S)	0.98	1.000
1,2,3,4,7,8,9-HPCDF	J	0.190	0.0833 (S)	1.03	1.000
OCDF		9.20	0.0477 (Q)	0.88	1.002
TOTAL TETRA-DIOXINS		5.86	0.0477 (Q)		
TOTAL PENTA-DIOXINS		7.07	0.0503 (S)		
TOTAL HEXA-DIOXINS		21.8	0.0639 (S)		
TOTAL HEPTA-DIOXINS		72.4	0.162 (S)		
TOTAL TETRA-FURANS		11.6	0.0477 (Q)		
TOTAL PENTA-FURANS		6.66	0.0620 (S)		
TOTAL HEXA-FURANS		5.64	0.0938 (S)		
TOTAL HEPTA-FURANS		10.8	0.0833 (S)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:22; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB5_L19652-27_Form1A_DX3M_080S49_SJ1607675.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-SEQ-04-S
Sample Collection:
09-May-2013 10:11

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-27
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 06:29:00	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_073 S: 17**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_073 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	56.2

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		0.780	0.0477 (Q)	0.71	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

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Report Filename: 1613_DIOXINS_1613DB225_L19652-27_Form1A_DB33_073S17_SJ1607696.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-SEQ-03-S
Sample Collection:
09-May-2013 11:04

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-28
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 13:00:51	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 50**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 40
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	63.4

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD		0.216	0.0857 (S)	0.77	1.001
1,2,3,7,8-PECDD [4]	J	0.831	0.107 (S)	0.67	1.002
1,2,3,4,7,8-HXCDD	K J	0.764	0.0756 (S)	0.94	1.000
1,2,3,6,7,8-HXCDD		2.81	0.0756 (S)	1.36	1.000
1,2,3,7,8,9-HXCDD		2.47	0.0756 (S)	1.30	1.000
1,2,3,4,6,7,8-HPCDD	B	32.6	0.256 (S)	1.02	1.000
OCDD	B	210	0.0477 (Q)	0.87	1.000
2,3,7,8-TCDF		2.41	0.0477 (Q)	0.81	1.001
1,2,3,7,8-PECDF	J	0.255	0.114 (S)	1.37	1.000
2,3,4,7,8-PECDF	B J	0.526	0.114 (S)	1.57	1.001
1,2,3,4,7,8-HXCDF	J	0.541	0.114 (S)	1.24	1.000
1,2,3,6,7,8-HXCDF	J	0.344	0.114 (S)	1.05	1.000
1,2,3,7,8,9-HXCDF	U		0.114 (S)		
2,3,4,6,7,8-HXCDF	J	0.331	0.114 (S)	1.24	1.000
1,2,3,4,6,7,8-HPCDF		5.41	0.103 (S)	0.93	1.000
1,2,3,4,7,8,9-HPCDF	J	0.355	0.103 (S)	1.12	1.001
OCDF		11.2	0.197 (S)	0.85	1.002
TOTAL TETRA-DIOXINS		10.9	0.0857 (S)		
TOTAL PENTA-DIOXINS		6.81	0.107 (S)		
TOTAL HEXA-DIOXINS		30.1	0.0756 (S)		
TOTAL HEPTA-DIOXINS		94.6	0.256 (S)		
TOTAL TETRA-FURANS		17.0	0.0477 (Q)		
TOTAL PENTA-FURANS		8.83	0.114 (S)		
TOTAL HEXA-FURANS		8.01	0.114 (S)		
TOTAL HEPTA-FURANS		14.0	0.103 (S)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:22; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB5_L19652-28_Form1A_DX3M_080S50_SJ1607676.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-SEQ-03-S
Sample Collection:
09-May-2013 11:04

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-28
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 10:48:54	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_074 S: 6**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_074 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	63.4

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.04	0.0477 (Q)	0.71	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:48; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB225_L19652-28_Form1A_DB33_074S6_SJ1607700.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-SEQ-03-D
Sample Collection:
09-May-2013 11:04

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-29
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 13:55:59	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 51**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 40
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	63.5

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD		0.220	0.0667 (S)	0.76	1.001
1,2,3,7,8-PECDD [4]	J	0.842	0.0896 (S)	0.53	1.001
1,2,3,4,7,8-HXCDD	J	0.780	0.0754 (S)	1.08	1.001
1,2,3,6,7,8-HXCDD		3.04	0.0754 (S)	1.26	1.000
1,2,3,7,8,9-HXCDD		2.61	0.0754 (S)	1.32	1.000
1,2,3,4,6,7,8-HPCDD	B	36.5	0.113 (S)	1.01	1.000
OCDD	B	251	0.0636 (S)	0.86	1.000
2,3,7,8-TCDF		2.14	0.0469 (Q)	0.71	1.001
1,2,3,7,8-PECDF	J	0.349	0.0776 (S)	1.62	1.001
2,3,4,7,8-PECDF	B J	0.574	0.0776 (S)	1.40	1.001
1,2,3,4,7,8-HXCDF	J	0.671	0.0469 (Q)	1.15	1.001
1,2,3,6,7,8-HXCDF	J	0.374	0.0469 (Q)	1.10	1.000
1,2,3,7,8,9-HXCDF	J	0.050	0.0469 (Q)	1.22	1.000
2,3,4,6,7,8-HXCDF	J	0.383	0.0469 (Q)	1.23	1.000
1,2,3,4,6,7,8-HPCDF		5.28	0.0585 (S)	0.96	1.001
1,2,3,4,7,8,9-HPCDF	J	0.447	0.0585 (S)	0.96	1.000
OCDF		12.0	0.0469 (Q)	0.81	1.002
TOTAL TETRA-DIOXINS		7.84	0.0667 (S)		
TOTAL PENTA-DIOXINS		9.17	0.0896 (S)		
TOTAL HEXA-DIOXINS		34.5	0.0754 (S)		
TOTAL HEPTA-DIOXINS		111	0.113 (S)		
TOTAL TETRA-FURANS		14.3	0.0469 (Q)		
TOTAL PENTA-FURANS		8.48	0.0776 (S)		
TOTAL HEXA-FURANS		8.16	0.0469 (Q)		
TOTAL HEPTA-FURANS		13.9	0.0585 (S)		

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:22; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB5_L19652-29_Form1A_DX3M_080S51_SJ1607677.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-SEQ-03-D
Sample Collection:
09-May-2013 11:04

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-29
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 11:25:39	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_074 S: 7**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_074 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	63.5

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		0.929	0.0542 (S)	0.69	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:48; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB225_L19652-29_Form1A_DB33_074S7_SJ1607701.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-SEQ-01-S
Sample Collection:
09-May-2013 11:41

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-30
Matrix:	SOLID	**Sample Size:**	10.1 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	03-Jun-2013 **Time:** 21:26:21	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_081 S: 13**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_081 S: 10
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	69.1

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	B	0.239	0.0524 (S)	0.68	1.001
1,2,3,7,8-PECDD [4]	J	0.979	0.128 (S)	0.55	1.002
1,2,3,4,7,8-HXCDD		1.03	0.114 (S)	1.21	1.001
1,2,3,6,7,8-HXCDD		3.82	0.114 (S)	1.32	1.000
1,2,3,7,8,9-HXCDD		4.19	0.114 (S)	1.36	1.000
1,2,3,4,6,7,8-HPCDD	B	36.5	0.144 (S)	1.00	1.000
OCDD	B	251	0.129 (S)	0.88	1.000
2,3,7,8-TCDF		2.11	0.0497 (Q)	0.81	1.001
1,2,3,7,8-PECDF	J	0.486	0.0939 (S)	1.37	1.001
2,3,4,7,8-PECDF	J	0.633	0.0939 (S)	1.43	1.001
1,2,3,4,7,8-HXCDF	K J	0.835	0.0973 (S)	0.89	1.001
1,2,3,6,7,8-HXCDF	J	0.493	0.0973 (S)	1.33	1.000
1,2,3,7,8,9-HXCDF	J	0.109	0.0973 (S)	1.06	1.000
2,3,4,6,7,8-HXCDF	K J	0.556	0.0973 (S)	1.57	1.000
1,2,3,4,6,7,8-HPCDF		7.37	0.0841 (S)	0.98	1.000
1,2,3,4,7,8,9-HPCDF	J	0.445	0.0841 (S)	1.16	1.000
OCDF	B	11.6	0.0506 (S)	0.82	1.002
TOTAL TETRA-DIOXINS		3.60	0.0524 (S)		
TOTAL PENTA-DIOXINS		5.03	0.128 (S)		
TOTAL HEXA-DIOXINS		36.1	0.114 (S)		
TOTAL HEPTA-DIOXINS	B	88.8	0.144 (S)		
TOTAL TETRA-FURANS		8.84	0.0497 (Q)		
TOTAL PENTA-FURANS		4.20	0.0939 (S)		
TOTAL HEXA-FURANS		5.62	0.0973 (S)		
TOTAL HEPTA-FURANS		17.1	0.0841 (S)		

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:13; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-30_Form1A_DX3M_081S13_SJ1608931.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-SEQ-01-S
Sample Collection:
09-May-2013 11:41

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-30
Matrix:	SOLID	**Sample Size:**	10.1 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	03-Jun-2013 **Time:** 12:36:45	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_076 S: 8**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_076 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	69.1

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.31	0.0497 (Q)	0.85	1.002

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:37; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-30_Form1A_DB33_076S8_SJ1610168.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-10-S
Sample Collection:
08-May-2013 11:27

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-31 R
Matrix:	SOLID	**Sample Size:**	9.94 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	07-Jun-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Jun-2013 **Time:** 01:18:00	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_087 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_087 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_087 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	68.9

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD		0.303	0.0503 (Q)	0.81	1.001
1,2,3,7,8-PECDD [4]	J	0.896	0.0503 (Q)	0.52	1.001
1,2,3,4,7,8-HXCDD	J	0.745	0.0648 (S)	1.13	1.001
1,2,3,6,7,8-HXCDD		3.64	0.0648 (S)	1.10	1.000
1,2,3,7,8,9-HXCDD		3.11	0.0648 (S)	1.21	1.000
1,2,3,4,6,7,8-HPCDD		31.0	0.0890 (S)	1.02	1.000
OCDD		176	0.227 (S)	0.87	1.000
2,3,7,8-TCDF		2.82	0.0503 (Q)	0.73	1.001
1,2,3,7,8-PECDF	J	0.403	0.0594 (S)	1.50	1.001
2,3,4,7,8-PECDF	J	0.687	0.0594 (S)	1.54	1.001
1,2,3,4,7,8-HXCDF	J	0.789	0.0503 (Q)	1.13	1.000
1,2,3,6,7,8-HXCDF	J	0.480	0.0503 (Q)	1.08	1.000
1,2,3,7,8,9-HXCDF	J	0.067	0.0503 (Q)	1.38	1.000
2,3,4,6,7,8-HXCDF	J	0.451	0.0503 (Q)	1.08	1.000
1,2,3,4,6,7,8-HPCDF		6.75	0.0503 (Q)	0.97	1.000
1,2,3,4,7,8,9-HPCDF	J	0.367	0.0503 (Q)	0.99	1.000
OCDF		9.60	0.0812 (S)	0.88	1.002
TOTAL TETRA-DIOXINS		9.85	0.0503 (Q)		
TOTAL PENTA-DIOXINS		11.9	0.0503 (Q)		
TOTAL HEXA-DIOXINS		38.2	0.0648 (S)		
TOTAL HEPTA-DIOXINS		77.7	0.0890 (S)		
TOTAL TETRA-FURANS		18.1	0.0503 (Q)		
TOTAL PENTA-FURANS		9.62	0.0594 (S)		
TOTAL HEXA-FURANS		10.9	0.0503 (Q)		
TOTAL HEPTA-FURANS		15.9	0.0503 (Q)		

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Celine Vaillant_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 17-Jun-2013 09:56:59; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-31_Form1A_DX3M_087S11_SJ1611179.html; Workgroup: WG43834; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-10-S
Sample Collection:
08-May-2013 11:27

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-31 R
Matrix:	SOLID	**Sample Size:**	9.94 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	07-Jun-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Jun-2013 **Time:** 11:45:49	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_084 S: 7**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_087 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_084 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	68.9

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.52	0.0726 (S)	0.88	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Celine Vaillant_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 17-Jun-2013 09:57:17; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-31_Form1A_DB33_084S7_SJ1611526.html; Workgroup: WG43834; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-07-S
Sample Collection:
08-May-2013 11:47

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-32
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	03-Jun-2013 **Time:** 23:16:46	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_081 S: 15**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_081 S: 10
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	68.6

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	B	0.314	0.0481 (Q)	0.88	1.001
1,2,3,7,8-PECDD [4]		1.22	0.0481 (Q)	0.63	1.001
1,2,3,4,7,8-HXCDD		0.973	0.0481 (Q)	1.10	1.000
1,2,3,6,7,8-HXCDD		4.70	0.0481 (Q)	1.18	1.000
1,2,3,7,8,9-HXCDD		3.93	0.0481 (Q)	1.21	1.000
1,2,3,4,6,7,8-HPCDD	B	37.8	0.0863 (S)	1.00	1.000
OCDD	B	217	0.0506 (S)	0.89	1.000
2,3,7,8-TCDF		3.54	0.0481 (Q)	0.73	1.001
1,2,3,7,8-PECDF	J	0.563	0.0481 (Q)	1.64	1.001
2,3,4,7,8-PECDF	J	0.854	0.0481 (Q)	1.56	1.001
1,2,3,4,7,8-HXCDF		0.972	0.0481 (Q)	1.38	1.000
1,2,3,6,7,8-HXCDF	J	0.571	0.0481 (Q)	1.17	1.001
1,2,3,7,8,9-HXCDF	K J	0.087	0.0481 (Q)	0.68	1.000
2,3,4,6,7,8-HXCDF	J	0.579	0.0481 (Q)	1.20	1.001
1,2,3,4,6,7,8-HPCDF		8.71	0.0481 (Q)	1.01	1.000
1,2,3,4,7,8,9-HPCDF	J	0.477	0.0481 (Q)	0.92	1.000
OCDF	B	13.9	0.0481 (Q)	0.88	1.002
TOTAL TETRA-DIOXINS		12.4	0.0481 (Q)		
TOTAL PENTA-DIOXINS		16.1	0.0481 (Q)		
TOTAL HEXA-DIOXINS		49.1	0.0481 (Q)		
TOTAL HEPTA-DIOXINS	B	91.9	0.0863 (S)		
TOTAL TETRA-FURANS		22.1	0.0481 (Q)		
TOTAL PENTA-FURANS		13.6	0.0481 (Q)		
TOTAL HEXA-FURANS		13.6	0.0481 (Q)		
TOTAL HEPTA-FURANS		20.4	0.0481 (Q)		

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:13; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-32_Form1A_DX3M_081S15_SJ1608933.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-07-S
Sample Collection:
08-May-2013 11:47

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-32
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	03-Jun-2013 **Time:** 13:50:29	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_076 S: 10**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_076 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	68.6

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		2.13	0.0481 (Q)	0.76	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:37; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-32_Form1A_DB33_076S10_SJ1610170.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-01-S
Sample Collection:
08-May-2013 12:06

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-33
Matrix:	SOLID	**Sample Size:**	9.91 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 00:11:53	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_081 S: 16**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_081 S: 10
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	76.4

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	B	0.348	0.0505 (Q)	0.67	1.001
1,2,3,7,8-PECDD [4]		1.07	0.0505 (Q)	0.66	1.001
1,2,3,4,7,8-HXCDD	J	0.848	0.0524 (S)	1.30	1.000
1,2,3,6,7,8-HXCDD		3.71	0.0524 (S)	1.28	1.000
1,2,3,7,8,9-HXCDD		3.31	0.0524 (S)	1.26	1.000
1,2,3,4,6,7,8-HPCDD	B	33.0	0.0859 (S)	1.06	1.000
OCDD	B	190	0.203 (S)	0.86	1.000
2,3,7,8-TCDF		3.34	0.0505 (Q)	0.76	1.001
1,2,3,7,8-PECDF	J	0.593	0.0505 (Q)	1.45	1.001
2,3,4,7,8-PECDF	J	0.913	0.0505 (Q)	1.49	1.000
1,2,3,4,7,8-HXCDF	J	0.990	0.0505 (Q)	1.24	1.000
1,2,3,6,7,8-HXCDF	J	0.624	0.0505 (Q)	1.14	1.001
1,2,3,7,8,9-HXCDF	K J	0.081	0.0505 (Q)	1.57	1.000
2,3,4,6,7,8-HXCDF	J	0.581	0.0505 (Q)	1.11	1.000
1,2,3,4,6,7,8-HPCDF		8.07	0.0505 (Q)	1.06	1.000
1,2,3,4,7,8,9-HPCDF	J	0.491	0.0505 (Q)	1.11	1.000
OCDF	B	13.8	0.0505 (Q)	0.93	1.002
TOTAL TETRA-DIOXINS		9.26	0.0505 (Q)		
TOTAL PENTA-DIOXINS		11.1	0.0505 (Q)		
TOTAL HEXA-DIOXINS		39.7	0.0524 (S)		
TOTAL HEPTA-DIOXINS	B	81.4	0.0859 (S)		
TOTAL TETRA-FURANS		20.7	0.0505 (Q)		
TOTAL PENTA-FURANS		10.9	0.0505 (Q)		
TOTAL HEXA-FURANS		12.1	0.0505 (Q)		
TOTAL HEPTA-FURANS		19.4	0.0505 (Q)		

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

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Report Filename: 1613_DIOXINS_1613DB5_L19652-33_Form1A_DX3M_081S16_SJ1608934.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-01-S
Sample Collection:
08-May-2013 12:06

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-33 i
Matrix:	SOLID	**Sample Size:**	9.91 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	03-Jun-2013 **Time:** 15:05:12	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_076A S: 1**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_076 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	76.4

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.72	0.110 (S)	0.66	1.002

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

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Report Filename: 1613_DIOXINS_1613DB225_L19652-33_Form1A_DB33_076AS1_SJ1610171.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-03-S
Sample Collection:
08-May-2013 13:57

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-34 (A)
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 01:07:07	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_081 S: 17**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_081 S: 10
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	20.7

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K B J	0.060	0.0491 (Q)	0.48	1.001
1,2,3,7,8-PECDD [4]	K J	0.087	0.0491 (Q)	0.49	1.001
1,2,3,4,7,8-HXCDD	K J	0.099	0.0491 (Q)	0.85	1.001
1,2,3,6,7,8-HXCDD	K J	0.326	0.0491 (Q)	1.64	1.000
1,2,3,7,8,9-HXCDD	J	0.270	0.0491 (Q)	1.22	1.000
1,2,3,4,6,7,8-HPCDD	B	2.56	0.0491 (Q)	1.06	1.000
OCDD	B	15.8	0.0491 (Q)	0.88	1.000
2,3,7,8-TCDF		0.269	0.0491 (Q)	0.87	1.001
1,2,3,7,8-PECDF	J	0.058	0.0491 (Q)	1.38	1.002
2,3,4,7,8-PECDF	J	0.077	0.0491 (Q)	1.50	1.001
1,2,3,4,7,8-HXCDF	K J	0.090	0.0491 (Q)	0.84	1.001
1,2,3,6,7,8-HXCDF	U		0.0491 (Q)		
1,2,3,7,8,9-HXCDF	U		0.0491 (Q)		
2,3,4,6,7,8-HXCDF	K J	0.061	0.0491 (Q)	0.94	1.000
1,2,3,4,6,7,8-HPCDF	J	0.598	0.0491 (Q)	1.04	1.000
1,2,3,4,7,8,9-HPCDF	U		0.0491 (Q)		
OCDF	B J	1.16	0.0491 (Q)	0.93	1.002
TOTAL TETRA-DIOXINS		0.615	0.0491 (Q)		
TOTAL PENTA-DIOXINS		0.654	0.0491 (Q)		
TOTAL HEXA-DIOXINS		2.72	0.0491 (Q)		
TOTAL HEPTA-DIOXINS	B	6.43	0.0491 (Q)		
TOTAL TETRA-FURANS		1.44	0.0491 (Q)		
TOTAL PENTA-FURANS		0.683	0.0491 (Q)		
TOTAL HEXA-FURANS		0.614	0.0491 (Q)		
TOTAL HEPTA-FURANS		1.42	0.0491 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:13; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-34_Form1A_DX3M_081S17_SJ1608935.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-03-S
Sample Collection:
08-May-2013 13:57

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-34 (A)
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	03-Jun-2013 **Time:** 15:41:58	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_076A S: 2**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_076 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	20.7

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF	J	0.116	0.0467 (Q)	0.69	1.002

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

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Report Filename: 1613_DIOXINS_1613DB225_L19652-34_Form1A_DB33_076AS2_SJ1610172.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-03-S (Duplicate)
Sample Collection:
08-May-2013 13:57

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	WG43721-103 (DUP L19652-34)
Matrix:	SOLID	**Sample Size:**	11.2 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 02:02:20	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_081 S: 18**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_081 S: 10
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	20.3

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K B J	0.047	0.0445 (Q)	0.08	1.003
1,2,3,7,8-PECDD [4]	J	0.096	0.0445 (Q)	0.53	1.002
1,2,3,4,7,8-HXCDD	J	0.071	0.0445 (Q)	1.34	1.001
1,2,3,6,7,8-HXCDD	J	0.259	0.0445 (Q)	1.38	1.000
1,2,3,7,8,9-HXCDD	J	0.271	0.0445 (Q)	1.15	1.000
1,2,3,4,6,7,8-HPCDD	B	2.37	0.0445 (Q)	0.99	1.000
OCDD	B	13.1	0.0688 (S)	0.94	1.000
2,3,7,8-TCDF		0.226	0.0445 (Q)	0.88	1.001
1,2,3,7,8-PECDF	U		0.0445 (Q)		
2,3,4,7,8-PECDF	J	0.091	0.0445 (Q)	1.47	1.001
1,2,3,4,7,8-HXCDF	K J	0.082	0.0445 (Q)	0.87	1.001
1,2,3,6,7,8-HXCDF	U		0.0445 (Q)		
1,2,3,7,8,9-HXCDF	U		0.0445 (Q)		
2,3,4,6,7,8-HXCDF	J	0.056	0.0445 (Q)	1.40	1.000
1,2,3,4,6,7,8-HPCDF	J	0.579	0.0445 (Q)	1.02	1.000
1,2,3,4,7,8,9-HPCDF	U		0.0445 (Q)		
OCDF	B J	0.852	0.0445 (Q)	0.83	1.002
TOTAL TETRA-DIOXINS		0.423	0.0445 (Q)		
TOTAL PENTA-DIOXINS		0.548	0.0445 (Q)		
TOTAL HEXA-DIOXINS		2.76	0.0445 (Q)		
TOTAL HEPTA-DIOXINS	B	5.73	0.0445 (Q)		
TOTAL TETRA-FURANS		0.902	0.0445 (Q)		
TOTAL PENTA-FURANS		0.421	0.0445 (Q)		
TOTAL HEXA-FURANS		0.539	0.0445 (Q)		
TOTAL HEPTA-FURANS		1.22	0.0445 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:13; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_WG43721-103_Form1A_DX3M_081S18_SJ1608936.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-03-S (Duplicate)
Sample Collection:
08-May-2013 13:57

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	WG43721-103 (DUP L19652-34)
Matrix:	SOLID	**Sample Size:**	11.2 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	03-Jun-2013 **Time:** 16:18:47	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_076A S: 3**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_076 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	20.3

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF	K J	0.127	0.0445 (Q)	1.25	1.002

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

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Report Filename: 1613_DIOXINS_1613DB225_WG43721-103_Form1A_DB33_076AS3_SJ1610173.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-12-S
Sample Collection:
08-May-2013 14:44

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-35
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 02:57:28	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_081 S: 19**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_081 S: 10
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	21.0

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K B J	0.071	0.0474 (Q)	0.32	1.001
1,2,3,7,8-PECDD [4]	J	0.180	0.0538 (S)	0.55	1.001
1,2,3,4,7,8-HXCDD	J	0.140	0.0474 (Q)	1.38	1.001
1,2,3,6,7,8-HXCDD	J	0.616	0.0474 (Q)	1.14	1.001
1,2,3,7,8,9-HXCDD	J	0.734	0.0474 (Q)	1.35	1.000
1,2,3,4,6,7,8-HPCDD	B	5.18	0.0474 (Q)	1.05	1.000
OCDD	B	29.4	0.0474 (Q)	0.85	1.000
2,3,7,8-TCDF		0.444	0.0474 (Q)	0.79	1.001
1,2,3,7,8-PECDF	K J	0.093	0.0474 (Q)	2.33	1.000
2,3,4,7,8-PECDF	J	0.127	0.0474 (Q)	1.44	1.001
1,2,3,4,7,8-HXCDF	J	0.172	0.0474 (Q)	1.14	1.001
1,2,3,6,7,8-HXCDF	J	0.141	0.0474 (Q)	1.23	1.001
1,2,3,7,8,9-HXCDF	U		0.0474 (Q)		
2,3,4,6,7,8-HXCDF	J	0.112	0.0474 (Q)	1.08	1.000
1,2,3,4,6,7,8-HPCDF		1.41	0.0474 (Q)	1.04	1.000
1,2,3,4,7,8,9-HPCDF	J	0.089	0.0474 (Q)	1.15	1.000
OCDF	B	1.92	0.0474 (Q)	0.87	1.002
TOTAL TETRA-DIOXINS		0.638	0.0474 (Q)		
TOTAL PENTA-DIOXINS		0.795	0.0538 (S)		
TOTAL HEXA-DIOXINS		5.93	0.0474 (Q)		
TOTAL HEPTA-DIOXINS	B	12.1	0.0474 (Q)		
TOTAL TETRA-FURANS		1.54	0.0474 (Q)		
TOTAL PENTA-FURANS		0.127	0.0474 (Q)		
TOTAL HEXA-FURANS		0.970	0.0474 (Q)		
TOTAL HEPTA-FURANS		2.98	0.0474 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:13; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-35_Form1A_DX3M_081S19_SJ1608937.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-12-S
Sample Collection:
08-May-2013 14:44

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-35
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	03-Jun-2013 **Time:** 16:55:38	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_076A S: 4**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_076 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	21.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		0.308	0.0474 (Q)	0.70	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:37; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-35_Form1A_DB33_076AS4_SJ1610174.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-02-S
Sample Collection:
08-May-2013 15:29

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-36
Matrix:	SOLID	**Sample Size:**	10.0 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 03:52:35	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_081 S: 20**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_081 S: 10
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	71.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K B	0.301	0.0498 (Q)	0.59	1.001
1,2,3,7,8-PECDD [4]		1.01	0.0498 (Q)	0.59	1.001
1,2,3,4,7,8-HXCDD	J	0.792	0.0498 (Q)	1.22	1.000
1,2,3,6,7,8-HXCDD		3.91	0.0498 (Q)	1.22	1.000
1,2,3,7,8,9-HXCDD		3.62	0.0498 (Q)	1.33	1.000
1,2,3,4,6,7,8-HPCDD	B	31.2	0.0810 (S)	1.03	1.000
OCDD	B	199	0.0498 (Q)	0.87	1.000
2,3,7,8-TCDF		2.73	0.0498 (Q)	0.79	1.001
1,2,3,7,8-PECDF	J	0.390	0.0498 (Q)	1.32	1.001
2,3,4,7,8-PECDF	J	0.698	0.0498 (Q)	1.53	1.001
1,2,3,4,7,8-HXCDF	J	0.747	0.0498 (Q)	1.35	1.001
1,2,3,6,7,8-HXCDF	J	0.460	0.0498 (Q)	1.15	1.000
1,2,3,7,8,9-HXCDF	U		0.0498 (Q)		
2,3,4,6,7,8-HXCDF	J	0.478	0.0498 (Q)	1.09	1.000
1,2,3,4,6,7,8-HPCDF		6.85	0.0498 (Q)	1.07	1.000
1,2,3,4,7,8,9-HPCDF	J	0.416	0.0498 (Q)	1.07	1.000
OCDF	B	11.9	0.0498 (Q)	0.89	1.002
TOTAL TETRA-DIOXINS		5.93	0.0498 (Q)		
TOTAL PENTA-DIOXINS		9.64	0.0498 (Q)		
TOTAL HEXA-DIOXINS		39.1	0.0498 (Q)		
TOTAL HEPTA-DIOXINS	B	76.7	0.0810 (S)		
TOTAL TETRA-FURANS		12.1	0.0498 (Q)		
TOTAL PENTA-FURANS		6.44	0.0498 (Q)		
TOTAL HEXA-FURANS		8.26	0.0498 (Q)		
TOTAL HEPTA-FURANS		16.3	0.0498 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:13; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-36_Form1A_DX3M_081S20_SJ1608938.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-02-S
Sample Collection:
08-May-2013 15:29

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-36
Matrix:	SOLID	**Sample Size:**	10.0 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	03-Jun-2013 **Time:** 17:32:27	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_076A S: 5**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_076 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	71.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.68	0.0503 (S)	0.85	1.002

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:37; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-36_Form1A_DB33_076AS5_SJ1610175.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-05-S
Sample Collection:
08-May-2013 15:54

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-37
Matrix:	SOLID	**Sample Size:**	10.8 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 04:47:43	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_081 S: 21**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_081 S: 10
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	47.1

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	B	0.221	0.0464 (Q)	0.66	1.001
1,2,3,7,8-PECDD [4]	J	0.736	0.0464 (Q)	0.68	1.001
1,2,3,4,7,8-HXCDD	J	0.521	0.0464 (Q)	1.18	1.000
1,2,3,6,7,8-HXCDD		2.87	0.0464 (Q)	1.13	1.000
1,2,3,7,8,9-HXCDD		2.83	0.0464 (Q)	1.16	1.000
1,2,3,4,6,7,8-HPCDD	B	22.8	0.0535 (S)	0.96	1.000
OCDD	B	138	0.0464 (Q)	0.87	1.000
2,3,7,8-TCDF		1.98	0.0464 (Q)	0.76	1.001
1,2,3,7,8-PECDF	J	0.335	0.0514 (S)	1.56	1.001
2,3,4,7,8-PECDF	J	0.467	0.0514 (S)	1.58	1.001
1,2,3,4,7,8-HXCDF	J	0.551	0.0464 (Q)	1.28	1.000
1,2,3,6,7,8-HXCDF	J	0.314	0.0464 (Q)	1.20	1.001
1,2,3,7,8,9-HXCDF	U		0.0464 (Q)		
2,3,4,6,7,8-HXCDF	J	0.357	0.0464 (Q)	1.26	1.001
1,2,3,4,6,7,8-HPCDF		5.20	0.0464 (Q)	0.97	1.000
1,2,3,4,7,8,9-HPCDF	J	0.286	0.0464 (Q)	1.13	1.000
OCDF	B	7.93	0.0464 (Q)	0.90	1.002
TOTAL TETRA-DIOXINS		4.73	0.0464 (Q)		
TOTAL PENTA-DIOXINS		6.59	0.0464 (Q)		
TOTAL HEXA-DIOXINS		28.8	0.0464 (Q)		
TOTAL HEPTA-DIOXINS	B	54.5	0.0535 (S)		
TOTAL TETRA-FURANS		8.41	0.0464 (Q)		
TOTAL PENTA-FURANS		4.36	0.0514 (S)		
TOTAL HEXA-FURANS		6.00	0.0464 (Q)		
TOTAL HEPTA-FURANS		11.9	0.0464 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:13; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-37_Form1A_DX3M_081S21_SJ1608939.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-05-S
Sample Collection:
08-May-2013 15:54

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-37
Matrix:	SOLID	**Sample Size:**	10.8 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	03-Jun-2013 **Time:** 18:09:18	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_076A S: 6**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_076 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	47.1

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.23	0.0464 (Q)	0.79	1.002

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

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Report Filename: 1613_DIOXINS_1613DB225_L19652-37_Form1A_DB33_076AS6_SJ1610176.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-04-S
Sample Collection:
07-May-2013 13:42

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-38
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 09:32:43	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_081 S: 26**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_081 S: 22
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	49.5

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	B	0.203	0.0469 (Q)	0.72	1.001
1,2,3,7,8-PECDD [4]	J	0.599	0.0514 (S)	0.66	1.001
1,2,3,4,7,8-HXCDD	J	0.445	0.0469 (Q)	1.11	1.000
1,2,3,6,7,8-HXCDD		2.16	0.0469 (Q)	1.20	1.000
1,2,3,7,8,9-HXCDD		1.85	0.0469 (Q)	1.30	1.000
1,2,3,4,6,7,8-HPCDD	B	18.3	0.0597 (S)	1.00	1.000
OCDD	B	114	0.0469 (Q)	0.88	1.000
2,3,7,8-TCDF		2.08	0.0469 (Q)	0.74	1.001
1,2,3,7,8-PECDF	J	0.277	0.0469 (Q)	1.58	1.001
2,3,4,7,8-PECDF	J	0.465	0.0469 (Q)	1.35	1.001
1,2,3,4,7,8-HXCDF	J	0.429	0.0469 (Q)	1.41	1.000
1,2,3,6,7,8-HXCDF	J	0.262	0.0469 (Q)	1.24	1.001
1,2,3,7,8,9-HXCDF	U		0.0469 (Q)		
2,3,4,6,7,8-HXCDF	J	0.271	0.0469 (Q)	1.43	1.001
1,2,3,4,6,7,8-HPCDF		4.08	0.0469 (Q)	1.04	1.000
1,2,3,4,7,8,9-HPCDF	J	0.236	0.0469 (Q)	0.97	1.000
OCDF	B	7.22	0.0469 (Q)	0.79	1.002
TOTAL TETRA-DIOXINS		6.15	0.0469 (Q)		
TOTAL PENTA-DIOXINS		6.71	0.0514 (S)		
TOTAL HEXA-DIOXINS		23.5	0.0469 (Q)		
TOTAL HEPTA-DIOXINS	B	43.7	0.0597 (S)		
TOTAL TETRA-FURANS		11.4	0.0469 (Q)		
TOTAL PENTA-FURANS		4.93	0.0469 (Q)		
TOTAL HEXA-FURANS		5.68	0.0469 (Q)		
TOTAL HEPTA-FURANS		9.76	0.0469 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

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Report Filename: 1613_DIOXINS_1613DB5_L19652-38_Form1A_DX3M_081S26_SJ1608948.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-04-S
Sample Collection:
07-May-2013 13:42

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-38
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	03-Jun-2013 **Time:** 18:46:11	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_076A S: 7**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_076 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	49.5

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.15	0.0469 (Q)	0.78	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:37; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-38_Form1A_DB33_076AS7_SJ1610177.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-11-S
Sample Collection:
07-May-2013 14:07

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-39
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 10:27:52	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_081 S: 27**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_081 S: 22
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	57.3

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	B	0.225	0.0481 (Q)	0.69	1.001
1,2,3,7,8-PECDD [4]	J	0.714	0.0481 (Q)	0.55	1.001
1,2,3,4,7,8-HXCDD	J	0.557	0.0481 (Q)	1.30	1.001
1,2,3,6,7,8-HXCDD		2.80	0.0481 (Q)	1.21	1.000
1,2,3,7,8,9-HXCDD		2.73	0.0481 (Q)	1.17	1.000
1,2,3,4,6,7,8-HPCDD	B	22.2	0.0542 (S)	1.07	1.000
OCDD	B	130	0.0481 (Q)	0.87	1.000
2,3,7,8-TCDF		2.09	0.0481 (Q)	0.80	1.001
1,2,3,7,8-PECDF	J	0.313	0.0481 (Q)	1.53	1.002
2,3,4,7,8-PECDF	J	0.513	0.0481 (Q)	1.46	1.001
1,2,3,4,7,8-HXCDF	J	0.499	0.0481 (Q)	1.19	1.001
1,2,3,6,7,8-HXCDF	J	0.316	0.0481 (Q)	1.40	1.000
1,2,3,7,8,9-HXCDF	U		0.0481 (Q)		
2,3,4,6,7,8-HXCDF	J	0.345	0.0481 (Q)	1.22	1.000
1,2,3,4,6,7,8-HPCDF		5.26	0.0481 (Q)	1.08	1.000
1,2,3,4,7,8,9-HPCDF	J	0.263	0.0481 (Q)	1.03	1.000
OCDF	B	8.37	0.0481 (Q)	0.86	1.002
TOTAL TETRA-DIOXINS		4.84	0.0481 (Q)		
TOTAL PENTA-DIOXINS		7.36	0.0481 (Q)		
TOTAL HEXA-DIOXINS		28.8	0.0481 (Q)		
TOTAL HEPTA-DIOXINS	B	53.0	0.0542 (S)		
TOTAL TETRA-FURANS		8.95	0.0481 (Q)		
TOTAL PENTA-FURANS		4.72	0.0481 (Q)		
TOTAL HEXA-FURANS		6.21	0.0481 (Q)		
TOTAL HEPTA-FURANS		12.6	0.0481 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:13; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-39_Form1A_DX3M_081S27_SJ1608949.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-11-S
Sample Collection:
07-May-2013 14:07

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-39
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 00:55:08	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_077A S: 5**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_077A S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	57.3

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.51	0.0481 (Q)	0.76	1.002

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

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Report Filename: 1613_DIOXINS_1613DB225_L19652-39_Form1A_DB33_077AS5_SJ1610183.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-08-S
Sample Collection:
07-May-2013 14:35

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-40
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 11:23:04	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_081 S: 28**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_081 S: 22
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	21.9

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K B J	0.082	0.0490 (Q)	0.51	1.002
1,2,3,7,8-PECDD [4]	J	0.240	0.0490 (Q)	0.63	1.002
1,2,3,4,7,8-HXCDD	K J	0.185	0.0490 (Q)	0.99	1.000
1,2,3,6,7,8-HXCDD	J	0.872	0.0490 (Q)	1.27	1.000
1,2,3,7,8,9-HXCDD	J	0.864	0.0490 (Q)	1.22	1.000
1,2,3,4,6,7,8-HPCDD	B	6.64	0.0584 (S)	1.08	1.000
OCDD	B	36.1	0.0490 (Q)	0.89	1.000
2,3,7,8-TCDF		0.612	0.0490 (Q)	0.68	1.001
1,2,3,7,8-PECDF	J	0.108	0.0490 (Q)	1.73	1.001
2,3,4,7,8-PECDF	J	0.186	0.0490 (Q)	1.41	1.001
1,2,3,4,7,8-HXCDF	J	0.234	0.0490 (Q)	1.10	1.001
1,2,3,6,7,8-HXCDF	J	0.120	0.0490 (Q)	1.14	1.000
1,2,3,7,8,9-HXCDF	U		0.0490 (Q)		
2,3,4,6,7,8-HXCDF	J	0.113	0.0490 (Q)	1.30	1.001
1,2,3,4,6,7,8-HPCDF		1.60	0.0490 (Q)	0.99	1.000
1,2,3,4,7,8,9-HPCDF	J	0.084	0.0490 (Q)	1.17	1.000
OCDF	B	2.25	0.0490 (Q)	0.81	1.002
TOTAL TETRA-DIOXINS		1.16	0.0490 (Q)		
TOTAL PENTA-DIOXINS		1.83	0.0490 (Q)		
TOTAL HEXA-DIOXINS		9.04	0.0490 (Q)		
TOTAL HEPTA-DIOXINS	B	15.8	0.0584 (S)		
TOTAL TETRA-FURANS		2.39	0.0490 (Q)		
TOTAL PENTA-FURANS		1.27	0.0490 (Q)		
TOTAL HEXA-FURANS		1.77	0.0490 (Q)		
TOTAL HEPTA-FURANS		3.56	0.0490 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:13; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-40_Form1A_DX3M_081S28_SJ1608950.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-08-S
Sample Collection:
07-May-2013 14:35

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-40
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 01:31:55	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_077A S: 6**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_077A S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	21.9

This page is part of a total report that contains information necessary for accreditation compliance.
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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		0.468	0.0490 (Q)	0.80	1.002

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

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Report Filename: 1613_DIOXINS_1613DB225_L19652-40_Form1A_DB33_077AS6_SJ1610184.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-06-S
Sample Collection:
07-May-2013 15:30

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-41
Matrix:	SOLID	**Sample Size:**	10.0 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 12:18:10	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_081 S: 29**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_081 S: 22
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	69.3

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COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	B	0.438	0.0500 (Q)	0.85	1.001
1,2,3,7,8-PECDD [4]		1.56	0.0510 (S)	0.53	1.001
1,2,3,4,7,8-HXCDD		1.44	0.0775 (S)	1.38	1.001
1,2,3,6,7,8-HXCDD		6.22	0.0775 (S)	1.23	1.000
1,2,3,7,8,9-HXCDD		7.39	0.0775 (S)	1.37	1.000
1,2,3,4,6,7,8-HPCDD	B	52.2	0.135 (S)	1.02	1.000
OCDD	B	295	0.0500 (Q)	0.86	1.000
2,3,7,8-TCDF		3.96	0.0500 (Q)	0.72	1.001
1,2,3,7,8-PECDF	J	0.801	0.119 (S)	1.32	1.001
2,3,4,7,8-PECDF		1.23	0.119 (S)	1.49	1.001
1,2,3,4,7,8-HXCDF		1.67	0.0645 (S)	1.14	1.001
1,2,3,6,7,8-HXCDF	J	0.873	0.0645 (S)	1.38	1.000
1,2,3,7,8,9-HXCDF	J	0.093	0.0645 (S)	1.17	1.001
2,3,4,6,7,8-HXCDF	J	0.935	0.0645 (S)	1.08	1.001
1,2,3,4,6,7,8-HPCDF		13.3	0.0848 (S)	1.02	1.000
1,2,3,4,7,8,9-HPCDF	J	0.634	0.0848 (S)	0.97	1.000
OCDF	B	15.9	0.0500 (Q)	0.87	1.002
TOTAL TETRA-DIOXINS		5.15	0.0500 (Q)		
TOTAL PENTA-DIOXINS		12.9	0.0510 (S)		
TOTAL HEXA-DIOXINS		61.3	0.0775 (S)		
TOTAL HEPTA-DIOXINS	B	115	0.135 (S)		
TOTAL TETRA-FURANS		15.6	0.0500 (Q)		
TOTAL PENTA-FURANS		10.8	0.119 (S)		
TOTAL HEXA-FURANS		12.6	0.0645 (S)		
TOTAL HEPTA-FURANS		30.3	0.0848 (S)		

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:13; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-41_Form1A_DX3M_081S29_SJ1608951.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-06-S
Sample Collection:
07-May-2013 15:30

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-41
Matrix:	SOLID	**Sample Size:**	10.0 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 02:08:44	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_077A S: 7**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_077A S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	69.3

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		2.87	0.0500 (Q)	0.78	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:37; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-41_Form1A_DB33_077AS7_SJ1610185.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-09-S
Sample Collection:
07-May-2013 16:40

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-42
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 13:13:19	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_081 S: 30**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_081 S: 22
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	41.4

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	B	0.187	0.0467 (Q)	0.68	1.001
1,2,3,7,8-PECDD [4]	J	0.513	0.0467 (Q)	0.65	1.001
1,2,3,4,7,8-HXCDD	J	0.415	0.0467 (Q)	1.08	1.000
1,2,3,6,7,8-HXCDD		1.92	0.0467 (Q)	1.21	1.000
1,2,3,7,8,9-HXCDD		2.23	0.0467 (Q)	1.17	1.000
1,2,3,4,6,7,8-HPCDD	B	14.5	0.0566 (S)	1.08	1.000
OCDD	B	88.7	0.0467 (Q)	0.89	1.000
2,3,7,8-TCDF		1.42	0.0467 (Q)	0.72	1.001
1,2,3,7,8-PECDF	J	0.278	0.0467 (Q)	1.70	1.001
2,3,4,7,8-PECDF	J	0.347	0.0467 (Q)	1.48	1.001
1,2,3,4,7,8-HXCDF	J	0.437	0.0467 (Q)	1.09	1.000
1,2,3,6,7,8-HXCDF	J	0.251	0.0467 (Q)	1.07	1.000
1,2,3,7,8,9-HXCDF	U		0.0467 (Q)		
2,3,4,6,7,8-HXCDF	J	0.274	0.0467 (Q)	1.10	1.001
1,2,3,4,6,7,8-HPCDF		3.62	0.0467 (Q)	1.05	1.000
1,2,3,4,7,8,9-HPCDF	J	0.247	0.0467 (Q)	1.17	1.000
OCDF	B	5.05	0.0467 (Q)	0.89	1.002
TOTAL TETRA-DIOXINS		2.00	0.0467 (Q)		
TOTAL PENTA-DIOXINS		3.11	0.0467 (Q)		
TOTAL HEXA-DIOXINS		19.4	0.0467 (Q)		
TOTAL HEPTA-DIOXINS	B	34.4	0.0566 (S)		
TOTAL TETRA-FURANS		4.94	0.0467 (Q)		
TOTAL PENTA-FURANS		2.43	0.0467 (Q)		
TOTAL HEXA-FURANS		3.45	0.0467 (Q)		
TOTAL HEPTA-FURANS		8.60	0.0467 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:13; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-42_Form1A_DX3M_081S30_SJ1608952.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-09-S
Sample Collection:
07-May-2013 16:40

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-42
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 02:45:31	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_077A S: 8**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_077A S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	41.4

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.03	0.0467 (Q)	0.67	1.002

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:37; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-42_Form1A_DB33_077AS8_SJ1610186.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-09-D
Sample Collection:
07-May-2013 16:40

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-43
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 14:08:31	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_081 S: 31**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_081 S: 22
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	41.2

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	B	0.210	0.0470 (Q)	0.68	1.001
1,2,3,7,8-PECDD [4]	J G	0.473	0.0470 (Q)	0.59	1.001
1,2,3,4,7,8-HXCDD	J	0.390	0.0470 (Q)	1.32	1.000
1,2,3,6,7,8-HXCDD		1.94	0.0470 (Q)	1.09	1.000
1,2,3,7,8,9-HXCDD		1.99	0.0470 (Q)	1.16	1.000
1,2,3,4,6,7,8-HPCDD	B	15.0	0.0660 (S)	0.98	1.000
OCDD	B	91.5	0.0812 (S)	0.89	1.000
2,3,7,8-TCDF		1.55	0.0470 (Q)	0.77	1.001
1,2,3,7,8-PECDF	J	0.233	0.0470 (Q)	1.58	1.001
2,3,4,7,8-PECDF	J	0.374	0.0470 (Q)	1.74	1.002
1,2,3,4,7,8-HXCDF	J	0.422	0.0470 (Q)	1.17	1.000
1,2,3,6,7,8-HXCDF	J	0.253	0.0470 (Q)	1.41	1.000
1,2,3,7,8,9-HXCDF	U		0.0470 (Q)		
2,3,4,6,7,8-HXCDF	J	0.231	0.0470 (Q)	1.15	1.000
1,2,3,4,6,7,8-HPCDF		3.50	0.0470 (Q)	1.04	1.000
1,2,3,4,7,8,9-HPCDF	J	0.171	0.0470 (Q)	1.10	1.000
OCDF	B	5.41	0.0493 (S)	0.89	1.002
TOTAL TETRA-DIOXINS		3.69	0.0470 (Q)		
TOTAL PENTA-DIOXINS		4.37	0.0470 (Q)		
TOTAL HEXA-DIOXINS		19.5	0.0470 (Q)		
TOTAL HEPTA-DIOXINS	B	35.9	0.0660 (S)		
TOTAL TETRA-FURANS		6.09	0.0470 (Q)		
TOTAL PENTA-FURANS		3.10	0.0470 (Q)		
TOTAL HEXA-FURANS		3.97	0.0470 (Q)		
TOTAL HEPTA-FURANS		8.58	0.0470 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:13; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19652-43_Form1A_DX3M_081S31_SJ1608953.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
RB13-DIS-09-D
Sample Collection:
07-May-2013 16:40

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-43
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 03:22:05	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_077A S: 9**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_077A S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	41.2

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		1.16	0.0470 (Q)	0.71	1.002

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:37; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19652-43_Form1A_DB33_077AS9_SJ1610187.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
SRS1136
Sample Collection:
N/A

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19665-1
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	17-May-2013	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 22:09:00	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 34**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 28
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	2.42

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD		1.04	0.0489 (Q)	0.76	1.001
1,2,3,7,8-PECDD [4]		1.03	0.0489 (Q)	0.57	1.001
1,2,3,4,7,8-HXCDD	B	1.81	0.0489 (Q)	1.34	1.000
1,2,3,6,7,8-HXCDD	B	4.06	0.0489 (Q)	1.23	1.001
1,2,3,7,8,9-HXCDD	B	3.65	0.0489 (Q)	1.33	1.000
1,2,3,4,6,7,8-HPCDD	B	112	0.183 (S)	1.08	1.000
OCDD	B	1010	0.0489 (Q)	0.89	1.000
2,3,7,8-TCDF		1.83	0.0489 (Q)	0.71	1.002
1,2,3,7,8-PECDF	J	0.916	0.0489 (Q)	1.63	1.001
2,3,4,7,8-PECDF	B J	0.844	0.0489 (Q)	1.57	1.001
1,2,3,4,7,8-HXCDF	B	3.24	0.0599 (S)	1.18	1.000
1,2,3,6,7,8-HXCDF		1.05	0.0599 (S)	1.14	1.001
1,2,3,7,8,9-HXCDF	K B J	0.102	0.0599 (S)	1.76	1.000
2,3,4,6,7,8-HXCDF		1.27	0.0599 (S)	1.14	1.001
1,2,3,4,6,7,8-HPCDF	B	21.8	0.0934 (S)	0.93	1.000
1,2,3,4,7,8,9-HPCDF		1.93	0.0934 (S)	1.09	1.000
OCDF	B	107	0.0489 (Q)	0.88	1.002
TOTAL TETRA-DIOXINS		6.18	0.0489 (Q)		
TOTAL PENTA-DIOXINS		7.18	0.0489 (Q)		
TOTAL HEXA-DIOXINS	B	38.7	0.0489 (Q)		
TOTAL HEPTA-DIOXINS	B	298	0.183 (S)		
TOTAL TETRA-FURANS		14.2	0.0489 (Q)		
TOTAL PENTA-FURANS		16.6	0.0489 (Q)		
TOTAL HEXA-FURANS	B	38.0	0.0599 (S)		
TOTAL HEPTA-FURANS		81.1	0.0934 (S)		

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:12; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_L19665-1_Form1A_DX3M_080S34_SJ1607553.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
SRS1136
Sample Collection:
N/A

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19665-1
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	17-May-2013	**Initial Calibration Date:**	10-Apr-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 22:08:12	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB33_075 S: 5**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB33_075 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	2.42

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDF		0.789	0.0489 (Q)	0.72	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 17:06:49; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB225_L19665-1_Form1A_DB33_075S5_SJ1607593.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43679-101
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	30-May-2013 **Time:** 21:55:04	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 4
Concentration Units:	ng/kg		

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	U		0.0500 (Q)		
1,2,3,7,8-PECDD [4]	U		0.0500 (Q)		
1,2,3,4,7,8-HXCDD	J	0.054	0.0500 (Q)	1.42	1.000
1,2,3,6,7,8-HXCDD	J	0.055	0.0500 (Q)	1.18	1.000
1,2,3,7,8,9-HXCDD	K J	0.088	0.0500 (Q)	3.53	1.000
1,2,3,4,6,7,8-HPCDD	J	0.116	0.0500 (Q)	0.90	1.000
OCDD	J	0.317	0.0500 (Q)	1.02	1.000
2,3,7,8-TCDF	U		0.0500 (Q)		
1,2,3,7,8-PECDF	U		0.0500 (Q)		
2,3,4,7,8-PECDF	K J	0.076	0.0500 (Q)	1.19	1.001
1,2,3,4,7,8-HXCDF	K J	0.059	0.0500 (Q)	1.74	1.000
1,2,3,6,7,8-HXCDF	U		0.0500 (Q)		
1,2,3,7,8,9-HXCDF	J	0.057	0.0500 (Q)	1.41	1.000
2,3,4,6,7,8-HXCDF	U		0.0500 (Q)		
1,2,3,4,6,7,8-HPCDF	K J	0.067	0.0500 (Q)	2.05	1.000
1,2,3,4,7,8,9-HPCDF	U		0.0500 (Q)		
OCDF	J	0.097	0.0500 (Q)	0.77	1.002
TOTAL TETRA-DIOXINS	U		0.0500 (Q)		
TOTAL PENTA-DIOXINS	U		0.0500 (Q)		
TOTAL HEXA-DIOXINS		0.108	0.0500 (Q)		
TOTAL HEPTA-DIOXINS		0.202	0.0500 (Q)		
TOTAL TETRA-FURANS	U		0.0500 (Q)		
TOTAL PENTA-FURANS	U		0.0500 (Q)		
TOTAL HEXA-FURANS		0.057	0.0500 (Q)		
TOTAL HEPTA-FURANS	U		0.0500 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

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Report Filename: 1613_DIOXINS_1613DB5_WG43679-101_Form1A_DX3M_080S8_SJ1607463.html; Workgroup: WG43679; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43699-101
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	15-May-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 20:18:39	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_080 S: 32**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_080 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_080 S: 28
Concentration Units:	ng/kg		

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	U		0.0500 (Q)		
1,2,3,7,8-PECDD [4]	U		0.0500 (Q)		
1,2,3,4,7,8-HXCDD	U		0.0500 (Q)		
1,2,3,6,7,8-HXCDD	U		0.0500 (Q)		
1,2,3,7,8,9-HXCDD	U		0.0500 (Q)		
1,2,3,4,6,7,8-HPCDD	K J	0.060	0.0500 (Q)	1.33	1.000
OCDD	J	0.116	0.0500 (Q)	1.01	1.000
2,3,7,8-TCDF	U		0.0500 (Q)		
1,2,3,7,8-PECDF	U		0.0500 (Q)		
2,3,4,7,8-PECDF	K J	0.051	0.0500 (Q)	1.28	1.001
1,2,3,4,7,8-HXCDF	U		0.0500 (Q)		
1,2,3,6,7,8-HXCDF	U		0.0500 (Q)		
1,2,3,7,8,9-HXCDF	U		0.0500 (Q)		
2,3,4,6,7,8-HXCDF	U		0.0500 (Q)		
1,2,3,4,6,7,8-HPCDF	U		0.0500 (Q)		
1,2,3,4,7,8,9-HPCDF	U		0.0500 (Q)		
OCDF	U		0.0500 (Q)		
TOTAL TETRA-DIOXINS	U		0.0500 (Q)		
TOTAL PENTA-DIOXINS	U		0.0500 (Q)		
TOTAL HEXA-DIOXINS	U		0.0500 (Q)		
TOTAL HEPTA-DIOXINS	U		0.0500 (Q)		
TOTAL TETRA-FURANS	U		0.0500 (Q)		
TOTAL PENTA-FURANS	U		0.0500 (Q)		
TOTAL HEXA-FURANS	U		0.0500 (Q)		
TOTAL HEPTA-FURANS	U		0.0500 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 11-Jun-2013 09:00:22; Application: XMLTransformer-1.13.41;
Report Filename: 1613_DIOXINS_1613DB5_WG43699-101_Form1A_DX3M_080S32_SJ1607658.html; Workgroup: WG43699; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43721-101 i
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	15-May-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	03-Jun-2013 **Time:** 15:48:33	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_081 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_081 S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_081 S: 1
Concentration Units:	ng/kg		

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	K J	0.069	0.0500 (Q)	0.02	1.001
1,2,3,7,8-PECDD [4]	U		0.0500 (Q)		
1,2,3,4,7,8-HXCDD	U		0.0500 (Q)		
1,2,3,6,7,8-HXCDD	U		0.0500 (Q)		
1,2,3,7,8,9-HXCDD	U		0.0500 (Q)		
1,2,3,4,6,7,8-HPCDD	J	0.068	0.0500 (Q)	1.00	1.000
OCDD	J	0.406	0.0500 (Q)	0.99	1.000
2,3,7,8-TCDF	U		0.0500 (Q)		
1,2,3,7,8-PECDF	U		0.0500 (Q)		
2,3,4,7,8-PECDF	U		0.0500 (Q)		
1,2,3,4,7,8-HXCDF	U		0.0500 (Q)		
1,2,3,6,7,8-HXCDF	U		0.0500 (Q)		
1,2,3,7,8,9-HXCDF	U		0.0500 (Q)		
2,3,4,6,7,8-HXCDF	U		0.0500 (Q)		
1,2,3,4,6,7,8-HPCDF	U		0.0500 (Q)		
1,2,3,4,7,8,9-HPCDF	U		0.0500 (Q)		
OCDF	J	0.072	0.0500 (Q)	0.91	1.002
TOTAL TETRA-DIOXINS	U		0.0500 (Q)		
TOTAL PENTA-DIOXINS	U		0.0500 (Q)		
TOTAL HEXA-DIOXINS	U		0.0500 (Q)		
TOTAL HEPTA-DIOXINS		0.068	0.0500 (Q)		
TOTAL TETRA-FURANS	U		0.0500 (Q)		
TOTAL PENTA-FURANS	U		0.0500 (Q)		
TOTAL HEXA-FURANS	U		0.0500 (Q)		
TOTAL HEPTA-FURANS	U		0.0500 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 09:35:13; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_WG43721-101_Form1A_DX3M_081S7_SJ1608924.html; Workgroup: WG43721; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43769-101
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	15-May-2013
Extraction Date:	31-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 16:58:17	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_082 S: 27**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_082 S: 27
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_082 S: 22
Concentration Units:	ng/kg		

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	U		0.0500 (Q)		
1,2,3,7,8-PECDD [4]	U		0.0500 (Q)		
1,2,3,4,7,8-HXCDD	U		0.0500 (Q)		
1,2,3,6,7,8-HXCDD	U		0.0500 (Q)		
1,2,3,7,8,9-HXCDD	U		0.0500 (Q)		
1,2,3,4,6,7,8-HPCDD	U		0.0500 (Q)		
OCDD	J	0.086	0.0500 (Q)	0.87	1.000
2,3,7,8-TCDF	U		0.0500 (Q)		
1,2,3,7,8-PECDF	U		0.0500 (Q)		
2,3,4,7,8-PECDF	U		0.0500 (Q)		
1,2,3,4,7,8-HXCDF	U		0.0500 (Q)		
1,2,3,6,7,8-HXCDF	U		0.0500 (Q)		
1,2,3,7,8,9-HXCDF	U		0.0500 (Q)		
2,3,4,6,7,8-HXCDF	U		0.0500 (Q)		
1,2,3,4,6,7,8-HPCDF	U		0.0500 (Q)		
1,2,3,4,7,8,9-HPCDF	U		0.0500 (Q)		
OCDF	U		0.0500 (Q)		
TOTAL TETRA-DIOXINS	U		0.0500 (Q)		
TOTAL PENTA-DIOXINS	U		0.0500 (Q)		
TOTAL HEXA-DIOXINS	U		0.0500 (Q)		
TOTAL HEPTA-DIOXINS	U		0.0500 (Q)		
TOTAL TETRA-FURANS	U		0.0500 (Q)		
TOTAL PENTA-FURANS	U		0.0500 (Q)		
TOTAL HEXA-FURANS	U		0.0500 (Q)		
TOTAL HEPTA-FURANS	U		0.0500 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; J = concentration less than lowest calibration equivalent.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 13-Jun-2013 11:26:59; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_WG43769-101_Form1A_DX3M_082S27_SJ1610108.html; Workgroup: WG43769; Design ID: 1644]

AXYS METHOD MLA-017 Rev 20

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43834-101
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	15-May-2013
Extraction Date:	07-Jun-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	12-Jun-2013 **Time:** 22:32:36	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX3M_087 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX3M_087 S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX3M_087 S: 1
Concentration Units:	ng/kg		

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO [3]	RRT [3]
2,3,7,8-TCDD	U		0.0500 (Q)		
1,2,3,7,8-PECDD [4]	U		0.0500 (Q)		
1,2,3,4,7,8-HXCDD	U		0.0500 (Q)		
1,2,3,6,7,8-HXCDD	U		0.0500 (Q)		
1,2,3,7,8,9-HXCDD	U		0.0500 (Q)		
1,2,3,4,6,7,8-HPCDD	U		0.0500 (Q)		
OCDD	U		0.0500 (Q)		
2,3,7,8-TCDF	U		0.0500 (Q)		
1,2,3,7,8-PECDF	U		0.0500 (Q)		
2,3,4,7,8-PECDF	U		0.0500 (Q)		
1,2,3,4,7,8-HXCDF	U		0.0500 (Q)		
1,2,3,6,7,8-HXCDF	U		0.0500 (Q)		
1,2,3,7,8,9-HXCDF	U		0.0500 (Q)		
2,3,4,6,7,8-HXCDF	U		0.0500 (Q)		
1,2,3,4,6,7,8-HPCDF	U		0.0500 (Q)		
1,2,3,4,7,8,9-HPCDF	U		0.0500 (Q)		
OCDF	U		0.0500 (Q)		
TOTAL TETRA-DIOXINS	U		0.0500 (Q)		
TOTAL PENTA-DIOXINS	U		0.0500 (Q)		
TOTAL HEXA-DIOXINS	U		0.0500 (Q)		
TOTAL HEPTA-DIOXINS	U		0.0500 (Q)		
TOTAL TETRA-FURANS	U		0.0500 (Q)		
TOTAL PENTA-FURANS	U		0.0500 (Q)		
TOTAL HEXA-FURANS	U		0.0500 (Q)		
TOTAL HEPTA-FURANS	U		0.0500 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Celine Vaillant_____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 17-Jun-2013 09:56:59; Application: XMLTransformer-1.13.42;
Report Filename: 1613_DIOXINS_1613DB5_WG43834-101_Form1A_DX3M_087S8_SJ1611187.html; Workgroup: WG43834; Design ID: 1644]

AXYS | Axys Analytical Services Ltd
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AXYS Client No.: 4273

Client Address: Newfields Environmental
115 2nd Ave N, Suite 100
Edmonds, WA, US, 98020

The AXYS contact for these data is Candice Navaroli.

PCB CONGENER ANALYSIS

SOLID SAMPLES

PROJECT NAME: NORTH OLYMPIC PENINSULA REG. BACKGROUND

Contract: 4273
Data Package Identification: DPWG43892

Analysis WG43679, WG43699, WG43721 & WG43769

21 June 2013

NEWFIELDS ENVIRONMENTAL
SOLID SAMPLES

PCB CONGENERS ANALYSIS
AXYS METHOD: MLA-013 & MLA-010

PROJECT NAME: NORTH OLYMPIC PENNINSULA REG. BACKGROUND

4273: L19652-1 to -43 and L19665-1

24 Jun 2013

NARRATIVE

This narrative describes the analysis of forty four solid samples for the determination of polychlorinated biphenyl congeners (PCB) using high-resolution gas chromatography / high-resolution mass spectrometry (HRGC / HRMS).

SAMPLE RECEIPT AND STORAGE

The samples with login of L19652 were received on the 15th of May 2013 and sample SRS1136 (AXYS ID L19665-1) was received on the 17th May 2013. Temperature of sample SRS1136 upon receipt at AXYS was 20.7 °C, which exceeded the method recommended <4 °C, and the impact on the data is unknown. Details of sample conditions on receipt are provided on the Sample Receiving Record forms included in this data package. The samples were stored at -20°C prior to extraction and analysis.

Some discrepancies in sample labeling between the COC and sample containers were noted on the sample receiving records and the issues were resolved through communicating to the client. A confirmation letter is provided in the data package.

SAMPLE PREPARATION AND ANALYSIS

The solids were homogenized as documented on the Solid Preparation Record forms.

Extraction and analysis procedures were in general accordance with **USEPA Method 1668** as documented in AXYS Method MLA-013 and the associated AXYS Method MLA-010. Summaries of the AXYS methods, MSU-013 and MSU-010, with a list of modifications of USEPA Method 1668A are included following this narrative.

Samples and QC samples (a procedural blank, a lab-generated reference sample known as the Ongoing Precision and Recovery (OPR) and a sample duplicate) were analyzed in four batches named WG43679, WG43699, WG43721 and WG43769. The composition of each batch is shown on the Correlation Table following this narrative and on the Batch Lists accompanying the extraction workup sheets.

The procedural blanks and the OPRs were prepared using sand. Sample SRS1136 (AXYS ID L19665-1) was analyzed as a reference sample in analysis batch WG43679. Samples listed in the following table were analyzed as duplicates in different batches.

Client ID	AXYS ID	Duplicate AXYS ID
RB13-DUN-01-S	L19652-13	WG43679-103
RB13-PT-07-S	L19652-21	WG43699-103
RB13-DIS-03-S	L19652-34	WG43721-103

An accurately weighed sub-sample (approximately 10g dry) was spiked with ^{13}C-labeled PCB quantification standards and Soxhlet extracted using 80:20 Toluene-Acetone. The raw extract was spiked with labeled cleanup standards and cleaned-up using the chromatographic columns listed on the

Extraction Workup Sheets. The final extract was reduced in volume and spiked with labeled recovery (internal) standards prior to instrumental analysis. The final volume was 20µL; 1µL was injected onto the GC-MS.

CALCULATIONS

Target concentrations were determined by isotope dilution or internal standard method using Micromass OPUSQUAN software. Sample specific detection limits (SDLs) were calculated for each target analyte and used as the detection qualifier. If the software selected an unrepresentative area for the detection limit calculation, the data validation chemist made corrections. These corrections are hand noted on the quantification report pages attached to the chromatograms.

Because of instrument variability and lab background levels, it is AXYS' policy to report detection limits no lower than 0.5 pg absolute (0.05 pg/g on a 10g sample). In cases where a detection limit is observed to be less than 0.5 pg absolute, the SDL is raised to 0.5 pg absolute.

Toxic Equivalents (TEQs) were calculated using WHO 2005 TEFs. PCB congeners that did not meet the method ion abundance ratio criteria were excluded from the TEQ calculations.

REPORTING CONVENTIONS

The AXYS contract number assigned for internal tracking was 4273. Samples were assigned a unique laboratory identifier of the form L19XXX-X, where 'X' is a numeral. All data reports reference both this unique AXYS ID and the client sample identifier. To assist with locating data, a table correlating Axys IDs with client sample identifiers is included in this data package. The report forms were generated using Laboratory Information Management Software (LIMS).

Any extra work required and performed after the initial instrumental analysis of a sample extract is given an extra "test suffix" code. This single letter code per extra work performed is added to the AXYS sample ID as a suffix, and is combined with any other applicable test suffix codes. The extra work codes used to report data in this package include:

(A)	=	the parent sample for a duplicate pair
i	=	instrumental re-analysis of the extract in the same vial
L	=	extract was given further cleanup to remove interferences
M	=	concentration of the sample extract followed by instrumental re-analysis
W	=	a small dilution of the sample extract followed by instrumental re-analysis

The following laboratory qualifier flags were also used in this data package:

B	=	analyte found in the sample and the associated blank
C	=	data refers to the first of the co-eluting congeners
Cx	=	co-elutes with indicated congener, data are given under the lowest IUPAC designated congener in the group, 'x' denotes the IUPAC number of the lowest numerical designated congener
D	=	dilution data
G	=	disturbance of the mass ion used to monitor instrument performance (lock-mass) present
J	=	indicates an estimated value where the concentration of the analyte is less than the LMCL but greater than the SDL
K	=	identifies a target that could not be confirmed by virtue of not satisfying all method required criteria, the reported value may be interpreted as an estimated maximum analyte concentration
NQ	=	data not quantifiable
U	=	identifies a compound that was not detected
V	=	surrogate recovery is not within method control limits

X = results reported separately

Final results are reported to three significant figures in concentration units of nanograms per kilogram (ng/kg) dry weight basis.

QA/QC NOTES

QC samples were prepared alongside the client samples, and were carried through the same analytical procedures. The sample data were evaluated in relation to the batch QC samples.

- Sample analyte concentrations are not blank corrected and should be evaluated with consideration of analyte levels in the Lab Blank.
- By virtue of the isotope dilution/internal standard quantification procedures, data are recovery corrected for possible losses during extraction and cleanup.
- All linearity, CAL/VER, OPR, duplicate and labeled compound recovery specifications were met with exceptions stated below:

WG43679

A disturbance of the mass ion used to monitor instrument performance (lock-mass) greater than method specifications was observed in the samples listed below at several retention times and have been flagged with a 'G'. These congeners are non-toxic and not a major contributor to the total concentration of PCB in these samples, and data are not considered significantly affected.

Axys ID	Client ID	Target G flagged
L19652-1	RB13-DUN-03-S	PCB24,27,82
L19652-2	RB13-DUN-06-S	PCB11,14,17,27,3/18,77,82,148
L19652-3	RB13-DUN-07-S	PCB82
L19652-4	RB13-DUN-12-S	PCB120,148,197/200
L19652-5	RB13-DUN-10-S	PCB12/13, 24,27,82,148
L19652-6	RB13-DUN-13-S	PCB12/13, 27,82,148
L19652-7	RB13-DUN-05-S	PCB 8,12/13, 17,30/18, 27, 82,146,148,197/200
L19652-8	RB13-DUN-05-D	PCB197/200
L19652-9	RB13-DUN-09-S	PCB8,30/18,82
L19652-10	RB13-DUN-04-S	PCB197/200
L19652-11	RB13-DUN-02-S	PCB8,12/13, 30/18,27
L19652-12	RB13-DUN-11-S	PCB82
L19652-13	RB13-DUN-01-S	PCB146,197/200
L19652-14	RB13-DUN-08-S	PCB30/18,146,197/200
L19652-15	RB13-PT-06-S	PCB146,197/200
L19665-1	SRS1136	PCB197/200

Clean-up standards 13C-labeled-PCB-28L, 111L and 178L in samples SRS1136 (AXYS ID L19665-1) and RB13-DUN-11-S (AXYS ID L19652-12) were not recovered, likely due to the standard not being spiked; these compounds have been flagged with 'NQ' to denote that the data for these compounds were not quantifiable. As these compounds were not used for quantifications of any analytes, and the percent recoveries for all the quantification standards met the method criteria, data are not considered to be affected by this variance.

Relative Percent Differences (RPDs) for PCB 58 and 181 between the sample RB13-DUN-01-S and its duplicate (AXYS ID L19652-13 and WG43679-103, respectively) were slightly above the method control

limit of 40%. This is because the concentrations of these two compounds are less than 5 times the detection limits. The analysis precision is not affected.

Relative Retention Times (RRTs) for some PCB congeners or co-elutions in samples listed in the following table fell outside of the control limits reported on the associated single point calibration (Full Calibration) Form 3A. This is attributed to the lock mass interference affecting the retention time of the analytes and/or retention time reference standard. The retention times for the affected analytes were inspected and no error was found in retention time assignment. Data are not considered to be affected by this variance.

AXYS ID	CLIENT ID	RRT fell outside the limits
L19652-1	RB13-DUN-03-S	PCB 42,43,48,52,64, co-elution 44/47/65,45/51
L19652-2	RB13-DUN-06-S	PCB 43,48,52,64,136, co-elution 44/47/65
L19652-3	RB13-DUN-07-S	PCB 17,22,24,25,32,42,43,46,48,52,64,136, coelutions 26/29,30/18,41/40/71,44/47/65,50/53,59/62/75,69/49
L19652-5	RB13-DUN-10-S	PCB 42,43,48,52,64,136, co-elution 44/47/65
L19652-7	RB13-DUN-05-S	PCB 6, 8,42,43,48,64
L19652-9	RB13-DUN-09-S	PCB co-elution 26/29
WG43679-101	Lab Blank	PCB 17,64, co-elution 30/18,41/40/71,44/47/65,69/49,95/100/93/102/98

Some compounds in several samples and the lab blank were not detected as the reporting limits were above the method control limits. The reasons for this are that the samples were diluted to minimize lock mass interference and/or some high level PCB congeners eluted close to the affected compounds, which elevated the background where the noise was selected for detection limits determination. Data are not considered to be significantly affected by this variance.

WG43699

Clean-up standards 13C-labeled-PCB-28L, 111L and 178L in the Lab blank (AXYS ID: WG43699-101) were not recovered, likely due to the standard not being spiked; these compounds have been flagged with 'NQ' to denote that the data for these compounds were not quantifiable. As these compounds were not used for quantifications of any analytes, and the percent recoveries for all the quantification standards met the method criteria, data are not considered to be affected by this variance.

A disturbance of the mass ion used to monitor instrument performance (lock-mass) was observed near the retention time of PCB 197/200 in multiple samples; this compound has been flagged with a "G". The concentration of PCB 197/200 is not a significant contributor to the total PCB in these samples; therefore data are deemed not to be significantly affected.

Relative Percent Difference (RPD) value of PCB 209 between the samples RB13-PT-07-S and its duplicate (AXYS ID: L19652-21 and WG43699-103, respectively) was slightly above 40%. Data are not considered to be significantly affected by this variance.

Relative Retention Times (RRTs) for some PCB congeners or co-elutions in samples listed in the following table fell outside of the control limits reported on the associated single point calibration (Full Calibration) Form 3A. This is attributed to the lock mass interference affecting the retention time of the analytes and/or retention time reference standard. The retention times for the affected analytes were inspected and no error was found in retention time assignment. Data are not considered to be affected by this variance.

AXYS ID	CLIENT ID	RRT fell outside the limits
L19652-19	RB13-PT-05-S	PCB 111
L19652-20	RB13-PT-10-S	PCB 5
L19652-23	RB13-PT-08-S	PCB co-elution 183/185
WG43699-103	RB13-PT-07-S	PCB 9,136, co-elution 183/185
WG43699-101	Lab Blank	PCB 31,52,co-elution 21/33,41/40/71,44/47/65,69/49

WG43721

The recoveries of ^{13}C-labeled PCB 1L, 4L and 19L in sample RB13-DIS-10-S (AXYS ID: L19652-31) did not meet the method criteria; these compounds are flagged with a 'V'. As the isotope dilution method of quantification produces data that are recovery corrected, the slight variances from the method acceptance criteria are deemed not to affect the quantification of these analytes. Percent surrogate recoveries are used as a general method performance indicator only.

PCB 1 in the Lab Blank and PCB 1 and 3 in the OPR (AXYS IDs: WG43721-101 and 102) could not be quantified due to interferences, as indicated by the flag 'NQ'. Data are not considered to be affected by this variance.

A disturbance of the mass ion used to monitor instrument performance (lock-mass) greater than method specifications was observed in all field samples except RB13-DIS-05-S, RB13-DIS-08-S and RB13-DIS-09-S (AXYS ID: L19652-37, -40 and -42) under retention times corresponding to PCB 12/13, 27, 82, 146, 148, 187 and/or 197/200. These compounds have been flagged with a 'G'. These congeners are non-toxic and not a major contributor to the total concentration of PCB in these samples, and data are not considered significantly affected.

Relative Retention Times (RRTs) for some PCB congeners or co-elutions in samples listed in the following table fell outside of the control limits reported on the associated single point calibration (Full Calibration) Form 3A. This is attributed to the lock mass interference affecting the retention time of the analytes and/or retention time reference standard. The retention times for the affected analytes were inspected and no error was found in retention time assignment. Data are not considered to be affected by this variance.

AXYS ID	CLIENT ID	RRT fell outside the limits
L19652-31	RB13-DIS-10-S	PCB co-elution 134/143
L19652-39	RB13-DIS-11-S	PCB 80,92,121,131,132,133,136,144,148, co-elution 134/143,147/149
WG43721-101	Lab Blank	PCB 31,52,64,30/18,44/47/65,69/49

WG43769

The mono substituted PCBs in the Lab Blank (AXYS ID: WG43769-101) could not be quantified due to interferences, as indicated by the flag 'NQ'. Sample data are not considered to be affected by this variance.

PCB 1 in the OPR (AXYS ID: WG43769-102) has been flagged 'NDR' due to matrix interferences. Sample data are not considered to be affected by this variance.

Relative Retention Times (RRTs) for PCB 22, 31, 52, co-elution 21/33, 28/20, 41/40/71, 44/47/65 in the Lab Blank (AXYS ID WG43769-101) fell outside of the control limits reported on the associated single point calibration (Full Calibration) Form 3A. This is attributed to the lock mass interference affecting the retention time of the analytes and/or retention time reference standard. The retention times for the

affected analytes were inspected and no error was found in retention time assignment. Data are not considered to be affected by this variance.

ANALYTICAL DISCUSSION

WG43679

Samples RB13-DUN-05-D, RB13-DUN-01-S and its duplicate (AXYS ID L19652-8, -13 and WG43679-103, respectively) were instrumentally re-analyzed as closing verification data in the original data did not meet all the method specifications. The re-analysis data are reported (indicated by the suffix 'i' added to AXYS IDs).

Sample RB13-DUN-04-S (AXYS ID L19652-10) was instrumentally re-analyzed due to instrument disruption. However, the closing verification data with the re-analysis data did not meet all the method specifications, and the sample was instrumentally re-analyzed one more time. The secondary re-analysis data are reported (indicated by the suffix 'i2' on the AXYS ID).

Samples RB13-DUN-05-S, RB13-DUN-09-S and RB13-DUN-02-S (AXYS ID L19652-7, -9, and -11, respectively) required instrumental re-analysis as closing verification data in the original data did not meet all the method specifications. However, the sample extracts were diluted for interferences observed for some compounds in the original data, the sample extracts were concentrated back to the initial final extract volume followed by instrumental re-analysis. The re-analysis data are reported (indicated by the suffix 'M' added to AXYS IDs).

Instrumental interferences were observed in initial analysis data for samples listed in the following table. The extracts were diluted to minimize these interferences and instrumentally re-analyzed. The affected targets have been reported from the analyses of the diluted extracts (indicated by suffix 'W' on AXYS ID). The dilution factor is provided on the report for the dilution analysis.

Axys ID	Client ID
L19652-1	RB13-DUN-03-S
L19652-2	RB13-DUN-06-S
L19652-3	RB13-DUN-07-S
L19652-5	RB13-DUN-10-S
L19652-7	RB13-DUN-05-S
L19652-8	RB13-DUN-05-D
L19652-9	RB13-DUN-09-S
L19652-11	RB13-DUN-02-S
WG43679-101	Lab Blank
WG43679-102	OPR

WG43699

The analyst noted that the labeled cleanup standards may have been added twice for samples RB13-PT-01-S and RB13-SEQ-05-S (AXYS ID: L19652-24 and -25, respectively). The instrument responses indicate that the clean-up standard was not spiked twice for the sample RB13-PT-01-S and was spiked twice for the sample RB13-SEQ-05-S. For the sample RB13-SEQ-05-S, the recoveries of the standards were corrected based on twice the routine amount. Since the clean-up standards were not used for quantifications of any analytes, and surrogate recoveries met the method specifications, data are not affected by this variance.

Instrumental interferences were observed in samples RB13-PT-10-S, OPR and Duplicate (AXYS IDs: L19652-20, WG43699-102 and -103 respectively). The extracts were diluted to minimize these

interferences followed by instrumental re-analysis. The dilutions were successful and the affected targets have been reported from the analyses of the diluted extracts (indicated by suffix 'W' on AXYS ID). The dilution factor is provided on the report for the dilution analysis.

Instrumental interferences were observed in Lab blank (AXYS ID: WG43699-101). The extract was diluted to minimize these interferences followed by instrumental re-analysis. The dilutions were successful for some affected analytes and these analytes have been reported from the analyses of the initial diluted extract (indicated by suffix 'W' on AXYS ID). A further dilution was conducted to further minimize the interference for some compounds followed by instrumental re-analysis. The affected compounds are reported from the secondary dilution data (indicated by the suffix 'W2' on AXYS ID). The dilution factor is provided on the report for the dilution analysis.

Sample RB13-PT-09-S (AXYS ID: L19652-16) required instrumental re-analysis as the instrument blank did not meet all method criteria during the initial analysis. The re-analysis was successful and data are reported from the re-analysis run (indicated by the suffix "i" added to the AXYS ID).

RB13-PT-02-S was analyzed in the analysis batch WG43699 but the analysis was not successful and the sample was repeated in analysis batch WG43769. The sample data are reported from the repeat batch.

WG43721

The analyst noted that the extracts for samples RB13-DIS-07-S and RB13-DIS-05-S had gone dry during an extract concentration procedure. Given that the recovery values of the labeled standards were within the method control limits, data are not considered significantly affected.

Instrumental interferences were observed in the Lab blank and OPR (AXYS IDs: WG43769-101 and -102, respectively). The extracts were diluted to minimize these interferences followed by instrumental re-analysis. The dilutions were successful and the affected targets have been reported from the analyses of the diluted extracts (indicated by suffix 'W' on AXYS IDs). The dilution factor is provided on the report for the dilution analysis.

Sample RB13-DIS-05-S (AXYS ID L19652-37) was given an additional copper treatment due to presence of sulfur in the extract which led to retention time shifting of PCB 101. The treatment was successful and the re-analysis data are reported. This is indicated by the suffix of 'L' added to the AXYS ID.

WG43769

RB13-PT-02-S was originally analyzed in the analysis batch WG43699 and repeated in analysis batch WG43769. The sample data are reported from the repeat batch (indicated by the suffix 'R' added to the AXYS ID).

Instrumental interferences were observed in samples Lab blank and OPR (AXYS IDs: WG43769-101 and -102, respectively). The extracts were diluted to minimize these interferences followed by instrumental re-analysis. The dilutions were successful and the affected targets have been reported from the analyses of the diluted extracts (indicated by suffix 'W' on AXYS IDs). The dilution factor is provided on the report for the dilution analysis.

DATA PACKAGE

This data package is assigned a unique identifier, DPWG43892, shown on the front page of this data package. Included in the data package following the narrative is the following documentations:

- Method summaries
- Sample Correlation Table
- Sample Receiving Documentation
- Sample homogenization records
- Laboratory extraction logs for each sample
- Sample data reports (in order of AXYS sample ID)
- Laboratory QC sample data reports
- Instrumental QC data reports and mass resolution printouts (organized by analysis start date)
- Sample raw data (in order of AXYS sample ID)
- Laboratory QC sample raw data
- Instrumental QC raw data (organized by analysis start date)
- Accreditation Scope

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, except for the conditions detailed above. In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. The following signature, on behalf of AXYS Analytical Services Ltd, authorizes the release of the data contained in this data package.

Signed: Henry Huang, Ph.D.

24 Jun, 2013
Date Signed

NEWFIELDS ENVIRONMENTAL

CORRELATION TABLE

PCB CONGENER ANALYSIS

Lab Name: AXYS Analytical Services Ltd.	**Project Manager: Candice Navaroli**
Project Name: North Olympic Peninsula Reg. Background	**Contract No: 4273**
	AXYS Method: MLA-013 and MLA-010
Data Package Identification: DPWG43892	**Program: Solid Samples**
Client Sample No.	**Lab Sample ID**
LAB BLANK	WG43679-101
OPR	WG43679-102
RB13-DUN-03-S	L19652-1
RB13-DUN-06-S	L19652-2
RB13-DUN-07-S	L19652-3
RB13-DUN-12-S	L19652-4
RB13-DUN-10-S	L19652-5
RB13-DUN-13-S	L19652-6
RB13-DUN-05-S	L19652-7
RB13-DUN-05-D	L19652-8
RB13-DUN-09-S	L19652-9
RB13-DUN-04-S	L19652-10
RB13-DUN-02-S	L19652-11
RB13-DUN-11-S	L19652-12
RB13-DUN-01-S	L19652-13 WG43679-103 DUPLICATE
RB13-DUN-08-S	L19652-14
RB13-PT-06-S	L19652-15
SRS1136	L19665-1

NEWFIELDS ENVIRONMENTAL

CORRELATION TABLE

PCB CONGENER ANALYSIS

Lab Name: AXYS Analytical Services Ltd.	**Project Manager: Candice Navaroli**
Project Name: North Olympic Peninsula Reg. Background	**Contract No: 4273**
	AXYS Method: MLA-013 and MLA-010
Data Package Identification: DPWG43892	**Program: Solid Samples**
Client Sample No.	**Lab Sample ID**
LAB BLANK	WG43699-101
OPR	WG43699-102
RB13-PT-09-S	L19652-16
RB13-PT-04-S	L19652-17
RB13-PT-05-S	L19652-19
RB13-PT-10-S	L19652-20
RB13-PT-07-S	L19652-21 WG43699-103 DUPLICATE
RB13-PT-03-S	L19652-22
RB13-PT-08-S	L19652-23
RB13-PT-01-S	L19652-24
RB13-SEQ-05-S	L19652-25
RB13-SEQ-02-S	L19652-26
RB13-SEQ-04-S	L19652-27
RB13-SEQ-03-S	L19652-28
RB13-SEQ-03-D	L19652-29

NEWFIELDS ENVIRONMENTAL

CORRELATION TABLE

PCB CONGENER ANALYSIS

Lab Name: AXYS Analytical Services Ltd.	**Project Manager: Candice Navaroli**
Project Name: North Olympic Peninsula Reg. Background	**Contract No: 4273**
	AXYS Method: MLA-013 and MLA-010
Data Package Identification: DPWG43892	**Program: Solid Samples**
Client Sample No.	**Lab Sample ID**
LAB BLANK	WG43721-101
OPR	WG43721-102
RB13-SEQ-01-S	L19652-30
RB13-DIS-10-S	L19652-31
RB13-DIS-07-S	L19652-32
RB13-DIS-01-S	L19652-33
RB13-DIS-03-S	L19652-34 WG43721-103 DUPLICATE
RB13-DIS-12-S	L19652-35
RB13-DIS-02-S	L19652-36
RB13-DIS-05-S	L19652-37
RB13-DIS-04-S	L19652-38
RB13-DIS-11-S	L19652-39
RB13-DIS-08-S	L19652-40
RB13-DIS-06-S	L19652-41
RB13-DIS-09-S	L19652-42
RB13-DIS-09-D	L19652-43
LAB BLANK	WG43769-101
OPR	WG43769-102
RB13-PT-02-S	L19652-18

AXYS | Axys Analytical Services Ltd
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Sidney, British Columbia, Canada V8L 5X2 FAX: (250) 655-5811

CHAIN OF CUSTODY

AXYS CLIENT #: 4273

REPORT TO:
Company: Newfields
Address: 115 2nd Ave N, Edmonds WA 98020
Contact: Will Hafner
Phone: 425-967-5285 Ext 103
FAX:
E-mail: whafner@newfields.com

INVOICE TO:
Company: Newfields - same as report to
Address:
Contact:
Phone:
FAX:
E-mail:

Project Name/Number: North Olympic Peninsula Reg. Background
Sampler's Name:
Signature:

ANALYSIS REQUESTED: Dioxin/Furan Congeners; PCB Congeners

Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	AXYS Lab Sample ID (Lab use only)	Dioxin/Furan Congeners	PCB Congeners			
RB13-DUN-03-S	SED	5.6.13	1009	1 #1353	L19652-1	X	X			
RB13-DUN-06-S	"	"	1050	1 #1293	-2	X	X			
RB13-DUN-07-S	"	"	1110	1 #1303	-3	X	X			
RB13-DUN-12-S	"	"	1130	1 #1393	-4	X	X			
RB13-DUN-10-S	"	"	1210	1 #1323	-5	X	X			
RB13-DUN-13-S	"	"	1328	1 #1403	-6	X	X			
RB-13-DUN-05-S	"	"	1346	1 #1283	-7	X	X			
RB-13-DUN-05-D	"	"	"	1 #1400	-8	X	X			
RB13-DUN-09-S	"	"	1425	1 #1313	-9	X	X			
RB13-DUN-04-S	"	"	1446	1 #1363	-10	X	X			
RB13-DUN-02-S	"	"	1509	1 #1273	-11	X	X			

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
[signature]	5/14/13	13:00	[signature]	15 May 13	10:55
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time

Courier:
Waybill No.:

Sample Receipt

	Cooler
Temp °C	
Custody Seal #	
Seal Intact Y / N	
Sample Tags Y / N	

Remarks:

AXYS | Axys Analytical Services Ltd

2045 Mills Road West TEL: (250) 655-5800
Sidney, British Columbia, Canada V8L 5X2 FAX: (250) 655-5811 90 Candice Navaroli

CHAIN OF CUSTODY

AXYS CLIENT #: 4273

REPORT TO:

Company: Newfields - Will Hafner
Address: 115 2nd Ave N, Edmonds WA 98020
Contact: Will Hafner
Phone: 425-967-5285 Ext 103
FAX:
E-mail: whafner@newfields.com

INVOICE TO:

Company: Newfields - same as report TO
Address:
Contact:
Phone:
FAX:
E-mail:

Project Name/Number: North Olympic Peninsula Reg. Background

Sampler's Name:
Signature:

ANALYSIS REQUESTED: Dioxin/Furan Congeners; PCB Congeners

Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	AXYS Lab Sample ID (Lab use only)	Dioxin/Furan Congeners	PCB Congeners			
RB13-DUN-11-S	SED	5.6.13	1549	1 #1383	L19652-12	X	X			
RB13-DUN-01-S	"	"	1613	1 #1345	-13	X	X			
RB13-DUN-08-S	"	"	1638	1 #1373	-14	X	X			

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Jasper Bauer	5/14/13	13:00	[signature]	15 May 13	10:55
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time

Courier:
Waybill No.:

Remarks:

Sample Receipt

	Cooler
Temp °C	
Custody Seal #	
Seal Intact Y / N	
Sample Tags Y / N	

AXYS | Axys Analytical Services Ltd

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Attn: Candice Navaroli

CHAIN OF CUSTODY

AXYS CLIENT #: 4273

REPORT TO:

Company: NewFields
Address: 115 2nd Ave N, Edmonds WA 98020
Contact: Will Hafner
Phone: 425-967-5285 x103
FAX: —
E-mail: whafner@newfields.com

INVOICE TO:

Company: NewFields - same as report to
Address:
Contact:
Phone:
FAX:
E-mail:

Project Name/Number: North Olympic Peninsula Reg. Background

Sampler's Name:
Signature:

ANALYSIS REQUESTED

Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	AXYS Lab Sample ID (Lab use only)	Dioxin/Furan Congeners	PCB congeners (Full suite)	NewFields Jar #		
RB13-PT-06-S	Sed	5/10/13	909	1	L9652-15	X	X	1553		
RB13-PT-09-S	Sed	5/10/13	948	1	-16	X	X	1583		
RB13-PT-04-S	Sed	5/10/13	1008	1	-17	X	X	1533		
RB13-PT-02-S	Sed	5/10/13	1035	1	-18	X	X	1513		
RB13-PT-05-S	Sed	5/10/13	1115	1	-19	X	X	1543		
RB13-PT-10-S	Sed	5/10/13	1133	1	-20	X	X	1593		
RB13-PT-07-S	Sed	5/10/13	1156	1	-21	X	X	1563		
RB13-PT-03-S	Sed	5/10/13	1307	1	-22	X	X	1523	VH	
RB13-PT-08-S	Sed	5/10/13	1411	1	-23	X	X	~~1411~~	1573	
RB13-PT-01-S	Sed	5/10/13	1446	1	-24	X	X	1503		

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Jasper Bauer	5/14/13	13:00		15 May 13	10:55
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time

Remarks

Courier:
Waybill No.:

Sample Receipt

	Cooler
Temp °C	
Custody Seal #	
Seal Intact Y / N	
Sample Tags Y / N	

NEWFIELDS

NewFields Northwest, LLC.
Shipping: 4729 NE View Dr.
Mailing: P.O. Box 216
Port Gamble, WA. 98364
Tel: (360) 297-6040, Fax: (360)297-7268

CHAIN OF CUSTODY

13639 4273

Destination Lab: Axys	Sample Originator: New Fields	Report Results To: Will Hafner	Phone:
Destination Contact: Candice Navarali	Contact Name: Will Hafner	Contact Name:	Fax:
Date: 5/9/13	Address: 115 2nd Ave N Edmonds WA 98020	Address:	Email:
Turn-Around-Time			
Project Name: North Olympic Peninsula Regional Background	Phone: 425-967-5285 x103	Invoicing To:	
Contract/PO:	Fax: ~	Comments or Special Instructions:	
	E-mail: whafner@newfields.com		

No.	Sample ID	Matrix	No. & Type of Container	Date & Time	Dioxin/Furan	PCB Congener					Preservation	Sample Temp Upon Receipt	LAB ID
1	RB13-SEQ-05-S	sed	1	5/9/13 8:57	X	X					L9652-25		1043
2	RB13-SEQ-02-S	sed	1	5/9/13 9:36	X	X					-26		~~1073~~ 1013
3	RB13-SEQ-04-S	sed	1	5/9/13 10:11	X	X					-27		1033
4	RB13-SEQ-03-S	sed	1	5/9/13 11:04	X	X					-28		1023
5	RB13-SEQ-03-D	sed	1	5/9/13 11:04	X	X					-29		1080
6	RB13-SEQ-01-S	sed	1	5/9/13 11:41	X	X					-30		1003
7													
8													
9													
10													
11													
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16													
17													
18													
19													
20													

Relinquished by:	Recieved by:	Relinquished by:	Recieved by:
Print Name: Jasper Beans	Print Name: M GIERDEN	Print Name:	Print Name:
Signature: Jasper Beans	Signature:	Signature:	Signature:
Affiliation: New Fields	Affiliation: AXYS	Affiliation:	Affiliation:
Date/Time: 5/14/13 13:00	Date/Time: 15 May 13 10:55	Date/Time:	Date/Time:

Matrix Codes
FW = Fresh Water
WW = Waste Water
SB = Salt & Brackish Water
SS = Soil & Sediment
TS = plant & Animal Tissue
OT = Other

WHITE – return to originator • YELLOW – lab • PINK – retained by originator

AXYS | Axys Analytical Services Ltd

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Sidney, British Columbia, Canada V8L 5X2 FAX: (250) 655-5811

Attn: Candice Navarolli

CHAIN OF CUSTODY

AXYS CLIENT #: 4273

REPORT TO:
Company: Newfields
Address: 115 2nd Ave N
Edmonds WA 98020
Contact: Will Hafner
Phone: 425 967 5265 x 103
FAX:
E-mail: whafner@newfields.com

INVOICE TO:
Company: Newfields - same
Address:
Contact:
Phone:
FAX:
E-mail:

Project Name/Number: North olympic Peninsula reg. Background

Sampler's Name: Will Hafner
Signature:

ANALYSIS REQUESTED

Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	Preservative Y / N	AXYS Lab ID Lab use only	dioxin/furan congeners	PCB congeners (full suite)	Newfields Jar Tag		
RB13-DIS-10-S	Sed	5/8/13	1127	1		L19652-31	X	X	1173		
RB13-DIS-07-S	Sed	5/8/13	1147	1		-32	X	X	1143		
RB13-DIS-01-S	Sed	5/8/13	1083	1		-33	X	X	1083		
RB13-DIS-01-S	Sed	5/8/13	~~1103~~ 1357	1		-34	X	X	1103		
RB13-DIS-12-S	Sed	5/8/13	1435	1		-35	X	X	1193		
RB13-DIS-02-S	Sed	5/8/13	1529	1		-36	X	X	1093		
RB13-DIS-05-S	Sed	5/8/13	1554	1		-37	X	X	1123		

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
[signature]	5/14/13	13:00	[signature]	15 May 13	10:55
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time

Remarks / Type Of Preservative

Courier	Waybill No.
Fedex	799759574788

Sample Receipt

	Cooler
Temp °C	
Custody Seal #	
Seal Intact Y / N	
Sample Tags Y / N	

AXYS | Axys Analytical Services Ltd

2045 Mills Road West TEL: (250) 655-5800
Sidney, British Columbia, Canada V8L 5X2 FAX: (250) 655-5811

Candice Navarali

CHAIN OF CUSTODY

AXYS CLIENT #: 4273

REPORT TO:		INVOICE TO:	
Company	NewFields	Company	NewFields - Will Hafner
Address	115 2nd Ave N Suite 100 Edmonds WA 98020	Address	
Contact	Will Hafner	Contact	
Phone	425-967-5285 x103	Phone	
FAX		FAX	
E-mail	whafner@newfields.com	E-mail	
Project Name/Number:	North Olympic Peninsula Regional Background	Sampler's Name: Signature:	

Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	AXYS Lab Sample ID (Lab use only)	Dioxin Furan congeners	PCB congeners (full suite)			
RB13-DIS-04-S	Sed	5/7/13	1342	1	L19652-38	X	X			
RB13-DIS-11-S	Sed	5/7/13	1407	1	-39	X	X			
RB13-DIS-08-S	Sed	5/7/13	1429	1	-40	X	X			
RB13-DIS-06-S	Sed	5/7/13	1530	1	-41	X	X			
RB13-DIS-09-S	Sed	5/7/13	1640	1	-42	X	X			
RB13-DIS-09-D	Sed	5/7/13	1640	1	-43	X	X			

Relinquished by (Signature)	Date	Time	Received by (Signature)	Courier	Waybill No.
Jennifer Beaus	5/14/13	13:00	Date 15 May 13 Time 10:55	Fedex	799759574788
Relinquished by (Signature)	Date	Time	Received by (Signature) Date Time	Sample Receipt	

Remarks	Cooler
	Temp °C
	Custody Seal #
	Seal Intact Y / N
	Sample Tags Y / N

4273

From: (425) 318-0420
Will Hafner
NewFields Northwest
115 2nd Ave N
Suite 100
Edmonds, WA 98020
UNITED STATES

Origin ID: PAEA

FedEx Express

J13111302120426

Ship Date: 14MAY13
ActWgt: 57.0 LB
CAD: 7698805/INET3370

Dims: 24 X 14 X 14 IN

TotWgt: 167.0 LB

REF: 860.0072.000 Phase 2
DESC-1: 250 ml jars containing sediment samples for chemical analysi
DESC-2:
DESC-3:
DESC-4:
EEI: NO EEI 30.36
COUNTRY MFG: US
CARRIAGE VALUE: 0.00 USD
CUSTOMS VALUE: 215.00 USD
T/C: S 368990728 D/T: S 368990728
SIGN: Will Hafner
EIN/VAT:
PKG TYPE: CUSTOMER

Received
15 May 13 10:55

SHIP TO: (250) 655-5839 BILL SENDER

Candice Navaroli
Axys Analytical Services Ltd
2045 Mills Road

Sidney, BC V8L5X2
CA

1 of 3

AM
INTL PRIORITY

TRK# 7997 5957 4788
0430

MASTER
XQ YYJA

V8L 5X2
BC-CA
YVR

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4273

From: (425) 318-0420
Will Hafner
NewFields Northwest
115 2nd Ave N
Suite 100
Edmonds, WA 98020
UNITED STATES

Origin ID: PAEA

FedEx Express

J131113021204 26

Ship Date: 14MAY13
ActWgt: 57.0 LB
CAD: 7698805/INET3370

Dims: 24 X 13 X 14 IN

TotWgt: 167.0 LB

REF: 860.0072.000 Phase 2

Received
15May13 10:55

PKG TYPE: CUSTOMER

SHIP TO: (250) 655-5839 BILL SENDER

Candice Navaroli
Axys Analytical Services Ltd
2045 Mills Road

Sidney, BC V8L5X2
CA

3 of 3

AM
INTL PRIORITY

MPS# 7997 5957 5063
0441

Mstr# 7997 5957 4788 0430

XQ YYJA

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4273

From: (425) 318-0420
Will Hafner
NewFields Northwest
115 2nd Ave N
Suite 100
Edmonds, WA 98020
UNITED STATES

Origin ID: PAEA

FedEx Express

J13111302120426

Ship Date: 14MAY13
ActWgt: 53.0 LB
CAD: 7698805/INET3370

Dims: 24 X 14 X 14 IN

TotWgt: 167.0 LB

REF: 860.0072.000 Phase 2

Received 15May13 10:55

PKG TYPE: CUSTOMER

SHIP TO: (250) 655-5839 BILL SENDER

Candice Navaroli
Axys Analytical Services Ltd
2045 Mills Road

Sidney, BC V8L5X2
CA

2 of 3

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MPS# 7997 5957 4870
0441
Mstr# 7997 5957 4788
0430

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AXYS Analytical Services Ltd
SAMPLE RECEIVING RECORD

Waybill : Yes /No — Waybill #: 799759574788
Date Shipped: 14-MAY-13 — Date /Time Received: 15-MAY-13 10:55

AXYS Client & Contract # 4273-NewFields Environmental Forensics

Project Number: — Receipt No: WB14810

Login Number:

Received By: MGIERDEN — Log in by: M. WILMAN — Signature: M. Wilman

Axys Sample ID's: L19652-1 to 14

Matrix Type: 14 Marine Seds

Condition of Shipping Container: Intact.

Temperature upon Receipt: 3.4 Celcius — shipped on wet ice, some left. temp blank present → unable to retrieve from cooler. Thermometer ID: 3290
Corrected Temperature: 3.4 Celcius

Custody Seals: Shipping Containers Yes /No — Intact Yes /No — Seal Numbers Yes /No date & signature
Samples Yes /No — Intact Yes /No — Seal Numbers Yes /No

Chain of Custody or Documents:	Yes /No	Tracking Report /Packing List:	Yes /No
Sample ID's	Yes /No	Sample Tag Numbers	Yes /No
Collection Location	Yes /No	Sample Type	Yes /No
Date & Time Collection	Yes /No	Preservative Added	Yes /No
Collector's Name	Yes /No	Preservation Requested	Yes /No

Sample Tags	Yes /No		
Sample Labels	Yes /No		
Sample Labels Cross Referenced to COC	Yes /No	Information Agrees	Yes /No
Sample Tags Cross Referenced to Sample Labels	Yes /No	Information Agrees	Yes /No
Sample Tags Cross Referenced to COC	Yes /No	Information Agrees	Yes /No

Comments:

RB13-DUN-01-S COC tag # 1345 Label tag # 1343

Action Taken:

AXYS Analytical Services Ltd
SAMPLE RECEIVING RECORD

Waybill : Yes /No
Waybill #: 799759575063
Date Shipped: 14-MAY-13
Date /Time Received: 15-MAY-13 10:55

AXYS Client & Contract # 4273-NewFields Environmental Forensics

Project Number:
Receipt No: WB14811

Login Number:

Received By: MGIERDEN
Log in by: M. WILMAN
Signature: M. Wilman

Axys Sample ID's: L19652-15 to 30

Matrix Type: 16 Marine Seds

Condition of Shipping Container: Intact

Temperature upon Receipt: .7 Celcius
shipped on wet ice, some left, temp blank present
Thermometer ID: 3290
unable to retrieve from cooler
Corrected Temperature: .7 Celcius

Custody Seals: Shipping Containers Yes /No Intact Yes /No Seal Numbers Yes /No date & signature.
Samples Yes /No Intact Yes /No Seal Numbers Yes /No

Chain of Custody or Documents: Yes /No
Sample ID's Yes /No
Collection Location Yes /No
Date & Time Collection Yes /No
Collector's Name Yes /No

Tracking Report /Packing List: Yes /No
Sample Tag Numbers Yes /No
Sample Type Yes /No
Preservative Added Yes /No
Preservation Requested Yes /No

Sample Tags Yes /No
Sample Labels Yes /No
Sample Labels Cross Referenced to COC Yes /No Information Agrees Yes /No
Sample Tags Cross Referenced to Sample Labels Yes /No Information Agrees Yes /No
Sample Tags Cross Referenced to COC Yes /No Information Agrees Yes /No

Comments:

Action Taken:

AXYS Analytical Services Ltd
SAMPLE RECEIVING RECORD

Waybill : Yes /No
Waybill #: 799759574870
Date Shipped: 14-MAY-13
Date /Time Received: 15-MAY-13 10:55

AXYS Client & Contract # 4273-NewFields Environmental Forensics

Project Number:
Receipt No: WB14812

Login Number:

Received By: MGIERDEN
Log in by: M. WILMAN
Signature: M. Wilman

Axys Sample ID's: L19652-31 to 43

Matrix Type: 13 Marine Seds

Condition of Shipping Container: Intact.

Temperature upon Receipt: 2.9 Celcius
shipped on wet ice, some left. temp blank present
Thermometer ID: 3290
Corrected Temperature: 2.9 Celcius

Custody Seals: Shipping Containers Yes /No Intact Yes /No Seal Numbers Yes /No
Samples Yes /No Intact Yes /No Seal Numbers Yes /No

Unable to retrieve from cooler date & signature

Chain of Custody or Documents:	Yes /No	Tracking Report /Packing List:	Yes /No
Sample ID's	Yes /No	Sample Tag Numbers	Yes /No
Collection Location	Yes /No	Sample Type	Yes /No
Date & Time Collection	Yes /No	Preservative Added	Yes /No
Collector's Name	Yes /No	Preservation Requested	Yes /No

Sample Tags	Yes /No		
Sample Labels	Yes /No		
Sample Labels Cross Referenced to COC	Yes /No	Information Agrees	Yes /No
Sample Tags Cross Referenced to Sample Labels	Yes /No	Information Agrees	Yes /No
Sample Tags Cross Referenced to COC	Yes /No	Information Agrees	Yes /No

Comments:

RB13-DIS-01-S coctime = 1083 label time = 12:06
logged in as per label time.

COC = RB13-DIS-01-S 5/8/13 13:57 tag # 1103
Label = RB13-DIS-03-S 5/8/13 13:44 tag # 1103
logged in as per label.

RB13-DIS-12-S COC = 14:35 label = 14:44
RB13-DIS-08-S COC = 14:29 Label = 14:35

Action Taken:

See attached client email.

For Scanning CN
14-Jun-13

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-1		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-03-S 06-MAY-13 10:09	Project #: PORT GARDNER			
Comments: Tag # 1353				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-2		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-06-S 06-MAY-13 10:50	Project #: PORT GARDNER			
Comments: Tag # 1293				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-3		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-07-S 06-MAY-13 11:10	Project #: PORT GARDNER			
Comments: Tag # 1303				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-4		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-12-S 06-MAY-13 11:30	Project #: PORT GARDNER			
Comments: Tag # 1393				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-5		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-10-S 06-MAY-13 12:10	Project #: PORT GARDNER			
Comments: Tag # 1323				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-6		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-13-S 06-MAY-13 13:28	Project #: PORT GARDNER			
Comments: Tag # 1403				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
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Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-7		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-05-S 06-MAY-13 13:46	Project #: PORT GARDNER			
Comments: Tag # 1283				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-8		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-05-D 06-MAY-13 13:46	Project #: PORT GARDNER			
Comments: Tag # 1400				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
Solid	R:7:MOISTURE		:	USD
Solid	R:DX017.1613		:	USD
Solid	R:DX017.1613-2		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
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Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-9		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-09-S 06-MAY-13 14:25	Project #: PORT GARDNER			
Comments: Tag # 1313				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-10		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-04-S 06-MAY-13 14:46	Project #: PORT GARDNER			
Comments: Tag # 1363				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
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Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-11		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-02-S 06-MAY-13 15:09	Project #: PORT GARDNER			
Comments: Tag # 1273				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-12		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-11-S 06-MAY-13 15:49	Project #: PORT GARDNER			
Comments: Tag # 1343				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
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Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-13		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-01-S 06-MAY-13 16:13	Project #: PORT GARDNER			
Comments: Tag # 1345				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-14		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DUN-08-S 06-MAY-13 16:38	Project #: PORT GARDNER			
Comments: Tag # 1373				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Jun. 14, 2013
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Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-15		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-06-S 10-MAY-13 09:09	Project #: PORT GARDNER			
Comments: Tag # 1553				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-16		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-09-S 10-MAY-13 09:48	Project #: PORT GARDNER			
Comments: Tag # 1583				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Jun. 14, 2013
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Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-17		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-04-S 10-MAY-13 10:08	Project #: PORT GARDNER			
Comments: Tag # 1533				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-18		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-02-S 10-MAY-13 10:35	Project #: PORT GARDNER			
Comments: Tag # 1513				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
Solid	R:3:MOISTURE		:	USD
Solid	R:DX013.1613		:	USD
Solid	R:DX013.1613-2		:	USD
Solid	R:PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Jun. 14, 2013
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Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-19		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-05-S 10-MAY-13 11:15	Project #: PORT GARDNER			
Comments: Tag # 1543				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-20		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-10-S 10-MAY-13 11:33	Project #: PORT GARDNER			
Comments: Tag # 1593				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
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Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-21		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-07-S 10-MAY-13 11:58	Project #: PORT GARDNER			
Comments: Tag # 1563				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-22		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-03-S 10-MAY-13 13:07	Project #: PORT GARDNER			
Comments: Tag # 1523				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
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Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-23		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-08-S 10-MAY-13 14:11	Project #: PORT GARDNER			
Comments: Tag # 1573				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-24		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-PT-01-S 10-MAY-13 14:46	Project #: PORT GARDNER			
Comments: Tag # 1503				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013

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Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-25		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-SEQ-05-S 09-MAY-13 08:57	Project #: PORT GARDNER			
Comments: Tag # 1043				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-26		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-SEQ-02-S 09-MAY-13 09:36	Project #: PORT GARDNER			
Comments: Tag # 1013				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
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Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-27		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-SEQ-04-S 09-MAY-13 10:11	Project #: PORT GARDNER			
Comments: Tag # 1033				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-28		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-SEQ-03-S 09-MAY-13 11:04	Project #: PORT GARDNER			
Comments: Tag # 1023				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Jun. 14, 2013
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Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-29		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-SEQ-03-D 09-MAY-13 11:04	Project #: PORT GARDNER			
Comments: Tag # 1080				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-30		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-SEQ-01-S 09-MAY-13 11:41	Project #: PORT GARDNER			
Comments: Tag # 1003				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

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Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-31		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-10-S 08-MAY-13 11:27	Project #: PORT GARDNER			
Comments: Tag #1173				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
Solid	R:7:MOISTURE		:	USD
Solid	R:DX017.1613		:	USD
Solid	R:DX017.1613-2		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-32		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-07-S 08-MAY-13 11:47	Project #: PORT GARDNER			
Comments: Tag #1143				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-33		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-01-S 08-MAY-13 12:06	Project #: PORT GARDNER			
Comments: Tag #1083				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-34		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-03-S 08-MAY-13 13:57	Project #: PORT GARDNER			
Comments: Tag #1103				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-35		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-12-S 08-MAY-13 14:44	Project #: PORT GARDNER			
Comments: Tag #1193				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-36		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-02-S 08-MAY-13 15:29	Project #: PORT GARDNER			
Comments: Tag #1093				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-37		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-05-S 08-MAY-13 15:54	Project #: PORT GARDNER			
Comments: Tag #1123				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-38		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-04-S 07-MAY-13 13:42	Project #: PORT GARDNER			
Comments: Tag #				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-39		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-11-S 07-MAY-13 14:07	Project #: PORT GARDNER			
Comments: Tag #				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-40		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-08-S 07-MAY-13 14:35	Project #: PORT GARDNER			
Comments: Tag #				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-41		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-06-S 07-MAY-13 15:30	Project #: PORT GARDNER			
Comments: Tag #				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD
L19652-42		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-09-S 07-MAY-13 16:40	Project #: PORT GARDNER			
Comments: Tag #				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

Jun. 14, 2013
02:30 PM

Login Number: L19652
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19652-43		15-MAY-13		
	Storage: WIF-4, under 6D			
RB13-DIS-09-D 07-MAY-13 16:40	Project #: PORT GARDNER			
Comments: Tag #				
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	HOMOGENIZATION		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 250 mL glass AMB	USD

Candice Navaroli

From: Will Hafner [whafner@newfields.com]
Sent: Wednesday, May 15, 2013 4:30 PM
To: Candice Navaroli
Subject: RE: FedEx MPS Shipment Notification

DATA PKG.

Candice,
The corrections are included below.
I submitted the form for the SRM. I'll keep you posted on when you can expect it to arrive.
Will

Will Hafner Ph.D.
Environmental Chemist
115 2nd Ave N, Suite 100
Edmonds, WA 98020
Office: 425-967-5285 Ext. 103
Cell: 425-318-0420
www.newfields.com

NewFields
Perspective. Vision. Solutions.

From: Candice Navaroli [mailto:cnavaroli@axys.com]
Sent: Wednesday, May 15, 2013 3:12 PM
To: Will Hafner
Subject: RE: FedEx MPS Shipment Notification

Hi Will,
There are a few sample discrepancies that need to be resolved so that we can successfully complete sample login. Please advise as to which we should use;

1) Client ID on the Chain of Custody form: RB13-DUN-01-S COC tag # = 1345, Sample Jar Label tag # = 1343

It should be 1343 on the COC. With a couple exceptions the dioxin jar tags end in a 3.

2) Client ID and time on the Chain of Custody form: RB13-DIS-01-S, time = 1083 tag # = 12:06, Sample Jar Label tag # = 1083, I think this may have just been a writing in the incorrect column type of error.
Yes, the time should be 1206 for sample RB13-DIS-01-S and the jar tag is 1083.
That COC has RB13-DIS-01-S listed twice. The second listing (fourth line) should be RB13-DIS-03-S.

3) Client ID on the Chain of Custody form: RB13-DIS-12-S, time= 14:35 Sample Label time= 14:44
The time should be 1444

4) Client ID on the Chain of Custody form: RB13-DIS-08-S, time= 14:29 Sample Label time= 14:35
The time should be 1435

Regards,
Candice

Candice Navaroli (B.Sc.)
Project Manager
Tel.: 250-655-5800
Direct: 250-655-5839
Toll free: 1-888-373-0881 Ext.5839
Fax: 250-655-5811
Email: cnavaroli@axys.com

Axys Analytical Services Ltd.

2045 Mills Road
Sidney, BC.
Canada, V8L 5X2

From: Will Hafner [mailto:whafner@newfields.com]
Sent: Tuesday, May 14, 2013 4:26 PM
To: Candice Navaroli
Subject: FW: FedEx MPS Shipment Notification

Candice,
Here is the tracking info for the coolers.
I noticed I screwed up on one of the COCs. The COC that begins with sample RB13-DIS-10-S has two errors.
It has sample RB13-DIS-01-S listed twice. The COC for these two samples should read (the two errors are highlighted):

RB13-DIS-01-S	Sed	5/8/13	1206
RB13-DIS-03-S	Sed	5/8/13	1357

Did you find out anything about the PCB reference materials?
Will

Will Hafner Ph.D.
Environmental Chemist
115 2nd Ave N, Suite 100
Edmonds, WA 98020
Office: 425-967-5285 Ext. 103
Cell: 425-318-0420
www.newfields.com

NewFields
Perspective. Vision. Solutions.

From: trackingupdates@fedex.com [mailto:trackingupdates@fedex.com]
Sent: Tuesday, May 14, 2013 1:27 PM
To: whafner@newfields.com
Subject: FedEx MPS Shipment Notification

This tracking update has been requested by:

Company Name: NewFields Northwest
Name: Will Hafner
E-mail: whafner@newfields.com

Sent to: cnavaroli@axys.com
whafner@newfields.com

Will Hafner of NewFields Northwest sent Candice Navaroli of Axys Analytical Services Ltd 3 FedEx International Priority package(s).

This shipment is scheduled to be sent on 05/14/2013.

Reference information includes:

Reference: 860.0072.000 Phase 2

Special handling/Services:	Deliver Weekday
Master tracking number:	799759574788 (1 of 3)
Tracking number:	799759574870 (2 of 3)
Status:	Shipment information sent to FedEx
Tracking number:	799759575063 (3 of 3)
Status:	Shipment information sent to FedEx

To track the latest status of your shipment, click on the tracking number above, or visit us at fedex.com.

To learn more about FedEx Express, please visit our website at fedex.com.

This tracking update has been sent to you by FedEx on the behalf of the Requestor noted above. FedEx does not validate the authenticity of the requestor and does not validate, guarantee or warrant the authenticity of the request, the requestor's message, or the accuracy of this tracking update. For tracking results and fedex.com's terms of use, go to fedex.com.

Thank you for your business.

Candice Navaroli

From: Candice Navaroli
Sent: Friday, June 14, 2013 2:31 PM
To: 'Will Hafner'; Leah Chad
Subject: RE: Dioxin/Furan Data (4273 WG43699) North Olympic Peninsula Reg. Background

Hi Will,
I will have this revised.
Regards,
Candice

DATA PKG.

Candice Navaroli (B.Sc.)
Project Manager
Tel.: 250-655-5800
Direct: 250-655-5839
Toll free: 1-888-373-0881 Ext.5839
Fax: 250-655-5811
Email: cnavaroli@axys.com

Axys Analytical Services Ltd.
2045 Mills Road
Sidney, BC.
Canada, V8L 5X2

From: Will Hafner [mailto:whafner@newfields.com]
Sent: Friday, June 14, 2013 2:22 PM
To: Leah Chad
Cc: Candice Navaroli
Subject: RE: Dioxin/Furan Data (4273 WG43699) North Olympic Penninsula Reg. Background

Candice,
Can you change RB13-PT01-S to RB13-PT-01-S in your system before the data package is finalized? I just noticed it was missing the dash. I can make the change in the EDD.
Thanks,
Will

Will Hafner Ph.D.
Environmental Chemist
115 2nd Ave N, Suite 100
Edmonds, WA 98020
Office: 425-967-5285 Ext. 103
Cell: 425-318-0420
www.newfields.com

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From: Leah Chad [mailto:lchad@axys.com]
Sent: Tuesday, June 11, 2013 10:09 AM
To: cransom@ecochem.net; whafner@newfields.com
Cc: Candice Navaroli
Subject: Dioxin/Furan Data (4273 WG43699) North Olympic Penninsula Reg. Background

Attached please find dioxin/furan data in .csv and .pdf format sent to you today, 11 June 2013.

Contract: 4273
Batch ID: WG43699
Analysis: Dioxin/Furan
Samples:

L19652-16	RB13-PT-09-S
L19652-17	RB13-PT-04-S
L19652-19	RB13-PT-05-S
L19652-20	RB13-PT-10-S
L19652-21	RB13-PT-07-S
L19652-22	RB13-PT-03-S
L19652-23	RB13-PT-08-S
L19652-24	RB13-PT01-S
L19652-25	RB13-SEQ-05-S
L19652-26	RB13-SEQ-02-S
L19652-27	RB13-SEQ-04-S
L19652-28	RB13-SEQ-03-S
L19652-29	RB13-SEQ-03-D

1. Data are considered final.
2. Data are not blank corrected.

Every effort has been made to ensure the correct transfer of electronic data files. The files have been prepared in a READ ONLY format to prevent inadvertent changes to the data. Should a discrepancy occur between the electronic copy and the signed analysis report, the latter is considered to contain the authorized data. If you have any questions or require further information, please contact Candice Navaroli, Project Manager.

Regards,
AXYS ANALYTICAL SERVICES LTD
lc/kp

Leah Chad
Data Reporter
AXYS Analytical Services Ltd.
2045 Mills Road W, Sidney, BC V8L 5X2
Tel. (250) 655-5800 Ext.1843
lchad@axys.com

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Recipient Copy

CHAIN-OF-CUSTODY RECORD

COC No. 12647

Order Number: SG012084

Date Shipped: 5/16/2013

AirBill No(s): 560847646659 4273

From: QATS LABORATORY
2700 CHANDLER AVENUE, BLDG. B
LAS VEGAS, NV 89120
PHONE: 1-702-895-8712
FAX: 1-702-795-8210

To: Candice Navaroli
AXYS ANALYTICAL SERVICES
2045 MILLS ROAD WEST
SIDNEY BC V8L 5X2
(250)-655-5800

Sample ID	Sigma ID	Qty	Description/Remarks	→ Catalogue Number
SRS1136 L196605-1	SR0431	1	PUGET SOUND SEDIMENT RM	PS-SRM

AC 5/16/13

Please use the enclosed Sample Preparation Instructions. If catalogue number(s) are listed at the top of the Sample Preparation Instructions use the Sample Preparation Instructions with catalogue number(s) matching the catalogue number(s) of each of the samples listed above.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	5/16/13 15:00		17May13 11:15
Custody Seal(s): Present/Absent	Remarks:		
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

QATS Form 20-008F053R01 07-31-2012

4273

ORIGIN ID: LASA (702) 895-8714
ARTHUR CLARKE
SHAW ENVIRONMENTAL INC.
2700 CHANDLER AVE.
SUITE C
LAS VEGAS, NV 89120 US
SIGN: ARTHUR CLARKE

SHIP DATE: 16MAY13
ACTWGT: 1.0 LB MAN
CAD: 0157618/CAFE2608

BILL THIRD PARTY
NO EEI 30.36

TO CANDICE NAVAROLI
AXYS ANALYTICAL SERVICES
2045 MILLS ROAD WEST

SIDNEY BC V8L5X2 (CA)
(250) 655-5800 REF:
INV:
PO: DEPT:

FedEx Express

These commodities, technology, or software were exported from the United States in accordance with the export administration regulations. Diversion contrary to US law is prohibited.

TRK# 0430 5608 4764 6659

AM
INTL PRIORITY

XQ YYJA

V8L 5X2
BC-CA YVR

Part # 156148-434 NRIT 8-05

Received 17May13 11:15

AXYS Analytical Services Ltd
SAMPLE RECEIVING RECORD

Waybill : Yes/No
Waybill #: 560847646659
Date Shipped: 16-MAY-13
Date /Time Received: 17-MAY-13 11:15

AXYS Client & Contract # 4273-NewFields Environmental Forensics

Project Number:
Receipt No: WB14819
Login Number:

Received By: MGIERDEN
Log in by: Mgierden
Signature:

Axys Sample ID's: L19665-1

Matrix Type: 1 SRM

Condition of Shipping Container: Intact

Temperature upon Receipt: 20.7 Celcius shipped ambient
Thermometer ID: 3270
Corrected Temperature: 20.7 Celcius

MGI 17May13

Custody Seals: Shipping Containers Yes/No Intact Yes/No Seal Numbers Yes/No date + Initials - See Reverse

Samples Yes/No Intact Yes/No Seal Numbers Yes/No

Chain of Custody or Documents:	Yes/No	Tracking Report /Packing List:	Yes/No
Sample ID's	Yes/No	Sample Tag Numbers	Yes/No
Collection Location	Yes/No	Sample Type	Yes/No
Date & Time Collection	Yes/No	Preservative Added	Yes/No
Collector's Name	Yes/No	Preservation Requested	Yes/No

Sample Tags	Yes/No		
Sample Labels	Yes/No		
Sample Labels Cross Referenced to COC	Yes/No	Information Agrees	Yes/No
Sample Tags Cross Referenced to Sample Labels	Yes/No	Information Agrees	Yes/No
Sample Tags Cross Referenced to COC	Yes/No	Information Agrees	Yes/No

Comments:

Action Taken:

For Scanning CN
21-May-13

AXYS

AXYS Analytical Services Ltd.

Login Chain of Custody Report (ln01)

May. 21, 2013
12:32 PM

Login Number: L19665
Account: 4273 NewFields Environmental Forensics
Project: PORT GARDNER

Axys ID versus Client Sample Identification		Received	Due	PR
L19665-1		17-MAY-13		
	Storage: WIC-2, 5A			
SRS1136				
	Project #: PORT GARDNER			
Client QC Type: REFERENCE MATERIAL	Description: Sigma ID: SR0431 - Puget Sound Reference Material			
Solid	2:MOISTURE		:	USD
Solid	3:MOISTURE		:	USD
Solid	DX013.1613		:	USD
Solid	DX013.1613-2		:	USD
Solid	PB013.1668A		:	USD
EDataDeliv	DX EDD		:	USD
EDataDeliv	PCB HI EDD		:	USD
D.Package	DX DATA PKG		:	USD
D.Package	PCB DPKG (HI)		:	USD
ANY	SAMPLE RECEIPT	1	: 30 mL glass AMB	USD

4273

PUGET SOUND SEDIMENT REFERENCE MATERIAL (SRM) REQUEST FORM

TO REQUEST PUGET SOUND SRM, PLEASE COMPLETE THIS FORM AND SEND IT TO:	
USEPA Region 10 SRM Manager Attn: Mr. Donald M. Brown 1200 Sixth Avenue, Suite 900 Seattle, WA 98101 **Phone:** (206) 553-0717 **Email:** brown.donaldm@epa.gov	**Special Instructions:**

NOTE: PUGET SOUND SEDIMENT REFERENCE MATERIAL IS USUALLY SHIPPED WITHIN 24 HOURS OF REQUEST.

Date of Request:	5-15-13	Project/Site Name:	NOP Reg. Background
Date SRM Needed:	ASAP	Project/Site Number:	
No. of Bottles Requested:	1	FedEx Account No.:	3689-9072-8

NOTE: PUGET SOUND SEDIMENT REFERENCE MATERIAL IS PACKAGED IN GLASS BOTTLES CONTAINING 30 GRAMS OF MATERIAL.

Ship SRM, SRM request form, and Chain-of-Custody form with sample numbers to:					
Contact Name:	Candice Navaroli	Email:	cnavaroli@axys.com		
Laboratory Name:	Axys Analytical Services Ltd				
Address:	2045 Mills Road				
City:	Sidney	State:	BC	Zip Code:	V8L5X2
Phone:	250-655-5839	Fax No.:	250-655-5811		
Send copies of the SRM request form and Chain-of-Custody form with sample numbers to:					
Contact Name:	Will Hafner	Email:	whafner@newfields.com		
Company:	NewFields				
Address:	115 2nd Avenue N, Suite 100				
City:	Edmonds	State:	WA	Zip Code:	98020
Phone:	425-967-5285 x103	Fax No.:			

For QATS Laboratory Use Only			
No. of Samples Shipped:		Shipped By:	
Shipping Date:		Airbill No.:	
COC No.:			

As an authorized agency requestor, I certify that the Puget Sound SRM requested is to be used for USEPA Region 10 approved activities only.

Laura Inouye		Laura Inouye	
Print Name		Authorized Signature	
Authorized Agency:	Ecology	Phone No:	360-407-6165

QATS Form 20-007F159R00, 03-19-2012

Shaw

4273

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2008 Certified Program"

Instructions for QATS Catalog Number: PS-SRM
Marine Sediment: CDD/CDF/CB Congeners/Aroclors

PUGET SOUND SEDIMENT REFERENCE MATERIAL
QATS LABORATORY INSTRUCTIONS FOR HRGC/HRMS CDD/CDF/CB CONGENER AND GC/ECD AROCLOR ANALYSIS

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocols or your contract, disregard these instructions.

APPLICATION: For the analysis of CDD/CDF and CB Congener analytes using project-specified HRGC/HRMS methods, and Aroclors using project-specified GC/ECD methods.

CAUTION: Read instructions carefully before opening bottles and proceeding with the analyses.

This Sample Contains Chemicals Known or Suspected to Have Serious Human Health Effects.

Material Safety Data Sheets Available Upon Request

(A) *SAMPLE DESCRIPTION*

Enclosed is a Puget Sound (Washington State) Sediment Reference Material (SRM) set for chlorinated dibenzo-p-dioxins / chlorinated dibenzofurans (CDD/CDF), and/or chlorinated biphenyl (CB) Congener analysis using project-specified high resolution gas chromatography/ high resolution mass spectrometry (HRGC/HRMS) methods. This SRM is also suitable for Aroclor analysis using project-specified gas chromatography/electron capture detection (GC/ECD) methods. This set consists of one (1) or more bottles, each with approximately 30 grams of Puget Sound SRM containing CDD/CDF, CB Congener, and/or Aroclor analytes. Check the chain-of-custody record to determine the number of bottles provided for CDD/CDF, CB Congener, and/or Aroclor analysis. None of the bottles are to be opened until SRM preparation/analysis is to occur.

CAUTION: The SRM could contain compounds that are light sensitive and should be protected from light during storage. Store the SRM at 4° C ± 2° C until SRM preparation and analysis is to occur. Allow the bottle(s) to reach ambient temperature before opening.

(B) *BREAKAGE OR MISSING ITEMS*

Check the contents of the shipment carefully for any broken, leaking, or missing items. Refer to enclosed chain-of-custody record. Report any problems to Mr. Keith Strout, Shaw Environmental, Inc. at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
Shaw Environmental, Inc.
2700 Chandler Ave - Bldg C
Las Vegas, NV 89120

(C) *ANALYSIS REQUIREMENTS*

The SRM is to be analyzed as described in the project-specified methods employed for the analysis of CDD/CDF and/or CB Congener analytes using HRGC/HRMS instrumentation and/or Aroclors using GC/ECD instrumentation. These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the project-specified methods, or your contract, disregard these instructions.

(D) *SAMPLE ANALYSIS*

General Instructions

The SRM contains CDD/CDF, CB Congener, and Aroclor analytes which are known or suspected to have severe health effects. Employing appropriate safety precautions, this SRM is to be handled, prepared, and analyzed exactly as you would process samples received from a known or suspected hazardous waste site. The SRM should be handled only by trained and experienced analysts in facilities expressly designed to handle such materials. When calculating the concentrations of analytes, use 0% as the soil moisture content.

Allow the bottle(s) to reach ambient temperature before opening and removing gravimetric amounts for sample preparation. To begin the extraction and analysis procedure, break the seal and open the bottle carefully. Weigh out the appropriate aliquot for extraction and analysis as prescribed in the project-specified methods (typically 10 grams for HRGC/HRMS methods and 30 grams for GC/ECD methods), or in accordance with your contract.

Proceed immediately with the extraction and analysis as described in the project-specified methods or your contract.

(E) *REPORTING*

Report the results for the prepared SRM as received.

Report the analytical results for the SRM to EPA or other appropriate Agency, using the format and other instructions for submission of data packages as specified in your contract.

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-03-S
Sample Collection:
06-May-2013 10:09

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-1
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 23:55:07	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_192 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_192 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	22.6

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4			0.883	0.168 (S)	1.39	1.000
2,3-DiCB	5			3.36	0.107 (S)	1.53	1.201
2,3'-DiCB	6			0.447	0.0993 (S)	1.40	1.172
2,4-DiCB	7		K J	0.378	0.103 (S)	1.25	1.161
2,4'-DiCB	8		U		0.0924 (S)		
2,5-DiCB	9		K J	0.360	0.0978 (S)	1.04	1.000
2,6-DiCB	10		U		0.101 (S)		
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U		0.0994 (S)		
4,4'-DiCB	15			3.65	0.119 (S)	1.54	1.001
2,2',3-TriCB	16			0.752	0.0614 (S)	1.13	1.167
2,2',4-TriCB	17		B	1.14	0.0519 (S)	1.06	1.138
2,2',5-TriCB	18	18 + 30	C B	1.92	0.0482 (Q)	1.12	1.113
2,2',6-TriCB	19		J	0.276	0.0627 (S)	1.15	1.001
2,3,3'-TriCB	20	20 + 28	C B	9.69	0.0482 (Q)	1.00	0.849
2,3,4-TriCB	21	21 + 33	C	2.56	0.0482 (Q)	0.98	0.857
2,3,4'-TriCB	22			2.16	0.0482 (Q)	1.03	0.873
2,3,5-TriCB	23		U		0.0482 (Q)		
2,3,6-TriCB	24		U G		0.0482 (Q)		
2,3',4-TriCB	25			0.575	0.0482 (Q)	1.14	0.826
2,3',5-TriCB	26	26 + 29	C	1.20	0.0482 (Q)	0.98	1.299
2,3',6-TriCB	27		J G	0.050	0.0482 (Q)	1.11	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			5.65	0.0482 (Q)	1.03	0.838
2,4',6-TriCB	32			1.29	0.0482 (Q)	1.10	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U		0.0482 (Q)		
3,3',4-TriCB	35			0.476	0.0482 (Q)	1.03	0.985
3,3',5-TriCB	36		J	0.250	0.0482 (Q)	1.02	0.932
3,4,4'-TriCB	37		B	3.55	0.0485 (S)	1.01	1.001
3,4,5-TriCB	38		J	0.305	0.0482 (Q)	1.07	0.968
3,4',5-TriCB	39		K J	0.089	0.0482 (Q)	1.44	0.946

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2,2',3,3'-TeCB	40	40 + 41 + 71	C B	2.75	0.0705 (S)	0.85	1.330
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			1.67	0.0749 (S)	0.79	1.306
2,2',3,5-TeCB	43		K J	0.169	0.0932 (S)	0.46	1.241
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	5.33	0.0648 (S)	0.76	1.280
2,2',3,6-TeCB	45	45 + 51	C	0.604	0.0728 (S)	0.77	1.142
2,2',3,6'-TeCB	46		J	0.219	0.0848 (S)	0.75	1.157
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			0.911	0.0716 (S)	0.79	1.268
2,2',4,5'-TeCB	49	49 + 69	C B	4.07	0.0605 (S)	0.77	1.254
2,2',4,6-TeCB	50	50 + 53	C	0.568	0.0701 (S)	0.76	1.107
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			5.83	0.0654 (S)	0.78	1.228
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0482 (Q)		
2,3,3',4-TeCB	55		K J	0.132	0.0913 (S)	1.04	0.890
2,3,3',4'-TeCB	56		B	3.95	0.0914 (S)	0.74	0.905
2,3,3',5-TeCB	57		U		0.0884 (S)		
2,3,3',5'-TeCB	58		U		0.0893 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C	0.483	0.0532 (S)	0.82	1.296
2,3,4,4'-TeCB	60		B	2.45	0.0888 (S)	0.74	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	15.4	0.0865 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			0.401	0.0817 (S)	0.88	0.864
2,3,4',6-TeCB	64		B	2.31	0.0521 (S)	0.77	1.342
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	8.46	0.0843 (S)	0.78	0.884
2,3',4,5-TeCB	67		J	0.320	0.0783 (S)	0.73	0.856
2,3',4,5'-TeCB	68		J	0.123	0.0835 (S)	0.81	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		J	0.145	0.0819 (S)	0.78	0.823
2,3',5',6-TeCB	73		U		0.0522 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B	1.71	0.134 (S)	0.70	1.000
3,3',4,5-TeCB	78		U		0.0865 (S)		
3,3',4,5'-TeCB	79		K J	0.325	0.0736 (S)	0.89	0.972
3,3',5,5'-TeCB	80		U		0.0789 (S)		
3,4,4',5-TeCB	81		J	0.079	0.0786 (S)	0.87	1.000
2,2',3,3',4-PeCB	82		G	0.811	0.0548 (S)	1.58	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	6.48	0.0521 (S)	1.47	0.887
2,2',3,3',6-PeCB	84			1.50	0.0593 (S)	1.46	1.162
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	2.05	0.0482 (Q)	1.78	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	6.21	0.0482 (Q)	1.62	0.902
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	1.02	0.0522 (S)	1.69	1.154
2,2',3,4,6'-PeCB	89		K J	0.081	0.0539 (S)	1.08	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	9.13	0.0482 (Q)	1.56	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			1.66	0.0509 (S)	1.67	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	5.56	0.0512 (S)	1.54	1.121
2,2',3,5,6'-PeCB	94		U		0.0573 (S)		
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		J	0.053	0.0482 (Q)	1.67	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		K J	0.103	0.0482 (Q)	1.90	1.093
2,2',4,6,6'-PeCB	104		U		0.0482 (Q)		
2,3,3',4,4'-PeCB	105		B	5.33	0.0643 (S)	1.50	1.000
2,3,3',4,5-PeCB	106		U		0.0596 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	0.428	0.0628 (S)	1.51	0.990
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		K	1.24	0.0609 (S)	1.24	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	9.31	0.0482 (Q)	1.59	0.925
2,3,3',5,5'-PeCB	111		U		0.0482 (Q)		
2,3,3',5,6-PeCB	112		U		0.0482 (Q)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		K J	0.216	0.0653 (S)	0.88	1.001
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	11.4	0.0607 (S)	1.60	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		K J	0.076	0.0482 (Q)	1.30	0.959
2,3',4,5',6-PeCB	121		U		0.0482 (Q)		
2',3,3',4,5-PeCB	122		J	0.103	0.0622 (S)	1.40	1.010
2',3,4,4',5-PeCB	123		J	0.200	0.0638 (S)	1.39	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		J	0.103	0.0710 (S)	1.70	1.000
3,3',4,5,5'-PeCB	127		U		0.0589 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	2.31	0.0608 (S)	1.26	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	19.5	0.0827 (S)	1.25	0.929
2,2',3,3',4,5'-HxCB	130			0.927	0.0724 (S)	1.19	0.913
2,2',3,3',4,6-HxCB	131		J	0.129	0.0742 (S)	1.07	1.159
2,2',3,3',4,6'-HxCB	132			2.68	0.0724 (S)	1.19	1.173
2,2',3,3',5,5'-HxCB	133		K J	0.272	0.0666 (S)	1.57	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	1.17	0.170 (S)	1.28	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	2.99	0.0639 (S)	1.27	1.105
2,2',3,3',6,6'-HxCB	136			0.758	0.0506 (S)	1.08	1.025
2,2',3,4,4',5-HxCB	137			0.425	0.0715 (S)	1.29	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C K J	0.201	0.0663 (S)	1.45	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			1.13	0.0673 (S)	1.31	0.903
2,2',3,4,5,6-HxCB	142		U		0.0702 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		K J	0.380	0.0646 (S)	1.58	1.122
2,2',3,4,6,6'-HxCB	145		U		0.0531 (S)		
2,2',3,4',5,5'-HxCB	146			2.65	0.0630 (S)	1.26	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	7.98	0.0652 (S)	1.33	1.133
2,2',3,4',5,6'-HxCB	148		U		0.0668 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.0523 (S)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0482 (Q)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	12.6	0.0527 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0482 (Q)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	1.23	0.0580 (S)	1.19	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			0.961	0.0482 (Q)	1.18	0.938
2,3,3',4,5,5'-HxCB	159		J	0.096	0.0501 (S)	1.21	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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2,3,3',4,5',6-HxCB	161		U		0.0482 (Q)		
2,3,3',4',5,5'-HxCB	162		J	0.056	0.0516 (S)	1.37	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			0.642	0.0495 (S)	1.42	0.921
2,3,3',5,5',6-HxCB	165		U		0.0556 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			0.544	0.0482 (Q)	1.18	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.0505 (S)		
2,2',3,3',4,4',5-HpCB	170			2.54	0.0833 (S)	0.97	1.001
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	0.835	0.0786 (S)	1.04	1.162
2,2',3,3',4,5,5'-HpCB	172			0.436	0.0786 (S)	1.20	0.898
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			2.05	0.0722 (S)	0.96	1.133
2,2',3,3',4,5',6-HpCB	175		K J	0.171	0.0701 (S)	1.55	1.102
2,2',3,3',4,6,6'-HpCB	176		K J	0.340	0.0529 (S)	0.82	1.034
2,2',3,3',4',5,6-HpCB	177			2.17	0.0766 (S)	0.89	1.144
2,2',3,3',5,5',6-HpCB	178			0.781	0.0740 (S)	1.00	1.084
2,2',3,3',5,6,6'-HpCB	179			1.04	0.0515 (S)	1.20	1.009
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	5.18	0.0680 (S)	1.02	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.0761 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.0711 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C U		0.0715 (S)		
2,2',3,4,4',6,6'-HpCB	184		U		0.0520 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0562 (S)		
2,2',3,4',5,5',6-HpCB	187			4.68	0.0687 (S)	1.10	1.109
2,2',3,4',5,6,6'-HpCB	188		U		0.0531 (S)		
2,3,3',4,4',5,5'-HpCB	189		K J	0.177	0.0607 (S)	2.03	1.001
2,3,3',4,4',5,6-HpCB	190			0.502	0.0614 (S)	1.09	0.947
2,3,3',4,4',5',6-HpCB	191		K J	0.119	0.0579 (S)	2.85	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.0641 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			1.59	0.0685 (S)	0.92	0.991
2,2',3,3',4,4',5,6-OcCB	195			0.637	0.0711 (S)	1.01	0.945
2,2',3,3',4,4',5,6'-OcCB	196			0.720	0.0834 (S)	0.98	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C U		0.0608 (S)		
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	1.83	0.0873 (S)	0.77	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		J	0.265	0.0599 (S)	0.99	1.023
2,2',3,3',5,5',6,6'-OcCB	202		K	0.584	0.0784 (S)	1.20	1.001
2,2',3,4,4',5,5',6-OcCB	203			0.822	0.0801 (S)	1.00	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0610 (S)		
2,3,3',4,4',5,5',6-OcCB	205		J	0.089	0.0541 (S)	0.99	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			1.22	0.147 (S)	0.82	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207		J	0.201	0.107 (S)	0.71	1.019
2,2',3,3',4,5,5',6,6'-NoCB	208			0.439	0.113 (S)	0.88	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			1.24	0.0691 (S)	1.01	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-1_Form1A_PB3C_192S5_SJ1607904.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-03-S
Sample Collection:
06-May-2013 10:09

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-1 W
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	08-Jun-2013 **Time:** 01:17:08	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	200	**Sample Data Filename:**	**PB3C_202 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	10	**Cal. Ver. Data Filename:**	PB3C_202 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	22.6

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		K D J	0.833	0.832 (S)	1.65	1.000
3-MoCB	2		D	6.80	0.845 (S)	2.72	0.988
4-MoCB	3		K B D J	1.70	0.841 (S)	7.35	0.999
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		D	7.67	1.53 (S)	1.78	0.969
3,4-DiCB	12	12 + 13	C K D	8.23	1.44 (S)	21.0	0.986
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		X				
2,3,4',6-TeCB	64		X				
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6-TeCB	73		X				
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5-TeCB	81		X				
2,2',3,3',4-PeCB	82		X				
2,2',3,3',5-PeCB	83	83 + 99	C X				
2,2',3,3',6-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		X				
2,2',3,3',4,4',5,6-OcCB	195		X				
2,2',3,3',4,4',5,6'-OcCB	196		X				
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		X				
2,2',3,3',5,5',6,6'-OcCB	202		X				
2,2',3,4,4',5,5',6-OcCB	203		X				
2,2',3,4,4',5,6,6'-OcCB	204		X				
2,3,3',4,4',5,5',6-OcCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; D = dilution data; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-1_Form1A_PB3C_202S6_SJ1610153.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-03-S
Sample Collection:
06-May-2013 10:09

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-1
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 23:55:07	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename(s):**	**PB3C_192 S: 5, PB3C_202 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_192 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	22.6

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		6.80
Total Dichloro Biphenyls		16.0
Total Trichloro Biphenyls		31.8
Total Tetrachloro Biphenyls		57.8
Total Pentachloro Biphenyls		61.3
Total Hexachloro Biphenyls		58.8
Total Heptachloro Biphenyls		20.2
Total Octachloro Biphenyls		5.95
Total Nonachloro Biphenyls		1.86
Decachloro Biphenyl		1.24
TOTAL PCBs		262

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 17-Jun-2013 14:26:53; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-1_Form1AHT_SJ1607904.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-03-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 06-May-2013 10:09

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-1

Sample Size: 10.4 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_192 S: 5**
PB3C_202 S: 6

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			1.71	0.134	0.0001	1.71e-04	1.71e-04	
3,4,4',5-TeCB	81			0.079	0.0786	0.0003	2.37e-05	2.37e-05	
2,3,3',4,4'-PeCB	105			5.33	0.0643	0.00003	1.60e-04	1.60e-04	
2,3,4,4',5-PeCB	114		U		0.0653	0.00003	0.00e+00	9.80e-07	
2,3',4,4',5-PeCB	118			11.4	0.0607	0.00003	3.42e-04	3.42e-04	
2',3,4,4',5-PeCB	123			0.200	0.0638	0.00003	6.00e-06	6.00e-06	
3,3',4,4',5-PeCB	126			0.103	0.0710	0.1	1.03e-02	1.03e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	1.23	0.0580	0.00003	3.69e-05	3.69e-05	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			0.544	0.0482	0.00003	1.63e-05	1.63e-05	
3,3',4,4',5,5'-HxCB	169		U		0.0505	0.03	0.00e+00	7.58e-04	
2,3,3',4,4',5,5'-HpCB	189		U		0.0607	0.00003	0.00e+00	9.11e-07	
					TOTAL TEQ		0.0111	0.0118	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 17-Jun-2013 14:26:53; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-1_TEQ_SJ1607904.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-06-S
Sample Collection:
06-May-2013 10:50

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-2
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 00:59:13	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_192 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_192 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	30.5

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4			3.26	0.180 (S)	1.57	1.001
2,3-DiCB	5		U		0.105 (S)		
2,3'-DiCB	6			2.92	0.0970 (S)	1.55	1.172
2,4-DiCB	7			0.497	0.100 (S)	1.37	1.155
2,4'-DiCB	8			11.3	0.0903 (S)	1.49	1.204
2,5-DiCB	9			0.627	0.0955 (S)	1.56	1.142
2,6-DiCB	10		J	0.109	0.0989 (S)	1.79	1.013
3,3'-DiCB	11		G	21.8	0.0992 (S)	1.55	0.968
3,4-DiCB	12	12 + 13	C U		0.102 (S)		
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K G	0.633	0.0970 (S)	0.43	0.925
4,4'-DiCB	15			13.5	0.108 (S)	1.55	1.000
2,2',3-TriCB	16			3.64	0.0591 (S)	1.12	1.166
2,2',4-TriCB	17		B G	4.87	0.0499 (S)	1.05	1.137
2,2',5-TriCB	18	18 + 30	C B G	8.23	0.0489 (Q)	1.04	1.112
2,2',6-TriCB	19			0.940	0.0587 (S)	1.12	1.001
2,3,3'-TriCB	20	20 + 28	C B	38.2	0.0489 (Q)	1.03	0.849
2,3,4-TriCB	21	21 + 33	C	11.4	0.0489 (Q)	1.02	0.858
2,3,4'-TriCB	22			9.13	0.0489 (Q)	1.01	0.873
2,3,5-TriCB	23		U		0.0489 (Q)		
2,3,6-TriCB	24		K J	0.100	0.0489 (Q)	0.78	1.160
2,3',4-TriCB	25			3.27	0.0489 (Q)	0.99	0.826
2,3',5-TriCB	26	26 + 29	C	6.19	0.0489 (Q)	1.01	1.298
2,3',6-TriCB	27		G	0.501	0.0489 (Q)	1.05	1.152
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			25.7	0.0489 (Q)	1.02	0.839
2,4',6-TriCB	32			4.28	0.0489 (Q)	1.00	1.196
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.171	0.0489 (Q)	1.00	1.270
3,3',4-TriCB	35			1.49	0.0489 (Q)	1.08	0.985
3,3',5-TriCB	36			0.899	0.0489 (Q)	0.93	0.932
3,4,4'-TriCB	37		B	13.5	0.0489 (Q)	1.02	1.001
3,4,5-TriCB	38		J	0.283	0.0489 (Q)	1.11	0.968
3,4',5-TriCB	39		J	0.348	0.0489 (Q)	0.99	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	14.2	0.0846 (S)	0.81	1.331
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			7.00	0.0899 (S)	0.78	1.308
2,2',3,5-TeCB	43			0.873	0.112 (S)	0.71	1.242
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	24.9	0.0778 (S)	0.82	1.281
2,2',3,6-TeCB	45	45 + 51	C	3.07	0.0873 (S)	0.81	1.144
2,2',3,6'-TeCB	46			1.11	0.102 (S)	0.84	1.158
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			4.47	0.0859 (S)	0.74	1.269
2,2',4,5'-TeCB	49	49 + 69	C B	17.5	0.0726 (S)	0.77	1.256
2,2',4,6-TeCB	50	50 + 53	C	2.63	0.0841 (S)	0.74	1.108
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			26.6	0.0784 (S)	0.79	1.230
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		K J	0.050	0.0489 (Q)	1.03	1.001
2,3,3',4-TeCB	55			0.438	0.145 (S)	0.71	0.889
2,3,3',4'-TeCB	56		B	16.6	0.145 (S)	0.76	0.904
2,3,3',5-TeCB	57		J	0.217	0.140 (S)	0.68	0.844
2,3,3',5'-TeCB	58		J	0.169	0.142 (S)	0.76	0.851
2,3,3',6-TeCB	59	59 + 62 + 75	C	2.33	0.0638 (S)	0.77	1.297
2,3,4,4'-TeCB	60		B	9.94	0.141 (S)	0.77	0.910
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	63.3	0.137 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			1.52	0.130 (S)	0.77	0.864
2,3,4',6-TeCB	64		B	10.8	0.0625 (S)	0.79	1.344
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	37.1	0.134 (S)	0.77	0.884
2,3',4,5-TeCB	67			1.17	0.124 (S)	0.68	0.856
2,3',4,5'-TeCB	68			0.413	0.133 (S)	0.82	0.832
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			0.474	0.130 (S)	0.70	0.822
2,3',5',6-TeCB	73		U		0.0626 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B G	6.26	0.232 (S)	0.75	1.000
3,3',4,5-TeCB	78		U		0.137 (S)		
3,3',4,5'-TeCB	79			0.613	0.117 (S)	0.66	0.970
3,3',5,5'-TeCB	80		U		0.125 (S)		
3,4,4',5-TeCB	81		J	0.315	0.122 (S)	0.69	1.000
2,2',3,3',4-PeCB	82		G	3.06	0.0722 (S)	1.78	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	26.6	0.0687 (S)	1.65	0.887
2,2',3,3',6-PeCB	84			6.56	0.0783 (S)	1.54	1.162
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	8.74	0.0560 (S)	1.57	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	24.6	0.0584 (S)	1.58	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	4.61	0.0688 (S)	1.54	1.154
2,2',3,4,6'-PeCB	89		K J	0.364	0.0710 (S)	1.23	1.181
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	38.8	0.0599 (S)	1.54	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			6.69	0.0672 (S)	1.45	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	23.0	0.0675 (S)	1.58	1.120
2,2',3,5,6'-PeCB	94		K J	0.224	0.0756 (S)	1.15	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		J	0.194	0.0489 (Q)	1.35	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			0.511	0.0604 (S)	1.72	1.093
2,2',4,6,6'-PeCB	104		U		0.0489 (Q)		
2,3,3',4,4'-PeCB	105		B	21.6	0.0981 (S)	1.57	1.000
2,3,3',4,5-PeCB	106		U		0.0888 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	1.65	0.0936 (S)	1.52	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			4.36	0.0908 (S)	1.58	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	39.8	0.0498 (S)	1.56	0.925
2,3,3',5,5'-PeCB	111		U		0.0501 (S)		
2,3,3',5,6-PeCB	112		U		0.0504 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			0.952	0.0977 (S)	1.74	1.001
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	45.0	0.0947 (S)	1.55	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		J	0.322	0.0489 (Q)	1.52	0.959
2,3',4,5',6-PeCB	121		U		0.0514 (S)		
2',3,3',4,5-PeCB	122			0.485	0.0927 (S)	1.34	1.010
2',3,4,4',5-PeCB	123			0.929	0.0988 (S)	1.46	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			0.456	0.112 (S)	1.36	1.000
3,3',4,5,5'-PeCB	127		U		0.0878 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	8.61	0.0973 (S)	1.26	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	78.1	0.132 (S)	1.23	0.929
2,2',3,3',4,5'-HxCB	130			3.36	0.116 (S)	1.26	0.913
2,2',3,3',4,6-HxCB	131			0.472	0.119 (S)	1.32	1.159
2,2',3,3',4,6'-HxCB	132			12.0	0.116 (S)	1.23	1.174
2,2',3,3',5,5'-HxCB	133			1.01	0.107 (S)	1.19	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	4.28	0.272 (S)	1.33	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	13.0	0.0699 (S)	1.27	1.106
2,2',3,3',6,6'-HxCB	136			3.37	0.0553 (S)	1.28	1.026
2,2',3,4,4',5-HxCB	137			1.56	0.114 (S)	1.09	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	0.819	0.106 (S)	1.11	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			5.22	0.108 (S)	1.30	0.904
2,2',3,4,5,6-HxCB	142		U		0.112 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		U		0.0707 (S)		
2,2',3,4,6,6'-HxCB	145		U		0.0582 (S)		
2,2',3,4',5,5'-HxCB	146			9.46	0.101 (S)	1.15	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	32.6	0.104 (S)	1.28	1.134
2,2',3,4',5,6'-HxCB	148		K J G	0.114	0.0731 (S)	0.83	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		K J	0.145	0.0572 (S)	1.54	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		K J	0.066	0.0528 (S)	1.70	1.007
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	50.1	0.0843 (S)	1.25	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0489 (Q)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	5.01	0.0972 (S)	1.25	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			4.01	0.0759 (S)	1.26	0.938
2,3,3',4,5,5'-HxCB	159		K	0.420	0.0801 (S)	1.48	0.982
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.0761 (S)		
2,3,3',4',5,5'-HxCB	162		K J	0.221	0.0827 (S)	1.61	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			3.00	0.0792 (S)	1.18	0.921
2,3,3',5,5',6-HxCB	165		U		0.0890 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			2.09	0.0764 (S)	1.30	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.0834 (S)		
2,2',3,3',4,4',5-HpCB	170			11.7	0.0785 (S)	1.00	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	3.97	0.0748 (S)	1.13	1.162
2,2',3,3',4,5,5'-HpCB	172			1.91	0.0748 (S)	1.06	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			9.82	0.0686 (S)	0.99	1.133
2,2',3,3',4,5',6-HpCB	175			0.651	0.0666 (S)	0.97	1.102
2,2',3,3',4,6,6'-HpCB	176			1.44	0.0504 (S)	0.99	1.035
2,2',3,3',4',5,6-HpCB	177			9.44	0.0728 (S)	1.03	1.145
2,2',3,3',5,5',6-HpCB	178			3.85	0.0704 (S)	0.99	1.085
2,2',3,3',5,6,6'-HpCB	179			5.03	0.0490 (S)	0.98	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	22.9	0.0630 (S)	1.05	1.000
2,2',3,4,4',5,6-HpCB	181		K J	0.075	0.0724 (S)	1.78	1.156
2,2',3,4,4',5,6'-HpCB	182		J	0.099	0.0676 (S)	0.99	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	8.50	0.0680 (S)	1.00	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.0495 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0534 (S)		
2,2',3,4',5,5',6-HpCB	187			21.0	0.0653 (S)	1.01	1.110
2,2',3,4',5,6,6'-HpCB	188		J	0.114	0.0489 (Q)	0.91	1.001
2,3,3',4,4',5,5'-HpCB	189			0.516	0.0995 (S)	0.93	1.000
2,3,3',4,4',5,6-HpCB	190			2.15	0.0584 (S)	1.05	0.947
2,3,3',4,4',5',6-HpCB	191		K	0.452	0.0551 (S)	0.89	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.0609 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			6.44	0.0791 (S)	0.90	0.991
2,2',3,3',4,4',5,6-OcCB	195			2.70	0.0821 (S)	1.00	0.946
2,2',3,3',4,4',5,6'-OcCB	196			3.30	0.0831 (S)	0.82	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C	0.555	0.0606 (S)	0.89	1.047
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	9.42	0.0870 (S)	0.88	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			1.19	0.0596 (S)	0.81	1.023
2,2',3,3',5,5',6,6'-OcCB	202			2.70	0.0717 (S)	0.92	1.001
2,2',3,4,4',5,5',6-OcCB	203			4.12	0.0797 (S)	0.91	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0607 (S)		
2,3,3',4,4',5,5',6-OcCB	205			0.397	0.0672 (S)	0.78	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			4.96	0.149 (S)	0.76	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207			0.730	0.106 (S)	0.73	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			1.84	0.110 (S)	0.77	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			4.92	0.0704 (S)	1.12	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-2_Form1A_PB3C_192S6_SJ1607906.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-06-S
Sample Collection:
06-May-2013 10:50

Form 1A

PCB CONGENER ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-2 W
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	08-Jun-2013 **Time:** 02:21:32	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	200	**Sample Data Filename:**	**PB3C_202 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	10	**Cal. Ver. Data Filename:**	PB3C_202 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	30.5

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		D J	2.02	0.822 (S)	3.06	1.001
3-MoCB	2		D	17.0	0.837 (S)	3.13	0.988
4-MoCB	3		B D J	2.91	0.834 (S)	3.43	1.000
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		X				
2,3,4',6-TeCB	64		X				
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6-TeCB	73		X				
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5-TeCB	81		X				
2,2',3,3',4-PeCB	82		X				
2,2',3,3',5-PeCB	83	83 + 99	C X				
2,2',3,3',6-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		X				
2,2',3,3',4,4',5,6-OcCB	195		X				
2,2',3,3',4,4',5,6'-OcCB	196		X				
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		X				
2,2',3,3',5,5',6,6'-OcCB	202		X				
2,2',3,4,4',5,5',6-OcCB	203		X				
2,2',3,4,4',5,6,6'-OcCB	204		X				
2,3,3',4,4',5,5',6-OcCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; D = dilution data; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-2_Form1A_PB3C_202S7_SJ1610155.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-06-S
Sample Collection:
06-May-2013 10:50

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-2
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 00:59:13	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename(s):**	**PB3C_192 S: 6, PB3C_202 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_192 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	30.5

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		21.9
Total Dichloro Biphenyls		54.0
Total Trichloro Biphenyls		133
Total Tetrachloro Biphenyls		254
Total Pentachloro Biphenyls		259
Total Hexachloro Biphenyls		238
Total Heptachloro Biphenyls		103
Total Octachloro Biphenyls		30.8
Total Nonachloro Biphenyls		7.53
Decachloro Biphenyl		4.92
TOTAL PCBs		1110

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-2_Form1AHT_SJ1607906.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-06-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 06-May-2013 10:50

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-2

Sample Size: 10.2 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_192 S: 6**
PB3C_202 S: 7

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			6.26	0.232	0.0001	6.26e-04	6.26e-04	
3,4,4',5-TeCB	81			0.315	0.122	0.0003	9.45e-05	9.45e-05	
2,3,3',4,4'-PeCB	105			21.6	0.0981	0.00003	6.48e-04	6.48e-04	
2,3,4,4',5-PeCB	114			0.952	0.0977	0.00003	2.86e-05	2.86e-05	
2,3',4,4',5-PeCB	118			45.0	0.0947	0.00003	1.35e-03	1.35e-03	
2',3,4,4',5-PeCB	123			0.929	0.0988	0.00003	2.79e-05	2.79e-05	
3,3',4,4',5-PeCB	126			0.456	0.112	0.1	4.56e-02	4.56e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	5.01	0.0972	0.00003	1.50e-04	1.50e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			2.09	0.0764	0.00003	6.27e-05	6.27e-05	
3,3',4,4',5,5'-HxCB	169		U		0.0834	0.03	0.00e+00	1.25e-03	
2,3,3',4,4',5,5'-HpCB	189			0.516	0.0995	0.00003	1.55e-05	1.55e-05	
					TOTAL TEQ		0.0486	0.0499	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 17-Jun-2013 14:26:53; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-2_TEQ_SJ1607906.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-07-S
Sample Collection:
06-May-2013 11:10

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-3
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 02:03:30	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_192 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_192 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	16.8

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		B	0.527	0.0544 (S)	1.16	1.133
2,2',5-TriCB	18	18 + 30	C B	1.01	0.0478 (Q)	1.02	1.108
2,2',6-TriCB	19		J	0.102	0.0631 (S)	1.16	1.000
2,3,3'-TriCB	20	20 + 28	C B	4.78	0.0478 (Q)	1.00	0.850
2,3,4-TriCB	21	21 + 33	C	1.40	0.0478 (Q)	1.07	0.859
2,3,4'-TriCB	22			1.16	0.0478 (Q)	0.95	0.875
2,3,5-TriCB	23		U		0.0478 (Q)		
2,3,6-TriCB	24		J	0.068	0.0478 (Q)	1.15	1.152
2,3',4-TriCB	25		J	0.305	0.0478 (Q)	1.01	0.828
2,3',5-TriCB	26	26 + 29	C	0.633	0.0478 (Q)	1.04	1.291
2,3',6-TriCB	27		U		0.0478 (Q)		
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			3.15	0.0478 (Q)	1.08	0.839
2,4',6-TriCB	32			0.446	0.0478 (Q)	1.07	1.192
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U		0.0478 (Q)		
3,3',4-TriCB	35		J	0.220	0.0478 (Q)	0.91	0.985
3,3',5-TriCB	36		J	0.172	0.0478 (Q)	0.95	0.932
3,4,4'-TriCB	37		B	1.86	0.0478 (Q)	1.00	1.001
3,4,5-TriCB	38		K J	0.060	0.0478 (Q)	0.55	0.968
3,4',5-TriCB	39		U		0.0478 (Q)		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	1.56	0.0947 (S)	0.83	1.325
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			0.782	0.101 (S)	0.72	1.301
2,2',3,5-TeCB	43		U		0.125 (S)		
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	3.05	0.0870 (S)	0.79	1.275
2,2',3,6-TeCB	45	45 + 51	C J	0.358	0.0978 (S)	0.83	1.139
2,2',3,6'-TeCB	46		J	0.152	0.114 (S)	0.68	1.153
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			0.436	0.0962 (S)	0.81	1.264
2,2',4,5'-TeCB	49	49 + 69	C B	1.96	0.0813 (S)	0.81	1.249
2,2',4,6-TeCB	50	50 + 53	C J	0.276	0.0941 (S)	0.85	1.105
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			3.16	0.0878 (S)	0.71	1.226
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0478 (Q)		
2,3,3',4-TeCB	55		U		0.0822 (S)		
2,3,3',4'-TeCB	56		B	1.96	0.0823 (S)	0.76	0.905
2,3,3',5-TeCB	57		U		0.0796 (S)		
2,3,3',5'-TeCB	58		U		0.0804 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C J	0.304	0.0715 (S)	0.79	1.292
2,3,4,4'-TeCB	60		B	1.23	0.0800 (S)	0.76	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	8.50	0.0779 (S)	0.77	0.876
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		J	0.172	0.0736 (S)	0.84	0.865
2,3,4',6-TeCB	64		B	1.36	0.0700 (S)	0.84	1.337
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	4.78	0.0759 (S)	0.76	0.885
2,3',4,5-TeCB	67		K J	0.157	0.0705 (S)	0.58	0.857
2,3',4,5'-TeCB	68		U		0.0752 (S)		
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		U		0.0737 (S)		
2,3',5',6-TeCB	73		U		0.0701 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B	0.993	0.134 (S)	0.74	1.000
3,3',4,5-TeCB	78		U		0.0779 (S)		
3,3',4,5'-TeCB	79		U		0.0663 (S)		
3,3',5,5'-TeCB	80		U		0.0711 (S)		
3,4,4',5-TeCB	81		U		0.0659 (S)		
2,2',3,3',4-PeCB	82		K J G	0.376	0.0709 (S)	1.93	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	3.60	0.0674 (S)	1.75	0.887
2,2',3,3',6-PeCB	84			0.969	0.0768 (S)	1.64	1.161
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	1.11	0.0549 (S)	1.70	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	3.90	0.0573 (S)	1.56	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	0.592	0.0675 (S)	1.77	1.153
2,2',3,4,6'-PeCB	89		J	0.070	0.0697 (S)	1.55	1.181
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	5.14	0.0588 (S)	1.61	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			0.901	0.0659 (S)	1.44	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	3.16	0.0662 (S)	1.70	1.119
2,2',3,5,6'-PeCB	94		U		0.0742 (S)		
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		U		0.0478 (Q)		
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		K J	0.064	0.0592 (S)	2.17	1.092
2,2',4,6,6'-PeCB	104		U		0.0483 (S)		
2,3,3',4,4'-PeCB	105		B	2.99	0.0801 (S)	1.58	1.000
2,3,3',4,5-PeCB	106		U		0.0711 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C J	0.244	0.0749 (S)	1.72	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			0.605	0.0726 (S)	1.65	0.998
2,3,3',4',6-PeCB	110	110 + 115	C	5.72	0.0488 (S)	1.59	0.925
2,3,3',5,5'-PeCB	111		U		0.0491 (S)		
2,3,3',5,6-PeCB	112		U		0.0494 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		J	0.131	0.0736 (S)	1.33	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	6.52	0.0743 (S)	1.55	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		U		0.0478 (Q)		
2,3',4,5',6-PeCB	121		U		0.0504 (S)		
2',3,3',4,5-PeCB	122		K J	0.086	0.0742 (S)	1.17	1.009
2',3,4,4',5-PeCB	123		J	0.115	0.0751 (S)	1.39	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		U		0.0853 (S)		
3,3',4,5,5'-PeCB	127		U		0.0702 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	1.24	0.0717 (S)	1.23	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	10.8	0.0975 (S)	1.28	0.929
2,2',3,3',4,5'-HxCB	130		K	0.532	0.0854 (S)	1.52	0.913
2,2',3,3',4,6-HxCB	131		J	0.111	0.0875 (S)	1.25	1.159
2,2',3,3',4,6'-HxCB	132			1.71	0.0854 (S)	1.42	1.174
2,2',3,3',5,5'-HxCB	133		K J	0.130	0.0785 (S)	2.16	1.190
2,2',3,3',5,6-HxCB	134	134 + 143	C K	0.631	0.200 (S)	1.64	1.141
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	1.58	0.0550 (S)	1.36	1.106
2,2',3,3',6,6'-HxCB	136		K	0.398	0.0478 (Q)	1.63	1.026
2,2',3,4,4',5-HxCB	137		K J	0.244	0.0843 (S)	1.00	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C K J	0.114	0.0781 (S)	0.85	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			0.755	0.0793 (S)	1.18	0.904
2,2',3,4,5,6-HxCB	142		U		0.0827 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		U		0.0556 (S)		
2,2',3,4,6,6'-HxCB	145		U		0.0478 (Q)		
2,2',3,4',5,5'-HxCB	146			1.43	0.0742 (S)	1.20	0.885
2,2',3,4',5,6-HxCB	147	147 + 149	C B	4.23	0.0769 (S)	1.35	1.134
2,2',3,4',5,6'-HxCB	148		U		0.0575 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.0478 (Q)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0478 (Q)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	7.06	0.0621 (S)	1.28	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0478 (Q)		
2,3,3',4,4',5-HxCB	156	156 + 157	C J	0.678	0.0695 (S)	1.20	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			0.528	0.0559 (S)	1.08	0.938
2,3,3',4,5,5'-HxCB	159		K J	0.065	0.0590 (S)	2.52	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.0560 (S)		
2,3,3',4',5,5'-HxCB	162		U		0.0609 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			0.425	0.0583 (S)	1.22	0.921
2,3,3',5,5',6-HxCB	165		U		0.0656 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		K J	0.297	0.0554 (S)	0.98	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.0583 (S)		
2,2',3,3',4,4',5-HpCB	170		K	1.51	0.0763 (S)	1.21	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	0.483	0.0742 (S)	1.06	1.161
2,2',3,3',4,5,5'-HpCB	172		K J	0.224	0.0742 (S)	1.26	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			1.17	0.0681 (S)	1.15	1.132
2,2',3,3',4,5',6-HpCB	175		K J	0.068	0.0661 (S)	0.60	1.102
2,2',3,3',4,6,6'-HpCB	176		J	0.186	0.0500 (S)	0.96	1.033
2,2',3,3',4',5,6-HpCB	177			1.05	0.0723 (S)	1.07	1.144
2,2',3,3',5,5',6-HpCB	178			0.461	0.0699 (S)	1.00	1.085
2,2',3,3',5,6,6'-HpCB	179			0.633	0.0486 (S)	1.08	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	3.12	0.0620 (S)	0.99	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.0718 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.0671 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C K	0.940	0.0675 (S)	1.31	1.126
2,2',3,4,4',6,6'-HpCB	184		U		0.0491 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0530 (S)		
2,2',3,4',5,5',6-HpCB	187			2.53	0.0648 (S)	1.10	1.109
2,2',3,4',5,6,6'-HpCB	188		U		0.0494 (S)		
2,3,3',4,4',5,5'-HpCB	189		J	0.111	0.0956 (S)	1.17	1.001
2,3,3',4,4',5,6-HpCB	190		J	0.271	0.0580 (S)	1.12	0.947
2,3,3',4,4',5',6-HpCB	191		U		0.0547 (S)		
2,3,3',4,5,5',6-HpCB	192		U		0.0605 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			0.849	0.111 (S)	0.84	0.991
2,2',3,3',4,4',5,6-OcCB	195			0.386	0.115 (S)	0.87	0.945
2,2',3,3',4,4',5,6'-OcCB	196		J	0.336	0.0820 (S)	0.86	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C J	0.119	0.0598 (S)	0.91	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	1.14	0.0859 (S)	0.89	1.114
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		J	0.136	0.0589 (S)	0.99	1.022
2,2',3,3',5,5',6,6'-OcCB	202		J	0.360	0.0796 (S)	0.83	1.000
2,2',3,4,4',5,5',6-OcCB	203			0.486	0.0787 (S)	0.87	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0600 (S)		
2,3,3',4,4',5,5',6-OcCB	205		U		0.0849 (S)		
2,2',3,3',4,4',5,5',6-NoCB	206		K	0.719	0.146 (S)	0.64	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207		U		0.107 (S)		
2,2',3,3',4,5,5',6,6'-NoCB	208		J	0.261	0.113 (S)	0.75	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			0.952	0.0782 (S)	1.09	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-3_Form1A_PB3C_192S7_SJ1607908.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-07-S
Sample Collection:
06-May-2013 11:10

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-3 W
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	07-Jun-2013 **Time:** 04:29:28	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	200	**Sample Data Filename:**	**PB3C_200 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	10	**Cal. Ver. Data Filename:**	PB3C_200 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	16.8

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		U D		1.12 (S)		
3-MoCB	2		D J	2.90	1.08 (S)	2.81	0.988
4-MoCB	3		B D J	1.59	1.01 (S)	3.28	1.000
2,2'-DiCB	4		U D		1.94 (S)		
2,3-DiCB	5		U D		1.36 (S)		
2,3'-DiCB	6		U D		1.22 (S)		
2,4-DiCB	7		U D		1.26 (S)		
2,4'-DiCB	8		U D		1.13 (S)		
2,5-DiCB	9		U D		1.21 (S)		
2,6-DiCB	10		U D		1.26 (S)		
3,3'-DiCB	11		D	5.70	1.27 (S)	1.60	0.968
3,4-DiCB	12	12 + 13	C K D	8.72	1.23 (S)	21.2	0.985
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U D		1.22 (S)		
4,4'-DiCB	15		K D J	2.20	1.45 (S)	1.27	1.000
2,2',3-TriCB	16		U D		1.46 (S)		
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		X				
2,3,4',6-TeCB	64		X				
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6-TeCB	73		X				
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5-TeCB	81		X				
2,2',3,3',4-PeCB	82		X				
2,2',3,3',5-PeCB	83	83 + 99	C X				
2,2',3,3',6-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		X				
2,2',3,3',4,4',5,6-OcCB	195		X				
2,2',3,3',4,4',5,6'-OcCB	196		X				
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		X				
2,2',3,3',5,5',6,6'-OcCB	202		X				
2,2',3,4,4',5,5',6-OcCB	203		X				
2,2',3,4,4',5,6,6'-OcCB	204		X				
2,3,3',4,4',5,5',6-OcCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; D = dilution data; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-3_Form1A_PB3C_200S8_SJ1610049.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-07-S
Sample Collection:
06-May-2013 11:10

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-3
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 02:03:30	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename(s):**	**PB3C_192 S: 7, PB3C_200 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_192 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	16.8

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		4.49
Total Dichloro Biphenyls		5.70
Total Trichloro Biphenyls		15.8
Total Tetrachloro Biphenyls		31.0
Total Pentachloro Biphenyls		35.8
Total Hexachloro Biphenyls		30.5
Total Heptachloro Biphenyls		10.0
Total Octachloro Biphenyls		3.81
Total Nonachloro Biphenyls		0.261
Decachloro Biphenyl		0.952
TOTAL PCBs		138

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 17-Jun-2013 14:26:53; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-3_Form1AHT_SJ1607908.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-07-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 06-May-2013 11:10

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-3

Sample Size: 10.5 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_192 S: 7**
PB3C_200 S: 8

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			0.993	0.134	0.0001	9.93e-05	9.93e-05	
3,4,4',5-TeCB	81		U		0.0659	0.0003	0.00e+00	9.89e-06	
2,3,3',4,4'-PeCB	105			2.99	0.0801	0.00003	8.97e-05	8.97e-05	
2,3,4,4',5-PeCB	114			0.131	0.0736	0.00003	3.93e-06	3.93e-06	
2,3',4,4',5-PeCB	118			6.52	0.0743	0.00003	1.96e-04	1.96e-04	
2',3,4,4',5-PeCB	123			0.115	0.0751	0.00003	3.45e-06	3.45e-06	
3,3',4,4',5-PeCB	126		U		0.0853	0.1	0.00e+00	4.27e-03	
2,3,3',4,4',5-HxCB	156	156 + 157	C	0.678	0.0695	0.00003	2.03e-05	2.03e-05	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167		U		0.0554	0.00003	0.00e+00	8.31e-07	
3,3',4,4',5,5'-HxCB	169		U		0.0583	0.03	0.00e+00	8.75e-04	
2,3,3',4,4',5,5'-HpCB	189			0.111	0.0956	0.00003	3.33e-06	3.33e-06	
					TOTAL TEQ		0.000416	0.00557	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-3_TEQ_SJ1607908.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-12-S
Sample Collection:
06-May-2013 11:30

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
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		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-4
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 03:07:34	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_192 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_192 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	37.2

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			2.04	0.0475 (Q)	3.30	1.001
3-MoCB	2			19.4	0.0475 (Q)	3.05	0.988
4-MoCB	3		B	3.15	0.0475 (Q)	3.31	1.001
2,2'-DiCB	4			2.03	0.196 (S)	1.59	1.001
2,3-DiCB	5		K J	0.113	0.108 (S)	1.19	1.197
2,3'-DiCB	6			1.33	0.0996 (S)	1.52	1.175
2,4-DiCB	7			0.751	0.103 (S)	1.74	1.159
2,4'-DiCB	8			7.88	0.0928 (S)	1.52	1.206
2,5-DiCB	9			0.589	0.0981 (S)	1.40	1.144
2,6-DiCB	10		U		0.102 (S)		
3,3'-DiCB	11			18.2	0.102 (S)	1.54	0.969
3,4-DiCB	12	12 + 13	C	1.93	0.105 (S)	1.68	0.985
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	0.628	0.0997 (S)	0.62	0.926
4,4'-DiCB	15			11.4	0.109 (S)	1.51	1.002
2,2',3-TriCB	16			2.92	0.0475 (Q)	1.07	1.165
2,2',4-TriCB	17		B	4.03	0.0475 (Q)	1.01	1.138
2,2',5-TriCB	18	18 + 30	C B	5.95	0.0475 (Q)	1.00	1.113
2,2',6-TriCB	19			0.615	0.0475 (Q)	1.03	1.001
2,3,3'-TriCB	20	20 + 28	C B	28.5	0.0475 (Q)	1.02	0.849
2,3,4-TriCB	21	21 + 33	C	8.14	0.0475 (Q)	1.02	0.857
2,3,4'-TriCB	22			6.94	0.0475 (Q)	1.01	0.873
2,3,5-TriCB	23		U		0.0475 (Q)		
2,3,6-TriCB	24		J	0.076	0.0475 (Q)	0.96	1.158
2,3',4-TriCB	25			1.70	0.0475 (Q)	1.07	0.825
2,3',5-TriCB	26	26 + 29	C	3.42	0.0475 (Q)	1.01	1.301
2,3',6-TriCB	27			0.654	0.0475 (Q)	1.08	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			17.7	0.0475 (Q)	1.01	0.837
2,4',6-TriCB	32			2.71	0.0475 (Q)	1.04	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.115	0.0475 (Q)	0.94	1.273
3,3',4-TriCB	35			1.21	0.0475 (Q)	1.02	0.985
3,3',5-TriCB	36			0.848	0.0475 (Q)	1.02	0.932
3,4,4'-TriCB	37		B	10.1	0.0475 (Q)	1.04	1.001
3,4,5-TriCB	38			0.426	0.0475 (Q)	1.06	0.968
3,4',5-TriCB	39		J	0.265	0.0475 (Q)	1.15	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	8.55	0.0652 (S)	0.78	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			4.86	0.0692 (S)	0.82	1.311
2,2',3,5-TeCB	43			0.585	0.0861 (S)	0.70	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	18.7	0.0599 (S)	0.79	1.285
2,2',3,6-TeCB	45	45 + 51	C	2.14	0.0673 (S)	0.78	1.147
2,2',3,6'-TeCB	46			0.548	0.0783 (S)	0.71	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			2.72	0.0662 (S)	0.84	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	11.9	0.0559 (S)	0.79	1.258
2,2',4,6-TeCB	50	50 + 53	C	1.56	0.0648 (S)	0.67	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			18.5	0.0604 (S)	0.78	1.233
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0475 (Q)		
2,3,3',4-TeCB	55		U		0.138 (S)		
2,3,3',4'-TeCB	56		B	10.8	0.138 (S)	0.75	0.905
2,3,3',5-TeCB	57		K J	0.165	0.134 (S)	0.90	0.844
2,3,3',5'-TeCB	58		U		0.135 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C	1.57	0.0492 (S)	0.75	1.301
2,3,4,4'-TeCB	60		B	6.70	0.134 (S)	0.76	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	43.2	0.131 (S)	0.76	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			1.08	0.124 (S)	0.74	0.864
2,3,4',6-TeCB	64		B	7.53	0.0482 (S)	0.79	1.347
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	24.3	0.127 (S)	0.77	0.884
2,3',4,5-TeCB	67			0.808	0.118 (S)	0.71	0.856
2,3',4,5'-TeCB	68			0.527	0.126 (S)	0.77	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			0.395	0.124 (S)	0.75	0.823
2,3',5',6-TeCB	73		U		0.0482 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B	4.72	0.199 (S)	0.73	1.000
3,3',4,5-TeCB	78		U		0.131 (S)		
3,3',4,5'-TeCB	79			0.563	0.111 (S)	0.69	0.971
3,3',5,5'-TeCB	80		U		0.119 (S)		
3,4,4',5-TeCB	81		K J	0.277	0.121 (S)	1.00	1.000
2,2',3,3',4-PeCB	82			2.07	0.0590 (S)	1.51	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	20.8	0.0561 (S)	1.53	0.886
2,2',3,3',6-PeCB	84			4.96	0.0639 (S)	1.51	1.162
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	6.39	0.0475 (Q)	1.55	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	17.6	0.0477 (S)	1.61	0.902
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	3.28	0.0562 (S)	1.56	1.154
2,2',3,4,6'-PeCB	89		K J	0.240	0.0580 (S)	2.19	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	28.7	0.0489 (S)	1.59	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			4.92	0.0548 (S)	1.63	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	16.8	0.0551 (S)	1.64	1.120
2,2',3,5,6'-PeCB	94		K J	0.132	0.0617 (S)	2.42	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		J	0.140	0.0475 (Q)	1.77	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		K J	0.331	0.0493 (S)	2.10	1.093
2,2',4,6,6'-PeCB	104		U		0.0475 (Q)		
2,3,3',4,4'-PeCB	105		B	15.2	0.103 (S)	1.57	1.000
2,3,3',4,5-PeCB	106		U		0.0929 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	1.12	0.0980 (S)	1.41	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			3.16	0.0950 (S)	1.51	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	29.5	0.0475 (Q)	1.65	0.925
2,3,3',5,5'-PeCB	111		K J	0.085	0.0475 (Q)	1.27	0.947
2,3,3',5,6-PeCB	112		U		0.0475 (Q)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			0.709	0.104 (S)	1.59	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	32.7	0.0973 (S)	1.55	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		K J G	0.270	0.0475 (Q)	1.23	0.959
2,3',4,5',6-PeCB	121		U		0.0475 (Q)		
2',3,3',4,5-PeCB	122		J	0.348	0.0970 (S)	1.45	1.010
2',3,4,4',5-PeCB	123			0.740	0.106 (S)	1.57	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			0.488	0.117 (S)	1.56	1.000
3,3',4,5,5'-PeCB	127		U		0.0919 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	6.35	0.0547 (S)	1.24	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	54.9	0.0744 (S)	1.25	0.929
2,2',3,3',4,5'-HxCB	130			2.60	0.0652 (S)	1.29	0.913
2,2',3,3',4,6-HxCB	131		J	0.267	0.0668 (S)	1.19	1.159
2,2',3,3',4,6'-HxCB	132			8.11	0.0652 (S)	1.26	1.174
2,2',3,3',5,5'-HxCB	133			0.748	0.0599 (S)	1.25	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	3.30	0.153 (S)	1.17	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	9.22	0.0475 (Q)	1.29	1.105
2,2',3,3',6,6'-HxCB	136			2.53	0.0475 (Q)	1.28	1.025
2,2',3,4,4',5-HxCB	137		K	1.30	0.0643 (S)	1.44	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	0.559	0.0596 (S)	1.18	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			2.84	0.0605 (S)	1.23	0.903
2,2',3,4,5,6-HxCB	142		U		0.0631 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			0.969	0.0475 (Q)	1.17	1.122
2,2',3,4,6,6'-HxCB	145		U		0.0475 (Q)		
2,2',3,4',5,5'-HxCB	146			6.50	0.0567 (S)	1.31	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	23.4	0.0587 (S)	1.28	1.133
2,2',3,4',5,6'-HxCB	148		K J G	0.052	0.0475 (Q)	1.49	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		K J	0.072	0.0475 (Q)	1.83	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		K J	0.048	0.0475 (Q)	0.78	1.007
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	36.5	0.0475 (Q)	1.27	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		K J	0.052	0.0475 (Q)	1.73	1.001
2,3,3',4,4',5-HxCB	156	156 + 157	C	3.72	0.0543 (S)	1.31	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			2.60	0.0475 (Q)	1.13	0.938
2,3,3',4,5,5'-HxCB	159		J	0.326	0.0475 (Q)	1.32	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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2,3,3',4,5',6-HxCB	161		U		0.0475 (Q)		
2,3,3',4',5,5'-HxCB	162		J	0.207	0.0475 (Q)	1.07	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			1.88	0.0475 (Q)	1.22	0.921
2,3,3',5,5',6-HxCB	165		K J	0.069	0.0500 (S)	1.60	0.879
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			1.46	0.0475 (Q)	1.17	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.126 (Q)		
2,2',3,3',4,4',5-HpCB	170			7.51	0.0723 (S)	1.04	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	2.32	0.0698 (S)	0.96	1.162
2,2',3,3',4,5,5'-HpCB	172			1.38	0.0697 (S)	0.97	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			6.20	0.0640 (S)	1.10	1.132
2,2',3,3',4,5',6-HpCB	175			0.417	0.0622 (S)	1.19	1.102
2,2',3,3',4,6,6'-HpCB	176			0.874	0.0475 (Q)	0.90	1.034
2,2',3,3',4',5,6-HpCB	177			5.98	0.0680 (S)	1.02	1.144
2,2',3,3',5,5',6-HpCB	178			2.57	0.0657 (S)	1.02	1.084
2,2',3,3',5,6,6'-HpCB	179			3.10	0.0475 (Q)	1.00	1.009
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	15.1	0.0603 (S)	1.06	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.0675 (S)		
2,2',3,4,4',5,6'-HpCB	182		J	0.140	0.0631 (S)	0.91	1.114
2,2',3,4,4',5',6-HpCB	183	183 + 185	C U		0.0635 (S)		
2,2',3,4,4',6,6'-HpCB	184		U		0.0475 (Q)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0499 (S)		
2,2',3,4',5,5',6-HpCB	187			14.3	0.0609 (S)	1.04	1.109
2,2',3,4',5,6,6'-HpCB	188		J	0.074	0.0475 (Q)	1.15	1.000
2,3,3',4,4',5,5'-HpCB	189		K	0.450	0.0804 (S)	0.78	1.001
2,3,3',4,4',5,6-HpCB	190			1.40	0.0545 (S)	1.08	0.947
2,3,3',4,4',5',6-HpCB	191		J	0.252	0.0514 (S)	1.09	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.0569 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			4.17	0.0775 (S)	0.92	0.991
2,2',3,3',4,4',5,6-OcCB	195			1.67	0.0804 (S)	0.90	0.945
2,2',3,3',4,4',5,6'-OcCB	196			2.28	0.0704 (S)	0.90	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C K G	0.501	0.0513 (S)	1.13	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	6.30	0.0737 (S)	0.90	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			0.863	0.0505 (S)	0.91	1.023
2,2',3,3',5,5',6,6'-OcCB	202			1.78	0.0606 (S)	0.96	1.000
2,2',3,4,4',5,5',6-OcCB	203			2.92	0.0675 (S)	0.96	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0514 (S)		
2,3,3',4,4',5,5',6-OcCB	205		J	0.269	0.0660 (S)	0.87	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			3.86	0.165 (S)	0.79	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			0.578	0.118 (S)	0.84	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			1.44	0.124 (S)	0.78	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			3.73	0.0779 (S)	1.15	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-4_Form1A_PB3C_192S8_SJ1607910.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-12-S
Sample Collection:
06-May-2013 11:30

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-4
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 03:07:34	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_192 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_192 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	37.2

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		24.6
Total Dichloro Biphenyls		44.1
Total Trichloro Biphenyls		96.3
Total Tetrachloro Biphenyls		172
Total Pentachloro Biphenyls		190
Total Hexachloro Biphenyls		169
Total Heptachloro Biphenyls		61.6
Total Octachloro Biphenyls		20.3
Total Nonachloro Biphenyls		5.88
Decachloro Biphenyl		3.73
TOTAL PCBs		787

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 17-Jun-2013 14:26:53; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-4_Form1AHT_SJ1607910.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-12-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	06-May-2013 11:30		
Contract No.:	4273	**Project No.**	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Matrix:	SOLID	**Lab Sample I.D.:**	L19652-4
Sample Size:	10.5 g (dry)	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg (dry weight basis)	**Sample Data Filename(s):**	**PB3C_192 S: 8**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			4.72	0.199	0.0001	4.72e-04	4.72e-04	
3,4,4',5-TeCB	81		U		0.121	0.0003	0.00e+00	1.82e-05	
2,3,3',4,4'-PeCB	105			15.2	0.103	0.00003	4.56e-04	4.56e-04	
2,3,4,4',5-PeCB	114			0.709	0.104	0.00003	2.13e-05	2.13e-05	
2,3',4,4',5-PeCB	118			32.7	0.0973	0.00003	9.81e-04	9.81e-04	
2',3,4,4',5-PeCB	123			0.740	0.106	0.00003	2.22e-05	2.22e-05	
3,3',4,4',5-PeCB	126			0.488	0.117	0.1	4.88e-02	4.88e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	3.72	0.0543	0.00003	1.12e-04	1.12e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			1.46	0.0475	0.00003	4.38e-05	4.38e-05	
3,3',4,4',5,5'-HxCB	169		U		0.126	0.03	0.00e+00	1.89e-03	
2,3,3',4,4',5,5'-HpCB	189		U		0.0804	0.00003	0.00e+00	1.21e-06	
					TOTAL TEQ		0.0509	0.0528	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-10-S
Sample Collection:
06-May-2013 12:10

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-5
Matrix:	SOLID	**Sample Size:**	11.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 04:11:37	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_192 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_192 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	16.4

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4			0.842	0.145 (S)	1.44	1.001
2,3-DiCB	5		U		0.0840 (S)		
2,3'-DiCB	6		K	0.467	0.0778 (S)	1.26	1.173
2,4-DiCB	7		K J	0.311	0.0803 (S)	1.14	1.155
2,4'-DiCB	8			2.77	0.0725 (S)	1.45	1.204
2,5-DiCB	9		K	0.365	0.0766 (S)	1.03	1.142
2,6-DiCB	10		U		0.0794 (S)		
3,3'-DiCB	11			6.92	0.0796 (S)	1.68	0.969
3,4-DiCB	12	12 + 13	C K G	5.74	0.0817 (S)	17.4	0.986
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K J	0.325	0.0779 (S)	0.48	0.925
4,4'-DiCB	15		X				
2,2',3-TriCB	16			0.873	0.0526 (S)	0.98	1.167
2,2',4-TriCB	17		B	1.18	0.0444 (S)	0.99	1.138
2,2',5-TriCB	18	18 + 30	C B	1.79	0.0437 (Q)	1.07	1.113
2,2',6-TriCB	19		J	0.275	0.0544 (S)	1.15	1.000
2,3,3'-TriCB	20	20 + 28	C B	9.94	0.0437 (Q)	1.04	0.849
2,3,4-TriCB	21	21 + 33	C	2.52	0.0437 (Q)	1.02	0.857
2,3,4'-TriCB	22			2.25	0.0437 (Q)	1.00	0.873
2,3,5-TriCB	23		U		0.0437 (Q)		
2,3,6-TriCB	24		K J G	0.051	0.0437 (Q)	0.74	1.159
2,3',4-TriCB	25			0.596	0.0437 (Q)	1.03	0.826
2,3',5-TriCB	26	26 + 29	C	1.19	0.0437 (Q)	0.98	1.299
2,3',6-TriCB	27		J G	0.088	0.0437 (Q)	1.10	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			6.10	0.0437 (Q)	1.03	0.838
2,4',6-TriCB	32			1.14	0.0437 (Q)	1.13	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U		0.0437 (Q)		
3,3',4-TriCB	35			0.439	0.0437 (Q)	0.99	0.985
3,3',5-TriCB	36		J	0.267	0.0437 (Q)	1.15	0.932
3,4,4'-TriCB	37		B	3.76	0.0437 (Q)	0.99	1.001
3,4,5-TriCB	38		J	0.201	0.0437 (Q)	1.06	0.968
3,4',5-TriCB	39		J	0.064	0.0437 (Q)	1.14	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	2.86	0.0833 (S)	0.75	1.331
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			1.58	0.0885 (S)	0.79	1.307
2,2',3,5-TeCB	43		K J	0.166	0.110 (S)	1.08	1.241
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	5.85	0.0765 (S)	0.79	1.281
2,2',3,6-TeCB	45	45 + 51	C	0.695	0.0860 (S)	0.81	1.143
2,2',3,6'-TeCB	46		J	0.193	0.100 (S)	0.72	1.157
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			0.868	0.0846 (S)	0.75	1.268
2,2',4,5'-TeCB	49	49 + 69	C B	4.05	0.0715 (S)	0.80	1.254
2,2',4,6-TeCB	50	50 + 53	C	0.569	0.0828 (S)	0.78	1.108
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			5.97	0.0772 (S)	0.76	1.230
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0437 (Q)		
2,3,3',4-TeCB	55		U		0.106 (S)		
2,3,3',4'-TeCB	56		B	3.97	0.106 (S)	0.80	0.905
2,3,3',5-TeCB	57		U		0.103 (S)		
2,3,3',5'-TeCB	58		U		0.104 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C	0.533	0.0628 (S)	0.76	1.297
2,3,4,4'-TeCB	60		B	2.67	0.103 (S)	0.81	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	16.0	0.101 (S)	0.76	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			0.399	0.0949 (S)	0.81	0.864
2,3,4',6-TeCB	64		B	2.52	0.0616 (S)	0.80	1.343
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	8.71	0.0979 (S)	0.77	0.885
2,3',4,5-TeCB	67		K J	0.317	0.0910 (S)	0.60	0.857
2,3',4,5'-TeCB	68		U		0.0970 (S)		
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		J	0.116	0.0951 (S)	0.79	0.823
2,3',5',6-TeCB	73		U		0.0616 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B	1.87	0.172 (S)	0.81	1.001
3,3',4,5-TeCB	78		U		0.101 (S)		
3,3',4,5'-TeCB	79		J	0.329	0.0855 (S)	0.86	0.972
3,3',5,5'-TeCB	80		U		0.0917 (S)		
3,4,4',5-TeCB	81		K J	0.103	0.0858 (S)	0.92	1.000
2,2',3,3',4-PeCB	82		G	0.581	0.0918 (S)	1.67	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	6.48	0.0873 (S)	1.59	0.887
2,2',3,3',6-PeCB	84			1.57	0.0995 (S)	1.48	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	2.11	0.0712 (S)	1.61	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	6.15	0.0742 (S)	1.57	0.902
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	1.05	0.0874 (S)	1.37	1.154
2,2',3,4,6'-PeCB	89		J	0.127	0.0903 (S)	1.52	1.181
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	9.57	0.0762 (S)	1.53	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		K	1.68	0.0854 (S)	1.80	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	5.53	0.0858 (S)	1.60	1.121
2,2',3,5,6'-PeCB	94		U		0.0961 (S)		
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		J	0.054	0.0437 (Q)	1.77	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		J	0.116	0.0768 (S)	1.33	1.093
2,2',4,6,6'-PeCB	104		U		0.0437 (Q)		
2,3,3',4,4'-PeCB	105		B	5.38	0.107 (S)	1.52	1.000
2,3,3',4,5-PeCB	106		U		0.0944 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	0.454	0.0995 (S)	1.76	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			1.11	0.0965 (S)	1.61	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	9.39	0.0633 (S)	1.51	0.925
2,3,3',5,5'-PeCB	111		U		0.0637 (S)		
2,3,3',5,6-PeCB	112		U		0.0640 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		K J	0.239	0.102 (S)	1.21	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	11.5	0.0980 (S)	1.50	1.001
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		U		0.0582 (S)		
2,3',4,5',6-PeCB	121		U		0.0654 (S)		
2',3,3',4,5-PeCB	122		K J	0.124	0.0985 (S)	2.38	1.010
2',3,4,4',5-PeCB	123		K J	0.267	0.104 (S)	1.82	1.000
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		U		0.120 (S)		
3,3',4,5,5'-PeCB	127		U		0.0933 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	2.12	0.0665 (S)	1.25	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	18.5	0.0905 (S)	1.28	0.929
2,2',3,3',4,5'-HxCB	130			0.807	0.0793 (S)	1.29	0.913
2,2',3,3',4,6-HxCB	131		J	0.115	0.0812 (S)	1.16	1.159
2,2',3,3',4,6'-HxCB	132			2.44	0.0793 (S)	1.31	1.174
2,2',3,3',5,5'-HxCB	133		K J	0.238	0.0729 (S)	1.01	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C K	0.939	0.186 (S)	0.96	1.141
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	3.14	0.0718 (S)	1.14	1.107
2,2',3,3',6,6'-HxCB	136			0.710	0.0568 (S)	1.40	1.026
2,2',3,4,4',5-HxCB	137			0.447	0.0782 (S)	1.20	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C J	0.212	0.0725 (S)	1.09	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			1.16	0.0737 (S)	1.25	0.904
2,2',3,4,5,6-HxCB	142		U		0.0768 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		U		0.0726 (S)		
2,2',3,4,6,6'-HxCB	145		U		0.0597 (S)		
2,2',3,4',5,5'-HxCB	146			2.48	0.0689 (S)	1.29	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	7.26	0.0714 (S)	1.24	1.134
2,2',3,4',5,6'-HxCB	148		U G		0.0750 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.0587 (S)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0542 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	11.8	0.0577 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0493 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	1.12	0.0661 (S)	1.24	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		K	0.931	0.0519 (S)	1.48	0.938
2,3,3',4,5,5'-HxCB	159		J	0.100	0.0548 (S)	1.25	0.982
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.0520 (S)		
2,3,3',4',5,5'-HxCB	162		U		0.0565 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			0.606	0.0541 (S)	1.31	0.921
2,3,3',5,5',6-HxCB	165		U		0.0609 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			0.548	0.0520 (S)	1.29	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.0559 (S)		
2,2',3,3',4,4',5-HpCB	170			2.55	0.0942 (S)	0.98	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	0.840	0.0938 (S)	1.04	1.162
2,2',3,3',4,5,5'-HpCB	172			0.464	0.0937 (S)	1.00	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			1.99	0.0860 (S)	1.00	1.132
2,2',3,3',4,5',6-HpCB	175		J	0.151	0.0835 (S)	0.91	1.101
2,2',3,3',4,6,6'-HpCB	176		J	0.331	0.0631 (S)	1.16	1.034
2,2',3,3',4',5,6-HpCB	177			1.99	0.0913 (S)	1.09	1.145
2,2',3,3',5,5',6-HpCB	178		K	0.838	0.0882 (S)	1.23	1.085
2,2',3,3',5,6,6'-HpCB	179			1.01	0.0614 (S)	1.03	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	5.03	0.0781 (S)	1.02	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.0907 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.0847 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	1.80	0.0853 (S)	0.97	1.126
2,2',3,4,4',6,6'-HpCB	184		U		0.0620 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0670 (S)		
2,2',3,4',5,5',6-HpCB	187			4.91	0.0819 (S)	0.97	1.109
2,2',3,4',5,6,6'-HpCB	188		U		0.0584 (S)		
2,3,3',4,4',5,5'-HpCB	189		J	0.173	0.0963 (S)	1.12	1.001
2,3,3',4,4',5,6-HpCB	190			0.502	0.0732 (S)	1.13	0.947
2,3,3',4,4',5',6-HpCB	191		J	0.081	0.0691 (S)	1.04	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.0764 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			1.35	0.0769 (S)	0.86	0.991
2,2',3,3',4,4',5,6-OcCB	195			0.583	0.0798 (S)	0.97	0.945
2,2',3,3',4,4',5,6'-OcCB	196		K	0.619	0.0844 (S)	0.75	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C J	0.182	0.0615 (S)	0.95	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	1.84	0.0884 (S)	0.88	1.114
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		J	0.222	0.0606 (S)	1.01	1.023
2,2',3,3',5,5',6,6'-OcCB	202			0.617	0.0730 (S)	0.81	1.000
2,2',3,4,4',5,5',6-OcCB	203			0.797	0.0810 (S)	0.99	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0617 (S)		
2,3,3',4,4',5,5',6-OcCB	205		U		0.0652 (S)		
2,2',3,3',4,4',5,5',6-NoCB	206			1.02	0.187 (S)	0.76	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207		U		0.132 (S)		
2,2',3,3',4,5,5',6,6'-NoCB	208			0.457	0.138 (S)	0.76	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			1.17	0.0662 (S)	1.30	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-5_Form1A_PB3C_192S9_SJ1607912.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-10-S
Sample Collection:
06-May-2013 12:10

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-5 W
Matrix:	SOLID	**Sample Size:**	11.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	07-Jun-2013 **Time:** 06:37:47	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	200	**Sample Data Filename:**	**PB3C_200 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	10	**Cal. Ver. Data Filename:**	PB3C_200 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	16.4

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		U D		0.981 (S)		
3-MoCB	2		D	7.15	0.989 (S)	2.89	0.988
4-MoCB	3		B D J	1.84	0.967 (S)	3.13	1.000
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		D	4.16	1.91 (S)	1.72	1.001
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		X				
2,3,4',6-TeCB	64		X				
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6-TeCB	73		X				
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5-TeCB	81		X				
2,2',3,3',4-PeCB	82		X				
2,2',3,3',5-PeCB	83	83 + 99	C X				
2,2',3,3',6-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		X				
2,2',3,3',4,4',5,6-OcCB	195		X				
2,2',3,3',4,4',5,6'-OcCB	196		X				
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		X				
2,2',3,3',5,5',6,6'-OcCB	202		X				
2,2',3,4,4',5,5',6-OcCB	203		X				
2,2',3,4,4',5,6,6'-OcCB	204		X				
2,3,3',4,4',5,5',6-OcCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; B = analyte found in sample and the associated blank; D = dilution data; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-5_Form1A_PB3C_200S10_SJ1610053.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-10-S
Sample Collection:
06-May-2013 12:10

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-5
Matrix:	SOLID	**Sample Size:**	11.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 04:11:37	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename(s):**	**PB3C_192 S: 9, PB3C_200 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_192 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	16.4

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		8.99
Total Dichloro Biphenyls		14.7
Total Trichloro Biphenyls		32.7
Total Tetrachloro Biphenyls		59.8
Total Pentachloro Biphenyls		61.2
Total Hexachloro Biphenyls		53.6
Total Heptachloro Biphenyls		21.8
Total Octachloro Biphenyls		5.59
Total Nonachloro Biphenyls		1.48
Decachloro Biphenyl		1.17
TOTAL PCBs		261

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 17-Jun-2013 14:26:53; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-5_Form1AHT_SJ1607912.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-10-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	06-May-2013 12:10		
Contract No.:	4273	**Project No.**	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Matrix:	SOLID	**Lab Sample I.D.:**	L19652-5
Sample Size:	11.4 g (dry)	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg (dry weight basis)	**Sample Data Filename(s):**	**PB3C_192 S: 9** **PB3C_200 S: 10**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			1.87	0.172	0.0001	1.87e-04	1.87e-04	
3,4,4',5-TeCB	81		U		0.0858	0.0003	0.00e+00	1.29e-05	
2,3,3',4,4'-PeCB	105			5.38	0.107	0.00003	1.61e-04	1.61e-04	
2,3,4,4',5-PeCB	114		U		0.102	0.00003	0.00e+00	1.53e-06	
2,3',4,4',5-PeCB	118			11.5	0.0980	0.00003	3.45e-04	3.45e-04	
2',3,4,4',5-PeCB	123		U		0.104	0.00003	0.00e+00	1.56e-06	
3,3',4,4',5-PeCB	126		U		0.120	0.1	0.00e+00	6.00e-03	
2,3,3',4,4',5-HxCB	156	156 + 157	C	1.12	0.0661	0.00003	3.36e-05	3.36e-05	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			0.548	0.0520	0.00003	1.64e-05	1.64e-05	
3,3',4,4',5,5'-HxCB	169		U		0.0559	0.03	0.00e+00	8.39e-04	
2,3,3',4,4',5,5'-HpCB	189			0.173	0.0963	0.00003	5.19e-06	5.19e-06	
					TOTAL TEQ		0.000749	0.00760	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-5_TEQ_SJ1607912.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-13-S
Sample Collection:
06-May-2013 13:28

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-6
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 05:15:50	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_192 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_192 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.7

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			0.807	0.0517 (S)	2.99	1.001
3-MoCB	2			5.48	0.0468 (Q)	3.07	0.988
4-MoCB	3		B	1.02	0.0468 (Q)	3.59	1.001
2,2'-DiCB	4			0.786	0.212 (S)	1.37	1.001
2,3-DiCB	5		U		0.112 (S)		
2,3'-DiCB	6			0.414	0.104 (S)	1.62	1.174
2,4-DiCB	7		J	0.215	0.107 (S)	1.48	1.158
2,4'-DiCB	8			2.66	0.0963 (S)	1.49	1.206
2,5-DiCB	9		K	0.423	0.102 (S)	1.13	1.144
2,6-DiCB	10		U		0.106 (S)		
3,3'-DiCB	11			7.05	0.106 (S)	1.61	0.969
3,4-DiCB	12	12 + 13	C K G	3.38	0.109 (S)	12.0	0.987
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K J	0.243	0.104 (S)	0.51	0.926
4,4'-DiCB	15			4.19	0.109 (S)	1.58	1.001
2,2',3-TriCB	16			1.01	0.0544 (S)	1.02	1.165
2,2',4-TriCB	17		B	1.21	0.0468 (Q)	1.04	1.137
2,2',5-TriCB	18	18 + 30	C B	1.89	0.0468 (Q)	1.07	1.111
2,2',6-TriCB	19		J	0.227	0.0596 (S)	1.00	1.000
2,3,3'-TriCB	20	20 + 28	C B	10.2	0.0468 (Q)	1.04	0.849
2,3,4-TriCB	21	21 + 33	C	2.63	0.0468 (Q)	1.01	0.858
2,3,4'-TriCB	22			2.47	0.0468 (Q)	1.01	0.873
2,3,5-TriCB	23		U		0.0468 (Q)		
2,3,6-TriCB	24		U		0.0468 (Q)		
2,3',4-TriCB	25			0.601	0.0468 (Q)	1.03	0.826
2,3',5-TriCB	26	26 + 29	C	1.20	0.0468 (Q)	1.06	1.298
2,3',6-TriCB	27		J G	0.150	0.0468 (Q)	1.07	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			6.09	0.0468 (Q)	1.01	0.838
2,4',6-TriCB	32			0.965	0.0468 (Q)	1.09	1.196
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		K J	0.047	0.0468 (Q)	1.23	1.271
3,3',4-TriCB	35			0.531	0.0468 (Q)	1.17	0.985
3,3',5-TriCB	36		J	0.306	0.0468 (Q)	1.01	0.932
3,4,4'-TriCB	37		B	4.00	0.0468 (Q)	1.01	1.001
3,4,5-TriCB	38		K J	0.171	0.0468 (Q)	0.75	0.968
3,4',5-TriCB	39		J	0.088	0.0468 (Q)	1.16	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	3.25	0.0589 (S)	0.76	1.334
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			1.63	0.0625 (S)	0.75	1.309
2,2',3,5-TeCB	43		J	0.172	0.0778 (S)	0.70	1.244
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	6.27	0.0541 (S)	0.78	1.282
2,2',3,6-TeCB	45	45 + 51	C	0.681	0.0608 (S)	0.71	1.144
2,2',3,6'-TeCB	46		J	0.209	0.0708 (S)	0.75	1.159
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			0.899	0.0598 (S)	0.80	1.271
2,2',4,5'-TeCB	49	49 + 69	C B	4.32	0.0505 (S)	0.78	1.257
2,2',4,6-TeCB	50	50 + 53	C	0.540	0.0585 (S)	0.75	1.110
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			6.35	0.0546 (S)	0.80	1.231
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0468 (Q)		
2,3,3',4-TeCB	55		J	0.135	0.0730 (S)	0.73	0.889
2,3,3',4'-TeCB	56		B	4.20	0.0730 (S)	0.78	0.904
2,3,3',5-TeCB	57		U		0.0707 (S)		
2,3,3',5'-TeCB	58		U		0.0713 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C	0.647	0.0468 (Q)	0.80	1.299
2,3,4,4'-TeCB	60		B	2.62	0.0710 (S)	0.81	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	17.1	0.0691 (S)	0.75	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			0.446	0.0653 (S)	0.70	0.864
2,3,4',6-TeCB	64		B	2.68	0.0468 (Q)	0.79	1.346
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	9.35	0.0674 (S)	0.78	0.884
2,3',4,5-TeCB	67		J	0.342	0.0626 (S)	0.76	0.856
2,3',4,5'-TeCB	68		J	0.127	0.0667 (S)	0.70	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		J	0.154	0.0655 (S)	0.73	0.822
2,3',5',6-TeCB	73		U		0.0468 (Q)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B	1.89	0.0934 (S)	0.77	1.000
3,3',4,5-TeCB	78		U		0.0692 (S)		
3,3',4,5'-TeCB	79		J	0.157	0.0589 (S)	0.72	0.970
3,3',5,5'-TeCB	80		U		0.0631 (S)		
3,4,4',5-TeCB	81		K J	0.078	0.0675 (S)	0.66	1.000
2,2',3,3',4-PeCB	82		G	0.815	0.0593 (S)	1.49	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	7.30	0.0564 (S)	1.53	0.886
2,2',3,3',6-PeCB	84			1.73	0.0642 (S)	1.44	1.162
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	2.37	0.0468 (Q)	1.53	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	6.83	0.0479 (S)	1.61	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	1.07	0.0564 (S)	1.75	1.154
2,2',3,4,6'-PeCB	89		K J	0.115	0.0583 (S)	1.81	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	10.7	0.0492 (S)	1.52	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			1.82	0.0551 (S)	1.55	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	5.93	0.0554 (S)	1.63	1.121
2,2',3,5,6'-PeCB	94		U		0.0620 (S)		
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		K J	0.059	0.0468 (Q)	1.29	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		J	0.120	0.0495 (S)	1.45	1.093
2,2',4,6,6'-PeCB	104		U		0.0468 (Q)		
2,3,3',4,4'-PeCB	105		B	5.77	0.0683 (S)	1.49	1.000
2,3,3',4,5-PeCB	106		U		0.0634 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C K	0.435	0.0669 (S)	1.30	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			1.23	0.0648 (S)	1.47	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	10.5	0.0468 (Q)	1.56	0.925
2,3,3',5,5'-PeCB	111		U		0.0468 (Q)		
2,3,3',5,6-PeCB	112		U		0.0468 (Q)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		J	0.275	0.0663 (S)	1.52	1.001
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	13.0	0.0670 (S)	1.53	1.001
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		J	0.091	0.0468 (Q)	1.48	0.959
2,3',4,5',6-PeCB	121		U		0.0468 (Q)		
2',3,3',4,5-PeCB	122		J	0.127	0.0662 (S)	1.76	1.010
2',3,4,4',5-PeCB	123		K J	0.252	0.0722 (S)	2.29	1.000
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		J	0.180	0.0729 (S)	1.62	1.000
3,3',4,5,5'-PeCB	127		U		0.0627 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	2.23	0.0646 (S)	1.13	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	20.7	0.0878 (S)	1.24	0.928
2,2',3,3',4,5'-HxCB	130			0.949	0.0769 (S)	1.28	0.913
2,2',3,3',4,6-HxCB	131		J	0.116	0.0788 (S)	1.34	1.159
2,2',3,3',4,6'-HxCB	132			2.92	0.0769 (S)	1.19	1.173
2,2',3,3',5,5'-HxCB	133		J	0.286	0.0707 (S)	1.22	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C K	1.17	0.181 (S)	1.48	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	3.36	0.0495 (S)	1.26	1.105
2,2',3,3',6,6'-HxCB	136			0.952	0.0468 (Q)	1.35	1.024
2,2',3,4,4',5-HxCB	137			0.415	0.0759 (S)	1.36	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C K J	0.224	0.0704 (S)	1.02	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			1.22	0.0715 (S)	1.27	0.903
2,2',3,4,5,6-HxCB	142		U		0.0745 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			0.398	0.0500 (S)	1.27	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0468 (Q)		
2,2',3,4',5,5'-HxCB	146			2.77	0.0669 (S)	1.29	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	8.53	0.0692 (S)	1.28	1.133
2,2',3,4',5,6'-HxCB	148		U G		0.0517 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.0468 (Q)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0468 (Q)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	13.5	0.0559 (S)	1.30	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0468 (Q)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	1.39	0.0632 (S)	1.21	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			1.11	0.0504 (S)	1.22	0.938
2,3,3',4,5,5'-HxCB	159		K J	0.116	0.0532 (S)	2.38	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.0504 (S)		
2,3,3',4',5,5'-HxCB	162		K J	0.060	0.0548 (S)	0.95	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			0.673	0.0525 (S)	1.29	0.921
2,3,3',5,5',6-HxCB	165		U		0.0591 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			0.533	0.0501 (S)	1.27	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.0559 (S)		
2,2',3,3',4,4',5-HpCB	170		K	2.85	0.0866 (S)	0.86	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	0.944	0.0707 (S)	1.12	1.162
2,2',3,3',4,5,5'-HpCB	172			0.443	0.0706 (S)	1.17	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			2.09	0.0649 (S)	1.00	1.133
2,2',3,3',4,5',6-HpCB	175		K J	0.172	0.0630 (S)	0.73	1.103
2,2',3,3',4,6,6'-HpCB	176		J	0.324	0.0476 (S)	1.15	1.033
2,2',3,3',4',5,6-HpCB	177			2.03	0.0688 (S)	1.12	1.145
2,2',3,3',5,5',6-HpCB	178			0.899	0.0665 (S)	1.16	1.085
2,2',3,3',5,6,6'-HpCB	179			1.15	0.0468 (Q)	1.13	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	5.84	0.0682 (S)	1.05	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.0684 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.0639 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	2.00	0.0643 (S)	1.12	1.126
2,2',3,4,4',6,6'-HpCB	184		U		0.0468 (Q)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0505 (S)		
2,2',3,4',5,5',6-HpCB	187			4.92	0.0617 (S)	1.01	1.109
2,2',3,4',5,6,6'-HpCB	188		K J	0.050	0.0488 (S)	0.71	1.001
2,3,3',4,4',5,5'-HpCB	189		J	0.152	0.0760 (S)	1.17	1.000
2,3,3',4,4',5,6-HpCB	190			0.509	0.0552 (S)	1.10	0.947
2,3,3',4,4',5',6-HpCB	191		K J	0.073	0.0521 (S)	0.67	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.0576 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			1.75	0.0870 (S)	0.91	0.991
2,2',3,3',4,4',5,6-OcCB	195		K	0.752	0.0903 (S)	0.65	0.945
2,2',3,3',4,4',5,6'-OcCB	196			0.578	0.0846 (S)	1.00	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C K J	0.180	0.0617 (S)	0.47	1.047
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	1.76	0.0886 (S)	0.90	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		K J	0.240	0.0607 (S)	1.12	1.023
2,2',3,3',5,5',6,6'-OcCB	202			0.828	0.0975 (S)	0.98	1.001
2,2',3,4,4',5,5',6-OcCB	203			0.704	0.0812 (S)	0.95	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0618 (S)		
2,3,3',4,4',5,5',6-OcCB	205		K J	0.082	0.0599 (S)	0.71	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			1.21	0.186 (S)	0.86	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207		K J	0.198	0.131 (S)	0.89	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			0.475	0.136 (S)	0.78	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209		K	1.52	0.0880 (S)	1.44	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-6_Form1A_PB3C_192S10_SJ1607914.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-13-S
Sample Collection:
06-May-2013 13:28

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-6
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 05:15:50	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_192 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_192 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.7

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		7.31
Total Dichloro Biphenyls		15.3
Total Trichloro Biphenyls		33.6
Total Tetrachloro Biphenyls		64.2
Total Pentachloro Biphenyls		69.9
Total Hexachloro Biphenyls		62.1
Total Heptachloro Biphenyls		21.3
Total Octachloro Biphenyls		5.62
Total Nonachloro Biphenyls		1.69
Decachloro Biphenyl	U	
TOTAL PCBs		281

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 17-Jun-2013 14:26:53; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-6_Form1AHT_SJ1607914.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-13-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	06-May-2013 13:28		
Contract No.:	4273	**Project No.**	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Matrix:	SOLID	**Lab Sample I.D.:**	L19652-6
Sample Size:	10.7 g (dry)	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg (dry weight basis)	**Sample Data Filename(s):**	**PB3C_192 S: 10**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			1.89	0.0934	0.0001	1.89e-04	1.89e-04	
3,4,4',5-TeCB	81		U		0.0675	0.0003	0.00e+00	1.01e-05	
2,3,3',4,4'-PeCB	105			5.77	0.0683	0.00003	1.73e-04	1.73e-04	
2,3,4,4',5-PeCB	114			0.275	0.0663	0.00003	8.25e-06	8.25e-06	
2,3',4,4',5-PeCB	118			13.0	0.0670	0.00003	3.90e-04	3.90e-04	
2',3,4,4',5-PeCB	123		U		0.0722	0.00003	0.00e+00	1.08e-06	
3,3',4,4',5-PeCB	126			0.180	0.0729	0.1	1.80e-02	1.80e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	1.39	0.0632	0.00003	4.17e-05	4.17e-05	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			0.533	0.0501	0.00003	1.60e-05	1.60e-05	
3,3',4,4',5,5'-HxCB	169		U		0.0559	0.03	0.00e+00	8.39e-04	
2,3,3',4,4',5,5'-HpCB	189			0.152	0.0760	0.00003	4.56e-06	4.56e-06	
					TOTAL TEQ		0.0188	0.0197	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 17-Jun-2013 14:26:53; Application: XMLTransformer-1.13.42; Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-6_TEQ_SJ1607914.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-05-S
Sample Collection:
06-May-2013 13:46

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-7 W
Matrix:	SOLID	**Sample Size:**	9.97 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	08-Jun-2013 **Time:** 03:25:52	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	200	**Sample Data Filename:**	**PB3C_202 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	10	**Cal. Ver. Data Filename:**	PB3C_202 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	29.6

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		D J	3.02	1.10 (S)	3.12	1.001
3-MoCB	2		D	15.1	1.14 (S)	2.99	0.988
4-MoCB	3		K B D J	3.86	1.16 (S)	4.02	1.000
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		D	29.0	2.07 (S)	1.59	0.968
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		X				
2,3,4',6-TeCB	64		X				
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6-TeCB	73		X				
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5-TeCB	81		X				
2,2',3,3',4-PeCB	82		X				
2,2',3,3',5-PeCB	83	83 + 99	C X				
2,2',3,3',6-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		X				
2,2',3,3',4,4',5,6-OcCB	195		X				
2,2',3,3',4,4',5,6'-OcCB	196		X				
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		X				
2,2',3,3',5,5',6,6'-OcCB	202		X				
2,2',3,4,4',5,5',6-OcCB	203		X				
2,2',3,4,4',5,6,6'-OcCB	204		X				
2,3,3',4,4',5,5',6-OcCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; D = dilution data; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-7_Form1A_PB3C_202S8_SJ1610157.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-05-S
Sample Collection:
06-May-2013 13:46

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-7 M
Matrix:	SOLID	**Sample Size:**	9.97 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Jun-2013 **Time:** 13:07:06	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_209C S: 3**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_209C S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	29.6

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4			3.50	0.237 (S)	1.56	1.001
2,3-DiCB	5		U		0.147 (S)		
2,3'-DiCB	6			1.97	0.134 (S)	1.51	1.171
2,4-DiCB	7			0.529	0.139 (S)	1.55	1.155
2,4'-DiCB	8		G	11.5	0.127 (S)	1.51	1.203
2,5-DiCB	9			0.740	0.133 (S)	1.35	1.144
2,6-DiCB	10		U		0.141 (S)		
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C K G	3.14	0.137 (S)	3.49	0.986
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K J	0.282	0.133 (S)	1.12	0.926
4,4'-DiCB	15			15.0	0.156 (S)	1.58	1.002
2,2',3-TriCB	16			4.30	0.0794 (S)	1.01	1.163
2,2',4-TriCB	17		B G	4.56	0.0627 (S)	1.04	1.136
2,2',5-TriCB	18	18 + 30	C B G	7.28	0.0518 (S)	1.10	1.110
2,2',6-TriCB	19			0.781	0.0712 (S)	1.16	1.000
2,3,3'-TriCB	20	20 + 28	C B	33.8	0.0573 (S)	1.03	0.849
2,3,4-TriCB	21	21 + 33	C	12.1	0.0563 (S)	1.04	0.858
2,3,4'-TriCB	22			9.10	0.0613 (S)	1.05	0.872
2,3,5-TriCB	23		U		0.0617 (S)		
2,3,6-TriCB	24		J	0.108	0.0502 (Q)	1.06	1.157
2,3',4-TriCB	25			2.36	0.0515 (S)	1.02	0.826
2,3',5-TriCB	26	26 + 29	C	4.68	0.0580 (S)	1.01	1.297
2,3',6-TriCB	27		G	0.592	0.0502 (Q)	0.99	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			23.1	0.0543 (S)	1.03	0.837
2,4',6-TriCB	32			3.35	0.0564 (S)	1.01	1.195
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.127	0.0583 (S)	1.01	1.269
3,3',4-TriCB	35			1.40	0.0568 (S)	0.99	0.985
3,3',5-TriCB	36			1.05	0.0540 (S)	1.02	0.932
3,4,4'-TriCB	37		B	13.0	0.0656 (S)	1.03	1.001
3,4,5-TriCB	38		J	0.214	0.0556 (S)	0.91	0.968
3,4',5-TriCB	39		J	0.289	0.0543 (S)	1.05	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	12.7	0.0804 (S)	0.79	1.332
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			6.21	0.0835 (S)	0.81	1.308
2,2',3,5-TeCB	43			0.711	0.0956 (S)	0.78	1.243
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	24.3	0.0743 (S)	0.77	1.282
2,2',3,6-TeCB	45	45 + 51	C	2.38	0.0829 (S)	0.77	1.143
2,2',3,6'-TeCB	46			0.840	0.0963 (S)	0.82	1.158
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			3.98	0.0813 (S)	0.77	1.270
2,2',4,5'-TeCB	49	49 + 69	C B	15.8	0.0690 (S)	0.77	1.255
2,2',4,6-TeCB	50	50 + 53	C	2.16	0.0794 (S)	0.73	1.109
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			27.1	0.0771 (S)	0.78	1.232
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0502 (Q)		
2,3,3',4-TeCB	55			0.524	0.110 (S)	0.70	0.889
2,3,3',4'-TeCB	56		B	16.0	0.109 (S)	0.75	0.905
2,3,3',5-TeCB	57		J	0.175	0.103 (S)	0.81	0.844
2,3,3',5'-TeCB	58		J	0.121	0.106 (S)	0.69	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	2.11	0.0605 (S)	0.74	1.299
2,3,4,4'-TeCB	60		B	9.42	0.108 (S)	0.78	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	62.3	0.103 (S)	0.78	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			1.40	0.101 (S)	0.80	0.865
2,3,4',6-TeCB	64		B	10.1	0.0587 (S)	0.75	1.345
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	34.9	0.0975 (S)	0.77	0.885
2,3',4,5-TeCB	67			1.05	0.0936 (S)	0.77	0.856
2,3',4,5'-TeCB	68		J	0.380	0.0995 (S)	0.74	0.832
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			0.417	0.0935 (S)	0.77	0.823
2,3',5',6-TeCB	73		U		0.0618 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B	6.23	0.144 (S)	0.78	1.000
3,3',4,5-TeCB	78		U		0.100 (S)		
3,3',4,5'-TeCB	79			0.656	0.0837 (S)	0.81	0.970
3,3',5,5'-TeCB	80		U		0.0956 (S)		
3,4,4',5-TeCB	81		J	0.247	0.110 (S)	0.76	1.000
2,2',3,3',4-PeCB	82		G	3.28	0.0838 (S)	1.59	0.933
2,2',3,3',5-PeCB	83	83 + 99	C B	26.6	0.0776 (S)	1.56	0.887
2,2',3,3',6-PeCB	84			6.95	0.0881 (S)	1.59	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	8.98	0.0643 (S)	1.58	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	26.0	0.0669 (S)	1.58	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	4.41	0.0782 (S)	1.61	1.154
2,2',3,4,6'-PeCB	89		J	0.389	0.0815 (S)	1.55	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	38.1	0.0674 (S)	1.60	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			6.67	0.0768 (S)	1.57	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	23.6	0.0770 (S)	1.60	1.120
2,2',3,5,6'-PeCB	94		J	0.162	0.0849 (S)	1.48	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		K J	0.162	0.0623 (S)	1.81	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		J	0.381	0.0683 (S)	1.40	1.093
2,2',4,6,6'-PeCB	104		U		0.0541 (S)		
2,3,3',4,4'-PeCB	105		B	23.1	0.0970 (S)	1.53	1.001
2,3,3',4,5-PeCB	106		U		0.0800 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	1.62	0.0871 (S)	1.48	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			3.87	0.0783 (S)	1.59	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	42.9	0.0580 (S)	1.59	0.925
2,3,3',5,5'-PeCB	111		J	0.085	0.0575 (S)	1.51	0.946
2,3,3',5,6-PeCB	112		U		0.0581 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			0.957	0.0943 (S)	1.36	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	48.9	0.0914 (S)	1.54	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		K J	0.315	0.0525 (S)	1.19	0.959
2,3',4,5',6-PeCB	121		U		0.0586 (S)		
2',3,3',4,5-PeCB	122			0.441	0.0904 (S)	1.39	1.009
2',3,4,4',5-PeCB	123			0.754	0.0972 (S)	1.50	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		J	0.399	0.103 (S)	1.59	1.000
3,3',4,5,5'-PeCB	127		U		0.0821 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	8.68	0.0827 (S)	1.26	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	56.1	0.0820 (S)	1.25	0.928
2,2',3,3',4,5'-HxCB	130			3.58	0.102 (S)	1.33	0.913
2,2',3,3',4,6-HxCB	131			0.435	0.0983 (S)	1.20	1.158
2,2',3,3',4,6'-HxCB	132			12.2	0.102 (S)	1.27	1.174
2,2',3,3',5,5'-HxCB	133			0.856	0.0948 (S)	1.33	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	1.73	0.101 (S)	1.23	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	14.0	0.0857 (S)	1.33	1.104
2,2',3,3',6,6'-HxCB	136			3.47	0.0642 (S)	1.26	1.025
2,2',3,4,4',5-HxCB	137			1.87	0.0932 (S)	1.26	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	0.776	0.0904 (S)	1.22	1.152
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			5.46	0.0905 (S)	1.24	0.903
2,2',3,4,5,6-HxCB	142		U		0.101 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			1.66	0.0839 (S)	1.28	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0680 (S)		
2,2',3,4',5,5'-HxCB	146		G	8.31	0.0839 (S)	1.27	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	31.3	0.0892 (S)	1.25	1.133
2,2',3,4',5,6'-HxCB	148		K J G	0.161	0.0874 (S)	0.89	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	0.085	0.0641 (S)	1.37	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0616 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	48.9	0.0736 (S)	1.24	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0502 (Q)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	5.43	0.0808 (S)	1.22	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			4.08	0.0642 (S)	1.27	0.938
2,3,3',4,5,5'-HxCB	159			0.439	0.0670 (S)	1.23	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.0679 (S)		
2,3,3',4',5,5'-HxCB	162		J	0.221	0.0692 (S)	1.06	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			2.95	0.0715 (S)	1.21	0.921
2,3,3',5,5',6-HxCB	165		U		0.0773 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			2.17	0.0685 (S)	1.30	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.0830 (S)		
2,2',3,3',4,4',5-HpCB	170			10.9	0.0746 (S)	1.03	1.001
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	3.96	0.0762 (S)	1.11	1.163
2,2',3,3',4,5,5'-HpCB	172			2.08	0.0762 (S)	0.95	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			10.6	0.0735 (S)	1.02	1.133
2,2',3,3',4,5',6-HpCB	175			0.644	0.0693 (S)	0.94	1.102
2,2',3,3',4,6,6'-HpCB	176			1.41	0.0527 (S)	1.13	1.034
2,2',3,3',4',5,6-HpCB	177			9.30	0.0748 (S)	1.05	1.145
2,2',3,3',5,5',6-HpCB	178			3.58	0.0725 (S)	1.00	1.084
2,2',3,3',5,6,6'-HpCB	179			4.86	0.0509 (S)	1.03	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	22.4	0.0592 (S)	1.04	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.0719 (S)		
2,2',3,4,4',5,6'-HpCB	182		J	0.091	0.0693 (S)	1.13	1.116
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	8.39	0.0687 (S)	1.01	1.127
2,2',3,4,4',6,6'-HpCB	184		J	0.061	0.0515 (S)	0.97	1.025
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0555 (S)		
2,2',3,4',5,5',6-HpCB	187			20.9	0.0671 (S)	1.03	1.110
2,2',3,4',5,6,6'-HpCB	188		J	0.087	0.0502 (Q)	0.92	1.001
2,3,3',4,4',5,5'-HpCB	189		K	0.513	0.0957 (S)	1.34	1.001
2,3,3',4,4',5,6-HpCB	190			2.29	0.0552 (S)	1.04	0.947
2,3,3',4,4',5',6-HpCB	191			0.407	0.0551 (S)	1.15	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.0612 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			5.65	0.0856 (S)	0.89	0.991
2,2',3,3',4,4',5,6-OcCB	195			2.54	0.0934 (S)	0.86	0.945
2,2',3,3',4,4',5,6'-OcCB	196			3.24	0.0751 (S)	0.85	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	0.807	0.0559 (S)	0.80	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	9.20	0.0783 (S)	0.95	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			1.20	0.0547 (S)	0.92	1.023
2,2',3,3',5,5',6,6'-OcCB	202			2.33	0.0558 (S)	1.01	1.000
2,2',3,4,4',5,5',6-OcCB	203			4.47	0.0721 (S)	0.88	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0559 (S)		
2,3,3',4,4',5,5',6-OcCB	205		J	0.344	0.0811 (S)	0.78	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			5.02	0.112 (S)	0.79	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			0.743	0.0838 (S)	0.74	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			1.78	0.0878 (S)	0.79	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			4.67	0.0736 (S)	1.15	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-7_Form1A_PB3C_209CS3_SJ1611843.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-05-S
Sample Collection:
06-May-2013 13:46

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-7 W
Matrix:	SOLID	**Sample Size:**	9.97 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	08-Jun-2013 **Time:** 03:25:52	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename(s):**	**PB3C_202 S: 8, PB3C_209C S: 3**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_209C S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	29.6

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		18.1
Total Dichloro Biphenyls		62.2
Total Trichloro Biphenyls		122
Total Tetrachloro Biphenyls		242
Total Pentachloro Biphenyls		269
Total Hexachloro Biphenyls		215
Total Heptachloro Biphenyls		102
Total Octachloro Biphenyls		29.8
Total Nonachloro Biphenyls		7.54
Decachloro Biphenyl		4.67
TOTAL PCBs		1070

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 17-Jun-2013 14:26:53; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-7_Form1AHT_SJ1610157.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-05-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 06-May-2013 13:46

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-7 W

Sample Size: 9.97 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_202 S: 8**
PB3C_209C S: 3

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			6.23	0.144	0.0001	6.23e-04	6.23e-04	
3,4,4',5-TeCB	81			0.247	0.110	0.0003	7.41e-05	7.41e-05	
2,3,3',4,4'-PeCB	105			23.1	0.0970	0.00003	6.93e-04	6.93e-04	
2,3,4,4',5-PeCB	114			0.957	0.0943	0.00003	2.87e-05	2.87e-05	
2,3',4,4',5-PeCB	118			48.9	0.0914	0.00003	1.47e-03	1.47e-03	
2',3,4,4',5-PeCB	123			0.754	0.0972	0.00003	2.26e-05	2.26e-05	
3,3',4,4',5-PeCB	126			0.399	0.103	0.1	3.99e-02	3.99e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	5.43	0.0808	0.00003	1.63e-04	1.63e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			2.17	0.0685	0.00003	6.51e-05	6.51e-05	
3,3',4,4',5,5'-HxCB	169		U		0.0830	0.03	0.00e+00	1.25e-03	
2,3,3',4,4',5,5'-HpCB	189		U		0.0957	0.00003	0.00e+00	1.44e-06	
					TOTAL TEQ		0.0430	0.0443	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 17-Jun-2013 14:26:53; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-7_TEQ_SJ1610157.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-05-D
Sample Collection:
06-May-2013 13:46

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-8 i
Matrix:	SOLID	**Sample Size:**	9.99 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Jun-2013 **Time:** 14:11:25	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_209C S: 4**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_209C S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	29.3

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			2.93	0.0676 (S)	3.13	1.001
3-MoCB	2			14.6	0.0612 (S)	3.08	0.988
4-MoCB	3		B	3.20	0.0613 (S)	3.21	1.001
2,2'-DiCB	4			3.32	0.333 (S)	1.56	1.001
2,3-DiCB	5		U		0.191 (S)		
2,3'-DiCB	6			1.89	0.175 (S)	1.52	1.174
2,4-DiCB	7			0.498	0.181 (S)	1.54	1.158
2,4'-DiCB	8			11.6	0.166 (S)	1.53	1.205
2,5-DiCB	9			0.767	0.173 (S)	1.38	1.143
2,6-DiCB	10		U		0.183 (S)		
3,3'-DiCB	11			29.1	0.175 (S)	1.53	0.969
3,4-DiCB	12	12 + 13	C	2.41	0.178 (S)	1.56	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K J	0.295	0.173 (S)	1.21	0.926
4,4'-DiCB	15			14.9	0.196 (S)	1.52	1.000
2,2',3-TriCB	16			4.17	0.0957 (S)	1.01	1.164
2,2',4-TriCB	17		B	5.00	0.0755 (S)	1.08	1.137
2,2',5-TriCB	18	18 + 30	C B	9.05	0.0625 (S)	1.11	1.112
2,2',6-TriCB	19			0.780	0.0907 (S)	0.96	1.000
2,3,3'-TriCB	20	20 + 28	C B	35.5	0.0598 (S)	1.03	0.848
2,3,4-TriCB	21	21 + 33	C	12.1	0.0588 (S)	1.01	0.858
2,3,4'-TriCB	22			9.85	0.0640 (S)	1.02	0.872
2,3,5-TriCB	23		U		0.0645 (S)		
2,3,6-TriCB	24		J	0.139	0.0541 (S)	1.10	1.158
2,3',4-TriCB	25			2.39	0.0538 (S)	1.03	0.825
2,3',5-TriCB	26	26 + 29	C	4.82	0.0606 (S)	1.02	1.300
2,3',6-TriCB	27			0.863	0.0526 (S)	1.03	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			23.4	0.0567 (S)	1.05	0.837
2,4',6-TriCB	32			3.26	0.0589 (S)	0.99	1.196
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.131	0.0608 (S)	0.90	1.272
3,3',4-TriCB	35			1.55	0.0593 (S)	0.94	0.985
3,3',5-TriCB	36			1.14	0.0564 (S)	0.92	0.932
3,4,4'-TriCB	37		B	13.8	0.0666 (S)	1.00	1.001
3,4,5-TriCB	38		J	0.228	0.0581 (S)	0.95	0.968
3,4',5-TriCB	39		J	0.278	0.0567 (S)	0.98	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	12.9	0.0717 (S)	0.78	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			6.17	0.0744 (S)	0.75	1.311
2,2',3,5-TeCB	43			0.678	0.0853 (S)	0.67	1.245
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	23.4	0.0663 (S)	0.79	1.285
2,2',3,6-TeCB	45	45 + 51	C	2.11	0.0740 (S)	0.79	1.146
2,2',3,6'-TeCB	46			0.794	0.0859 (S)	0.80	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			3.66	0.0725 (S)	0.78	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	15.1	0.0615 (S)	0.78	1.259
2,2',4,6-TeCB	50	50 + 53	C	2.07	0.0708 (S)	0.75	1.110
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			26.6	0.0688 (S)	0.80	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0549 (S)		
2,3,3',4-TeCB	55			0.491	0.136 (S)	0.75	0.889
2,3,3',4'-TeCB	56		B	16.6	0.134 (S)	0.77	0.904
2,3,3',5-TeCB	57		J	0.187	0.127 (S)	0.68	0.844
2,3,3',5'-TeCB	58		U		0.130 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C	2.16	0.0539 (S)	0.73	1.302
2,3,4,4'-TeCB	60		B	9.77	0.133 (S)	0.77	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	62.0	0.127 (S)	0.78	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			1.42	0.125 (S)	0.79	0.865
2,3,4',6-TeCB	64		B	9.93	0.0524 (S)	0.77	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	34.7	0.120 (S)	0.79	0.885
2,3',4,5-TeCB	67			1.10	0.115 (S)	0.74	0.856
2,3',4,5'-TeCB	68		J	0.354	0.123 (S)	0.72	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			0.421	0.115 (S)	0.78	0.823
2,3',5',6-TeCB	73		U		0.0551 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B	6.52	0.142 (S)	0.78	1.000
3,3',4,5-TeCB	78		U		0.123 (S)		
3,3',4,5'-TeCB	79			0.677	0.103 (S)	0.85	0.970
3,3',5,5'-TeCB	80		U		0.118 (S)		
3,4,4',5-TeCB	81		J	0.276	0.146 (S)	0.75	1.000
2,2',3,3',4-PeCB	82			5.04	0.113 (S)	1.61	0.933
2,2',3,3',5-PeCB	83	83 + 99	C B	27.9	0.105 (S)	1.55	0.886
2,2',3,3',6-PeCB	84			7.36	0.119 (S)	1.56	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	9.44	0.0868 (S)	1.62	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	27.3	0.0904 (S)	1.59	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	4.46	0.106 (S)	1.57	1.154
2,2',3,4,6'-PeCB	89			0.423	0.110 (S)	1.42	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	39.7	0.0910 (S)	1.56	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			7.07	0.104 (S)	1.60	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	24.3	0.104 (S)	1.56	1.121
2,2',3,5,6'-PeCB	94		J	0.172	0.115 (S)	1.74	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		J	0.177	0.0575 (S)	1.52	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		J	0.393	0.0922 (S)	1.58	1.094
2,2',4,6,6'-PeCB	104		U		0.0501 (Q)		
2,3,3',4,4'-PeCB	105		B	24.0	0.122 (S)	1.53	1.000
2,3,3',4,5-PeCB	106		U		0.102 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	1.74	0.111 (S)	1.54	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			3.97	0.0994 (S)	1.58	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	46.0	0.0783 (S)	1.60	0.925
2,3,3',5,5'-PeCB	111		U		0.0776 (S)		
2,3,3',5,6-PeCB	112		U		0.0784 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			1.06	0.120 (S)	1.62	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	51.0	0.116 (S)	1.54	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		J	0.360	0.0709 (S)	1.41	0.959
2,3',4,5',6-PeCB	121		U		0.0792 (S)		
2',3,3',4,5-PeCB	122			0.577	0.115 (S)	1.48	1.010
2',3,4,4',5-PeCB	123			0.992	0.125 (S)	1.66	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			0.454	0.135 (S)	1.50	1.000
3,3',4,5,5'-PeCB	127		U		0.104 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	9.41	0.138 (S)	1.28	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	60.8	0.137 (S)	1.21	0.929
2,2',3,3',4,5'-HxCB	130			3.85	0.170 (S)	1.21	0.913
2,2',3,3',4,6-HxCB	131			0.518	0.164 (S)	1.26	1.159
2,2',3,3',4,6'-HxCB	132			13.7	0.170 (S)	1.30	1.174
2,2',3,3',5,5'-HxCB	133			1.07	0.158 (S)	1.14	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	2.01	0.167 (S)	1.26	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	16.5	0.110 (S)	1.23	1.103
2,2',3,3',6,6'-HxCB	136			4.30	0.0822 (S)	1.23	1.024
2,2',3,4,4',5-HxCB	137			1.99	0.155 (S)	1.27	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	0.802	0.151 (S)	1.41	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			6.23	0.151 (S)	1.14	0.903
2,2',3,4,5,6-HxCB	142		U		0.168 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			1.98	0.107 (S)	1.25	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0870 (S)		
2,2',3,4',5,5'-HxCB	146			9.55	0.140 (S)	1.25	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	35.6	0.149 (S)	1.24	1.133
2,2',3,4',5,6'-HxCB	148		J	0.395	0.112 (S)	1.33	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		K J	0.101	0.0820 (S)	1.00	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0788 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	52.9	0.123 (S)	1.24	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0631 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	5.90	0.140 (S)	1.24	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			4.56	0.107 (S)	1.23	0.938
2,3,3',4,5,5'-HxCB	159			0.500	0.112 (S)	1.29	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.113 (S)		
2,3,3',4',5,5'-HxCB	162		J	0.195	0.115 (S)	1.08	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			3.24	0.119 (S)	1.25	0.921
2,3,3',5,5',6-HxCB	165		U		0.129 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			2.31	0.107 (S)	1.29	1.001
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.141 (S)		
2,2',3,3',4,4',5-HpCB	170			12.0	0.123 (S)	1.09	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	5.01	0.133 (S)	1.04	1.162
2,2',3,3',4,5,5'-HpCB	172			2.58	0.133 (S)	1.06	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			13.0	0.129 (S)	1.04	1.133
2,2',3,3',4,5',6-HpCB	175			0.769	0.121 (S)	1.00	1.102
2,2',3,3',4,6,6'-HpCB	176			1.74	0.0923 (S)	1.01	1.034
2,2',3,3',4',5,6-HpCB	177			11.1	0.131 (S)	1.08	1.145
2,2',3,3',5,5',6-HpCB	178			4.39	0.127 (S)	1.07	1.085
2,2',3,3',5,6,6'-HpCB	179			6.14	0.0891 (S)	1.05	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	24.9	0.0944 (S)	1.04	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.126 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.121 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	10.3	0.120 (S)	1.02	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.0902 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0972 (S)		
2,2',3,4',5,5',6-HpCB	187			25.2	0.117 (S)	1.01	1.110
2,2',3,4',5,6,6'-HpCB	188		U		0.0762 (S)		
2,3,3',4,4',5,5'-HpCB	189			0.602	0.134 (S)	0.97	1.000
2,3,3',4,4',5,6-HpCB	190			2.55	0.0965 (S)	0.98	0.947
2,3,3',4,4',5',6-HpCB	191			0.515	0.0965 (S)	1.09	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.107 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			6.15	0.129 (S)	0.92	0.991
2,2',3,3',4,4',5,6-OcCB	195			2.65	0.141 (S)	0.89	0.945
2,2',3,3',4,4',5,6'-OcCB	196			3.51	0.125 (S)	0.87	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	1.14	0.0930 (S)	0.98	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	10.4	0.130 (S)	0.91	1.114
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			1.35	0.0911 (S)	0.89	1.023
2,2',3,3',5,5',6,6'-OcCB	202			2.49	0.0913 (S)	0.87	1.000
2,2',3,4,4',5,5',6-OcCB	203			5.11	0.120 (S)	0.84	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0930 (S)		
2,3,3',4,4',5,5',6-OcCB	205		J	0.387	0.125 (S)	0.85	1.001
2,2',3,3',4,4',5,5',6-NoCB	206			6.39	0.171 (S)	0.77	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			0.815	0.128 (S)	0.68	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			2.32	0.134 (S)	0.76	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			6.74	0.0876 (S)	1.16	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-8_Form1A_PB3C_209CS4_SJ1611845.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-05-D
Sample Collection:
06-May-2013 13:46

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-8 i
Matrix:	SOLID	**Sample Size:**	9.99 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Jun-2013 **Time:** 14:11:25	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_209C S: 4**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_209C S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	29.3

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		20.7
Total Dichloro Biphenyls		64.5
Total Trichloro Biphenyls		128
Total Tetrachloro Biphenyls		240
Total Pentachloro Biphenyls		284
Total Hexachloro Biphenyls		238
Total Heptachloro Biphenyls		121
Total Octachloro Biphenyls		33.2
Total Nonachloro Biphenyls		9.53
Decachloro Biphenyl		6.74
TOTAL PCBs		1150

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-8_Form1AHT_SJ1611845.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-05-D

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	06-May-2013 13:46		
Contract No.:	4273	**Project No.**	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Matrix:	SOLID	**Lab Sample I.D.:**	L19652-8 i
Sample Size:	9.99 g (dry)	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg (dry weight basis)	**Sample Data Filename(s):**	**PB3C_209C S: 4**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			6.52	0.142	0.0001	6.52e-04	6.52e-04	
3,4,4',5-TeCB	81			0.276	0.146	0.0003	8.28e-05	8.28e-05	
2,3,3',4,4'-PeCB	105			24.0	0.122	0.00003	7.20e-04	7.20e-04	
2,3,4,4',5-PeCB	114			1.06	0.120	0.00003	3.18e-05	3.18e-05	
2,3',4,4',5-PeCB	118			51.0	0.116	0.00003	1.53e-03	1.53e-03	
2',3,4,4',5-PeCB	123			0.992	0.125	0.00003	2.98e-05	2.98e-05	
3,3',4,4',5-PeCB	126			0.454	0.135	0.1	4.54e-02	4.54e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	5.90	0.140	0.00003	1.77e-04	1.77e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			2.31	0.107	0.00003	6.93e-05	6.93e-05	
3,3',4,4',5,5'-HxCB	169		U		0.141	0.03	0.00e+00	2.12e-03	
2,3,3',4,4',5,5'-HpCB	189			0.602	0.134	0.00003	1.81e-05	1.81e-05	
					TOTAL TEQ		0.0487	0.0508	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-09-S
Sample Collection:
06-May-2013 14:25

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-9 W
Matrix:	SOLID	**Sample Size:**	11.1 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	07-Jun-2013 **Time:** 03:25:21	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	200	**Sample Data Filename:**	**PB3C_200 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	10	**Cal. Ver. Data Filename:**	PB3C_200 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	15.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		D J	1.21	1.15 (S)	2.66	1.000
3-MoCB	2		D	4.10	1.19 (S)	2.81	0.988
4-MoCB	3		B D J	1.62	1.18 (S)	3.50	1.000
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		X				
2,3,4',6-TeCB	64		X				
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6-TeCB	73		X				
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5-TeCB	81		X				
2,2',3,3',4-PeCB	82		X				
2,2',3,3',5-PeCB	83	83 + 99	C X				
2,2',3,3',6-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		X				
2,2',3,3',4,4',5,6-OcCB	195		X				
2,2',3,3',4,4',5,6'-OcCB	196		X				
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		X				
2,2',3,3',5,5',6,6'-OcCB	202		X				
2,2',3,4,4',5,5',6-OcCB	203		X				
2,2',3,4,4',5,6,6'-OcCB	204		X				
2,3,3',4,4',5,5',6-OcCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; B = analyte found in sample and the associated blank; D = dilution data; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-9_Form1A_PB3C_200S7_SJ1610047.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-09-S
Sample Collection:
06-May-2013 14:25

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-9 M
Matrix:	SOLID	**Sample Size:**	11.1 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Jun-2013 **Time:** 15:15:46	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_209C S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_209C S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	15.0

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4		U		0.418 (S)		
2,3-DiCB	5		U		0.208 (S)		
2,3'-DiCB	6		J	0.237	0.190 (S)	1.38	1.176
2,4-DiCB	7		U		0.197 (S)		
2,4'-DiCB	8		G	1.29	0.181 (S)	1.41	1.204
2,5-DiCB	9		K J	0.344	0.189 (S)	1.02	0.999
2,6-DiCB	10		U		0.199 (S)		
3,3'-DiCB	11			4.43	0.191 (S)	1.53	0.970
3,4-DiCB	12	12 + 13	C	0.498	0.194 (S)	1.67	0.985
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U		0.188 (S)		
4,4'-DiCB	15			2.71	0.180 (S)	1.48	1.001
2,2',3-TriCB	16			0.532	0.0909 (S)	0.98	1.162
2,2',4-TriCB	17		B	0.582	0.0718 (S)	1.00	1.136
2,2',5-TriCB	18	18 + 30	C B G	0.829	0.0594 (S)	1.02	1.110
2,2',6-TriCB	19		J	0.117	0.0848 (S)	1.09	1.002
2,3,3'-TriCB	20	20 + 28	C B	5.72	0.0577 (S)	1.01	0.849
2,3,4-TriCB	21	21 + 33	C	1.43	0.0567 (S)	1.01	0.858
2,3,4'-TriCB	22			1.29	0.0618 (S)	1.09	0.872
2,3,5-TriCB	23		U		0.0622 (S)		
2,3,6-TriCB	24		U		0.0514 (S)		
2,3',4-TriCB	25		J	0.296	0.0519 (S)	1.10	0.826
2,3',5-TriCB	26	26 + 29	C	0.606	0.0585 (S)	0.92	1.296
2,3',6-TriCB	27		J	0.106	0.0500 (S)	1.05	1.148
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			3.42	0.0547 (S)	1.01	0.838
2,4',6-TriCB	32			0.478	0.0568 (S)	0.96	1.194
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U		0.0587 (S)		
3,3',4-TriCB	35		J	0.271	0.0572 (S)	1.06	0.985
3,3',5-TriCB	36		J	0.128	0.0544 (S)	0.91	0.932
3,4,4'-TriCB	37		B	2.46	0.0654 (S)	1.03	1.001
3,4,5-TriCB	38		J	0.078	0.0560 (S)	0.93	0.968
3,4',5-TriCB	39		U		0.0547 (S)		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	1.66	0.0870 (S)	0.75	1.334
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			0.898	0.0903 (S)	0.85	1.310
2,2',3,5-TeCB	43		U		0.104 (S)		
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	3.33	0.0804 (S)	0.79	1.283
2,2',3,6-TeCB	45	45 + 51	C	0.392	0.0898 (S)	0.81	1.145
2,2',3,6'-TeCB	46		K J	0.127	0.104 (S)	1.04	1.160
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			0.470	0.0880 (S)	0.87	1.272
2,2',4,5'-TeCB	49	49 + 69	C B	2.00	0.0747 (S)	0.84	1.257
2,2',4,6-TeCB	50	50 + 53	C J	0.262	0.0860 (S)	0.74	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			3.51	0.0835 (S)	0.84	1.233
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0618 (S)		
2,3,3',4-TeCB	55		U		0.0756 (S)		
2,3,3',4'-TeCB	56		B	2.07	0.0747 (S)	0.78	0.904
2,3,3',5-TeCB	57		U		0.0706 (S)		
2,3,3',5'-TeCB	58		U		0.0725 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C J	0.281	0.0655 (S)	0.78	1.300
2,3,4,4'-TeCB	60		B	1.47	0.0740 (S)	0.84	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	8.53	0.0707 (S)	0.78	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		J	0.215	0.0693 (S)	0.83	0.865
2,3,4',6-TeCB	64		B	1.38	0.0635 (S)	0.74	1.346
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	4.48	0.0668 (S)	0.77	0.885
2,3',4,5-TeCB	67		J	0.183	0.0641 (S)	0.84	0.856
2,3',4,5'-TeCB	68		J	0.079	0.0682 (S)	0.77	0.832
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		J	0.066	0.0640 (S)	0.74	0.823
2,3',5',6-TeCB	73		U		0.0669 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B	1.02	0.0885 (S)	0.76	1.001
3,3',4,5-TeCB	78		U		0.0686 (S)		
3,3',4,5'-TeCB	79		J	0.096	0.0573 (S)	0.86	0.970
3,3',5,5'-TeCB	80		U		0.0655 (S)		
3,4,4',5-TeCB	81		U		0.0763 (S)		
2,2',3,3',4-PeCB	82		G	0.402	0.106 (S)	1.49	0.933
2,2',3,3',5-PeCB	83	83 + 99	C B	3.39	0.0983 (S)	1.68	0.886
2,2',3,3',6-PeCB	84			0.858	0.112 (S)	1.55	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	1.19	0.0814 (S)	1.67	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	3.44	0.0847 (S)	1.62	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	0.498	0.0990 (S)	1.49	1.154
2,2',3,4,6'-PeCB	89		U		0.103 (S)		
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	4.92	0.0854 (S)	1.63	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			0.863	0.0972 (S)	1.63	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	2.93	0.0976 (S)	1.58	1.120
2,2',3,5,6'-PeCB	94		U		0.108 (S)		
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		U		0.0686 (S)		
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		U		0.0864 (S)		
2,2',4,6,6'-PeCB	104		U		0.0624 (S)		
2,3,3',4,4'-PeCB	105		B	2.78	0.0842 (S)	1.60	1.000
2,3,3',4,5-PeCB	106		U		0.0718 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C J	0.239	0.0783 (S)	1.70	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			0.523	0.0704 (S)	1.74	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	4.94	0.0735 (S)	1.64	0.925
2,3,3',5,5'-PeCB	111		U		0.0728 (S)		
2,3,3',5,6-PeCB	112		U		0.0736 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		K J	0.136	0.0854 (S)	1.20	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	6.15	0.0803 (S)	1.54	1.001
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		U		0.0665 (S)		
2,3',4,5',6-PeCB	121		U		0.0742 (S)		
2',3,3',4,5-PeCB	122		U		0.0812 (S)		
2',3,4,4',5-PeCB	123		J	0.098	0.0877 (S)	1.42	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		K J	0.102	0.0951 (S)	0.79	1.001
3,3',4,5,5'-PeCB	127		U		0.0738 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	0.852	0.0949 (S)	1.33	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	6.87	0.0941 (S)	1.25	0.928
2,2',3,3',4,5'-HxCB	130			0.422	0.117 (S)	1.22	0.913
2,2',3,3',4,6-HxCB	131		U		0.113 (S)		
2,2',3,3',4,6'-HxCB	132			1.34	0.117 (S)	1.18	1.173
2,2',3,3',5,5'-HxCB	133		K J	0.125	0.109 (S)	1.62	1.190
2,2',3,3',5,6-HxCB	134	134 + 143	C K J	0.128	0.115 (S)	0.96	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	1.45	0.0905 (S)	1.18	1.104
2,2',3,3',6,6'-HxCB	136			0.408	0.0679 (S)	1.28	1.023
2,2',3,4,4',5-HxCB	137		J	0.229	0.107 (S)	1.22	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C U		0.104 (S)		
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			0.524	0.104 (S)	1.26	0.904
2,2',3,4,5,6-HxCB	142		U		0.116 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		J	0.129	0.0886 (S)	1.30	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0719 (S)		
2,2',3,4',5,5'-HxCB	146			1.15	0.0962 (S)	1.34	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	3.49	0.102 (S)	1.22	1.132
2,2',3,4',5,6'-HxCB	148		U		0.0924 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.0677 (S)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0651 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	5.85	0.0844 (S)	1.22	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0538 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C J	0.601	0.0934 (S)	1.11	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			0.427	0.0736 (S)	1.31	0.938
2,3,3',4,5,5'-HxCB	159		U		0.0768 (S)		
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.0779 (S)		
2,3,3',4',5,5'-HxCB	162		U		0.0794 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		K J	0.290	0.0820 (S)	1.57	0.921
2,3,3',5,5',6-HxCB	165		U		0.0886 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		J	0.231	0.0748 (S)	1.40	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.0805 (S)		
2,2',3,3',4,4',5-HpCB	170			0.886	0.0956 (S)	0.93	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C J	0.360	0.103 (S)	1.01	1.162
2,2',3,3',4,5,5'-HpCB	172		J	0.179	0.103 (S)	1.06	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			0.974	0.0996 (S)	1.06	1.133
2,2',3,3',4,5',6-HpCB	175		U		0.0939 (S)		
2,2',3,3',4,6,6'-HpCB	176		J	0.153	0.0715 (S)	1.07	1.034
2,2',3,3',4',5,6-HpCB	177			0.908	0.101 (S)	0.99	1.145
2,2',3,3',5,5',6-HpCB	178			0.437	0.0982 (S)	1.20	1.085
2,2',3,3',5,6,6'-HpCB	179			0.472	0.0690 (S)	0.95	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	1.97	0.0754 (S)	0.98	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.0974 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.0939 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	0.929	0.0932 (S)	1.00	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.0698 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0753 (S)		
2,2',3,4',5,5',6-HpCB	187			2.32	0.0909 (S)	1.14	1.109
2,2',3,4',5,6,6'-HpCB	188		U		0.0596 (S)		
2,3,3',4,4',5,5'-HpCB	189		U		0.111 (S)		
2,3,3',4,4',5,6-HpCB	190		J	0.230	0.0747 (S)	1.09	0.947
2,3,3',4,4',5',6-HpCB	191		U		0.0747 (S)		
2,3,3',4,5,5',6-HpCB	192		U		0.0829 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			0.512	0.0970 (S)	0.84	0.991
2,2',3,3',4,4',5,6-OcCB	195		J	0.272	0.106 (S)	0.88	0.945
2,2',3,3',4,4',5,6'-OcCB	196		J	0.270	0.101 (S)	0.80	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C J	0.142	0.0753 (S)	0.95	1.045
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	0.839	0.105 (S)	0.82	1.114
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		K J	0.125	0.0737 (S)	1.23	1.022
2,2',3,3',5,5',6,6'-OcCB	202		K J	0.235	0.0757 (S)	1.03	1.001
2,2',3,4,4',5,5',6-OcCB	203			0.398	0.0971 (S)	0.78	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0752 (S)		
2,3,3',4,4',5,5',6-OcCB	205		U		0.0913 (S)		
2,2',3,3',4,4',5,5',6-NoCB	206			0.520	0.130 (S)	0.75	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207		J	0.106	0.0950 (S)	0.85	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208		J	0.180	0.0981 (S)	0.82	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209		K	0.501	0.0845 (S)	1.49	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

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Report Filename: 1668_PCB1668_PCBTF_L19652-9_Form1A_PB3C_209CS5_SJ1611847.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-09-S
Sample Collection:
06-May-2013 14:25

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-9 W
Matrix:	SOLID	**Sample Size:**	11.1 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	07-Jun-2013 **Time:** 03:25:21	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename(s):**	**PB3C_200 S: 7, PB3C_209C S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_209C S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	15.0

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		6.93
Total Dichloro Biphenyls		9.17
Total Trichloro Biphenyls		18.3
Total Tetrachloro Biphenyls		32.4
Total Pentachloro Biphenyls		33.2
Total Hexachloro Biphenyls		24.0
Total Heptachloro Biphenyls		9.82
Total Octachloro Biphenyls		2.43
Total Nonachloro Biphenyls		0.806
Decachloro Biphenyl	U	
TOTAL PCBs		137

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-9_Form1AHT_SJ1610047.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-09-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	06-May-2013 14:25		
Contract No.:	4273	**Project No.**	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Matrix:	SOLID	**Lab Sample I.D.:**	L19652-9 W
Sample Size:	11.1 g (dry)	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg (dry weight basis)	**Sample Data Filename(s):**	**PB3C_200 S: 7** **PB3C_209C S: 5**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			1.02	0.0885	0.0001	1.02e-04	1.02e-04	
3,4,4',5-TeCB	81		U		0.0763	0.0003	0.00e+00	1.14e-05	
2,3,3',4,4'-PeCB	105			2.78	0.0842	0.00003	8.34e-05	8.34e-05	
2,3,4,4',5-PeCB	114		U		0.0854	0.00003	0.00e+00	1.28e-06	
2,3',4,4',5-PeCB	118			6.15	0.0803	0.00003	1.85e-04	1.85e-04	
2',3,4,4',5-PeCB	123			0.098	0.0877	0.00003	2.94e-06	2.94e-06	
3,3',4,4',5-PeCB	126		U		0.0951	0.1	0.00e+00	4.76e-03	
2,3,3',4,4',5-HxCB	156	156 + 157	C	0.601	0.0934	0.00003	1.80e-05	1.80e-05	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			0.231	0.0748	0.00003	6.93e-06	6.93e-06	
3,3',4,4',5,5'-HxCB	169		U		0.0805	0.03	0.00e+00	1.21e-03	
2,3,3',4,4',5,5'-HpCB	189		U		0.111	0.00003	0.00e+00	1.67e-06	
					TOTAL TEQ		0.000398	0.00637	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-9_TEQ_SJ1610047.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-04-S
Sample Collection:
06-May-2013 14:46

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-10 i2
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Jun-2013 **Time:** 16:20:08	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_209C S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_209C S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	31.2

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			4.18	0.116 (S)	3.14	1.001
3-MoCB	2			12.1	0.106 (S)	3.10	0.988
4-MoCB	3		B	3.26	0.107 (S)	3.39	1.001
2,2'-DiCB	4			4.84	0.305 (S)	1.56	1.002
2,3-DiCB	5		J	0.178	0.172 (S)	1.46	1.197
2,3'-DiCB	6			2.43	0.157 (S)	1.46	1.174
2,4-DiCB	7			0.637	0.162 (S)	1.43	1.156
2,4'-DiCB	8			16.4	0.149 (S)	1.53	1.206
2,5-DiCB	9			0.948	0.156 (S)	1.33	1.144
2,6-DiCB	10		J	0.189	0.164 (S)	1.51	1.014
3,3'-DiCB	11			22.4	0.157 (S)	1.54	0.969
3,4-DiCB	12	12 + 13	C	3.04	0.160 (S)	1.71	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		J	0.265	0.155 (S)	1.60	0.927
4,4'-DiCB	15			22.2	0.174 (S)	1.56	1.001
2,2',3-TriCB	16			5.90	0.118 (S)	1.08	1.165
2,2',4-TriCB	17		B	7.28	0.0928 (S)	1.07	1.138
2,2',5-TriCB	18	18 + 30	C B	12.3	0.0768 (S)	1.04	1.113
2,2',6-TriCB	19			1.31	0.118 (S)	0.98	1.001
2,3,3'-TriCB	20	20 + 28	C B	50.9	0.0933 (S)	1.02	0.849
2,3,4-TriCB	21	21 + 33	C	16.8	0.0917 (S)	1.03	0.858
2,3,4'-TriCB	22			13.6	0.0999 (S)	1.02	0.872
2,3,5-TriCB	23		U		0.101 (S)		
2,3,6-TriCB	24		J	0.150	0.0665 (S)	1.07	1.158
2,3',4-TriCB	25			3.25	0.0840 (S)	1.02	0.825
2,3',5-TriCB	26	26 + 29	C	6.40	0.0945 (S)	1.04	1.300
2,3',6-TriCB	27			1.36	0.0647 (S)	1.08	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			31.8	0.0884 (S)	1.03	0.838
2,4',6-TriCB	32			6.37	0.0919 (S)	0.99	1.196
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.196	0.0949 (S)	1.06	1.273
3,3',4-TriCB	35			2.28	0.0926 (S)	1.07	0.985
3,3',5-TriCB	36			1.06	0.0880 (S)	1.02	0.932
3,4,4'-TriCB	37		B	21.3	0.100 (S)	1.02	1.001
3,4,5-TriCB	38		J	0.297	0.0906 (S)	0.95	0.968
3,4',5-TriCB	39			0.418	0.0885 (S)	1.08	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	21.2	0.107 (S)	0.77	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			10.4	0.111 (S)	0.77	1.311
2,2',3,5-TeCB	43			1.10	0.127 (S)	0.75	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	37.4	0.0990 (S)	0.78	1.285
2,2',3,6-TeCB	45	45 + 51	C	4.21	0.111 (S)	0.80	1.146
2,2',3,6'-TeCB	46			1.50	0.128 (S)	0.84	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			6.26	0.108 (S)	0.79	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	25.1	0.0920 (S)	0.79	1.258
2,2',4,6-TeCB	50	50 + 53	C	3.40	0.106 (S)	0.75	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			38.9	0.103 (S)	0.80	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0830 (S)		
2,3,3',4-TeCB	55			0.757	0.149 (S)	0.76	0.889
2,3,3',4'-TeCB	56		B	23.7	0.147 (S)	0.77	0.904
2,3,3',5-TeCB	57		J	0.284	0.139 (S)	0.78	0.844
2,3,3',5'-TeCB	58		J	0.223	0.143 (S)	0.73	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	3.38	0.0806 (S)	0.77	1.301
2,3,4,4'-TeCB	60		B	14.2	0.145 (S)	0.77	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	90.8	0.139 (S)	0.78	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			2.09	0.136 (S)	0.74	0.864
2,3,4',6-TeCB	64		B	15.3	0.0782 (S)	0.79	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	51.8	0.131 (S)	0.78	0.884
2,3',4,5-TeCB	67			1.77	0.126 (S)	0.82	0.856
2,3',4,5'-TeCB	68			0.560	0.134 (S)	0.70	0.832
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			0.747	0.126 (S)	0.75	0.823
2,3',5',6-TeCB	73		U		0.0824 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B	10.6	0.161 (S)	0.74	1.000
3,3',4,5-TeCB	78		U		0.135 (S)		
3,3',4,5'-TeCB	79			1.01	0.113 (S)	0.87	0.970
3,3',5,5'-TeCB	80		U		0.129 (S)		
3,4,4',5-TeCB	81			0.426	0.152 (S)	0.78	1.000
2,2',3,3',4-PeCB	82			8.15	0.174 (S)	1.53	0.933
2,2',3,3',5-PeCB	83	83 + 99	C B	45.0	0.161 (S)	1.56	0.885
2,2',3,3',6-PeCB	84			12.1	0.183 (S)	1.60	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	14.3	0.133 (S)	1.52	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	41.3	0.139 (S)	1.55	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	7.69	0.162 (S)	1.51	1.154
2,2',3,4,6'-PeCB	89			0.725	0.169 (S)	1.44	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	61.1	0.140 (S)	1.60	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			11.0	0.159 (S)	1.57	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	39.6	0.160 (S)	1.61	1.120
2,2',3,5,6'-PeCB	94		J	0.322	0.176 (S)	1.55	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		J	0.369	0.0828 (S)	1.42	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			0.927	0.142 (S)	1.34	1.093
2,2',4,6,6'-PeCB	104		U		0.0735 (S)		
2,3,3',4,4'-PeCB	105		B	34.4	0.145 (S)	1.53	1.000
2,3,3',4,5-PeCB	106		U		0.121 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	2.52	0.132 (S)	1.55	0.990
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			6.24	0.119 (S)	1.55	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	68.4	0.120 (S)	1.60	0.924
2,3,3',5,5'-PeCB	111		K J	0.156	0.119 (S)	1.82	0.945
2,3,3',5,6-PeCB	112		U		0.121 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			1.61	0.146 (S)	1.47	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	73.6	0.137 (S)	1.55	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			0.556	0.109 (S)	1.76	0.959
2,3',4,5',6-PeCB	121		U		0.122 (S)		
2',3,3',4,5-PeCB	122		K	0.918	0.137 (S)	1.25	1.010
2',3,4,4',5-PeCB	123			1.57	0.145 (S)	1.47	1.000
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			0.649	0.164 (S)	1.71	1.000
3,3',4,5,5'-PeCB	127		J	0.172	0.125 (S)	1.44	1.041
2,2',3,3',4,4'-HxCB	128	128 + 166	C	14.3	0.166 (S)	1.22	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	93.0	0.165 (S)	1.26	0.928
2,2',3,3',4,5'-HxCB	130			6.36	0.205 (S)	1.17	0.913
2,2',3,3',4,6-HxCB	131			0.826	0.198 (S)	1.23	1.159
2,2',3,3',4,6'-HxCB	132			22.2	0.206 (S)	1.26	1.174
2,2',3,3',5,5'-HxCB	133			1.75	0.191 (S)	1.37	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	3.36	0.202 (S)	1.28	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	27.1	0.139 (S)	1.23	1.104
2,2',3,3',6,6'-HxCB	136			7.40	0.104 (S)	1.28	1.023
2,2',3,4,4',5-HxCB	137			2.61	0.188 (S)	1.19	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	1.60	0.182 (S)	1.26	1.152
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			9.15	0.182 (S)	1.24	0.904
2,2',3,4,5,6-HxCB	142		U		0.203 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			2.95	0.136 (S)	1.18	1.122
2,2',3,4,6,6'-HxCB	145		U		0.110 (S)		
2,2',3,4',5,5'-HxCB	146			15.6	0.169 (S)	1.27	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	60.5	0.180 (S)	1.23	1.133
2,2',3,4',5,6'-HxCB	148			0.518	0.142 (S)	1.15	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	0.245	0.104 (S)	1.27	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.100 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	82.3	0.148 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0837 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	8.80	0.164 (S)	1.20	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			7.04	0.129 (S)	1.30	0.938
2,3,3',4,5,5'-HxCB	159			0.861	0.135 (S)	1.18	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.137 (S)		
2,3,3',4',5,5'-HxCB	162		J	0.340	0.139 (S)	1.24	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			5.18	0.144 (S)	1.17	0.921
2,3,3',5,5',6-HxCB	165		J	0.254	0.156 (S)	1.35	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			3.39	0.133 (S)	1.20	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.149 (S)		
2,2',3,3',4,4',5-HpCB	170			19.8	0.141 (S)	1.07	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	7.42	0.145 (S)	1.07	1.163
2,2',3,3',4,5,5'-HpCB	172			3.73	0.145 (S)	1.05	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			19.1	0.139 (S)	1.01	1.133
2,2',3,3',4,5',6-HpCB	175			1.36	0.131 (S)	1.01	1.102
2,2',3,3',4,6,6'-HpCB	176			2.96	0.0999 (S)	0.98	1.034
2,2',3,3',4',5,6-HpCB	177			16.7	0.142 (S)	1.02	1.145
2,2',3,3',5,5',6-HpCB	178			6.87	0.137 (S)	1.00	1.084
2,2',3,3',5,6,6'-HpCB	179			10.0	0.0965 (S)	1.01	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	39.1	0.114 (S)	1.05	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.136 (S)		
2,2',3,4,4',5,6'-HpCB	182		J	0.232	0.131 (S)	1.04	1.116
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	15.1	0.130 (S)	1.07	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.0976 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.105 (S)		
2,2',3,4',5,5',6-HpCB	187			37.1	0.127 (S)	1.01	1.110
2,2',3,4',5,6,6'-HpCB	188		J	0.116	0.0867 (S)	1.16	1.000
2,3,3',4,4',5,5'-HpCB	189			0.913	0.147 (S)	1.06	1.000
2,3,3',4,4',5,6-HpCB	190			3.63	0.105 (S)	1.04	0.947
2,3,3',4,4',5',6-HpCB	191			0.693	0.105 (S)	1.17	0.917
2,3,3',4,5,5',6-HpCB	192		U		0.116 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			11.0	0.131 (S)	0.91	0.991
2,2',3,3',4,4',5,6-OcCB	195			4.67	0.143 (S)	0.90	0.946
2,2',3,3',4,4',5,6'-OcCB	196			6.52	0.147 (S)	0.92	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	1.88	0.109 (S)	0.82	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	17.1	0.153 (S)	0.88	1.114
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			2.49	0.107 (S)	0.91	1.023
2,2',3,3',5,5',6,6'-OcCB	202			4.32	0.112 (S)	0.91	1.000
2,2',3,4,4',5,5',6-OcCB	203			7.49	0.141 (S)	0.89	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.109 (S)		
2,3,3',4,4',5,5',6-OcCB	205			0.623	0.121 (S)	0.87	1.001
2,2',3,3',4,4',5,5',6-NoCB	206			8.93	0.245 (S)	0.78	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207			1.28	0.178 (S)	0.78	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			3.42	0.182 (S)	0.73	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			9.39	0.117 (S)	1.14	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

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Report Filename: 1668_PCB1668_PCBTF_L19652-10_Form1A_PB3C_209CS6_SJ1611849.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-04-S
Sample Collection:
06-May-2013 14:46

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-10 i2
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Jun-2013 **Time:** 16:20:08	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_209C S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_209C S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	31.2

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		19.5
Total Dichloro Biphenyls		73.5
Total Trichloro Biphenyls		183
Total Tetrachloro Biphenyls		367
Total Pentachloro Biphenyls		432
Total Hexachloro Biphenyls		378
Total Heptachloro Biphenyls		185
Total Octachloro Biphenyls		56.1
Total Nonachloro Biphenyls		13.6
Decachloro Biphenyl		9.39
TOTAL PCBs		1720

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-10_Form1AHT_SJ1611849.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-04-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 06-May-2013 14:46

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-10 i2

Sample Size: 10.4 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_209C S: 6**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			10.6	0.161	0.0001	1.06e-03	1.06e-03	
3,4,4',5-TeCB	81			0.426	0.152	0.0003	1.28e-04	1.28e-04	
2,3,3',4,4'-PeCB	105			34.4	0.145	0.00003	1.03e-03	1.03e-03	
2,3,4,4',5-PeCB	114			1.61	0.146	0.00003	4.83e-05	4.83e-05	
2,3',4,4',5-PeCB	118			73.6	0.137	0.00003	2.21e-03	2.21e-03	
2',3,4,4',5-PeCB	123			1.57	0.145	0.00003	4.71e-05	4.71e-05	
3,3',4,4',5-PeCB	126			0.649	0.164	0.1	6.49e-02	6.49e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	8.80	0.164	0.00003	2.64e-04	2.64e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			3.39	0.133	0.00003	1.02e-04	1.02e-04	
3,3',4,4',5,5'-HxCB	169		U		0.149	0.03	0.00e+00	2.24e-03	
2,3,3',4,4',5,5'-HpCB	189			0.913	0.147	0.00003	2.74e-05	2.74e-05	
					TOTAL TEQ		0.0698	0.0721	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-02-S
Sample Collection:
06-May-2013 15:09

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-11 M
Matrix:	SOLID	**Sample Size:**	10.8 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Jun-2013 **Time:** 17:24:30	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_209C S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_209C S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.1

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		K	0.731	0.106 (S)	4.07	1.001
3-MoCB	2			7.28	0.0783 (S)	3.06	0.988
4-MoCB	3		K B	0.930	0.0624 (S)	4.52	1.000
2,2'-DiCB	4			0.499	0.352 (S)	1.39	1.001
2,3-DiCB	5		U		0.201 (S)		
2,3'-DiCB	6		J	0.272	0.183 (S)	1.72	1.174
2,4-DiCB	7		U		0.190 (S)		
2,4'-DiCB	8		G	1.48	0.174 (S)	1.35	1.205
2,5-DiCB	9		K	0.415	0.182 (S)	1.18	1.144
2,6-DiCB	10		U		0.192 (S)		
3,3'-DiCB	11			6.07	0.184 (S)	1.58	0.969
3,4-DiCB	12	12 + 13	C K G	1.64	0.187 (S)	7.02	0.985
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K J	0.298	0.182 (S)	0.39	0.926
4,4'-DiCB	15			2.89	0.202 (S)	1.51	1.000
2,2',3-TriCB	16			0.649	0.101 (S)	0.96	1.164
2,2',4-TriCB	17		B	0.633	0.0796 (S)	1.09	1.137
2,2',5-TriCB	18	18 + 30	C B G	0.931	0.0659 (S)	1.05	1.113
2,2',6-TriCB	19		K J	0.130	0.0961 (S)	1.58	1.001
2,3,3'-TriCB	20	20 + 28	C B	6.75	0.0729 (S)	1.04	0.849
2,3,4-TriCB	21	21 + 33	C	1.69	0.0717 (S)	1.00	0.858
2,3,4'-TriCB	22			1.62	0.0781 (S)	1.02	0.872
2,3,5-TriCB	23		U		0.0786 (S)		
2,3,6-TriCB	24		U G		0.0571 (S)		
2,3',4-TriCB	25			0.390	0.0656 (S)	0.98	0.825
2,3',5-TriCB	26	26 + 29	C	0.754	0.0739 (S)	1.01	1.299
2,3',6-TriCB	27		J G	0.105	0.0555 (S)	1.11	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			4.08	0.0691 (S)	1.01	0.838
2,4',6-TriCB	32			0.496	0.0718 (S)	0.96	1.195
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U		0.0742 (S)		
3,3',4-TriCB	35		J	0.366	0.0723 (S)	1.00	0.985
3,3',5-TriCB	36		J	0.221	0.0688 (S)	0.95	0.932
3,4,4'-TriCB	37		B	2.81	0.0816 (S)	0.97	1.001
3,4,5-TriCB	38		J	0.128	0.0708 (S)	1.14	0.968
3,4',5-TriCB	39		U		0.0691 (S)		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	1.68	0.125 (S)	0.80	1.334
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			1.00	0.130 (S)	0.77	1.310
2,2',3,5-TeCB	43		U		0.149 (S)		
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	3.71	0.116 (S)	0.84	1.284
2,2',3,6-TeCB	45	45 + 51	C J	0.363	0.129 (S)	0.82	1.144
2,2',3,6'-TeCB	46		U		0.150 (S)		
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			0.575	0.126 (S)	0.80	1.272
2,2',4,5'-TeCB	49	49 + 69	C B	2.45	0.107 (S)	0.75	1.257
2,2',4,6-TeCB	50	50 + 53	C J	0.287	0.123 (S)	0.74	1.110
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			4.06	0.120 (S)	0.78	1.233
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0742 (S)		
2,3,3',4-TeCB	55		U		0.128 (S)		
2,3,3',4'-TeCB	56		B	2.43	0.127 (S)	0.77	0.904
2,3,3',5-TeCB	57		U		0.120 (S)		
2,3,3',5'-TeCB	58		U		0.123 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C J	0.290	0.0940 (S)	0.76	1.300
2,3,4,4'-TeCB	60		B	1.68	0.126 (S)	0.75	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	10.1	0.120 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		J	0.246	0.118 (S)	0.78	0.864
2,3,4',6-TeCB	64		B	1.53	0.0912 (S)	0.78	1.347
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	5.40	0.113 (S)	0.78	0.884
2,3',4,5-TeCB	67		J	0.198	0.109 (S)	0.88	0.856
2,3',4,5'-TeCB	68		U		0.116 (S)		
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		U		0.109 (S)		
2,3',5',6-TeCB	73		U		0.0960 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B	1.29	0.179 (S)	0.72	1.000
3,3',4,5-TeCB	78		U		0.117 (S)		
3,3',4,5'-TeCB	79		K J	0.101	0.0974 (S)	0.91	0.970
3,3',5,5'-TeCB	80		U		0.111 (S)		
3,4,4',5-TeCB	81		U		0.118 (S)		
2,2',3,3',4-PeCB	82		K G	0.409	0.0980 (S)	2.20	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	3.71	0.0907 (S)	1.61	0.886
2,2',3,3',6-PeCB	84			0.890	0.103 (S)	1.67	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	1.27	0.0751 (S)	1.56	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	3.62	0.0782 (S)	1.65	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	0.616	0.0913 (S)	1.53	1.154
2,2',3,4,6'-PeCB	89		U		0.0952 (S)		
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	5.31	0.0788 (S)	1.53	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			0.976	0.0897 (S)	1.42	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	3.12	0.0900 (S)	1.57	1.120
2,2',3,5,6'-PeCB	94		U		0.0992 (S)		
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		U		0.0776 (S)		
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		U		0.0798 (S)		
2,2',4,6,6'-PeCB	104		U		0.0727 (S)		
2,3,3',4,4'-PeCB	105		B	3.31	0.106 (S)	1.49	1.000
2,3,3',4,5-PeCB	106		U		0.0901 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C J	0.275	0.0982 (S)	1.63	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			0.656	0.0883 (S)	1.47	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	5.57	0.0678 (S)	1.61	0.925
2,3,3',5,5'-PeCB	111		U		0.0672 (S)		
2,3,3',5,6-PeCB	112		U		0.0679 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		J	0.161	0.107 (S)	1.43	1.001
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	7.56	0.100 (S)	1.51	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		J	0.066	0.0614 (S)	1.40	0.959
2,3',4,5',6-PeCB	121		U		0.0685 (S)		
2',3,3',4,5-PeCB	122		U		0.102 (S)		
2',3,4,4',5-PeCB	123		K J	0.151	0.108 (S)	1.87	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		K J	0.129	0.117 (S)	0.92	1.000
3,3',4,5,5'-PeCB	127		U		0.0925 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	1.24	0.115 (S)	1.35	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	8.04	0.114 (S)	1.25	0.928
2,2',3,3',4,5'-HxCB	130		K	0.499	0.142 (S)	1.54	0.913
2,2',3,3',4,6-HxCB	131		U		0.137 (S)		
2,2',3,3',4,6'-HxCB	132			1.39	0.142 (S)	1.33	1.174
2,2',3,3',5,5'-HxCB	133		J	0.156	0.132 (S)	1.42	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C J	0.156	0.140 (S)	1.36	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	1.78	0.119 (S)	1.36	1.105
2,2',3,3',6,6'-HxCB	136			0.432	0.0892 (S)	1.12	1.025
2,2',3,4,4',5-HxCB	137		K J	0.245	0.130 (S)	1.51	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C U		0.126 (S)		
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			0.525	0.126 (S)	1.08	0.904
2,2',3,4,5,6-HxCB	142		U		0.140 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		K J	0.183	0.116 (S)	1.44	1.122
2,2',3,4,6,6'-HxCB	145		U		0.0944 (S)		
2,2',3,4',5,5'-HxCB	146			1.26	0.117 (S)	1.29	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	3.80	0.124 (S)	1.33	1.133
2,2',3,4',5,6'-HxCB	148		U		0.121 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.0890 (S)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0855 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	7.09	0.102 (S)	1.25	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0733 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C J	0.667	0.114 (S)	1.33	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			0.547	0.0892 (S)	1.24	0.938
2,3,3',4,5,5'-HxCB	159		U		0.0930 (S)		
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.0944 (S)		
2,3,3',4',5,5'-HxCB	162		U		0.0961 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		J	0.308	0.0994 (S)	1.14	0.921
2,3,3',5,5',6-HxCB	165		U		0.107 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		J	0.286	0.0869 (S)	1.16	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.0955 (S)		
2,2',3,3',4,4',5-HpCB	170		G	1.04	0.131 (S)	0.98	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	0.485	0.122 (S)	0.89	1.162
2,2',3,3',4,5,5'-HpCB	172		J	0.214	0.122 (S)	1.18	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			0.866	0.117 (S)	1.02	1.133
2,2',3,3',4,5',6-HpCB	175		U		0.111 (S)		
2,2',3,3',4,6,6'-HpCB	176		J	0.157	0.0842 (S)	1.20	1.034
2,2',3,3',4',5,6-HpCB	177		K	0.992	0.120 (S)	1.23	1.145
2,2',3,3',5,5',6-HpCB	178		K	0.420	0.116 (S)	0.72	1.085
2,2',3,3',5,6,6'-HpCB	179			0.542	0.0813 (S)	1.19	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B G	2.18	0.134 (S)	0.92	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.115 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.111 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	0.940	0.110 (S)	1.04	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.0823 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0887 (S)		
2,2',3,4',5,5',6-HpCB	187			2.55	0.107 (S)	1.04	1.109
2,2',3,4',5,6,6'-HpCB	188		U		0.0750 (S)		
2,3,3',4,4',5,5'-HpCB	189		U		0.124 (S)		
2,3,3',4,4',5,6-HpCB	190		K J	0.259	0.0881 (S)	1.30	0.947
2,3,3',4,4',5',6-HpCB	191		U		0.0880 (S)		
2,3,3',4,5,5',6-HpCB	192		U		0.0977 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			0.538	0.115 (S)	0.98	0.991
2,2',3,3',4,4',5,6-OcCB	195		J	0.261	0.125 (S)	0.80	0.945
2,2',3,3',4,4',5,6'-OcCB	196		J	0.292	0.131 (S)	0.93	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C J	0.125	0.0975 (S)	0.90	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	0.968	0.137 (S)	0.90	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		K J	0.115	0.0954 (S)	1.07	1.022
2,2',3,3',5,5',6,6'-OcCB	202		J	0.292	0.100 (S)	1.02	1.000
2,2',3,4,4',5,5',6-OcCB	203			0.378	0.126 (S)	0.94	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0974 (S)		
2,3,3',4,4',5,5',6-OcCB	205		U		0.105 (S)		
2,2',3,3',4,4',5,5',6-NoCB	206			0.608	0.159 (S)	0.70	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207		U		0.117 (S)		
2,2',3,3',4,5,5',6,6'-NoCB	208		J	0.230	0.122 (S)	0.83	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			0.592	0.0962 (S)	1.11	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-11_Form1A_PB3C_209CS7_SJ1611851.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-02-S
Sample Collection:
06-May-2013 15:09

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-11 M
Matrix:	SOLID	**Sample Size:**	10.8 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Jun-2013 **Time:** 17:24:30	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_209C S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_209C S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.1

PCB HOMOLOGUE GROUP	LAB FLAG [1]	CONC. FOUND
Total Monochloro Biphenyls		7.28
Total Dichloro Biphenyls		11.2
Total Trichloro Biphenyls		21.6
Total Tetrachloro Biphenyls		37.3
Total Pentachloro Biphenyls		37.1
Total Hexachloro Biphenyls		27.7
Total Heptachloro Biphenyls		8.97
Total Octachloro Biphenyls		2.85
Total Nonachloro Biphenyls		0.838
Decachloro Biphenyl		0.592
TOTAL PCBs		155

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-11_Form1AHT_SJ1611851.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-02-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 06-May-2013 15:09

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-11 M

Sample Size: 10.8 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_209C S: 7**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			1.29	0.179	0.0001	1.29e-04	1.29e-04	
3,4,4',5-TeCB	81		U		0.118	0.0003	0.00e+00	1.77e-05	
2,3,3',4,4'-PeCB	105			3.31	0.106	0.00003	9.93e-05	9.93e-05	
2,3,4,4',5-PeCB	114			0.161	0.107	0.00003	4.83e-06	4.83e-06	
2,3',4,4',5-PeCB	118			7.56	0.100	0.00003	2.27e-04	2.27e-04	
2',3,4,4',5-PeCB	123		U		0.108	0.00003	0.00e+00	1.62e-06	
3,3',4,4',5-PeCB	126		U		0.117	0.1	0.00e+00	5.85e-03	
2,3,3',4,4',5-HxCB	156	156 + 157	C	0.667	0.114	0.00003	2.00e-05	2.00e-05	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			0.286	0.0869	0.00003	8.58e-06	8.58e-06	
3,3',4,4',5,5'-HxCB	169		U		0.0955	0.03	0.00e+00	1.43e-03	
2,3,3',4,4',5,5'-HpCB	189		U		0.124	0.00003	0.00e+00	1.86e-06	
					TOTAL TEQ		0.000489	0.00779	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-11_TEQ_SJ1611851.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-11-S
Sample Collection:
06-May-2013 15:49

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-12
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 04:48:08	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_194A S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_194A S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	14.2

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			0.569	0.0981 (S)	3.20	1.001
3-MoCB	2			4.79	0.0836 (S)	2.99	0.989
4-MoCB	3		K B	0.717	0.0723 (S)	3.70	1.001
2,2'-DiCB	4			0.531	0.232 (S)	1.50	1.000
2,3-DiCB	5		U		0.135 (S)		
2,3'-DiCB	6		J	0.296	0.124 (S)	1.37	1.173
2,4-DiCB	7		U		0.128 (S)		
2,4'-DiCB	8			1.47	0.115 (S)	1.36	1.205
2,5-DiCB	9		K J	0.364	0.121 (S)	1.14	1.142
2,6-DiCB	10		U		0.124 (S)		
3,3'-DiCB	11			6.11	0.132 (S)	1.55	0.969
3,4-DiCB	12	12 + 13	C K	0.934	0.133 (S)	3.59	0.986
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U		0.126 (S)		
4,4'-DiCB	15			2.43	0.127 (S)	1.52	1.001
2,2',3-TriCB	16			0.559	0.0958 (S)	1.15	1.164
2,2',4-TriCB	17		B	0.570	0.0818 (S)	0.91	1.137
2,2',5-TriCB	18	18 + 30	C B	1.19	0.0678 (S)	1.02	1.112
2,2',6-TriCB	19		J	0.125	0.113 (S)	0.94	1.000
2,3,3'-TriCB	20	20 + 28	C B	5.59	0.0763 (S)	0.99	0.848
2,3,4-TriCB	21	21 + 33	C	1.58	0.0773 (S)	0.99	0.858
2,3,4'-TriCB	22			1.55	0.0854 (S)	1.05	0.872
2,3,5-TriCB	23		U		0.0842 (S)		
2,3,6-TriCB	24		U		0.0598 (S)		
2,3',4-TriCB	25		J	0.326	0.0690 (S)	0.90	0.826
2,3',5-TriCB	26	26 + 29	C	0.690	0.0792 (S)	0.93	1.300
2,3',6-TriCB	27		J	0.126	0.0559 (S)	0.97	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			3.62	0.0732 (S)	1.03	0.837
2,4',6-TriCB	32			0.476	0.0741 (S)	0.89	1.196
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U		0.0807 (S)		
3,3',4-TriCB	35		K J	0.288	0.0826 (S)	1.22	0.985
3,3',5-TriCB	36		J	0.215	0.0744 (S)	0.93	0.932
3,4,4'-TriCB	37		B	2.07	0.0765 (S)	1.00	1.001
3,4,5-TriCB	38		U		0.0734 (S)		
3,4',5-TriCB	39		J	0.080	0.0757 (S)	0.99	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	1.60	0.0788 (S)	0.82	1.335
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			0.966	0.0843 (S)	0.66	1.311
2,2',3,5-TeCB	43		J	0.111	0.102 (S)	0.82	1.245
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	3.42	0.0736 (S)	0.80	1.284
2,2',3,6-TeCB	45	45 + 51	C J	0.356	0.0832 (S)	0.85	1.146
2,2',3,6'-TeCB	46		J	0.117	0.0959 (S)	0.67	1.160
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		U		0.0810 (S)		
2,2',4,5'-TeCB	49	49 + 69	C B	2.19	0.0691 (S)	0.81	1.259
2,2',4,6-TeCB	50	50 + 53	C J	0.249	0.0802 (S)	0.82	1.110
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			3.46	0.0747 (S)	0.76	1.233
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0636 (S)		
2,3,3',4-TeCB	55		U		0.0972 (S)		
2,3,3',4'-TeCB	56		B	2.28	0.0941 (S)	0.73	0.905
2,3,3',5-TeCB	57		U		0.0917 (S)		
2,3,3',5'-TeCB	58		U		0.0952 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C J	0.262	0.0607 (S)	0.66	1.300
2,3,4,4'-TeCB	60		B	1.58	0.0947 (S)	0.70	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	9.16	0.0907 (S)	0.75	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		J	0.246	0.0871 (S)	0.69	0.864
2,3,4',6-TeCB	64		U		0.0580 (S)		
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	4.96	0.0886 (S)	0.74	0.884
2,3',4,5-TeCB	67		J	0.194	0.0826 (S)	0.76	0.856
2,3',4,5'-TeCB	68		U		0.0893 (S)		
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		U		0.0874 (S)		
2,3',5',6-TeCB	73		U		0.0604 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B	0.955	0.106 (S)	0.74	1.001
3,3',4,5-TeCB	78		U		0.0900 (S)		
3,3',4,5'-TeCB	79		J	0.105	0.0734 (S)	0.69	0.970
3,3',5,5'-TeCB	80		U		0.0841 (S)		
3,4,4',5-TeCB	81		U		0.0884 (S)		
2,2',3,3',4-PeCB	82		G	0.437	0.0907 (S)	1.77	0.933
2,2',3,3',5-PeCB	83	83 + 99	C B	3.46	0.0859 (S)	1.64	0.886
2,2',3,3',6-PeCB	84			0.901	0.0994 (S)	1.46	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	1.24	0.0711 (S)	1.46	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	3.42	0.0742 (S)	1.57	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	0.540	0.0860 (S)	1.46	1.154
2,2',3,4,6'-PeCB	89		U		0.0889 (S)		
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	4.78	0.0759 (S)	1.48	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			0.878	0.0858 (S)	1.47	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	2.85	0.0850 (S)	1.49	1.121
2,2',3,5,6'-PeCB	94		U		0.0947 (S)		
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		U		0.0619 (S)		
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		U		0.0784 (S)		
2,2',4,6,6'-PeCB	104		U		0.0597 (S)		
2,3,3',4,4'-PeCB	105		B	2.99	0.0927 (S)	1.52	1.000
2,3,3',4,5-PeCB	106		U		0.0874 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C J	0.238	0.0918 (S)	1.68	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		K	0.632	0.0913 (S)	1.22	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	5.06	0.0642 (S)	1.57	0.925
2,3,3',5,5'-PeCB	111		U		0.0628 (S)		
2,3,3',5,6-PeCB	112		U		0.0637 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		K J	0.126	0.0936 (S)	0.90	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	6.28	0.0857 (S)	1.53	1.001
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		K J	0.064	0.0594 (S)	0.90	0.959
2,3',4,5',6-PeCB	121		U		0.0667 (S)		
2',3,3',4,5-PeCB	122		U		0.0933 (S)		
2',3,4,4',5-PeCB	123		J	0.118	0.0950 (S)	1.45	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		U		0.100 (S)		
3,3',4,5,5'-PeCB	127		U		0.0865 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	1.12	0.0784 (S)	1.22	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	7.07	0.0787 (S)	1.18	0.928
2,2',3,3',4,5'-HxCB	130		K	0.460	0.0970 (S)	1.02	0.913
2,2',3,3',4,6-HxCB	131		U		0.0992 (S)		
2,2',3,3',4,6'-HxCB	132			1.38	0.0985 (S)	1.29	1.173
2,2',3,3',5,5'-HxCB	133		K J	0.151	0.0893 (S)	1.01	1.190
2,2',3,3',5,6-HxCB	134	134 + 143	C K J	0.211	0.0973 (S)	0.86	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	1.69	0.0822 (S)	1.16	1.104
2,2',3,3',6,6'-HxCB	136		U		0.0647 (S)		
2,2',3,4,4',5-HxCB	137		J	0.217	0.0940 (S)	1.16	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C U		0.0879 (S)		
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		K	0.567	0.0859 (S)	1.55	0.903
2,2',3,4,5,6-HxCB	142		U		0.0949 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		J	0.243	0.0835 (S)	1.18	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0685 (S)		
2,2',3,4',5,5'-HxCB	146			1.33	0.0847 (S)	1.40	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	3.69	0.0872 (S)	1.27	1.133
2,2',3,4',5,6'-HxCB	148		U		0.0847 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.0654 (S)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0619 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	5.89	0.0689 (S)	1.31	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0550 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C J	0.654	0.0775 (S)	1.23	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			0.483	0.0622 (S)	1.11	0.938
2,3,3',4,5,5'-HxCB	159		U		0.0663 (S)		
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.0644 (S)		
2,3,3',4',5,5'-HxCB	162		U		0.0671 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		J	0.283	0.0656 (S)	1.07	0.921
2,3,3',5,5',6-HxCB	165		U		0.0771 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		J	0.295	0.0618 (S)	1.09	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.0666 (S)		
2,2',3,3',4,4',5-HpCB	170			1.10	0.0869 (S)	1.13	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C K	0.396	0.0889 (S)	1.24	1.162
2,2',3,3',4,5,5'-HpCB	172		K J	0.210	0.0859 (S)	0.79	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			0.906	0.0810 (S)	1.16	1.133
2,2',3,3',4,5',6-HpCB	175		K J	0.109	0.0778 (S)	0.65	1.102
2,2',3,3',4,6,6'-HpCB	176		K J	0.152	0.0611 (S)	0.79	1.034
2,2',3,3',4',5,6-HpCB	177			0.986	0.0872 (S)	0.96	1.146
2,2',3,3',5,5',6-HpCB	178		K	0.481	0.0819 (S)	1.21	1.085
2,2',3,3',5,6,6'-HpCB	179			0.584	0.0600 (S)	1.07	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	2.17	0.0735 (S)	0.93	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.0840 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.0784 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	0.938	0.0808 (S)	1.13	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.0598 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0637 (S)		
2,2',3,4',5,5',6-HpCB	187			2.37	0.0769 (S)	1.04	1.109
2,2',3,4',5,6,6'-HpCB	188		U		0.0597 (S)		
2,3,3',4,4',5,5'-HpCB	189		U		0.100 (S)		
2,3,3',4,4',5,6-HpCB	190		J	0.228	0.0692 (S)	0.92	0.947
2,3,3',4,4',5',6-HpCB	191		U		0.0662 (S)		
2,3,3',4,5,5',6-HpCB	192		U		0.0737 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			0.593	0.0978 (S)	0.88	0.991
2,2',3,3',4,4',5,6-OcCB	195		K J	0.303	0.103 (S)	1.11	0.946
2,2',3,3',4,4',5,6'-OcCB	196		K J	0.277	0.0817 (S)	1.55	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C K J	0.129	0.0600 (S)	1.05	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	0.966	0.0844 (S)	0.99	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		J	0.126	0.0596 (S)	0.92	1.022
2,2',3,3',5,5',6,6'-OcCB	202		K J	0.296	0.0644 (S)	1.14	1.001
2,2',3,4,4',5,5',6-OcCB	203			0.402	0.0815 (S)	1.00	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0598 (S)		
2,3,3',4,4',5,5',6-OcCB	205		U		0.0838 (S)		
2,2',3,3',4,4',5,5',6-NoCB	206			0.623	0.147 (S)	0.76	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207		U		0.108 (S)		
2,2',3,3',4,5,5',6,6'-NoCB	208		J	0.213	0.111 (S)	0.78	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			0.582	0.0871 (S)	1.13	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-12_Form1A_PB3C_194AS7_SJ1608030.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-11-S
Sample Collection:
06-May-2013 15:49

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-12
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 04:48:08	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_194A S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_194A S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	14.2

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		5.36
Total Dichloro Biphenyls		10.8
Total Trichloro Biphenyls		18.8
Total Tetrachloro Biphenyls		32.2
Total Pentachloro Biphenyls		33.2
Total Hexachloro Biphenyls		24.3
Total Heptachloro Biphenyls		9.28
Total Octachloro Biphenyls		2.09
Total Nonachloro Biphenyls		0.836
Decachloro Biphenyl		0.582
TOTAL PCBs		137

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 17-Jun-2013 14:26:53; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-12_Form1AHT_SJ1608030.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-11-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	06-May-2013 15:49		
Contract No.:	4273	**Project No.**	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Matrix:	SOLID	**Lab Sample I.D.:**	L19652-12
Sample Size:	10.7 g (dry)	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg (dry weight basis)	**Sample Data Filename(s):**	**PB3C_194A S: 7**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			0.955	0.106	0.0001	9.55e-05	9.55e-05	
3,4,4',5-TeCB	81		U		0.0884	0.0003	0.00e+00	1.33e-05	
2,3,3',4,4'-PeCB	105			2.99	0.0927	0.00003	8.97e-05	8.97e-05	
2,3,4,4',5-PeCB	114		U		0.0936	0.00003	0.00e+00	1.40e-06	
2,3',4,4',5-PeCB	118			6.28	0.0857	0.00003	1.88e-04	1.88e-04	
2',3,4,4',5-PeCB	123			0.118	0.0950	0.00003	3.54e-06	3.54e-06	
3,3',4,4',5-PeCB	126		U		0.100	0.1	0.00e+00	5.00e-03	
2,3,3',4,4',5-HxCB	156	156 + 157	C	0.654	0.0775	0.00003	1.96e-05	1.96e-05	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			0.295	0.0618	0.00003	8.85e-06	8.85e-06	
3,3',4,4',5,5'-HxCB	169		U		0.0666	0.03	0.00e+00	9.99e-04	
2,3,3',4,4',5,5'-HpCB	189		U		0.100	0.00003	0.00e+00	1.50e-06	
					TOTAL TEQ		0.000406	0.00642	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-12_TEQ_SJ1608030.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-01-S
Sample Collection:
06-May-2013 16:13

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-13 i (A)
Matrix:	SOLID	**Sample Size:**	9.77 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Jun-2013 **Time:** 18:28:51	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_209C S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_209C S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	39.6

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			4.61	0.0977 (S)	3.15	1.001
3-MoCB	2			18.0	0.0898 (S)	3.15	0.989
4-MoCB	3		B	4.17	0.0916 (S)	3.19	1.002
2,2'-DiCB	4			6.21	0.277 (S)	1.42	1.001
2,3-DiCB	5		J	0.224	0.154 (S)	1.67	1.197
2,3'-DiCB	6			3.47	0.141 (S)	1.44	1.175
2,4-DiCB	7			0.921	0.146 (S)	1.60	1.158
2,4'-DiCB	8			22.0	0.134 (S)	1.52	1.206
2,5-DiCB	9			0.883	0.140 (S)	1.36	1.144
2,6-DiCB	10		J	0.183	0.148 (S)	1.44	1.013
3,3'-DiCB	11			36.5	0.142 (S)	1.53	0.968
3,4-DiCB	12	12 + 13	C	4.40	0.144 (S)	1.57	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	0.466	0.140 (S)	1.24	0.926
4,4'-DiCB	15			33.5	0.156 (S)	1.53	1.000
2,2',3-TriCB	16			7.69	0.109 (S)	1.10	1.164
2,2',4-TriCB	17		B	9.56	0.0858 (S)	1.07	1.137
2,2',5-TriCB	18	18 + 30	C B	16.5	0.0710 (S)	1.01	1.112
2,2',6-TriCB	19			1.50	0.112 (S)	1.06	1.000
2,3,3'-TriCB	20	20 + 28	C B	73.2	0.0775 (S)	1.02	0.848
2,3,4-TriCB	21	21 + 33	C	23.9	0.0762 (S)	1.02	0.857
2,3,4'-TriCB	22			18.9	0.0830 (S)	1.00	0.872
2,3,5-TriCB	23		U		0.0836 (S)		
2,3,6-TriCB	24		J	0.240	0.0615 (S)	0.97	1.157
2,3',4-TriCB	25			5.18	0.0698 (S)	1.00	0.825
2,3',5-TriCB	26	26 + 29	C	9.03	0.0785 (S)	1.01	1.300
2,3',6-TriCB	27			1.58	0.0598 (S)	1.05	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			46.4	0.0735 (S)	1.02	0.836
2,4',6-TriCB	32			7.97	0.0763 (S)	1.04	1.196
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.227	0.0789 (S)	1.18	1.272
3,3',4-TriCB	35			3.18	0.0769 (S)	1.07	0.985
3,3',5-TriCB	36			1.67	0.0731 (S)	1.09	0.932
3,4,4'-TriCB	37		B	30.4	0.0828 (S)	1.03	1.001
3,4,5-TriCB	38		J	0.354	0.0753 (S)	1.12	0.968
3,4',5-TriCB	39			0.625	0.0735 (S)	1.07	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	26.5	0.0956 (S)	0.80	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			13.3	0.0992 (S)	0.75	1.311
2,2',3,5-TeCB	43			1.34	0.114 (S)	0.78	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	47.3	0.0883 (S)	0.76	1.285
2,2',3,6-TeCB	45	45 + 51	C	4.78	0.0986 (S)	0.79	1.145
2,2',3,6'-TeCB	46			1.74	0.115 (S)	0.77	1.160
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			7.90	0.0967 (S)	0.80	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	31.7	0.0820 (S)	0.78	1.258
2,2',4,6-TeCB	50	50 + 53	C	4.24	0.0944 (S)	0.78	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			49.4	0.0917 (S)	0.78	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		J	0.091	0.0787 (S)	0.66	1.000
2,3,3',4-TeCB	55			1.23	0.151 (S)	0.78	0.889
2,3,3',4'-TeCB	56		B	36.4	0.149 (S)	0.76	0.904
2,3,3',5-TeCB	57		J	0.346	0.141 (S)	0.81	0.844
2,3,3',5'-TeCB	58		J	0.327	0.145 (S)	0.72	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	4.29	0.0719 (S)	0.75	1.302
2,3,4,4'-TeCB	60		B	21.3	0.148 (S)	0.77	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	132	0.141 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			3.10	0.138 (S)	0.76	0.865
2,3,4',6-TeCB	64		B	19.9	0.0698 (S)	0.78	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	78.3	0.133 (S)	0.77	0.885
2,3',4,5-TeCB	67			2.47	0.128 (S)	0.75	0.856
2,3',4,5'-TeCB	68			0.767	0.136 (S)	0.69	0.832
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			0.910	0.128 (S)	0.78	0.823
2,3',5',6-TeCB	73		U		0.0735 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B	14.5	0.158 (S)	0.77	1.000
3,3',4,5-TeCB	78		U		0.137 (S)		
3,3',4,5'-TeCB	79			1.30	0.114 (S)	0.79	0.970
3,3',5,5'-TeCB	80		U		0.131 (S)		
3,4,4',5-TeCB	81			0.564	0.152 (S)	0.84	1.000
2,2',3,3',4-PeCB	82			10.3	0.114 (S)	1.55	0.933
2,2',3,3',5-PeCB	83	83 + 99	C B	58.0	0.106 (S)	1.58	0.886
2,2',3,3',6-PeCB	84			14.7	0.120 (S)	1.59	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	19.6	0.0877 (S)	1.56	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	55.3	0.0913 (S)	1.59	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	9.27	0.107 (S)	1.49	1.155
2,2',3,4,6'-PeCB	89		K	0.925	0.111 (S)	1.80	1.183
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	80.9	0.0920 (S)	1.58	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			14.3	0.105 (S)	1.56	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	47.8	0.105 (S)	1.59	1.121
2,2',3,5,6'-PeCB	94			0.501	0.116 (S)	1.40	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		K J	0.367	0.0742 (S)	1.80	1.016
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			0.840	0.0932 (S)	1.60	1.094
2,2',4,6,6'-PeCB	104		U		0.0705 (S)		
2,3,3',4,4'-PeCB	105		B	49.7	0.162 (S)	1.56	1.001
2,3,3',4,5-PeCB	106		U		0.139 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	3.56	0.152 (S)	1.52	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			8.54	0.136 (S)	1.46	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	90.4	0.0792 (S)	1.54	0.925
2,3,3',5,5'-PeCB	111		K J	0.190	0.0785 (S)	1.31	0.946
2,3,3',5,6-PeCB	112		U		0.0793 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			2.14	0.162 (S)	1.49	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	104	0.155 (S)	1.53	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			0.706	0.0717 (S)	1.39	0.959
2,3',4,5',6-PeCB	121		K J	0.081	0.0800 (S)	3.25	1.200
2',3,3',4,5-PeCB	122			1.05	0.157 (S)	1.45	1.009
2',3,4,4',5-PeCB	123			2.35	0.169 (S)	1.67	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			0.961	0.184 (S)	1.76	1.000
3,3',4,5,5'-PeCB	127		U		0.143 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	19.9	0.145 (S)	1.23	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	123	0.144 (S)	1.24	0.928
2,2',3,3',4,5'-HxCB	130			8.14	0.179 (S)	1.23	0.913
2,2',3,3',4,6-HxCB	131			0.912	0.172 (S)	1.30	1.158
2,2',3,3',4,6'-HxCB	132			27.4	0.179 (S)	1.25	1.174
2,2',3,3',5,5'-HxCB	133			2.12	0.166 (S)	1.27	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	4.16	0.176 (S)	1.23	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	28.5	0.111 (S)	1.25	1.103
2,2',3,3',6,6'-HxCB	136			8.26	0.0832 (S)	1.25	1.023
2,2',3,4,4',5-HxCB	137			3.80	0.163 (S)	1.18	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	1.85	0.158 (S)	1.35	1.152
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			11.4	0.158 (S)	1.21	0.903
2,2',3,4,5,6-HxCB	142		U		0.177 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			3.60	0.109 (S)	1.18	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0880 (S)		
2,2',3,4',5,5'-HxCB	146		G	17.9	0.147 (S)	1.24	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	69.7	0.156 (S)	1.25	1.133
2,2',3,4',5,6'-HxCB	148			0.522	0.113 (S)	1.36	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		K J	0.211	0.0830 (S)	1.75	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		K J	0.080	0.0797 (S)	1.03	1.006
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	105	0.129 (S)	1.24	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0690 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	12.1	0.141 (S)	1.23	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			8.93	0.112 (S)	1.30	0.938
2,3,3',4,5,5'-HxCB	159			1.08	0.117 (S)	1.23	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.119 (S)		
2,3,3',4',5,5'-HxCB	162			0.615	0.121 (S)	1.21	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			6.67	0.125 (S)	1.24	0.921
2,3,3',5,5',6-HxCB	165		J	0.262	0.135 (S)	1.42	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			4.93	0.115 (S)	1.26	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.118 (S)		
2,2',3,3',4,4',5-HpCB	170			25.1	0.117 (S)	1.03	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	9.29	0.128 (S)	0.98	1.163
2,2',3,3',4,5,5'-HpCB	172			4.71	0.128 (S)	0.96	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			24.3	0.123 (S)	1.05	1.133
2,2',3,3',4,5',6-HpCB	175			1.54	0.116 (S)	0.94	1.102
2,2',3,3',4,6,6'-HpCB	176			3.24	0.0885 (S)	1.07	1.034
2,2',3,3',4',5,6-HpCB	177			21.3	0.126 (S)	1.06	1.145
2,2',3,3',5,5',6-HpCB	178			8.23	0.122 (S)	1.07	1.085
2,2',3,3',5,6,6'-HpCB	179			11.1	0.0854 (S)	1.03	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	48.5	0.0972 (S)	1.05	1.000
2,2',3,4,4',5,6-HpCB	181		J	0.253	0.121 (S)	0.94	1.156
2,2',3,4,4',5,6'-HpCB	182		J	0.303	0.116 (S)	0.92	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	18.9	0.115 (S)	1.02	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.0864 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0932 (S)		
2,2',3,4',5,5',6-HpCB	187			46.4	0.113 (S)	1.02	1.110
2,2',3,4',5,6,6'-HpCB	188		J	0.155	0.0757 (S)	1.03	1.000
2,3,3',4,4',5,5'-HpCB	189			1.22	0.116 (S)	0.92	1.000
2,3,3',4,4',5,6-HpCB	190			4.62	0.0925 (S)	1.04	0.947
2,3,3',4,4',5',6-HpCB	191			0.921	0.0925 (S)	1.11	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.103 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			13.2	0.119 (S)	0.87	0.991
2,2',3,3',4,4',5,6-OcCB	195			5.78	0.130 (S)	0.87	0.945
2,2',3,3',4,4',5,6'-OcCB	196			7.95	0.122 (S)	0.85	0.915
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	2.06	0.0906 (S)	0.96	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	22.1	0.127 (S)	0.89	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			2.83	0.0887 (S)	0.90	1.023
2,2',3,3',5,5',6,6'-OcCB	202			5.21	0.0908 (S)	0.92	1.000
2,2',3,4,4',5,5',6-OcCB	203			9.84	0.117 (S)	0.91	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0905 (S)		
2,3,3',4,4',5,5',6-OcCB	205			0.651	0.113 (S)	0.89	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			11.7	0.201 (S)	0.77	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207			1.75	0.138 (S)	0.78	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			4.51	0.136 (S)	0.79	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			11.2	0.122 (S)	1.13	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-13_Form1A_PB3C_209CS8_SJ1611853.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-01-S
Sample Collection:
06-May-2013 16:13

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-13 i (A)
Matrix:	SOLID	**Sample Size:**	9.77 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Jun-2013 **Time:** 18:28:51	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_209C S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_209C S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	39.6

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		26.8
Total Dichloro Biphenyls		108
Total Trichloro Biphenyls		258
Total Tetrachloro Biphenyls		506
Total Pentachloro Biphenyls		575
Total Hexachloro Biphenyls		471
Total Heptachloro Biphenyls		230
Total Octachloro Biphenyls		69.6
Total Nonachloro Biphenyls		18.0
Decachloro Biphenyl		11.2
TOTAL PCBs		2270

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 17-Jun-2013 14:26:53; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-13_Form1AHT_SJ1611853.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-01-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 06-May-2013 16:13

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-13 i (A)

Sample Size: 9.77 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_209C S: 8**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			14.5	0.158	0.0001	1.45e-03	1.45e-03	
3,4,4',5-TeCB	81			0.564	0.152	0.0003	1.69e-04	1.69e-04	
2,3,3',4,4'-PeCB	105			49.7	0.162	0.00003	1.49e-03	1.49e-03	
2,3,4,4',5-PeCB	114			2.14	0.162	0.00003	6.42e-05	6.42e-05	
2,3',4,4',5-PeCB	118			104	0.155	0.00003	3.12e-03	3.12e-03	
2',3,4,4',5-PeCB	123			2.35	0.169	0.00003	7.05e-05	7.05e-05	
3,3',4,4',5-PeCB	126			0.961	0.184	0.1	9.61e-02	9.61e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	12.1	0.141	0.00003	3.63e-04	3.63e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			4.93	0.115	0.00003	1.48e-04	1.48e-04	
3,3',4,4',5,5'-HxCB	169		U		0.118	0.03	0.00e+00	1.77e-03	
2,3,3',4,4',5,5'-HpCB	189			1.22	0.116	0.00003	3.66e-05	3.66e-05	
					TOTAL TEQ		0.103	0.105	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-01-S (Duplicate)
Sample Collection:
06-May-2013 16:13

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	WG43679-103 i (DUP L19652-13)
Matrix:	SOLID	**Sample Size:**	10.1 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Jun-2013 **Time:** 19:33:13	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_209C S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_209C S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	39.1

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			4.48	0.0986 (S)	3.09	1.001
3-MoCB	2			16.6	0.0823 (S)	3.12	0.989
4-MoCB	3		B	3.80	0.0769 (S)	3.24	1.001
2,2'-DiCB	4			5.75	0.244 (S)	1.56	1.001
2,3-DiCB	5		J	0.236	0.140 (S)	1.55	1.195
2,3'-DiCB	6			3.08	0.128 (S)	1.53	1.174
2,4-DiCB	7			0.824	0.133 (S)	1.53	1.157
2,4'-DiCB	8			20.8	0.122 (S)	1.54	1.205
2,5-DiCB	9			0.893	0.127 (S)	1.58	1.144
2,6-DiCB	10		J	0.179	0.135 (S)	1.69	1.013
3,3'-DiCB	11			33.8	0.129 (S)	1.54	0.969
3,4-DiCB	12	12 + 13	C	3.95	0.131 (S)	1.57	0.985
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	0.445	0.127 (S)	1.23	0.927
4,4'-DiCB	15			28.8	0.144 (S)	1.55	1.001
2,2',3-TriCB	16			7.45	0.0881 (S)	1.03	1.164
2,2',4-TriCB	17		B	9.16	0.0696 (S)	1.02	1.137
2,2',5-TriCB	18	18 + 30	C B	15.4	0.0576 (S)	1.05	1.112
2,2',6-TriCB	19			1.35	0.0814 (S)	1.10	1.001
2,3,3'-TriCB	20	20 + 28	C B	66.7	0.0809 (S)	1.02	0.848
2,3,4-TriCB	21	21 + 33	C	21.8	0.0795 (S)	1.03	0.858
2,3,4'-TriCB	22			16.8	0.0866 (S)	1.02	0.872
2,3,5-TriCB	23		U		0.0872 (S)		
2,3,6-TriCB	24		J	0.180	0.0498 (S)	0.95	1.157
2,3',4-TriCB	25			4.35	0.0728 (S)	1.00	0.825
2,3',5-TriCB	26	26 + 29	C	8.30	0.0819 (S)	1.01	1.299
2,3',6-TriCB	27			1.63	0.0497 (Q)	1.04	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			42.9	0.0767 (S)	1.04	0.837
2,4',6-TriCB	32			7.65	0.0797 (S)	1.02	1.196
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.259	0.0823 (S)	0.94	1.272
3,3',4-TriCB	35			2.70	0.0803 (S)	1.02	0.985
3,3',5-TriCB	36			1.55	0.0763 (S)	1.03	0.932
3,4,4'-TriCB	37		B	26.8	0.0910 (S)	1.03	1.001
3,4,5-TriCB	38		J	0.326	0.0786 (S)	0.96	0.968
3,4',5-TriCB	39			0.551	0.0767 (S)	0.95	0.946

This page is part of a total report that contains information necessary for accreditation compliance.
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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	24.6	0.0908 (S)	0.78	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			12.1	0.0943 (S)	0.79	1.311
2,2',3,5-TeCB	43			1.28	0.108 (S)	0.74	1.245
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	44.3	0.0839 (S)	0.78	1.285
2,2',3,6-TeCB	45	45 + 51	C	4.81	0.0937 (S)	0.81	1.145
2,2',3,6'-TeCB	46			1.68	0.109 (S)	0.78	1.160
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			7.52	0.0919 (S)	0.79	1.272
2,2',4,5'-TeCB	49	49 + 69	C B	30.0	0.0780 (S)	0.80	1.258
2,2',4,6-TeCB	50	50 + 53	C	4.16	0.0897 (S)	0.84	1.110
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			47.1	0.0871 (S)	0.80	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0647 (S)		
2,3,3',4-TeCB	55			0.968	0.169 (S)	0.78	0.889
2,3,3',4'-TeCB	56		B	30.9	0.167 (S)	0.78	0.904
2,3,3',5-TeCB	57			0.415	0.158 (S)	0.81	0.844
2,3,3',5'-TeCB	58		J	0.213	0.162 (S)	0.69	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	4.21	0.0683 (S)	0.83	1.302
2,3,4,4'-TeCB	60		B	18.9	0.165 (S)	0.79	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	114	0.158 (S)	0.78	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			2.82	0.155 (S)	0.79	0.864
2,3,4',6-TeCB	64		B	18.3	0.0663 (S)	0.78	1.347
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	66.9	0.149 (S)	0.77	0.884
2,3',4,5-TeCB	67			2.26	0.143 (S)	0.81	0.856
2,3',4,5'-TeCB	68			0.696	0.152 (S)	0.74	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			0.883	0.143 (S)	0.83	0.823
2,3',5',6-TeCB	73		U		0.0698 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B	12.2	0.184 (S)	0.78	1.000
3,3',4,5-TeCB	78		U		0.153 (S)		
3,3',4,5'-TeCB	79			1.17	0.128 (S)	0.76	0.970
3,3',5,5'-TeCB	80		U		0.146 (S)		
3,4,4',5-TeCB	81			0.516	0.185 (S)	0.77	1.000
2,2',3,3',4-PeCB	82			8.37	0.128 (S)	1.51	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	52.6	0.118 (S)	1.57	0.886
2,2',3,3',6-PeCB	84			13.0	0.134 (S)	1.57	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	16.7	0.0980 (S)	1.58	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	49.5	0.102 (S)	1.60	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	8.39	0.119 (S)	1.56	1.154
2,2',3,4,6'-PeCB	89			0.817	0.124 (S)	1.62	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	71.5	0.103 (S)	1.54	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			12.4	0.117 (S)	1.65	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	44.1	0.117 (S)	1.60	1.120
2,2',3,5,6'-PeCB	94		K J	0.315	0.130 (S)	1.96	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		K	0.408	0.0767 (S)	1.85	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		K	0.849	0.104 (S)	1.28	1.094
2,2',4,6,6'-PeCB	104		U		0.0649 (S)		
2,3,3',4,4'-PeCB	105		B	42.8	0.148 (S)	1.53	1.000
2,3,3',4,5-PeCB	106		U		0.120 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	3.17	0.131 (S)	1.56	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			7.63	0.118 (S)	1.56	0.998
2,3,3',4',6-PeCB	110	110 + 115	C	75.3	0.0884 (S)	1.59	0.925
2,3,3',5,5'-PeCB	111		J	0.174	0.0876 (S)	1.49	0.946
2,3,3',5,6-PeCB	112		U		0.0886 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			1.68	0.144 (S)	1.47	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	90.2	0.137 (S)	1.54	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			0.571	0.0800 (S)	1.42	0.959
2,3',4,5',6-PeCB	121		U		0.0894 (S)		
2',3,3',4,5-PeCB	122			0.864	0.136 (S)	1.62	1.010
2',3,4,4',5-PeCB	123			1.80	0.146 (S)	1.54	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			0.765	0.163 (S)	1.60	1.000
3,3',4,5,5'-PeCB	127		U		0.124 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	17.5	0.154 (S)	1.25	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	111	0.153 (S)	1.26	0.929
2,2',3,3',4,5'-HxCB	130			7.44	0.190 (S)	1.24	0.913
2,2',3,3',4,6-HxCB	131			0.945	0.183 (S)	1.38	1.159
2,2',3,3',4,6'-HxCB	132			25.5	0.190 (S)	1.24	1.174
2,2',3,3',5,5'-HxCB	133			1.74	0.177 (S)	1.28	1.190
2,2',3,3',5,6-HxCB	134	134 + 143	C	3.79	0.187 (S)	1.29	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	26.5	0.126 (S)	1.28	1.104
2,2',3,3',6,6'-HxCB	136			7.52	0.0943 (S)	1.22	1.024
2,2',3,4,4',5-HxCB	137			3.64	0.174 (S)	1.21	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	1.62	0.169 (S)	1.29	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			10.6	0.169 (S)	1.27	0.904
2,2',3,4,5,6-HxCB	142		U		0.188 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			3.11	0.123 (S)	1.23	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0998 (S)		
2,2',3,4',5,5'-HxCB	146		G	15.1	0.157 (S)	1.26	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	62.4	0.166 (S)	1.26	1.133
2,2',3,4',5,6'-HxCB	148		K	0.476	0.128 (S)	0.93	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	0.210	0.0940 (S)	1.11	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0904 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	96.3	0.137 (S)	1.25	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0701 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	11.0	0.156 (S)	1.26	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			8.03	0.120 (S)	1.31	0.938
2,3,3',4,5,5'-HxCB	159			0.924	0.125 (S)	1.23	0.982
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.127 (S)		
2,3,3',4',5,5'-HxCB	162			0.410	0.129 (S)	1.25	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			5.56	0.133 (S)	1.18	0.921
2,3,3',5,5',6-HxCB	165		K J	0.220	0.144 (S)	1.97	0.879
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			4.31	0.125 (S)	1.26	1.001
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.128 (S)		
2,2',3,3',4,4',5-HpCB	170			22.5	0.146 (S)	1.03	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	8.65	0.160 (S)	1.07	1.163
2,2',3,3',4,5,5'-HpCB	172			4.07	0.160 (S)	1.01	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			22.7	0.154 (S)	1.05	1.133
2,2',3,3',4,5',6-HpCB	175			1.31	0.146 (S)	1.09	1.102
2,2',3,3',4,6,6'-HpCB	176			3.10	0.111 (S)	0.99	1.034
2,2',3,3',4',5,6-HpCB	177			19.4	0.157 (S)	1.05	1.145
2,2',3,3',5,5',6-HpCB	178			7.40	0.152 (S)	1.12	1.084
2,2',3,3',5,6,6'-HpCB	179			10.9	0.107 (S)	1.03	1.009
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	42.9	0.118 (S)	1.05	1.000
2,2',3,4,4',5,6-HpCB	181		J	0.151	0.151 (S)	0.97	1.156
2,2',3,4,4',5,6'-HpCB	182		K J	0.194	0.145 (S)	2.23	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	17.8	0.144 (S)	1.03	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.108 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.117 (S)		
2,2',3,4',5,5',6-HpCB	187			41.8	0.141 (S)	1.04	1.110
2,2',3,4',5,6,6'-HpCB	188		K J	0.121	0.0867 (S)	0.86	1.000
2,3,3',4,4',5,5'-HpCB	189			0.997	0.159 (S)	1.16	1.000
2,3,3',4,4',5,6-HpCB	190			4.13	0.116 (S)	1.05	0.947
2,3,3',4,4',5',6-HpCB	191			0.917	0.116 (S)	0.97	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.129 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			11.4	0.122 (S)	0.89	0.991
2,2',3,3',4,4',5,6-OcCB	195			4.72	0.133 (S)	0.88	0.945
2,2',3,3',4,4',5,6'-OcCB	196			6.84	0.149 (S)	0.91	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	1.76	0.111 (S)	0.84	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	19.3	0.155 (S)	0.93	1.114
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			2.35	0.108 (S)	0.87	1.023
2,2',3,3',5,5',6,6'-OcCB	202			4.62	0.111 (S)	0.89	1.000
2,2',3,4,4',5,5',6-OcCB	203			8.41	0.143 (S)	0.92	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.111 (S)		
2,3,3',4,4',5,5',6-OcCB	205			0.720	0.115 (S)	0.94	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			10.5	0.229 (S)	0.82	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			1.56	0.162 (S)	0.74	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			3.91	0.162 (S)	0.80	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			10.1	0.117 (S)	1.13	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

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Report Filename: 1668_PCB1668_PCBTF_WG43679-103_Form1A_PB3C_209CS9_SJ1611855.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-01-S (Duplicate)
Sample Collection:
06-May-2013 16:13

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	WG43679-103 i (DUP L19652-13)
Matrix:	SOLID	**Sample Size:**	10.1 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	13-Jun-2013 **Time:** 19:33:13	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_209C S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_209C S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	39.1

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		24.9
Total Dichloro Biphenyls		98.3
Total Trichloro Biphenyls		236
Total Tetrachloro Biphenyls		453
Total Pentachloro Biphenyls		502
Total Hexachloro Biphenyls		425
Total Heptachloro Biphenyls		209
Total Octachloro Biphenyls		60.1
Total Nonachloro Biphenyls		16.0
Decachloro Biphenyl		10.1
TOTAL PCBs		2030

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_WG43679-103_Form1AHT_SJ1611855.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-01-S (Duplicate)

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	06-May-2013 16:13		
Contract No.:	4273	**Project No.**	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Matrix:	SOLID	**Lab Sample I.D.:**	WG43679-103 i (DUP L19652-13)
Sample Size:	10.1 g (dry)	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg (dry weight basis)	**Sample Data Filename(s):**	**PB3C_209C S: 9**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			12.2	0.184	0.0001	1.22e-03	1.22e-03	
3,4,4',5-TeCB	81			0.516	0.185	0.0003	1.55e-04	1.55e-04	
2,3,3',4,4'-PeCB	105			42.8	0.148	0.00003	1.28e-03	1.28e-03	
2,3,4,4',5-PeCB	114			1.68	0.144	0.00003	5.04e-05	5.04e-05	
2,3',4,4',5-PeCB	118			90.2	0.137	0.00003	2.71e-03	2.71e-03	
2',3,4,4',5-PeCB	123			1.80	0.146	0.00003	5.40e-05	5.40e-05	
3,3',4,4',5-PeCB	126			0.765	0.163	0.1	7.65e-02	7.65e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	11.0	0.156	0.00003	3.30e-04	3.30e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			4.31	0.125	0.00003	1.29e-04	1.29e-04	
3,3',4,4',5,5'-HxCB	169		U		0.128	0.03	0.00e+00	1.92e-03	
2,3,3',4,4',5,5'-HpCB	189			0.997	0.159	0.00003	2.99e-05	2.99e-05	
					TOTAL TEQ		0.0825	0.0844	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_WG43679-103_TEQ_SJ1611855.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

PCB CONGENER ANALYSIS REPORT
RELATIVE PERCENT DIFFERENCE

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Contract No.: 4273
Client ID: RB13-DUN-01-S

Concentration Units: ng/kg (dry weight basis)

COMPOUND	IUPAC NO.	L19652-13 (A) LAB FLAG [1]	L19652-13 (A) CONC. FOUND	WG43679-103 LAB FLAG [1]	WG43679-103 CONC. FOUND	MEAN	RELATIVE PERCENT DIFFERENCE
2-MoCB	1		4.61		4.48	4.55	2.75
3-MoCB	2		18.0		16.6	17.3	8.02
4-MoCB	3		4.17		3.80	3.99	9.38
2,2'-DiCB	4		6.21		5.75	5.98	7.81
2,3-DiCB	5	J	0.224	J	0.236	0.230	5.22
2,3'-DiCB	6		3.47		3.08	3.28	11.9
2,4-DiCB	7		0.921		0.824	0.873	11.1
2,4'-DiCB	8		22.0		20.8	21.4	5.71
2,5-DiCB	9		0.883		0.893	0.888	1.13
2,6-DiCB	10	J	0.183	J	0.179	0.181	2.21
3,3'-DiCB	11		36.5		33.8	35.1	7.78
3,4-DiCB	12	C	4.40	C	3.95	4.17	10.6
3,4'-DiCB	13	C12		C12			
3,5-DiCB	14	K	0.466	K	0.445		
4,4'-DiCB	15		33.5		28.8	31.2	15.0
2,2',3-TriCB	16		7.69		7.45	7.57	3.08
2,2',4-TriCB	17		9.56		9.16	9.36	4.33
2,2',5-TriCB	18	C	16.5	C	15.4	15.9	7.15
2,2',6-TriCB	19		1.50		1.35	1.43	10.4
2,3,3'-TriCB	20	C	73.2	C	66.7	70.0	9.20
2,3,4-TriCB	21	C	23.9	C	21.8	22.8	9.26
2,3,4'-TriCB	22		18.9		16.8	17.8	11.4
2,3,5-TriCB	23	U		U			
2,3,6-TriCB	24	J	0.240	J	0.180	0.210	28.6
2,3',4-TriCB	25		5.18		4.35	4.77	17.5
2,3',5-TriCB	26	C	9.03	C	8.30	8.67	8.47
2,3',6-TriCB	27		1.58		1.63	1.61	3.36
2,4,4'-TriCB	28	C20		C20			
2,4,5-TriCB	29	C26		C26			
2,4,6-TriCB	30	C18		C18			
2,4',5-TriCB	31		46.4		42.9	44.7	7.81
2,4',6-TriCB	32		7.97		7.65	7.81	4.03
2',3,4-TriCB	33	C21		C21			
2',3,5-TriCB	34	J	0.227	J	0.259	0.243	13.2
3,3',4-TriCB	35		3.18		2.70	2.94	16.4
3,3',5-TriCB	36		1.67		1.55	1.61	7.64
3,4,4'-TriCB	37		30.4		26.8	28.6	12.5
3,4,5-TriCB	38	J	0.354	J	0.326	0.340	8.24
3,4',5-TriCB	39		0.625		0.551	0.588	12.6
2,2',3,3'-TeCB	40	C	26.5	C	24.6	25.5	7.24
2,2',3,4-TeCB	41	C40		C40			
2,2',3,4'-TeCB	42		13.3		12.1	12.7	8.88
2,2',3,5-TeCB	43		1.34		1.28	1.31	4.89
2,2',3,5'-TeCB	44	C	47.3	C	44.3	45.8	6.72
2,2',3,6-TeCB	45	C	4.78	C	4.81	4.79	0.689
2,2',3,6'-TeCB	46		1.74		1.68	1.71	3.62
2,2',4,4'-TeCB	47	C44		C44			
2,2',4,5-TeCB	48		7.90		7.52	7.71	5.02
2,2',4,5'-TeCB	49	C	31.7	C	30.0	30.8	5.64
2,2',4,6-TeCB	50	C	4.24	C	4.16	4.20	1.76
2,2',4,6'-TeCB	51	C45		C45			
2,2',5,5'-TeCB	52		49.4		47.1	48.2	4.77
2,2',5,6'-TeCB	53	C50		C50			
2,2',6,6'-TeCB	54	J	0.091	U			
2,3,3',4-TeCB	55		1.23		0.968	1.10	23.7

COMPOUND	IUPAC NO.	L19652-13 (A) LAB FLAG [1]	L19652-13 (A) CONC. FOUND	WG43679-103 LAB FLAG [1]	WG43679-103 CONC. FOUND	MEAN	RELATIVE PERCENT DIFFERENCE
2,3,3',4'-TeCB	56		36.4		30.9	33.7	16.2
2,3,3',5-TeCB	57	J	0.346		0.415	0.381	18.1
2,3,3',5'-TeCB	58	J	0.327	J	0.213	0.270	42.2
2,3,3',6-TeCB	59	C	4.29	C	4.21	4.25	1.93
2,3,4,4'-TeCB	60		21.3		18.9	20.1	12.1
2,3,4,5-TeCB	61	C	132	C	114	123	14.7
2,3,4,6-TeCB	62	C59		C59			
2,3,4',5-TeCB	63		3.10		2.82	2.96	9.44
2,3,4',6-TeCB	64		19.9		18.3	19.1	8.35
2,3,5,6-TeCB	65	C44		C44			
2,3',4,4'-TeCB	66		78.3		66.9	72.6	15.7
2,3',4,5-TeCB	67		2.47		2.26	2.36	8.77
2,3',4,5'-TeCB	68		0.767		0.696	0.732	9.71
2,3',4,6-TeCB	69	C49		C49			
2,3',4',5-TeCB	70	C61		C61			
2,3',4',6-TeCB	71	C40		C40			
2,3',5,5'-TeCB	72		0.910		0.883	0.897	3.01
2,3',5',6-TeCB	73	U		U			
2,4,4',5-TeCB	74	C61		C61			
2,4,4',6-TeCB	75	C59		C59			
2',3,4,5-TeCB	76	C61		C61			
3,3',4,4'-TeCB	77		14.5		12.2	13.4	17.2
3,3',4,5-TeCB	78	U		U			
3,3',4,5'-TeCB	79		1.30		1.17	1.24	10.9
3,3',5,5'-TeCB	80	U		U			
3,4,4',5-TeCB	81		0.564		0.516	0.540	8.89
2,2',3,3',4-PeCB	82		10.3		8.37	9.31	20.3
2,2',3,3',5-PeCB	83	C	58.0	C	52.6	55.3	9.79
2,2',3,3',6-PeCB	84		14.7		13.0	13.9	12.1
2,2',3,4,4'-PeCB	85	C	19.6	C	16.7	18.2	15.6
2,2',3,4,5-PeCB	86	C	55.3	C	49.5	52.4	11.1
2,2',3,4,5'-PeCB	87	C86		C86			
2,2',3,4,6-PeCB	88	C	9.27	C	8.39	8.83	9.96
2,2',3,4,6'-PeCB	89	K	0.925		0.817		
2,2',3,4',5-PeCB	90	C	80.9	C	71.5	76.2	12.4
2,2',3,4',6-PeCB	91	C88		C88			
2,2',3,5,5'-PeCB	92		14.3		12.4	13.4	14.3
2,2',3,5,6-PeCB	93	C	47.8	C	44.1	45.9	7.95
2,2',3,5,6'-PeCB	94		0.501	K J	0.315		
2,2',3,5',6-PeCB	95	C93		C93			
2,2',3,6,6'-PeCB	96	K J	0.367	K	0.408		
2,2',3',4,5-PeCB	97	C86		C86			
2,2',3',4,6-PeCB	98	C93		C93			
2,2',4,4',5-PeCB	99	C83		C83			
2,2',4,4',6-PeCB	100	C93		C93			
2,2',4,5,5'-PeCB	101	C90		C90			
2,2',4,5,6'-PeCB	102	C93		C93			
2,2',4,5',6-PeCB	103		0.840	K	0.849		
2,2',4,6,6'-PeCB	104	U		U			
2,3,3',4,4'-PeCB	105		49.7		42.8	46.3	14.8
2,3,3',4,5-PeCB	106	U		U			
2,3,3',4',5-PeCB	107	C	3.56	C	3.17	3.36	11.3
2,3,3',4,5'-PeCB	108	C86		C86			
2,3,3',4,6-PeCB	109		8.54		7.63	8.08	11.2
2,3,3',4',6-PeCB	110	C	90.4	C	75.3	82.8	18.3
2,3,3',5,5'-PeCB	111	K J	0.190	J	0.174		
2,3,3',5,6-PeCB	112	U		U			
2,3,3',5',6-PeCB	113	C90		C90			
2,3,4,4',5-PeCB	114		2.14		1.68	1.91	23.9
2,3,4,4',6-PeCB	115	C110		C110			
2,3,4,5,6-PeCB	116	C85		C85			
2,3,4',5,6-PeCB	117	C85		C85			
2,3',4,4',5-PeCB	118		104		90.2	97.1	14.1
2,3',4,4',6-PeCB	119	C86		C86			

COMPOUND	IUPAC NO.	L19652-13 (A) LAB FLAG [1]	L19652-13 (A) CONC. FOUND	WG43679-103 LAB FLAG [1]	WG43679-103 CONC. FOUND	MEAN	RELATIVE PERCENT DIFFERENCE
2,3',4,5,5'-PeCB	120		0.706		0.571	0.639	21.1
2,3',4,5',6-PeCB	121	K J	0.081	U			
2',3,3',4,5-PeCB	122		1.05		0.864	0.956	19.2
2',3,4,4',5-PeCB	123		2.35		1.80	2.07	26.7
2',3,4,5,5'-PeCB	124	C107		C107			
2',3,4,5,6'-PeCB	125	C86		C86			
3,3',4,4',5-PeCB	126		0.961		0.765	0.863	22.7
3,3',4,5,5'-PeCB	127	U		U			
2,2',3,3',4,4'-HxCB	128	C	19.9	C	17.5	18.7	12.7
2,2',3,3',4,5-HxCB	129	C	123	C	111	117	10.2
2,2',3,3',4,5'-HxCB	130		8.14		7.44	7.79	8.90
2,2',3,3',4,6-HxCB	131		0.912		0.945	0.929	3.55
2,2',3,3',4,6'-HxCB	132		27.4		25.5	26.5	7.35
2,2',3,3',5,5'-HxCB	133		2.12		1.74	1.93	19.7
2,2',3,3',5,6-HxCB	134	C	4.16	C	3.79	3.97	9.31
2,2',3,3',5,6'-HxCB	135	C	28.5	C	26.5	27.5	7.34
2,2',3,3',6,6'-HxCB	136		8.26		7.52	7.89	9.43
2,2',3,4,4',5-HxCB	137		3.80		3.64	3.72	4.17
2,2',3,4,4',5'-HxCB	138	C129		C129			
2,2',3,4,4',6-HxCB	139	C	1.85	C	1.62	1.73	13.2
2,2',3,4,4',6'-HxCB	140	C139		C139			
2,2',3,4,5,5'-HxCB	141		11.4		10.6	11.0	6.94
2,2',3,4,5,6-HxCB	142	U		U			
2,2',3,4,5,6'-HxCB	143	C134		C134			
2,2',3,4,5',6-HxCB	144		3.60		3.11	3.36	14.4
2,2',3,4,6,6'-HxCB	145	U		U			
2,2',3,4',5,5'-HxCB	146	G	17.9	G	15.1	16.5	17.1
2,2',3,4',5,6-HxCB	147	C	69.7	C	62.4	66.0	11.0
2,2',3,4',5,6'-HxCB	148		0.522	K	0.476		
2,2',3,4',5',6-HxCB	149	C147		C147			
2,2',3,4',6,6'-HxCB	150	K J	0.211	J	0.210		
2,2',3,5,5',6-HxCB	151	C135		C135			
2,2',3,5,6,6'-HxCB	152	K J	0.080	U			
2,2',4,4',5,5'-HxCB	153	C	105	C	96.3	100	8.28
2,2',4,4',5,6'-HxCB	154	C135		C135			
2,2',4,4',6,6'-HxCB	155	U		U			
2,3,3',4,4',5-HxCB	156	C	12.1	C	11.0	11.6	10.2
2,3,3',4,4',5'-HxCB	157	C156		C156			
2,3,3',4,4',6-HxCB	158		8.93		8.03	8.48	10.7
2,3,3',4,5,5'-HxCB	159		1.08		0.924	1.00	15.2
2,3,3',4,5,6-HxCB	160	C129		C129			
2,3,3',4,5',6-HxCB	161	U		U			
2,3,3',4',5,5'-HxCB	162		0.615		0.410	0.513	40.0
2,3,3',4',5,6-HxCB	163	C129		C129			
2,3,3',4',5',6-HxCB	164		6.67		5.56	6.12	18.2
2,3,3',5,5',6-HxCB	165	J	0.262	K J	0.220		
2,3,4,4',5,6-HxCB	166	C128		C128			
2,3',4,4',5,5'-HxCB	167		4.93		4.31	4.62	13.5
2,3',4,4',5',6-HxCB	168	C153		C153			
3,3',4,4',5,5'-HxCB	169	U		U			
2,2',3,3',4,4',5-HpCB	170		25.1		22.5	23.8	11.3
2,2',3,3',4,4',6-HpCB	171	C	9.29	C	8.65	8.97	7.14
2,2',3,3',4,5,5'-HpCB	172		4.71		4.07	4.39	14.6
2,2',3,3',4,5,6-HpCB	173	C171		C171			
2,2',3,3',4,5,6'-HpCB	174		24.3		22.7	23.5	7.07
2,2',3,3',4,5',6-HpCB	175		1.54		1.31	1.42	16.2
2,2',3,3',4,6,6'-HpCB	176		3.24		3.10	3.17	4.49
2,2',3,3',4',5,6-HpCB	177		21.3		19.4	20.4	9.34
2,2',3,3',5,5',6-HpCB	178		8.23		7.40	7.81	10.5
2,2',3,3',5,6,6'-HpCB	179		11.1		10.9	11.0	1.18
2,2',3,4,4',5,5'-HpCB	180	C	48.5	C	42.9	45.7	12.2
2,2',3,4,4',5,6-HpCB	181	J	0.253	J	0.151	0.202	50.5
2,2',3,4,4',5,6'-HpCB	182	J	0.303	K J	0.194		
2,2',3,4,4',5',6-HpCB	183	C	18.9	C	17.8	18.3	5.92

COMPOUND	IUPAC NO.	L19652-13 (A) LAB FLAG [1]	L19652-13 (A) CONC. FOUND	WG43679-103 LAB FLAG [1]	WG43679-103 CONC. FOUND	MEAN	RELATIVE PERCENT DIFFERENCE
2,2',3,4,4',6,6'-HpCB	184	U		U			
2,2',3,4,5,5',6-HpCB	185	C183		C183			
2,2',3,4,5,6,6'-HpCB	186	U		U			
2,2',3,4',5,5',6-HpCB	187		46.4		41.8	44.1	10.5
2,2',3,4',5,6,6'-HpCB	188	J	0.155	K J	0.121		
2,3,3',4,4',5,5'-HpCB	189		1.22		0.997	1.11	20.4
2,3,3',4,4',5,6-HpCB	190		4.62		4.13	4.38	11.3
2,3,3',4,4',5',6-HpCB	191		0.921		0.917	0.919	0.435
2,3,3',4,5,5',6-HpCB	192	U		U			
2,3,3',4',5,5',6-HpCB	193	C180		C180			
2,2',3,3',4,4',5,5'-OcCB	194		13.2		11.4	12.3	15.0
2,2',3,3',4,4',5,6-OcCB	195		5.78		4.72	5.25	20.3
2,2',3,3',4,4',5,6'-OcCB	196		7.95		6.84	7.40	15.0
2,2',3,3',4,4',6,6'-OcCB	197	C G	2.06	C G	1.76	1.91	15.9
2,2',3,3',4,5,5',6-OcCB	198	C	22.1	C	19.3	20.7	13.5
2,2',3,3',4,5,5',6'-OcCB	199	C198		C198			
2,2',3,3',4,5,6,6'-OcCB	200	C197		C197			
2,2',3,3',4,5',6,6'-OcCB	201		2.83		2.35	2.59	18.5
2,2',3,3',5,5',6,6'-OcCB	202		5.21		4.62	4.91	12.1
2,2',3,4,4',5,5',6-OcCB	203		9.84		8.41	9.13	15.7
2,2',3,4,4',5,6,6'-OcCB	204	U		U			
2,3,3',4,4',5,5',6-OcCB	205		0.651		0.720	0.686	10.1
2,2',3,3',4,4',5,5',6-NoCB	206		11.7		10.5	11.1	10.9
2,2',3,3',4,4',5,6,6'-NoCB	207		1.75		1.56	1.66	11.8
2,2',3,3',4,5,5',6,6'-NoCB	208		4.51		3.91	4.21	14.3
2,2',3,3',4,4',5,5',6,6'-DeCB	209		11.2		10.1	10.6	11.1

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: RPD.xsl; Created: 17-Jun-2013 14:27:16; Application: XMLTransformer-1.13.42; Report Filename: RPD_PCB1668_RPD_WG43679-103_L19652-13_.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DUN-08-S
Sample Collection:
06-May-2013 16:38

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-14
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 05:52:15	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_194A S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_194A S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	22.6

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			1.65	0.0787 (S)	2.96	1.001
3-MoCB	2			7.66	0.0740 (S)	3.11	0.988
4-MoCB	3		B	1.85	0.0708 (S)	3.33	1.001
2,2'-DiCB	4			1.79	0.236 (S)	1.39	1.001
2,3-DiCB	5		U		0.140 (S)		
2,3'-DiCB	6			0.884	0.128 (S)	1.61	1.176
2,4-DiCB	7		J	0.266	0.133 (S)	1.63	1.159
2,4'-DiCB	8			5.46	0.119 (S)	1.53	1.207
2,5-DiCB	9			0.554	0.125 (S)	1.34	1.144
2,6-DiCB	10		U		0.128 (S)		
3,3'-DiCB	11			11.9	0.137 (S)	1.53	0.969
3,4-DiCB	12	12 + 13	C	1.26	0.138 (S)	1.69	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		J	0.165	0.130 (S)	1.69	0.926
4,4'-DiCB	15			7.64	0.134 (S)	1.46	1.000
2,2',3-TriCB	16			1.78	0.0737 (S)	0.90	1.165
2,2',4-TriCB	17		B	2.59	0.0629 (S)	1.02	1.137
2,2',5-TriCB	18	18 + 30	C B G	3.36	0.0522 (S)	1.10	1.113
2,2',6-TriCB	19			0.490	0.0770 (S)	1.09	1.001
2,3,3'-TriCB	20	20 + 28	C B	18.7	0.0717 (S)	1.00	0.848
2,3,4-TriCB	21	21 + 33	C	5.64	0.0727 (S)	1.00	0.858
2,3,4'-TriCB	22			4.59	0.0802 (S)	1.02	0.872
2,3,5-TriCB	23		U		0.0791 (S)		
2,3,6-TriCB	24		J	0.058	0.0484 (Q)	0.90	1.158
2,3',4-TriCB	25			1.16	0.0648 (S)	1.00	0.826
2,3',5-TriCB	26	26 + 29	C	2.16	0.0744 (S)	0.97	1.300
2,3',6-TriCB	27			0.415	0.0484 (Q)	1.02	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			11.2	0.0688 (S)	1.02	0.837
2,4',6-TriCB	32			2.17	0.0696 (S)	0.95	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U		0.0758 (S)		
3,3',4-TriCB	35			0.857	0.0776 (S)	1.13	0.985
3,3',5-TriCB	36			0.473	0.0699 (S)	0.96	0.932
3,4,4'-TriCB	37		B	7.25	0.0768 (S)	1.01	1.001
3,4,5-TriCB	38		J	0.092	0.0689 (S)	1.20	0.968
3,4',5-TriCB	39		J	0.174	0.0711 (S)	1.03	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	6.08	0.0737 (S)	0.76	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			3.39	0.0789 (S)	0.75	1.312
2,2',3,5-TeCB	43		K J	0.300	0.0950 (S)	0.63	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	11.8	0.0689 (S)	0.80	1.285
2,2',3,6-TeCB	45	45 + 51	C K	1.29	0.0778 (S)	0.89	1.146
2,2',3,6'-TeCB	46		K	0.387	0.0898 (S)	1.00	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			1.88	0.0758 (S)	0.79	1.274
2,2',4,5'-TeCB	49	49 + 69	C B	8.37	0.0646 (S)	0.77	1.260
2,2',4,6-TeCB	50	50 + 53	C	1.13	0.0750 (S)	0.73	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			12.3	0.0700 (S)	0.76	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0570 (S)		
2,3,3',4-TeCB	55		J	0.254	0.0913 (S)	0.71	0.889
2,3,3',4'-TeCB	56		B	7.79	0.0885 (S)	0.76	0.904
2,3,3',5-TeCB	57		J	0.093	0.0862 (S)	0.67	0.844
2,3,3',5'-TeCB	58		U		0.0895 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C	1.09	0.0568 (S)	0.69	1.302
2,3,4,4'-TeCB	60		B	4.90	0.0890 (S)	0.77	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	30.9	0.0853 (S)	0.78	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			0.816	0.0819 (S)	0.74	0.864
2,3,4',6-TeCB	64		B	5.06	0.0543 (S)	0.81	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	18.3	0.0833 (S)	0.76	0.884
2,3',4,5-TeCB	67			0.596	0.0777 (S)	0.77	0.856
2,3',4,5'-TeCB	68		J	0.225	0.0839 (S)	0.85	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		J	0.253	0.0822 (S)	0.77	0.823
2,3',5',6-TeCB	73		U		0.0565 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B	3.51	0.0942 (S)	0.75	1.000
3,3',4,5-TeCB	78		U		0.0846 (S)		
3,3',4,5'-TeCB	79		J	0.328	0.0690 (S)	0.77	0.970
3,3',5,5'-TeCB	80		U		0.0791 (S)		
3,4,4',5-TeCB	81		J	0.144	0.0914 (S)	0.72	1.000
2,2',3,3',4-PeCB	82			2.39	0.116 (S)	1.64	0.933
2,2',3,3',5-PeCB	83	83 + 99	C B	15.1	0.110 (S)	1.56	0.886
2,2',3,3',6-PeCB	84			3.35	0.127 (S)	1.51	1.162
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	4.66	0.0911 (S)	1.55	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	13.7	0.0950 (S)	1.60	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	2.22	0.110 (S)	1.47	1.154
2,2',3,4,6'-PeCB	89		J	0.216	0.114 (S)	1.42	1.181
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	20.7	0.0972 (S)	1.54	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			3.60	0.110 (S)	1.57	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	11.5	0.109 (S)	1.59	1.121
2,2',3,5,6'-PeCB	94		U		0.121 (S)		
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		K J	0.120	0.0664 (S)	1.86	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		K J	0.254	0.100 (S)	2.12	1.093
2,2',4,6,6'-PeCB	104		U		0.0543 (S)		
2,3,3',4,4'-PeCB	105		B	11.8	0.138 (S)	1.64	1.000
2,3,3',4,5-PeCB	106		U		0.126 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	0.888	0.133 (S)	1.49	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			2.49	0.132 (S)	1.52	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	21.9	0.0822 (S)	1.56	0.925
2,3,3',5,5'-PeCB	111		U		0.0804 (S)		
2,3,3',5,6-PeCB	112		U		0.0816 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			0.489	0.137 (S)	1.42	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	25.2	0.131 (S)	1.53	1.001
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		J	0.204	0.0760 (S)	1.47	0.958
2,3',4,5',6-PeCB	121		U		0.0855 (S)		
2',3,3',4,5-PeCB	122		J	0.285	0.135 (S)	1.56	1.010
2',3,4,4',5-PeCB	123			0.560	0.146 (S)	1.65	1.000
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		J	0.282	0.154 (S)	1.67	1.000
3,3',4,5,5'-PeCB	127		U		0.125 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	4.63	0.139 (S)	1.19	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	30.8	0.140 (S)	1.26	0.928
2,2',3,3',4,5'-HxCB	130			2.00	0.172 (S)	1.38	0.913
2,2',3,3',4,6-HxCB	131		J	0.297	0.176 (S)	1.10	1.159
2,2',3,3',4,6'-HxCB	132			5.98	0.175 (S)	1.33	1.174
2,2',3,3',5,5'-HxCB	133		K	0.553	0.159 (S)	1.43	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	0.792	0.173 (S)	1.24	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	8.13	0.0779 (S)	1.31	1.104
2,2',3,3',6,6'-HxCB	136			2.04	0.0613 (S)	1.32	1.024
2,2',3,4,4',5-HxCB	137			1.05	0.167 (S)	1.23	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	0.498	0.156 (S)	1.35	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			2.41	0.153 (S)	1.33	0.903
2,2',3,4,5,6-HxCB	142		U		0.169 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			0.950	0.0791 (S)	1.21	1.122
2,2',3,4,6,6'-HxCB	145		U		0.0649 (S)		
2,2',3,4',5,5'-HxCB	146		G	5.48	0.151 (S)	1.17	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	17.7	0.155 (S)	1.22	1.133
2,2',3,4',5,6'-HxCB	148		K J	0.163	0.0802 (S)	0.84	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	0.069	0.0620 (S)	1.08	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0587 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	26.6	0.123 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0484 (Q)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	2.90	0.142 (S)	1.22	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			2.19	0.111 (S)	1.30	0.938
2,3,3',4,5,5'-HxCB	159		K J	0.299	0.118 (S)	1.46	0.982
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.115 (S)		
2,3,3',4',5,5'-HxCB	162		J	0.152	0.119 (S)	1.09	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			1.47	0.117 (S)	1.28	0.921
2,3,3',5,5',6-HxCB	165		U		0.137 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			1.23	0.112 (S)	1.27	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.125 (S)		
2,2',3,3',4,4',5-HpCB	170			6.08	0.107 (S)	1.06	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	2.07	0.106 (S)	1.03	1.162
2,2',3,3',4,5,5'-HpCB	172			1.07	0.102 (S)	1.20	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			5.19	0.0963 (S)	0.97	1.133
2,2',3,3',4,5',6-HpCB	175		K J	0.341	0.0925 (S)	1.41	1.102
2,2',3,3',4,6,6'-HpCB	176			0.713	0.0726 (S)	1.13	1.034
2,2',3,3',4',5,6-HpCB	177			5.18	0.104 (S)	1.06	1.145
2,2',3,3',5,5',6-HpCB	178		K	2.04	0.0974 (S)	0.88	1.085
2,2',3,3',5,6,6'-HpCB	179			2.76	0.0714 (S)	1.05	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	12.1	0.0854 (S)	1.02	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.0999 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.0933 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	4.67	0.0960 (S)	0.93	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.0712 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0758 (S)		
2,2',3,4',5,5',6-HpCB	187			11.5	0.0914 (S)	1.05	1.109
2,2',3,4',5,6,6'-HpCB	188		U		0.0654 (S)		
2,3,3',4,4',5,5'-HpCB	189		J	0.280	0.127 (S)	1.05	1.000
2,3,3',4,4',5,6-HpCB	190			1.09	0.0823 (S)	1.06	0.947
2,3,3',4,4',5',6-HpCB	191		J	0.234	0.0787 (S)	0.92	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.0876 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			3.24	0.112 (S)	0.94	0.991
2,2',3,3',4,4',5,6-OcCB	195			1.53	0.117 (S)	0.90	0.945
2,2',3,3',4,4',5,6'-OcCB	196			1.85	0.0867 (S)	0.98	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	0.594	0.0637 (S)	0.90	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	5.22	0.0895 (S)	0.95	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			0.736	0.0632 (S)	0.81	1.023
2,2',3,3',5,5',6,6'-OcCB	202			1.45	0.0655 (S)	0.91	1.001
2,2',3,4,4',5,5',6-OcCB	203			2.57	0.0864 (S)	0.85	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0635 (S)		
2,3,3',4,4',5,5',6-OcCB	205		K J	0.161	0.102 (S)	1.13	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			3.01	0.145 (S)	0.84	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207			0.526	0.107 (S)	0.66	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			1.14	0.109 (S)	0.81	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			3.04	0.0928 (S)	1.09	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

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Report Filename: 1668_PCB1668_PCBTF_L19652-14_Form1A_PB3C_194AS8_SJ1608032.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-08-S
Sample Collection:
06-May-2013 16:38

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-14
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 05:52:15	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_194A S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_194A S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	22.6

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		11.2
Total Dichloro Biphenyls		29.9
Total Trichloro Biphenyls		63.2
Total Tetrachloro Biphenyls		119
Total Pentachloro Biphenyls		142
Total Hexachloro Biphenyls		117
Total Heptachloro Biphenyls		52.9
Total Octachloro Biphenyls		17.2
Total Nonachloro Biphenyls		4.68
Decachloro Biphenyl		3.04
TOTAL PCBs		560

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-14_Form1AHT_SJ1608032.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DUN-08-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 06-May-2013 16:38

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-14

Sample Size: 10.3 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_194A S: 8**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			3.51	0.0942	0.0001	3.51e-04	3.51e-04	
3,4,4',5-TeCB	81			0.144	0.0914	0.0003	4.32e-05	4.32e-05	
2,3,3',4,4'-PeCB	105			11.8	0.138	0.00003	3.54e-04	3.54e-04	
2,3,4,4',5-PeCB	114			0.489	0.137	0.00003	1.47e-05	1.47e-05	
2,3',4,4',5-PeCB	118			25.2	0.131	0.00003	7.56e-04	7.56e-04	
2',3,4,4',5-PeCB	123			0.560	0.146	0.00003	1.68e-05	1.68e-05	
3,3',4,4',5-PeCB	126			0.282	0.154	0.1	2.82e-02	2.82e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	2.90	0.142	0.00003	8.70e-05	8.70e-05	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			1.23	0.112	0.00003	3.69e-05	3.69e-05	
3,3',4,4',5,5'-HxCB	169		U		0.125	0.03	0.00e+00	1.88e-03	
2,3,3',4,4',5,5'-HpCB	189			0.280	0.127	0.00003	8.40e-06	8.40e-06	
					TOTAL TEQ		0.0299	0.0317	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 17-Jun-2013 14:26:53; Application: XMLTransformer-1.13.42; Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-14_TEQ_SJ1608032.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-06-S
Sample Collection:
10-May-2013 09:09

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-15
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 06:56:23	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_194A S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_194A S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	32.9

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			3.73	0.0875 (S)	2.94	1.001
3-MoCB	2			15.0	0.0825 (S)	3.03	0.989
4-MoCB	3		B	3.28	0.0790 (S)	3.08	1.002
2,2'-DiCB	4			5.31	0.240 (S)	1.48	1.001
2,3-DiCB	5		J	0.211	0.140 (S)	1.38	1.197
2,3'-DiCB	6			2.67	0.128 (S)	1.49	1.176
2,4-DiCB	7			0.885	0.132 (S)	1.57	1.158
2,4'-DiCB	8			17.8	0.119 (S)	1.54	1.207
2,5-DiCB	9			0.813	0.125 (S)	1.42	1.146
2,6-DiCB	10		J	0.174	0.128 (S)	1.73	1.013
3,3'-DiCB	11			32.7	0.137 (S)	1.51	0.969
3,4-DiCB	12	12 + 13	C	3.70	0.137 (S)	1.59	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		J	0.383	0.130 (S)	1.37	0.926
4,4'-DiCB	15			21.4	0.131 (S)	1.52	1.000
2,2',3-TriCB	16			6.03	0.0998 (S)	1.04	1.165
2,2',4-TriCB	17		B	8.48	0.0852 (S)	1.08	1.137
2,2',5-TriCB	18	18 + 30	C B	11.3	0.0706 (S)	1.08	1.113
2,2',6-TriCB	19			1.44	0.104 (S)	1.09	1.001
2,3,3'-TriCB	20	20 + 28	C B	53.8	0.0781 (S)	1.01	0.848
2,3,4-TriCB	21	21 + 33	C	17.9	0.0792 (S)	1.02	0.858
2,3,4'-TriCB	22			13.9	0.0875 (S)	1.03	0.872
2,3,5-TriCB	23		U		0.0862 (S)		
2,3,6-TriCB	24		J	0.188	0.0622 (S)	1.15	1.158
2,3',4-TriCB	25			3.59	0.0706 (S)	1.00	0.825
2,3',5-TriCB	26	26 + 29	C	6.53	0.0811 (S)	1.01	1.301
2,3',6-TriCB	27			1.33	0.0582 (S)	1.17	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			33.3	0.0750 (S)	1.01	0.837
2,4',6-TriCB	32			6.84	0.0759 (S)	1.01	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.252	0.0826 (S)	1.09	1.273
3,3',4-TriCB	35			2.52	0.0846 (S)	0.99	0.985
3,3',5-TriCB	36			1.41	0.0762 (S)	1.03	0.932
3,4,4'-TriCB	37		B	21.2	0.0836 (S)	1.02	1.001
3,4,5-TriCB	38		J	0.325	0.0752 (S)	1.01	0.968
3,4',5-TriCB	39			0.470	0.0775 (S)	0.96	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	22.2	0.0923 (S)	0.76	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			11.1	0.0987 (S)	0.78	1.311
2,2',3,5-TeCB	43			1.32	0.119 (S)	0.72	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	38.7	0.0862 (S)	0.76	1.285
2,2',3,6-TeCB	45	45 + 51	C	4.20	0.0974 (S)	0.77	1.145
2,2',3,6'-TeCB	46			1.59	0.112 (S)	0.74	1.160
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			6.85	0.0948 (S)	0.80	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	27.1	0.0809 (S)	0.78	1.259
2,2',4,6-TeCB	50	50 + 53	C	4.07	0.0939 (S)	0.85	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			41.3	0.0875 (S)	0.77	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		J	0.111	0.0702 (S)	0.78	1.001
2,3,3',4-TeCB	55			0.861	0.129 (S)	0.69	0.889
2,3,3',4'-TeCB	56		B	24.6	0.125 (S)	0.76	0.905
2,3,3',5-TeCB	57		J	0.265	0.122 (S)	0.85	0.844
2,3,3',5'-TeCB	58		J	0.244	0.127 (S)	0.82	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	3.67	0.0710 (S)	0.79	1.302
2,3,4,4'-TeCB	60		B	14.7	0.126 (S)	0.74	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	93.9	0.121 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			2.24	0.116 (S)	0.77	0.864
2,3,4',6-TeCB	64		B	16.2	0.0679 (S)	0.75	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	57.6	0.118 (S)	0.75	0.884
2,3',4,5-TeCB	67			1.76	0.110 (S)	0.78	0.857
2,3',4,5'-TeCB	68			0.694	0.119 (S)	0.70	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			0.894	0.116 (S)	0.70	0.823
2,3',5',6-TeCB	73		U		0.0707 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B	10.9	0.136 (S)	0.76	1.000
3,3',4,5-TeCB	78		U		0.120 (S)		
3,3',4,5'-TeCB	79			1.01	0.0977 (S)	0.80	0.970
3,3',5,5'-TeCB	80		U		0.112 (S)		
3,4,4',5-TeCB	81			0.412	0.129 (S)	0.77	1.001
2,2',3,3',4-PeCB	82			7.72	0.109 (S)	1.50	0.933
2,2',3,3',5-PeCB	83	83 + 99	C B	50.5	0.103 (S)	1.58	0.885
2,2',3,3',6-PeCB	84			13.0	0.119 (S)	1.58	1.164
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	15.8	0.0852 (S)	1.68	0.919
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	46.7	0.0888 (S)	1.61	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	8.07	0.103 (S)	1.63	1.155
2,2',3,4,6'-PeCB	89			0.788	0.107 (S)	1.40	1.183
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	69.0	0.0909 (S)	1.53	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			11.7	0.103 (S)	1.55	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	43.5	0.102 (S)	1.56	1.121
2,2',3,5,6'-PeCB	94		K J	0.378	0.113 (S)	1.28	1.103
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		K	0.414	0.0693 (S)	1.18	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			0.884	0.0939 (S)	1.49	1.094
2,2',4,6,6'-PeCB	104		U		0.0574 (S)		
2,3,3',4,4'-PeCB	105		B	38.3	0.153 (S)	1.55	1.000
2,3,3',4,5-PeCB	106		U		0.141 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	2.95	0.148 (S)	1.46	0.990
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			8.03	0.147 (S)	1.52	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	74.7	0.0769 (S)	1.51	0.924
2,3,3',5,5'-PeCB	111		K J	0.181	0.0752 (S)	2.03	0.945
2,3,3',5,6-PeCB	112		U		0.0763 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			1.56	0.153 (S)	1.74	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	84.8	0.149 (S)	1.54	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			0.659	0.0711 (S)	1.71	0.958
2,3',4,5',6-PeCB	121		U		0.0799 (S)		
2',3,3',4,5-PeCB	122			0.950	0.150 (S)	1.60	1.010
2',3,4,4',5-PeCB	123			1.49	0.159 (S)	1.36	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			0.749	0.174 (S)	1.57	1.000
3,3',4,5,5'-PeCB	127		U		0.139 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	16.0	0.152 (S)	1.30	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	101	0.152 (S)	1.23	0.928
2,2',3,3',4,5'-HxCB	130			6.53	0.188 (S)	1.19	0.913
2,2',3,3',4,6-HxCB	131		K	0.874	0.192 (S)	1.04	1.160
2,2',3,3',4,6'-HxCB	132			22.3	0.191 (S)	1.21	1.174
2,2',3,3',5,5'-HxCB	133			1.74	0.173 (S)	1.16	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	3.44	0.188 (S)	1.30	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	25.5	0.0915 (S)	1.26	1.104
2,2',3,3',6,6'-HxCB	136			7.71	0.0720 (S)	1.27	1.023
2,2',3,4,4',5-HxCB	137			2.96	0.182 (S)	1.14	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	1.50	0.170 (S)	1.33	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			8.58	0.166 (S)	1.29	0.903
2,2',3,4,5,6-HxCB	142		U		0.184 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			3.23	0.0930 (S)	1.30	1.122
2,2',3,4,6,6'-HxCB	145		U		0.0762 (S)		
2,2',3,4',5,5'-HxCB	146		G	15.9	0.164 (S)	1.21	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	60.3	0.169 (S)	1.26	1.133
2,2',3,4',5,6'-HxCB	148		K	0.465	0.0943 (S)	0.93	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	0.259	0.0728 (S)	1.19	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		K J	0.079	0.0689 (S)	1.49	1.007
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	85.3	0.133 (S)	1.25	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0538 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	9.33	0.157 (S)	1.24	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			7.10	0.120 (S)	1.27	0.938
2,3,3',4,5,5'-HxCB	159			0.866	0.128 (S)	1.17	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.125 (S)		
2,3,3',4',5,5'-HxCB	162			0.483	0.130 (S)	1.33	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			5.28	0.127 (S)	1.25	0.921
2,3,3',5,5',6-HxCB	165		K J	0.231	0.149 (S)	0.96	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			3.98	0.126 (S)	1.20	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.242 (S)		
2,2',3,3',4,4',5-HpCB	170			18.3	0.114 (S)	1.02	1.001
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	6.95	0.116 (S)	1.00	1.163
2,2',3,3',4,5,5'-HpCB	172			3.23	0.112 (S)	1.03	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			16.7	0.106 (S)	1.05	1.133
2,2',3,3',4,5',6-HpCB	175			1.11	0.102 (S)	0.93	1.102
2,2',3,3',4,6,6'-HpCB	176			2.46	0.0799 (S)	1.01	1.034
2,2',3,3',4',5,6-HpCB	177			16.2	0.114 (S)	1.03	1.145
2,2',3,3',5,5',6-HpCB	178			6.39	0.107 (S)	1.05	1.085
2,2',3,3',5,6,6'-HpCB	179			9.17	0.0785 (S)	0.97	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	37.4	0.0948 (S)	1.03	1.000
2,2',3,4,4',5,6-HpCB	181		K J	0.226	0.110 (S)	1.58	1.156
2,2',3,4,4',5,6'-HpCB	182		K J	0.177	0.103 (S)	1.40	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	14.9	0.106 (S)	1.02	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.0783 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0833 (S)		
2,2',3,4',5,5',6-HpCB	187			36.2	0.101 (S)	1.02	1.110
2,2',3,4',5,6,6'-HpCB	188		K J	0.141	0.0710 (S)	0.65	1.001
2,3,3',4,4',5,5'-HpCB	189			0.827	0.163 (S)	1.06	1.001
2,3,3',4,4',5,6-HpCB	190			3.52	0.0906 (S)	0.98	0.947
2,3,3',4,4',5',6-HpCB	191			0.738	0.0866 (S)	0.94	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.0963 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			10.2	0.150 (S)	0.91	0.991
2,2',3,3',4,4',5,6-OcCB	195			4.22	0.158 (S)	0.87	0.945
2,2',3,3',4,4',5,6'-OcCB	196			6.34	0.108 (S)	0.90	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	1.80	0.0790 (S)	0.94	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	17.8	0.111 (S)	0.91	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			2.36	0.0784 (S)	0.79	1.023
2,2',3,3',5,5',6,6'-OcCB	202			4.69	0.0806 (S)	0.87	1.000
2,2',3,4,4',5,5',6-OcCB	203			8.54	0.107 (S)	0.92	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0787 (S)		
2,3,3',4,4',5,5',6-OcCB	205			0.661	0.138 (S)	0.91	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			12.5	0.177 (S)	0.79	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			1.77	0.128 (S)	0.82	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			4.73	0.130 (S)	0.78	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			12.9	0.128 (S)	1.17	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-15_Form1A_PB3C_194AS9_SJ1608034.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-06-S
Sample Collection:
10-May-2013 09:09

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-15
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 06:56:23	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_194A S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_194A S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	32.9

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		22.0
Total Dichloro Biphenyls		86.0
Total Trichloro Biphenyls		191
Total Tetrachloro Biphenyls		388
Total Pentachloro Biphenyls		482
Total Hexachloro Biphenyls		389
Total Heptachloro Biphenyls		174
Total Octachloro Biphenyls		56.6
Total Nonachloro Biphenyls		19.0
Decachloro Biphenyl		12.9
TOTAL PCBs		1820

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 17-Jun-2013 14:26:53; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-15_Form1AHT_SJ1608034.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-06-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 10-May-2013 09:09

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-15

Sample Size: 10.3 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_194A S: 9**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			10.9	0.136	0.0001	1.09e-03	1.09e-03	
3,4,4',5-TeCB	81			0.412	0.129	0.0003	1.24e-04	1.24e-04	
2,3,3',4,4'-PeCB	105			38.3	0.153	0.00003	1.15e-03	1.15e-03	
2,3,4,4',5-PeCB	114			1.56	0.153	0.00003	4.68e-05	4.68e-05	
2,3',4,4',5-PeCB	118			84.8	0.149	0.00003	2.54e-03	2.54e-03	
2',3,4,4',5-PeCB	123			1.49	0.159	0.00003	4.47e-05	4.47e-05	
3,3',4,4',5-PeCB	126			0.749	0.174	0.1	7.49e-02	7.49e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	9.33	0.157	0.00003	2.80e-04	2.80e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			3.98	0.126	0.00003	1.19e-04	1.19e-04	
3,3',4,4',5,5'-HxCB	169		U		0.242	0.03	0.00e+00	3.63e-03	
2,3,3',4,4',5,5'-HpCB	189			0.827	0.163	0.00003	2.48e-05	2.48e-05	
					TOTAL TEQ		0.0803	0.0840	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-09-S
Sample Collection:
10-May-2013 09:48

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-16 i
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	07-Jun-2013 **Time:** 17:28:28	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_201 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_201 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.1

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			1.14	0.148 (S)	3.14	1.001
3-MoCB	2			4.13	0.131 (S)	2.99	0.988
4-MoCB	3			1.11	0.111 (S)	3.17	1.000
2,2'-DiCB	4			1.14	0.314 (S)	1.65	1.001
2,3-DiCB	5		U		0.203 (S)		
2,3'-DiCB	6			0.628	0.179 (S)	1.50	1.175
2,4-DiCB	7		J	0.244	0.185 (S)	1.57	1.157
2,4'-DiCB	8			4.13	0.163 (S)	1.49	1.206
2,5-DiCB	9		J	0.324	0.180 (S)	1.58	1.145
2,6-DiCB	10		U		0.187 (S)		
3,3'-DiCB	11			7.33	0.194 (S)	1.49	0.968
3,4-DiCB	12	12 + 13	C	0.755	0.191 (S)	1.69	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U		0.182 (S)		
4,4'-DiCB	15			5.10	0.197 (S)	1.52	1.001
2,2',3-TriCB	16			1.16	0.183 (S)	1.05	1.165
2,2',4-TriCB	17			1.87	0.154 (S)	1.11	1.138
2,2',5-TriCB	18	18 + 30	C	2.82	0.128 (S)	1.01	1.113
2,2',6-TriCB	19		J	0.312	0.167 (S)	1.06	1.000
2,3,3'-TriCB	20	20 + 28	C B	13.3	0.122 (S)	1.01	0.849
2,3,4-TriCB	21	21 + 33	C B	3.69	0.112 (S)	1.03	0.858
2,3,4'-TriCB	22			2.82	0.126 (S)	1.02	0.872
2,3,5-TriCB	23		U		0.125 (S)		
2,3,6-TriCB	24		U		0.110 (S)		
2,3',4-TriCB	25			0.681	0.104 (S)	1.03	0.826
2,3',5-TriCB	26	26 + 29	C	1.33	0.120 (S)	1.02	1.300
2,3',6-TriCB	27		J	0.214	0.107 (S)	0.90	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	7.20	0.110 (S)	1.06	0.838
2,4',6-TriCB	32			1.74	0.114 (S)	1.08	1.196
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U		0.121 (S)		
3,3',4-TriCB	35			0.499	0.120 (S)	1.04	0.986
3,3',5-TriCB	36		J	0.302	0.115 (S)	1.13	0.932
3,4,4'-TriCB	37			4.86	0.128 (S)	1.07	1.001
3,4,5-TriCB	38		U		0.117 (S)		
3,4',5-TriCB	39		U		0.114 (S)		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	5.32	0.174 (S)	0.72	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			2.30	0.175 (S)	0.88	1.312
2,2',3,5-TeCB	43		U		0.223 (S)		
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	8.38	0.162 (S)	0.80	1.285
2,2',3,6-TeCB	45	45 + 51	C	0.866	0.182 (S)	0.83	1.146
2,2',3,6'-TeCB	46		J	0.380	0.207 (S)	0.80	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			1.40	0.178 (S)	0.71	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	6.03	0.152 (S)	0.76	1.258
2,2',4,6-TeCB	50	50 + 53	C	0.906	0.178 (S)	0.76	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	8.76	0.168 (S)	0.79	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.108 (S)		
2,3,3',4-TeCB	55		U		0.223 (S)		
2,3,3',4'-TeCB	56			5.75	0.230 (S)	0.74	0.905
2,3,3',5-TeCB	57		U		0.213 (S)		
2,3,3',5'-TeCB	58		U		0.218 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C	0.835	0.133 (S)	0.86	1.301
2,3,4,4'-TeCB	60			3.38	0.221 (S)	0.82	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	21.8	0.213 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			0.476	0.206 (S)	0.69	0.864
2,3,4',6-TeCB	64			3.50	0.126 (S)	0.79	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	13.0	0.210 (S)	0.78	0.885
2,3',4,5-TeCB	67		J	0.310	0.190 (S)	0.80	0.856
2,3',4,5'-TeCB	68		U		0.203 (S)		
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		U		0.203 (S)		
2,3',5',6-TeCB	73		U		0.130 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			2.70	0.282 (S)	0.72	1.001
3,3',4,5-TeCB	78		U		0.215 (S)		
3,3',4,5'-TeCB	79		K J	0.266	0.180 (S)	0.62	0.970
3,3',5,5'-TeCB	80		U		0.207 (S)		
3,4,4',5-TeCB	81		U		0.212 (S)		
2,2',3,3',4-PeCB	82			1.71	0.179 (S)	1.51	0.934
2,2',3,3',5-PeCB	83	83 + 99	C	12.3	0.170 (S)	1.55	0.886
2,2',3,3',6-PeCB	84			3.34	0.193 (S)	1.54	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	4.09	0.142 (S)	1.65	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	11.2	0.146 (S)	1.58	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	2.03	0.170 (S)	1.47	1.154
2,2',3,4,6'-PeCB	89		U		0.179 (S)		
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	16.6	0.150 (S)	1.68	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			2.98	0.169 (S)	1.45	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	9.65	0.164 (S)	1.43	1.120
2,2',3,5,6'-PeCB	94		U		0.181 (S)		
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		J	0.119	0.0895 (S)	1.62	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		J	0.276	0.150 (S)	1.59	1.093
2,2',4,6,6'-PeCB	104		U		0.0780 (S)		
2,3,3',4,4'-PeCB	105			9.34	0.171 (S)	1.54	1.000
2,3,3',4,5-PeCB	106		U		0.159 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	0.718	0.172 (S)	1.57	0.990
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			2.18	0.165 (S)	1.51	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	17.3	0.127 (S)	1.62	0.925
2,3,3',5,5'-PeCB	111		U		0.126 (S)		
2,3,3',5,6-PeCB	112		U		0.127 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		J	0.312	0.172 (S)	1.68	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	20.6	0.165 (S)	1.56	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		K J	0.210	0.117 (S)	0.88	0.959
2,3',4,5',6-PeCB	121		U		0.131 (S)		
2',3,3',4,5-PeCB	122		J	0.199	0.178 (S)	1.51	1.010
2',3,4,4',5-PeCB	123			0.432	0.171 (S)	1.47	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		J	0.199	0.188 (S)	1.78	1.000
3,3',4,5,5'-PeCB	127		U		0.157 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	5.10	0.171 (S)	1.10	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	28.1	0.171 (S)	1.27	0.928
2,2',3,3',4,5'-HxCB	130			1.79	0.211 (S)	1.26	0.913
2,2',3,3',4,6-HxCB	131		U		0.217 (S)		
2,2',3,3',4,6'-HxCB	132			6.29	0.216 (S)	1.23	1.174
2,2',3,3',5,5'-HxCB	133		U		0.198 (S)		
2,2',3,3',5,6-HxCB	134	134 + 143	C	0.966	0.210 (S)	1.30	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	6.71	0.142 (S)	1.21	1.105
2,2',3,3',6,6'-HxCB	136			1.92	0.114 (S)	1.31	1.025
2,2',3,4,4',5-HxCB	137			0.821	0.205 (S)	1.42	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	0.425	0.192 (S)	1.07	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			2.41	0.193 (S)	1.36	0.903
2,2',3,4,5,6-HxCB	142		U		0.205 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			0.787	0.143 (S)	1.10	1.122
2,2',3,4,6,6'-HxCB	145		U		0.119 (S)		
2,2',3,4',5,5'-HxCB	146			5.27	0.183 (S)	1.26	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	16.6	0.189 (S)	1.22	1.134
2,2',3,4',5,6'-HxCB	148		U		0.146 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.116 (S)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.110 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	24.4	0.153 (S)	1.25	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0814 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	2.36	0.166 (S)	1.34	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			1.89	0.138 (S)	1.27	0.938
2,3,3',4,5,5'-HxCB	159		J	0.271	0.142 (S)	1.29	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.143 (S)		
2,3,3',4',5,5'-HxCB	162		U		0.145 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			1.30	0.144 (S)	1.17	0.921
2,3,3',5,5',6-HxCB	165		U		0.167 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			1.00	0.127 (S)	1.38	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.135 (S)		
2,2',3,3',4,4',5-HpCB	170			4.78	0.177 (S)	1.01	1.001
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	1.81	0.183 (S)	1.19	1.163
2,2',3,3',4,5,5'-HpCB	172			0.850	0.180 (S)	0.96	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			4.20	0.169 (S)	1.03	1.133
2,2',3,3',4,5',6-HpCB	175		J	0.266	0.168 (S)	1.10	1.102
2,2',3,3',4,6,6'-HpCB	176		K	0.712	0.133 (S)	1.29	1.034
2,2',3,3',4',5,6-HpCB	177			4.14	0.179 (S)	1.06	1.145
2,2',3,3',5,5',6-HpCB	178			1.76	0.176 (S)	0.90	1.084
2,2',3,3',5,6,6'-HpCB	179			2.58	0.132 (S)	1.07	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	9.68	0.149 (S)	1.05	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.177 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.167 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	4.03	0.170 (S)	1.08	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.133 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.139 (S)		
2,2',3,4',5,5',6-HpCB	187			9.39	0.165 (S)	0.97	1.110
2,2',3,4',5,6,6'-HpCB	188		U		0.115 (S)		
2,3,3',4,4',5,5'-HpCB	189		U		0.179 (S)		
2,3,3',4,4',5,6-HpCB	190		K	0.707	0.138 (S)	0.86	0.947
2,3,3',4,4',5',6-HpCB	191		J	0.219	0.135 (S)	0.98	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.153 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			2.91	0.209 (S)	0.91	0.991
2,2',3,3',4,4',5,6-OcCB	195			1.23	0.225 (S)	0.76	0.945
2,2',3,3',4,4',5,6'-OcCB	196			1.73	0.145 (S)	1.02	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C	0.637	0.110 (S)	1.00	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	4.97	0.148 (S)	0.83	1.114
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			0.690	0.110 (S)	1.01	1.023
2,2',3,3',5,5',6,6'-OcCB	202			1.34	0.112 (S)	0.80	1.000
2,2',3,4,4',5,5',6-OcCB	203			2.08	0.141 (S)	0.95	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.109 (S)		
2,3,3',4,4',5,5',6-OcCB	205		U		0.183 (S)		
2,2',3,3',4,4',5,5',6-NoCB	206			3.00	0.202 (S)	0.74	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207			0.486	0.157 (S)	0.86	1.019
2,2',3,3',4,5,5',6,6'-NoCB	208			1.11	0.155 (S)	0.79	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			2.74	0.152 (S)	1.12	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 14-Jun-2013 15:24:25; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-16_Form1A_PB3C_201S8_SJ1610466.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-09-S
Sample Collection:
10-May-2013 09:48

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-16 i
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	07-Jun-2013 **Time:** 17:28:28	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_201 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_201 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.1

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		6.38
Total Dichloro Biphenyls		19.7
Total Trichloro Biphenyls		42.8
Total Tetrachloro Biphenyls		86.1
Total Pentachloro Biphenyls		116
Total Hexachloro Biphenyls		108
Total Heptachloro Biphenyls		43.7
Total Octachloro Biphenyls		15.6
Total Nonachloro Biphenyls		4.60
Decachloro Biphenyl		2.74
TOTAL PCBs		446

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-16_Form1AHT_SJ1610466.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-09-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 10-May-2013 09:48

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-16 i

Sample Size: 10.5 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_201 S: 8**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			2.70	0.282	0.0001	2.70e-04	2.70e-04	
3,4,4',5-TeCB	81		U		0.212	0.0003	0.00e+00	3.18e-05	
2,3,3',4,4'-PeCB	105			9.34	0.171	0.00003	2.80e-04	2.80e-04	
2,3,4,4',5-PeCB	114			0.312	0.172	0.00003	9.36e-06	9.36e-06	
2,3',4,4',5-PeCB	118			20.6	0.165	0.00003	6.18e-04	6.18e-04	
2',3,4,4',5-PeCB	123			0.432	0.171	0.00003	1.30e-05	1.30e-05	
3,3',4,4',5-PeCB	126			0.199	0.188	0.1	1.99e-02	1.99e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	2.36	0.166	0.00003	7.08e-05	7.08e-05	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			1.00	0.127	0.00003	3.00e-05	3.00e-05	
3,3',4,4',5,5'-HxCB	169		U		0.135	0.03	0.00e+00	2.03e-03	
2,3,3',4,4',5,5'-HpCB	189		U		0.179	0.00003	0.00e+00	2.69e-06	
					TOTAL TEQ		0.0212	0.0233	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-16_TEQ_SJ1610466.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-04-S
Sample Collection:
10-May-2013 10:08

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-17
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 12:55:11	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_195A S: 2**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_195 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	41.5

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			5.56	0.0870 (S)	3.00	1.001
3-MoCB	2			20.5	0.0798 (S)	3.01	0.988
4-MoCB	3			4.85	0.0743 (S)	3.11	1.001
2,2'-DiCB	4			8.15	0.220 (S)	1.55	1.001
2,3-DiCB	5		J	0.309	0.131 (S)	1.63	1.197
2,3'-DiCB	6			3.93	0.117 (S)	1.45	1.175
2,4-DiCB	7			1.32	0.123 (S)	1.39	1.158
2,4'-DiCB	8			26.0	0.110 (S)	1.51	1.208
2,5-DiCB	9			1.06	0.119 (S)	1.41	1.147
2,6-DiCB	10		J	0.313	0.125 (S)	1.66	1.014
3,3'-DiCB	11			44.9	0.118 (S)	1.50	0.969
3,4-DiCB	12	12 + 13	C	4.78	0.120 (S)	1.49	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14			0.552	0.116 (S)	1.58	0.926
4,4'-DiCB	15			30.4	0.121 (S)	1.49	1.001
2,2',3-TriCB	16			8.27	0.0813 (S)	1.05	1.164
2,2',4-TriCB	17			11.5	0.0717 (S)	1.03	1.137
2,2',5-TriCB	18	18 + 30	C	18.4	0.0607 (S)	1.07	1.113
2,2',6-TriCB	19			2.26	0.0904 (S)	1.07	1.001
2,3,3'-TriCB	20	20 + 28	C B	78.6	0.0922 (S)	1.01	0.849
2,3,4-TriCB	21	21 + 33	C B	27.0	0.0909 (S)	1.01	0.858
2,3,4'-TriCB	22			19.7	0.0988 (S)	1.01	0.872
2,3,5-TriCB	23		U		0.101 (S)		
2,3,6-TriCB	24		K J	0.233	0.0546 (S)	1.27	1.158
2,3',4-TriCB	25			5.47	0.0827 (S)	1.03	0.826
2,3',5-TriCB	26	26 + 29	C	10.0	0.0949 (S)	1.02	1.299
2,3',6-TriCB	27			2.01	0.0501 (S)	1.13	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	50.0	0.0866 (S)	1.02	0.838
2,4',6-TriCB	32			10.5	0.0915 (S)	1.03	1.196
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.355	0.0954 (S)	0.92	1.272
3,3',4-TriCB	35			3.47	0.0904 (S)	0.99	0.985
3,3',5-TriCB	36			2.17	0.0864 (S)	0.99	0.933
3,4,4'-TriCB	37			29.0	0.0938 (S)	1.02	1.001
3,4,5-TriCB	38			0.423	0.0872 (S)	1.19	0.968
3,4',5-TriCB	39			0.659	0.0879 (S)	1.06	0.947

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	32.2	0.0951 (S)	0.78	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			15.5	0.101 (S)	0.79	1.312
2,2',3,5-TeCB	43			1.65	0.119 (S)	0.75	1.245
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	58.8	0.0906 (S)	0.78	1.285
2,2',3,6-TeCB	45	45 + 51	C	5.99	0.102 (S)	0.76	1.147
2,2',3,6'-TeCB	46			2.23	0.118 (S)	0.77	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			9.85	0.0987 (S)	0.78	1.274
2,2',4,5'-TeCB	49	49 + 69	C B	40.1	0.0846 (S)	0.79	1.259
2,2',4,6-TeCB	50	50 + 53	C	6.19	0.100 (S)	0.76	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	68.3	0.0932 (S)	0.78	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		J	0.137	0.0764 (S)	0.77	1.001
2,3,3',4-TeCB	55			1.08	0.178 (S)	0.73	0.889
2,3,3',4'-TeCB	56			35.9	0.174 (S)	0.75	0.905
2,3,3',5-TeCB	57		J	0.363	0.166 (S)	0.83	0.844
2,3,3',5'-TeCB	58		J	0.259	0.171 (S)	0.72	0.851
2,3,3',6-TeCB	59	59 + 62 + 75	C	5.14	0.0736 (S)	0.74	1.302
2,3,4,4'-TeCB	60			20.6	0.173 (S)	0.74	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	139	0.166 (S)	0.76	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			3.36	0.160 (S)	0.78	0.865
2,3,4',6-TeCB	64			23.4	0.0699 (S)	0.78	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	81.4	0.160 (S)	0.76	0.885
2,3',4,5-TeCB	67			2.51	0.150 (S)	0.77	0.857
2,3',4,5'-TeCB	68			0.894	0.161 (S)	0.75	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			1.16	0.160 (S)	0.79	0.823
2,3',5',6-TeCB	73		U		0.0748 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			14.3	0.178 (S)	0.76	1.000
3,3',4,5-TeCB	78		U		0.165 (S)		
3,3',4,5'-TeCB	79			1.90	0.139 (S)	0.73	0.970
3,3',5,5'-TeCB	80		U		0.155 (S)		
3,4,4',5-TeCB	81			0.470	0.174 (S)	0.70	1.000
2,2',3,3',4-PeCB	82			15.0	0.126 (S)	1.56	0.934
2,2',3,3',5-PeCB	83	83 + 99	C	88.6	0.119 (S)	1.57	0.886
2,2',3,3',6-PeCB	84			29.0	0.138 (S)	1.59	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	27.1	0.0979 (S)	1.59	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	92.2	0.102 (S)	1.58	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	16.1	0.123 (S)	1.60	1.154
2,2',3,4,6'-PeCB	89			1.25	0.127 (S)	1.54	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	134	0.105 (S)	1.58	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			23.5	0.120 (S)	1.59	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	92.7	0.120 (S)	1.59	1.120
2,2',3,5,6'-PeCB	94			0.590	0.133 (S)	1.73	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.722	0.0684 (S)	1.52	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			1.31	0.108 (S)	1.56	1.093
2,2',4,6,6'-PeCB	104		U		0.0589 (S)		
2,3,3',4,4'-PeCB	105			64.7	0.279 (S)	1.53	1.000
2,3,3',4,5-PeCB	106		U		0.241 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	5.62	0.271 (S)	1.56	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			12.3	0.242 (S)	1.65	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	142	0.0869 (S)	1.57	0.925
2,3,3',5,5'-PeCB	111		K J	0.192	0.0870 (S)	1.30	0.945
2,3,3',5,6-PeCB	112		U		0.0864 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			3.14	0.271 (S)	1.61	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	148	0.262 (S)	1.53	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			0.993	0.0793 (S)	1.37	0.959
2,3',4,5',6-PeCB	121		U		0.0908 (S)		
2',3,3',4,5-PeCB	122			1.71	0.272 (S)	1.66	1.010
2',3,4,4',5-PeCB	123			3.01	0.285 (S)	1.65	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			1.08	0.299 (S)	1.40	1.000
3,3',4,5,5'-PeCB	127		U		0.252 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	32.8	0.138 (S)	1.25	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	197	0.139 (S)	1.24	0.928
2,2',3,3',4,5'-HxCB	130			12.9	0.170 (S)	1.25	0.913
2,2',3,3',4,6-HxCB	131			2.15	0.171 (S)	1.20	1.159
2,2',3,3',4,6'-HxCB	132			49.6	0.172 (S)	1.23	1.174
2,2',3,3',5,5'-HxCB	133			3.04	0.156 (S)	1.17	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	8.14	0.169 (S)	1.19	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	42.8	0.0981 (S)	1.28	1.104
2,2',3,3',6,6'-HxCB	136			15.5	0.0799 (S)	1.27	1.023
2,2',3,4,4',5-HxCB	137			6.99	0.154 (S)	1.22	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	3.35	0.153 (S)	1.25	1.152
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			19.4	0.148 (S)	1.27	0.903
2,2',3,4,5,6-HxCB	142		U		0.170 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			5.96	0.0990 (S)	1.23	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0850 (S)		
2,2',3,4',5,5'-HxCB	146			25.1	0.141 (S)	1.32	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	114	0.152 (S)	1.23	1.133
2,2',3,4',5,6'-HxCB	148		K	0.604	0.105 (S)	1.01	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	0.355	0.0815 (S)	1.24	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	0.140	0.0784 (S)	1.15	1.006
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	156	0.124 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0592 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	20.9	0.137 (S)	1.28	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			16.7	0.110 (S)	1.22	0.938
2,3,3',4,5,5'-HxCB	159			1.40	0.114 (S)	1.26	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.115 (S)		
2,3,3',4',5,5'-HxCB	162			0.798	0.115 (S)	1.42	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			11.2	0.119 (S)	1.21	0.921
2,3,3',5,5',6-HxCB	165		J	0.272	0.131 (S)	1.19	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			7.48	0.107 (S)	1.28	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.314 (S)		
2,2',3,3',4,4',5-HpCB	170			30.1	0.129 (S)	1.03	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	11.0	0.130 (S)	1.06	1.162
2,2',3,3',4,5,5'-HpCB	172			5.00	0.125 (S)	1.03	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			26.8	0.125 (S)	1.03	1.133
2,2',3,3',4,5',6-HpCB	175			1.72	0.119 (S)	1.01	1.102
2,2',3,3',4,6,6'-HpCB	176			3.70	0.0911 (S)	1.11	1.034
2,2',3,3',4',5,6-HpCB	177			23.8	0.126 (S)	1.05	1.144
2,2',3,3',5,5',6-HpCB	178			9.59	0.124 (S)	1.03	1.084
2,2',3,3',5,6,6'-HpCB	179			13.2	0.0885 (S)	1.01	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	58.4	0.108 (S)	1.03	1.001
2,2',3,4,4',5,6-HpCB	181		K J	0.358	0.123 (S)	0.87	1.155
2,2',3,4,4',5,6'-HpCB	182		J	0.297	0.120 (S)	1.03	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	22.5	0.118 (S)	1.07	1.127
2,2',3,4,4',6,6'-HpCB	184		J	0.112	0.0901 (S)	1.10	1.024
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0962 (S)		
2,2',3,4',5,5',6-HpCB	187			51.2	0.114 (S)	1.03	1.109
2,2',3,4',5,6,6'-HpCB	188		J	0.236	0.0799 (S)	0.94	1.000
2,3,3',4,4',5,5'-HpCB	189			1.58	0.151 (S)	1.05	1.001
2,3,3',4,4',5,6-HpCB	190			5.42	0.0955 (S)	1.03	0.947
2,3,3',4,4',5',6-HpCB	191			1.13	0.0920 (S)	1.13	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.106 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			15.0	0.130 (S)	0.87	0.991
2,2',3,3',4,4',5,6-OcCB	195			6.07	0.137 (S)	0.88	0.945
2,2',3,3',4,4',5,6'-OcCB	196			8.39	0.0951 (S)	0.88	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	2.32	0.0709 (S)	0.91	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	23.9	0.0986 (S)	0.90	1.114
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			3.18	0.0699 (S)	0.90	1.023
2,2',3,3',5,5',6,6'-OcCB	202			6.48	0.0748 (S)	0.95	1.000
2,2',3,4,4',5,5',6-OcCB	203			11.2	0.0913 (S)	0.89	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0718 (S)		
2,3,3',4,4',5,5',6-OcCB	205			0.894	0.118 (S)	0.78	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			16.1	0.184 (S)	0.76	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			2.28	0.135 (S)	0.77	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			5.92	0.132 (S)	0.75	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			15.1	0.126 (S)	1.16	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 14-Jun-2013 15:24:25; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-17_Form1A_PB3C_195AS2_SJ1608844.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-04-S
Sample Collection:
10-May-2013 10:08

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-17
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 12:55:11	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_195A S: 2**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_195 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	41.5

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		30.9
Total Dichloro Biphenyls		122
Total Trichloro Biphenyls		280
Total Tetrachloro Biphenyls		573
Total Pentachloro Biphenyls		905
Total Hexachloro Biphenyls		754
Total Heptachloro Biphenyls		266
Total Octachloro Biphenyls		77.4
Total Nonachloro Biphenyls		24.3
Decachloro Biphenyl		15.1
TOTAL PCBs		3050

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-17_Form1AHT_SJ1608844.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-04-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 10-May-2013 10:08

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-17

Sample Size: 10.7 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_195A S: 2**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			14.3	0.178	0.0001	1.43e-03	1.43e-03	
3,4,4',5-TeCB	81			0.470	0.174	0.0003	1.41e-04	1.41e-04	
2,3,3',4,4'-PeCB	105			64.7	0.279	0.00003	1.94e-03	1.94e-03	
2,3,4,4',5-PeCB	114			3.14	0.271	0.00003	9.42e-05	9.42e-05	
2,3',4,4',5-PeCB	118			148	0.262	0.00003	4.44e-03	4.44e-03	
2',3,4,4',5-PeCB	123			3.01	0.285	0.00003	9.03e-05	9.03e-05	
3,3',4,4',5-PeCB	126			1.08	0.299	0.1	1.08e-01	1.08e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	20.9	0.137	0.00003	6.27e-04	6.27e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			7.48	0.107	0.00003	2.24e-04	2.24e-04	
3,3',4,4',5,5'-HxCB	169		U		0.314	0.03	0.00e+00	4.71e-03	
2,3,3',4,4',5,5'-HpCB	189			1.58	0.151	0.00003	4.74e-05	4.74e-05	
					TOTAL TEQ		0.117	0.122	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-17_TEQ_SJ1608844.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-02-S
Sample Collection:
10-May-2013 10:35

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-18 R
Matrix:	SOLID	**Sample Size:**	11.0 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	31-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	08-Jun-2013 **Time:** 04:30:14	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_202 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_202 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_202 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	49.7

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			9.77	0.167 (S)	3.16	1.001
3-MoCB	2			58.7	0.134 (S)	3.06	0.988
4-MoCB	3			9.28	0.104 (S)	3.08	1.001
2,2'-DiCB	4			14.2	0.259 (S)	1.55	1.001
2,3-DiCB	5			0.601	0.163 (S)	1.41	1.196
2,3'-DiCB	6			7.08	0.146 (S)	1.53	1.174
2,4-DiCB	7			2.34	0.149 (S)	1.57	1.156
2,4'-DiCB	8			42.3	0.131 (S)	1.50	1.205
2,5-DiCB	9			1.51	0.145 (S)	1.68	1.144
2,6-DiCB	10			0.658	0.151 (S)	1.47	1.013
3,3'-DiCB	11		B	92.7	0.162 (S)	1.55	0.970
3,4-DiCB	12	12 + 13	C K	10.7	0.153 (S)	2.08	0.986
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	1.19	0.151 (S)	1.23	0.927
4,4'-DiCB	15			56.7	0.169 (S)	1.54	1.002
2,2',3-TriCB	16			12.6	0.112 (S)	1.04	1.164
2,2',4-TriCB	17			19.3	0.101 (S)	1.05	1.137
2,2',5-TriCB	18	18 + 30	C	33.8	0.0859 (S)	1.05	1.112
2,2',6-TriCB	19			3.09	0.110 (S)	1.07	1.001
2,3,3'-TriCB	20	20 + 28	C B	139	0.132 (S)	1.03	0.849
2,3,4-TriCB	21	21 + 33	C B	42.8	0.122 (S)	1.04	0.858
2,3,4'-TriCB	22		B	32.8	0.139 (S)	1.00	0.872
2,3,5-TriCB	23		U		0.135 (S)		
2,3,6-TriCB	24			0.408	0.0769 (S)	0.96	1.158
2,3',4-TriCB	25			8.85	0.114 (S)	1.01	0.825
2,3',5-TriCB	26	26 + 29	C	16.5	0.131 (S)	1.03	1.299
2,3',6-TriCB	27			3.26	0.0695 (S)	1.07	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	81.8	0.121 (S)	1.03	0.837
2,4',6-TriCB	32			17.6	0.127 (S)	1.02	1.196
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34			0.563	0.134 (S)	0.99	1.272
3,3',4-TriCB	35			6.22	0.139 (S)	1.05	0.985
3,3',5-TriCB	36			3.73	0.127 (S)	1.00	0.932
3,4,4'-TriCB	37			51.4	0.145 (S)	1.03	1.001
3,4,5-TriCB	38			0.712	0.128 (S)	1.11	0.968
3,4',5-TriCB	39			1.08	0.126 (S)	1.11	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	48.1	0.129 (S)	0.77	1.335
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			20.7	0.125 (S)	0.79	1.310
2,2',3,5-TeCB	43			2.24	0.147 (S)	0.73	1.245
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	83.8	0.121 (S)	0.77	1.284
2,2',3,6-TeCB	45	45 + 51	C	8.93	0.134 (S)	0.79	1.146
2,2',3,6'-TeCB	46			3.34	0.151 (S)	0.81	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			14.1	0.129 (S)	0.79	1.272
2,2',4,5'-TeCB	49	49 + 69	C B	57.8	0.112 (S)	0.77	1.257
2,2',4,6-TeCB	50	50 + 53	C	8.82	0.131 (S)	0.76	1.110
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	91.7	0.126 (S)	0.80	1.233
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		K J	0.267	0.0942 (S)	0.93	1.001
2,3,3',4-TeCB	55			1.77	0.179 (S)	0.73	0.889
2,3,3',4'-TeCB	56			53.7	0.188 (S)	0.77	0.905
2,3,3',5-TeCB	57			0.663	0.178 (S)	0.75	0.844
2,3,3',5'-TeCB	58			0.586	0.183 (S)	0.85	0.851
2,3,3',6-TeCB	59	59 + 62 + 75	C	7.46	0.100 (S)	0.80	1.301
2,3,4,4'-TeCB	60			30.1	0.177 (S)	0.76	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	208	0.177 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			5.10	0.168 (S)	0.78	0.865
2,3,4',6-TeCB	64			32.5	0.0927 (S)	0.78	1.347
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	125	0.171 (S)	0.77	0.885
2,3',4,5-TeCB	67			3.99	0.157 (S)	0.80	0.856
2,3',4,5'-TeCB	68			1.41	0.177 (S)	0.78	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			1.84	0.172 (S)	0.78	0.823
2,3',5',6-TeCB	73		K J	0.237	0.100 (S)	1.03	1.240
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			24.9	0.209 (S)	0.77	1.000
3,3',4,5-TeCB	78		J	0.201	0.184 (S)	0.82	0.987
3,3',4,5'-TeCB	79			2.25	0.151 (S)	0.80	0.970
3,3',5,5'-TeCB	80		U		0.166 (S)		
3,4,4',5-TeCB	81		K	0.940	0.198 (S)	0.81	1.000
2,2',3,3',4-PeCB	82			18.6	0.151 (S)	1.52	0.933
2,2',3,3',5-PeCB	83	83 + 99	C	115	0.144 (S)	1.57	0.885
2,2',3,3',6-PeCB	84			28.1	0.160 (S)	1.55	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	35.3	0.120 (S)	1.57	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	101	0.121 (S)	1.60	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	17.8	0.142 (S)	1.55	1.154
2,2',3,4,6'-PeCB	89			1.52	0.147 (S)	1.58	1.183
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	152	0.123 (S)	1.55	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			26.3	0.140 (S)	1.55	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	89.5	0.135 (S)	1.56	1.121
2,2',3,5,6'-PeCB	94			0.677	0.153 (S)	1.52	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.770	0.0863 (S)	1.49	1.016
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			1.70	0.128 (S)	1.74	1.094
2,2',4,6,6'-PeCB	104		U		0.0775 (S)		
2,3,3',4,4'-PeCB	105			90.9	0.281 (S)	1.55	1.001
2,3,3',4,5-PeCB	106		U		0.252 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	6.79	0.279 (S)	1.51	0.990
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			17.6	0.245 (S)	1.52	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	163	0.104 (S)	1.56	0.924
2,3,3',5,5'-PeCB	111		K J	0.252	0.106 (S)	2.07	0.945
2,3,3',5,6-PeCB	112		U		0.0995 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			3.59	0.289 (S)	1.53	1.001
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	200	0.271 (S)	1.54	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			1.38	0.0975 (S)	1.72	0.958
2,3',4,5',6-PeCB	121		U		0.108 (S)		
2',3,3',4,5-PeCB	122			2.27	0.287 (S)	1.70	1.010
2',3,4,4',5-PeCB	123			3.58	0.289 (S)	1.62	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			1.96	0.308 (S)	1.32	1.000
3,3',4,5,5'-PeCB	127		K J	0.364	0.258 (S)	2.79	1.042
2,2',3,3',4,4'-HxCB	128	128 + 166	C	38.2	0.193 (S)	1.29	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	237	0.194 (S)	1.26	0.928
2,2',3,3',4,5'-HxCB	130			15.2	0.239 (S)	1.36	0.913
2,2',3,3',4,6-HxCB	131			1.90	0.231 (S)	1.19	1.158
2,2',3,3',4,6'-HxCB	132			53.6	0.243 (S)	1.24	1.174
2,2',3,3',5,5'-HxCB	133			3.80	0.221 (S)	1.21	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	7.65	0.234 (S)	1.24	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	54.8	0.132 (S)	1.28	1.103
2,2',3,3',6,6'-HxCB	136			14.8	0.104 (S)	1.27	1.023
2,2',3,4,4',5-HxCB	137			6.78	0.239 (S)	1.27	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	3.29	0.215 (S)	1.27	1.152
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			19.0	0.210 (S)	1.25	0.903
2,2',3,4,5,6-HxCB	142		U		0.240 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			6.49	0.138 (S)	1.19	1.121
2,2',3,4,6,6'-HxCB	145		U		0.110 (S)		
2,2',3,4',5,5'-HxCB	146			38.0	0.204 (S)	1.22	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C	134	0.213 (S)	1.25	1.133
2,2',3,4',5,6'-HxCB	148			1.27	0.137 (S)	1.29	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		K	0.402	0.104 (S)	0.95	1.011
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	0.143	0.0997 (S)	1.14	1.006
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	204	0.173 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0814 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	20.7	0.181 (S)	1.22	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			17.0	0.154 (S)	1.27	0.938
2,3,3',4,5,5'-HxCB	159			1.69	0.158 (S)	1.21	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.160 (S)		
2,3,3',4',5,5'-HxCB	162			1.11	0.164 (S)	1.38	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			11.5	0.159 (S)	1.22	0.921
2,3,3',5,5',6-HxCB	165			0.401	0.189 (S)	1.13	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			8.72	0.148 (S)	1.21	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.470 (S)		
2,2',3,3',4,4',5-HpCB	170			40.1	0.187 (S)	1.02	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	14.5	0.180 (S)	1.07	1.162
2,2',3,3',4,5,5'-HpCB	172			7.05	0.177 (S)	1.06	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			34.5	0.165 (S)	1.05	1.133
2,2',3,3',4,5',6-HpCB	175			2.29	0.166 (S)	0.97	1.102
2,2',3,3',4,6,6'-HpCB	176			5.14	0.130 (S)	1.03	1.034
2,2',3,3',4',5,6-HpCB	177			34.6	0.179 (S)	1.02	1.144
2,2',3,3',5,5',6-HpCB	178			14.2	0.173 (S)	1.07	1.084
2,2',3,3',5,6,6'-HpCB	179			19.1	0.128 (S)	1.00	1.009
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	80.2	0.155 (S)	1.04	1.000
2,2',3,4,4',5,6-HpCB	181		J	0.323	0.175 (S)	1.04	1.156
2,2',3,4,4',5,6'-HpCB	182		K	0.410	0.164 (S)	0.80	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	31.9	0.166 (S)	1.01	1.126
2,2',3,4,4',6,6'-HpCB	184		J	0.183	0.129 (S)	0.92	1.024
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.137 (S)		
2,2',3,4',5,5',6-HpCB	187			78.5	0.159 (S)	1.04	1.109
2,2',3,4',5,6,6'-HpCB	188		J	0.322	0.115 (S)	1.04	1.001
2,3,3',4,4',5,5'-HpCB	189			1.86	0.196 (S)	1.05	1.000
2,3,3',4,4',5,6-HpCB	190			7.24	0.135 (S)	0.99	0.947
2,3,3',4,4',5',6-HpCB	191			1.45	0.132 (S)	1.08	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.148 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			24.0	0.174 (S)	0.85	0.991
2,2',3,3',4,4',5,6-OcCB	195			9.74	0.187 (S)	0.90	0.945
2,2',3,3',4,4',5,6'-OcCB	196			12.7	0.112 (S)	0.88	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C	4.03	0.0862 (S)	0.91	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	37.3	0.118 (S)	0.91	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			5.17	0.0857 (S)	0.88	1.023
2,2',3,3',5,5',6,6'-OcCB	202			10.4	0.0896 (S)	0.88	1.000
2,2',3,4,4',5,5',6-OcCB	203			17.8	0.110 (S)	0.91	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0860 (S)		
2,3,3',4,4',5,5',6-OcCB	205			1.34	0.151 (S)	0.79	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			24.2	0.163 (S)	0.78	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			3.40	0.124 (S)	0.79	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			9.70	0.125 (S)	0.77	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			26.4	0.120 (S)	1.26	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 13-Jun-2013 14:00:34; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-18_Form1A_PB3C_202S9_SJ1609909.html; Workgroup: WG43769; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-02-S
Sample Collection:
10-May-2013 10:35

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-18 R
Matrix:	SOLID	**Sample Size:**	11.0 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	31-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	08-Jun-2013 **Time:** 04:30:14	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_202 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_202 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_202 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	49.7

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		77.8
Total Dichloro Biphenyls		218
Total Trichloro Biphenyls		476
Total Tetrachloro Biphenyls		839
Total Pentachloro Biphenyls		1080
Total Hexachloro Biphenyls		901
Total Heptachloro Biphenyls		373
Total Octachloro Biphenyls		122
Total Nonachloro Biphenyls		37.3
Decachloro Biphenyl		26.4
TOTAL PCBs		4150

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-18_Form1AHT_SJ1609909.html; Workgroup: WG43769; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-02-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 10-May-2013 10:35

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-18 R

Sample Size: 11.0 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_202 S: 9**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			24.9	0.209	0.0001	2.49e-03	2.49e-03	
3,4,4',5-TeCB	81		U		0.198	0.0003	0.00e+00	2.97e-05	
2,3,3',4,4'-PeCB	105			90.9	0.281	0.00003	2.73e-03	2.73e-03	
2,3,4,4',5-PeCB	114			3.59	0.289	0.00003	1.08e-04	1.08e-04	
2,3',4,4',5-PeCB	118			200	0.271	0.00003	6.00e-03	6.00e-03	
2',3,4,4',5-PeCB	123			3.58	0.289	0.00003	1.07e-04	1.07e-04	
3,3',4,4',5-PeCB	126			1.96	0.308	0.1	1.96e-01	1.96e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	20.7	0.181	0.00003	6.21e-04	6.21e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			8.72	0.148	0.00003	2.62e-04	2.62e-04	
3,3',4,4',5,5'-HxCB	169		U		0.470	0.03	0.00e+00	7.05e-03	
2,3,3',4,4',5,5'-HpCB	189			1.86	0.196	0.00003	5.58e-05	5.58e-05	
					TOTAL TEQ		0.208	0.215	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 13-Jun-2013 14:00:56; Application: XMLTransformer-1.13.42; Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-18_TEQ_SJ1609909.html; Workgroup: WG43769; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-05-S
Sample Collection:
10-May-2013 11:15

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-19
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 13:59:19	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_195A S: 3**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_195 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	56.2

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			6.96	0.178 (S)	3.05	1.001
3-MoCB	2			26.8	0.164 (S)	3.02	0.988
4-MoCB	3			6.70	0.154 (S)	3.15	1.001
2,2'-DiCB	4			10.3	0.353 (S)	1.56	1.001
2,3-DiCB	5			0.438	0.213 (S)	1.72	1.197
2,3'-DiCB	6			5.11	0.191 (S)	1.58	1.175
2,4-DiCB	7			1.84	0.201 (S)	1.62	1.159
2,4'-DiCB	8			36.9	0.178 (S)	1.52	1.206
2,5-DiCB	9			1.32	0.194 (S)	1.46	1.146
2,6-DiCB	10			0.427	0.204 (S)	1.76	1.013
3,3'-DiCB	11			72.1	0.192 (S)	1.51	0.969
3,4-DiCB	12	12 + 13	C	7.36	0.196 (S)	1.57	0.985
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	0.946	0.189 (S)	0.87	0.926
4,4'-DiCB	15			44.1	0.201 (S)	1.52	1.001
2,2',3-TriCB	16			11.3	0.175 (S)	1.01	1.165
2,2',4-TriCB	17			15.7	0.155 (S)	1.08	1.138
2,2',5-TriCB	18	18 + 30	C	22.2	0.131 (S)	1.04	1.113
2,2',6-TriCB	19			2.43	0.178 (S)	1.06	1.001
2,3,3'-TriCB	20	20 + 28	C B	113	0.178 (S)	1.01	0.848
2,3,4-TriCB	21	21 + 33	C B	36.8	0.176 (S)	1.02	0.857
2,3,4'-TriCB	22			26.7	0.191 (S)	1.04	0.872
2,3,5-TriCB	23		U		0.195 (S)		
2,3,6-TriCB	24		K J	0.319	0.118 (S)	0.81	1.158
2,3',4-TriCB	25			7.65	0.160 (S)	1.00	0.825
2,3',5-TriCB	26	26 + 29	C	13.6	0.183 (S)	1.03	1.301
2,3',6-TriCB	27			2.74	0.108 (S)	1.01	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	68.7	0.167 (S)	1.01	0.837
2,4',6-TriCB	32			14.3	0.177 (S)	0.98	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.362	0.184 (S)	1.07	1.273
3,3',4-TriCB	35			4.88	0.175 (S)	1.11	0.985
3,3',5-TriCB	36			3.16	0.167 (S)	1.09	0.932
3,4,4'-TriCB	37			41.4	0.190 (S)	1.01	1.001
3,4,5-TriCB	38			0.518	0.168 (S)	1.19	0.968
3,4',5-TriCB	39			0.945	0.170 (S)	1.13	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	43.1	0.160 (S)	0.78	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			20.7	0.169 (S)	0.77	1.311
2,2',3,5-TeCB	43			2.17	0.200 (S)	0.84	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	76.9	0.152 (S)	0.76	1.284
2,2',3,6-TeCB	45	45 + 51	C	7.82	0.171 (S)	0.73	1.146
2,2',3,6'-TeCB	46			3.09	0.198 (S)	0.82	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			12.3	0.165 (S)	0.81	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	53.8	0.142 (S)	0.78	1.258
2,2',4,6-TeCB	50	50 + 53	C	7.87	0.168 (S)	0.82	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	81.0	0.156 (S)	0.79	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		J	0.161	0.108 (S)	0.83	1.001
2,3,3',4-TeCB	55			1.45	0.267 (S)	0.75	0.889
2,3,3',4'-TeCB	56			46.4	0.261 (S)	0.77	0.905
2,3,3',5-TeCB	57			0.436	0.248 (S)	0.76	0.844
2,3,3',5'-TeCB	58			0.398	0.257 (S)	0.77	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	7.03	0.123 (S)	0.84	1.301
2,3,4,4'-TeCB	60			27.3	0.259 (S)	0.75	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	183	0.249 (S)	0.76	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			4.23	0.240 (S)	0.73	0.864
2,3,4',6-TeCB	64			30.4	0.117 (S)	0.77	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	109	0.240 (S)	0.76	0.884
2,3',4,5-TeCB	67			3.43	0.225 (S)	0.76	0.857
2,3',4,5'-TeCB	68			1.06	0.241 (S)	0.76	0.832
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			1.52	0.239 (S)	0.85	0.823
2,3',5',6-TeCB	73		U		0.125 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			19.6	0.303 (S)	0.77	1.000
3,3',4,5-TeCB	78		U		0.247 (S)		
3,3',4,5'-TeCB	79			2.29	0.208 (S)	0.86	0.970
3,3',5,5'-TeCB	80		U		0.232 (S)		
3,4,4',5-TeCB	81			0.773	0.262 (S)	0.75	1.001
2,2',3,3',4-PeCB	82			11.4	0.229 (S)	1.62	0.934
2,2',3,3',5-PeCB	83	83 + 99	C	102	0.217 (S)	1.52	0.886
2,2',3,3',6-PeCB	84			25.2	0.252 (S)	1.58	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	30.2	0.179 (S)	1.60	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	90.6	0.186 (S)	1.57	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	16.8	0.225 (S)	1.58	1.154
2,2',3,4,6'-PeCB	89			1.54	0.231 (S)	1.43	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	138	0.191 (S)	1.55	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			24.1	0.219 (S)	1.52	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	85.4	0.219 (S)	1.56	1.120
2,2',3,5,6'-PeCB	94			0.799	0.243 (S)	1.73	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.666	0.134 (S)	1.65	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			1.70	0.198 (S)	1.56	1.093
2,2',4,6,6'-PeCB	104		U		0.105 (S)		
2,3,3',4,4'-PeCB	105			74.6	0.226 (S)	1.53	1.000
2,3,3',4,5-PeCB	106		U		0.191 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	5.83	0.215 (S)	1.58	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			13.9	0.191 (S)	1.50	0.998
2,3,3',4',6-PeCB	110	110 + 115	C B	145	0.159 (S)	1.55	0.925
2,3,3',5,5'-PeCB	111		J	0.225	0.159 (S)	1.44	0.947
2,3,3',5,6-PeCB	112		U		0.158 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			2.54	0.220 (S)	1.52	1.001
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	166	0.213 (S)	1.53	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			1.30	0.145 (S)	1.38	0.959
2,3',4,5',6-PeCB	121		U		0.166 (S)		
2',3,3',4,5-PeCB	122			1.47	0.215 (S)	1.38	1.010
2',3,4,4',5-PeCB	123			3.31	0.231 (S)	1.67	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			1.37	0.254 (S)	1.69	1.000
3,3',4,5,5'-PeCB	127		U		0.199 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	35.3	0.267 (S)	1.22	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	217	0.268 (S)	1.24	0.929
2,2',3,3',4,5'-HxCB	130			14.1	0.329 (S)	1.24	0.913
2,2',3,3',4,6-HxCB	131			1.98	0.330 (S)	1.33	1.160
2,2',3,3',4,6'-HxCB	132			51.9	0.333 (S)	1.26	1.174
2,2',3,3',5,5'-HxCB	133			3.67	0.302 (S)	1.15	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	7.84	0.327 (S)	1.21	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	49.9	0.184 (S)	1.24	1.105
2,2',3,3',6,6'-HxCB	136			15.6	0.150 (S)	1.30	1.024
2,2',3,4,4',5-HxCB	137			6.88	0.297 (S)	1.23	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	3.44	0.295 (S)	1.31	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			17.5	0.287 (S)	1.24	0.903
2,2',3,4,5,6-HxCB	142		U		0.329 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			6.31	0.186 (S)	1.20	1.122
2,2',3,4,6,6'-HxCB	145		U		0.160 (S)		
2,2',3,4',5,5'-HxCB	146			29.8	0.273 (S)	1.25	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	128	0.294 (S)	1.26	1.133
2,2',3,4',5,6'-HxCB	148		K J	0.225	0.197 (S)	1.55	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150			0.457	0.153 (S)	1.21	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.147 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	181	0.239 (S)	1.25	0.898
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.102 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	20.2	0.267 (S)	1.28	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			16.4	0.212 (S)	1.30	0.938
2,3,3',4,5,5'-HxCB	159			1.91	0.220 (S)	1.29	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.223 (S)		
2,3,3',4',5,5'-HxCB	162		K	0.799	0.223 (S)	1.87	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			11.5	0.231 (S)	1.25	0.921
2,3,3',5,5',6-HxCB	165		U		0.253 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			8.22	0.210 (S)	1.27	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.525 (S)		
2,2',3,3',4,4',5-HpCB	170			34.4	0.224 (S)	1.04	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	13.5	0.228 (S)	1.02	1.162
2,2',3,3',4,5,5'-HpCB	172			5.92	0.219 (S)	1.04	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			32.8	0.220 (S)	1.02	1.134
2,2',3,3',4,5',6-HpCB	175			2.16	0.208 (S)	0.97	1.102
2,2',3,3',4,6,6'-HpCB	176			5.01	0.160 (S)	1.01	1.034
2,2',3,3',4',5,6-HpCB	177			30.6	0.221 (S)	1.03	1.145
2,2',3,3',5,5',6-HpCB	178			13.2	0.217 (S)	1.07	1.085
2,2',3,3',5,6,6'-HpCB	179			17.9	0.155 (S)	1.01	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	66.4	0.182 (S)	1.04	1.000
2,2',3,4,4',5,6-HpCB	181		J	0.250	0.217 (S)	1.08	1.156
2,2',3,4,4',5,6'-HpCB	182		J	0.385	0.210 (S)	1.04	1.116
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	28.7	0.207 (S)	0.96	1.127
2,2',3,4,4',6,6'-HpCB	184		J	0.174	0.158 (S)	0.98	1.025
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.169 (S)		
2,2',3,4',5,5',6-HpCB	187			70.1	0.201 (S)	1.02	1.110
2,2',3,4',5,6,6'-HpCB	188		K J	0.262	0.130 (S)	0.85	1.001
2,3,3',4,4',5,5'-HpCB	189			1.87	0.342 (S)	0.91	1.000
2,3,3',4,4',5,6-HpCB	190			6.28	0.168 (S)	1.04	0.947
2,3,3',4,4',5',6-HpCB	191			1.29	0.162 (S)	1.01	0.917
2,3,3',4,5,5',6-HpCB	192		U		0.186 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			18.2	0.294 (S)	0.86	0.991
2,2',3,3',4,4',5,6-OcCB	195			6.95	0.309 (S)	0.88	0.945
2,2',3,3',4,4',5,6'-OcCB	196			10.5	0.212 (S)	0.88	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	3.35	0.158 (S)	0.86	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	32.3	0.220 (S)	0.87	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			4.38	0.156 (S)	0.96	1.023
2,2',3,3',5,5',6,6'-OcCB	202			9.08	0.159 (S)	0.87	1.001
2,2',3,4,4',5,5',6-OcCB	203			14.6	0.204 (S)	0.88	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.160 (S)		
2,3,3',4,4',5,5',6-OcCB	205			1.14	0.282 (S)	0.85	1.001
2,2',3,3',4,4',5,5',6-NoCB	206			20.7	0.346 (S)	0.78	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207			3.20	0.247 (S)	0.81	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			7.85	0.236 (S)	0.74	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			20.3	0.259 (S)	1.18	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 14-Jun-2013 15:24:25; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-19_Form1A_PB3C_195AS3_SJ1608846.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-05-S
Sample Collection:
10-May-2013 11:15

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-19
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 13:59:19	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_195A S: 3**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_195 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	56.2

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		40.5
Total Dichloro Biphenyls		180
Total Trichloro Biphenyls		386
Total Tetrachloro Biphenyls		747
Total Pentachloro Biphenyls		944
Total Hexachloro Biphenyls		829
Total Heptachloro Biphenyls		331
Total Octachloro Biphenyls		101
Total Nonachloro Biphenyls		31.8
Decachloro Biphenyl		20.3
TOTAL PCBs		3610

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 14-Jun-2013 15:25:41; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-19_Form1AHT_SJ1608846.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-05-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 10-May-2013 11:15

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-19

Sample Size: 10.4 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_195A S: 3**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			19.6	0.303	0.0001	1.96e-03	1.96e-03	
3,4,4',5-TeCB	81			0.773	0.262	0.0003	2.32e-04	2.32e-04	
2,3,3',4,4'-PeCB	105			74.6	0.226	0.00003	2.24e-03	2.24e-03	
2,3,4,4',5-PeCB	114			2.54	0.220	0.00003	7.62e-05	7.62e-05	
2,3',4,4',5-PeCB	118			166	0.213	0.00003	4.98e-03	4.98e-03	
2',3,4,4',5-PeCB	123			3.31	0.231	0.00003	9.93e-05	9.93e-05	
3,3',4,4',5-PeCB	126			1.37	0.254	0.1	1.37e-01	1.37e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	20.2	0.267	0.00003	6.06e-04	6.06e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			8.22	0.210	0.00003	2.47e-04	2.47e-04	
3,3',4,4',5,5'-HxCB	169		U		0.525	0.03	0.00e+00	7.88e-03	
2,3,3',4,4',5,5'-HpCB	189			1.87	0.342	0.00003	5.61e-05	5.61e-05	
					TOTAL TEQ		0.147	0.155	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-10-S
Sample Collection:
10-May-2013 11:33

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-20
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 15:03:38	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_195A S: 4**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_195 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	59.9

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4			12.1	0.375 (S)	1.62	1.001
2,3-DiCB	5			0.464	0.222 (S)	1.53	1.194
2,3'-DiCB	6			5.59	0.198 (S)	1.56	1.173
2,4-DiCB	7			2.63	0.209 (S)	1.63	1.156
2,4'-DiCB	8			40.1	0.185 (S)	1.52	1.204
2,5-DiCB	9			1.37	0.201 (S)	1.38	1.144
2,6-DiCB	10			0.562	0.212 (S)	1.48	1.013
3,3'-DiCB	11			72.1	0.199 (S)	1.54	0.968
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	0.995	0.197 (S)	0.95	0.926
4,4'-DiCB	15			46.7	0.209 (S)	1.55	1.002
2,2',3-TriCB	16			8.73	0.151 (S)	1.05	1.165
2,2',4-TriCB	17			11.9	0.133 (S)	1.03	1.138
2,2',5-TriCB	18	18 + 30	C	18.2	0.113 (S)	1.02	1.113
2,2',6-TriCB	19			2.30	0.179 (S)	1.09	1.001
2,3,3'-TriCB	20	20 + 28	C B	96.2	0.132 (S)	1.02	0.849
2,3,4-TriCB	21	21 + 33	C B	30.9	0.131 (S)	1.03	0.858
2,3,4'-TriCB	22			22.9	0.142 (S)	1.01	0.873
2,3,5-TriCB	23		U		0.145 (S)		
2,3,6-TriCB	24		J	0.229	0.102 (S)	1.15	1.158
2,3',4-TriCB	25			6.47	0.119 (S)	0.97	0.826
2,3',5-TriCB	26	26 + 29	C	11.3	0.136 (S)	1.02	1.300
2,3',6-TriCB	27			1.99	0.0933 (S)	1.01	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	56.5	0.125 (S)	1.01	0.838
2,4',6-TriCB	32			13.2	0.132 (S)	1.02	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34			0.394	0.137 (S)	1.02	1.273
3,3',4-TriCB	35			4.31	0.130 (S)	0.99	0.985
3,3',5-TriCB	36			2.80	0.124 (S)	1.01	0.932
3,4,4'-TriCB	37			35.0	0.132 (S)	1.02	1.001
3,4,5-TriCB	38		K J	0.367	0.125 (S)	0.55	0.968
3,4',5-TriCB	39			0.660	0.126 (S)	1.13	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		K J	0.133	0.132 (S)	0.57	1.001
2,3,3',4-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		X				
2,3,4',6-TeCB	64		X				
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6-TeCB	73		X				
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5-TeCB	81			0.672	0.294 (S)	0.83	1.000
2,2',3,3',4-PeCB	82			9.49	0.225 (S)	1.61	0.934
2,2',3,3',5-PeCB	83	83 + 99	C	75.5	0.212 (S)	1.58	0.887
2,2',3,3',6-PeCB	84			22.5	0.247 (S)	1.55	1.164
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	23.8	0.175 (S)	1.51	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	73.8	0.182 (S)	1.51	0.902
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	14.0	0.221 (S)	1.47	1.154
2,2',3,4,6'-PeCB	89			1.07	0.227 (S)	1.51	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	108	0.188 (S)	1.58	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			19.6	0.215 (S)	1.58	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	72.4	0.215 (S)	1.57	1.121
2,2',3,5,6'-PeCB	94			0.567	0.238 (S)	1.71	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.476	0.128 (S)	1.59	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			1.15	0.194 (S)	1.64	1.093
2,2',4,6,6'-PeCB	104		U		0.115 (S)		
2,3,3',4,4'-PeCB	105			60.5	0.339 (S)	1.53	1.000
2,3,3',4,5-PeCB	106		U		0.302 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	4.87	0.340 (S)	1.49	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			11.5	0.303 (S)	1.53	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	120	0.156 (S)	1.54	0.925
2,3,3',5,5'-PeCB	111		U		0.156 (S)		
2,3,3',5,6-PeCB	112		U		0.155 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			2.17	0.353 (S)	1.41	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	134	0.326 (S)	1.53	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		U		0.142 (S)		
2,3',4,5',6-PeCB	121		U		0.163 (S)		
2',3,3',4,5-PeCB	122			1.32	0.341 (S)	1.75	1.010
2',3,4,4',5-PeCB	123			2.49	0.345 (S)	1.44	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			1.11	0.375 (S)	1.74	1.000
3,3',4,5,5'-PeCB	127		U		0.316 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	27.5	0.381 (S)	1.25	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	162	0.382 (S)	1.24	0.929
2,2',3,3',4,5'-HxCB	130			10.9	0.469 (S)	1.29	0.913
2,2',3,3',4,6-HxCB	131			1.42	0.470 (S)	1.42	1.159
2,2',3,3',4,6'-HxCB	132			40.9	0.475 (S)	1.27	1.174
2,2',3,3',5,5'-HxCB	133			2.53	0.431 (S)	1.23	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	6.04	0.466 (S)	1.23	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	37.3	0.205 (S)	1.24	1.106
2,2',3,3',6,6'-HxCB	136			11.1	0.167 (S)	1.20	1.025
2,2',3,4,4',5-HxCB	137			4.60	0.424 (S)	1.23	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	2.28	0.422 (S)	1.28	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			13.4	0.410 (S)	1.26	0.903
2,2',3,4,5,6-HxCB	142		U		0.469 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			4.65	0.207 (S)	1.30	1.122
2,2',3,4,6,6'-HxCB	145		U		0.177 (S)		
2,2',3,4',5,5'-HxCB	146			24.1	0.389 (S)	1.21	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	95.1	0.419 (S)	1.23	1.133
2,2',3,4',5,6'-HxCB	148		U		0.218 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	0.281	0.170 (S)	1.28	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.164 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	135	0.341 (S)	1.24	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.127 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	14.5	0.369 (S)	1.26	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			11.8	0.303 (S)	1.26	0.938
2,3,3',4,5,5'-HxCB	159			1.31	0.314 (S)	1.11	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.319 (S)		
2,3,3',4',5,5'-HxCB	162		K	0.478	0.318 (S)	1.53	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			8.80	0.330 (S)	1.29	0.921
2,3,3',5,5',6-HxCB	165		U		0.361 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			5.89	0.292 (S)	1.28	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.318 (S)		
2,2',3,3',4,4',5-HpCB	170			25.3	0.257 (S)	1.06	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	10.8	0.261 (S)	1.00	1.162
2,2',3,3',4,5,5'-HpCB	172			4.45	0.251 (S)	1.04	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			26.4	0.251 (S)	1.04	1.133
2,2',3,3',4,5',6-HpCB	175			1.68	0.238 (S)	1.20	1.102
2,2',3,3',4,6,6'-HpCB	176			4.14	0.183 (S)	1.04	1.034
2,2',3,3',4',5,6-HpCB	177			24.0	0.253 (S)	1.03	1.144
2,2',3,3',5,5',6-HpCB	178			9.96	0.248 (S)	0.99	1.084
2,2',3,3',5,6,6'-HpCB	179			14.0	0.178 (S)	1.08	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	51.4	0.206 (S)	1.05	1.001
2,2',3,4,4',5,6-HpCB	181		U		0.248 (S)		
2,2',3,4,4',5,6'-HpCB	182			0.453	0.241 (S)	0.99	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C U		0.237 (S)		
2,2',3,4,4',6,6'-HpCB	184		U		0.181 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.193 (S)		
2,2',3,4',5,5',6-HpCB	187			54.3	0.229 (S)	1.05	1.109
2,2',3,4',5,6,6'-HpCB	188		J	0.182	0.159 (S)	1.02	1.000
2,3,3',4,4',5,5'-HpCB	189		K	1.04	0.324 (S)	1.26	1.000
2,3,3',4,4',5,6-HpCB	190			4.76	0.192 (S)	1.05	0.947
2,3,3',4,4',5',6-HpCB	191			1.05	0.185 (S)	1.16	0.917
2,3,3',4,5,5',6-HpCB	192		U		0.213 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			14.2	0.294 (S)	0.84	0.991
2,2',3,3',4,4',5,6-OcCB	195			5.56	0.309 (S)	0.92	0.945
2,2',3,3',4,4',5,6'-OcCB	196			8.12	0.243 (S)	0.87	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	24.3	0.252 (S)	0.91	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			3.28	0.179 (S)	0.94	1.023
2,2',3,3',5,5',6,6'-OcCB	202			6.91	0.192 (S)	0.81	1.000
2,2',3,4,4',5,5',6-OcCB	203			11.3	0.234 (S)	0.81	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.184 (S)		
2,3,3',4,4',5,5',6-OcCB	205			0.766	0.265 (S)	0.90	1.001
2,2',3,3',4,4',5,5',6-NoCB	206			18.3	0.348 (S)	0.82	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			2.50	0.261 (S)	0.86	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			7.25	0.259 (S)	0.77	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			21.2	0.200 (S)	1.21	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 14-Jun-2013 15:24:25; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-20_Form1A_PB3C_195AS4_SJ1608848.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-10-S
Sample Collection:
10-May-2013 11:33

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-20 W
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	07-Jun-2013 **Time:** 16:24:07	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	200	**Sample Data Filename:**	**PB3C_201 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	10	**Cal. Ver. Data Filename:**	PB3C_201 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	59.9

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		D	9.98	1.21 (S)	3.04	1.000
3-MoCB	2		D	30.9	1.15 (S)	3.12	0.988
4-MoCB	3		D	9.97	1.06 (S)	3.42	1.001
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C K D	10.8	1.74 (S)	2.13	0.985
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B D	33.7	1.33 (S)	0.74	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		D	15.1	1.33 (S)	0.77	1.311
2,2',3,5-TeCB	43		U D		1.70 (S)		
2,2',3,5'-TeCB	44	44 + 47 + 65	C B D	57.0	1.23 (S)	0.77	1.285
2,2',3,6-TeCB	45	45 + 51	C D	5.85	1.39 (S)	0.78	1.147
2,2',3,6'-TeCB	46		K D J	1.67	1.58 (S)	0.98	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		D	8.17	1.36 (S)	0.73	1.274
2,2',4,5'-TeCB	49	49 + 69	C B D	39.6	1.16 (S)	0.84	1.258
2,2',4,6-TeCB	50	50 + 53	C D	5.03	1.35 (S)	0.88	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B D	62.5	1.28 (S)	0.81	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4-TeCB	55		U D		1.42 (S)		
2,3,3',4'-TeCB	56		D	40.7	1.47 (S)	0.76	0.905
2,3,3',5-TeCB	57		U D		1.36 (S)		
2,3,3',5'-TeCB	58		U D		1.39 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C D	5.68	1.02 (S)	0.76	1.302
2,3,4,4'-TeCB	60		D	22.3	1.41 (S)	0.79	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B D	148	1.36 (S)	0.78	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		K D J	3.47	1.32 (S)	0.92	0.865
2,3,4',6-TeCB	64		D	23.9	0.958 (S)	0.78	1.349
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B D	90.9	1.34 (S)	0.80	0.885
2,3',4,5-TeCB	67		D J	2.52	1.21 (S)	0.81	0.856
2,3',4,5'-TeCB	68		U D		1.30 (S)		
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		U D		1.30 (S)		
2,3',5',6-TeCB	73		K D J	1.17	0.995 (S)	0.58	1.244
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		D	15.8	1.56 (S)	0.76	1.000
3,3',4,5-TeCB	78		U D		1.37 (S)		
3,3',4,5'-TeCB	79		K D J	1.97	1.15 (S)	0.53	0.970
3,3',5,5'-TeCB	80		U D		1.32 (S)		
3,4,4',5-TeCB	81		X				
2,2',3,3',4-PeCB	82		X				
2,2',3,3',5-PeCB	83	83 + 99	C X				
2,2',3,3',6-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		X				
2,2',3,3',4,4',5,6-OcCB	195		X				
2,2',3,3',4,4',5,6'-OcCB	196		X				
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C D J	3.31	0.851 (S)	0.78	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		X				
2,2',3,3',5,5',6,6'-OcCB	202		X				
2,2',3,4,4',5,5',6-OcCB	203		X				
2,2',3,4,4',5,6,6'-OcCB	204		X				
2,3,3',4,4',5,5',6-OcCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; D = dilution data; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 14-Jun-2013 15:24:25; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-20_Form1A_PB3C_201S7_SJ1610464.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-10-S
Sample Collection:
10-May-2013 11:33

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-20
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 15:03:38	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename(s):**	**PB3C_195A S: 4, PB3C_201 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_195 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	59.9

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		50.9
Total Dichloro Biphenyls		182
Total Trichloro Biphenyls		324
Total Tetrachloro Biphenyls		577
Total Pentachloro Biphenyls		760
Total Hexachloro Biphenyls		621
Total Heptachloro Biphenyls		233
Total Octachloro Biphenyls		77.7
Total Nonachloro Biphenyls		28.1
Decachloro Biphenyl		21.2
TOTAL PCBs		2880

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 14-Jun-2013 15:25:41; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-20_Form1AHT_SJ1608848.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-10-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 10-May-2013 11:33

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-20

Sample Size: 10.3 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_195A S: 4**
PB3C_201 S: 7

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			15.8	1.56	0.0001	1.58e-03	1.58e-03	
3,4,4',5-TeCB	81			0.672	0.294	0.0003	2.02e-04	2.02e-04	
2,3,3',4,4'-PeCB	105			60.5	0.339	0.00003	1.82e-03	1.82e-03	
2,3,4,4',5-PeCB	114			2.17	0.353	0.00003	6.51e-05	6.51e-05	
2,3',4,4',5-PeCB	118			134	0.326	0.00003	4.02e-03	4.02e-03	
2',3,4,4',5-PeCB	123			2.49	0.345	0.00003	7.47e-05	7.47e-05	
3,3',4,4',5-PeCB	126			1.11	0.375	0.1	1.11e-01	1.11e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	14.5	0.369	0.00003	4.35e-04	4.35e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			5.89	0.292	0.00003	1.77e-04	1.77e-04	
3,3',4,4',5,5'-HxCB	169		U		0.318	0.03	0.00e+00	4.77e-03	
2,3,3',4,4',5,5'-HpCB	189		U		0.324	0.00003	0.00e+00	4.86e-06	
					TOTAL TEQ		0.119	0.124	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-20_TEQ_SJ1608848.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-07-S
Sample Collection:
10-May-2013 11:58

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-21 (A)
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 16:07:45	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_195A S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_195 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.6

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			0.516	0.112 (S)	3.20	1.001
3-MoCB	2			2.53	0.103 (S)	2.80	0.988
4-MoCB	3			0.757	0.0958 (S)	3.38	1.000
2,2'-DiCB	4			0.427	0.263 (S)	1.64	1.001
2,3-DiCB	5		U		0.152 (S)		
2,3'-DiCB	6		J	0.301	0.136 (S)	1.37	1.175
2,4-DiCB	7		U		0.144 (S)		
2,4'-DiCB	8			1.75	0.128 (S)	1.45	1.207
2,5-DiCB	9		J	0.281	0.138 (S)	1.44	1.145
2,6-DiCB	10		U		0.146 (S)		
3,3'-DiCB	11			5.34	0.137 (S)	1.56	0.969
3,4-DiCB	12	12 + 13	C	0.500	0.140 (S)	1.64	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U		0.135 (S)		
4,4'-DiCB	15			3.55	0.139 (S)	1.51	1.001
2,2',3-TriCB	16			0.693	0.121 (S)	0.89	1.165
2,2',4-TriCB	17			0.840	0.106 (S)	1.05	1.138
2,2',5-TriCB	18	18 + 30	C	1.48	0.0899 (S)	1.04	1.113
2,2',6-TriCB	19		J	0.192	0.140 (S)	0.95	1.001
2,3,3'-TriCB	20	20 + 28	C B	9.32	0.0820 (S)	1.00	0.848
2,3,4-TriCB	21	21 + 33	C B	1.98	0.0809 (S)	1.00	0.858
2,3,4'-TriCB	22			1.73	0.0879 (S)	1.03	0.873
2,3,5-TriCB	23		U		0.0896 (S)		
2,3,6-TriCB	24		U		0.0810 (S)		
2,3',4-TriCB	25			0.442	0.0736 (S)	1.05	0.826
2,3',5-TriCB	26	26 + 29	C	0.833	0.0844 (S)	0.95	1.300
2,3',6-TriCB	27		K J	0.148	0.0743 (S)	0.82	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	4.62	0.0771 (S)	1.04	0.837
2,4',6-TriCB	32			0.773	0.0814 (S)	0.98	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U		0.0849 (S)		
3,3',4-TriCB	35		J	0.369	0.0805 (S)	1.02	0.985
3,3',5-TriCB	36		J	0.198	0.0769 (S)	0.94	0.932
3,4,4'-TriCB	37			3.09	0.0816 (S)	1.02	1.001
3,4,5-TriCB	38		U		0.0775 (S)		
3,4',5-TriCB	39		U		0.0782 (S)		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	2.55	0.121 (S)	0.77	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			1.37	0.128 (S)	0.84	1.311
2,2',3,5-TeCB	43		U		0.152 (S)		
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	4.92	0.115 (S)	0.76	1.285
2,2',3,6-TeCB	45	45 + 51	C	0.460	0.130 (S)	0.76	1.146
2,2',3,6'-TeCB	46		U		0.150 (S)		
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			0.685	0.126 (S)	0.83	1.274
2,2',4,5'-TeCB	49	49 + 69	C B	3.40	0.108 (S)	0.78	1.259
2,2',4,6-TeCB	50	50 + 53	C	0.393	0.127 (S)	0.81	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	5.44	0.119 (S)	0.76	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0874 (S)		
2,3,3',4-TeCB	55		U		0.134 (S)		
2,3,3',4'-TeCB	56			3.17	0.131 (S)	0.78	0.905
2,3,3',5-TeCB	57		U		0.124 (S)		
2,3,3',5'-TeCB	58		U		0.128 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C	0.536	0.0937 (S)	0.70	1.302
2,3,4,4'-TeCB	60			1.91	0.130 (S)	0.77	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	13.0	0.124 (S)	0.76	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		J	0.299	0.120 (S)	0.71	0.864
2,3,4',6-TeCB	64			2.10	0.0889 (S)	0.75	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	6.84	0.120 (S)	0.75	0.884
2,3',4,5-TeCB	67		J	0.225	0.112 (S)	0.69	0.857
2,3',4,5'-TeCB	68		U		0.121 (S)		
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		U		0.120 (S)		
2,3',5',6-TeCB	73		U		0.0951 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			1.65	0.157 (S)	0.86	1.001
3,3',4,5-TeCB	78		U		0.124 (S)		
3,3',4,5'-TeCB	79		J	0.169	0.104 (S)	0.82	0.970
3,3',5,5'-TeCB	80		U		0.116 (S)		
3,4,4',5-TeCB	81		U		0.118 (S)		
2,2',3,3',4-PeCB	82		K	0.740	0.149 (S)	2.20	0.934
2,2',3,3',5-PeCB	83	83 + 99	C	6.49	0.140 (S)	1.65	0.886
2,2',3,3',6-PeCB	84			1.81	0.163 (S)	1.55	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	2.07	0.116 (S)	1.64	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	6.05	0.121 (S)	1.64	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	1.18	0.146 (S)	1.67	1.154
2,2',3,4,6'-PeCB	89		U		0.150 (S)		
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	9.58	0.124 (S)	1.60	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			1.77	0.142 (S)	1.51	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	5.99	0.142 (S)	1.53	1.120
2,2',3,5,6'-PeCB	94		U		0.157 (S)		
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		U		0.0836 (S)		
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		U		0.128 (S)		
2,2',4,6,6'-PeCB	104		U		0.0767 (S)		
2,3,3',4,4'-PeCB	105			5.17	0.143 (S)	1.50	1.000
2,3,3',4,5-PeCB	106		U		0.128 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C J	0.372	0.144 (S)	1.36	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			1.02	0.128 (S)	1.49	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	9.88	0.103 (S)	1.56	0.925
2,3,3',5,5'-PeCB	111		U		0.103 (S)		
2,3,3',5,6-PeCB	112		U		0.102 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		J	0.229	0.145 (S)	1.72	1.001
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	11.8	0.138 (S)	1.54	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		U		0.0939 (S)		
2,3',4,5',6-PeCB	121		U		0.108 (S)		
2',3,3',4,5-PeCB	122		U		0.144 (S)		
2',3,4,4',5-PeCB	123		J	0.289	0.149 (S)	1.46	1.000
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		J	0.197	0.162 (S)	1.77	1.000
3,3',4,5,5'-PeCB	127		U		0.134 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	2.16	0.120 (S)	1.27	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	13.2	0.120 (S)	1.26	0.929
2,2',3,3',4,5'-HxCB	130			0.812	0.148 (S)	1.28	0.913
2,2',3,3',4,6-HxCB	131		U		0.148 (S)		
2,2',3,3',4,6'-HxCB	132			2.87	0.149 (S)	1.16	1.174
2,2',3,3',5,5'-HxCB	133		J	0.188	0.136 (S)	1.35	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	0.456	0.147 (S)	1.34	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	3.08	0.106 (S)	1.23	1.105
2,2',3,3',6,6'-HxCB	136			0.998	0.0863 (S)	1.40	1.024
2,2',3,4,4',5-HxCB	137		J	0.352	0.133 (S)	1.35	0.919
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C J	0.137	0.133 (S)	1.31	1.152
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			1.04	0.129 (S)	1.31	0.903
2,2',3,4,5,6-HxCB	142		U		0.148 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		J	0.355	0.107 (S)	1.07	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0918 (S)		
2,2',3,4',5,5'-HxCB	146			2.10	0.122 (S)	1.30	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	7.82	0.132 (S)	1.25	1.133
2,2',3,4',5,6'-HxCB	148		U		0.113 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.0879 (S)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0847 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	11.2	0.107 (S)	1.31	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0655 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	1.14	0.116 (S)	1.19	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			0.934	0.0953 (S)	1.17	0.938
2,3,3',4,5,5'-HxCB	159		U		0.0988 (S)		
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.100 (S)		
2,3,3',4',5,5'-HxCB	162		U		0.100 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			0.603	0.104 (S)	1.32	0.921
2,3,3',5,5',6-HxCB	165		U		0.113 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			0.441	0.0921 (S)	1.09	1.001
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.101 (S)		
2,2',3,3',4,4',5-HpCB	170			1.78	0.128 (S)	1.16	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	0.845	0.138 (S)	1.06	1.162
2,2',3,3',4,5,5'-HpCB	172		J	0.342	0.133 (S)	0.93	0.898
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			1.95	0.133 (S)	0.90	1.133
2,2',3,3',4,5',6-HpCB	175		U		0.126 (S)		
2,2',3,3',4,6,6'-HpCB	176		K J	0.287	0.0967 (S)	0.68	1.034
2,2',3,3',4',5,6-HpCB	177			1.67	0.134 (S)	0.90	1.145
2,2',3,3',5,5',6-HpCB	178			0.859	0.131 (S)	1.10	1.085
2,2',3,3',5,6,6'-HpCB	179			1.21	0.0939 (S)	0.95	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	3.56	0.106 (S)	1.08	1.001
2,2',3,4,4',5,6-HpCB	181		U		0.131 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.127 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	1.81	0.125 (S)	1.02	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.0957 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.102 (S)		
2,2',3,4',5,5',6-HpCB	187			4.66	0.121 (S)	0.99	1.110
2,2',3,4',5,6,6'-HpCB	188		U		0.0800 (S)		
2,3,3',4,4',5,5'-HpCB	189		U		0.199 (S)		
2,3,3',4,4',5,6-HpCB	190		J	0.374	0.101 (S)	0.93	0.947
2,3,3',4,4',5',6-HpCB	191		U		0.0977 (S)		
2,3,3',4,5,5',6-HpCB	192		U		0.112 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			0.979	0.151 (S)	0.79	0.991
2,2',3,3',4,4',5,6-OcCB	195		J	0.354	0.159 (S)	1.02	0.945
2,2',3,3',4,4',5,6'-OcCB	196			0.678	0.116 (S)	0.96	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C J	0.223	0.0866 (S)	0.92	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	2.02	0.120 (S)	0.94	1.114
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		J	0.212	0.0854 (S)	1.02	1.023
2,2',3,3',5,5',6,6'-OcCB	202			0.582	0.0899 (S)	0.88	1.000
2,2',3,4,4',5,5',6-OcCB	203			0.716	0.112 (S)	0.97	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0877 (S)		
2,3,3',4,4',5,5',6-OcCB	205		U		0.141 (S)		
2,2',3,3',4,4',5,5',6-NoCB	206			1.37	0.203 (S)	0.72	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207		J	0.201	0.147 (S)	0.66	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			0.451	0.141 (S)	0.68	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			2.44	0.122 (S)	1.23	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 14-Jun-2013 15:24:25; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-21_Form1A_PB3C_195AS5_SJ1608850.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-07-S
Sample Collection:
10-May-2013 11:58

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-21 (A)
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 16:07:45	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_195A S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_195 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.6

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		3.80
Total Dichloro Biphenyls		12.1
Total Trichloro Biphenyls		26.6
Total Tetrachloro Biphenyls		49.1
Total Pentachloro Biphenyls		63.9
Total Hexachloro Biphenyls		49.9
Total Heptachloro Biphenyls		19.1
Total Octachloro Biphenyls		5.76
Total Nonachloro Biphenyls		2.02
Decachloro Biphenyl		2.44
TOTAL PCBs		235

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 14-Jun-2013 15:25:41; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-21_Form1AHT_SJ1608850.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-07-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 10-May-2013 11:58

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-21 (A)

Sample Size: 10.4 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_195A S: 5**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			1.65	0.157	0.0001	1.65e-04	1.65e-04	
3,4,4',5-TeCB	81		U		0.118	0.0003	0.00e+00	1.77e-05	
2,3,3',4,4'-PeCB	105			5.17	0.143	0.00003	1.55e-04	1.55e-04	
2,3,4,4',5-PeCB	114			0.229	0.145	0.00003	6.87e-06	6.87e-06	
2,3',4,4',5-PeCB	118			11.8	0.138	0.00003	3.54e-04	3.54e-04	
2',3,4,4',5-PeCB	123			0.289	0.149	0.00003	8.67e-06	8.67e-06	
3,3',4,4',5-PeCB	126			0.197	0.162	0.1	1.97e-02	1.97e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	1.14	0.116	0.00003	3.42e-05	3.42e-05	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			0.441	0.0921	0.00003	1.32e-05	1.32e-05	
3,3',4,4',5,5'-HxCB	169		U		0.101	0.03	0.00e+00	1.52e-03	
2,3,3',4,4',5,5'-HpCB	189		U		0.199	0.00003	0.00e+00	2.99e-06	
					TOTAL TEQ		0.0204	0.0220	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 14-Jun-2013 15:25:41; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-21_TEQ_SJ1608850.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-07-S (Duplicate)
Sample Collection:
10-May-2013 11:58

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	WG43699-103 (DUP L19652-21)
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 17:11:52	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_195A S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_195 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.5

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4			0.399	0.193 (S)	1.54	1.001
2,3-DiCB	5		U		0.124 (S)		
2,3'-DiCB	6		J	0.331	0.111 (S)	1.59	1.172
2,4-DiCB	7		U		0.116 (S)		
2,4'-DiCB	8			1.91	0.103 (S)	1.40	1.205
2,5-DiCB	9		K J	0.362	0.112 (S)	1.28	1.141
2,6-DiCB	10		U		0.118 (S)		
3,3'-DiCB	11			5.98	0.111 (S)	1.67	0.968
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U		0.110 (S)		
4,4'-DiCB	15			3.58	0.119 (S)	1.57	1.000
2,2',3-TriCB	16			0.547	0.0987 (S)	1.13	1.165
2,2',4-TriCB	17			0.792	0.0871 (S)	1.07	1.137
2,2',5-TriCB	18	18 + 30	C	1.38	0.0737 (S)	1.18	1.113
2,2',6-TriCB	19		J	0.167	0.106 (S)	1.07	1.000
2,3,3'-TriCB	20	20 + 28	C B	9.13	0.0881 (S)	1.03	0.849
2,3,4-TriCB	21	21 + 33	C B	1.86	0.0869 (S)	1.00	0.858
2,3,4'-TriCB	22			1.70	0.0945 (S)	1.02	0.873
2,3,5-TriCB	23		U		0.0963 (S)		
2,3,6-TriCB	24		U		0.0663 (S)		
2,3',4-TriCB	25			0.475	0.0790 (S)	0.92	0.826
2,3',5-TriCB	26	26 + 29	C	0.870	0.0907 (S)	1.11	1.299
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	4.64	0.0828 (S)	1.02	0.838
2,4',6-TriCB	32			0.738	0.0875 (S)	0.95	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U		0.0912 (S)		
3,3',4-TriCB	35		J	0.352	0.0864 (S)	1.16	0.985
3,3',5-TriCB	36		J	0.174	0.0826 (S)	1.14	0.932
3,4,4'-TriCB	37			3.23	0.0927 (S)	0.98	1.001
3,4,5-TriCB	38		U		0.0833 (S)		
3,4',5-TriCB	39		U		0.0840 (S)		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0685 (S)		
2,3,3',4-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		X				
2,3,4',6-TeCB	64		X				
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6-TeCB	73		X				
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5-TeCB	81		U		0.125 (S)		
2,2',3,3',4-PeCB	82			0.696	0.116 (S)	1.60	0.934
2,2',3,3',5-PeCB	83	83 + 99	C	5.83	0.110 (S)	1.62	0.887
2,2',3,3',6-PeCB	84			1.69	0.128 (S)	1.45	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	1.84	0.0906 (S)	1.65	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	5.48	0.0943 (S)	1.55	0.902
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	1.01	0.114 (S)	1.66	1.154
2,2',3,4,6'-PeCB	89		U		0.117 (S)		
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	9.25	0.0970 (S)	1.56	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			1.64	0.111 (S)	1.43	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	5.73	0.111 (S)	1.49	1.120
2,2',3,5,6'-PeCB	94		U		0.123 (S)		
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		U		0.0733 (S)		
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		J	0.112	0.100 (S)	1.59	1.093
2,2',4,6,6'-PeCB	104		U		0.0693 (S)		
2,3,3',4,4'-PeCB	105			5.22	0.105 (S)	1.55	1.000
2,3,3',4,5-PeCB	106		U		0.0939 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	0.400	0.106 (S)	1.62	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			0.920	0.0942 (S)	1.50	0.998
2,3,3',4',6-PeCB	110	110 + 115	C B	9.50	0.0805 (S)	1.55	0.925
2,3,3',5,5'-PeCB	111		U		0.0806 (S)		
2,3,3',5,6-PeCB	112		U		0.0801 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		J	0.167	0.106 (S)	1.72	1.001
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	11.8	0.0997 (S)	1.49	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		U		0.0734 (S)		
2,3',4,5',6-PeCB	121		U		0.0841 (S)		
2',3,3',4,5-PeCB	122		U		0.106 (S)		
2',3,4,4',5-PeCB	123		J	0.236	0.108 (S)	1.58	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		K J	0.161	0.120 (S)	1.19	1.000
3,3',4,5,5'-PeCB	127		U		0.0981 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	2.13	0.122 (S)	1.20	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	12.8	0.122 (S)	1.25	0.929
2,2',3,3',4,5'-HxCB	130			0.843	0.150 (S)	1.16	0.913
2,2',3,3',4,6-HxCB	131		U		0.150 (S)		
2,2',3,3',4,6'-HxCB	132			2.90	0.152 (S)	1.20	1.174
2,2',3,3',5,5'-HxCB	133		J	0.153	0.138 (S)	1.37	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	0.397	0.149 (S)	1.38	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	2.98	0.0942 (S)	1.11	1.106
2,2',3,3',6,6'-HxCB	136			0.952	0.0767 (S)	1.18	1.026
2,2',3,4,4',5-HxCB	137		J	0.289	0.135 (S)	1.23	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C J	0.186	0.135 (S)	1.15	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			0.820	0.131 (S)	1.39	0.903
2,2',3,4,5,6-HxCB	142		U		0.150 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		J	0.315	0.0951 (S)	1.22	1.122
2,2',3,4,6,6'-HxCB	145		U		0.0816 (S)		
2,2',3,4',5,5'-HxCB	146			2.15	0.124 (S)	1.21	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	7.52	0.134 (S)	1.17	1.133
2,2',3,4',5,6'-HxCB	148		U		0.101 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.0782 (S)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0753 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	11.0	0.109 (S)	1.30	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0584 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	1.11	0.116 (S)	1.35	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			0.941	0.0967 (S)	1.18	0.938
2,3,3',4,5,5'-HxCB	159		U		0.100 (S)		
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.102 (S)		
2,3,3',4',5,5'-HxCB	162		U		0.102 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			0.630	0.105 (S)	1.15	0.921
2,3,3',5,5',6-HxCB	165		U		0.115 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			0.466	0.0929 (S)	1.11	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.106 (S)		
2,2',3,3',4,4',5-HpCB	170			1.65	0.131 (S)	0.99	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	0.713	0.127 (S)	1.19	1.162
2,2',3,3',4,5,5'-HpCB	172		J	0.329	0.122 (S)	1.19	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			1.73	0.122 (S)	1.01	1.133
2,2',3,3',4,5',6-HpCB	175		U		0.116 (S)		
2,2',3,3',4,6,6'-HpCB	176		J	0.289	0.0888 (S)	0.96	1.034
2,2',3,3',4',5,6-HpCB	177			1.74	0.123 (S)	1.05	1.145
2,2',3,3',5,5',6-HpCB	178			0.792	0.121 (S)	1.11	1.085
2,2',3,3',5,6,6'-HpCB	179			0.977	0.0862 (S)	0.92	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	3.57	0.103 (S)	0.95	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.120 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.117 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	1.66	0.115 (S)	0.98	1.126
2,2',3,4,4',6,6'-HpCB	184		U		0.0879 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0938 (S)		
2,2',3,4',5,5',6-HpCB	187			4.40	0.111 (S)	0.95	1.109
2,2',3,4',5,6,6'-HpCB	188		U		0.0774 (S)		
2,3,3',4,4',5,5'-HpCB	189		U		0.153 (S)		
2,3,3',4,4',5,6-HpCB	190		J	0.367	0.0931 (S)	1.20	0.947
2,3,3',4,4',5',6-HpCB	191		U		0.0897 (S)		
2,3,3',4,5,5',6-HpCB	192		U		0.103 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			0.919	0.138 (S)	1.00	0.991
2,2',3,3',4,4',5,6-OcCB	195			0.474	0.145 (S)	0.83	0.945
2,2',3,3',4,4',5,6'-OcCB	196			0.689	0.0939 (S)	0.95	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C J	0.243	0.0700 (S)	0.99	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	1.90	0.0973 (S)	1.00	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		J	0.271	0.0690 (S)	0.97	1.023
2,2',3,3',5,5',6,6'-OcCB	202			0.605	0.0746 (S)	0.97	1.001
2,2',3,4,4',5,5',6-OcCB	203			0.708	0.0901 (S)	1.02	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0709 (S)		
2,3,3',4,4',5,5',6-OcCB	205		U		0.124 (S)		
2,2',3,3',4,4',5,5',6-NoCB	206			1.32	0.186 (S)	0.84	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207		J	0.254	0.139 (S)	0.68	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			0.534	0.137 (S)	0.84	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			1.47	0.121 (S)	1.24	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 14-Jun-2013 15:24:25; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_WG43699-103_Form1A_PB3C_195AS6_SJ1608852.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-07-S (Duplicate)
Sample Collection:
10-May-2013 11:58

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	WG43699-103 W (DUP L19652-21)
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	07-Jun-2013 **Time:** 15:19:46	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	200	**Sample Data Filename:**	**PB3C_201 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	10	**Cal. Ver. Data Filename:**	PB3C_201 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.5

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		U D		0.956 (S)		
3-MoCB	2		D J	2.56	0.970 (S)	3.35	0.988
4-MoCB	3		U D		0.937 (S)		
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C U D		1.54 (S)		
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		U D		0.983 (S)		
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B D J	2.93	1.17 (S)	0.81	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		D J	1.21	1.18 (S)	0.87	1.311
2,2',3,5-TeCB	43		U D		1.51 (S)		
2,2',3,5'-TeCB	44	44 + 47 + 65	C B D	4.89	1.09 (S)	0.74	1.285
2,2',3,6-TeCB	45	45 + 51	C U D		1.23 (S)		
2,2',3,6'-TeCB	46		U D		1.40 (S)		
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		U D		1.20 (S)		
2,2',4,5'-TeCB	49	49 + 69	C B D J	3.57	1.02 (S)	0.83	1.259
2,2',4,6-TeCB	50	50 + 53	C U D		1.20 (S)		
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B D	4.44	1.13 (S)	0.88	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4-TeCB	55		U D		1.40 (S)		
2,3,3',4'-TeCB	56		D J	3.18	1.44 (S)	0.85	0.905
2,3,3',5-TeCB	57		U D		1.33 (S)		
2,3,3',5'-TeCB	58		U D		1.37 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C U D		0.900 (S)		
2,3,4,4'-TeCB	60		D J	1.73	1.39 (S)	0.83	0.912
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B D	13.8	1.34 (S)	0.87	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		U D		1.29 (S)		
2,3,4',6-TeCB	64		D J	1.97	0.847 (S)	0.88	1.347
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B D	6.69	1.32 (S)	0.75	0.885
2,3',4,5-TeCB	67		U D		1.19 (S)		
2,3',4,5'-TeCB	68		U D		1.27 (S)		
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		U D		1.27 (S)		
2,3',5',6-TeCB	73		U D		0.880 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		D J	1.71	1.53 (S)	0.70	1.001
3,3',4,5-TeCB	78		U D		1.35 (S)		
3,3',4,5'-TeCB	79		U D		1.13 (S)		
3,3',5,5'-TeCB	80		U D		1.30 (S)		
3,4,4',5-TeCB	81		X				
2,2',3,3',4-PeCB	82		X				
2,2',3,3',5-PeCB	83	83 + 99	C X				
2,2',3,3',6-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		X				
2,2',3,3',4,4',5,6-OcCB	195		X				
2,2',3,3',4,4',5,6'-OcCB	196		X				
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		X				
2,2',3,3',5,5',6,6'-OcCB	202		X				
2,2',3,4,4',5,5',6-OcCB	203		X				
2,2',3,4,4',5,6,6'-OcCB	204		X				
2,3,3',4,4',5,5',6-OcCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; B = analyte found in sample and the associated blank; D = dilution data; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

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Report Filename: 1668_PCB1668_PCBTF_WG43699-103_Form1A_PB3C_201S6_SJ1610462.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-07-S (Duplicate)
Sample Collection:
10-May-2013 11:58

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	WG43699-103 (DUP L19652-21)
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 17:11:52	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename(s):**	**PB3C_195A S: 6, PB3C_201 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_195 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	18.5

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		2.56
Total Dichloro Biphenyls		12.2
Total Trichloro Biphenyls		26.1
Total Tetrachloro Biphenyls		46.1
Total Pentachloro Biphenyls		61.5
Total Hexachloro Biphenyls		48.6
Total Heptachloro Biphenyls		18.2
Total Octachloro Biphenyls		5.81
Total Nonachloro Biphenyls		2.11
Decachloro Biphenyl		1.47
TOTAL PCBs		225

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_WG43699-103_Form1AHT_SJ1608852.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-07-S (Duplicate)

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 10-May-2013 11:58

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: WG43699-103 (DUP L19652-21)

Sample Size: 10.4 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_195A S: 6**
PB3C_201 S: 6

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			1.71	1.53	0.0001	1.71e-04	1.71e-04	
3,4,4',5-TeCB	81		U		0.125	0.0003	0.00e+00	1.88e-05	
2,3,3',4,4'-PeCB	105			5.22	0.105	0.00003	1.57e-04	1.57e-04	
2,3,4,4',5-PeCB	114			0.167	0.106	0.00003	5.01e-06	5.01e-06	
2,3',4,4',5-PeCB	118			11.8	0.0997	0.00003	3.54e-04	3.54e-04	
2',3,4,4',5-PeCB	123			0.236	0.108	0.00003	7.08e-06	7.08e-06	
3,3',4,4',5-PeCB	126		U		0.120	0.1	0.00e+00	6.00e-03	
2,3,3',4,4',5-HxCB	156	156 + 157	C	1.11	0.116	0.00003	3.33e-05	3.33e-05	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			0.466	0.0929	0.00003	1.40e-05	1.40e-05	
3,3',4,4',5,5'-HxCB	169		U		0.106	0.03	0.00e+00	1.59e-03	
2,3,3',4,4',5,5'-HpCB	189		U		0.153	0.00003	0.00e+00	2.30e-06	
					TOTAL TEQ		0.000741	0.00835	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_WG43699-103_TEQ_SJ1608852.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

PCB CONGENER ANALYSIS REPORT
RELATIVE PERCENT DIFFERENCE

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Contract No.: 4273
Client ID: RB13-PT-07-S

Concentration Units: ng/kg (dry weight basis)

COMPOUND	IUPAC NO.	L19652-21 (A) LAB FLAG [1]	L19652-21 (A) CONC. FOUND	WG43699-103 LAB FLAG [1]	WG43699-103 CONC. FOUND	MEAN	RELATIVE PERCENT DIFFERENCE
2-MoCB	1		0.516	U D			
3-MoCB	2		2.53	D J	2.56	2.54	1.34
4-MoCB	3		0.757	U D			
2,2'-DiCB	4		0.427		0.399	0.413	6.78
2,3-DiCB	5	U		U			
2,3'-DiCB	6	J	0.301	J	0.331	0.316	9.49
2,4-DiCB	7	U		U			
2,4'-DiCB	8		1.75		1.91	1.83	8.53
2,5-DiCB	9	J	0.281	K J	0.362		
2,6-DiCB	10	U		U			
3,3'-DiCB	11		5.34		5.98	5.66	11.4
3,4-DiCB	12	C	0.500	C U D			
3,4'-DiCB	13	C12		C12			
3,5-DiCB	14	U		U			
4,4'-DiCB	15		3.55		3.58	3.56	0.702
2,2',3-TriCB	16		0.693		0.547	0.620	23.5
2,2',4-TriCB	17		0.840		0.792	0.816	5.88
2,2',5-TriCB	18	C	1.48	C	1.38	1.43	6.97
2,2',6-TriCB	19	J	0.192	J	0.167	0.180	13.9
2,3,3'-TriCB	20	C	9.32	C	9.13	9.22	1.99
2,3,4-TriCB	21	C	1.98	C	1.86	1.92	6.72
2,3,4'-TriCB	22		1.73		1.70	1.71	1.34
2,3,5-TriCB	23	U		U			
2,3,6-TriCB	24	U		U			
2,3',4-TriCB	25		0.442		0.475	0.459	7.20
2,3',5-TriCB	26	C	0.833	C	0.870	0.852	4.35
2,3',6-TriCB	27	K J	0.148	U D			
2,4,4'-TriCB	28	C20		C20			
2,4,5-TriCB	29	C26		C26			
2,4,6-TriCB	30	C18		C18			
2,4',5-TriCB	31		4.62		4.64	4.63	0.626
2,4',6-TriCB	32		0.773		0.738	0.756	4.63
2',3,4-TriCB	33	C21		C21			
2',3,5-TriCB	34	U		U			
3,3',4-TriCB	35	J	0.369	J	0.352	0.361	4.72
3,3',5-TriCB	36	J	0.198	J	0.174	0.186	12.9
3,4,4'-TriCB	37		3.09		3.23	3.16	4.34
3,4,5-TriCB	38	U		U			
3,4',5-TriCB	39	U		U			
2,2',3,3'-TeCB	40	C	2.55	C D J	2.93	2.74	13.8
2,2',3,4-TeCB	41	C40		C40			
2,2',3,4'-TeCB	42		1.37	D J	1.21	1.29	12.3
2,2',3,5-TeCB	43	U		U D			
2,2',3,5'-TeCB	44	C	4.92	C D	4.89	4.91	0.571
2,2',3,6-TeCB	45	C	0.460	C U D			
2,2',3,6'-TeCB	46	U		U D			
2,2',4,4'-TeCB	47	C44		C44			
2,2',4,5-TeCB	48		0.685	U D			
2,2',4,5'-TeCB	49	C	3.40	C D J	3.57	3.48	5.08
2,2',4,6-TeCB	50	C	0.393	C U D			
2,2',4,6'-TeCB	51	C45		C45			
2,2',5,5'-TeCB	52		5.44	D	4.44	4.94	20.3
2,2',5,6'-TeCB	53	C50		C50			
2,2',6,6'-TeCB	54	U		U			
2,3,3',4-TeCB	55	U		U D			

COMPOUND	IUPAC NO.	L19652-21 (A) LAB FLAG [1]	L19652-21 (A) CONC. FOUND	WG43699-103 LAB FLAG [1]	WG43699-103 CONC. FOUND	MEAN	RELATIVE PERCENT DIFFERENCE
2,3,3',4'-TeCB	56		3.17	D J	3.18	3.18	0.315
2,3,3',5-TeCB	57	U		U D			
2,3,3',5'-TeCB	58	U		U D			
2,3,3',6-TeCB	59	C	0.536	C U D			
2,3,4,4'-TeCB	60		1.91	D J	1.73	1.82	10.1
2,3,4,5-TeCB	61	C	13.0	C D	13.8	13.4	5.85
2,3,4,6-TeCB	62	C59		C59			
2,3,4',5-TeCB	63	J	0.299	U D			
2,3,4',6-TeCB	64		2.10	D J	1.97	2.03	6.29
2,3,5,6-TeCB	65	C44		C44			
2,3',4,4'-TeCB	66		6.84	D	6.69	6.77	2.20
2,3',4,5-TeCB	67	J	0.225	U D			
2,3',4,5'-TeCB	68	U		U D			
2,3',4,6-TeCB	69	C49		C49			
2,3',4',5-TeCB	70	C61		C61			
2,3',4',6-TeCB	71	C40		C40			
2,3',5,5'-TeCB	72	U		U D			
2,3',5',6-TeCB	73	U		U D			
2,4,4',5-TeCB	74	C61		C61			
2,4,4',6-TeCB	75	C59		C59			
2',3,4,5-TeCB	76	C61		C61			
3,3',4,4'-TeCB	77		1.65	D J	1.71	1.68	3.39
3,3',4,5-TeCB	78	U		U D			
3,3',4,5'-TeCB	79	J	0.169	U D			
3,3',5,5'-TeCB	80	U		U D			
3,4,4',5-TeCB	81	U		U			
2,2',3,3',4-PeCB	82	K	0.740		0.696		
2,2',3,3',5-PeCB	83	C	6.49	C	5.83	6.16	10.7
2,2',3,3',6-PeCB	84		1.81		1.69	1.75	6.52
2,2',3,4,4'-PeCB	85	C	2.07	C	1.84	1.96	12.0
2,2',3,4,5-PeCB	86	C	6.05	C	5.48	5.76	9.85
2,2',3,4,5'-PeCB	87	C86		C86			
2,2',3,4,6-PeCB	88	C	1.18	C	1.01	1.09	15.0
2,2',3,4,6'-PeCB	89	U		U			
2,2',3,4',5-PeCB	90	C	9.58	C	9.25	9.41	3.48
2,2',3,4',6-PeCB	91	C88		C88			
2,2',3,5,5'-PeCB	92		1.77		1.64	1.70	7.87
2,2',3,5,6-PeCB	93	C	5.99	C	5.73	5.86	4.45
2,2',3,5,6'-PeCB	94	U		U			
2,2',3,5',6-PeCB	95	C93		C93			
2,2',3,6,6'-PeCB	96	U		U			
2,2',3',4,5-PeCB	97	C86		C86			
2,2',3',4,6-PeCB	98	C93		C93			
2,2',4,4',5-PeCB	99	C83		C83			
2,2',4,4',6-PeCB	100	C93		C93			
2,2',4,5,5'-PeCB	101	C90		C90			
2,2',4,5,6'-PeCB	102	C93		C93			
2,2',4,5',6-PeCB	103	U		J	0.112		
2,2',4,6,6'-PeCB	104	U		U			
2,3,3',4,4'-PeCB	105		5.17		5.22	5.19	1.06
2,3,3',4,5-PeCB	106	U		U			
2,3,3',4',5-PeCB	107	C J	0.372	C	0.400	0.386	7.25
2,3,3',4,5'-PeCB	108	C86		C86			
2,3,3',4,6-PeCB	109		1.02		0.920	0.971	10.4
2,3,3',4',6-PeCB	110	C	9.88	C	9.50	9.69	3.92
2,3,3',5,5'-PeCB	111	U		U			
2,3,3',5,6-PeCB	112	U		U			
2,3,3',5',6-PeCB	113	C90		C90			
2,3,4,4',5-PeCB	114	J	0.229	J	0.167	0.198	31.3
2,3,4,4',6-PeCB	115	C110		C110			
2,3,4,5,6-PeCB	116	C85		C85			
2,3,4',5,6-PeCB	117	C85		C85			
2,3',4,4',5-PeCB	118		11.8		11.8	11.8	0.068
2,3',4,4',6-PeCB	119	C86		C86			

COMPOUND	IUPAC NO.	L19652-21 (A) LAB FLAG [1]	L19652-21 (A) CONC. FOUND	WG43699-103 LAB FLAG [1]	WG43699-103 CONC. FOUND	MEAN	RELATIVE PERCENT DIFFERENCE
2,3',4,5,5'-PeCB	120	U		U			
2,3',4,5',6-PeCB	121	U		U			
2',3,3',4,5-PeCB	122	U		U			
2',3,4,4',5-PeCB	123	J	0.289	J	0.236	0.263	20.2
2',3,4,5,5'-PeCB	124	C107		C107			
2',3,4,5,6'-PeCB	125	C86		C86			
3,3',4,4',5-PeCB	126	J	0.197	K J	0.161		
3,3',4,5,5'-PeCB	127	U		U			
2,2',3,3',4,4'-HxCB	128	C	2.16	C	2.13	2.14	1.31
2,2',3,3',4,5-HxCB	129	C	13.2	C	12.8	13.0	3.57
2,2',3,3',4,5'-HxCB	130		0.812		0.843	0.828	3.75
2,2',3,3',4,6-HxCB	131	U		U			
2,2',3,3',4,6'-HxCB	132		2.87		2.90	2.89	0.970
2,2',3,3',5,5'-HxCB	133	J	0.188	J	0.153	0.171	20.5
2,2',3,3',5,6-HxCB	134	C	0.456	C	0.397	0.427	13.8
2,2',3,3',5,6'-HxCB	135	C	3.08	C	2.98	3.03	3.04
2,2',3,3',6,6'-HxCB	136		0.998		0.952	0.975	4.72
2,2',3,4,4',5-HxCB	137	J	0.352	J	0.289	0.321	19.7
2,2',3,4,4',5'-HxCB	138	C129		C129			
2,2',3,4,4',6-HxCB	139	C J	0.137	C J	0.186	0.162	30.3
2,2',3,4,4',6'-HxCB	140	C139		C139			
2,2',3,4,5,5'-HxCB	141		1.04		0.820	0.931	23.8
2,2',3,4,5,6-HxCB	142	U		U			
2,2',3,4,5,6'-HxCB	143	C134		C134			
2,2',3,4,5',6-HxCB	144	J	0.355	J	0.315	0.335	11.9
2,2',3,4,6,6'-HxCB	145	U		U			
2,2',3,4',5,5'-HxCB	146		2.10		2.15	2.12	2.17
2,2',3,4',5,6-HxCB	147	C	7.82	C	7.52	7.67	3.87
2,2',3,4',5,6'-HxCB	148	U		U			
2,2',3,4',5',6-HxCB	149	C147		C147			
2,2',3,4',6,6'-HxCB	150	U		U			
2,2',3,5,5',6-HxCB	151	C135		C135			
2,2',3,5,6,6'-HxCB	152	U		U			
2,2',4,4',5,5'-HxCB	153	C	11.2	C	11.0	11.1	1.50
2,2',4,4',5,6'-HxCB	154	C135		C135			
2,2',4,4',6,6'-HxCB	155	U		U			
2,3,3',4,4',5-HxCB	156	C	1.14	C	1.11	1.12	3.21
2,3,3',4,4',5'-HxCB	157	C156		C156			
2,3,3',4,4',6-HxCB	158		0.934		0.941	0.938	0.747
2,3,3',4,5,5'-HxCB	159	U		U			
2,3,3',4,5,6-HxCB	160	C129		C129			
2,3,3',4,5',6-HxCB	161	U		U			
2,3,3',4',5,5'-HxCB	162	U		U			
2,3,3',4',5,6-HxCB	163	C129		C129			
2,3,3',4',5',6-HxCB	164		0.603		0.630	0.617	4.38
2,3,3',5,5',6-HxCB	165	U		U			
2,3,4,4',5,6-HxCB	166	C128		C128			
2,3',4,4',5,5'-HxCB	167		0.441		0.466	0.454	5.51
2,3',4,4',5',6-HxCB	168	C153		C153			
3,3',4,4',5,5'-HxCB	169	U		U			
2,2',3,3',4,4',5-HpCB	170		1.78		1.65	1.72	7.40
2,2',3,3',4,4',6-HpCB	171	C	0.845	C	0.713	0.779	16.9
2,2',3,3',4,5,5'-HpCB	172	J	0.342	J	0.329	0.336	3.87
2,2',3,3',4,5,6-HpCB	173	C171		C171			
2,2',3,3',4,5,6'-HpCB	174		1.95		1.73	1.84	11.7
2,2',3,3',4,5',6-HpCB	175	U		U			
2,2',3,3',4,6,6'-HpCB	176	K J	0.287	J	0.289		
2,2',3,3',4',5,6-HpCB	177		1.67		1.74	1.70	4.41
2,2',3,3',5,5',6-HpCB	178		0.859		0.792	0.826	8.12
2,2',3,3',5,6,6'-HpCB	179		1.21		0.977	1.10	21.6
2,2',3,4,4',5,5'-HpCB	180	C	3.56	C	3.57	3.56	0.477
2,2',3,4,4',5,6-HpCB	181	U		U			
2,2',3,4,4',5,6'-HpCB	182	U		U			
2,2',3,4,4',5',6-HpCB	183	C	1.81	C	1.66	1.74	8.30

COMPOUND	IUPAC NO.	L19652-21 (A) LAB FLAG [1]	L19652-21 (A) CONC. FOUND	WG43699-103 LAB FLAG [1]	WG43699-103 CONC. FOUND	MEAN	RELATIVE PERCENT DIFFERENCE
2,2',3,4,4',6,6'-HpCB	184	U		U			
2,2',3,4,5,5',6-HpCB	185	C183		C183			
2,2',3,4,5,6,6'-HpCB	186	U		U			
2,2',3,4',5,5',6-HpCB	187		4.66		4.40	4.53	5.63
2,2',3,4',5,6,6'-HpCB	188	U		U			
2,3,3',4,4',5,5'-HpCB	189	U		U			
2,3,3',4,4',5,6-HpCB	190	J	0.374	J	0.367	0.371	1.89
2,3,3',4,4',5',6-HpCB	191	U		U			
2,3,3',4,5,5',6-HpCB	192	U		U			
2,3,3',4',5,5',6-HpCB	193	C180		C180			
2,2',3,3',4,4',5,5'-OcCB	194		0.979		0.919	0.949	6.32
2,2',3,3',4,4',5,6-OcCB	195	J	0.354		0.474	0.414	29.0
2,2',3,3',4,4',5,6'-OcCB	196		0.678		0.689	0.684	1.61
2,2',3,3',4,4',6,6'-OcCB	197	C J	0.223	C J	0.243	0.233	8.58
2,2',3,3',4,5,5',6-OcCB	198	C	2.02	C	1.90	1.96	6.06
2,2',3,3',4,5,5',6'-OcCB	199	C198		C198			
2,2',3,3',4,5,6,6'-OcCB	200	C197		C197			
2,2',3,3',4,5',6,6'-OcCB	201	J	0.212	J	0.271	0.242	24.4
2,2',3,3',5,5',6,6'-OcCB	202		0.582		0.605	0.594	3.88
2,2',3,4,4',5,5',6-OcCB	203		0.716		0.708	0.712	1.12
2,2',3,4,4',5,6,6'-OcCB	204	U		U			
2,3,3',4,4',5,5',6-OcCB	205	U		U			
2,2',3,3',4,4',5,5',6-NoCB	206		1.37		1.32	1.34	3.58
2,2',3,3',4,4',5,6,6'-NoCB	207	J	0.201	J	0.254	0.228	23.3
2,2',3,3',4,5,5',6,6'-NoCB	208		0.451		0.534	0.493	16.9
2,2',3,3',4,4',5,5',6,6'-DeCB	209		2.44		1.47	1.95	49.4

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; D = dilution data; J = concentration less than lowest calibration equivalent; C = co-eluting congener.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: RPD.xsl; Created: 14-Jun-2013 15:25:16; Application: XMLTransformer-1.13.42;
Report Filename: RPD_PCB1668_RPD_WG43699-103_L19652-21_.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-03-S
Sample Collection:
10-May-2013 13:07

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-22
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 18:15:58	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_195A S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_195 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	57.3

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			6.30	0.0990 (S)	2.99	1.001
3-MoCB	2			25.1	0.0901 (S)	2.99	0.988
4-MoCB	3			6.69	0.0828 (S)	3.21	1.001
2,2'-DiCB	4			8.55	0.218 (S)	1.56	1.001
2,3-DiCB	5		J	0.324	0.128 (S)	1.43	1.196
2,3'-DiCB	6			4.16	0.115 (S)	1.54	1.174
2,4-DiCB	7			1.66	0.121 (S)	1.60	1.157
2,4'-DiCB	8			28.9	0.107 (S)	1.52	1.206
2,5-DiCB	9			1.11	0.117 (S)	1.43	1.144
2,6-DiCB	10			0.441	0.123 (S)	1.33	1.013
3,3'-DiCB	11			57.2	0.115 (S)	1.52	0.969
3,4-DiCB	12	12 + 13	C	6.04	0.118 (S)	1.52	0.985
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14			0.699	0.114 (S)	1.35	0.926
4,4'-DiCB	15			37.9	0.119 (S)	1.51	1.001
2,2',3-TriCB	16			7.69	0.0991 (S)	1.00	1.165
2,2',4-TriCB	17			11.2	0.0874 (S)	1.04	1.138
2,2',5-TriCB	18	18 + 30	C	15.8	0.0740 (S)	1.04	1.114
2,2',6-TriCB	19			1.85	0.107 (S)	0.99	1.001
2,3,3'-TriCB	20	20 + 28	C B	87.9	0.139 (S)	1.01	0.849
2,3,4-TriCB	21	21 + 33	C B	27.5	0.137 (S)	1.00	0.858
2,3,4'-TriCB	22			19.7	0.149 (S)	1.00	0.873
2,3,5-TriCB	23		U		0.152 (S)		
2,3,6-TriCB	24		J	0.221	0.0666 (S)	0.90	1.158
2,3',4-TriCB	25			6.03	0.124 (S)	1.02	0.826
2,3',5-TriCB	26	26 + 29	C	9.93	0.143 (S)	1.01	1.300
2,3',6-TriCB	27			2.01	0.0611 (S)	1.07	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	50.0	0.130 (S)	1.02	0.838
2,4',6-TriCB	32			11.8	0.138 (S)	1.00	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.304	0.144 (S)	1.12	1.273
3,3',4-TriCB	35			4.13	0.136 (S)	1.00	0.985
3,3',5-TriCB	36			2.47	0.130 (S)	1.01	0.932
3,4,4'-TriCB	37			32.4	0.143 (S)	1.01	1.001
3,4,5-TriCB	38		J	0.335	0.131 (S)	1.17	0.968
3,4',5-TriCB	39			0.693	0.132 (S)	1.01	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	32.3	0.102 (S)	0.76	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			14.8	0.108 (S)	0.80	1.312
2,2',3,5-TeCB	43			1.41	0.128 (S)	0.82	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	56.0	0.0971 (S)	0.78	1.285
2,2',3,6-TeCB	45	45 + 51	C	5.79	0.110 (S)	0.77	1.147
2,2',3,6'-TeCB	46			2.23	0.127 (S)	0.81	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			8.30	0.106 (S)	0.78	1.274
2,2',4,5'-TeCB	49	49 + 69	C B	37.6	0.0906 (S)	0.78	1.260
2,2',4,6-TeCB	50	50 + 53	C	5.86	0.107 (S)	0.78	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	57.9	0.0999 (S)	0.77	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		J	0.130	0.0757 (S)	0.67	1.001
2,3,3',4-TeCB	55			1.02	0.153 (S)	0.79	0.890
2,3,3',4'-TeCB	56			35.8	0.150 (S)	0.75	0.905
2,3,3',5-TeCB	57		J	0.374	0.143 (S)	0.69	0.844
2,3,3',5'-TeCB	58		J	0.272	0.147 (S)	0.70	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	5.02	0.0789 (S)	0.83	1.302
2,3,4,4'-TeCB	60			20.3	0.149 (S)	0.75	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	137	0.143 (S)	0.76	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			3.20	0.138 (S)	0.77	0.864
2,3,4',6-TeCB	64			21.8	0.0748 (S)	0.76	1.349
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	83.1	0.138 (S)	0.76	0.884
2,3',4,5-TeCB	67			2.69	0.129 (S)	0.79	0.857
2,3',4,5'-TeCB	68			0.942	0.139 (S)	0.69	0.832
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			1.21	0.137 (S)	0.78	0.823
2,3',5',6-TeCB	73		U		0.0801 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			15.3	0.159 (S)	0.75	1.000
3,3',4,5-TeCB	78		U		0.142 (S)		
3,3',4,5'-TeCB	79			1.82	0.119 (S)	0.76	0.970
3,3',5,5'-TeCB	80		U		0.133 (S)		
3,4,4',5-TeCB	81			0.562	0.153 (S)	0.66	1.001
2,2',3,3',4-PeCB	82			11.8	0.111 (S)	1.54	0.934
2,2',3,3',5-PeCB	83	83 + 99	C	76.6	0.105 (S)	1.54	0.886
2,2',3,3',6-PeCB	84			21.4	0.122 (S)	1.55	1.162
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	24.8	0.0867 (S)	1.60	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	73.9	0.0901 (S)	1.56	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	13.6	0.109 (S)	1.63	1.154
2,2',3,4,6'-PeCB	89			1.18	0.112 (S)	1.73	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	105	0.0927 (S)	1.56	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			18.3	0.106 (S)	1.60	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	70.0	0.106 (S)	1.58	1.120
2,2',3,5,6'-PeCB	94			0.527	0.118 (S)	1.48	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		K	0.572	0.0812 (S)	1.88	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			1.34	0.0960 (S)	1.34	1.093
2,2',4,6,6'-PeCB	104		U		0.0676 (S)		
2,3,3',4,4'-PeCB	105			60.0	0.147 (S)	1.50	1.000
2,3,3',4,5-PeCB	106		U		0.125 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	4.62	0.140 (S)	1.60	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			11.5	0.125 (S)	1.51	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	116	0.0770 (S)	1.55	0.925
2,3,3',5,5'-PeCB	111		K J	0.213	0.0770 (S)	2.18	0.946
2,3,3',5,6-PeCB	112		U		0.0766 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			2.38	0.144 (S)	1.53	1.001
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	131	0.135 (S)	1.52	1.001
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		K	0.863	0.0702 (S)	1.85	0.959
2,3',4,5',6-PeCB	121		U		0.0804 (S)		
2',3,3',4,5-PeCB	122			1.51	0.141 (S)	1.43	1.010
2',3,4,4',5-PeCB	123			2.28	0.147 (S)	1.63	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			1.14	0.162 (S)	1.56	1.000
3,3',4,5,5'-PeCB	127		U		0.130 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	28.7	0.142 (S)	1.23	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	170	0.143 (S)	1.25	0.928
2,2',3,3',4,5'-HxCB	130			11.3	0.175 (S)	1.25	0.913
2,2',3,3',4,6-HxCB	131			1.54	0.175 (S)	1.25	1.159
2,2',3,3',4,6'-HxCB	132			41.9	0.177 (S)	1.25	1.174
2,2',3,3',5,5'-HxCB	133			2.72	0.161 (S)	1.37	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	6.31	0.174 (S)	1.18	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	39.3	0.111 (S)	1.25	1.104
2,2',3,3',6,6'-HxCB	136			12.4	0.0905 (S)	1.23	1.024
2,2',3,4,4',5-HxCB	137			4.95	0.158 (S)	1.31	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	2.67	0.157 (S)	1.26	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			13.1	0.153 (S)	1.27	0.903
2,2',3,4,5,6-HxCB	142		U		0.175 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			4.76	0.112 (S)	1.31	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0963 (S)		
2,2',3,4',5,5'-HxCB	146			23.3	0.145 (S)	1.23	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	102	0.156 (S)	1.25	1.133
2,2',3,4',5,6'-HxCB	148			0.388	0.119 (S)	1.10	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		K J	0.310	0.0922 (S)	1.85	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		K J	0.110	0.0888 (S)	2.13	1.007
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	140	0.127 (S)	1.24	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0656 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	14.0	0.139 (S)	1.23	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			12.3	0.113 (S)	1.26	0.938
2,3,3',4,5,5'-HxCB	159			1.33	0.117 (S)	1.22	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.119 (S)		
2,3,3',4',5,5'-HxCB	162		K	0.605	0.119 (S)	1.02	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			8.70	0.123 (S)	1.30	0.921
2,3,3',5,5',6-HxCB	165		J	0.276	0.135 (S)	1.11	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			5.85	0.110 (S)	1.22	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.195 (S)		
2,2',3,3',4,4',5-HpCB	170			24.5	0.146 (S)	1.00	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	10.0	0.139 (S)	1.07	1.162
2,2',3,3',4,5,5'-HpCB	172			3.97	0.134 (S)	1.10	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			24.5	0.134 (S)	0.99	1.133
2,2',3,3',4,5',6-HpCB	175			1.68	0.127 (S)	1.12	1.102
2,2',3,3',4,6,6'-HpCB	176			3.82	0.0978 (S)	1.04	1.034
2,2',3,3',4',5,6-HpCB	177			23.0	0.135 (S)	1.07	1.145
2,2',3,3',5,5',6-HpCB	178			10.2	0.133 (S)	1.06	1.085
2,2',3,3',5,6,6'-HpCB	179			13.8	0.0949 (S)	1.05	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	48.7	0.116 (S)	1.06	1.000
2,2',3,4,4',5,6-HpCB	181		J	0.231	0.132 (S)	1.11	1.156
2,2',3,4,4',5,6'-HpCB	182		J	0.343	0.129 (S)	1.18	1.116
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	21.4	0.127 (S)	1.06	1.127
2,2',3,4,4',6,6'-HpCB	184		K J	0.102	0.0967 (S)	0.83	1.025
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.103 (S)		
2,2',3,4',5,5',6-HpCB	187			54.0	0.123 (S)	1.02	1.110
2,2',3,4',5,6,6'-HpCB	188		J	0.194	0.0838 (S)	1.02	1.001
2,3,3',4,4',5,5'-HpCB	189			1.06	0.174 (S)	0.90	1.000
2,3,3',4,4',5,6-HpCB	190			4.43	0.103 (S)	1.11	0.947
2,3,3',4,4',5',6-HpCB	191			0.871	0.0988 (S)	1.13	0.917
2,3,3',4,5,5',6-HpCB	192		U		0.114 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			13.0	0.145 (S)	0.88	0.991
2,2',3,3',4,4',5,6-OcCB	195			5.55	0.153 (S)	0.86	0.945
2,2',3,3',4,4',5,6'-OcCB	196			7.80	0.132 (S)	0.90	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	2.39	0.0987 (S)	0.97	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	24.2	0.137 (S)	0.90	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			3.56	0.0973 (S)	0.89	1.023
2,2',3,3',5,5',6,6'-OcCB	202			6.98	0.0995 (S)	0.89	1.001
2,2',3,4,4',5,5',6-OcCB	203			10.8	0.127 (S)	0.89	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0999 (S)		
2,3,3',4,4',5,5',6-OcCB	205			0.800	0.139 (S)	0.88	1.001
2,2',3,3',4,4',5,5',6-NoCB	206			16.6	0.225 (S)	0.81	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207			2.53	0.166 (S)	0.76	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			6.79	0.163 (S)	0.76	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			20.5	0.136 (S)	1.18	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 14-Jun-2013 15:24:25; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-22_Form1A_PB3C_195AS7_SJ1608854.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-03-S
Sample Collection:
10-May-2013 13:07

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-22
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 18:15:58	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_195A S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_195 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	57.3

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		38.1
Total Dichloro Biphenyls		147
Total Trichloro Biphenyls		292
Total Tetrachloro Biphenyls		553
Total Pentachloro Biphenyls		749
Total Hexachloro Biphenyls		648
Total Heptachloro Biphenyls		247
Total Octachloro Biphenyls		75.1
Total Nonachloro Biphenyls		25.9
Decachloro Biphenyl		20.5
TOTAL PCBs		2790

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-22_Form1AHT_SJ1608854.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-03-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 10-May-2013 13:07

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-22

Sample Size: 10.6 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_195A S: 7**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			15.3	0.159	0.0001	1.53e-03	1.53e-03	
3,4,4',5-TeCB	81			0.562	0.153	0.0003	1.69e-04	1.69e-04	
2,3,3',4,4'-PeCB	105			60.0	0.147	0.00003	1.80e-03	1.80e-03	
2,3,4,4',5-PeCB	114			2.38	0.144	0.00003	7.14e-05	7.14e-05	
2,3',4,4',5-PeCB	118			131	0.135	0.00003	3.93e-03	3.93e-03	
2',3,4,4',5-PeCB	123			2.28	0.147	0.00003	6.84e-05	6.84e-05	
3,3',4,4',5-PeCB	126			1.14	0.162	0.1	1.14e-01	1.14e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	14.0	0.139	0.00003	4.20e-04	4.20e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			5.85	0.110	0.00003	1.76e-04	1.76e-04	
3,3',4,4',5,5'-HxCB	169		U		0.195	0.03	0.00e+00	2.93e-03	
2,3,3',4,4',5,5'-HpCB	189			1.06	0.174	0.00003	3.18e-05	3.18e-05	
					TOTAL TEQ		0.122	0.125	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-22_TEQ_SJ1608854.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-08-S
Sample Collection:
10-May-2013 14:11

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-23
Matrix:	SOLID	**Sample Size:**	11.2 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 19:20:06	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_195A S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_195 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	53.7

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			9.19	0.0949 (S)	3.09	1.001
3-MoCB	2			33.3	0.0862 (S)	3.05	0.988
4-MoCB	3			9.77	0.0799 (S)	3.14	1.001
2,2'-DiCB	4			13.0	0.195 (S)	1.50	1.001
2,3-DiCB	5			0.647	0.109 (S)	1.55	1.198
2,3'-DiCB	6			6.24	0.0970 (S)	1.51	1.177
2,4-DiCB	7			2.20	0.102 (S)	1.56	1.159
2,4'-DiCB	8			40.0	0.0908 (S)	1.52	1.208
2,5-DiCB	9			1.81	0.0986 (S)	1.51	1.148
2,6-DiCB	10			0.573	0.104 (S)	1.45	1.014
3,3'-DiCB	11			85.8	0.0976 (S)	1.49	0.968
3,4-DiCB	12	12 + 13	C	8.65	0.0996 (S)	1.52	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14			0.939	0.0963 (S)	1.38	0.926
4,4'-DiCB	15			50.1	0.0986 (S)	1.52	1.001
2,2',3-TriCB	16			13.5	0.0965 (S)	1.07	1.165
2,2',4-TriCB	17			17.0	0.0851 (S)	1.07	1.138
2,2',5-TriCB	18	18 + 30	C	27.7	0.0720 (S)	1.04	1.114
2,2',6-TriCB	19			3.85	0.113 (S)	1.06	1.001
2,3,3'-TriCB	20	20 + 28	C B	122	0.0953 (S)	1.02	0.848
2,3,4-TriCB	21	21 + 33	C B	42.5	0.0940 (S)	1.01	0.857
2,3,4'-TriCB	22			31.3	0.102 (S)	1.03	0.872
2,3,5-TriCB	23		U		0.104 (S)		
2,3,6-TriCB	24			0.459	0.0648 (S)	0.96	1.157
2,3',4-TriCB	25			8.35	0.0855 (S)	1.00	0.825
2,3',5-TriCB	26	26 + 29	C	15.6	0.0981 (S)	1.04	1.301
2,3',6-TriCB	27			3.14	0.0595 (S)	1.04	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	78.1	0.0896 (S)	1.01	0.837
2,4',6-TriCB	32			16.8	0.0946 (S)	1.03	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34			0.406	0.0987 (S)	1.16	1.273
3,3',4-TriCB	35			5.67	0.0935 (S)	1.05	0.985
3,3',5-TriCB	36			3.61	0.0894 (S)	1.07	0.932
3,4,4'-TriCB	37			44.9	0.0956 (S)	1.03	1.001
3,4,5-TriCB	38			0.547	0.0901 (S)	0.96	0.968
3,4',5-TriCB	39			0.863	0.0909 (S)	0.99	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	46.9	0.0861 (S)	0.78	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			21.7	0.0911 (S)	0.78	1.311
2,2',3,5-TeCB	43			2.22	0.108 (S)	0.78	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	91.4	0.0820 (S)	0.79	1.284
2,2',3,6-TeCB	45	45 + 51	C	8.48	0.0925 (S)	0.77	1.145
2,2',3,6'-TeCB	46			3.24	0.107 (S)	0.73	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			13.0	0.0892 (S)	0.78	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	57.4	0.0765 (S)	0.78	1.258
2,2',4,6-TeCB	50	50 + 53	C	8.69	0.0906 (S)	0.80	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	120	0.0843 (S)	0.77	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		J	0.133	0.0738 (S)	0.67	1.001
2,3,3',4-TeCB	55			1.52	0.125 (S)	0.82	0.890
2,3,3',4'-TeCB	56			55.1	0.122 (S)	0.76	0.905
2,3,3',5-TeCB	57			0.615	0.116 (S)	0.76	0.844
2,3,3',5'-TeCB	58			0.546	0.120 (S)	0.73	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	7.55	0.0666 (S)	0.77	1.302
2,3,4,4'-TeCB	60			31.5	0.121 (S)	0.77	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	231	0.116 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			4.71	0.112 (S)	0.77	0.865
2,3,4',6-TeCB	64			36.0	0.0632 (S)	0.78	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	122	0.112 (S)	0.77	0.885
2,3',4,5-TeCB	67			3.91	0.105 (S)	0.75	0.857
2,3',4,5'-TeCB	68			1.11	0.113 (S)	0.81	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			1.53	0.112 (S)	0.74	0.823
2,3',5',6-TeCB	73		U		0.0676 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			20.5	0.122 (S)	0.77	1.000
3,3',4,5-TeCB	78		U		0.116 (S)		
3,3',4,5'-TeCB	79			3.00	0.0972 (S)	0.78	0.970
3,3',5,5'-TeCB	80		U		0.109 (S)		
3,4,4',5-TeCB	81			0.699	0.119 (S)	0.77	1.001
2,2',3,3',4-PeCB	82			24.1	0.108 (S)	1.53	0.933
2,2',3,3',5-PeCB	83	83 + 99	C	133	0.102 (S)	1.55	0.885
2,2',3,3',6-PeCB	84			49.5	0.119 (S)	1.55	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	42.0	0.0844 (S)	1.54	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	153	0.0878 (S)	1.58	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	26.1	0.106 (S)	1.60	1.154
2,2',3,4,6'-PeCB	89			1.98	0.109 (S)	1.72	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	215	0.0903 (S)	1.55	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			37.1	0.103 (S)	1.53	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	157	0.103 (S)	1.56	1.120
2,2',3,5,6'-PeCB	94			0.761	0.115 (S)	1.50	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.915	0.0662 (S)	1.63	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			1.61	0.0935 (S)	1.63	1.093
2,2',4,6,6'-PeCB	104		U		0.0625 (S)		
2,3,3',4,4'-PeCB	105			104	0.206 (S)	1.53	1.000
2,3,3',4,5-PeCB	106		U		0.187 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	9.53	0.210 (S)	1.53	0.990
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			19.3	0.187 (S)	1.51	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	241	0.0750 (S)	1.60	0.924
2,3,3',5,5'-PeCB	111		K J	0.212	0.0750 (S)	1.19	0.945
2,3,3',5,6-PeCB	112		U		0.0746 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			4.87	0.210 (S)	1.58	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	238	0.199 (S)	1.53	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			1.06	0.0684 (S)	1.55	0.959
2,3',4,5',6-PeCB	121		U		0.0783 (S)		
2',3,3',4,5-PeCB	122			2.94	0.211 (S)	1.59	1.010
2',3,4,4',5-PeCB	123			3.90	0.215 (S)	1.60	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			1.31	0.230 (S)	1.58	1.000
3,3',4,5,5'-PeCB	127		U		0.195 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	50.7	0.235 (S)	1.27	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	296	0.236 (S)	1.25	0.929
2,2',3,3',4,5'-HxCB	130			19.5	0.289 (S)	1.21	0.913
2,2',3,3',4,6-HxCB	131			3.62	0.290 (S)	1.22	1.159
2,2',3,3',4,6'-HxCB	132			81.8	0.293 (S)	1.26	1.174
2,2',3,3',5,5'-HxCB	133			4.22	0.266 (S)	1.30	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	13.0	0.287 (S)	1.24	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	63.8	0.0931 (S)	1.24	1.103
2,2',3,3',6,6'-HxCB	136			24.0	0.0758 (S)	1.23	1.024
2,2',3,4,4',5-HxCB	137			11.4	0.261 (S)	1.29	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	5.04	0.260 (S)	1.23	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			32.5	0.252 (S)	1.23	0.903
2,2',3,4,5,6-HxCB	142		U		0.289 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			9.02	0.0940 (S)	1.24	1.121
2,2',3,4,6,6'-HxCB	145		K J	0.111	0.0807 (S)	0.78	1.034
2,2',3,4',5,5'-HxCB	146			34.8	0.240 (S)	1.24	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	177	0.258 (S)	1.24	1.133
2,2',3,4',5,6'-HxCB	148			0.671	0.0994 (S)	1.14	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150			0.449	0.0773 (S)	1.06	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	0.246	0.0744 (S)	1.09	1.006
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	226	0.210 (S)	1.25	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		J	0.076	0.0575 (S)	1.12	1.001
2,3,3',4,4',5-HxCB	156	156 + 157	C	29.6	0.230 (S)	1.27	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			25.8	0.187 (S)	1.23	0.938
2,3,3',4,5,5'-HxCB	159			2.46	0.194 (S)	1.16	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.196 (S)		
2,3,3',4',5,5'-HxCB	162		K	0.911	0.196 (S)	0.83	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			16.9	0.203 (S)	1.24	0.921
2,3,3',5,5',6-HxCB	165		K J	0.276	0.222 (S)	0.95	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			10.8	0.183 (S)	1.23	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.316 (S)		
2,2',3,3',4,4',5-HpCB	170			44.0	0.164 (S)	1.03	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	16.3	0.167 (S)	1.08	1.162
2,2',3,3',4,5,5'-HpCB	172			7.56	0.160 (S)	1.03	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			43.8	0.161 (S)	1.03	1.133
2,2',3,3',4,5',6-HpCB	175			2.55	0.152 (S)	1.09	1.102
2,2',3,3',4,6,6'-HpCB	176			6.00	0.117 (S)	1.02	1.034
2,2',3,3',4',5,6-HpCB	177			34.3	0.162 (S)	1.02	1.145
2,2',3,3',5,5',6-HpCB	178			13.2	0.159 (S)	1.08	1.085
2,2',3,3',5,6,6'-HpCB	179			20.1	0.114 (S)	1.05	1.009
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	89.0	0.132 (S)	1.02	1.001
2,2',3,4,4',5,6-HpCB	181			0.510	0.158 (S)	1.07	1.156
2,2',3,4,4',5,6'-HpCB	182		J	0.306	0.154 (S)	1.09	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	34.5	0.152 (S)	1.05	1.126
2,2',3,4,4',6,6'-HpCB	184		K J	0.118	0.116 (S)	1.44	1.024
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.124 (S)		
2,2',3,4',5,5',6-HpCB	187			73.8	0.147 (S)	1.03	1.110
2,2',3,4',5,6,6'-HpCB	188		J	0.195	0.101 (S)	1.16	1.001
2,3,3',4,4',5,5'-HpCB	189			2.07	0.180 (S)	1.14	1.000
2,3,3',4,4',5,6-HpCB	190			8.54	0.123 (S)	0.99	0.947
2,3,3',4,4',5',6-HpCB	191			1.78	0.118 (S)	0.95	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.136 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			23.0	0.135 (S)	0.91	0.991
2,2',3,3',4,4',5,6-OcCB	195			8.86	0.142 (S)	0.93	0.945
2,2',3,3',4,4',5,6'-OcCB	196			12.3	0.113 (S)	0.86	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	3.26	0.0845 (S)	0.85	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	33.6	0.118 (S)	0.90	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			4.41	0.0833 (S)	0.90	1.023
2,2',3,3',5,5',6,6'-OcCB	202			8.48	0.0872 (S)	0.89	1.001
2,2',3,4,4',5,5',6-OcCB	203			16.3	0.109 (S)	0.90	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0856 (S)		
2,3,3',4,4',5,5',6-OcCB	205			1.27	0.125 (S)	0.93	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			18.7	0.181 (S)	0.79	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			2.79	0.136 (S)	0.77	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			6.86	0.135 (S)	0.80	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			16.7	0.117 (S)	1.14	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

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Report Filename: 1668_PCB1668_PCBTF_L19652-23_Form1A_PB3C_195AS8_SJ1608856.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-08-S
Sample Collection:
10-May-2013 14:11

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-23
Matrix:	SOLID	**Sample Size:**	11.2 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 19:20:06	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_195A S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_195 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	53.7

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		52.3
Total Dichloro Biphenyls		210
Total Trichloro Biphenyls		436
Total Tetrachloro Biphenyls		894
Total Pentachloro Biphenyls		1470
Total Hexachloro Biphenyls		1140
Total Heptachloro Biphenyls		399
Total Octachloro Biphenyls		111
Total Nonachloro Biphenyls		28.4
Decachloro Biphenyl		16.7
TOTAL PCBs		4760

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-23_Form1AHT_SJ1608856.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-08-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 10-May-2013 14:11

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-23

Sample Size: 11.2 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_195A S: 8**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			20.5	0.122	0.0001	2.05e-03	2.05e-03	
3,4,4',5-TeCB	81			0.699	0.119	0.0003	2.10e-04	2.10e-04	
2,3,3',4,4'-PeCB	105			104	0.206	0.00003	3.12e-03	3.12e-03	
2,3,4,4',5-PeCB	114			4.87	0.210	0.00003	1.46e-04	1.46e-04	
2,3',4,4',5-PeCB	118			238	0.199	0.00003	7.14e-03	7.14e-03	
2',3,4,4',5-PeCB	123			3.90	0.215	0.00003	1.17e-04	1.17e-04	
3,3',4,4',5-PeCB	126			1.31	0.230	0.1	1.31e-01	1.31e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	29.6	0.230	0.00003	8.88e-04	8.88e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			10.8	0.183	0.00003	3.24e-04	3.24e-04	
3,3',4,4',5,5'-HxCB	169		U		0.316	0.03	0.00e+00	4.74e-03	
2,3,3',4,4',5,5'-HpCB	189			2.07	0.180	0.00003	6.21e-05	6.21e-05	
					TOTAL TEQ		0.145	0.150	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-23_TEQ_SJ1608856.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-PT-01-S
Sample Collection:
10-May-2013 14:46

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-24
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 00:49:03	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_196 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_196 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	52.3

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			7.60	0.175 (S)	3.03	1.001
3-MoCB	2			20.7	0.160 (S)	3.08	0.988
4-MoCB	3			7.38	0.154 (S)	3.31	1.001
2,2'-DiCB	4			10.7	0.434 (S)	1.52	1.001
2,3-DiCB	5			0.448	0.228 (S)	1.76	1.198
2,3'-DiCB	6			5.09	0.211 (S)	1.55	1.177
2,4-DiCB	7			1.58	0.216 (S)	1.50	1.159
2,4'-DiCB	8			30.7	0.198 (S)	1.51	1.208
2,5-DiCB	9			1.19	0.208 (S)	1.40	1.147
2,6-DiCB	10			0.381	0.217 (S)	1.38	1.014
3,3'-DiCB	11			58.5	0.209 (S)	1.52	0.969
3,4-DiCB	12	12 + 13	C	6.61	0.217 (S)	1.61	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14			0.635	0.208 (S)	1.59	0.926
4,4'-DiCB	15			38.8	0.220 (S)	1.53	1.002
2,2',3-TriCB	16			10.5	0.163 (S)	1.08	1.165
2,2',4-TriCB	17			14.4	0.142 (S)	1.07	1.138
2,2',5-TriCB	18	18 + 30	C	23.5	0.119 (S)	1.02	1.113
2,2',6-TriCB	19			2.58	0.185 (S)	1.05	1.001
2,3,3'-TriCB	20	20 + 28	C B	91.9	0.173 (S)	1.02	0.849
2,3,4-TriCB	21	21 + 33	C B	30.4	0.164 (S)	1.04	0.858
2,3,4'-TriCB	22			22.5	0.182 (S)	1.04	0.872
2,3,5-TriCB	23		U		0.181 (S)		
2,3,6-TriCB	24		K J	0.305	0.107 (S)	0.84	1.158
2,3',4-TriCB	25			6.28	0.154 (S)	1.01	0.826
2,3',5-TriCB	26	26 + 29	C	11.1	0.173 (S)	1.00	1.300
2,3',6-TriCB	27			2.50	0.0965 (S)	1.06	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	56.4	0.162 (S)	1.03	0.838
2,4',6-TriCB	32			12.6	0.170 (S)	1.02	1.196
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.364	0.175 (S)	1.09	1.273
3,3',4-TriCB	35			4.25	0.174 (S)	1.01	0.985
3,3',5-TriCB	36			2.58	0.162 (S)	1.04	0.932
3,4,4'-TriCB	37			33.5	0.177 (S)	1.03	1.001
3,4,5-TriCB	38			0.440	0.163 (S)	1.11	0.968
3,4',5-TriCB	39			0.758	0.164 (S)	1.08	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	38.9	0.168 (S)	0.76	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			17.5	0.176 (S)	0.80	1.313
2,2',3,5-TeCB	43			1.92	0.212 (S)	0.88	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	65.2	0.157 (S)	0.78	1.285
2,2',3,6-TeCB	45	45 + 51	C	6.96	0.175 (S)	0.79	1.147
2,2',3,6'-TeCB	46			2.85	0.202 (S)	0.78	1.162
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			10.3	0.171 (S)	0.76	1.274
2,2',4,5'-TeCB	49	49 + 69	C B	42.7	0.148 (S)	0.78	1.259
2,2',4,6-TeCB	50	50 + 53	C	6.95	0.171 (S)	0.79	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	70.4	0.162 (S)	0.81	1.235
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.140 (S)		
2,3,3',4-TeCB	55			1.20	0.246 (S)	0.66	0.889
2,3,3',4'-TeCB	56			38.4	0.246 (S)	0.74	0.905
2,3,3',5-TeCB	57		J	0.363	0.236 (S)	0.70	0.844
2,3,3',5'-TeCB	58		J	0.329	0.244 (S)	0.84	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	5.92	0.129 (S)	0.74	1.302
2,3,4,4'-TeCB	60			22.0	0.243 (S)	0.76	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	146	0.236 (S)	0.76	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			3.28	0.230 (S)	0.75	0.864
2,3,4',6-TeCB	64			26.5	0.124 (S)	0.78	1.349
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	83.5	0.223 (S)	0.75	0.885
2,3',4,5-TeCB	67			2.65	0.213 (S)	0.73	0.857
2,3',4,5'-TeCB	68			0.830	0.228 (S)	0.77	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			1.17	0.229 (S)	0.75	0.823
2,3',5',6-TeCB	73		U		0.128 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			15.2	0.256 (S)	0.75	1.000
3,3',4,5-TeCB	78		U		0.233 (S)		
3,3',4,5'-TeCB	79			1.98	0.193 (S)	0.76	0.970
3,3',5,5'-TeCB	80		U		0.218 (S)		
3,4,4',5-TeCB	81			0.572	0.253 (S)	0.77	1.000
2,2',3,3',4-PeCB	82			14.5	0.203 (S)	1.56	0.934
2,2',3,3',5-PeCB	83	83 + 99	C	77.1	0.190 (S)	1.57	0.886
2,2',3,3',6-PeCB	84			24.3	0.222 (S)	1.58	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	25.8	0.159 (S)	1.49	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	80.8	0.166 (S)	1.57	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	13.8	0.198 (S)	1.61	1.154
2,2',3,4,6'-PeCB	89			1.19	0.198 (S)	1.65	1.181
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	114	0.169 (S)	1.56	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			20.8	0.193 (S)	1.54	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	78.1	0.195 (S)	1.55	1.120
2,2',3,5,6'-PeCB	94			0.510	0.216 (S)	1.51	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.550	0.121 (S)	1.60	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			1.28	0.179 (S)	1.52	1.093
2,2',4,6,6'-PeCB	104		U		0.108 (S)		
2,3,3',4,4'-PeCB	105			59.8	0.270 (S)	1.54	1.000
2,3,3',4,5-PeCB	106		U		0.240 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	4.95	0.269 (S)	1.49	0.990
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			11.3	0.241 (S)	1.43	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	128	0.141 (S)	1.55	0.925
2,3,3',5,5'-PeCB	111		U		0.141 (S)		
2,3,3',5,6-PeCB	112		U		0.140 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			2.62	0.278 (S)	1.58	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	132	0.265 (S)	1.53	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		K	0.868	0.131 (S)	1.28	0.959
2,3',4,5',6-PeCB	121		U		0.146 (S)		
2',3,3',4,5-PeCB	122			1.52	0.273 (S)	1.34	1.010
2',3,4,4',5-PeCB	123			2.54	0.283 (S)	1.48	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			0.803	0.300 (S)	1.74	1.000
3,3',4,5,5'-PeCB	127		U		0.251 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	26.7	0.261 (S)	1.26	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	155	0.253 (S)	1.24	0.928
2,2',3,3',4,5'-HxCB	130			10.5	0.311 (S)	1.29	0.913
2,2',3,3',4,6-HxCB	131			1.48	0.323 (S)	1.23	1.160
2,2',3,3',4,6'-HxCB	132			38.5	0.322 (S)	1.25	1.174
2,2',3,3',5,5'-HxCB	133			2.43	0.288 (S)	1.26	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	5.94	0.309 (S)	1.32	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	38.7	0.161 (S)	1.25	1.104
2,2',3,3',6,6'-HxCB	136			12.4	0.128 (S)	1.29	1.024
2,2',3,4,4',5-HxCB	137			5.07	0.290 (S)	1.24	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	2.31	0.283 (S)	1.19	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			15.4	0.277 (S)	1.29	0.903
2,2',3,4,5,6-HxCB	142		U		0.316 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			5.01	0.161 (S)	1.15	1.121
2,2',3,4,6,6'-HxCB	145		U		0.138 (S)		
2,2',3,4',5,5'-HxCB	146			22.5	0.261 (S)	1.32	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	95.4	0.283 (S)	1.21	1.133
2,2',3,4',5,6'-HxCB	148		K	0.537	0.166 (S)	0.96	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	0.304	0.130 (S)	1.13	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	0.126	0.125 (S)	1.22	1.007
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	126	0.230 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.104 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	14.4	0.253 (S)	1.29	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			12.0	0.203 (S)	1.24	0.938
2,3,3',4,5,5'-HxCB	159			1.16	0.212 (S)	1.07	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.212 (S)		
2,3,3',4',5,5'-HxCB	162		K	0.573	0.219 (S)	1.68	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			8.22	0.221 (S)	1.24	0.921
2,3,3',5,5',6-HxCB	165		J	0.290	0.249 (S)	1.37	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			5.75	0.205 (S)	1.18	1.001
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.217 (S)		
2,2',3,3',4,4',5-HpCB	170			26.8	0.194 (S)	1.03	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	9.80	0.193 (S)	1.01	1.162
2,2',3,3',4,5,5'-HpCB	172			4.64	0.190 (S)	0.93	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			25.0	0.180 (S)	1.05	1.133
2,2',3,3',4,5',6-HpCB	175			1.59	0.174 (S)	0.96	1.102
2,2',3,3',4,6,6'-HpCB	176			3.63	0.134 (S)	1.07	1.034
2,2',3,3',4',5,6-HpCB	177			21.4	0.187 (S)	1.01	1.145
2,2',3,3',5,5',6-HpCB	178			8.91	0.182 (S)	1.01	1.085
2,2',3,3',5,6,6'-HpCB	179			13.2	0.132 (S)	1.04	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	54.2	0.155 (S)	1.02	1.001
2,2',3,4,4',5,6-HpCB	181		J	0.280	0.182 (S)	1.19	1.156
2,2',3,4,4',5,6'-HpCB	182		U		0.173 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	20.5	0.173 (S)	1.04	1.126
2,2',3,4,4',6,6'-HpCB	184		U		0.133 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.143 (S)		
2,2',3,4',5,5',6-HpCB	187			50.3	0.168 (S)	1.05	1.110
2,2',3,4',5,6,6'-HpCB	188		U		0.126 (S)		
2,3,3',4,4',5,5'-HpCB	189			1.28	0.239 (S)	1.19	1.000
2,3,3',4,4',5,6-HpCB	190			5.01	0.150 (S)	0.92	0.947
2,3,3',4,4',5',6-HpCB	191			1.02	0.142 (S)	1.01	0.917
2,3,3',4,5,5',6-HpCB	192		U		0.157 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			14.0	0.246 (S)	0.86	0.991
2,2',3,3',4,4',5,6-OcCB	195			5.63	0.252 (S)	0.87	0.945
2,2',3,3',4,4',5,6'-OcCB	196			7.91	0.169 (S)	0.81	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	2.47	0.127 (S)	0.89	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	22.2	0.176 (S)	0.90	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			2.86	0.124 (S)	0.79	1.023
2,2',3,3',5,5',6,6'-OcCB	202			5.92	0.135 (S)	0.90	1.001
2,2',3,4,4',5,5',6-OcCB	203			10.6	0.166 (S)	0.88	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.127 (S)		
2,3,3',4,4',5,5',6-OcCB	205			0.793	0.221 (S)	1.02	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			18.9	0.290 (S)	0.76	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			2.36	0.248 (S)	0.77	1.019
2,2',3,3',4,5,5',6,6'-NoCB	208			7.31	0.222 (S)	0.83	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			23.3	0.210 (S)	1.15	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

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Report Filename: 1668_PCB1668_PCBTF_L19652-24_Form1A_PB3C_196S5_SJ1608812.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-01-S
Sample Collection:
10-May-2013 14:46

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-24
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 00:49:03	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_196 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_196 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	52.3

PCB HOMOLOGUE GROUP	LAB FLAG [1]	CONC. FOUND
Total Monochloro Biphenyls		35.7
Total Dichloro Biphenyls		155
Total Trichloro Biphenyls		327
Total Tetrachloro Biphenyls		614
Total Pentachloro Biphenyls		796
Total Hexachloro Biphenyls		606
Total Heptachloro Biphenyls		248
Total Octachloro Biphenyls		72.4
Total Nonachloro Biphenyls		28.6
Decachloro Biphenyl		23.3
TOTAL PCBs		2900

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-24_Form1AHT_SJ1608812.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-PT-01-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 10-May-2013 14:46

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-24

Sample Size: 10.6 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_196 S: 5**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			15.2	0.256	0.0001	1.52e-03	1.52e-03	
3,4,4',5-TeCB	81			0.572	0.253	0.0003	1.72e-04	1.72e-04	
2,3,3',4,4'-PeCB	105			59.8	0.270	0.00003	1.79e-03	1.79e-03	
2,3,4,4',5-PeCB	114			2.62	0.278	0.00003	7.86e-05	7.86e-05	
2,3',4,4',5-PeCB	118			132	0.265	0.00003	3.96e-03	3.96e-03	
2',3,4,4',5-PeCB	123			2.54	0.283	0.00003	7.62e-05	7.62e-05	
3,3',4,4',5-PeCB	126			0.803	0.300	0.1	8.03e-02	8.03e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	14.4	0.253	0.00003	4.32e-04	4.32e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			5.75	0.205	0.00003	1.73e-04	1.73e-04	
3,3',4,4',5,5'-HxCB	169		U		0.217	0.03	0.00e+00	3.26e-03	
2,3,3',4,4',5,5'-HpCB	189			1.28	0.239	0.00003	3.84e-05	3.84e-05	
					TOTAL TEQ		0.0885	0.0918	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 14-Jun-2013 15:25:41; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-24_TEQ_SJ1608812.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-SEQ-05-S
Sample Collection:
09-May-2013 08:57

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-25
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 01:53:17	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_196 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_196 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	66.1

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			2.36	0.125 (S)	2.99	1.001
3-MoCB	2			9.61	0.111 (S)	2.96	0.988
4-MoCB	3			4.05	0.106 (S)	3.17	1.000
2,2'-DiCB	4			3.28	0.247 (S)	1.47	1.001
2,3-DiCB	5		J	0.189	0.125 (S)	1.67	1.198
2,3'-DiCB	6			1.91	0.115 (S)	1.47	1.177
2,4-DiCB	7			0.650	0.118 (S)	1.68	1.159
2,4'-DiCB	8			15.0	0.108 (S)	1.55	1.209
2,5-DiCB	9			0.633	0.114 (S)	1.58	1.147
2,6-DiCB	10		J	0.124	0.119 (S)	1.36	1.014
3,3'-DiCB	11			18.5	0.115 (S)	1.52	0.969
3,4-DiCB	12	12 + 13	C	3.12	0.119 (S)	1.56	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14			0.565	0.114 (S)	1.35	0.926
4,4'-DiCB	15			21.4	0.119 (S)	1.49	1.002
2,2',3-TriCB	16			5.97	0.109 (S)	1.18	1.165
2,2',4-TriCB	17			6.98	0.0950 (S)	1.08	1.138
2,2',5-TriCB	18	18 + 30	C	10.0	0.0797 (S)	1.06	1.113
2,2',6-TriCB	19			1.32	0.125 (S)	0.98	1.001
2,3,3'-TriCB	20	20 + 28	C B	56.9	0.108 (S)	1.00	0.849
2,3,4-TriCB	21	21 + 33	C B	13.6	0.102 (S)	1.02	0.858
2,3,4'-TriCB	22			12.5	0.114 (S)	1.00	0.873
2,3,5-TriCB	23		U		0.113 (S)		
2,3,6-TriCB	24		J	0.193	0.0719 (S)	1.06	1.157
2,3',4-TriCB	25			3.58	0.0960 (S)	1.03	0.826
2,3',5-TriCB	26	26 + 29	C	6.37	0.108 (S)	1.02	1.301
2,3',6-TriCB	27			1.23	0.0646 (S)	1.17	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	32.2	0.101 (S)	1.01	0.838
2,4',6-TriCB	32			5.86	0.106 (S)	1.01	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.194	0.109 (S)	1.09	1.273
3,3',4-TriCB	35			2.14	0.108 (S)	0.92	0.985
3,3',5-TriCB	36			0.905	0.101 (S)	0.93	0.932
3,4,4'-TriCB	37			14.9	0.111 (S)	1.00	1.001
3,4,5-TriCB	38			0.401	0.102 (S)	1.01	0.968
3,4',5-TriCB	39			0.501	0.102 (S)	0.92	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	20.4	0.105 (S)	0.80	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			12.1	0.110 (S)	0.79	1.311
2,2',3,5-TeCB	43			1.33	0.133 (S)	0.80	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	41.9	0.0986 (S)	0.80	1.285
2,2',3,6-TeCB	45	45 + 51	C	4.81	0.110 (S)	0.83	1.146
2,2',3,6'-TeCB	46			1.69	0.127 (S)	0.88	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			6.58	0.107 (S)	0.75	1.274
2,2',4,5'-TeCB	49	49 + 69	C B	30.3	0.0929 (S)	0.76	1.259
2,2',4,6-TeCB	50	50 + 53	C	4.01	0.107 (S)	0.79	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	51.7	0.101 (S)	0.78	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0839 (S)		
2,3,3',4-TeCB	55			0.749	0.118 (S)	0.78	0.890
2,3,3',4'-TeCB	56			19.6	0.118 (S)	0.77	0.905
2,3,3',5-TeCB	57		J	0.234	0.113 (S)	0.86	0.844
2,3,3',5'-TeCB	58		J	0.190	0.117 (S)	0.79	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	3.88	0.0809 (S)	0.78	1.302
2,3,4,4'-TeCB	60			13.1	0.116 (S)	0.77	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	88.2	0.113 (S)	0.76	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			2.09	0.110 (S)	0.74	0.865
2,3,4',6-TeCB	64			18.6	0.0775 (S)	0.80	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	46.2	0.107 (S)	0.75	0.885
2,3',4,5-TeCB	67			2.00	0.102 (S)	0.71	0.857
2,3',4,5'-TeCB	68			0.589	0.109 (S)	0.76	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			1.05	0.109 (S)	0.76	0.823
2,3',5',6-TeCB	73		U		0.0804 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			7.42	0.132 (S)	0.76	1.000
3,3',4,5-TeCB	78		U		0.111 (S)		
3,3',4,5'-TeCB	79			0.990	0.0922 (S)	0.76	0.970
3,3',5,5'-TeCB	80		U		0.104 (S)		
3,4,4',5-TeCB	81		J	0.379	0.116 (S)	0.74	1.001
2,2',3,3',4-PeCB	82			5.24	0.113 (S)	1.56	0.933
2,2',3,3',5-PeCB	83	83 + 99	C	47.8	0.106 (S)	1.59	0.886
2,2',3,3',6-PeCB	84			15.5	0.124 (S)	1.60	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	15.9	0.0883 (S)	1.54	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	44.4	0.0922 (S)	1.54	0.902
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	9.94	0.110 (S)	1.57	1.154
2,2',3,4,6'-PeCB	89			0.898	0.110 (S)	1.62	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	74.1	0.0941 (S)	1.55	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			14.0	0.107 (S)	1.52	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	53.3	0.109 (S)	1.57	1.120
2,2',3,5,6'-PeCB	94		K	0.473	0.120 (S)	1.21	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.484	0.0786 (S)	1.58	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			0.721	0.0997 (S)	1.34	1.093
2,2',4,6,6'-PeCB	104		U		0.0672 (S)		
2,3,3',4,4'-PeCB	105			29.1	0.157 (S)	1.54	1.000
2,3,3',4,5-PeCB	106		U		0.133 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	2.49	0.149 (S)	1.55	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			6.37	0.134 (S)	1.46	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	72.9	0.0784 (S)	1.57	0.925
2,3,3',5,5'-PeCB	111		J	0.138	0.0783 (S)	1.47	0.946
2,3,3',5,6-PeCB	112		U		0.0781 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			1.12	0.153 (S)	1.62	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	63.8	0.147 (S)	1.54	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			0.630	0.0727 (S)	1.77	0.959
2,3',4,5',6-PeCB	121		U		0.0812 (S)		
2',3,3',4,5-PeCB	122			0.674	0.152 (S)	1.37	1.010
2',3,4,4',5-PeCB	123			1.20	0.160 (S)	1.33	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			0.643	0.169 (S)	1.39	1.000
3,3',4,5,5'-PeCB	127		U		0.140 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	13.8	0.100 (S)	1.22	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	88.2	0.0970 (S)	1.25	0.929
2,2',3,3',4,5'-HxCB	130			5.62	0.119 (S)	1.26	0.913
2,2',3,3',4,6-HxCB	131			0.757	0.124 (S)	1.11	1.159
2,2',3,3',4,6'-HxCB	132			21.9	0.123 (S)	1.26	1.173
2,2',3,3',5,5'-HxCB	133			1.91	0.110 (S)	1.39	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	3.48	0.118 (S)	1.23	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	25.7	0.0961 (S)	1.28	1.103
2,2',3,3',6,6'-HxCB	136			8.24	0.0767 (S)	1.26	1.024
2,2',3,4,4',5-HxCB	137			2.87	0.111 (S)	1.24	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	1.64	0.108 (S)	1.12	1.152
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			7.66	0.106 (S)	1.21	0.903
2,2',3,4,5,6-HxCB	142		U		0.121 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			3.12	0.0962 (S)	1.31	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0822 (S)		
2,2',3,4',5,5'-HxCB	146			13.9	0.100 (S)	1.26	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	64.1	0.109 (S)	1.27	1.133
2,2',3,4',5,6'-HxCB	148		J	0.200	0.0991 (S)	1.20	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150			0.450	0.0777 (S)	1.28	1.011
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	0.192	0.0745 (S)	1.26	1.006
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	77.0	0.0880 (S)	1.25	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0575 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	6.69	0.102 (S)	1.26	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			5.85	0.0777 (S)	1.26	0.938
2,3,3',4,5,5'-HxCB	159			0.861	0.0812 (S)	1.12	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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2,3,3',4,5',6-HxCB	161		U		0.0811 (S)		
2,3,3',4',5,5'-HxCB	162		U		0.0838 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			4.58	0.0846 (S)	1.20	0.921
2,3,3',5,5',6-HxCB	165		K J	0.191	0.0953 (S)	0.93	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			2.81	0.0767 (S)	1.24	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.105 (S)		
2,2',3,3',4,4',5-HpCB	170			15.1	0.140 (S)	1.05	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	5.44	0.136 (S)	1.07	1.162
2,2',3,3',4,5,5'-HpCB	172			2.72	0.134 (S)	1.10	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			14.4	0.128 (S)	1.02	1.133
2,2',3,3',4,5',6-HpCB	175			0.882	0.123 (S)	1.01	1.102
2,2',3,3',4,6,6'-HpCB	176			2.25	0.0952 (S)	0.90	1.034
2,2',3,3',4',5,6-HpCB	177			10.5	0.132 (S)	1.05	1.145
2,2',3,3',5,5',6-HpCB	178			5.67	0.129 (S)	0.99	1.085
2,2',3,3',5,6,6'-HpCB	179			8.33	0.0938 (S)	1.06	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	30.3	0.116 (S)	1.06	1.000
2,2',3,4,4',5,6-HpCB	181		J	0.172	0.129 (S)	1.19	1.156
2,2',3,4,4',5,6'-HpCB	182		J	0.224	0.123 (S)	1.00	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	12.7	0.122 (S)	1.04	1.126
2,2',3,4,4',6,6'-HpCB	184		U		0.0940 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.101 (S)		
2,2',3,4',5,5',6-HpCB	187			32.9	0.119 (S)	1.02	1.110
2,2',3,4',5,6,6'-HpCB	188			0.529	0.0851 (S)	1.17	1.001
2,3,3',4,4',5,5'-HpCB	189			0.577	0.187 (S)	1.15	1.000
2,3,3',4,4',5,6-HpCB	190			2.59	0.107 (S)	1.05	0.947
2,3,3',4,4',5',6-HpCB	191			0.482	0.101 (S)	1.17	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.111 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			8.54	0.146 (S)	0.90	0.991
2,2',3,3',4,4',5,6-OcCB	195			2.88	0.150 (S)	0.87	0.945
2,2',3,3',4,4',5,6'-OcCB	196			4.98	0.111 (S)	0.93	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C	1.28	0.0832 (S)	0.93	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	12.6	0.116 (S)	0.90	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			1.77	0.0814 (S)	0.97	1.023
2,2',3,3',5,5',6,6'-OcCB	202			3.81	0.0882 (S)	0.86	1.001
2,2',3,4,4',5,5',6-OcCB	203			6.02	0.109 (S)	0.97	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0833 (S)		
2,3,3',4,4',5,5',6-OcCB	205			0.388	0.133 (S)	0.86	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			9.78	0.205 (S)	0.78	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207			1.86	0.169 (S)	0.79	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			4.10	0.147 (S)	0.80	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			11.3	0.127 (S)	1.18	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 14-Jun-2013 15:24:25; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-25_Form1A_PB3C_196S6_SJ1608814.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-SEQ-05-S
Sample Collection:
09-May-2013 08:57

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-25
Matrix:	SOLID	**Sample Size:**	10.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 01:53:17	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_196 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_196 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	66.1

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		16.0
Total Dichloro Biphenyls		65.4
Total Trichloro Biphenyls		176
Total Tetrachloro Biphenyls		380
Total Pentachloro Biphenyls		461
Total Hexachloro Biphenyls		362
Total Heptachloro Biphenyls		146
Total Octachloro Biphenyls		42.3
Total Nonachloro Biphenyls		15.7
Decachloro Biphenyl		11.3
TOTAL PCBs		1680

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 14-Jun-2013 15:25:41; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-25_Form1AHT_SJ1608814.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-SEQ-05-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 09-May-2013 08:57

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-25

Sample Size: 10.3 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_196 S: 6**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			7.42	0.132	0.0001	7.42e-04	7.42e-04	
3,4,4',5-TeCB	81			0.379	0.116	0.0003	1.14e-04	1.14e-04	
2,3,3',4,4'-PeCB	105			29.1	0.157	0.00003	8.73e-04	8.73e-04	
2,3,4,4',5-PeCB	114			1.12	0.153	0.00003	3.36e-05	3.36e-05	
2,3',4,4',5-PeCB	118			63.8	0.147	0.00003	1.91e-03	1.91e-03	
2',3,4,4',5-PeCB	123			1.20	0.160	0.00003	3.60e-05	3.60e-05	
3,3',4,4',5-PeCB	126			0.643	0.169	0.1	6.43e-02	6.43e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	6.69	0.102	0.00003	2.01e-04	2.01e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			2.81	0.0767	0.00003	8.43e-05	8.43e-05	
3,3',4,4',5,5'-HxCB	169		U		0.105	0.03	0.00e+00	1.58e-03	
2,3,3',4,4',5,5'-HpCB	189			0.577	0.187	0.00003	1.73e-05	1.73e-05	
					TOTAL TEQ		0.0683	0.0699	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 14-Jun-2013 15:25:41; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-25_TEQ_SJ1608814.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-SEQ-02-S
Sample Collection:
09-May-2013 09:36

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-26
Matrix:	SOLID	**Sample Size:**	11.0 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 02:57:29	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_196 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_196 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	60.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			3.56	0.117 (S)	3.09	1.001
3-MoCB	2			13.5	0.106 (S)	3.06	0.988
4-MoCB	3			4.80	0.102 (S)	3.36	1.001
2,2'-DiCB	4			8.05	0.321 (S)	1.60	1.001
2,3-DiCB	5		J	0.208	0.167 (S)	1.58	1.197
2,3'-DiCB	6			2.64	0.154 (S)	1.56	1.175
2,4-DiCB	7			1.28	0.158 (S)	1.53	1.159
2,4'-DiCB	8			23.1	0.144 (S)	1.55	1.206
2,5-DiCB	9			0.744	0.151 (S)	1.53	1.144
2,6-DiCB	10		J	0.345	0.158 (S)	1.58	1.013
3,3'-DiCB	11			26.2	0.153 (S)	1.50	0.968
3,4-DiCB	12	12 + 13	C	4.43	0.158 (S)	1.53	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14			0.625	0.152 (S)	1.63	0.925
4,4'-DiCB	15			28.6	0.160 (S)	1.53	1.001
2,2',3-TriCB	16			6.23	0.117 (S)	1.08	1.164
2,2',4-TriCB	17			9.30	0.102 (S)	1.03	1.137
2,2',5-TriCB	18	18 + 30	C	13.3	0.0855 (S)	1.02	1.113
2,2',6-TriCB	19			1.60	0.133 (S)	1.12	1.001
2,3,3'-TriCB	20	20 + 28	C B	73.2	0.107 (S)	1.01	0.848
2,3,4-TriCB	21	21 + 33	C B	18.3	0.101 (S)	1.01	0.857
2,3,4'-TriCB	22			15.4	0.113 (S)	1.01	0.872
2,3,5-TriCB	23		U		0.112 (S)		
2,3,6-TriCB	24		J	0.243	0.0771 (S)	1.17	1.157
2,3',4-TriCB	25			4.58	0.0954 (S)	1.01	0.825
2,3',5-TriCB	26	26 + 29	C	7.29	0.107 (S)	1.02	1.301
2,3',6-TriCB	27			1.37	0.0693 (S)	1.08	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	38.4	0.100 (S)	1.03	0.837
2,4',6-TriCB	32			9.24	0.105 (S)	1.03	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.256	0.108 (S)	1.16	1.273
3,3',4-TriCB	35			2.88	0.108 (S)	1.03	0.985
3,3',5-TriCB	36			1.20	0.100 (S)	1.06	0.932
3,4,4'-TriCB	37			22.9	0.110 (S)	1.01	1.001
3,4,5-TriCB	38			0.401	0.101 (S)	0.90	0.968
3,4',5-TriCB	39			0.542	0.102 (S)	0.97	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	20.4	0.104 (S)	0.79	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			11.9	0.109 (S)	0.79	1.311
2,2',3,5-TeCB	43			1.09	0.131 (S)	0.76	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	42.7	0.0972 (S)	0.74	1.285
2,2',3,6-TeCB	45	45 + 51	C	4.68	0.108 (S)	0.79	1.146
2,2',3,6'-TeCB	46			1.51	0.125 (S)	0.73	1.160
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			6.56	0.106 (S)	0.76	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	32.1	0.0916 (S)	0.78	1.258
2,2',4,6-TeCB	50	50 + 53	C	4.29	0.106 (S)	0.79	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	48.5	0.0999 (S)	0.78	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0866 (S)		
2,3,3',4-TeCB	55			0.719	0.184 (S)	0.81	0.890
2,3,3',4'-TeCB	56			23.5	0.183 (S)	0.77	0.905
2,3,3',5-TeCB	57		J	0.290	0.176 (S)	0.83	0.844
2,3,3',5'-TeCB	58		J	0.242	0.182 (S)	0.83	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	4.26	0.0798 (S)	0.81	1.301
2,3,4,4'-TeCB	60			15.1	0.181 (S)	0.78	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	97.7	0.176 (S)	0.75	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			2.50	0.171 (S)	0.76	0.865
2,3,4',6-TeCB	64			17.6	0.0765 (S)	0.78	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	58.7	0.167 (S)	0.77	0.885
2,3',4,5-TeCB	67			2.04	0.159 (S)	0.78	0.857
2,3',4,5'-TeCB	68			0.695	0.170 (S)	0.67	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			0.913	0.170 (S)	0.75	0.823
2,3',5',6-TeCB	73		U		0.0793 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			10.2	0.194 (S)	0.75	1.001
3,3',4,5-TeCB	78		U		0.174 (S)		
3,3',4,5'-TeCB	79			1.14	0.144 (S)	0.71	0.970
3,3',5,5'-TeCB	80		U		0.162 (S)		
3,4,4',5-TeCB	81		J	0.340	0.186 (S)	0.70	1.001
2,2',3,3',4-PeCB	82			6.67	0.103 (S)	1.50	0.933
2,2',3,3',5-PeCB	83	83 + 99	C	53.8	0.0968 (S)	1.54	0.885
2,2',3,3',6-PeCB	84			14.7	0.113 (S)	1.58	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	17.3	0.0806 (S)	1.55	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	44.0	0.0842 (S)	1.58	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	9.58	0.101 (S)	1.48	1.154
2,2',3,4,6'-PeCB	89			0.629	0.101 (S)	1.71	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	74.7	0.0860 (S)	1.59	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			13.0	0.0980 (S)	1.60	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	50.1	0.0992 (S)	1.56	1.120
2,2',3,5,6'-PeCB	94			0.419	0.110 (S)	1.54	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.421	0.0873 (S)	1.74	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			0.995	0.0911 (S)	1.48	1.093
2,2',4,6,6'-PeCB	104		U		0.0790 (S)		
2,3,3',4,4'-PeCB	105			35.6	0.173 (S)	1.52	1.001
2,3,3',4,5-PeCB	106		U		0.150 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	2.71	0.168 (S)	1.54	0.990
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			7.90	0.150 (S)	1.49	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	76.4	0.0716 (S)	1.56	0.924
2,3,3',5,5'-PeCB	111		K J	0.170	0.0715 (S)	2.85	0.945
2,3,3',5,6-PeCB	112		U		0.0714 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			1.49	0.172 (S)	1.43	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	76.5	0.163 (S)	1.51	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			0.734	0.0664 (S)	1.61	0.958
2,3',4,5',6-PeCB	121		U		0.0742 (S)		
2',3,3',4,5-PeCB	122			0.692	0.170 (S)	1.50	1.010
2',3,4,4',5-PeCB	123			1.42	0.175 (S)	1.66	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			0.710	0.197 (S)	1.44	1.000
3,3',4,5,5'-PeCB	127		U		0.157 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	16.7	0.176 (S)	1.27	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	100	0.171 (S)	1.25	0.929
2,2',3,3',4,5'-HxCB	130			6.90	0.210 (S)	1.27	0.913
2,2',3,3',4,6-HxCB	131			0.818	0.218 (S)	1.12	1.158
2,2',3,3',4,6'-HxCB	132			23.1	0.217 (S)	1.27	1.174
2,2',3,3',5,5'-HxCB	133			1.89	0.194 (S)	1.15	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	3.65	0.208 (S)	1.11	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	26.8	0.106 (S)	1.23	1.103
2,2',3,3',6,6'-HxCB	136			8.70	0.0845 (S)	1.29	1.024
2,2',3,4,4',5-HxCB	137			2.39	0.195 (S)	1.26	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	1.51	0.191 (S)	1.19	1.152
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			6.94	0.187 (S)	1.27	0.903
2,2',3,4,5,6-HxCB	142		U		0.213 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			3.17	0.106 (S)	1.39	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0906 (S)		
2,2',3,4',5,5'-HxCB	146			15.4	0.176 (S)	1.25	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	65.2	0.191 (S)	1.26	1.133
2,2',3,4',5,6'-HxCB	148		K J	0.356	0.109 (S)	1.46	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	0.254	0.0856 (S)	1.38	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	0.102	0.0820 (S)	1.12	1.007
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	86.7	0.155 (S)	1.24	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0647 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	7.84	0.176 (S)	1.25	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			5.89	0.137 (S)	1.27	0.938
2,3,3',4,5,5'-HxCB	159			0.733	0.143 (S)	1.24	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.143 (S)		
2,3,3',4',5,5'-HxCB	162		J	0.352	0.148 (S)	1.12	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			4.50	0.149 (S)	1.30	0.921
2,3,3',5,5',6-HxCB	165		J	0.204	0.168 (S)	1.38	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			3.22	0.136 (S)	1.14	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.181 (S)		
2,2',3,3',4,4',5-HpCB	170			18.7	0.133 (S)	1.07	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	6.68	0.131 (S)	1.06	1.162
2,2',3,3',4,5,5'-HpCB	172			3.53	0.129 (S)	1.06	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			17.6	0.123 (S)	1.09	1.133
2,2',3,3',4,5',6-HpCB	175			1.26	0.119 (S)	1.11	1.102
2,2',3,3',4,6,6'-HpCB	176			2.75	0.0916 (S)	1.06	1.034
2,2',3,3',4',5,6-HpCB	177			15.7	0.127 (S)	1.03	1.145
2,2',3,3',5,5',6-HpCB	178			7.07	0.124 (S)	1.09	1.084
2,2',3,3',5,6,6'-HpCB	179			10.0	0.0902 (S)	1.07	1.009
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	28.9	0.108 (S)	1.03	1.000
2,2',3,4,4',5,6-HpCB	181		J	0.133	0.124 (S)	1.10	1.156
2,2',3,4,4',5,6'-HpCB	182		J	0.295	0.118 (S)	1.02	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	15.2	0.118 (S)	1.05	1.126
2,2',3,4,4',6,6'-HpCB	184		U		0.0904 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0974 (S)		
2,2',3,4',5,5',6-HpCB	187			38.5	0.115 (S)	1.03	1.110
2,2',3,4',5,6,6'-HpCB	188		J	0.193	0.0790 (S)	0.93	1.000
2,3,3',4,4',5,5'-HpCB	189			0.805	0.215 (S)	1.15	1.000
2,3,3',4,4',5,6-HpCB	190			3.24	0.102 (S)	1.06	0.947
2,3,3',4,4',5',6-HpCB	191			0.647	0.0969 (S)	0.96	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.107 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			9.26	0.163 (S)	0.88	0.991
2,2',3,3',4,4',5,6-OcCB	195			3.71	0.167 (S)	0.96	0.945
2,2',3,3',4,4',5,6'-OcCB	196			5.83	0.137 (S)	0.91	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	1.69	0.103 (S)	0.79	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	16.6	0.143 (S)	0.91	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			2.41	0.101 (S)	0.89	1.023
2,2',3,3',5,5',6,6'-OcCB	202			4.43	0.108 (S)	0.90	1.000
2,2',3,4,4',5,5',6-OcCB	203			6.85	0.134 (S)	0.84	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.103 (S)		
2,3,3',4,4',5,5',6-OcCB	205			0.578	0.149 (S)	0.89	1.001
2,2',3,3',4,4',5,5',6-NoCB	206			10.2	0.217 (S)	0.81	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			1.94	0.179 (S)	0.78	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			4.45	0.157 (S)	0.82	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			11.0	0.140 (S)	1.16	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

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Report Filename: 1668_PCB1668_PCBTF_L19652-26_Form1A_PB3C_196S7_SJ1608816.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-SEQ-02-S
Sample Collection:
09-May-2013 09:36

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-26
Matrix:	SOLID	**Sample Size:**	11.0 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 02:57:29	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_196 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_196 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	60.0

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		21.9
Total Dichloro Biphenyls		96.2
Total Trichloro Biphenyls		227
Total Tetrachloro Biphenyls		410
Total Pentachloro Biphenyls		490
Total Hexachloro Biphenyls		393
Total Heptachloro Biphenyls		171
Total Octachloro Biphenyls		51.4
Total Nonachloro Biphenyls		16.6
Decachloro Biphenyl		11.0
TOTAL PCBs		1890

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-26_Form1AHT_SJ1608816.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-SEQ-02-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4273	**Sample Collection:**	09-May-2013 09:36
		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Matrix:	SOLID	**Lab Sample I.D.:**	L19652-26
Sample Size:	11.0 g (dry)	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg (dry weight basis)	**Sample Data Filename(s):**	**PB3C_196 S: 7**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			10.2	0.194	0.0001	1.02e-03	1.02e-03	
3,4,4',5-TeCB	81			0.340	0.186	0.0003	1.02e-04	1.02e-04	
2,3,3',4,4'-PeCB	105			35.6	0.173	0.00003	1.07e-03	1.07e-03	
2,3,4,4',5-PeCB	114			1.49	0.172	0.00003	4.47e-05	4.47e-05	
2,3',4,4',5-PeCB	118			76.5	0.163	0.00003	2.30e-03	2.30e-03	
2',3,4,4',5-PeCB	123			1.42	0.175	0.00003	4.26e-05	4.26e-05	
3,3',4,4',5-PeCB	126			0.710	0.197	0.1	7.10e-02	7.10e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	7.84	0.176	0.00003	2.35e-04	2.35e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			3.22	0.136	0.00003	9.66e-05	9.66e-05	
3,3',4,4',5,5'-HxCB	169		U		0.181	0.03	0.00e+00	2.72e-03	
2,3,3',4,4',5,5'-HpCB	189			0.805	0.215	0.00003	2.42e-05	2.42e-05	
					TOTAL TEQ		0.0759	0.0786	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-26_TEQ_SJ1608816.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-SEQ-04-S
Sample Collection:
09-May-2013 10:11

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-27
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 04:01:36	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_196 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_196 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	56.2

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			3.64	0.114 (S)	3.10	1.001
3-MoCB	2			15.8	0.102 (S)	3.08	0.988
4-MoCB	3			4.74	0.0969 (S)	3.19	1.001
2,2'-DiCB	4			7.42	0.228 (S)	1.47	1.001
2,3-DiCB	5		J	0.210	0.135 (S)	1.65	1.197
2,3'-DiCB	6			2.89	0.124 (S)	1.50	1.175
2,4-DiCB	7			1.39	0.128 (S)	1.45	1.159
2,4'-DiCB	8			24.5	0.117 (S)	1.51	1.206
2,5-DiCB	9			1.00	0.123 (S)	1.35	1.144
2,6-DiCB	10		J	0.332	0.128 (S)	1.43	1.013
3,3'-DiCB	11			29.3	0.124 (S)	1.54	0.969
3,4-DiCB	12	12 + 13	C	4.89	0.128 (S)	1.79	0.985
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	0.803	0.123 (S)	0.62	0.926
4,4'-DiCB	15			29.8	0.136 (S)	1.51	1.001
2,2',3-TriCB	16			5.69	0.118 (S)	1.05	1.164
2,2',4-TriCB	17			9.31	0.103 (S)	1.06	1.137
2,2',5-TriCB	18	18 + 30	C	12.4	0.0863 (S)	1.09	1.113
2,2',6-TriCB	19			1.50	0.119 (S)	1.02	1.001
2,3,3'-TriCB	20	20 + 28	C B	76.1	0.117 (S)	1.03	0.849
2,3,4-TriCB	21	21 + 33	C B	17.7	0.110 (S)	1.03	0.859
2,3,4'-TriCB	22			15.3	0.123 (S)	1.02	0.873
2,3,5-TriCB	23		U		0.122 (S)		
2,3,6-TriCB	24		J	0.166	0.0778 (S)	0.90	1.158
2,3',4-TriCB	25			4.50	0.104 (S)	1.02	0.826
2,3',5-TriCB	26	26 + 29	C	7.54	0.117 (S)	1.01	1.300
2,3',6-TriCB	27			1.23	0.0700 (S)	1.07	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	40.0	0.109 (S)	1.03	0.838
2,4',6-TriCB	32			8.73	0.115 (S)	1.00	1.196
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.226	0.118 (S)	0.89	1.273
3,3',4-TriCB	35			2.87	0.117 (S)	1.00	0.985
3,3',5-TriCB	36			1.33	0.109 (S)	1.03	0.932
3,4,4'-TriCB	37			24.9	0.128 (S)	1.02	1.001
3,4,5-TriCB	38		K J	0.323	0.110 (S)	0.87	0.968
3,4',5-TriCB	39			0.556	0.111 (S)	0.99	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	17.3	0.147 (S)	0.80	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			11.3	0.154 (S)	0.82	1.311
2,2',3,5-TeCB	43			1.10	0.185 (S)	0.82	1.247
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	41.2	0.137 (S)	0.79	1.285
2,2',3,6-TeCB	45	45 + 51	C	4.27	0.153 (S)	0.78	1.148
2,2',3,6'-TeCB	46			1.34	0.176 (S)	0.83	1.163
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			6.22	0.149 (S)	0.80	1.274
2,2',4,5'-TeCB	49	49 + 69	C B	32.4	0.129 (S)	0.76	1.259
2,2',4,6-TeCB	50	50 + 53	C	4.35	0.149 (S)	0.71	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	46.6	0.141 (S)	0.79	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0999 (S)		
2,3,3',4-TeCB	55			0.703	0.168 (S)	0.75	0.890
2,3,3',4'-TeCB	56			24.2	0.167 (S)	0.77	0.905
2,3,3',5-TeCB	57		J	0.291	0.161 (S)	0.79	0.844
2,3,3',5'-TeCB	58		J	0.212	0.166 (S)	0.67	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	4.13	0.113 (S)	0.85	1.302
2,3,4,4'-TeCB	60			16.8	0.165 (S)	0.75	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	107	0.160 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			2.63	0.156 (S)	0.74	0.864
2,3,4',6-TeCB	64			17.5	0.108 (S)	0.77	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	64.8	0.152 (S)	0.76	0.884
2,3',4,5-TeCB	67			2.09	0.145 (S)	0.73	0.857
2,3',4,5'-TeCB	68			0.825	0.155 (S)	0.74	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			1.10	0.156 (S)	0.87	0.823
2,3',5',6-TeCB	73		U		0.112 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			11.8	0.211 (S)	0.75	1.000
3,3',4,5-TeCB	78		U		0.158 (S)		
3,3',4,5'-TeCB	79			1.10	0.131 (S)	0.87	0.970
3,3',5,5'-TeCB	80		U		0.148 (S)		
3,4,4',5-TeCB	81		K	0.451	0.162 (S)	0.93	1.001
2,2',3,3',4-PeCB	82			4.54	0.145 (S)	1.68	0.934
2,2',3,3',5-PeCB	83	83 + 99	C	53.9	0.135 (S)	1.56	0.886
2,2',3,3',6-PeCB	84			13.3	0.158 (S)	1.55	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	17.0	0.113 (S)	1.57	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	40.9	0.118 (S)	1.59	0.902
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	9.01	0.141 (S)	1.65	1.154
2,2',3,4,6'-PeCB	89			0.466	0.141 (S)	1.45	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	74.9	0.120 (S)	1.56	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			13.2	0.137 (S)	1.52	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	47.8	0.139 (S)	1.58	1.120
2,2',3,5,6'-PeCB	94		J	0.368	0.154 (S)	1.64	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.481	0.0929 (S)	1.61	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			1.01	0.127 (S)	1.77	1.093
2,2',4,6,6'-PeCB	104		U		0.0866 (S)		
2,3,3',4,4'-PeCB	105			39.7	0.240 (S)	1.57	1.000
2,3,3',4,5-PeCB	106		U		0.211 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	2.83	0.236 (S)	1.56	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			8.62	0.211 (S)	1.57	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	74.3	0.100 (S)	1.55	0.925
2,3,3',5,5'-PeCB	111		K J	0.153	0.0999 (S)	2.62	0.947
2,3,3',5,6-PeCB	112		U		0.0998 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			1.45	0.244 (S)	1.43	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	85.0	0.226 (S)	1.52	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		K	0.752	0.0928 (S)	1.31	0.959
2,3',4,5',6-PeCB	121		U		0.104 (S)		
2',3,3',4,5-PeCB	122			0.533	0.239 (S)	1.44	1.010
2',3,4,4',5-PeCB	123			1.54	0.242 (S)	1.65	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			1.06	0.264 (S)	1.67	1.000
3,3',4,5,5'-PeCB	127		U		0.221 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	17.8	0.178 (S)	1.18	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	111	0.172 (S)	1.26	0.929
2,2',3,3',4,5'-HxCB	130			7.41	0.212 (S)	1.40	0.913
2,2',3,3',4,6-HxCB	131			0.836	0.220 (S)	1.12	1.159
2,2',3,3',4,6'-HxCB	132			23.2	0.219 (S)	1.22	1.174
2,2',3,3',5,5'-HxCB	133			1.97	0.196 (S)	1.24	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	3.69	0.210 (S)	1.26	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	27.5	0.134 (S)	1.24	1.105
2,2',3,3',6,6'-HxCB	136		U		0.107 (S)		
2,2',3,4,4',5-HxCB	137			2.52	0.197 (S)	1.28	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	1.62	0.193 (S)	1.33	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			6.95	0.188 (S)	1.39	0.904
2,2',3,4,5,6-HxCB	142		U		0.215 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			3.13	0.134 (S)	1.21	1.122
2,2',3,4,6,6'-HxCB	145		U		0.115 (S)		
2,2',3,4',5,5'-HxCB	146			17.3	0.178 (S)	1.25	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	66.6	0.193 (S)	1.25	1.133
2,2',3,4',5,6'-HxCB	148		K J	0.171	0.138 (S)	1.79	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	0.198	0.108 (S)	1.27	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.104 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	95.8	0.156 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0842 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	8.90	0.175 (S)	1.21	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			5.69	0.138 (S)	1.34	0.938
2,3,3',4,5,5'-HxCB	159		K	0.921	0.144 (S)	1.57	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.144 (S)		
2,3,3',4',5,5'-HxCB	162			0.469	0.149 (S)	1.39	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			4.36	0.150 (S)	1.24	0.921
2,3,3',5,5',6-HxCB	165		U		0.169 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			3.48	0.136 (S)	1.37	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.179 (S)		
2,2',3,3',4,4',5-HpCB	170			21.0	0.154 (S)	1.03	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	7.14	0.144 (S)	1.05	1.162
2,2',3,3',4,5,5'-HpCB	172			3.74	0.142 (S)	1.00	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			16.8	0.135 (S)	1.02	1.133
2,2',3,3',4,5',6-HpCB	175			1.18	0.130 (S)	1.05	1.102
2,2',3,3',4,6,6'-HpCB	176			2.67	0.101 (S)	1.16	1.034
2,2',3,3',4',5,6-HpCB	177			17.2	0.140 (S)	1.10	1.145
2,2',3,3',5,5',6-HpCB	178			7.36	0.136 (S)	1.01	1.085
2,2',3,3',5,6,6'-HpCB	179			9.93	0.0992 (S)	1.05	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	29.3	0.130 (S)	1.03	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.136 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.130 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	15.3	0.129 (S)	0.96	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.0994 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.107 (S)		
2,2',3,4',5,5',6-HpCB	187			39.1	0.126 (S)	1.01	1.109
2,2',3,4',5,6,6'-HpCB	188		K J	0.211	0.0948 (S)	1.71	1.000
2,3,3',4,4',5,5'-HpCB	189			1.00	0.204 (S)	0.94	1.000
2,3,3',4,4',5,6-HpCB	190			3.41	0.113 (S)	1.02	0.947
2,3,3',4,4',5',6-HpCB	191		K	0.557	0.107 (S)	1.36	0.917
2,3,3',4,5,5',6-HpCB	192		U		0.117 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			11.4	0.209 (S)	0.91	0.991
2,2',3,3',4,4',5,6-OcCB	195			4.45	0.214 (S)	0.87	0.945
2,2',3,3',4,4',5,6'-OcCB	196			6.27	0.156 (S)	0.87	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C	1.76	0.117 (S)	0.90	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	17.8	0.162 (S)	0.92	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			2.41	0.114 (S)	0.86	1.023
2,2',3,3',5,5',6,6'-OcCB	202			5.24	0.129 (S)	0.89	1.001
2,2',3,4,4',5,5',6-OcCB	203			7.51	0.153 (S)	0.96	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.117 (S)		
2,3,3',4,4',5,5',6-OcCB	205			0.509	0.180 (S)	0.98	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			10.7	0.219 (S)	0.81	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207			2.08	0.182 (S)	0.84	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			4.58	0.160 (S)	0.79	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			11.7	0.164 (S)	1.18	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

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Report Filename: 1668_PCB1668_PCBTF_L19652-27_Form1A_PB3C_196S8_SJ1608818.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-SEQ-04-S
Sample Collection:
09-May-2013 10:11

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-27
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 04:01:36	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_196 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_196 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	56.2

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		24.2
Total Dichloro Biphenyls		102
Total Trichloro Biphenyls		230
Total Tetrachloro Biphenyls		421
Total Pentachloro Biphenyls		492
Total Hexachloro Biphenyls		410
Total Heptachloro Biphenyls		175
Total Octachloro Biphenyls		57.3
Total Nonachloro Biphenyls		17.4
Decachloro Biphenyl		11.7
TOTAL PCBs		1940

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-27_Form1AHT_SJ1608818.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-SEQ-04-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 09-May-2013 10:11

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-27

Sample Size: 10.5 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_196 S: 8**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			11.8	0.211	0.0001	1.18e-03	1.18e-03	
3,4,4',5-TeCB	81		U		0.162	0.0003	0.00e+00	2.43e-05	
2,3,3',4,4'-PeCB	105			39.7	0.240	0.00003	1.19e-03	1.19e-03	
2,3,4,4',5-PeCB	114			1.45	0.244	0.00003	4.35e-05	4.35e-05	
2,3',4,4',5-PeCB	118			85.0	0.226	0.00003	2.55e-03	2.55e-03	
2',3,4,4',5-PeCB	123			1.54	0.242	0.00003	4.62e-05	4.62e-05	
3,3',4,4',5-PeCB	126			1.06	0.264	0.1	1.06e-01	1.06e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	8.90	0.175	0.00003	2.67e-04	2.67e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			3.48	0.136	0.00003	1.04e-04	1.04e-04	
3,3',4,4',5,5'-HxCB	169		U		0.179	0.03	0.00e+00	2.69e-03	
2,3,3',4,4',5,5'-HpCB	189			1.00	0.204	0.00003	3.00e-05	3.00e-05	
					TOTAL TEQ		0.111	0.114	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-27_TEQ_SJ1608818.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-SEQ-03-S
Sample Collection:
09-May-2013 11:04

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-28
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 05:05:44	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_196 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_196 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	63.4

This page is part of a total report that contains information necessary for accreditation compliance.
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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			4.07	0.112 (S)	2.97	1.003
3-MoCB	2			17.2	0.104 (S)	3.08	0.989
4-MoCB	3			5.95	0.103 (S)	3.08	1.002
2,2'-DiCB	4			7.33	0.330 (S)	1.53	1.001
2,3-DiCB	5		J	0.320	0.192 (S)	1.62	1.198
2,3'-DiCB	6			3.51	0.177 (S)	1.52	1.175
2,4-DiCB	7			1.50	0.181 (S)	1.40	1.159
2,4'-DiCB	8			25.9	0.166 (S)	1.51	1.208
2,5-DiCB	9			1.03	0.174 (S)	1.43	1.146
2,6-DiCB	10		J	0.295	0.182 (S)	1.50	1.013
3,3'-DiCB	11			36.3	0.176 (S)	1.51	0.969
3,4-DiCB	12	12 + 13	C	6.00	0.182 (S)	1.59	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14			0.753	0.175 (S)	1.46	0.926
4,4'-DiCB	15			41.8	0.193 (S)	1.54	1.001
2,2',3-TriCB	16			7.64	0.144 (S)	1.08	1.165
2,2',4-TriCB	17			10.4	0.126 (S)	1.04	1.138
2,2',5-TriCB	18	18 + 30	C	18.0	0.105 (S)	1.04	1.113
2,2',6-TriCB	19			1.68	0.160 (S)	1.19	1.002
2,3,3'-TriCB	20	20 + 28	C B	101	0.161 (S)	1.02	0.848
2,3,4-TriCB	21	21 + 33	C B	24.0	0.152 (S)	1.03	0.857
2,3,4'-TriCB	22			21.1	0.170 (S)	1.03	0.873
2,3,5-TriCB	23		U		0.169 (S)		
2,3,6-TriCB	24		K J	0.227	0.0950 (S)	1.30	1.158
2,3',4-TriCB	25			6.02	0.143 (S)	1.06	0.825
2,3',5-TriCB	26	26 + 29	C	10.3	0.161 (S)	1.01	1.301
2,3',6-TriCB	27			1.76	0.0854 (S)	1.08	1.152
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	54.6	0.151 (S)	1.04	0.837
2,4',6-TriCB	32			9.28	0.158 (S)	1.03	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.296	0.163 (S)	1.05	1.274
3,3',4-TriCB	35			4.07	0.162 (S)	1.08	0.985
3,3',5-TriCB	36			1.71	0.151 (S)	1.14	0.932
3,4,4'-TriCB	37			33.3	0.167 (S)	1.01	1.001
3,4,5-TriCB	38		K	0.499	0.152 (S)	1.36	0.968
3,4',5-TriCB	39			0.793	0.152 (S)	1.04	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	26.2	0.124 (S)	0.79	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			15.7	0.130 (S)	0.79	1.311
2,2',3,5-TeCB	43			1.62	0.157 (S)	0.87	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	55.2	0.116 (S)	0.79	1.285
2,2',3,6-TeCB	45	45 + 51	C	5.36	0.129 (S)	0.75	1.146
2,2',3,6'-TeCB	46			1.72	0.149 (S)	0.70	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			8.66	0.126 (S)	0.77	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	40.5	0.109 (S)	0.78	1.259
2,2',4,6-TeCB	50	50 + 53	C	4.81	0.126 (S)	0.79	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	67.1	0.119 (S)	0.80	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.107 (S)		
2,3,3',4-TeCB	55			1.24	0.192 (S)	0.71	0.890
2,3,3',4'-TeCB	56			34.9	0.192 (S)	0.76	0.905
2,3,3',5-TeCB	57			0.422	0.184 (S)	0.70	0.844
2,3,3',5'-TeCB	58		J	0.241	0.191 (S)	0.77	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	5.30	0.0953 (S)	0.77	1.302
2,3,4,4'-TeCB	60			22.5	0.190 (S)	0.75	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	148	0.184 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			3.60	0.180 (S)	0.76	0.865
2,3,4',6-TeCB	64			24.3	0.0913 (S)	0.79	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	84.9	0.175 (S)	0.76	0.885
2,3',4,5-TeCB	67			2.77	0.166 (S)	0.73	0.857
2,3',4,5'-TeCB	68			0.913	0.178 (S)	0.82	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			1.33	0.179 (S)	0.76	0.823
2,3',5',6-TeCB	73		U		0.0947 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			15.0	0.199 (S)	0.73	1.000
3,3',4,5-TeCB	78		U		0.182 (S)		
3,3',4,5'-TeCB	79			1.56	0.151 (S)	0.74	0.970
3,3',5,5'-TeCB	80		U		0.170 (S)		
3,4,4',5-TeCB	81			0.551	0.194 (S)	0.67	1.001
2,2',3,3',4-PeCB	82			10.5	0.192 (S)	1.56	0.933
2,2',3,3',5-PeCB	83	83 + 99	C	74.0	0.179 (S)	1.55	0.886
2,2',3,3',6-PeCB	84			20.9	0.209 (S)	1.66	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	25.0	0.149 (S)	1.57	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	65.9	0.156 (S)	1.53	0.902
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	12.3	0.187 (S)	1.59	1.154
2,2',3,4,6'-PeCB	89			0.948	0.187 (S)	1.62	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	108	0.159 (S)	1.56	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			19.0	0.182 (S)	1.60	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	68.7	0.184 (S)	1.52	1.121
2,2',3,5,6'-PeCB	94			0.455	0.204 (S)	1.57	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.526	0.107 (S)	1.45	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			1.11	0.169 (S)	1.42	1.093
2,2',4,6,6'-PeCB	104		U		0.104 (S)		
2,3,3',4,4'-PeCB	105			55.5	0.204 (S)	1.50	1.000
2,3,3',4,5-PeCB	106		U		0.182 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	4.13	0.204 (S)	1.50	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			11.3	0.183 (S)	1.52	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	114	0.133 (S)	1.58	0.925
2,3,3',5,5'-PeCB	111		K J	0.224	0.133 (S)	2.27	0.946
2,3,3',5,6-PeCB	112		U		0.132 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			2.03	0.200 (S)	1.55	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	121	0.197 (S)	1.54	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			1.04	0.123 (S)	1.54	0.959
2,3',4,5',6-PeCB	121		U		0.138 (S)		
2',3,3',4,5-PeCB	122			0.925	0.207 (S)	1.76	1.010
2',3,4,4',5-PeCB	123			2.47	0.214 (S)	1.59	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			0.889	0.230 (S)	1.39	1.000
3,3',4,5,5'-PeCB	127		U		0.191 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	26.4	0.255 (S)	1.21	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	158	0.247 (S)	1.25	0.929
2,2',3,3',4,5'-HxCB	130			10.7	0.303 (S)	1.15	0.913
2,2',3,3',4,6-HxCB	131			1.22	0.315 (S)	1.07	1.159
2,2',3,3',4,6'-HxCB	132			38.1	0.314 (S)	1.26	1.174
2,2',3,3',5,5'-HxCB	133			2.74	0.280 (S)	1.07	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	5.57	0.301 (S)	1.23	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	38.7	0.144 (S)	1.29	1.104
2,2',3,3',6,6'-HxCB	136			12.4	0.115 (S)	1.25	1.024
2,2',3,4,4',5-HxCB	137			4.44	0.282 (S)	1.29	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	2.22	0.276 (S)	1.13	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			12.6	0.270 (S)	1.25	0.903
2,2',3,4,5,6-HxCB	142		U		0.308 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			4.58	0.144 (S)	1.36	1.121
2,2',3,4,6,6'-HxCB	145		U		0.123 (S)		
2,2',3,4',5,5'-HxCB	146			23.6	0.255 (S)	1.26	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	99.1	0.276 (S)	1.25	1.133
2,2',3,4',5,6'-HxCB	148			0.386	0.148 (S)	1.27	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		K J	0.337	0.116 (S)	1.02	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		K J	0.131	0.111 (S)	1.58	1.007
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	133	0.224 (S)	1.25	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0943 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	13.3	0.247 (S)	1.21	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			9.96	0.198 (S)	1.35	0.938
2,3,3',4,5,5'-HxCB	159			1.27	0.207 (S)	1.23	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.206 (S)		
2,3,3',4',5,5'-HxCB	162		K	0.637	0.213 (S)	0.85	0.988
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			7.27	0.215 (S)	1.27	0.921
2,3,3',5,5',6-HxCB	165		U		0.243 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			5.40	0.198 (S)	1.27	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.208 (S)		
2,2',3,3',4,4',5-HpCB	170			29.9	0.192 (S)	1.03	1.001
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	10.2	0.194 (S)	1.04	1.162
2,2',3,3',4,5,5'-HpCB	172			5.38	0.191 (S)	1.14	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			27.7	0.182 (S)	1.05	1.133
2,2',3,3',4,5',6-HpCB	175			1.68	0.175 (S)	1.04	1.102
2,2',3,3',4,6,6'-HpCB	176			4.25	0.135 (S)	1.04	1.034
2,2',3,3',4',5,6-HpCB	177			23.1	0.188 (S)	1.10	1.145
2,2',3,3',5,5',6-HpCB	178			9.97	0.183 (S)	1.04	1.085
2,2',3,3',5,6,6'-HpCB	179			14.0	0.133 (S)	1.05	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	49.6	0.155 (S)	1.05	1.000
2,2',3,4,4',5,6-HpCB	181		K J	0.227	0.183 (S)	1.53	1.156
2,2',3,4,4',5,6'-HpCB	182		J	0.306	0.174 (S)	0.96	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	22.6	0.174 (S)	1.01	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.134 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.144 (S)		
2,2',3,4',5,5',6-HpCB	187			57.3	0.170 (S)	1.05	1.110
2,2',3,4',5,6,6'-HpCB	188		J	0.208	0.126 (S)	1.04	1.001
2,3,3',4,4',5,5'-HpCB	189			1.25	0.254 (S)	0.99	1.001
2,3,3',4,4',5,6-HpCB	190			5.28	0.151 (S)	1.03	0.947
2,3,3',4,4',5',6-HpCB	191			0.942	0.143 (S)	0.95	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.158 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			17.8	0.221 (S)	0.91	0.991
2,2',3,3',4,4',5,6-OcCB	195			6.37	0.227 (S)	0.95	0.945
2,2',3,3',4,4',5,6'-OcCB	196			9.53	0.155 (S)	0.88	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	2.60	0.116 (S)	0.86	1.045
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	26.1	0.161 (S)	0.89	1.114
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			3.55	0.114 (S)	0.93	1.023
2,2',3,3',5,5',6,6'-OcCB	202			6.76	0.130 (S)	0.89	1.000
2,2',3,4,4',5,5',6-OcCB	203			11.3	0.152 (S)	0.91	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.116 (S)		
2,3,3',4,4',5,5',6-OcCB	205			0.660	0.188 (S)	0.81	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			14.0	0.359 (S)	0.79	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			2.70	0.294 (S)	0.88	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			5.72	0.253 (S)	0.84	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			12.4	0.191 (S)	1.05	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

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Report Filename: 1668_PCB1668_PCBTF_L19652-28_Form1A_PB3C_196S9_SJ1608820.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-SEQ-03-S
Sample Collection:
09-May-2013 11:04

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-28
Matrix:	SOLID	**Sample Size:**	10.5 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 05:05:44	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_196 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_196 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	63.4

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		27.2
Total Dichloro Biphenyls		125
Total Trichloro Biphenyls		306
Total Tetrachloro Biphenyls		574
Total Pentachloro Biphenyls		721
Total Hexachloro Biphenyls		611
Total Heptachloro Biphenyls		264
Total Octachloro Biphenyls		84.7
Total Nonachloro Biphenyls		22.4
Decachloro Biphenyl		12.4
TOTAL PCBs		2750

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-28_Form1AHT_SJ1608820.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-SEQ-03-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 09-May-2013 11:04

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-28

Sample Size: 10.5 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_196 S: 9**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			15.0	0.199	0.0001	1.50e-03	1.50e-03	
3,4,4',5-TeCB	81			0.551	0.194	0.0003	1.65e-04	1.65e-04	
2,3,3',4,4'-PeCB	105			55.5	0.204	0.00003	1.67e-03	1.67e-03	
2,3,4,4',5-PeCB	114			2.03	0.200	0.00003	6.09e-05	6.09e-05	
2,3',4,4',5-PeCB	118			121	0.197	0.00003	3.63e-03	3.63e-03	
2',3,4,4',5-PeCB	123			2.47	0.214	0.00003	7.41e-05	7.41e-05	
3,3',4,4',5-PeCB	126			0.889	0.230	0.1	8.89e-02	8.89e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	13.3	0.247	0.00003	3.99e-04	3.99e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			5.40	0.198	0.00003	1.62e-04	1.62e-04	
3,3',4,4',5,5'-HxCB	169		U		0.208	0.03	0.00e+00	3.12e-03	
2,3,3',4,4',5,5'-HpCB	189			1.25	0.254	0.00003	3.75e-05	3.75e-05	
					TOTAL TEQ		0.0966	0.0997	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 14-Jun-2013 15:25:41; Application: XMLTransformer-1.13.42; Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-28_TEQ_SJ1608820.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-SEQ-03-D
Sample Collection:
09-May-2013 11:04

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-29
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 06:09:51	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_196 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_196 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	63.5

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			4.12	0.0926 (S)	3.18	1.001
3-MoCB	2			18.6	0.0816 (S)	3.07	0.988
4-MoCB	3			5.93	0.0772 (S)	3.09	1.001
2,2'-DiCB	4			7.38	0.176 (S)	1.55	1.001
2,3-DiCB	5		J	0.326	0.0948 (S)	1.36	1.199
2,3'-DiCB	6			3.37	0.0875 (S)	1.47	1.177
2,4-DiCB	7			1.51	0.0897 (S)	1.52	1.160
2,4'-DiCB	8			26.4	0.0821 (S)	1.51	1.208
2,5-DiCB	9			1.03	0.0862 (S)	1.39	1.147
2,6-DiCB	10		J	0.313	0.0900 (S)	1.71	1.014
3,3'-DiCB	11			36.0	0.0869 (S)	1.53	0.969
3,4-DiCB	12	12 + 13	C	5.88	0.0899 (S)	1.51	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	0.944	0.0862 (S)	0.83	0.927
4,4'-DiCB	15			41.8	0.0920 (S)	1.54	1.001
2,2',3-TriCB	16			8.02	0.0897 (S)	1.07	1.164
2,2',4-TriCB	17			11.8	0.0782 (S)	1.04	1.137
2,2',5-TriCB	18	18 + 30	C	15.5	0.0656 (S)	1.03	1.113
2,2',6-TriCB	19			1.69	0.0954 (S)	1.02	1.001
2,3,3'-TriCB	20	20 + 28	C B	105	0.0835 (S)	1.01	0.849
2,3,4-TriCB	21	21 + 33	C B	24.6	0.0790 (S)	1.01	0.858
2,3,4'-TriCB	22			21.9	0.0881 (S)	1.03	0.873
2,3,5-TriCB	23		U		0.0874 (S)		
2,3,6-TriCB	24		K J	0.286	0.0591 (S)	1.21	1.158
2,3',4-TriCB	25			6.32	0.0743 (S)	1.01	0.826
2,3',5-TriCB	26	26 + 29	C	10.9	0.0836 (S)	1.00	1.300
2,3',6-TriCB	27			1.79	0.0532 (S)	1.08	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	57.2	0.0781 (S)	1.02	0.837
2,4',6-TriCB	32			10.1	0.0820 (S)	1.02	1.196
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.304	0.0845 (S)	1.16	1.273
3,3',4-TriCB	35			3.98	0.0840 (S)	1.00	0.985
3,3',5-TriCB	36			1.84	0.0782 (S)	1.01	0.932
3,4,4'-TriCB	37			34.9	0.0887 (S)	1.01	1.001
3,4,5-TriCB	38			0.424	0.0787 (S)	0.95	0.968
3,4',5-TriCB	39			0.761	0.0791 (S)	1.06	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	28.3	0.109 (S)	0.76	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			16.9	0.114 (S)	0.79	1.311
2,2',3,5-TeCB	43			1.75	0.137 (S)	0.71	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	60.3	0.101 (S)	0.79	1.285
2,2',3,6-TeCB	45	45 + 51	C	5.82	0.113 (S)	0.76	1.146
2,2',3,6'-TeCB	46			1.94	0.130 (S)	0.68	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			9.22	0.110 (S)	0.78	1.274
2,2',4,5'-TeCB	49	49 + 69	C B	44.4	0.0956 (S)	0.78	1.259
2,2',4,6-TeCB	50	50 + 53	C	5.47	0.110 (S)	0.80	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	70.8	0.104 (S)	0.77	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		J	0.084	0.0760 (S)	0.70	1.000
2,3,3',4-TeCB	55			1.07	0.216 (S)	0.73	0.890
2,3,3',4'-TeCB	56			36.5	0.215 (S)	0.77	0.905
2,3,3',5-TeCB	57			0.398	0.207 (S)	0.77	0.844
2,3,3',5'-TeCB	58		J	0.337	0.214 (S)	0.72	0.851
2,3,3',6-TeCB	59	59 + 62 + 75	C	5.87	0.0833 (S)	0.77	1.302
2,3,4,4'-TeCB	60			23.1	0.213 (S)	0.76	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	155	0.207 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			3.72	0.201 (S)	0.78	0.864
2,3,4',6-TeCB	64			26.3	0.0798 (S)	0.78	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	88.7	0.196 (S)	0.77	0.884
2,3',4,5-TeCB	67			3.00	0.187 (S)	0.74	0.857
2,3',4,5'-TeCB	68			1.06	0.200 (S)	0.72	0.832
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			1.42	0.200 (S)	0.82	0.823
2,3',5',6-TeCB	73		U		0.0827 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			15.7	0.264 (S)	0.76	1.000
3,3',4,5-TeCB	78		U		0.204 (S)		
3,3',4,5'-TeCB	79			1.59	0.169 (S)	0.73	0.970
3,3',5,5'-TeCB	80		U		0.191 (S)		
3,4,4',5-TeCB	81			0.580	0.213 (S)	0.79	1.001
2,2',3,3',4-PeCB	82			7.39	0.107 (S)	1.52	0.934
2,2',3,3',5-PeCB	83	83 + 99	C	75.3	0.0998 (S)	1.60	0.886
2,2',3,3',6-PeCB	84			21.0	0.116 (S)	1.52	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	24.0	0.0831 (S)	1.55	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	66.6	0.0869 (S)	1.58	0.902
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	13.1	0.104 (S)	1.60	1.154
2,2',3,4,6'-PeCB	89			0.900	0.104 (S)	1.61	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	105	0.0887 (S)	1.58	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			19.0	0.101 (S)	1.54	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	69.8	0.102 (S)	1.57	1.120
2,2',3,5,6'-PeCB	94			0.465	0.113 (S)	1.76	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.616	0.0714 (S)	1.60	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			1.22	0.0939 (S)	1.51	1.093
2,2',4,6,6'-PeCB	104		U		0.0616 (S)		
2,3,3',4,4'-PeCB	105			53.6	0.202 (S)	1.51	1.000
2,3,3',4,5-PeCB	106		U		0.173 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	3.85	0.193 (S)	1.59	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			11.1	0.173 (S)	1.50	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	108	0.0738 (S)	1.56	0.925
2,3,3',5,5'-PeCB	111		K J	0.240	0.0737 (S)	1.22	0.946
2,3,3',5,6-PeCB	112		U		0.0736 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			1.91	0.202 (S)	1.48	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	117	0.190 (S)	1.53	1.001
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			0.945	0.0684 (S)	1.55	0.959
2,3',4,5',6-PeCB	121		J	0.087	0.0765 (S)	1.46	1.199
2',3,3',4,5-PeCB	122			0.921	0.196 (S)	1.61	1.010
2',3,4,4',5-PeCB	123			2.38	0.203 (S)	1.54	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			1.12	0.223 (S)	1.35	1.000
3,3',4,5,5'-PeCB	127		U		0.181 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	23.7	0.216 (S)	1.22	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	150	0.209 (S)	1.26	0.928
2,2',3,3',4,5'-HxCB	130			10.8	0.257 (S)	1.25	0.913
2,2',3,3',4,6-HxCB	131			1.35	0.267 (S)	1.24	1.159
2,2',3,3',4,6'-HxCB	132			36.6	0.266 (S)	1.26	1.174
2,2',3,3',5,5'-HxCB	133			2.86	0.237 (S)	1.30	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	5.27	0.255 (S)	1.23	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	37.3	0.105 (S)	1.29	1.105
2,2',3,3',6,6'-HxCB	136			12.3	0.0841 (S)	1.26	1.024
2,2',3,4,4',5-HxCB	137			3.77	0.239 (S)	1.26	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	2.17	0.234 (S)	1.23	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			12.0	0.228 (S)	1.31	0.903
2,2',3,4,5,6-HxCB	142		U		0.261 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			4.52	0.106 (S)	1.31	1.122
2,2',3,4,6,6'-HxCB	145		U		0.0902 (S)		
2,2',3,4',5,5'-HxCB	146			23.2	0.216 (S)	1.25	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	88.2	0.234 (S)	1.26	1.133
2,2',3,4',5,6'-HxCB	148		K J	0.178	0.109 (S)	0.82	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	0.327	0.0852 (S)	1.09	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	0.136	0.0816 (S)	1.39	1.006
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	127	0.190 (S)	1.25	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0616 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C	12.8	0.223 (S)	1.26	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			9.15	0.168 (S)	1.25	0.938
2,3,3',4,5,5'-HxCB	159			1.40	0.175 (S)	1.35	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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2,3,3',4,5',6-HxCB	161		U		0.175 (S)		
2,3,3',4',5,5'-HxCB	162			0.745	0.181 (S)	1.37	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			7.69	0.182 (S)	1.32	0.921
2,3,3',5,5',6-HxCB	165		J	0.243	0.205 (S)	1.43	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			4.97	0.169 (S)	1.27	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.183 (S)		
2,2',3,3',4,4',5-HpCB	170			29.7	0.135 (S)	1.05	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	9.45	0.123 (S)	1.05	1.162
2,2',3,3',4,5,5'-HpCB	172			5.01	0.121 (S)	1.03	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			25.6	0.116 (S)	0.99	1.133
2,2',3,3',4,5',6-HpCB	175			1.59	0.111 (S)	1.10	1.102
2,2',3,3',4,6,6'-HpCB	176			3.80	0.0860 (S)	1.04	1.034
2,2',3,3',4',5,6-HpCB	177			22.1	0.120 (S)	1.04	1.145
2,2',3,3',5,5',6-HpCB	178			9.21	0.116 (S)	1.05	1.085
2,2',3,3',5,6,6'-HpCB	179			13.5	0.0847 (S)	1.04	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	47.7	0.113 (S)	1.04	1.000
2,2',3,4,4',5,6-HpCB	181		J	0.215	0.116 (S)	1.13	1.156
2,2',3,4,4',5,6'-HpCB	182		K J	0.375	0.111 (S)	0.87	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	20.8	0.110 (S)	1.01	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.0849 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0915 (S)		
2,2',3,4',5,5',6-HpCB	187			52.0	0.108 (S)	1.03	1.110
2,2',3,4',5,6,6'-HpCB	188		J	0.244	0.0769 (S)	1.18	1.001
2,3,3',4,4',5,5'-HpCB	189			1.35	0.169 (S)	1.16	1.000
2,3,3',4,4',5,6-HpCB	190			4.60	0.0962 (S)	1.03	0.947
2,3,3',4,4',5',6-HpCB	191			0.826	0.0910 (S)	1.07	0.917
2,3,3',4,5,5',6-HpCB	192		U		0.100 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			16.0	0.142 (S)	0.88	0.991
2,2',3,3',4,4',5,6-OcCB	195			5.96	0.145 (S)	0.91	0.945
2,2',3,3',4,4',5,6'-OcCB	196			8.48	0.123 (S)	0.93	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C	2.39	0.0919 (S)	0.82	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	24.0	0.128 (S)	0.87	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			3.28	0.0900 (S)	0.97	1.023
2,2',3,3',5,5',6,6'-OcCB	202			6.83	0.0989 (S)	0.86	1.001
2,2',3,4,4',5,5',6-OcCB	203			9.98	0.120 (S)	0.92	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0921 (S)		
2,3,3',4,4',5,5',6-OcCB	205			0.774	0.126 (S)	0.91	1.001
2,2',3,3',4,4',5,5',6-NoCB	206			13.6	0.221 (S)	0.79	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207			2.60	0.185 (S)	0.80	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			5.76	0.164 (S)	0.75	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			12.6	0.139 (S)	1.11	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 14-Jun-2013 15:24:25; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-29_Form1A_PB3C_196S10_SJ1608822.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-SEQ-03-D
Sample Collection:
09-May-2013 11:04

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-29
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 06:09:51	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_196 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_196 S: 2
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	63.5

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		28.7
Total Dichloro Biphenyls		124
Total Trichloro Biphenyls		317
Total Tetrachloro Biphenyls		609
Total Pentachloro Biphenyls		705
Total Hexachloro Biphenyls		579
Total Heptachloro Biphenyls		248
Total Octachloro Biphenyls		77.7
Total Nonachloro Biphenyls		22.0
Decachloro Biphenyl		12.6
TOTAL PCBs		2720

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 14-Jun-2013 15:25:41; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-29_Form1AHT_SJ1608822.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-SEQ-03-D

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 09-May-2013 11:04

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-29

Sample Size: 10.7 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_196 S: 10**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			15.7	0.264	0.0001	1.57e-03	1.57e-03	
3,4,4',5-TeCB	81			0.580	0.213	0.0003	1.74e-04	1.74e-04	
2,3,3',4,4'-PeCB	105			53.6	0.202	0.00003	1.61e-03	1.61e-03	
2,3,4,4',5-PeCB	114			1.91	0.202	0.00003	5.73e-05	5.73e-05	
2,3',4,4',5-PeCB	118			117	0.190	0.00003	3.51e-03	3.51e-03	
2',3,4,4',5-PeCB	123			2.38	0.203	0.00003	7.14e-05	7.14e-05	
3,3',4,4',5-PeCB	126			1.12	0.223	0.1	1.12e-01	1.12e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	12.8	0.223	0.00003	3.84e-04	3.84e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			4.97	0.169	0.00003	1.49e-04	1.49e-04	
3,3',4,4',5,5'-HxCB	169		U		0.183	0.03	0.00e+00	2.75e-03	
2,3,3',4,4',5,5'-HpCB	189			1.35	0.169	0.00003	4.05e-05	4.05e-05	
					TOTAL TEQ		0.120	0.122	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-29_TEQ_SJ1608822.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-SEQ-01-S
Sample Collection:
09-May-2013 11:41

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-30
Matrix:	SOLID	**Sample Size:**	10.1 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 16:01:22	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_197A S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_197 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	69.1

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			5.12	0.119 (S)	3.06	1.001
3-MoCB	2			34.1	0.102 (S)	3.12	0.989
4-MoCB	3		B	6.78	0.0923 (S)	3.02	1.001
2,2'-DiCB	4			10.1	0.183 (S)	1.56	1.001
2,3-DiCB	5		J	0.378	0.115 (S)	1.57	1.198
2,3'-DiCB	6			4.74	0.104 (S)	1.50	1.175
2,4-DiCB	7			2.15	0.107 (S)	1.73	1.159
2,4'-DiCB	8			36.8	0.0954 (S)	1.52	1.206
2,5-DiCB	9			1.25	0.104 (S)	1.61	1.145
2,6-DiCB	10			0.483	0.109 (S)	1.44	1.013
3,3'-DiCB	11			49.7	0.103 (S)	1.53	0.969
3,4-DiCB	12	12 + 13	C	7.83	0.105 (S)	1.50	0.985
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	1.17	0.103 (S)	1.28	0.926
4,4'-DiCB	15			52.7	0.116 (S)	1.53	1.001
2,2',3-TriCB	16			12.0	0.123 (S)	1.08	1.164
2,2',4-TriCB	17			16.2	0.0980 (S)	1.04	1.137
2,2',5-TriCB	18	18 + 30	C B G	23.1	0.0826 (S)	1.08	1.113
2,2',6-TriCB	19			2.34	0.113 (S)	1.14	1.001
2,3,3'-TriCB	20	20 + 28	C B	138	0.108 (S)	1.03	0.849
2,3,4-TriCB	21	21 + 33	C	33.7	0.106 (S)	1.03	0.858
2,3,4'-TriCB	22		B	29.0	0.116 (S)	1.03	0.873
2,3,5-TriCB	23		U		0.117 (S)		
2,3,6-TriCB	24		K	0.408	0.0713 (S)	1.21	1.157
2,3',4-TriCB	25			8.56	0.0961 (S)	1.03	0.826
2,3',5-TriCB	26	26 + 29	C	14.6	0.109 (S)	1.03	1.301
2,3',6-TriCB	27			2.83	0.0694 (S)	1.06	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	74.9	0.101 (S)	1.02	0.837
2,4',6-TriCB	32			13.8	0.106 (S)	1.02	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34			0.489	0.110 (S)	1.05	1.273
3,3',4-TriCB	35			5.33	0.104 (S)	1.03	0.985
3,3',5-TriCB	36			2.48	0.0990 (S)	1.01	0.932
3,4,4'-TriCB	37			45.9	0.116 (S)	1.03	1.001
3,4,5-TriCB	38			0.575	0.102 (S)	1.15	0.968
3,4',5-TriCB	39			1.08	0.102 (S)	1.15	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C	37.8	0.105 (S)	0.78	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			22.4	0.108 (S)	0.78	1.311
2,2',3,5-TeCB	43			2.08	0.125 (S)	0.79	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	80.2	0.0982 (S)	0.79	1.285
2,2',3,6-TeCB	45	45 + 51	C	8.41	0.111 (S)	0.80	1.147
2,2',3,6'-TeCB	46			2.68	0.129 (S)	0.78	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			12.5	0.107 (S)	0.77	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	60.2	0.0926 (S)	0.78	1.259
2,2',4,6-TeCB	50	50 + 53	C	8.29	0.109 (S)	0.78	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	95.2	0.102 (S)	0.78	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		K J	0.145	0.0783 (S)	0.94	1.002
2,3,3',4-TeCB	55			1.67	0.162 (S)	0.71	0.890
2,3,3',4'-TeCB	56		B	45.6	0.158 (S)	0.77	0.905
2,3,3',5-TeCB	57			0.579	0.157 (S)	0.83	0.844
2,3,3',5'-TeCB	58			0.521	0.162 (S)	0.82	0.851
2,3,3',6-TeCB	59	59 + 62 + 75	C	7.84	0.0808 (S)	0.79	1.302
2,3,4,4'-TeCB	60			30.3	0.161 (S)	0.77	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	202	0.156 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			5.24	0.149 (S)	0.78	0.864
2,3,4',6-TeCB	64		B	35.0	0.0770 (S)	0.78	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	118	0.149 (S)	0.77	0.885
2,3',4,5-TeCB	67			4.16	0.140 (S)	0.77	0.856
2,3',4,5'-TeCB	68			1.50	0.151 (S)	0.78	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			2.06	0.151 (S)	0.82	0.823
2,3',5',6-TeCB	73		K J	0.166	0.0825 (S)	0.94	1.242
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			21.8	0.169 (S)	0.78	1.000
3,3',4,5-TeCB	78		U		0.145 (S)		
3,3',4,5'-TeCB	79			2.21	0.124 (S)	0.87	0.970
3,3',5,5'-TeCB	80		U		0.140 (S)		
3,4,4',5-TeCB	81		K	0.816	0.169 (S)	0.77	1.000
2,2',3,3',4-PeCB	82			12.9	0.132 (S)	1.55	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	106	0.128 (S)	1.55	0.886
2,2',3,3',6-PeCB	84			27.3	0.147 (S)	1.60	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	32.4	0.103 (S)	1.57	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	84.6	0.107 (S)	1.57	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	17.2	0.131 (S)	1.55	1.154
2,2',3,4,6'-PeCB	89			1.22	0.133 (S)	1.75	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	145	0.112 (S)	1.55	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			25.3	0.125 (S)	1.55	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	94.6	0.129 (S)	1.56	1.120
2,2',3,5,6'-PeCB	94			0.722	0.145 (S)	1.33	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.890	0.0838 (S)	1.73	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			1.87	0.119 (S)	1.67	1.093
2,2',4,6,6'-PeCB	104		U		0.0715 (S)		
2,3,3',4,4'-PeCB	105		B	73.7	0.194 (S)	1.51	1.000
2,3,3',4,5-PeCB	106		U		0.169 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	5.71	0.184 (S)	1.50	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			15.7	0.164 (S)	1.58	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	148	0.0909 (S)	1.58	0.925
2,3,3',5,5'-PeCB	111		K J	0.385	0.0920 (S)	1.83	0.945
2,3,3',5,6-PeCB	112		U		0.0893 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			3.03	0.188 (S)	1.53	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	163	0.181 (S)	1.53	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			1.45	0.0840 (S)	1.66	0.959
2,3',4,5',6-PeCB	121		U		0.0961 (S)		
2',3,3',4,5-PeCB	122			1.47	0.187 (S)	1.45	1.010
2',3,4,4',5-PeCB	123			3.36	0.195 (S)	1.52	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			1.50	0.204 (S)	1.54	1.000
3,3',4,5,5'-PeCB	127		K J	0.239	0.168 (S)	2.00	1.041
2,2',3,3',4,4'-HxCB	128	128 + 166	C B	33.3	0.184 (S)	1.26	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	224	0.186 (S)	1.25	0.929
2,2',3,3',4,5'-HxCB	130			14.4	0.227 (S)	1.25	0.913
2,2',3,3',4,6-HxCB	131			1.77	0.224 (S)	1.35	1.159
2,2',3,3',4,6'-HxCB	132		B	50.8	0.232 (S)	1.25	1.174
2,2',3,3',5,5'-HxCB	133			4.36	0.214 (S)	1.31	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	7.65	0.225 (S)	1.24	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C B	54.7	0.117 (S)	1.29	1.104
2,2',3,3',6,6'-HxCB	136			17.4	0.0954 (S)	1.25	1.024
2,2',3,4,4',5-HxCB	137			6.86	0.232 (S)	1.20	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	3.41	0.209 (S)	1.23	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		B	16.2	0.203 (S)	1.18	0.903
2,2',3,4,5,6-HxCB	142		U		0.230 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			6.63	0.119 (S)	1.34	1.121
2,2',3,4,6,6'-HxCB	145		U		0.102 (S)		
2,2',3,4',5,5'-HxCB	146		B G	32.1	0.188 (S)	1.24	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	132	0.203 (S)	1.25	1.133
2,2',3,4',5,6'-HxCB	148		K	0.529	0.122 (S)	1.03	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150			0.511	0.0968 (S)	1.23	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	0.218	0.0940 (S)	1.36	1.006
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	189	0.167 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0722 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C B	17.8	0.191 (S)	1.30	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		B	13.6	0.148 (S)	1.27	0.938
2,3,3',4,5,5'-HxCB	159			1.91	0.150 (S)	1.38	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.159 (S)		
2,3,3',4',5,5'-HxCB	162			0.975	0.155 (S)	1.18	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			9.82	0.150 (S)	1.27	0.921
2,3,3',5,5',6-HxCB	165			0.426	0.177 (S)	1.29	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		B	6.99	0.142 (S)	1.27	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.420 (S)		
2,2',3,3',4,4',5-HpCB	170		B	39.8	0.141 (S)	1.04	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C B	13.7	0.130 (S)	1.02	1.163
2,2',3,3',4,5,5'-HpCB	172			7.34	0.128 (S)	1.01	0.898
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		B	33.9	0.117 (S)	1.05	1.133
2,2',3,3',4,5',6-HpCB	175			2.56	0.121 (S)	0.98	1.102
2,2',3,3',4,6,6'-HpCB	176			5.59	0.0941 (S)	1.09	1.034
2,2',3,3',4',5,6-HpCB	177		B	32.1	0.125 (S)	1.05	1.145
2,2',3,3',5,5',6-HpCB	178			14.8	0.125 (S)	1.03	1.085
2,2',3,3',5,6,6'-HpCB	179		B	20.1	0.0926 (S)	1.05	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	67.3	0.117 (S)	1.04	1.000
2,2',3,4,4',5,6-HpCB	181		J	0.383	0.125 (S)	1.18	1.156
2,2',3,4,4',5,6'-HpCB	182			0.601	0.120 (S)	1.14	1.116
2,2',3,4,4',5',6-HpCB	183	183 + 185	C B	32.1	0.121 (S)	1.04	1.127
2,2',3,4,4',6,6'-HpCB	184		K J	0.153	0.0927 (S)	1.23	1.025
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.101 (S)		
2,2',3,4',5,5',6-HpCB	187		B	78.3	0.116 (S)	1.05	1.110
2,2',3,4',5,6,6'-HpCB	188		J	0.377	0.0848 (S)	1.15	1.001
2,3,3',4,4',5,5'-HpCB	189			1.69	0.162 (S)	1.01	1.001
2,3,3',4,4',5,6-HpCB	190		B	6.48	0.0972 (S)	1.01	0.947
2,3,3',4,4',5',6-HpCB	191			1.33	0.0947 (S)	1.03	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.108 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		B	21.4	0.179 (S)	0.90	0.991
2,2',3,3',4,4',5,6-OcCB	195			8.60	0.191 (S)	0.94	0.945
2,2',3,3',4,4',5,6'-OcCB	196		B	14.0	0.120 (S)	0.91	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	3.54	0.0935 (S)	0.83	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C B	38.8	0.127 (S)	0.90	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			5.39	0.0911 (S)	0.90	1.023
2,2',3,3',5,5',6,6'-OcCB	202			9.81	0.0933 (S)	0.87	1.001
2,2',3,4,4',5,5',6-OcCB	203		B	15.1	0.116 (S)	0.91	0.920
2,2',3,4,4',5,6,6'-OcCB	204		J	0.097	0.0924 (S)	0.82	1.039
2,3,3',4,4',5,5',6-OcCB	205			1.04	0.170 (S)	0.95	1.001
2,2',3,3',4,4',5,5',6-NoCB	206		B	20.6	0.234 (S)	0.80	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			3.55	0.167 (S)	0.79	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			8.85	0.162 (S)	0.75	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209		B	21.9	0.139 (S)	1.21	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 11-Jun-2013 15:27:35; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-30_Form1A_PB3C_197AS7_SJ1608682.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-SEQ-01-S
Sample Collection:
09-May-2013 11:41

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-30
Matrix:	SOLID	**Sample Size:**	10.1 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 16:01:22	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_197A S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_197 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	69.1

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		46.0
Total Dichloro Biphenyls		166
Total Trichloro Biphenyls		425
Total Tetrachloro Biphenyls		808
Total Pentachloro Biphenyls		967
Total Hexachloro Biphenyls		847
Total Heptachloro Biphenyls		358
Total Octachloro Biphenyls		118
Total Nonachloro Biphenyls		33.0
Decachloro Biphenyl		21.9
TOTAL PCBs		3790

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-30_Form1AHT_SJ1608682.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-SEQ-01-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 09-May-2013 11:41

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-30

Sample Size: 10.1 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_197A S: 7**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			21.8	0.169	0.0001	2.18e-03	2.18e-03	
3,4,4',5-TeCB	81		U		0.169	0.0003	0.00e+00	2.54e-05	
2,3,3',4,4'-PeCB	105			73.7	0.194	0.00003	2.21e-03	2.21e-03	
2,3,4,4',5-PeCB	114			3.03	0.188	0.00003	9.09e-05	9.09e-05	
2,3',4,4',5-PeCB	118			163	0.181	0.00003	4.89e-03	4.89e-03	
2',3,4,4',5-PeCB	123			3.36	0.195	0.00003	1.01e-04	1.01e-04	
3,3',4,4',5-PeCB	126			1.50	0.204	0.1	1.50e-01	1.50e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	17.8	0.191	0.00003	5.34e-04	5.34e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			6.99	0.142	0.00003	2.10e-04	2.10e-04	
3,3',4,4',5,5'-HxCB	169		U		0.420	0.03	0.00e+00	6.30e-03	
2,3,3',4,4',5,5'-HpCB	189			1.69	0.162	0.00003	5.07e-05	5.07e-05	
					TOTAL TEQ		0.160	0.167	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 11-Jun-2013 15:28:31; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-30_TEQ_SJ1608682.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-10-S
Sample Collection:
08-May-2013 11:27

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-31
Matrix:	SOLID	**Sample Size:**	9.80 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 17:05:34	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_197A S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_197 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	69.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			6.52	0.246 (S)	3.17	1.003
3-MoCB	2			41.5	0.223 (S)	3.10	0.988
4-MoCB	3		B	7.16	0.214 (S)	3.07	1.001
2,2'-DiCB	4			9.08	0.566 (S)	1.41	1.001
2,3-DiCB	5			0.528	0.346 (S)	1.38	1.197
2,3'-DiCB	6			5.84	0.312 (S)	1.54	1.175
2,4-DiCB	7			2.16	0.322 (S)	1.38	1.157
2,4'-DiCB	8			37.3	0.287 (S)	1.50	1.206
2,5-DiCB	9		K	1.43	0.312 (S)	1.30	1.147
2,6-DiCB	10		J	0.359	0.326 (S)	1.73	1.013
3,3'-DiCB	11			67.2	0.311 (S)	1.55	0.968
3,4-DiCB	12	12 + 13	C	9.73	0.315 (S)	1.68	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	1.18	0.309 (S)	1.17	0.925
4,4'-DiCB	15			53.9	0.343 (S)	1.54	1.001
2,2',3-TriCB	16			12.4	0.314 (S)	1.06	1.166
2,2',4-TriCB	17			15.2	0.250 (S)	1.05	1.138
2,2',5-TriCB	18	18 + 30	C B	23.9	0.211 (S)	1.05	1.113
2,2',6-TriCB	19			2.32	0.316 (S)	1.15	1.001
2,3,3'-TriCB	20	20 + 28	C B	132	0.245 (S)	1.02	0.849
2,3,4-TriCB	21	21 + 33	C	42.1	0.240 (S)	1.02	0.858
2,3,4'-TriCB	22		B	31.7	0.262 (S)	1.03	0.873
2,3,5-TriCB	23		U		0.266 (S)		
2,3,6-TriCB	24		K J	0.290	0.182 (S)	1.47	1.158
2,3',4-TriCB	25			8.85	0.218 (S)	1.05	0.825
2,3',5-TriCB	26	26 + 29	C	15.1	0.246 (S)	1.07	1.301
2,3',6-TriCB	27			2.73	0.178 (S)	1.13	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	82.8	0.230 (S)	1.04	0.837
2,4',6-TriCB	32			12.5	0.241 (S)	1.00	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		K	0.496	0.249 (S)	1.45	1.273
3,3',4-TriCB	35			5.77	0.236 (S)	1.10	0.985
3,3',5-TriCB	36			3.21	0.225 (S)	1.05	0.932
3,4,4'-TriCB	37			47.9	0.253 (S)	1.02	1.001
3,4,5-TriCB	38			0.749	0.230 (S)	0.91	0.968
3,4',5-TriCB	39			1.11	0.231 (S)	0.92	0.946

This page is part of a total report that contains information necessary for accreditation compliance.
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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C	46.8	0.272 (S)	0.79	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			23.3	0.281 (S)	0.82	1.311
2,2',3,5-TeCB	43			2.30	0.324 (S)	0.84	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	85.0	0.255 (S)	0.78	1.285
2,2',3,6-TeCB	45	45 + 51	C	7.83	0.287 (S)	0.78	1.146
2,2',3,6'-TeCB	46			2.83	0.335 (S)	0.88	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			13.0	0.277 (S)	0.78	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	58.1	0.240 (S)	0.78	1.259
2,2',4,6-TeCB	50	50 + 53	C	7.14	0.282 (S)	0.86	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	93.4	0.264 (S)	0.79	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.215 (S)		
2,3,3',4-TeCB	55			1.61	0.402 (S)	0.72	0.890
2,3,3',4'-TeCB	56		B	57.4	0.393 (S)	0.77	0.906
2,3,3',5-TeCB	57			0.783	0.389 (S)	0.74	0.845
2,3,3',5'-TeCB	58			0.537	0.402 (S)	0.86	0.851
2,3,3',6-TeCB	59	59 + 62 + 75	C	8.27	0.210 (S)	0.82	1.302
2,3,4,4'-TeCB	60			35.1	0.400 (S)	0.77	0.912
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	218	0.387 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			5.23	0.371 (S)	0.72	0.865
2,3,4',6-TeCB	64		B	34.7	0.200 (S)	0.79	1.347
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	129	0.371 (S)	0.77	0.885
2,3',4,5-TeCB	67			4.18	0.349 (S)	0.79	0.857
2,3',4,5'-TeCB	68			1.34	0.375 (S)	0.74	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			1.63	0.376 (S)	0.88	0.823
2,3',5',6-TeCB	73		U		0.214 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			24.0	0.411 (S)	0.77	1.000
3,3',4,5-TeCB	78		U		0.361 (S)		
3,3',4,5'-TeCB	79			2.09	0.307 (S)	0.74	0.970
3,3',5,5'-TeCB	80		U		0.348 (S)		
3,4,4',5-TeCB	81		K	0.914	0.411 (S)	0.80	1.000
2,2',3,3',4-PeCB	82			16.4	0.329 (S)	1.54	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	112	0.321 (S)	1.59	0.886
2,2',3,3',6-PeCB	84			27.8	0.366 (S)	1.58	1.164
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	33.3	0.257 (S)	1.61	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	96.4	0.267 (S)	1.56	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	17.4	0.327 (S)	1.70	1.154
2,2',3,4,6'-PeCB	89			1.49	0.333 (S)	1.35	1.183
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	146	0.280 (S)	1.58	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			25.6	0.311 (S)	1.55	0.854
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	90.1	0.321 (S)	1.53	1.120
2,2',3,5,6'-PeCB	94			0.584	0.363 (S)	1.77	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.722	0.224 (S)	1.44	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			1.89	0.296 (S)	1.50	1.093
2,2',4,6,6'-PeCB	104		U		0.184 (S)		
2,3,3',4,4'-PeCB	105		B	81.9	0.259 (S)	1.54	1.000
2,3,3',4,5-PeCB	106		U		0.229 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	6.18	0.250 (S)	1.41	0.990
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			15.4	0.222 (S)	1.49	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	148	0.227 (S)	1.58	0.925
2,3,3',5,5'-PeCB	111		U		0.230 (S)		
2,3,3',5,6-PeCB	112		U		0.223 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			3.42	0.263 (S)	1.45	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	177	0.249 (S)	1.53	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			1.51	0.210 (S)	1.54	0.959
2,3',4,5',6-PeCB	121		U		0.240 (S)		
2',3,3',4,5-PeCB	122			1.78	0.253 (S)	1.47	1.010
2',3,4,4',5-PeCB	123			3.53	0.266 (S)	1.63	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			1.67	0.292 (S)	1.68	1.001
3,3',4,5,5'-PeCB	127		U		0.229 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C B	34.2	0.227 (S)	1.26	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	223	0.228 (S)	1.24	0.928
2,2',3,3',4,5'-HxCB	130			14.2	0.279 (S)	1.23	0.913
2,2',3,3',4,6-HxCB	131			1.63	0.275 (S)	1.25	1.158
2,2',3,3',4,6'-HxCB	132		B	49.8	0.286 (S)	1.22	1.173
2,2',3,3',5,5'-HxCB	133		K	4.07	0.263 (S)	1.46	1.189
2,2',3,3',5,6-HxCB	134	134 + 143	C	7.64	0.277 (S)	1.21	1.138
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C B	53.4	0.316 (S)	1.21	1.103
2,2',3,3',6,6'-HxCB	136			17.0	0.257 (S)	1.23	1.023
2,2',3,4,4',5-HxCB	137			7.57	0.285 (S)	1.36	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	3.02	0.258 (S)	1.36	1.151
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		B	20.2	0.250 (S)	1.22	0.903
2,2',3,4,5,6-HxCB	142		U		0.283 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			6.62	0.321 (S)	1.31	1.120
2,2',3,4,6,6'-HxCB	145		U		0.274 (S)		
2,2',3,4',5,5'-HxCB	146		B G	33.7	0.232 (S)	1.19	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	131	0.250 (S)	1.23	1.132
2,2',3,4',5,6'-HxCB	148		K	0.515	0.330 (S)	1.05	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		K	0.485	0.261 (S)	1.94	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.254 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	196	0.206 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.165 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C B	20.3	0.239 (S)	1.24	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		B	15.2	0.182 (S)	1.25	0.938
2,3,3',4,5,5'-HxCB	159			1.76	0.185 (S)	1.26	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.195 (S)		
2,3,3',4',5,5'-HxCB	162			1.07	0.191 (S)	1.26	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			10.4	0.184 (S)	1.40	0.921
2,3,3',5,5',6-HxCB	165		K J	0.447	0.218 (S)	1.94	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		B	7.47	0.181 (S)	1.15	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.367 (S)		
2,2',3,3',4,4',5-HpCB	170		B	40.1	0.431 (S)	1.04	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C B	13.5	0.381 (S)	0.98	1.162
2,2',3,3',4,5,5'-HpCB	172			7.32	0.377 (S)	0.91	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		B	35.9	0.345 (S)	1.01	1.133
2,2',3,3',4,5',6-HpCB	175			2.11	0.355 (S)	1.10	1.102
2,2',3,3',4,6,6'-HpCB	176			5.30	0.277 (S)	1.01	1.034
2,2',3,3',4',5,6-HpCB	177		B	35.0	0.368 (S)	1.04	1.145
2,2',3,3',5,5',6-HpCB	178			14.8	0.366 (S)	1.06	1.084
2,2',3,3',5,6,6'-HpCB	179		B	20.2	0.272 (S)	1.06	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	81.5	0.366 (S)	1.04	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.368 (S)		
2,2',3,4,4',5,6'-HpCB	182		K	0.494	0.351 (S)	1.24	1.116
2,2',3,4,4',5',6-HpCB	183	183 + 185	C B	31.5	0.357 (S)	1.03	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.272 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.296 (S)		
2,2',3,4',5,5',6-HpCB	187		B	80.2	0.341 (S)	1.06	1.110
2,2',3,4',5,6,6'-HpCB	188		J	0.341	0.234 (S)	0.95	1.000
2,3,3',4,4',5,5'-HpCB	189			1.97	0.498 (S)	1.06	1.000
2,3,3',4,4',5,6-HpCB	190		B	7.13	0.286 (S)	1.02	0.948
2,3,3',4,4',5',6-HpCB	191			1.57	0.278 (S)	0.97	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.316 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		B	20.3	0.444 (S)	0.94	0.991
2,2',3,3',4,4',5,6-OcCB	195			9.13	0.476 (S)	0.87	0.945
2,2',3,3',4,4',5,6'-OcCB	196		B	11.9	0.384 (S)	0.93	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	3.94	0.299 (S)	0.90	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C B	37.5	0.404 (S)	0.84	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			5.00	0.291 (S)	0.92	1.023
2,2',3,3',5,5',6,6'-OcCB	202			9.81	0.285 (S)	0.87	1.000
2,2',3,4,4',5,5',6-OcCB	203		B	16.5	0.371 (S)	0.89	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.295 (S)		
2,3,3',4,4',5,5',6-OcCB	205			1.11	0.448 (S)	1.02	1.000
2,2',3,3',4,4',5,5',6-NoCB	206		B	21.8	0.651 (S)	0.81	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			3.35	0.457 (S)	0.72	1.019
2,2',3,3',4,5,5',6,6'-NoCB	208			9.05	0.439 (S)	0.80	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209		B	23.2	0.389 (S)	1.20	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 11-Jun-2013 15:27:35; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-31_Form1A_PB3C_197AS8_SJ1608684.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-10-S
Sample Collection:
08-May-2013 11:27

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-31
Matrix:	SOLID	**Sample Size:**	9.80 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 17:05:34	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_197A S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_197 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	69.0

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		55.2
Total Dichloro Biphenyls		186
Total Trichloro Biphenyls		440
Total Tetrachloro Biphenyls		864
Total Pentachloro Biphenyls		1010
Total Hexachloro Biphenyls		855
Total Heptachloro Biphenyls		378
Total Octachloro Biphenyls		115
Total Nonachloro Biphenyls		34.2
Decachloro Biphenyl		23.2
TOTAL PCBs		3960

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 11-Jun-2013 15:28:31; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-31_Form1AHT_SJ1608684.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-10-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4273	**Sample Collection:**	08-May-2013 11:27
		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Matrix:	SOLID	**Lab Sample I.D.:**	L19652-31
Sample Size:	9.80 g (dry)	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg (dry weight basis)	**Sample Data Filename(s):**	**PB3C_197A S: 8**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			24.0	0.411	0.0001	2.40e-03	2.40e-03	
3,4,4',5-TeCB	81		U		0.411	0.0003	0.00e+00	6.17e-05	
2,3,3',4,4'-PeCB	105			81.9	0.259	0.00003	2.46e-03	2.46e-03	
2,3,4,4',5-PeCB	114			3.42	0.263	0.00003	1.03e-04	1.03e-04	
2,3',4,4',5-PeCB	118			177	0.249	0.00003	5.31e-03	5.31e-03	
2',3,4,4',5-PeCB	123			3.53	0.266	0.00003	1.06e-04	1.06e-04	
3,3',4,4',5-PeCB	126			1.67	0.292	0.1	1.67e-01	1.67e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	20.3	0.239	0.00003	6.09e-04	6.09e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			7.47	0.181	0.00003	2.24e-04	2.24e-04	
3,3',4,4',5,5'-HxCB	169		U		0.367	0.03	0.00e+00	5.51e-03	
2,3,3',4,4',5,5'-HpCB	189			1.97	0.498	0.00003	5.91e-05	5.91e-05	
					TOTAL TEQ		0.178	0.184	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-31_TEQ_SJ1608684.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-07-S
Sample Collection:
08-May-2013 11:47

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-32
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 18:09:42	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_197A S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_197 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	68.6

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			7.64	0.188 (S)	3.07	1.001
3-MoCB	2			34.6	0.168 (S)	3.07	0.989
4-MoCB	3		B	9.16	0.160 (S)	3.21	1.001
2,2'-DiCB	4			12.1	0.397 (S)	1.45	1.001
2,3-DiCB	5			0.618	0.227 (S)	1.51	1.198
2,3'-DiCB	6			7.97	0.205 (S)	1.47	1.177
2,4-DiCB	7			3.44	0.212 (S)	1.40	1.159
2,4'-DiCB	8			49.9	0.188 (S)	1.53	1.208
2,5-DiCB	9			1.89	0.205 (S)	1.49	1.147
2,6-DiCB	10			0.410	0.214 (S)	1.49	1.014
3,3'-DiCB	11			57.5	0.204 (S)	1.53	0.969
3,4-DiCB	12	12 + 13	C	12.0	0.207 (S)	1.48	0.985
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14			1.47	0.203 (S)	1.33	0.927
4,4'-DiCB	15			75.7	0.215 (S)	1.49	1.001
2,2',3-TriCB	16			18.7	0.203 (S)	1.04	1.166
2,2',4-TriCB	17			20.3	0.162 (S)	0.99	1.139
2,2',5-TriCB	18	18 + 30	C B	34.6	0.136 (S)	1.06	1.114
2,2',6-TriCB	19			3.06	0.202 (S)	1.04	1.002
2,3,3'-TriCB	20	20 + 28	C B	179	0.197 (S)	1.02	0.848
2,3,4-TriCB	21	21 + 33	C	57.6	0.194 (S)	1.02	0.857
2,3,4'-TriCB	22		B	40.9	0.211 (S)	1.01	0.873
2,3,5-TriCB	23		U		0.214 (S)		
2,3,6-TriCB	24			0.424	0.118 (S)	1.16	1.159
2,3',4-TriCB	25			12.5	0.176 (S)	1.00	0.825
2,3',5-TriCB	26	26 + 29	C	19.3	0.198 (S)	1.04	1.302
2,3',6-TriCB	27			3.75	0.115 (S)	1.00	1.152
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	104	0.185 (S)	1.02	0.837
2,4',6-TriCB	32			18.2	0.194 (S)	1.05	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34			0.716	0.201 (S)	1.06	1.274
3,3',4-TriCB	35			7.56	0.190 (S)	0.97	0.985
3,3',5-TriCB	36			3.46	0.181 (S)	0.99	0.932
3,4,4'-TriCB	37			65.0	0.204 (S)	1.01	1.001
3,4,5-TriCB	38		K	0.722	0.186 (S)	1.31	0.967
3,4',5-TriCB	39			1.44	0.187 (S)	1.01	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C	66.6	0.189 (S)	0.78	1.337
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			33.0	0.195 (S)	0.79	1.311
2,2',3,5-TeCB	43			3.19	0.226 (S)	0.77	1.247
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	118	0.178 (S)	0.77	1.286
2,2',3,6-TeCB	45	45 + 51	C	10.9	0.200 (S)	0.79	1.147
2,2',3,6'-TeCB	46			3.77	0.233 (S)	0.81	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			18.2	0.193 (S)	0.79	1.274
2,2',4,5'-TeCB	49	49 + 69	C B	81.2	0.167 (S)	0.77	1.259
2,2',4,6-TeCB	50	50 + 53	C	9.53	0.196 (S)	0.80	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	130	0.184 (S)	0.78	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		K J	0.160	0.148 (S)	0.94	1.002
2,3,3',4-TeCB	55			2.42	0.354 (S)	0.71	0.890
2,3,3',4'-TeCB	56		B	75.7	0.346 (S)	0.76	0.905
2,3,3',5-TeCB	57			0.841	0.343 (S)	0.77	0.844
2,3,3',5'-TeCB	58			0.728	0.355 (S)	0.85	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	11.2	0.146 (S)	0.77	1.302
2,3,4,4'-TeCB	60			46.5	0.353 (S)	0.76	0.912
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	294	0.341 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			6.89	0.327 (S)	0.79	0.865
2,3,4',6-TeCB	64		B	48.3	0.139 (S)	0.79	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	166	0.327 (S)	0.77	0.885
2,3',4,5-TeCB	67			5.65	0.308 (S)	0.74	0.857
2,3',4,5'-TeCB	68			1.73	0.331 (S)	0.83	0.832
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			2.64	0.331 (S)	0.80	0.823
2,3',5',6-TeCB	73		J	0.361	0.149 (S)	0.72	1.241
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			32.3	0.371 (S)	0.75	1.000
3,3',4,5-TeCB	78		U		0.319 (S)		
3,3',4,5'-TeCB	79			3.26	0.271 (S)	0.76	0.970
3,3',5,5'-TeCB	80		U		0.307 (S)		
3,4,4',5-TeCB	81		K	1.42	0.357 (S)	0.80	1.001
2,2',3,3',4-PeCB	82			23.3	0.210 (S)	1.49	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	151	0.205 (S)	1.56	0.885
2,2',3,3',6-PeCB	84			40.7	0.233 (S)	1.60	1.162
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	47.1	0.164 (S)	1.55	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	136	0.170 (S)	1.59	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	25.3	0.209 (S)	1.60	1.154
2,2',3,4,6'-PeCB	89			2.02	0.212 (S)	1.57	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	214	0.179 (S)	1.57	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			37.4	0.199 (S)	1.56	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	137	0.205 (S)	1.57	1.120
2,2',3,5,6'-PeCB	94		K	1.02	0.231 (S)	1.82	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			1.02	0.134 (S)	1.45	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			2.41	0.189 (S)	1.69	1.093
2,2',4,6,6'-PeCB	104		U		0.109 (S)		
2,3,3',4,4'-PeCB	105		B	111	0.370 (S)	1.53	1.000
2,3,3',4,5-PeCB	106		U		0.327 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	8.85	0.357 (S)	1.50	0.990
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			21.4	0.317 (S)	1.52	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	211	0.145 (S)	1.59	0.925
2,3,3',5,5'-PeCB	111		J	0.353	0.146 (S)	1.33	0.945
2,3,3',5,6-PeCB	112		U		0.142 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			4.79	0.376 (S)	1.51	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	239	0.356 (S)	1.54	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			1.72	0.134 (S)	1.41	0.958
2,3',4,5',6-PeCB	121		U		0.153 (S)		
2',3,3',4,5-PeCB	122			2.87	0.362 (S)	1.57	1.010
2',3,4,4',5-PeCB	123			4.52	0.383 (S)	1.52	1.000
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			2.37	0.444 (S)	1.38	1.000
3,3',4,5,5'-PeCB	127		U		0.327 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C B	45.6	0.277 (S)	1.23	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	301	0.280 (S)	1.25	0.929
2,2',3,3',4,5'-HxCB	130			20.9	0.342 (S)	1.32	0.913
2,2',3,3',4,6-HxCB	131		K	2.53	0.337 (S)	1.50	1.159
2,2',3,3',4,6'-HxCB	132		B	74.7	0.350 (S)	1.26	1.173
2,2',3,3',5,5'-HxCB	133			5.57	0.322 (S)	1.19	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	11.3	0.340 (S)	1.24	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C B	82.8	0.201 (S)	1.26	1.103
2,2',3,3',6,6'-HxCB	136			26.5	0.164 (S)	1.25	1.023
2,2',3,4,4',5-HxCB	137			9.76	0.349 (S)	1.32	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	4.57	0.315 (S)	1.21	1.152
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		B	26.8	0.306 (S)	1.28	0.903
2,2',3,4,5,6-HxCB	142		U		0.346 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			8.92	0.204 (S)	1.31	1.121
2,2',3,4,6,6'-HxCB	145		U		0.174 (S)		
2,2',3,4',5,5'-HxCB	146		B G	47.9	0.284 (S)	1.24	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	188	0.306 (S)	1.25	1.133
2,2',3,4',5,6'-HxCB	148			0.690	0.210 (S)	1.33	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150			0.716	0.166 (S)	1.35	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	0.209	0.161 (S)	1.28	1.006
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	272	0.252 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.112 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C B	27.2	0.291 (S)	1.22	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		B	20.8	0.223 (S)	1.22	0.938
2,3,3',4,5,5'-HxCB	159			2.53	0.227 (S)	1.21	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.239 (S)		
2,3,3',4',5,5'-HxCB	162			1.49	0.234 (S)	1.37	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			15.9	0.226 (S)	1.31	0.921
2,3,3',5,5',6-HxCB	165			0.718	0.267 (S)	1.39	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		B	10.8	0.220 (S)	1.18	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.330 (S)		
2,2',3,3',4,4',5-HpCB	170		B	55.9	0.240 (S)	1.00	1.001
2,2',3,3',4,4',6-HpCB	171	171 + 173	C B	19.6	0.221 (S)	1.04	1.162
2,2',3,3',4,5,5'-HpCB	172			9.88	0.219 (S)	0.99	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		B	49.7	0.200 (S)	1.02	1.133
2,2',3,3',4,5',6-HpCB	175			3.36	0.206 (S)	0.92	1.102
2,2',3,3',4,6,6'-HpCB	176			8.02	0.161 (S)	1.03	1.034
2,2',3,3',4',5,6-HpCB	177		B	47.2	0.214 (S)	1.03	1.145
2,2',3,3',5,5',6-HpCB	178			20.1	0.213 (S)	1.04	1.084
2,2',3,3',5,6,6'-HpCB	179		B	29.8	0.158 (S)	1.04	1.009
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	111	0.195 (S)	1.04	1.000
2,2',3,4,4',5,6-HpCB	181			0.451	0.213 (S)	1.01	1.156
2,2',3,4,4',5,6'-HpCB	182			0.708	0.204 (S)	0.89	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C B	41.5	0.207 (S)	1.00	1.126
2,2',3,4,4',6,6'-HpCB	184		K J	0.165	0.158 (S)	0.59	1.024
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.172 (S)		
2,2',3,4',5,5',6-HpCB	187		B G	109	0.198 (S)	1.03	1.109
2,2',3,4',5,6,6'-HpCB	188		J	0.338	0.138 (S)	1.11	1.001
2,3,3',4,4',5,5'-HpCB	189			2.56	0.313 (S)	0.93	1.001
2,3,3',4,4',5,6-HpCB	190		B	9.09	0.166 (S)	0.98	0.947
2,3,3',4,4',5',6-HpCB	191			1.97	0.161 (S)	1.15	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.184 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		B	29.0	0.296 (S)	0.94	0.991
2,2',3,3',4,4',5,6-OcCB	195			12.0	0.317 (S)	0.89	0.945
2,2',3,3',4,4',5,6'-OcCB	196		B	16.7	0.226 (S)	0.85	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	4.87	0.176 (S)	0.95	1.045
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C B	51.7	0.238 (S)	0.91	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			7.01	0.171 (S)	0.90	1.023
2,2',3,3',5,5',6,6'-OcCB	202			13.1	0.171 (S)	0.89	1.000
2,2',3,4,4',5,5',6-OcCB	203		B	21.4	0.218 (S)	0.87	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.174 (S)		
2,3,3',4,4',5,5',6-OcCB	205			1.50	0.292 (S)	0.84	1.001
2,2',3,3',4,4',5,5',6-NoCB	206		B	28.2	0.392 (S)	0.79	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			4.33	0.276 (S)	0.81	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			11.8	0.264 (S)	0.75	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209		B	28.3	0.266 (S)	1.23	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

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Report Filename: 1668_PCB1668_PCBTF_L19652-32_Form1A_PB3C_197AS9_SJ1608686.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-07-S
Sample Collection:
08-May-2013 11:47

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-32
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 18:09:42	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_197A S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_197 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	68.6

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		51.4
Total Dichloro Biphenyls		223
Total Trichloro Biphenyls		591
Total Tetrachloro Biphenyls		1170
Total Pentachloro Biphenyls		1430
Total Hexachloro Biphenyls		1210
Total Heptachloro Biphenyls		520
Total Octachloro Biphenyls		157
Total Nonachloro Biphenyls		44.3
Decachloro Biphenyl		28.3
TOTAL PCBs		5420

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 11-Jun-2013 15:28:31; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-32_Form1AHT_SJ1608686.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-07-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 08-May-2013 11:47

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-32

Sample Size: 10.4 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_197A S: 9**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			32.3	0.371	0.0001	3.23e-03	3.23e-03	
3,4,4',5-TeCB	81		U		0.357	0.0003	0.00e+00	5.36e-05	
2,3,3',4,4'-PeCB	105			111	0.370	0.00003	3.33e-03	3.33e-03	
2,3,4,4',5-PeCB	114			4.79	0.376	0.00003	1.44e-04	1.44e-04	
2,3',4,4',5-PeCB	118			239	0.356	0.00003	7.17e-03	7.17e-03	
2',3,4,4',5-PeCB	123			4.52	0.383	0.00003	1.36e-04	1.36e-04	
3,3',4,4',5-PeCB	126			2.37	0.444	0.1	2.37e-01	2.37e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	27.2	0.291	0.00003	8.16e-04	8.16e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			10.8	0.220	0.00003	3.24e-04	3.24e-04	
3,3',4,4',5,5'-HxCB	169		U		0.330	0.03	0.00e+00	4.95e-03	
2,3,3',4,4',5,5'-HpCB	189			2.56	0.313	0.00003	7.68e-05	7.68e-05	
					TOTAL TEQ		0.252	0.257	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 11-Jun-2013 15:28:31; Application: XMLTransformer-1.13.42; Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-32_TEQ_SJ1608686.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-01-S
Sample Collection:
08-May-2013 12:06

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-33
Matrix:	SOLID	**Sample Size:**	9.91 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 22:56:50	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_198 S: 3**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_198 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	76.4

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			7.79	0.104 (S)	3.14	1.001
3-MoCB	2			29.9	0.0875 (S)	3.02	0.989
4-MoCB	3		B	8.44	0.0779 (S)	3.17	1.001
2,2'-DiCB	4			10.2	0.297 (S)	1.47	1.001
2,3-DiCB	5		K	0.532	0.167 (S)	1.31	1.197
2,3'-DiCB	6			7.35	0.150 (S)	1.55	1.175
2,4-DiCB	7			3.22	0.153 (S)	1.51	1.159
2,4'-DiCB	8			49.2	0.138 (S)	1.53	1.206
2,5-DiCB	9			1.53	0.148 (S)	1.54	1.145
2,6-DiCB	10			0.415	0.156 (S)	1.45	1.013
3,3'-DiCB	11			40.7	0.156 (S)	1.51	0.969
3,4-DiCB	12	12 + 13	C	9.90	0.151 (S)	1.64	0.985
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	1.22	0.148 (S)	1.13	0.926
4,4'-DiCB	15			64.0	0.153 (S)	1.53	1.001
2,2',3-TriCB	16			17.6	0.0565 (S)	1.03	1.165
2,2',4-TriCB	17			19.3	0.0505 (Q)	1.09	1.138
2,2',5-TriCB	18	18 + 30	C B	34.1	0.0505 (Q)	1.03	1.113
2,2',6-TriCB	19			3.36	0.0585 (S)	1.01	1.001
2,3,3'-TriCB	20	20 + 28	C B	153	0.0733 (S)	1.02	0.849
2,3,4-TriCB	21	21 + 33	C	43.6	0.0707 (S)	1.02	0.858
2,3,4'-TriCB	22		B	33.6	0.0781 (S)	1.01	0.873
2,3,5-TriCB	23		J	0.103	0.0796 (S)	1.11	1.283
2,3,6-TriCB	24			0.547	0.0505 (Q)	1.06	1.158
2,3',4-TriCB	25			10.5	0.0650 (S)	1.03	0.826
2,3',5-TriCB	26	26 + 29	C	17.2	0.0745 (S)	1.03	1.301
2,3',6-TriCB	27			3.69	0.0505 (Q)	1.12	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	87.5	0.0693 (S)	1.02	0.838
2,4',6-TriCB	32			16.7	0.0714 (S)	1.02	1.196
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34			0.631	0.0759 (S)	0.90	1.273
3,3',4-TriCB	35			6.13	0.0722 (S)	1.06	0.985
3,3',5-TriCB	36			2.51	0.0692 (S)	1.03	0.932
3,4,4'-TriCB	37			49.4	0.0759 (S)	1.02	1.001
3,4,5-TriCB	38			0.875	0.0684 (S)	1.07	0.968
3,4',5-TriCB	39			1.38	0.0691 (S)	0.96	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C	63.5	0.0634 (S)	0.76	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			32.4	0.0657 (S)	0.78	1.310
2,2',3,5-TeCB	43			3.47	0.0781 (S)	0.74	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	120	0.0594 (S)	0.77	1.285
2,2',3,6-TeCB	45	45 + 51	C	12.7	0.0670 (S)	0.76	1.146
2,2',3,6'-TeCB	46			4.74	0.0770 (S)	0.75	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			18.2	0.0646 (S)	0.80	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	76.6	0.0557 (S)	0.78	1.258
2,2',4,6-TeCB	50	50 + 53	C	11.1	0.0655 (S)	0.75	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	136	0.0609 (S)	0.77	1.233
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		K J	0.145	0.0505 (Q)	1.05	1.001
2,3,3',4-TeCB	55			2.25	0.140 (S)	0.76	0.890
2,3,3',4'-TeCB	56		B	60.5	0.139 (S)	0.77	0.905
2,3,3',5-TeCB	57			0.946	0.136 (S)	0.81	0.844
2,3,3',5'-TeCB	58			0.750	0.138 (S)	0.76	0.851
2,3,3',6-TeCB	59	59 + 62 + 75	C	11.2	0.0505 (Q)	0.77	1.301
2,3,4,4'-TeCB	60			36.6	0.137 (S)	0.76	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	236	0.134 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			6.14	0.129 (S)	0.78	0.865
2,3,4',6-TeCB	64		B	47.7	0.0505 (Q)	0.77	1.347
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	124	0.126 (S)	0.77	0.885
2,3',4,5-TeCB	67			5.65	0.121 (S)	0.76	0.857
2,3',4,5'-TeCB	68			1.49	0.131 (S)	0.83	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			2.39	0.131 (S)	0.75	0.823
2,3',5',6-TeCB	73		J	0.266	0.0505 (Q)	0.79	1.240
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			25.0	0.152 (S)	0.77	1.000
3,3',4,5-TeCB	78		U		0.129 (S)		
3,3',4,5'-TeCB	79			2.63	0.109 (S)	0.80	0.970
3,3',5,5'-TeCB	80		J	0.193	0.120 (S)	0.77	0.924
3,4,4',5-TeCB	81		K	1.03	0.139 (S)	0.73	1.000
2,2',3,3',4-PeCB	82			22.3	0.108 (S)	1.55	0.933
2,2',3,3',5-PeCB	83	83 + 99	C B	140	0.107 (S)	1.59	0.886
2,2',3,3',6-PeCB	84			45.3	0.121 (S)	1.55	1.162
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	44.7	0.0848 (S)	1.55	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	133	0.0876 (S)	1.55	0.902
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	25.2	0.105 (S)	1.57	1.153
2,2',3,4,6'-PeCB	89			2.05	0.110 (S)	1.66	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	205	0.0908 (S)	1.55	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			38.0	0.101 (S)	1.62	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	151	0.104 (S)	1.58	1.120
2,2',3,5,6'-PeCB	94			0.967	0.117 (S)	1.51	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			1.11	0.0505 (Q)	1.55	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		K	2.05	0.0965 (S)	1.85	1.093
2,2',4,6,6'-PeCB	104		U		0.0505 (Q)		
2,3,3',4,4'-PeCB	105		B	87.0	0.196 (S)	1.55	1.001
2,3,3',4,5-PeCB	106		U		0.176 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	7.62	0.189 (S)	1.48	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			17.0	0.163 (S)	1.51	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	210	0.0758 (S)	1.54	0.925
2,3,3',5,5'-PeCB	111		J	0.402	0.0748 (S)	1.35	0.945
2,3,3',5,6-PeCB	112		U		0.0752 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			3.91	0.197 (S)	1.64	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	194	0.188 (S)	1.52	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			1.65	0.0682 (S)	1.62	0.959
2,3',4,5',6-PeCB	121		J	0.108	0.0794 (S)	1.48	1.199
2',3,3',4,5-PeCB	122			2.22	0.189 (S)	1.54	1.010
2',3,4,4',5-PeCB	123			4.12	0.201 (S)	1.63	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			1.53	0.215 (S)	1.58	1.000
3,3',4,5,5'-PeCB	127		J	0.258	0.173 (S)	1.32	1.041
2,2',3,3',4,4'-HxCB	128	128 + 166	C B	38.0	0.170 (S)	1.26	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	260	0.170 (S)	1.24	0.929
2,2',3,3',4,5'-HxCB	130			17.4	0.209 (S)	1.29	0.913
2,2',3,3',4,6-HxCB	131			2.63	0.218 (S)	1.21	1.159
2,2',3,3',4,6'-HxCB	132		B	68.1	0.214 (S)	1.26	1.173
2,2',3,3',5,5'-HxCB	133			4.66	0.196 (S)	1.12	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	10.7	0.212 (S)	1.30	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C B	75.7	0.0544 (S)	1.27	1.103
2,2',3,3',6,6'-HxCB	136			25.5	0.0505 (Q)	1.25	1.023
2,2',3,4,4',5-HxCB	137			8.46	0.206 (S)	1.28	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	3.79	0.192 (S)	1.15	1.152
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		B	25.1	0.191 (S)	1.25	0.903
2,2',3,4,5,6-HxCB	142		U		0.207 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			8.65	0.0544 (S)	1.20	1.121
2,2',3,4,6,6'-HxCB	145		J	0.095	0.0505 (Q)	1.10	1.033
2,2',3,4',5,5'-HxCB	146		B G	42.9	0.187 (S)	1.26	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	177	0.191 (S)	1.25	1.133
2,2',3,4',5,6'-HxCB	148		K	0.507	0.0562 (S)	1.46	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150			0.678	0.0505 (Q)	1.16	1.011
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	0.210	0.0505 (Q)	1.37	1.006
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	223	0.152 (S)	1.25	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		J	0.075	0.0505 (Q)	1.39	1.001
2,3,3',4,4',5-HxCB	156	156 + 157	C B	20.6	0.173 (S)	1.25	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		B	18.5	0.136 (S)	1.22	0.938
2,3,3',4,5,5'-HxCB	159			2.33	0.140 (S)	1.22	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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2,3,3',4,5',6-HxCB	161		U		0.138 (S)		
2,3,3',4',5,5'-HxCB	162			1.20	0.142 (S)	1.08	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			14.1	0.139 (S)	1.27	0.921
2,3,3',5,5',6-HxCB	165			0.469	0.165 (S)	1.20	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		B	8.41	0.133 (S)	1.19	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.520 (S)		
2,2',3,3',4,4',5-HpCB	170		B	45.8	0.0587 (S)	1.08	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C B	16.8	0.0542 (S)	1.06	1.162
2,2',3,3',4,5,5'-HpCB	172			9.08	0.0516 (S)	1.04	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		B	46.1	0.0505 (Q)	1.01	1.133
2,2',3,3',4,5',6-HpCB	175			2.99	0.0505 (Q)	1.06	1.102
2,2',3,3',4,6,6'-HpCB	176			7.00	0.0505 (Q)	1.08	1.034
2,2',3,3',4',5,6-HpCB	177		B	39.6	0.0531 (S)	1.06	1.145
2,2',3,3',5,5',6-HpCB	178			17.0	0.0513 (S)	1.05	1.085
2,2',3,3',5,6,6'-HpCB	179		B	25.8	0.0505 (Q)	1.04	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	102	0.0505 (S)	1.05	1.001
2,2',3,4,4',5,6-HpCB	181			0.457	0.0521 (S)	0.99	1.156
2,2',3,4,4',5,6'-HpCB	182		K	0.519	0.0505 (Q)	1.30	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C B	36.9	0.0505 (Q)	1.04	1.126
2,2',3,4,4',6,6'-HpCB	184		J	0.170	0.0505 (Q)	0.91	1.024
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0505 (Q)		
2,2',3,4',5,5',6-HpCB	187		B G	91.8	0.0505 (Q)	1.04	1.110
2,2',3,4',5,6,6'-HpCB	188		J	0.328	0.0505 (Q)	1.08	1.000
2,3,3',4,4',5,5'-HpCB	189			1.84	0.112 (S)	0.97	1.001
2,3,3',4,4',5,6-HpCB	190		B	7.41	0.0505 (Q)	1.04	0.947
2,3,3',4,4',5',6-HpCB	191			1.66	0.0505 (Q)	0.92	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.0505 (Q)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		B	25.0	0.0864 (S)	0.90	0.991
2,2',3,3',4,4',5,6-OcCB	195			9.57	0.0933 (S)	0.92	0.945
2,2',3,3',4,4',5,6'-OcCB	196		B	14.3	0.0505 (Q)	0.92	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	4.11	0.0505 (Q)	0.96	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C B	43.6	0.0505 (Q)	0.89	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			5.91	0.0505 (Q)	0.84	1.023
2,2',3,3',5,5',6,6'-OcCB	202			11.8	0.0505 (Q)	0.87	1.000
2,2',3,4,4',5,5',6-OcCB	203		B	16.9	0.0505 (Q)	0.88	0.920
2,2',3,4,4',5,6,6'-OcCB	204		K J	0.054	0.0505 (Q)	1.10	1.039
2,3,3',4,4',5,5',6-OcCB	205			1.25	0.0787 (S)	0.76	1.001
2,2',3,3',4,4',5,5',6-NoCB	206		B	28.4	0.125 (S)	0.79	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			4.16	0.0946 (S)	0.78	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			13.1	0.0954 (S)	0.78	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209		B	30.9	0.0670 (S)	1.16	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 11-Jun-2013 15:27:35; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-33_Form1A_PB3C_198S3_SJ1608763.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-01-S
Sample Collection:
08-May-2013 12:06

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-33
Matrix:	SOLID	**Sample Size:**	9.91 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 22:56:50	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_198 S: 3**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_198 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	76.4

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		46.1
Total Dichloro Biphenyls		187
Total Trichloro Biphenyls		502
Total Tetrachloro Biphenyls		1040
Total Pentachloro Biphenyls		1340
Total Hexachloro Biphenyls		1060
Total Heptachloro Biphenyls		453
Total Octachloro Biphenyls		132
Total Nonachloro Biphenyls		45.7
Decachloro Biphenyl		30.9
TOTAL PCBs		4840

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 11-Jun-2013 15:28:31; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-33_Form1AHT_SJ1608763.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-01-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	08-May-2013 12:06		
Contract No.:	4273	**Project No.**	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Matrix:	SOLID	**Lab Sample I.D.:**	L19652-33
Sample Size:	9.91 g (dry)	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg (dry weight basis)	**Sample Data Filename(s):**	**PB3C_198 S: 3**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			25.0	0.152	0.0001	2.50e-03	2.50e-03	
3,4,4',5-TeCB	81		U		0.139	0.0003	0.00e+00	2.09e-05	
2,3,3',4,4'-PeCB	105			87.0	0.196	0.00003	2.61e-03	2.61e-03	
2,3,4,4',5-PeCB	114			3.91	0.197	0.00003	1.17e-04	1.17e-04	
2,3',4,4',5-PeCB	118			194	0.188	0.00003	5.82e-03	5.82e-03	
2',3,4,4',5-PeCB	123			4.12	0.201	0.00003	1.24e-04	1.24e-04	
3,3',4,4',5-PeCB	126			1.53	0.215	0.1	1.53e-01	1.53e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	20.6	0.173	0.00003	6.18e-04	6.18e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			8.41	0.133	0.00003	2.52e-04	2.52e-04	
3,3',4,4',5,5'-HxCB	169		U		0.520	0.03	0.00e+00	7.80e-03	
2,3,3',4,4',5,5'-HpCB	189			1.84	0.112	0.00003	5.52e-05	5.52e-05	
					TOTAL TEQ		0.165	0.173	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 11-Jun-2013 15:28:31; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-33_TEQ_SJ1608763.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-03-S
Sample Collection:
08-May-2013 13:57

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-34 (A)
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 00:01:09	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_198 S: 4**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_198 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	20.7

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			0.847	0.0731 (S)	3.07	1.003
3-MoCB	2			3.75	0.0651 (S)	3.15	0.989
4-MoCB	3		B	1.03	0.0602 (S)	3.30	1.001
2,2'-DiCB	4			0.991	0.248 (S)	1.48	1.001
2,3-DiCB	5		U		0.146 (S)		
2,3'-DiCB	6			0.518	0.131 (S)	1.33	1.174
2,4-DiCB	7		J	0.249	0.134 (S)	1.75	1.157
2,4'-DiCB	8			2.73	0.120 (S)	1.54	1.206
2,5-DiCB	9		K J	0.197	0.130 (S)	1.00	1.144
2,6-DiCB	10		U		0.137 (S)		
3,3'-DiCB	11			5.29	0.136 (S)	1.50	0.968
3,4-DiCB	12	12 + 13	C K	1.28	0.132 (S)	2.22	0.985
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K J	0.201	0.130 (S)	0.81	0.926
4,4'-DiCB	15			4.09	0.138 (S)	1.42	1.001
2,2',3-TriCB	16			1.03	0.0647 (S)	1.17	1.165
2,2',4-TriCB	17			1.43	0.0554 (S)	1.05	1.138
2,2',5-TriCB	18	18 + 30	C B	2.41	0.0466 (Q)	1.00	1.113
2,2',6-TriCB	19		J	0.303	0.0674 (S)	1.18	1.001
2,3,3'-TriCB	20	20 + 28	C B	10.8	0.0466 (Q)	1.00	0.848
2,3,4-TriCB	21	21 + 33	C	2.92	0.0466 (Q)	0.99	0.857
2,3,4'-TriCB	22		B	2.53	0.0486 (S)	1.07	0.872
2,3,5-TriCB	23		U		0.0495 (S)		
2,3,6-TriCB	24		K J	0.048	0.0466 (Q)	1.80	1.158
2,3',4-TriCB	25			0.701	0.0466 (Q)	1.04	0.825
2,3',5-TriCB	26	26 + 29	C	1.23	0.0466 (Q)	1.04	1.301
2,3',6-TriCB	27		K J	0.259	0.0466 (Q)	0.76	1.152
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	6.70	0.0466 (Q)	1.02	0.837
2,4',6-TriCB	32			1.38	0.0466 (Q)	1.05	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U		0.0472 (S)		
3,3',4-TriCB	35			0.495	0.0466 (Q)	1.04	0.985
3,3',5-TriCB	36		J	0.251	0.0466 (Q)	1.09	0.932
3,4,4'-TriCB	37			3.71	0.0470 (S)	1.02	1.001
3,4,5-TriCB	38		K J	0.268	0.0466 (Q)	0.82	0.967
3,4',5-TriCB	39		J	0.117	0.0466 (Q)	0.90	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C	3.48	0.0690 (S)	0.75	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			1.99	0.0715 (S)	0.78	1.311
2,2',3,5-TeCB	43		J	0.145	0.0850 (S)	0.76	1.247
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	7.49	0.0647 (S)	0.82	1.285
2,2',3,6-TeCB	45	45 + 51	C	0.784	0.0729 (S)	0.82	1.147
2,2',3,6'-TeCB	46		J	0.292	0.0839 (S)	0.85	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			1.10	0.0703 (S)	0.78	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	5.66	0.0606 (S)	0.80	1.258
2,2',4,6-TeCB	50	50 + 53	C	0.734	0.0713 (S)	0.88	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	9.79	0.0662 (S)	0.77	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0544 (S)		
2,3,3',4-TeCB	55		J	0.149	0.0823 (S)	0.68	0.889
2,3,3',4'-TeCB	56		B	4.42	0.0822 (S)	0.79	0.905
2,3,3',5-TeCB	57		U		0.0801 (S)		
2,3,3',5'-TeCB	58		U		0.0813 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C K	0.704	0.0531 (S)	0.92	1.302
2,3,4,4'-TeCB	60			2.79	0.0810 (S)	0.79	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	19.5	0.0791 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			0.456	0.0761 (S)	0.86	0.865
2,3,4',6-TeCB	64		B	3.21	0.0510 (S)	0.81	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	10.1	0.0742 (S)	0.76	0.885
2,3',4,5-TeCB	67		J	0.338	0.0715 (S)	0.79	0.857
2,3',4,5'-TeCB	68		K J	0.143	0.0774 (S)	0.94	0.832
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		J	0.193	0.0773 (S)	0.69	0.823
2,3',5',6-TeCB	73		U		0.0535 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			2.13	0.0887 (S)	0.79	1.000
3,3',4,5-TeCB	78		U		0.0761 (S)		
3,3',4,5'-TeCB	79		J	0.279	0.0642 (S)	0.81	0.970
3,3',5,5'-TeCB	80		U		0.0708 (S)		
3,4,4',5-TeCB	81		K J	0.102	0.0812 (S)	0.78	1.000
2,2',3,3',4-PeCB	82		G	1.56	0.0689 (S)	1.43	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	12.4	0.0685 (S)	1.61	0.885
2,2',3,3',6-PeCB	84			2.95	0.0771 (S)	1.47	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	3.89	0.0543 (S)	1.62	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	10.8	0.0561 (S)	1.56	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	1.94	0.0673 (S)	1.73	1.154
2,2',3,4,6'-PeCB	89		K J	0.162	0.0704 (S)	1.11	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	16.6	0.0581 (S)	1.59	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			2.97	0.0648 (S)	1.53	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	10.4	0.0664 (S)	1.71	1.120
2,2',3,5,6'-PeCB	94		J	0.084	0.0747 (S)	1.55	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		K J	0.090	0.0466 (Q)	1.21	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		J	0.185	0.0618 (S)	1.55	1.093
2,2',4,6,6'-PeCB	104		U		0.0466 (Q)		
2,3,3',4,4'-PeCB	105		B	8.85	0.0943 (S)	1.45	1.000
2,3,3',4,5-PeCB	106		U		0.0864 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	0.748	0.0926 (S)	1.43	0.990
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			1.64	0.0801 (S)	1.65	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	17.8	0.0485 (S)	1.59	0.924
2,3,3',5,5'-PeCB	111		U		0.0479 (S)		
2,3,3',5,6-PeCB	112		U		0.0482 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			0.393	0.0946 (S)	1.58	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	19.5	0.0912 (S)	1.52	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		J	0.134	0.0466 (Q)	1.68	0.959
2,3',4,5',6-PeCB	121		U		0.0508 (S)		
2',3,3',4,5-PeCB	122		J	0.234	0.0928 (S)	1.59	1.010
2',3,4,4',5-PeCB	123			0.418	0.0975 (S)	1.69	1.000
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		K J	0.147	0.103 (S)	1.87	1.000
3,3',4,5,5'-PeCB	127		U		0.0847 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C B	3.72	0.0672 (S)	1.27	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	23.7	0.0672 (S)	1.27	0.929
2,2',3,3',4,5'-HxCB	130			1.52	0.0824 (S)	1.18	0.913
2,2',3,3',4,6-HxCB	131		K J	0.184	0.0861 (S)	1.57	1.159
2,2',3,3',4,6'-HxCB	132		B	5.21	0.0846 (S)	1.16	1.174
2,2',3,3',5,5'-HxCB	133		J	0.356	0.0772 (S)	1.07	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	0.967	0.0839 (S)	1.23	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C B	5.32	0.0556 (S)	1.24	1.104
2,2',3,3',6,6'-HxCB	136			1.50	0.0466 (Q)	1.27	1.024
2,2',3,4,4',5-HxCB	137			0.902	0.0812 (S)	1.09	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C J	0.365	0.0758 (S)	1.38	1.152
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		B	1.96	0.0755 (S)	1.20	0.903
2,2',3,4,5,6-HxCB	142		U		0.0817 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		K	0.616	0.0556 (S)	1.49	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0484 (S)		
2,2',3,4',5,5'-HxCB	146		B	4.04	0.0739 (S)	1.19	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	13.7	0.0753 (S)	1.20	1.133
2,2',3,4',5,6'-HxCB	148		U G		0.0575 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.0466 (Q)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0466 (Q)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	19.7	0.0602 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0466 (Q)		
2,3,3',4,4',5-HxCB	156	156 + 157	C B	2.32	0.0670 (S)	1.16	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		B	1.73	0.0539 (S)	1.18	0.938
2,3,3',4,5,5'-HxCB	159		J	0.169	0.0552 (S)	1.35	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.0543 (S)		
2,3,3',4',5,5'-HxCB	162		K J	0.107	0.0563 (S)	1.71	0.988
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			1.12	0.0551 (S)	1.24	0.921
2,3,3',5,5',6-HxCB	165		K J	0.070	0.0650 (S)	1.01	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		B	0.904	0.0526 (S)	1.34	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.0800 (S)		
2,2',3,3',4,4',5-HpCB	170		B	3.83	0.0662 (S)	1.02	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C B	1.41	0.0698 (S)	1.04	1.162
2,2',3,3',4,5,5'-HpCB	172			0.784	0.0664 (S)	1.16	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		B	3.38	0.0641 (S)	1.10	1.133
2,2',3,3',4,5',6-HpCB	175		J	0.266	0.0639 (S)	0.91	1.102
2,2',3,3',4,6,6'-HpCB	176		K	0.557	0.0496 (S)	1.22	1.034
2,2',3,3',4',5,6-HpCB	177		B	3.33	0.0685 (S)	0.97	1.144
2,2',3,3',5,5',6-HpCB	178			1.47	0.0662 (S)	1.01	1.084
2,2',3,3',5,6,6'-HpCB	179		B	1.83	0.0489 (S)	1.03	1.009
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	7.83	0.0537 (S)	1.04	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.0672 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.0633 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C B	3.03	0.0642 (S)	1.03	1.126
2,2',3,4,4',6,6'-HpCB	184		U		0.0495 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0526 (S)		
2,2',3,4',5,5',6-HpCB	187		B	8.23	0.0619 (S)	1.03	1.109
2,2',3,4',5,6,6'-HpCB	188		U		0.0466 (Q)		
2,3,3',4,4',5,5'-HpCB	189		K J	0.252	0.106 (S)	1.40	1.001
2,3,3',4,4',5,6-HpCB	190		B	0.672	0.0509 (S)	1.13	0.947
2,3,3',4,4',5',6-HpCB	191		K J	0.145	0.0500 (S)	1.59	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.0555 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		B	2.17	0.0658 (S)	0.89	0.991
2,2',3,3',4,4',5,6-OcCB	195			0.780	0.0710 (S)	0.81	0.945
2,2',3,3',4,4',5,6'-OcCB	196		B	1.21	0.0578 (S)	0.82	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C K G	0.407	0.0466 (Q)	1.06	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C B	3.64	0.0624 (S)	0.92	1.114
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			0.436	0.0466 (Q)	0.86	1.023
2,2',3,3',5,5',6,6'-OcCB	202			0.976	0.0478 (S)	0.91	1.000
2,2',3,4,4',5,5',6-OcCB	203		B	1.49	0.0571 (S)	0.96	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0466 (Q)		
2,3,3',4,4',5,5',6-OcCB	205		J	0.113	0.0602 (S)	0.79	1.000
2,2',3,3',4,4',5,5',6-NoCB	206		B	2.34	0.130 (S)	0.74	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207		J	0.350	0.0953 (S)	0.81	1.019
2,2',3,3',4,5,5',6,6'-NoCB	208			0.998	0.0938 (S)	0.84	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209		B	2.58	0.0644 (S)	1.21	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 11-Jun-2013 15:27:35; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-34_Form1A_PB3C_198S4_SJ1608765.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-03-S
Sample Collection:
08-May-2013 13:57

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-34 (A)
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 00:01:09	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_198 S: 4**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_198 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	20.7

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		5.63
Total Dichloro Biphenyls		13.9
Total Trichloro Biphenyls		36.0
Total Tetrachloro Biphenyls		75.0
Total Pentachloro Biphenyls		113
Total Hexachloro Biphenyls		89.2
Total Heptachloro Biphenyls		36.1
Total Octachloro Biphenyls		10.8
Total Nonachloro Biphenyls		3.69
Decachloro Biphenyl		2.58
TOTAL PCBs		386

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-34_Form1AHT_SJ1608765.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-03-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 08-May-2013 13:57

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-34 (A)

Sample Size: 10.7 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_198 S: 4**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			2.13	0.0887	0.0001	2.13e-04	2.13e-04	
3,4,4',5-TeCB	81		U		0.0812	0.0003	0.00e+00	1.22e-05	
2,3,3',4,4'-PeCB	105			8.85	0.0943	0.00003	2.66e-04	2.66e-04	
2,3,4,4',5-PeCB	114			0.393	0.0946	0.00003	1.18e-05	1.18e-05	
2,3',4,4',5-PeCB	118			19.5	0.0912	0.00003	5.85e-04	5.85e-04	
2',3,4,4',5-PeCB	123			0.418	0.0975	0.00003	1.25e-05	1.25e-05	
3,3',4,4',5-PeCB	126		U		0.103	0.1	0.00e+00	5.15e-03	
2,3,3',4,4',5-HxCB	156	156 + 157	C	2.32	0.0670	0.00003	6.96e-05	6.96e-05	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			0.904	0.0526	0.00003	2.71e-05	2.71e-05	
3,3',4,4',5,5'-HxCB	169		U		0.0800	0.03	0.00e+00	1.20e-03	
2,3,3',4,4',5,5'-HpCB	189		U		0.106	0.00003	0.00e+00	1.59e-06	
					TOTAL TEQ		0.00118	0.00755	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-03-S (Duplicate)
Sample Collection:
08-May-2013 13:57

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	WG43721-103 (DUP L19652-34)
Matrix:	SOLID	**Sample Size:**	11.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 01:05:16	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_198 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_198 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	20.3

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			0.876	0.0939 (S)	3.28	1.001
3-MoCB	2			4.23	0.0784 (S)	3.06	0.988
4-MoCB	3		B	1.01	0.0689 (S)	3.42	1.001
2,2'-DiCB	4			0.961	0.306 (S)	1.33	1.001
2,3-DiCB	5		U		0.180 (S)		
2,3'-DiCB	6			0.519	0.161 (S)	1.57	1.174
2,4-DiCB	7		K J	0.222	0.165 (S)	2.14	1.157
2,4'-DiCB	8			3.29	0.148 (S)	1.49	1.206
2,5-DiCB	9		K J	0.187	0.160 (S)	2.36	1.144
2,6-DiCB	10		U		0.168 (S)		
3,3'-DiCB	11			6.41	0.168 (S)	1.53	0.968
3,4-DiCB	12	12 + 13	C K	1.72	0.163 (S)	5.43	0.985
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U		0.160 (S)		
4,4'-DiCB	15			4.15	0.167 (S)	1.46	1.001
2,2',3-TriCB	16			1.08	0.0612 (S)	0.93	1.165
2,2',4-TriCB	17			1.59	0.0524 (S)	1.13	1.138
2,2',5-TriCB	18	18 + 30	C B	2.51	0.0444 (Q)	1.05	1.113
2,2',6-TriCB	19		J	0.327	0.0615 (S)	1.02	1.001
2,3,3'-TriCB	20	20 + 28	C B	11.2	0.0455 (S)	1.02	0.848
2,3,4-TriCB	21	21 + 33	C	3.18	0.0444 (Q)	1.00	0.858
2,3,4'-TriCB	22		B	2.75	0.0485 (S)	1.05	0.873
2,3,5-TriCB	23		U		0.0494 (S)		
2,3,6-TriCB	24		U		0.0444 (Q)		
2,3',4-TriCB	25			0.785	0.0444 (Q)	1.00	0.825
2,3',5-TriCB	26	26 + 29	C	1.21	0.0462 (S)	1.07	1.300
2,3',6-TriCB	27		J	0.268	0.0444 (Q)	0.94	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	6.78	0.0444 (Q)	1.05	0.837
2,4',6-TriCB	32			1.45	0.0444 (Q)	0.91	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.061	0.0471 (S)	1.00	1.273
3,3',4-TriCB	35			0.506	0.0448 (S)	1.16	0.985
3,3',5-TriCB	36		J	0.295	0.0444 (Q)	1.03	0.932
3,4,4'-TriCB	37			3.91	0.0476 (S)	1.01	1.001
3,4,5-TriCB	38		J	0.151	0.0444 (Q)	1.05	0.968
3,4',5-TriCB	39		J	0.105	0.0444 (Q)	1.15	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C	3.66	0.0548 (S)	0.78	1.335
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			2.14	0.0568 (S)	0.70	1.310
2,2',3,5-TeCB	43		J	0.191	0.0675 (S)	0.86	1.245
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	7.68	0.0514 (S)	0.80	1.284
2,2',3,6-TeCB	45	45 + 51	C	0.773	0.0579 (S)	0.78	1.146
2,2',3,6'-TeCB	46		J	0.300	0.0666 (S)	0.86	1.160
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			1.17	0.0558 (S)	0.86	1.272
2,2',4,5'-TeCB	49	49 + 69	C B	5.82	0.0481 (S)	0.75	1.258
2,2',4,6-TeCB	50	50 + 53	C	0.881	0.0566 (S)	0.70	1.110
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	10.1	0.0526 (S)	0.76	1.233
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0444 (Q)		
2,3,3',4-TeCB	55		J	0.152	0.0819 (S)	0.83	0.890
2,3,3',4'-TeCB	56		B	4.83	0.0818 (S)	0.79	0.905
2,3,3',5-TeCB	57		J	0.089	0.0797 (S)	0.67	0.844
2,3,3',5'-TeCB	58		U		0.0809 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C	0.649	0.0444 (Q)	0.75	1.301
2,3,4,4'-TeCB	60			2.96	0.0806 (S)	0.73	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	20.3	0.0787 (S)	0.75	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			0.496	0.0757 (S)	0.75	0.865
2,3,4',6-TeCB	64		B	3.39	0.0444 (Q)	0.75	1.347
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	10.6	0.0739 (S)	0.76	0.885
2,3',4,5-TeCB	67			0.378	0.0712 (S)	0.82	0.856
2,3',4,5'-TeCB	68		J	0.118	0.0770 (S)	0.70	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		J	0.169	0.0769 (S)	0.75	0.823
2,3',5',6-TeCB	73		J	0.045	0.0444 (Q)	0.66	1.241
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			2.18	0.0849 (S)	0.77	1.000
3,3',4,5-TeCB	78		U		0.0758 (S)		
3,3',4,5'-TeCB	79		J	0.237	0.0639 (S)	0.86	0.970
3,3',5,5'-TeCB	80		U		0.0705 (S)		
3,4,4',5-TeCB	81		K J	0.095	0.0839 (S)	0.95	1.000
2,2',3,3',4-PeCB	82			1.79	0.0710 (S)	1.45	0.933
2,2',3,3',5-PeCB	83	83 + 99	C B	13.3	0.0705 (S)	1.59	0.886
2,2',3,3',6-PeCB	84			3.30	0.0794 (S)	1.45	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	4.14	0.0559 (S)	1.60	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	11.9	0.0578 (S)	1.58	0.902
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C K	2.14	0.0693 (S)	1.92	1.154
2,2',3,4,6'-PeCB	89		K J	0.161	0.0725 (S)	1.06	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	18.1	0.0598 (S)	1.57	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			3.07	0.0668 (S)	1.51	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	11.2	0.0684 (S)	1.46	1.121
2,2',3,5,6'-PeCB	94		U		0.0769 (S)		
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		J	0.086	0.0444 (Q)	1.57	1.016
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		K J	0.181	0.0636 (S)	1.20	1.093
2,2',4,6,6'-PeCB	104		U		0.0444 (Q)		
2,3,3',4,4'-PeCB	105		B	9.37	0.0762 (S)	1.52	1.000
2,3,3',4,5-PeCB	106		U		0.0696 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	0.764	0.0745 (S)	1.41	0.990
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			1.73	0.0645 (S)	1.64	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	19.3	0.0500 (S)	1.58	0.925
2,3,3',5,5'-PeCB	111		U		0.0493 (S)		
2,3,3',5,6-PeCB	112		U		0.0496 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			0.458	0.0756 (S)	1.47	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	20.6	0.0734 (S)	1.55	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		K J	0.125	0.0450 (S)	2.30	0.958
2,3',4,5',6-PeCB	121		U		0.0523 (S)		
2',3,3',4,5-PeCB	122		J	0.252	0.0747 (S)	1.42	1.010
2',3,4,4',5-PeCB	123		J	0.339	0.0797 (S)	1.63	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		J	0.164	0.0837 (S)	1.56	1.000
3,3',4,5,5'-PeCB	127		U		0.0682 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C B	3.97	0.0830 (S)	1.19	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	25.5	0.0831 (S)	1.24	0.929
2,2',3,3',4,5'-HxCB	130			1.60	0.102 (S)	1.08	0.913
2,2',3,3',4,6-HxCB	131		J	0.236	0.106 (S)	1.08	1.159
2,2',3,3',4,6'-HxCB	132		B	5.83	0.105 (S)	1.26	1.174
2,2',3,3',5,5'-HxCB	133			0.450	0.0955 (S)	1.26	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	0.984	0.104 (S)	1.41	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C B	6.05	0.0448 (S)	1.24	1.104
2,2',3,3',6,6'-HxCB	136			1.80	0.0444 (Q)	1.27	1.024
2,2',3,4,4',5-HxCB	137			1.09	0.100 (S)	1.29	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C K	0.402	0.0937 (S)	0.91	1.152
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		B	2.47	0.0934 (S)	1.33	0.903
2,2',3,4,5,6-HxCB	142		U		0.101 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			0.711	0.0447 (S)	1.21	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0444 (Q)		
2,2',3,4',5,5'-HxCB	146		B	4.51	0.0914 (S)	1.29	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	15.3	0.0931 (S)	1.27	1.133
2,2',3,4',5,6'-HxCB	148		K J	0.086	0.0462 (S)	1.00	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	0.053	0.0444 (Q)	1.22	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0444 (Q)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	21.5	0.0745 (S)	1.21	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0444 (Q)		
2,3,3',4,4',5-HxCB	156	156 + 157	C B	2.45	0.0812 (S)	1.23	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		B	2.00	0.0666 (S)	1.25	0.938
2,3,3',4,5,5'-HxCB	159		K J	0.184	0.0682 (S)	1.00	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.0672 (S)		
2,3,3',4',5,5'-HxCB	162		J	0.142	0.0696 (S)	1.39	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			1.22	0.0681 (S)	1.36	0.921
2,3,3',5,5',6-HxCB	165		U		0.0804 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		B	1.08	0.0652 (S)	1.18	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.0800 (S)		
2,2',3,3',4,4',5-HpCB	170		B	4.54	0.0520 (S)	1.11	1.001
2,2',3,3',4,4',6-HpCB	171	171 + 173	C B	1.52	0.0527 (S)	1.17	1.162
2,2',3,3',4,5,5'-HpCB	172			0.856	0.0502 (S)	1.05	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		B	3.95	0.0484 (S)	1.08	1.133
2,2',3,3',4,5',6-HpCB	175		K J	0.283	0.0483 (S)	0.87	1.102
2,2',3,3',4,6,6'-HpCB	176			0.554	0.0444 (Q)	1.05	1.034
2,2',3,3',4',5,6-HpCB	177		B	3.55	0.0517 (S)	1.05	1.145
2,2',3,3',5,5',6-HpCB	178			1.56	0.0500 (S)	1.02	1.084
2,2',3,3',5,6,6'-HpCB	179		B	2.05	0.0444 (Q)	1.07	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	9.32	0.0444 (Q)	1.03	1.000
2,2',3,4,4',5,6-HpCB	181		J	0.054	0.0507 (S)	0.96	1.156
2,2',3,4,4',5,6'-HpCB	182		J	0.057	0.0478 (S)	1.01	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C B	3.50	0.0485 (S)	1.01	1.126
2,2',3,4,4',6,6'-HpCB	184		U		0.0444 (Q)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0444 (Q)		
2,2',3,4',5,5',6-HpCB	187		B	8.46	0.0468 (S)	1.04	1.110
2,2',3,4',5,6,6'-HpCB	188		K J	0.048	0.0444 (Q)	0.72	1.000
2,3,3',4,4',5,5'-HpCB	189		K J	0.207	0.0997 (S)	0.80	1.000
2,3,3',4,4',5,6-HpCB	190		B	0.886	0.0444 (Q)	1.09	0.947
2,3,3',4,4',5',6-HpCB	191		J	0.187	0.0444 (Q)	1.00	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.0444 (Q)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		B	2.60	0.0862 (S)	0.93	0.991
2,2',3,3',4,4',5,6-OcCB	195		K	0.931	0.0931 (S)	1.04	0.945
2,2',3,3',4,4',5,6'-OcCB	196		B	1.36	0.0462 (S)	0.76	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C	0.463	0.0444 (Q)	0.85	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C B	4.00	0.0498 (S)	0.88	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			0.533	0.0444 (Q)	0.92	1.023
2,2',3,3',5,5',6,6'-OcCB	202			1.10	0.0444 (Q)	0.77	1.000
2,2',3,4,4',5,5',6-OcCB	203		B	1.86	0.0456 (S)	0.84	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0444 (Q)		
2,3,3',4,4',5,5',6-OcCB	205		K J	0.132	0.0788 (S)	1.09	1.000
2,2',3,3',4,4',5,5',6-NoCB	206		B	2.51	0.185 (S)	0.81	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			0.386	0.142 (S)	0.66	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			1.03	0.145 (S)	0.78	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209		B	2.65	0.0912 (S)	1.17	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

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Report Filename: 1668_PCB1668_PCBTF_WG43721-103_Form1A_PB3C_198S5_SJ1608767.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-03-S (Duplicate)
Sample Collection:
08-May-2013 13:57

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	WG43721-103 (DUP L19652-34)
Matrix:	SOLID	**Sample Size:**	11.3 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 01:05:16	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_198 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_198 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	20.3

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		6.12
Total Dichloro Biphenyls		15.3
Total Trichloro Biphenyls		38.2
Total Tetrachloro Biphenyls		79.3
Total Pentachloro Biphenyls		120
Total Hexachloro Biphenyls		98.9
Total Heptachloro Biphenyls		41.0
Total Octachloro Biphenyls		11.9
Total Nonachloro Biphenyls		3.93
Decachloro Biphenyl		2.65
TOTAL PCBs		417

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_WG43721-103_Form1AHT_SJ1608767.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-03-S (Duplicate)

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 08-May-2013 13:57

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: WG43721-103 (DUP L19652-34)

Sample Size: 11.3 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_198 S: 5**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			2.18	0.0849	0.0001	2.18e-04	2.18e-04	
3,4,4',5-TeCB	81		U		0.0839	0.0003	0.00e+00	1.26e-05	
2,3,3',4,4'-PeCB	105			9.37	0.0762	0.00003	2.81e-04	2.81e-04	
2,3,4,4',5-PeCB	114			0.458	0.0756	0.00003	1.37e-05	1.37e-05	
2,3',4,4',5-PeCB	118			20.6	0.0734	0.00003	6.18e-04	6.18e-04	
2',3,4,4',5-PeCB	123			0.339	0.0797	0.00003	1.02e-05	1.02e-05	
3,3',4,4',5-PeCB	126			0.164	0.0837	0.1	1.64e-02	1.64e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	2.45	0.0812	0.00003	7.35e-05	7.35e-05	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			1.08	0.0652	0.00003	3.24e-05	3.24e-05	
3,3',4,4',5,5'-HxCB	169		U		0.0800	0.03	0.00e+00	1.20e-03	
2,3,3',4,4',5,5'-HpCB	189		U		0.0997	0.00003	0.00e+00	1.50e-06	
					TOTAL TEQ		0.0176	0.0189	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_WG43721-103_TEQ_SJ1608767.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

PCB CONGENER ANALYSIS REPORT
RELATIVE PERCENT DIFFERENCE

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Contract No.: 4273
Client ID: RB13-DIS-03-S

Concentration Units: ng/kg (dry weight basis)

COMPOUND	IUPAC NO.	L19652-34 (A) LAB FLAG [1]	L19652-34 (A) CONC. FOUND	WG43721-103 LAB FLAG [1]	WG43721-103 CONC. FOUND	MEAN	RELATIVE PERCENT DIFFERENCE
2-MoCB	1		0.847		0.876	0.862	3.37
3-MoCB	2		3.75		4.23	3.99	12.0
4-MoCB	3		1.03		1.01	1.02	2.45
2,2'-DiCB	4		0.991		0.961	0.976	3.07
2,3-DiCB	5	U		U			
2,3'-DiCB	6		0.518		0.519	0.519	0.193
2,4-DiCB	7	J	0.249	K J	0.222		
2,4'-DiCB	8		2.73		3.29	3.01	18.4
2,5-DiCB	9	K J	0.197	K J	0.187		
2,6-DiCB	10	U		U			
3,3'-DiCB	11		5.29		6.41	5.85	19.1
3,4-DiCB	12	C K	1.28	C K	1.72		
3,4'-DiCB	13	C12		C12			
3,5-DiCB	14	K J	0.201	U			
4,4'-DiCB	15		4.09		4.15	4.12	1.53
2,2',3-TriCB	16		1.03		1.08	1.05	5.13
2,2',4-TriCB	17		1.43		1.59	1.51	10.5
2,2',5-TriCB	18	C	2.41	C	2.51	2.46	4.27
2,2',6-TriCB	19	J	0.303	J	0.327	0.315	7.62
2,3,3'-TriCB	20	C	10.8	C	11.2	11.0	3.83
2,3,4-TriCB	21	C	2.92	C	3.18	3.05	8.49
2,3,4'-TriCB	22		2.53		2.75	2.64	8.46
2,3,5-TriCB	23	U		U			
2,3,6-TriCB	24	K J	0.048	U			
2,3',4-TriCB	25		0.701		0.785	0.743	11.3
2,3',5-TriCB	26	C	1.23	C	1.21	1.22	1.72
2,3',6-TriCB	27	K J	0.259	J	0.268		
2,4,4'-TriCB	28	C20		C20			
2,4,5-TriCB	29	C26		C26			
2,4,6-TriCB	30	C18		C18			
2,4',5-TriCB	31		6.70		6.78	6.74	1.10
2,4',6-TriCB	32		1.38		1.45	1.41	5.02
2',3,4-TriCB	33	C21		C21			
2',3,5-TriCB	34	U		J	0.061		
3,3',4-TriCB	35		0.495		0.506	0.501	2.20
3,3',5-TriCB	36	J	0.251	J	0.295	0.273	16.1
3,4,4'-TriCB	37		3.71		3.91	3.81	5.17
3,4,5-TriCB	38	K J	0.268	J	0.151		
3,4',5-TriCB	39	J	0.117	J	0.105	0.111	10.8
2,2',3,3'-TeCB	40	C	3.48	C	3.66	3.57	4.95
2,2',3,4-TeCB	41	C40		C40			
2,2',3,4'-TeCB	42		1.99		2.14	2.06	7.17
2,2',3,5-TeCB	43	J	0.145	J	0.191	0.168	27.4
2,2',3,5'-TeCB	44	C	7.49	C	7.68	7.58	2.53
2,2',3,6-TeCB	45	C	0.784	C	0.773	0.779	1.41
2,2',3,6'-TeCB	46	J	0.292	J	0.300	0.296	2.70
2,2',4,4'-TeCB	47	C44		C44			
2,2',4,5-TeCB	48		1.10		1.17	1.13	6.54
2,2',4,5'-TeCB	49	C	5.66	C	5.82	5.74	2.79
2,2',4,6-TeCB	50	C	0.734	C	0.881	0.808	18.2
2,2',4,6'-TeCB	51	C45		C45			
2,2',5,5'-TeCB	52		9.79		10.1	9.93	2.89
2,2',5,6'-TeCB	53	C50		C50			
2,2',6,6'-TeCB	54	U		U			
2,3,3',4-TeCB	55	J	0.149	J	0.152	0.151	1.99

COMPOUND	IUPAC NO.	L19652-34 (A) LAB FLAG [1]	L19652-34 (A) CONC. FOUND	WG43721-103 LAB FLAG [1]	WG43721-103 CONC. FOUND	MEAN	RELATIVE PERCENT DIFFERENCE
2,3,3',4'-TeCB	56		4.42		4.83	4.62	8.76
2,3,3',5-TeCB	57	U		J	0.089		
2,3,3',5'-TeCB	58	U		U			
2,3,3',6-TeCB	59	C K	0.704	C	0.649		
2,3,4,4'-TeCB	60		2.79		2.96	2.87	5.85
2,3,4,5-TeCB	61	C	19.5	C	20.3	19.9	4.10
2,3,4,6-TeCB	62	C59		C59			
2,3,4',5-TeCB	63		0.456		0.496	0.476	8.40
2,3,4',6-TeCB	64		3.21		3.39	3.30	5.48
2,3,5,6-TeCB	65	C44		C44			
2,3',4,4'-TeCB	66		10.1		10.6	10.3	5.07
2,3',4,5-TeCB	67	J	0.338		0.378	0.358	11.2
2,3',4,5'-TeCB	68	K J	0.143	J	0.118		
2,3',4,6-TeCB	69	C49		C49			
2,3',4',5-TeCB	70	C61		C61			
2,3',4',6-TeCB	71	C40		C40			
2,3',5,5'-TeCB	72	J	0.193	J	0.169	0.181	13.3
2,3',5',6-TeCB	73	U		J	0.045		
2,4,4',5-TeCB	74	C61		C61			
2,4,4',6-TeCB	75	C59		C59			
2',3,4,5-TeCB	76	C61		C61			
3,3',4,4'-TeCB	77		2.13		2.18	2.15	2.74
3,3',4,5-TeCB	78	U		U			
3,3',4,5'-TeCB	79	J	0.279	J	0.237	0.258	16.3
3,3',5,5'-TeCB	80	U		U			
3,4,4',5-TeCB	81	K J	0.102	K J	0.095		
2,2',3,3',4-PeCB	82	G	1.56		1.79	1.68	13.4
2,2',3,3',5-PeCB	83	C	12.4	C	13.3	12.8	7.28
2,2',3,3',6-PeCB	84		2.95		3.30	3.13	11.2
2,2',3,4,4'-PeCB	85	C	3.89	C	4.14	4.02	6.28
2,2',3,4,5-PeCB	86	C	10.8	C	11.9	11.4	9.90
2,2',3,4,5'-PeCB	87	C86		C86			
2,2',3,4,6-PeCB	88	C	1.94	C K	2.14		
2,2',3,4,6'-PeCB	89	K J	0.162	K J	0.161		
2,2',3,4',5-PeCB	90	C	16.6	C	18.1	17.3	8.78
2,2',3,4',6-PeCB	91	C88		C88			
2,2',3,5,5'-PeCB	92		2.97		3.07	3.02	3.31
2,2',3,5,6-PeCB	93	C	10.4	C	11.2	10.8	7.25
2,2',3,5,6'-PeCB	94	J	0.084	U			
2,2',3,5',6-PeCB	95	C93		C93			
2,2',3,6,6'-PeCB	96	K J	0.090	J	0.086		
2,2',3',4,5-PeCB	97	C86		C86			
2,2',3',4,6-PeCB	98	C93		C93			
2,2',4,4',5-PeCB	99	C83		C83			
2,2',4,4',6-PeCB	100	C93		C93			
2,2',4,5,5'-PeCB	101	C90		C90			
2,2',4,5,6'-PeCB	102	C93		C93			
2,2',4,5',6-PeCB	103	J	0.185	K J	0.181		
2,2',4,6,6'-PeCB	104	U		U			
2,3,3',4,4'-PeCB	105		8.85		9.37	9.11	5.69
2,3,3',4,5-PeCB	106	U		U			
2,3,3',4',5-PeCB	107	C	0.748	C	0.764	0.756	2.12
2,3,3',4,5'-PeCB	108	C86		C86			
2,3,3',4,6-PeCB	109		1.64		1.73	1.68	5.17
2,3,3',4',6-PeCB	110	C	17.8	C	19.3	18.5	7.98
2,3,3',5,5'-PeCB	111	U		U			
2,3,3',5,6-PeCB	112	U		U			
2,3,3',5',6-PeCB	113	C90		C90			
2,3,4,4',5-PeCB	114		0.393		0.458	0.426	15.3
2,3,4,4',6-PeCB	115	C110		C110			
2,3,4,5,6-PeCB	116	C85		C85			
2,3,4',5,6-PeCB	117	C85		C85			
2,3',4,4',5-PeCB	118		19.5		20.6	20.0	5.77
2,3',4,4',6-PeCB	119	C86		C86			

COMPOUND	IUPAC NO.	L19652-34 (A) LAB FLAG [1]	L19652-34 (A) CONC. FOUND	WG43721-103 LAB FLAG [1]	WG43721-103 CONC. FOUND	MEAN	RELATIVE PERCENT DIFFERENCE
2,3',4,5,5'-PeCB	120	J	0.134	K J	0.125		
2,3',4,5',6-PeCB	121	U		U			
2',3,3',4,5-PeCB	122	J	0.234	J	0.252	0.243	7.41
2',3,4,4',5-PeCB	123		0.418	J	0.339	0.379	20.9
2',3,4,5,5'-PeCB	124	C107		C107			
2',3,4,5,6'-PeCB	125	C86		C86			
3,3',4,4',5-PeCB	126	K J	0.147	J	0.164		
3,3',4,5,5'-PeCB	127	U		U			
2,2',3,3',4,4'-HxCB	128	C	3.72	C	3.97	3.84	6.51
2,2',3,3',4,5-HxCB	129	C	23.7	C	25.5	24.6	7.11
2,2',3,3',4,5'-HxCB	130		1.52		1.60	1.56	5.58
2,2',3,3',4,6-HxCB	131	K J	0.184	J	0.236		
2,2',3,3',4,6'-HxCB	132		5.21		5.83	5.52	11.2
2,2',3,3',5,5'-HxCB	133	J	0.356		0.450	0.403	23.3
2,2',3,3',5,6-HxCB	134	C	0.967	C	0.984	0.976	1.74
2,2',3,3',5,6'-HxCB	135	C	5.32	C	6.05	5.69	12.9
2,2',3,3',6,6'-HxCB	136		1.50		1.80	1.65	18.5
2,2',3,4,4',5-HxCB	137		0.902		1.09	0.995	18.6
2,2',3,4,4',5'-HxCB	138	C129		C129			
2,2',3,4,4',6-HxCB	139	C J	0.365	C K	0.402		
2,2',3,4,4',6'-HxCB	140	C139		C139			
2,2',3,4,5,5'-HxCB	141		1.96		2.47	2.21	23.2
2,2',3,4,5,6-HxCB	142	U		U			
2,2',3,4,5,6'-HxCB	143	C134		C134			
2,2',3,4,5',6-HxCB	144	K	0.616		0.711		
2,2',3,4,6,6'-HxCB	145	U		U			
2,2',3,4',5,5'-HxCB	146		4.04		4.51	4.27	11.1
2,2',3,4',5,6-HxCB	147	C	13.7	C	15.3	14.5	10.8
2,2',3,4',5,6'-HxCB	148	U G		K J	0.086		
2,2',3,4',5',6-HxCB	149	C147		C147			
2,2',3,4',6,6'-HxCB	150	U		J	0.053		
2,2',3,5,5',6-HxCB	151	C135		C135			
2,2',3,5,6,6'-HxCB	152	U		U			
2,2',4,4',5,5'-HxCB	153	C	19.7	C	21.5	20.6	8.62
2,2',4,4',5,6'-HxCB	154	C135		C135			
2,2',4,4',6,6'-HxCB	155	U		U			
2,3,3',4,4',5-HxCB	156	C	2.32	C	2.45	2.39	5.41
2,3,3',4,4',5'-HxCB	157	C156		C156			
2,3,3',4,4',6-HxCB	158		1.73		2.00	1.86	14.2
2,3,3',4,5,5'-HxCB	159	J	0.169	K J	0.184		
2,3,3',4,5,6-HxCB	160	C129		C129			
2,3,3',4,5',6-HxCB	161	U		U			
2,3,3',4',5,5'-HxCB	162	K J	0.107	J	0.142		
2,3,3',4',5,6-HxCB	163	C129		C129			
2,3,3',4',5',6-HxCB	164		1.12		1.22	1.17	8.61
2,3,3',5,5',6-HxCB	165	K J	0.070	U			
2,3,4,4',5,6-HxCB	166	C128		C128			
2,3',4,4',5,5'-HxCB	167		0.904		1.08	0.991	17.6
2,3',4,4',5',6-HxCB	168	C153		C153			
3,3',4,4',5,5'-HxCB	169	U		U			
2,2',3,3',4,4',5-HpCB	170		3.83		4.54	4.18	16.9
2,2',3,3',4,4',6-HpCB	171	C	1.41	C	1.52	1.46	7.18
2,2',3,3',4,5,5'-HpCB	172		0.784		0.856	0.820	8.78
2,2',3,3',4,5,6-HpCB	173	C171		C171			
2,2',3,3',4,5,6'-HpCB	174		3.38		3.95	3.66	15.5
2,2',3,3',4,5',6-HpCB	175	J	0.266	K J	0.283		
2,2',3,3',4,6,6'-HpCB	176	K	0.557		0.554		
2,2',3,3',4',5,6-HpCB	177		3.33		3.55	3.44	6.60
2,2',3,3',5,5',6-HpCB	178		1.47		1.56	1.52	6.47
2,2',3,3',5,6,6'-HpCB	179		1.83		2.05	1.94	11.5
2,2',3,4,4',5,5'-HpCB	180	C	7.83	C	9.32	8.57	17.4
2,2',3,4,4',5,6-HpCB	181	U		J	0.054		
2,2',3,4,4',5,6'-HpCB	182	U		J	0.057		
2,2',3,4,4',5',6-HpCB	183	C	3.03	C	3.50	3.27	14.4

COMPOUND	IUPAC NO.	L19652-34 (A) LAB FLAG [1]	L19652-34 (A) CONC. FOUND	WG43721-103 LAB FLAG [1]	WG43721-103 CONC. FOUND	MEAN	RELATIVE PERCENT DIFFERENCE
2,2',3,4,4',6,6'-HpCB	184	U		U			
2,2',3,4,5,5',6-HpCB	185	C183		C183			
2,2',3,4,5,6,6'-HpCB	186	U		U			
2,2',3,4',5,5',6-HpCB	187		8.23		8.46	8.34	2.73
2,2',3,4',5,6,6'-HpCB	188	U		K J	0.048		
2,3,3',4,4',5,5'-HpCB	189	K J	0.252	K J	0.207		
2,3,3',4,4',5,6-HpCB	190		0.672		0.886	0.779	27.5
2,3,3',4,4',5',6-HpCB	191	K J	0.145	J	0.187		
2,3,3',4,5,5',6-HpCB	192	U		U			
2,3,3',4',5,5',6-HpCB	193	C180		C180			
2,2',3,3',4,4',5,5'-OcCB	194		2.17		2.60	2.38	18.4
2,2',3,3',4,4',5,6-OcCB	195		0.780	K	0.931		
2,2',3,3',4,4',5,6'-OcCB	196		1.21		1.36	1.29	11.2
2,2',3,3',4,4',6,6'-OcCB	197	C K G	0.407	C	0.463		
2,2',3,3',4,5,5',6-OcCB	198	C	3.64	C	4.00	3.82	9.43
2,2',3,3',4,5,5',6'-OcCB	199	C198		C198			
2,2',3,3',4,5,6,6'-OcCB	200	C197		C197			
2,2',3,3',4,5',6,6'-OcCB	201		0.436		0.533	0.485	20.0
2,2',3,3',5,5',6,6'-OcCB	202		0.976		1.10	1.04	12.2
2,2',3,4,4',5,5',6-OcCB	203		1.49		1.86	1.67	22.4
2,2',3,4,4',5,6,6'-OcCB	204	U		U			
2,3,3',4,4',5,5',6-OcCB	205	J	0.113	K J	0.132		
2,2',3,3',4,4',5,5',6-NoCB	206		2.34		2.51	2.42	7.06
2,2',3,3',4,4',5,6,6'-NoCB	207	J	0.350		0.386	0.368	9.78
2,2',3,3',4,5,5',6,6'-NoCB	208		0.998		1.03	1.02	3.35
2,2',3,3',4,4',5,5',6,6'-DeCB	209		2.58		2.65	2.61	2.95

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: RPD_PCB1668_RPD_WG43721-103_L19652-34_.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-12-S
Sample Collection:
08-May-2013 14:44

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-35
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 02:09:25	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_198 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_198 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	21.0

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			2.15	0.0983 (S)	3.14	1.000
3-MoCB	2			8.35	0.0835 (S)	2.99	0.988
4-MoCB	3		B	2.88	0.0742 (S)	3.18	1.001
2,2'-DiCB	4			2.54	0.262 (S)	1.51	1.000
2,3-DiCB	5		U		0.150 (S)		
2,3'-DiCB	6			1.00	0.134 (S)	1.39	1.175
2,4-DiCB	7		K J	0.318	0.137 (S)	1.80	1.157
2,4'-DiCB	8			6.17	0.123 (S)	1.50	1.206
2,5-DiCB	9		K J	0.325	0.133 (S)	1.22	1.145
2,6-DiCB	10		U		0.140 (S)		
3,3'-DiCB	11			9.82	0.139 (S)	1.53	0.968
3,4-DiCB	12	12 + 13	C K	2.73	0.135 (S)	3.50	0.985
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K J	0.300	0.133 (S)	0.95	0.925
4,4'-DiCB	15			8.74	0.138 (S)	1.51	1.001
2,2',3-TriCB	16			2.27	0.0626 (S)	1.01	1.165
2,2',4-TriCB	17			3.36	0.0536 (S)	1.01	1.138
2,2',5-TriCB	18	18 + 30	C B	5.76	0.0474 (Q)	1.04	1.114
2,2',6-TriCB	19			0.738	0.0624 (S)	0.94	1.001
2,3,3'-TriCB	20	20 + 28	C B	24.1	0.0474 (Q)	1.01	0.849
2,3,4-TriCB	21	21 + 33	C	6.11	0.0474 (Q)	1.03	0.858
2,3,4'-TriCB	22		B	5.75	0.0478 (S)	1.02	0.872
2,3,5-TriCB	23		U		0.0487 (S)		
2,3,6-TriCB	24		K J	0.073	0.0474 (Q)	0.81	1.158
2,3',4-TriCB	25			1.48	0.0474 (Q)	0.92	0.826
2,3',5-TriCB	26	26 + 29	C	2.80	0.0474 (Q)	0.99	1.300
2,3',6-TriCB	27			0.534	0.0474 (Q)	0.90	1.152
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	14.6	0.0474 (Q)	1.00	0.838
2,4',6-TriCB	32			3.15	0.0474 (Q)	1.02	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		K J	0.115	0.0474 (Q)	1.26	1.273
3,3',4-TriCB	35			0.981	0.0474 (Q)	0.91	0.986
3,3',5-TriCB	36			0.566	0.0474 (Q)	0.98	0.932
3,4,4'-TriCB	37			8.68	0.0474 (S)	1.02	1.001
3,4,5-TriCB	38		J	0.144	0.0474 (Q)	0.94	0.968
3,4',5-TriCB	39		J	0.196	0.0474 (Q)	1.00	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C	7.58	0.0562 (S)	0.78	1.335
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			4.45	0.0582 (S)	0.73	1.311
2,2',3,5-TeCB	43			0.465	0.0692 (S)	0.84	1.245
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	16.1	0.0527 (S)	0.79	1.284
2,2',3,6-TeCB	45	45 + 51	C	1.88	0.0594 (S)	0.67	1.146
2,2',3,6'-TeCB	46		K	0.547	0.0683 (S)	0.98	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			2.39	0.0572 (S)	0.88	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	11.4	0.0494 (S)	0.79	1.259
2,2',4,6-TeCB	50	50 + 53	C	1.64	0.0581 (S)	0.88	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	17.9	0.0540 (S)	0.80	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0474 (Q)		
2,3,3',4-TeCB	55		J	0.365	0.0848 (S)	0.88	0.889
2,3,3',4'-TeCB	56		B	9.60	0.0847 (S)	0.78	0.905
2,3,3',5-TeCB	57		J	0.156	0.0825 (S)	0.76	0.844
2,3,3',5'-TeCB	58		K J	0.103	0.0838 (S)	1.08	0.851
2,3,3',6-TeCB	59	59 + 62 + 75	C	1.50	0.0474 (Q)	0.82	1.302
2,3,4,4'-TeCB	60			6.11	0.0835 (S)	0.76	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	39.3	0.0815 (S)	0.76	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			1.03	0.0784 (S)	0.79	0.865
2,3,4',6-TeCB	64		B	6.74	0.0474 (Q)	0.81	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	22.0	0.0765 (S)	0.77	0.885
2,3',4,5-TeCB	67			0.779	0.0737 (S)	0.81	0.857
2,3',4,5'-TeCB	68		J	0.278	0.0797 (S)	0.74	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		K J	0.350	0.0796 (S)	0.93	0.823
2,3',5',6-TeCB	73		K J	0.048	0.0474 (Q)	1.08	1.241
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			4.55	0.0912 (S)	0.77	1.000
3,3',4,5-TeCB	78		U		0.0784 (S)		
3,3',4,5'-TeCB	79		J	0.378	0.0662 (S)	0.85	0.970
3,3',5,5'-TeCB	80		U		0.0730 (S)		
3,4,4',5-TeCB	81		K J	0.171	0.0849 (S)	0.95	1.000
2,2',3,3',4-PeCB	82		G	2.93	0.0601 (S)	1.36	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	20.8	0.0597 (S)	1.59	0.886
2,2',3,3',6-PeCB	84			5.06	0.0673 (S)	1.45	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	6.61	0.0474 (S)	1.41	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	18.4	0.0489 (S)	1.64	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	3.35	0.0587 (S)	1.71	1.154
2,2',3,4,6'-PeCB	89		K J	0.268	0.0614 (S)	2.34	1.181
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	28.6	0.0507 (S)	1.57	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			5.06	0.0566 (S)	1.48	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	17.7	0.0579 (S)	1.58	1.120
2,2',3,5,6'-PeCB	94		K J	0.187	0.0651 (S)	1.15	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		K J	0.134	0.0474 (Q)	2.38	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		J	0.331	0.0539 (S)	1.75	1.093
2,2',4,6,6'-PeCB	104		U		0.0474 (Q)		
2,3,3',4,4'-PeCB	105		B	15.4	0.0573 (S)	1.50	1.000
2,3,3',4,5-PeCB	106		U		0.0516 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	1.16	0.0552 (S)	1.47	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			2.97	0.0478 (S)	1.58	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	27.8	0.0474 (Q)	1.62	0.925
2,3,3',5,5'-PeCB	111		K J	0.069	0.0474 (Q)	1.85	0.946
2,3,3',5,6-PeCB	112		U		0.0474 (Q)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			0.643	0.0561 (S)	1.52	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	32.9	0.0552 (S)	1.52	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		K J	0.282	0.0474 (Q)	1.13	0.959
2,3',4,5',6-PeCB	121		U		0.0474 (Q)		
2',3,3',4,5-PeCB	122		J	0.351	0.0553 (S)	1.43	1.010
2',3,4,4',5-PeCB	123			0.720	0.0583 (S)	1.58	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		J	0.312	0.0610 (S)	1.50	1.000
3,3',4,5,5'-PeCB	127		U		0.0505 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C B	6.44	0.0959 (S)	1.29	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	42.3	0.0960 (S)	1.28	0.928
2,2',3,3',4,5'-HxCB	130			2.82	0.118 (S)	1.28	0.913
2,2',3,3',4,6-HxCB	131		K J	0.316	0.123 (S)	1.72	1.159
2,2',3,3',4,6'-HxCB	132		B	9.04	0.121 (S)	1.25	1.174
2,2',3,3',5,5'-HxCB	133			0.784	0.110 (S)	1.29	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	1.47	0.120 (S)	1.31	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C B	10.7	0.0547 (S)	1.22	1.104
2,2',3,3',6,6'-HxCB	136			2.89	0.0474 (Q)	1.13	1.023
2,2',3,4,4',5-HxCB	137			1.40	0.116 (S)	1.23	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	0.593	0.108 (S)	1.16	1.152
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		B	3.69	0.108 (S)	1.38	0.903
2,2',3,4,5,6-HxCB	142		U		0.117 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			1.18	0.0547 (S)	1.26	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0476 (S)		
2,2',3,4',5,5'-HxCB	146		B	8.07	0.106 (S)	1.28	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	24.5	0.108 (S)	1.24	1.133
2,2',3,4',5,6'-HxCB	148		K J G	0.084	0.0565 (S)	0.58	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		K J	0.079	0.0474 (Q)	0.92	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0474 (Q)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	36.4	0.0860 (S)	1.22	0.898
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0474 (Q)		
2,3,3',4,4',5-HxCB	156	156 + 157	C B	3.66	0.0944 (S)	1.16	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		B	2.92	0.0769 (S)	1.27	0.938
2,3,3',4,5,5'-HxCB	159		K J	0.354	0.0788 (S)	1.54	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.0776 (S)		
2,3,3',4',5,5'-HxCB	162		K J	0.223	0.0804 (S)	0.94	0.988
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			1.78	0.0786 (S)	1.15	0.921
2,3,3',5,5',6-HxCB	165		J	0.124	0.0928 (S)	1.23	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		B	1.60	0.0750 (S)	1.29	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.110 (S)		
2,2',3,3',4,4',5-HpCB	170		B	7.37	0.0556 (S)	1.01	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C B	2.51	0.0564 (S)	1.03	1.162
2,2',3,3',4,5,5'-HpCB	172			1.49	0.0536 (S)	0.95	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		B	6.61	0.0518 (S)	1.05	1.133
2,2',3,3',4,5',6-HpCB	175			0.456	0.0516 (S)	1.12	1.102
2,2',3,3',4,6,6'-HpCB	176			1.04	0.0474 (Q)	1.01	1.034
2,2',3,3',4',5,6-HpCB	177		B	6.66	0.0553 (S)	1.01	1.145
2,2',3,3',5,5',6-HpCB	178			2.79	0.0534 (S)	1.10	1.085
2,2',3,3',5,6,6'-HpCB	179		B	3.70	0.0474 (Q)	1.01	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	15.5	0.0474 (Q)	1.07	1.000
2,2',3,4,4',5,6-HpCB	181		K J	0.073	0.0542 (S)	1.30	1.155
2,2',3,4,4',5,6'-HpCB	182		J	0.084	0.0511 (S)	1.15	1.116
2,2',3,4,4',5',6-HpCB	183	183 + 185	C B	5.89	0.0518 (S)	1.06	1.126
2,2',3,4,4',6,6'-HpCB	184		U		0.0474 (Q)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0474 (Q)		
2,2',3,4',5,5',6-HpCB	187		B	16.2	0.0500 (S)	1.06	1.110
2,2',3,4',5,6,6'-HpCB	188		K J	0.054	0.0474 (Q)	1.44	1.001
2,3,3',4,4',5,5'-HpCB	189		K	0.504	0.0845 (S)	1.26	1.000
2,3,3',4,4',5,6-HpCB	190		B	1.39	0.0474 (Q)	1.02	0.947
2,3,3',4,4',5',6-HpCB	191		J	0.271	0.0474 (Q)	1.12	0.917
2,3,3',4,5,5',6-HpCB	192		U		0.0474 (Q)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		B	4.43	0.0613 (S)	0.94	0.991
2,2',3,3',4,4',5,6-OcCB	195			1.60	0.0662 (S)	0.94	0.945
2,2',3,3',4,4',5,6'-OcCB	196		B	2.27	0.0516 (S)	0.80	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C	0.880	0.0474 (Q)	0.76	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C B	7.76	0.0556 (S)	0.94	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			1.05	0.0474 (Q)	0.81	1.023
2,2',3,3',5,5',6,6'-OcCB	202			2.05	0.0474 (Q)	1.00	1.001
2,2',3,4,4',5,5',6-OcCB	203		B	3.21	0.0509 (S)	0.95	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0474 (Q)		
2,3,3',4,4',5,5',6-OcCB	205		K J	0.280	0.0557 (S)	1.17	1.000
2,2',3,3',4,4',5,5',6-NoCB	206		B	4.50	0.165 (S)	0.74	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			0.691	0.126 (S)	0.71	1.019
2,2',3,3',4,5,5',6,6'-NoCB	208			1.86	0.127 (S)	0.79	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209		B	4.64	0.0620 (S)	1.12	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

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Report Filename: 1668_PCB1668_PCBTF_L19652-35_Form1A_PB3C_198S6_SJ1608769.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-12-S
Sample Collection:
08-May-2013 14:44

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-35
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 02:09:25	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_198 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_198 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	21.0

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		13.4
Total Dichloro Biphenyls		28.3
Total Trichloro Biphenyls		81.2
Total Tetrachloro Biphenyls		157
Total Pentachloro Biphenyls		191
Total Hexachloro Biphenyls		162
Total Heptachloro Biphenyls		72.0
Total Octachloro Biphenyls		23.3
Total Nonachloro Biphenyls		7.05
Decachloro Biphenyl		4.64
TOTAL PCBs		740

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-35_Form1AHT_SJ1608769.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-12-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 08-May-2013 14:44

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-35

Sample Size: 10.6 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_198 S: 6**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			4.55	0.0912	0.0001	4.55e-04	4.55e-04	
3,4,4',5-TeCB	81		U		0.0849	0.0003	0.00e+00	1.27e-05	
2,3,3',4,4'-PeCB	105			15.4	0.0573	0.00003	4.62e-04	4.62e-04	
2,3,4,4',5-PeCB	114			0.643	0.0561	0.00003	1.93e-05	1.93e-05	
2,3',4,4',5-PeCB	118			32.9	0.0552	0.00003	9.87e-04	9.87e-04	
2',3,4,4',5-PeCB	123			0.720	0.0583	0.00003	2.16e-05	2.16e-05	
3,3',4,4',5-PeCB	126			0.312	0.0610	0.1	3.12e-02	3.12e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	3.66	0.0944	0.00003	1.10e-04	1.10e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			1.60	0.0750	0.00003	4.80e-05	4.80e-05	
3,3',4,4',5,5'-HxCB	169		U		0.110	0.03	0.00e+00	1.65e-03	
2,3,3',4,4',5,5'-HpCB	189		U		0.0845	0.00003	0.00e+00	1.27e-06	
					TOTAL TEQ		0.0333	0.0350	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-35_TEQ_SJ1608769.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-02-S
Sample Collection:
08-May-2013 15:29

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
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		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-36
Matrix:	SOLID	**Sample Size:**	10.1 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 03:13:37	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_198 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_198 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	71.0

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			7.48	0.0619 (S)	3.02	1.001
3-MoCB	2			42.6	0.0533 (S)	3.03	0.989
4-MoCB	3		B	8.23	0.0498 (Q)	3.09	1.002
2,2'-DiCB	4			10.3	0.263 (S)	1.48	1.001
2,3-DiCB	5			0.455	0.149 (S)	1.66	1.197
2,3'-DiCB	6			6.48	0.134 (S)	1.52	1.175
2,4-DiCB	7			2.33	0.137 (S)	1.55	1.159
2,4'-DiCB	8			38.4	0.123 (S)	1.53	1.206
2,5-DiCB	9			1.35	0.132 (S)	1.55	1.146
2,6-DiCB	10		J	0.356	0.139 (S)	1.40	1.013
3,3'-DiCB	11			65.2	0.139 (S)	1.50	0.969
3,4-DiCB	12	12 + 13	C	10.1	0.135 (S)	1.61	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	1.32	0.132 (S)	0.97	0.926
4,4'-DiCB	15			59.0	0.138 (S)	1.52	1.001
2,2',3-TriCB	16			13.6	0.0498 (Q)	1.04	1.165
2,2',4-TriCB	17			16.9	0.0498 (Q)	1.03	1.138
2,2',5-TriCB	18	18 + 30	C B G	27.1	0.0498 (Q)	1.05	1.114
2,2',6-TriCB	19			2.65	0.0517 (S)	1.00	1.001
2,3,3'-TriCB	20	20 + 28	C B	137	0.0878 (S)	1.03	0.849
2,3,4-TriCB	21	21 + 33	C	42.5	0.0847 (S)	1.02	0.859
2,3,4'-TriCB	22		B	33.1	0.0936 (S)	1.01	0.873
2,3,5-TriCB	23		J	0.217	0.0953 (S)	0.97	1.283
2,3,6-TriCB	24		J	0.321	0.0498 (Q)	1.19	1.158
2,3',4-TriCB	25			9.46	0.0778 (S)	1.02	0.826
2,3',5-TriCB	26	26 + 29	C	16.1	0.0893 (S)	1.02	1.302
2,3',6-TriCB	27			3.05	0.0498 (Q)	1.05	1.152
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	83.7	0.0830 (S)	1.01	0.838
2,4',6-TriCB	32			14.0	0.0855 (S)	1.01	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34			0.650	0.0909 (S)	1.03	1.274
3,3',4-TriCB	35			6.29	0.0865 (S)	0.98	0.985
3,3',5-TriCB	36			3.07	0.0829 (S)	1.03	0.932
3,4,4'-TriCB	37			50.5	0.0897 (S)	1.03	1.001
3,4,5-TriCB	38			0.679	0.0820 (S)	0.97	0.967
3,4',5-TriCB	39			1.15	0.0828 (S)	1.00	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C	48.2	0.0511 (S)	0.80	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			24.4	0.0530 (S)	0.78	1.311
2,2',3,5-TeCB	43			2.49	0.0630 (S)	0.74	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	93.6	0.0498 (Q)	0.77	1.285
2,2',3,6-TeCB	45	45 + 51	C	8.38	0.0540 (S)	0.76	1.148
2,2',3,6'-TeCB	46			3.01	0.0621 (S)	0.82	1.162
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			13.8	0.0521 (S)	0.78	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	62.6	0.0498 (Q)	0.77	1.259
2,2',4,6-TeCB	50	50 + 53	C	7.94	0.0528 (S)	0.79	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	112	0.0498 (Q)	0.78	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		J	0.235	0.0498 (Q)	0.81	1.001
2,3,3',4-TeCB	55			1.82	0.225 (S)	0.72	0.890
2,3,3',4'-TeCB	56		B	58.2	0.225 (S)	0.77	0.905
2,3,3',5-TeCB	57			0.567	0.219 (S)	0.76	0.844
2,3,3',5'-TeCB	58			0.501	0.223 (S)	0.68	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	8.28	0.0498 (Q)	0.79	1.302
2,3,4,4'-TeCB	60			35.3	0.222 (S)	0.77	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	231	0.217 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			5.23	0.208 (S)	0.73	0.864
2,3,4',6-TeCB	64		B	37.5	0.0498 (Q)	0.78	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	125	0.203 (S)	0.77	0.884
2,3',4,5-TeCB	67			4.17	0.196 (S)	0.73	0.857
2,3',4,5'-TeCB	68			1.39	0.212 (S)	0.75	0.832
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			1.84	0.211 (S)	0.75	0.823
2,3',5',6-TeCB	73		J	0.293	0.0498 (Q)	0.80	1.240
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			25.3	0.238 (S)	0.75	1.000
3,3',4,5-TeCB	78		U		0.208 (S)		
3,3',4,5'-TeCB	79			2.66	0.176 (S)	0.75	0.970
3,3',5,5'-TeCB	80		U		0.194 (S)		
3,4,4',5-TeCB	81		K	0.969	0.229 (S)	0.77	1.001
2,2',3,3',4-PeCB	82			19.5	0.0998 (S)	1.59	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	130	0.0991 (S)	1.55	0.886
2,2',3,3',6-PeCB	84			36.7	0.112 (S)	1.57	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	39.9	0.0786 (S)	1.57	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	123	0.0812 (S)	1.58	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	21.4	0.0974 (S)	1.58	1.154
2,2',3,4,6'-PeCB	89			1.79	0.102 (S)	1.69	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	184	0.0841 (S)	1.54	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			32.3	0.0939 (S)	1.64	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	120	0.0961 (S)	1.60	1.120
2,2',3,5,6'-PeCB	94			0.770	0.108 (S)	1.57	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.913	0.0498 (Q)	1.33	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			1.83	0.0894 (S)	1.50	1.093
2,2',4,6,6'-PeCB	104		J	0.088	0.0498 (Q)	1.78	1.001
2,3,3',4,4'-PeCB	105		B	95.5	0.166 (S)	1.52	1.000
2,3,3',4,5-PeCB	106		U		0.149 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	7.50	0.159 (S)	1.56	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			16.8	0.138 (S)	1.53	0.998
2,3,3',4',6-PeCB	110	110 + 115	C B	196	0.0702 (S)	1.56	0.925
2,3,3',5,5'-PeCB	111		J	0.300	0.0693 (S)	1.61	0.946
2,3,3',5,6-PeCB	112		U		0.0697 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			4.29	0.163 (S)	1.42	1.001
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	208	0.160 (S)	1.54	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			1.34	0.0632 (S)	1.48	0.959
2,3',4,5',6-PeCB	121		J	0.111	0.0736 (S)	1.38	1.200
2',3,3',4,5-PeCB	122			2.39	0.159 (S)	1.75	1.010
2',3,4,4',5-PeCB	123			4.25	0.172 (S)	1.55	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			1.68	0.176 (S)	1.41	1.000
3,3',4,5,5'-PeCB	127		K	0.574	0.146 (S)	1.20	1.042
2,2',3,3',4,4'-HxCB	128	128 + 166	C B	40.7	0.117 (S)	1.25	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	251	0.117 (S)	1.27	0.929
2,2',3,3',4,5'-HxCB	130			17.0	0.143 (S)	1.28	0.913
2,2',3,3',4,6-HxCB	131			2.28	0.149 (S)	1.09	1.160
2,2',3,3',4,6'-HxCB	132		B	62.1	0.147 (S)	1.26	1.174
2,2',3,3',5,5'-HxCB	133			4.14	0.134 (S)	1.23	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	9.29	0.146 (S)	1.16	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C B	62.1	0.0498 (Q)	1.27	1.104
2,2',3,3',6,6'-HxCB	136			20.6	0.0498 (Q)	1.28	1.024
2,2',3,4,4',5-HxCB	137			9.43	0.141 (S)	1.26	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	3.70	0.132 (S)	1.31	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		B	24.9	0.131 (S)	1.30	0.903
2,2',3,4,5,6-HxCB	142		U		0.142 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			7.37	0.0498 (Q)	1.21	1.121
2,2',3,4,6,6'-HxCB	145		J	0.091	0.0498 (Q)	1.31	1.034
2,2',3,4',5,5'-HxCB	146		B G	39.2	0.128 (S)	1.24	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	152	0.131 (S)	1.24	1.133
2,2',3,4',5,6'-HxCB	148			0.548	0.0498 (Q)	1.12	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150			0.484	0.0498 (Q)	1.39	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		K J	0.173	0.0498 (Q)	1.44	1.007
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	214	0.105 (S)	1.25	0.898
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		K J	0.151	0.0498 (Q)	0.88	1.001
2,3,3',4,4',5-HxCB	156	156 + 157	C B	24.5	0.117 (S)	1.27	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		B	18.6	0.0935 (S)	1.24	0.938
2,3,3',4,5,5'-HxCB	159			1.93	0.0958 (S)	1.31	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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2,3,3',4,5',6-HxCB	161		U		0.0943 (S)		
2,3,3',4',5,5'-HxCB	162			1.12	0.0977 (S)	1.17	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			12.8	0.0955 (S)	1.22	0.921
2,3,3',5,5',6-HxCB	165			0.463	0.113 (S)	1.17	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		B	9.44	0.0931 (S)	1.31	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.280 (S)		
2,2',3,3',4,4',5-HpCB	170		B	44.4	0.0693 (S)	1.05	1.001
2,2',3,3',4,4',6-HpCB	171	171 + 173	C B	15.2	0.0685 (S)	1.02	1.163
2,2',3,3',4,5,5'-HpCB	172			7.89	0.0652 (S)	1.01	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		B	39.7	0.0629 (S)	1.03	1.134
2,2',3,3',4,5',6-HpCB	175			2.42	0.0627 (S)	0.94	1.102
2,2',3,3',4,6,6'-HpCB	176			5.74	0.0498 (Q)	1.01	1.034
2,2',3,3',4',5,6-HpCB	177		B	36.4	0.0672 (S)	1.05	1.145
2,2',3,3',5,5',6-HpCB	178			15.4	0.0649 (S)	1.00	1.085
2,2',3,3',5,6,6'-HpCB	179		B	21.3	0.0498 (Q)	1.03	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	88.3	0.0565 (S)	1.02	1.000
2,2',3,4,4',5,6-HpCB	181			0.447	0.0659 (S)	1.10	1.156
2,2',3,4,4',5,6'-HpCB	182			0.485	0.0621 (S)	0.92	1.116
2,2',3,4,4',5',6-HpCB	183	183 + 185	C B	31.1	0.0630 (S)	1.03	1.127
2,2',3,4,4',6,6'-HpCB	184		J	0.145	0.0498 (Q)	1.15	1.025
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0516 (S)		
2,2',3,4',5,5',6-HpCB	187		B G	82.0	0.0607 (S)	1.03	1.110
2,2',3,4',5,6,6'-HpCB	188		J	0.249	0.0498 (Q)	0.97	1.001
2,3,3',4,4',5,5'-HpCB	189			2.03	0.107 (S)	1.17	1.001
2,3,3',4,4',5,6-HpCB	190		B	7.68	0.0499 (S)	1.05	0.947
2,3,3',4,4',5',6-HpCB	191			1.48	0.0498 (Q)	0.95	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.0544 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		B	23.3	0.0958 (S)	0.88	0.991
2,2',3,3',4,4',5,6-OcCB	195			9.63	0.103 (S)	0.89	0.945
2,2',3,3',4,4',5,6'-OcCB	196		B	12.7	0.0519 (S)	0.85	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	3.68	0.0498 (Q)	0.86	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C B	39.9	0.0560 (S)	0.89	1.114
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			5.17	0.0498 (Q)	0.85	1.023
2,2',3,3',5,5',6,6'-OcCB	202			10.6	0.0498 (Q)	0.87	1.000
2,2',3,4,4',5,5',6-OcCB	203		B	17.2	0.0513 (S)	0.88	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0498 (Q)		
2,3,3',4,4',5,5',6-OcCB	205			1.26	0.0885 (S)	0.90	1.001
2,2',3,3',4,4',5,5',6-NoCB	206		B	22.6	0.129 (S)	0.77	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207			3.39	0.0951 (S)	0.78	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			9.25	0.0939 (S)	0.77	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209		B	24.8	0.0617 (S)	1.19	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 11-Jun-2013 15:27:35; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-36_Form1A_PB3C_198S7_SJ1608771.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-02-S
Sample Collection:
08-May-2013 15:29

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-36
Matrix:	SOLID	**Sample Size:**	10.1 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 03:13:37	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_198 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_198 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	71.0

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		58.3
Total Dichloro Biphenyls		194
Total Trichloro Biphenyls		462
Total Tetrachloro Biphenyls		916
Total Pentachloro Biphenyls		1250
Total Hexachloro Biphenyls		990
Total Heptachloro Biphenyls		402
Total Octachloro Biphenyls		123
Total Nonachloro Biphenyls		35.2
Decachloro Biphenyl		24.8
TOTAL PCBs		4460

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 11-Jun-2013 15:28:31; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-36_Form1AHT_SJ1608771.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-02-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 08-May-2013 15:29

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-36

Sample Size: 10.1 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_198 S: 7**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			25.3	0.238	0.0001	2.53e-03	2.53e-03	
3,4,4',5-TeCB	81		U		0.229	0.0003	0.00e+00	3.44e-05	
2,3,3',4,4'-PeCB	105			95.5	0.166	0.00003	2.87e-03	2.87e-03	
2,3,4,4',5-PeCB	114			4.29	0.163	0.00003	1.29e-04	1.29e-04	
2,3',4,4',5-PeCB	118			208	0.160	0.00003	6.24e-03	6.24e-03	
2',3,4,4',5-PeCB	123			4.25	0.172	0.00003	1.28e-04	1.28e-04	
3,3',4,4',5-PeCB	126			1.68	0.176	0.1	1.68e-01	1.68e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	24.5	0.117	0.00003	7.35e-04	7.35e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			9.44	0.0931	0.00003	2.83e-04	2.83e-04	
3,3',4,4',5,5'-HxCB	169		U		0.280	0.03	0.00e+00	4.20e-03	
2,3,3',4,4',5,5'-HpCB	189			2.03	0.107	0.00003	6.09e-05	6.09e-05	
					TOTAL TEQ		0.181	0.185	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-36_TEQ_SJ1608771.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-05-S
Sample Collection:
08-May-2013 15:54

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-37 L
Matrix:	SOLID	**Sample Size:**	10.8 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	08-Jun-2013 **Time:** 05:34:35	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_202 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_202 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	47.1

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			5.71	0.208 (S)	2.85	1.001
3-MoCB	2			22.8	0.197 (S)	3.08	0.989
4-MoCB	3		B	5.47	0.185 (S)	3.28	1.001
2,2'-DiCB	4			9.11	0.417 (S)	1.55	1.001
2,3-DiCB	5		K J	0.330	0.258 (S)	1.18	1.197
2,3'-DiCB	6			4.87	0.232 (S)	1.53	1.177
2,4-DiCB	7			1.60	0.236 (S)	1.46	1.158
2,4'-DiCB	8			29.8	0.208 (S)	1.56	1.208
2,5-DiCB	9		K	1.04	0.230 (S)	1.20	1.147
2,6-DiCB	10		J	0.329	0.239 (S)	1.49	1.013
3,3'-DiCB	11			44.3	0.256 (S)	1.53	0.968
3,4-DiCB	12	12 + 13	C	7.05	0.242 (S)	1.56	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14			0.733	0.239 (S)	1.47	0.925
4,4'-DiCB	15			45.9	0.268 (S)	1.55	1.001
2,2',3-TriCB	16			10.4	0.204 (S)	1.04	1.167
2,2',4-TriCB	17			14.3	0.184 (S)	1.03	1.139
2,2',5-TriCB	18	18 + 30	C B	25.9	0.157 (S)	1.09	1.114
2,2',6-TriCB	19			2.20	0.204 (S)	1.05	1.001
2,3,3'-TriCB	20	20 + 28	C B	114	0.198 (S)	1.02	0.849
2,3,4-TriCB	21	21 + 33	C	35.7	0.183 (S)	1.01	0.858
2,3,4'-TriCB	22		B	26.9	0.208 (S)	0.99	0.872
2,3,5-TriCB	23		U		0.202 (S)		
2,3,6-TriCB	24		K J	0.328	0.140 (S)	0.67	1.159
2,3',4-TriCB	25			7.33	0.171 (S)	1.02	0.825
2,3',5-TriCB	26	26 + 29	C	12.9	0.196 (S)	1.00	1.302
2,3',6-TriCB	27			2.56	0.127 (S)	0.93	1.152
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	68.4	0.181 (S)	1.00	0.837
2,4',6-TriCB	32			12.9	0.190 (S)	1.01	1.198
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34			0.534	0.200 (S)	1.02	1.275
3,3',4-TriCB	35			5.08	0.207 (S)	1.01	0.985
3,3',5-TriCB	36			2.23	0.190 (S)	1.07	0.932
3,4,4'-TriCB	37			44.0	0.214 (S)	1.03	1.001
3,4,5-TriCB	38			0.447	0.191 (S)	1.05	0.967
3,4',5-TriCB	39			0.865	0.188 (S)	1.08	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C	39.1	0.164 (S)	0.77	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			19.2	0.159 (S)	0.75	1.312
2,2',3,5-TeCB	43		K	2.13	0.187 (S)	0.91	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	89.1	0.153 (S)	0.79	1.285
2,2',3,6-TeCB	45	45 + 51	C	7.21	0.170 (S)	0.82	1.147
2,2',3,6'-TeCB	46			2.38	0.191 (S)	0.85	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			11.0	0.164 (S)	0.76	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	56.2	0.142 (S)	0.80	1.259
2,2',4,6-TeCB	50	50 + 53	C	6.94	0.166 (S)	0.74	1.112
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	132	0.160 (S)	0.76	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.130 (S)		
2,3,3',4-TeCB	55			1.51	0.162 (S)	0.79	0.889
2,3,3',4'-TeCB	56		B	50.6	0.170 (S)	0.79	0.905
2,3,3',5-TeCB	57			0.548	0.160 (S)	0.86	0.844
2,3,3',5'-TeCB	58			0.438	0.165 (S)	0.68	0.851
2,3,3',6-TeCB	59	59 + 62 + 75	C	6.75	0.127 (S)	0.76	1.302
2,3,4,4'-TeCB	60			29.0	0.160 (S)	0.77	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	218	0.160 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			4.59	0.152 (S)	0.77	0.865
2,3,4',6-TeCB	64		B	32.4	0.118 (S)	0.78	1.349
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	113	0.154 (S)	0.77	0.885
2,3',4,5-TeCB	67			3.30	0.142 (S)	0.74	0.856
2,3',4,5'-TeCB	68			1.13	0.159 (S)	0.76	0.832
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			1.46	0.155 (S)	0.83	0.823
2,3',5',6-TeCB	73		K J	0.240	0.128 (S)	0.96	1.241
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			21.6	0.182 (S)	0.76	1.000
3,3',4,5-TeCB	78		U		0.166 (S)		
3,3',4,5'-TeCB	79			2.80	0.137 (S)	0.71	0.970
3,3',5,5'-TeCB	80		U		0.149 (S)		
3,4,4',5-TeCB	81		K	0.693	0.173 (S)	0.71	1.000
2,2',3,3',4-PeCB	82			27.6	0.277 (S)	1.56	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	148	0.264 (S)	1.53	0.886
2,2',3,3',6-PeCB	84			52.5	0.293 (S)	1.61	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	46.5	0.220 (S)	1.55	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	161	0.222 (S)	1.54	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	27.0	0.260 (S)	1.54	1.154
2,2',3,4,6'-PeCB	89			1.95	0.270 (S)	1.58	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	235	0.226 (S)	1.57	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			43.7	0.257 (S)	1.52	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	158	0.247 (S)	1.54	1.120
2,2',3,5,6'-PeCB	94			0.772	0.281 (S)	1.60	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		K	1.04	0.129 (S)	1.18	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			1.76	0.235 (S)	1.63	1.093
2,2',4,6,6'-PeCB	104		U		0.110 (S)		
2,3,3',4,4'-PeCB	105		B	115	0.395 (S)	1.54	1.001
2,3,3',4,5-PeCB	106		U		0.345 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	9.86	0.382 (S)	1.54	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			19.4	0.336 (S)	1.49	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	261	0.192 (S)	1.55	0.925
2,3,3',5,5'-PeCB	111		K J	0.339	0.194 (S)	1.24	0.945
2,3,3',5,6-PeCB	112		U		0.183 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			5.42	0.395 (S)	1.70	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	255	0.376 (S)	1.54	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			1.20	0.179 (S)	1.54	0.959
2,3',4,5',6-PeCB	121		U		0.198 (S)		
2',3,3',4,5-PeCB	122			2.82	0.394 (S)	1.52	1.010
2',3,4,4',5-PeCB	123			4.80	0.404 (S)	1.47	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			1.45	0.447 (S)	1.47	1.000
3,3',4,5,5'-PeCB	127		J	0.514	0.354 (S)	1.75	1.042
2,2',3,3',4,4'-HxCB	128	128 + 166	C B	54.1	0.170 (S)	1.22	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	314	0.170 (S)	1.25	0.928
2,2',3,3',4,5'-HxCB	130			21.5	0.210 (S)	1.23	0.913
2,2',3,3',4,6-HxCB	131			3.63	0.203 (S)	1.28	1.159
2,2',3,3',4,6'-HxCB	132		B	88.5	0.213 (S)	1.20	1.174
2,2',3,3',5,5'-HxCB	133			4.60	0.194 (S)	1.07	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	13.5	0.205 (S)	1.28	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C B	73.2	0.213 (S)	1.26	1.104
2,2',3,3',6,6'-HxCB	136			25.7	0.167 (S)	1.23	1.023
2,2',3,4,4',5-HxCB	137			14.2	0.210 (S)	1.19	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	5.39	0.189 (S)	1.29	1.152
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		B	34.6	0.184 (S)	1.24	0.903
2,2',3,4,5,6-HxCB	142		U		0.210 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			10.3	0.223 (S)	1.24	1.121
2,2',3,4,6,6'-HxCB	145		U		0.177 (S)		
2,2',3,4',5,5'-HxCB	146		B	46.5	0.179 (S)	1.27	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	183	0.187 (S)	1.26	1.133
2,2',3,4',5,6'-HxCB	148		K	0.643	0.221 (S)	1.52	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150			0.455	0.168 (S)	1.09	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		K J	0.237	0.161 (S)	0.92	1.006
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	238	0.152 (S)	1.23	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.123 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C B	36.1	0.162 (S)	1.30	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		B	28.1	0.135 (S)	1.25	0.938
2,3,3',4,5,5'-HxCB	159			1.85	0.139 (S)	1.27	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.141 (S)		
2,3,3',4',5,5'-HxCB	162			1.45	0.144 (S)	1.41	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			17.4	0.140 (S)	1.26	0.921
2,3,3',5,5',6-HxCB	165		K	0.379	0.166 (S)	1.01	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		B	12.1	0.128 (S)	1.26	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.539 (S)		
2,2',3,3',4,4',5-HpCB	170		B	47.9	0.250 (S)	1.01	1.001
2,2',3,3',4,4',6-HpCB	171	171 + 173	C B	17.6	0.266 (S)	1.07	1.162
2,2',3,3',4,5,5'-HpCB	172			8.73	0.262 (S)	1.06	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		B	43.6	0.244 (S)	1.06	1.133
2,2',3,3',4,5',6-HpCB	175			2.74	0.245 (S)	1.07	1.102
2,2',3,3',4,6,6'-HpCB	176			6.46	0.192 (S)	1.09	1.034
2,2',3,3',4',5,6-HpCB	177		B	37.6	0.264 (S)	1.03	1.145
2,2',3,3',5,5',6-HpCB	178			14.5	0.256 (S)	1.09	1.084
2,2',3,3',5,6,6'-HpCB	179		B	22.0	0.189 (S)	1.02	1.009
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	87.1	0.203 (S)	1.02	1.000
2,2',3,4,4',5,6-HpCB	181		K	0.582	0.259 (S)	1.45	1.156
2,2',3,4,4',5,6'-HpCB	182		K	0.409	0.242 (S)	1.29	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C B	35.4	0.245 (S)	1.02	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.190 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.202 (S)		
2,2',3,4',5,5',6-HpCB	187		B	80.6	0.235 (S)	1.00	1.109
2,2',3,4',5,6,6'-HpCB	188		K J	0.176	0.160 (S)	1.47	1.000
2,3,3',4,4',5,5'-HpCB	189			2.25	0.345 (S)	0.95	1.001
2,3,3',4,4',5,6-HpCB	190		B	9.44	0.199 (S)	1.09	0.947
2,3,3',4,4',5',6-HpCB	191			1.86	0.195 (S)	1.17	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.219 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		B	20.9	0.294 (S)	0.91	0.991
2,2',3,3',4,4',5,6-OcCB	195			9.38	0.316 (S)	0.90	0.945
2,2',3,3',4,4',5,6'-OcCB	196		B	12.5	0.193 (S)	0.86	0.915
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C	4.36	0.148 (S)	0.84	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C B	36.9	0.204 (S)	0.87	1.114
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			4.52	0.147 (S)	1.00	1.023
2,2',3,3',5,5',6,6'-OcCB	202			8.78	0.149 (S)	0.86	1.000
2,2',3,4,4',5,5',6-OcCB	203		B	16.2	0.188 (S)	0.88	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.148 (S)		
2,3,3',4,4',5,5',6-OcCB	205		K	1.13	0.268 (S)	1.14	1.000
2,2',3,3',4,4',5,5',6-NoCB	206		B	20.3	0.337 (S)	0.79	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207			2.92	0.248 (S)	0.79	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			7.62	0.245 (S)	0.80	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209		B	21.9	0.189 (S)	1.22	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 11-Jun-2013 15:27:35; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-37_Form1A_PB3C_202S10_SJ1609917.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-05-S
Sample Collection:
08-May-2013 15:54

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-37 L
Matrix:	SOLID	**Sample Size:**	10.8 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	08-Jun-2013 **Time:** 05:34:35	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_202 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_202 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	47.1

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		34.0
Total Dichloro Biphenyls		144
Total Trichloro Biphenyls		387
Total Tetrachloro Biphenyls		850
Total Pentachloro Biphenyls		1580
Total Hexachloro Biphenyls		1230
Total Heptachloro Biphenyls		418
Total Octachloro Biphenyls		114
Total Nonachloro Biphenyls		30.8
Decachloro Biphenyl		21.9
TOTAL PCBs		4810

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-37_Form1AHT_SJ1609917.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-05-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4273	**Sample Collection:**	08-May-2013 15:54
		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Matrix:	SOLID	**Lab Sample I.D.:**	L19652-37 L
Sample Size:	10.8 g (dry)	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg (dry weight basis)	**Sample Data Filename(s):**	**PB3C_202 S: 10**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			21.6	0.182	0.0001	2.16e-03	2.16e-03	
3,4,4',5-TeCB	81		U		0.173	0.0003	0.00e+00	2.60e-05	
2,3,3',4,4'-PeCB	105			115	0.395	0.00003	3.45e-03	3.45e-03	
2,3,4,4',5-PeCB	114			5.42	0.395	0.00003	1.63e-04	1.63e-04	
2,3',4,4',5-PeCB	118			255	0.376	0.00003	7.65e-03	7.65e-03	
2',3,4,4',5-PeCB	123			4.80	0.404	0.00003	1.44e-04	1.44e-04	
3,3',4,4',5-PeCB	126			1.45	0.447	0.1	1.45e-01	1.45e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	36.1	0.162	0.00003	1.08e-03	1.08e-03	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			12.1	0.128	0.00003	3.63e-04	3.63e-04	
3,3',4,4',5,5'-HxCB	169		U		0.539	0.03	0.00e+00	8.09e-03	
2,3,3',4,4',5,5'-HpCB	189			2.25	0.345	0.00003	6.75e-05	6.75e-05	
					TOTAL TEQ		0.160	0.168	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 11-Jun-2013 15:28:31; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-37_TEQ_SJ1609917.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-04-S
Sample Collection:
07-May-2013 13:42

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-38
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 05:21:59	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_198 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_198 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	49.5

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			6.21	0.0757 (S)	3.12	1.001
3-MoCB	2			22.2	0.0619 (S)	3.03	0.989
4-MoCB	3		B	5.25	0.0535 (S)	3.08	1.001
2,2'-DiCB	4			8.58	0.172 (S)	1.51	1.001
2,3-DiCB	5		J	0.339	0.0964 (S)	1.51	1.197
2,3'-DiCB	6			4.46	0.0862 (S)	1.49	1.174
2,4-DiCB	7			1.38	0.0883 (S)	1.49	1.157
2,4'-DiCB	8			29.1	0.0793 (S)	1.52	1.206
2,5-DiCB	9			0.953	0.0854 (S)	1.57	1.147
2,6-DiCB	10		J	0.269	0.0900 (S)	1.49	1.013
3,3'-DiCB	11			44.4	0.0898 (S)	1.54	0.968
3,4-DiCB	12	12 + 13	C	6.37	0.0872 (S)	1.58	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	0.638	0.0854 (S)	1.28	0.925
4,4'-DiCB	15			41.1	0.0889 (S)	1.55	1.001
2,2',3-TriCB	16			10.0	0.0535 (S)	0.98	1.164
2,2',4-TriCB	17			12.5	0.0469 (Q)	1.07	1.137
2,2',5-TriCB	18	18 + 30	C B	21.1	0.0469 (Q)	1.05	1.113
2,2',6-TriCB	19			2.11	0.0582 (S)	1.04	1.001
2,3,3'-TriCB	20	20 + 28	C B	96.2	0.0688 (S)	1.01	0.848
2,3,4-TriCB	21	21 + 33	C	31.0	0.0663 (S)	1.02	0.858
2,3,4'-TriCB	22		B	24.1	0.0733 (S)	1.02	0.873
2,3,5-TriCB	23		U		0.0746 (S)		
2,3,6-TriCB	24		J	0.317	0.0469 (Q)	1.15	1.157
2,3',4-TriCB	25			6.48	0.0609 (S)	1.00	0.825
2,3',5-TriCB	26	26 + 29	C	11.6	0.0699 (S)	1.02	1.301
2,3',6-TriCB	27			2.21	0.0469 (Q)	1.04	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	59.1	0.0650 (S)	1.02	0.837
2,4',6-TriCB	32			10.6	0.0670 (S)	0.99	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.359	0.0711 (S)	1.18	1.273
3,3',4-TriCB	35			4.36	0.0677 (S)	0.93	0.985
3,3',5-TriCB	36			2.12	0.0649 (S)	0.98	0.932
3,4,4'-TriCB	37			38.4	0.0697 (S)	1.02	1.001
3,4,5-TriCB	38			0.447	0.0642 (S)	0.95	0.968
3,4',5-TriCB	39			0.815	0.0648 (S)	1.06	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C	36.9	0.0469 (Q)	0.79	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			18.4	0.0469 (Q)	0.79	1.310
2,2',3,5-TeCB	43			1.74	0.0531 (S)	0.79	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	66.4	0.0469 (Q)	0.78	1.285
2,2',3,6-TeCB	45	45 + 51	C	6.25	0.0469 (Q)	0.75	1.146
2,2',3,6'-TeCB	46			2.18	0.0524 (S)	0.82	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			10.6	0.0469 (Q)	0.78	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	44.4	0.0469 (Q)	0.78	1.258
2,2',4,6-TeCB	50	50 + 53	C	5.57	0.0469 (Q)	0.77	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	70.6	0.0469 (Q)	0.79	1.233
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		K J	0.076	0.0469 (Q)	1.14	1.001
2,3,3',4-TeCB	55			1.59	0.0734 (S)	0.80	0.890
2,3,3',4'-TeCB	56		B	43.8	0.0733 (S)	0.77	0.905
2,3,3',5-TeCB	57			0.486	0.0714 (S)	0.72	0.844
2,3,3',5'-TeCB	58			0.418	0.0725 (S)	0.85	0.851
2,3,3',6-TeCB	59	59 + 62 + 75	C	6.10	0.0469 (Q)	0.78	1.301
2,3,4,4'-TeCB	60			26.6	0.0722 (S)	0.76	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	166	0.0705 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			3.67	0.0678 (S)	0.77	0.865
2,3,4',6-TeCB	64		B	27.6	0.0469 (Q)	0.78	1.347
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	95.4	0.0662 (S)	0.76	0.885
2,3',4,5-TeCB	67			3.15	0.0637 (S)	0.74	0.857
2,3',4,5'-TeCB	68			0.962	0.0690 (S)	0.74	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			1.28	0.0689 (S)	0.72	0.823
2,3',5',6-TeCB	73		J	0.190	0.0469 (Q)	0.75	1.241
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			17.5	0.0771 (S)	0.75	1.001
3,3',4,5-TeCB	78		K J	0.100	0.0679 (S)	0.61	0.987
3,3',4,5'-TeCB	79			1.84	0.0572 (S)	0.74	0.970
3,3',5,5'-TeCB	80		J	0.102	0.0631 (S)	0.78	0.924
3,4,4',5-TeCB	81		K	0.738	0.0729 (S)	0.73	1.001
2,2',3,3',4-PeCB	82		G	12.2	0.0779 (S)	1.53	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	82.9	0.0774 (S)	1.58	0.885
2,2',3,3',6-PeCB	84			22.4	0.0872 (S)	1.55	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	27.3	0.0614 (S)	1.56	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	75.9	0.0634 (S)	1.56	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	13.3	0.0761 (S)	1.56	1.154
2,2',3,4,6'-PeCB	89			1.29	0.0796 (S)	1.68	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	114	0.0657 (S)	1.59	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			19.2	0.0733 (S)	1.61	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	69.3	0.0751 (S)	1.51	1.121
2,2',3,5,6'-PeCB	94			0.539	0.0844 (S)	1.45	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		K	0.579	0.0469 (Q)	1.86	1.016
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			1.12	0.0698 (S)	1.62	1.093
2,2',4,6,6'-PeCB	104		U		0.0469 (Q)		
2,3,3',4,4'-PeCB	105		B	63.6	0.181 (S)	1.51	1.000
2,3,3',4,5-PeCB	106		U		0.159 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	4.68	0.171 (S)	1.49	0.990
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			10.7	0.148 (S)	1.57	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	122	0.0549 (S)	1.55	0.925
2,3,3',5,5'-PeCB	111		J	0.242	0.0541 (S)	1.37	0.945
2,3,3',5,6-PeCB	112		U		0.0545 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			2.81	0.177 (S)	1.53	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	133	0.166 (S)	1.53	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			0.914	0.0494 (S)	1.59	0.958
2,3',4,5',6-PeCB	121		K J	0.079	0.0575 (S)	1.02	1.200
2',3,3',4,5-PeCB	122			1.57	0.171 (S)	1.52	1.010
2',3,4,4',5-PeCB	123			2.85	0.182 (S)	1.33	1.000
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			1.06	0.207 (S)	1.70	1.000
3,3',4,5,5'-PeCB	127		K J	0.177	0.156 (S)	1.07	1.041
2,2',3,3',4,4'-HxCB	128	128 + 166	C B	25.0	0.137 (S)	1.24	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	160	0.137 (S)	1.27	0.929
2,2',3,3',4,5'-HxCB	130			10.5	0.168 (S)	1.24	0.913
2,2',3,3',4,6-HxCB	131			1.31	0.176 (S)	1.39	1.159
2,2',3,3',4,6'-HxCB	132		B	38.3	0.173 (S)	1.25	1.173
2,2',3,3',5,5'-HxCB	133			2.69	0.158 (S)	1.35	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	5.84	0.172 (S)	1.33	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C B	39.5	0.0469 (Q)	1.27	1.103
2,2',3,3',6,6'-HxCB	136			12.4	0.0469 (Q)	1.25	1.023
2,2',3,4,4',5-HxCB	137			5.12	0.166 (S)	1.26	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	2.38	0.155 (S)	1.33	1.152
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		B	14.4	0.154 (S)	1.28	0.903
2,2',3,4,5,6-HxCB	142		U		0.167 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			4.92	0.0469 (Q)	1.20	1.121
2,2',3,4,6,6'-HxCB	145		K J	0.059	0.0469 (Q)	0.75	1.033
2,2',3,4',5,5'-HxCB	146		B G	24.1	0.151 (S)	1.27	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	97.0	0.154 (S)	1.25	1.133
2,2',3,4',5,6'-HxCB	148		K G	0.482	0.0469 (Q)	0.95	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	0.302	0.0469 (Q)	1.27	1.011
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		K J	0.118	0.0469 (Q)	1.60	1.006
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	135	0.123 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		K J	0.051	0.0469 (Q)	1.44	1.001
2,3,3',4,4',5-HxCB	156	156 + 157	C B	15.0	0.138 (S)	1.26	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		B	11.3	0.110 (S)	1.25	0.938
2,3,3',4,5,5'-HxCB	159			1.26	0.113 (S)	1.41	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.111 (S)		
2,3,3',4',5,5'-HxCB	162			0.635	0.115 (S)	1.16	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			8.13	0.113 (S)	1.29	0.921
2,3,3',5,5',6-HxCB	165		J	0.284	0.133 (S)	1.41	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		B	5.67	0.108 (S)	1.25	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.330 (S)		
2,2',3,3',4,4',5-HpCB	170		B	27.8	0.0652 (S)	1.03	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C B	10.3	0.0671 (S)	1.04	1.162
2,2',3,3',4,5,5'-HpCB	172			4.87	0.0638 (S)	0.93	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		B	27.3	0.0615 (S)	1.07	1.133
2,2',3,3',4,5',6-HpCB	175			1.64	0.0614 (S)	1.06	1.102
2,2',3,3',4,6,6'-HpCB	176			4.24	0.0476 (S)	1.06	1.034
2,2',3,3',4',5,6-HpCB	177		B	25.6	0.0657 (S)	1.04	1.144
2,2',3,3',5,5',6-HpCB	178			10.2	0.0635 (S)	1.03	1.084
2,2',3,3',5,6,6'-HpCB	179		B	15.3	0.0470 (S)	1.02	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	53.1	0.0529 (S)	1.03	1.001
2,2',3,4,4',5,6-HpCB	181		K J	0.225	0.0645 (S)	0.77	1.155
2,2',3,4,4',5,6'-HpCB	182		J	0.289	0.0607 (S)	1.09	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C B	22.8	0.0616 (S)	1.05	1.126
2,2',3,4,4',6,6'-HpCB	184		J	0.081	0.0475 (S)	1.06	1.025
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0505 (S)		
2,2',3,4',5,5',6-HpCB	187		B G	57.1	0.0595 (S)	1.05	1.109
2,2',3,4',5,6,6'-HpCB	188		K J	0.115	0.0469 (Q)	0.87	1.000
2,3,3',4,4',5,5'-HpCB	189		K	1.18	0.127 (S)	1.29	1.000
2,3,3',4,4',5,6-HpCB	190		B	4.95	0.0488 (S)	1.03	0.947
2,3,3',4,4',5',6-HpCB	191			1.02	0.0480 (S)	1.02	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.0533 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		B	13.0	0.0559 (S)	0.91	0.991
2,2',3,3',4,4',5,6-OcCB	195			5.93	0.0603 (S)	0.89	0.945
2,2',3,3',4,4',5,6'-OcCB	196		B	7.76	0.0520 (S)	0.92	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	2.75	0.0469 (Q)	0.90	1.045
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C B	26.0	0.0561 (S)	0.88	1.114
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			3.49	0.0469 (Q)	0.83	1.023
2,2',3,3',5,5',6,6'-OcCB	202			6.39	0.0469 (Q)	0.93	1.000
2,2',3,4,4',5,5',6-OcCB	203		B	11.3	0.0514 (S)	0.91	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0469 (Q)		
2,3,3',4,4',5,5',6-OcCB	205			0.874	0.0567 (S)	0.86	1.000
2,2',3,3',4,4',5,5',6-NoCB	206		B	13.7	0.151 (S)	0.77	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			2.03	0.105 (S)	0.81	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			5.52	0.0995 (S)	0.83	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209		B	13.7	0.0600 (S)	1.20	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

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Report Filename: 1668_PCB1668_PCBTF_L19652-38_Form1A_PB3C_198S9_SJ1608775.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-04-S
Sample Collection:
07-May-2013 13:42

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-38
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 05:21:59	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_198 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_198 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	49.5

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		33.7
Total Dichloro Biphenyls		137
Total Trichloro Biphenyls		334
Total Tetrachloro Biphenyls		660
Total Pentachloro Biphenyls		783
Total Hexachloro Biphenyls		621
Total Heptachloro Biphenyls		267
Total Octachloro Biphenyls		77.5
Total Nonachloro Biphenyls		21.3
Decachloro Biphenyl		13.7
TOTAL PCBs		2950

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-38_Form1AHT_SJ1608775.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-04-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 07-May-2013 13:42

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-38

Sample Size: 10.7 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_198 S: 9**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			17.5	0.0771	0.0001	1.75e-03	1.75e-03	
3,4,4',5-TeCB	81		U		0.0729	0.0003	0.00e+00	1.09e-05	
2,3,3',4,4'-PeCB	105			63.6	0.181	0.00003	1.91e-03	1.91e-03	
2,3,4,4',5-PeCB	114			2.81	0.177	0.00003	8.43e-05	8.43e-05	
2,3',4,4',5-PeCB	118			133	0.166	0.00003	3.99e-03	3.99e-03	
2',3,4,4',5-PeCB	123			2.85	0.182	0.00003	8.55e-05	8.55e-05	
3,3',4,4',5-PeCB	126			1.06	0.207	0.1	1.06e-01	1.06e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	15.0	0.138	0.00003	4.50e-04	4.50e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			5.67	0.108	0.00003	1.70e-04	1.70e-04	
3,3',4,4',5,5'-HxCB	169		U		0.330	0.03	0.00e+00	4.95e-03	
2,3,3',4,4',5,5'-HpCB	189		U		0.127	0.00003	0.00e+00	1.91e-06	
					TOTAL TEQ		0.114	0.119	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-11-S
Sample Collection:
07-May-2013 14:07

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-39
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 06:26:07	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_198 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_198 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	57.3

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			6.49	0.0914 (S)	3.13	1.000
3-MoCB	2			22.0	0.0770 (S)	3.05	0.988
4-MoCB	3		B	5.98	0.0693 (S)	3.07	1.001
2,2'-DiCB	4			11.8	0.268 (S)	1.55	1.001
2,3-DiCB	5		K	0.569	0.154 (S)	1.23	1.197
2,3'-DiCB	6			6.35	0.138 (S)	1.57	1.175
2,4-DiCB	7			2.00	0.141 (S)	1.50	1.158
2,4'-DiCB	8			40.2	0.127 (S)	1.50	1.208
2,5-DiCB	9			1.47	0.137 (S)	1.59	1.146
2,6-DiCB	10		K J	0.380	0.144 (S)	1.09	1.014
3,3'-DiCB	11			57.7	0.144 (S)	1.54	0.968
3,4-DiCB	12	12 + 13	C	9.35	0.139 (S)	1.62	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	0.992	0.137 (S)	1.05	0.925
4,4'-DiCB	15			53.0	0.144 (S)	1.51	1.001
2,2',3-TriCB	16			21.0	0.0727 (S)	1.05	1.165
2,2',4-TriCB	17			23.5	0.0623 (S)	1.06	1.138
2,2',5-TriCB	18	18 + 30	C B	44.7	0.0520 (S)	1.06	1.114
2,2',6-TriCB	19			4.75	0.0757 (S)	1.05	1.001
2,3,3'-TriCB	20	20 + 28	C B	144	0.0687 (S)	1.03	0.849
2,3,4-TriCB	21	21 + 33	C	54.2	0.0662 (S)	1.02	0.858
2,3,4'-TriCB	22		B	39.6	0.0732 (S)	1.00	0.873
2,3,5-TriCB	23		J	0.107	0.0746 (S)	1.19	1.283
2,3,6-TriCB	24			0.659	0.0481 (Q)	1.19	1.157
2,3',4-TriCB	25			9.81	0.0609 (S)	0.99	0.826
2,3',5-TriCB	26	26 + 29	C	18.4	0.0699 (S)	0.99	1.301
2,3',6-TriCB	27			3.93	0.0481 (Q)	1.11	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	95.8	0.0649 (S)	1.01	0.837
2,4',6-TriCB	32			18.5	0.0669 (S)	1.03	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34			0.528	0.0711 (S)	1.16	1.274
3,3',4-TriCB	35			5.94	0.0677 (S)	0.99	0.985
3,3',5-TriCB	36			2.67	0.0648 (S)	1.03	0.932
3,4,4'-TriCB	37			53.2	0.0711 (S)	1.03	1.001
3,4,5-TriCB	38			0.577	0.0641 (S)	0.95	0.968
3,4',5-TriCB	39			1.10	0.0648 (S)	0.98	0.947

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C	50.7	0.0514 (S)	0.76	1.335
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			25.1	0.0533 (S)	0.76	1.311
2,2',3,5-TeCB	43			3.00	0.0633 (S)	0.87	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	87.6	0.0482 (S)	0.77	1.285
2,2',3,6-TeCB	45	45 + 51	C	11.1	0.0543 (S)	0.77	1.147
2,2',3,6'-TeCB	46			3.87	0.0625 (S)	0.78	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			16.3	0.0524 (S)	0.79	1.274
2,2',4,5'-TeCB	49	49 + 69	C B	58.8	0.0481 (Q)	0.77	1.259
2,2',4,6-TeCB	50	50 + 53	C	8.62	0.0531 (S)	0.76	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	88.6	0.0494 (S)	0.78	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		J	0.190	0.0481 (Q)	0.81	1.001
2,3,3',4-TeCB	55			2.04	0.0976 (S)	0.82	0.890
2,3,3',4'-TeCB	56		B	61.0	0.0975 (S)	0.77	0.906
2,3,3',5-TeCB	57			0.735	0.0950 (S)	0.84	0.844
2,3,3',5'-TeCB	58			0.521	0.0965 (S)	0.76	0.851
2,3,3',6-TeCB	59	59 + 62 + 75	C	8.89	0.0481 (Q)	0.81	1.302
2,3,4,4'-TeCB	60			38.1	0.0961 (S)	0.77	0.913
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	215	0.0939 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			5.35	0.0903 (S)	0.76	0.865
2,3,4',6-TeCB	64		B	37.6	0.0481 (Q)	0.77	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	125	0.0880 (S)	0.77	0.885
2,3',4,5-TeCB	67			4.41	0.0848 (S)	0.75	0.857
2,3',4,5'-TeCB	68			1.26	0.0918 (S)	0.82	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			1.67	0.0917 (S)	0.76	0.823
2,3',5',6-TeCB	73		J	0.135	0.0481 (Q)	0.89	1.241
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			22.8	0.0985 (S)	0.77	1.001
3,3',4,5-TeCB	78		J	0.168	0.0903 (S)	0.80	0.987
3,3',4,5'-TeCB	79			1.88	0.0762 (S)	0.74	0.970
3,3',5,5'-TeCB	80		J	0.119	0.0840 (S)	0.73	0.927
3,4,4',5-TeCB	81		K	0.996	0.0993 (S)	0.94	1.000
2,2',3,3',4-PeCB	82			15.5	0.0610 (S)	1.65	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	98.2	0.0606 (S)	1.56	0.886
2,2',3,3',6-PeCB	84			24.0	0.0683 (S)	1.55	1.164
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	29.9	0.0481 (Q)	1.55	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	86.6	0.0496 (S)	1.57	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	15.3	0.0596 (S)	1.57	1.154
2,2',3,4,6'-PeCB	89			1.55	0.0623 (S)	1.52	1.183
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	135	0.0514 (S)	1.59	0.871
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			21.8	0.0574 (S)	1.55	0.856
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	78.5	0.0588 (S)	1.59	1.120
2,2',3,5,6'-PeCB	94			0.541	0.0661 (S)	1.68	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.656	0.0481 (Q)	1.58	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			1.36	0.0547 (S)	1.50	1.093
2,2',4,6,6'-PeCB	104		U		0.0481 (Q)		
2,3,3',4,4'-PeCB	105		B	76.1	0.214 (S)	1.53	1.001
2,3,3',4,5-PeCB	106		U		0.195 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	5.78	0.209 (S)	1.53	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			13.9	0.181 (S)	1.56	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	139	0.0481 (Q)	1.56	0.925
2,3,3',5,5'-PeCB	111		K J	0.285	0.0481 (Q)	1.11	0.946
2,3,3',5,6-PeCB	112		U		0.0481 (Q)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			3.19	0.215 (S)	1.64	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	159	0.208 (S)	1.53	1.001
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			1.13	0.0481 (Q)	1.64	0.959
2,3',4,5',6-PeCB	121		K J	0.087	0.0481 (Q)	1.17	1.202
2',3,3',4,5-PeCB	122			1.73	0.210 (S)	1.66	1.010
2',3,4,4',5-PeCB	123			3.13	0.218 (S)	1.60	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			1.37	0.235 (S)	1.47	1.000
3,3',4,5,5'-PeCB	127		K J	0.349	0.191 (S)	1.28	1.042
2,2',3,3',4,4'-HxCB	128	128 + 166	C B	30.3	0.112 (S)	1.23	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	190	0.112 (S)	1.26	0.928
2,2',3,3',4,5'-HxCB	130			12.6	0.137 (S)	1.28	0.913
2,2',3,3',4,6-HxCB	131			1.46	0.143 (S)	1.29	1.155
2,2',3,3',4,6'-HxCB	132		B	43.4	0.141 (S)	1.25	1.170
2,2',3,3',5,5'-HxCB	133			3.20	0.129 (S)	1.24	1.188
2,2',3,3',5,6-HxCB	134	134 + 143	C	6.73	0.140 (S)	1.08	1.137
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C B	46.4	0.0631 (S)	1.28	1.101
2,2',3,3',6,6'-HxCB	136			13.9	0.0509 (S)	1.23	1.021
2,2',3,4,4',5-HxCB	137			6.65	0.135 (S)	1.24	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	2.71	0.126 (S)	1.25	1.149
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		B	16.5	0.126 (S)	1.32	0.903
2,2',3,4,5,6-HxCB	142		U		0.136 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			5.38	0.0631 (S)	1.22	1.117
2,2',3,4,6,6'-HxCB	145		U		0.0549 (S)		
2,2',3,4',5,5'-HxCB	146		B G	30.6	0.123 (S)	1.24	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	113	0.125 (S)	1.25	1.129
2,2',3,4',5,6'-HxCB	148			0.708	0.0652 (S)	1.08	1.081
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		K	0.408	0.0528 (S)	0.93	1.010
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	0.124	0.0500 (S)	1.37	1.006
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	166	0.100 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		J	0.053	0.0481 (Q)	1.14	1.000
2,3,3',4,4',5-HxCB	156	156 + 157	C B	17.1	0.115 (S)	1.21	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		B	13.4	0.0897 (S)	1.19	0.938
2,3,3',4,5,5'-HxCB	159			1.54	0.0920 (S)	1.30	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.0905 (S)		
2,3,3',4',5,5'-HxCB	162			0.964	0.0938 (S)	1.37	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			9.09	0.0917 (S)	1.23	0.921
2,3,3',5,5',6-HxCB	165		J	0.350	0.108 (S)	1.07	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		B	6.95	0.0917 (S)	1.35	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.380 (S)		
2,2',3,3',4,4',5-HpCB	170		B	34.4	0.0806 (S)	1.05	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C B	12.8	0.0822 (S)	1.10	1.162
2,2',3,3',4,5,5'-HpCB	172			6.19	0.0782 (S)	1.10	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		B	33.6	0.0754 (S)	1.03	1.133
2,2',3,3',4,5',6-HpCB	175			2.24	0.0752 (S)	1.01	1.102
2,2',3,3',4,6,6'-HpCB	176			5.02	0.0583 (S)	1.03	1.034
2,2',3,3',4',5,6-HpCB	177		B	32.1	0.0806 (S)	1.08	1.145
2,2',3,3',5,5',6-HpCB	178			13.0	0.0779 (S)	1.03	1.085
2,2',3,3',5,6,6'-HpCB	179		B	18.5	0.0576 (S)	1.04	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	65.7	0.0651 (S)	1.04	1.000
2,2',3,4,4',5,6-HpCB	181			0.395	0.0791 (S)	1.08	1.156
2,2',3,4,4',5,6'-HpCB	182			0.433	0.0744 (S)	1.10	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C B	28.4	0.0756 (S)	1.02	1.127
2,2',3,4,4',6,6'-HpCB	184		J	0.090	0.0582 (S)	1.20	1.025
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0619 (S)		
2,2',3,4',5,5',6-HpCB	187		B G	71.7	0.0729 (S)	1.02	1.110
2,2',3,4',5,6,6'-HpCB	188		K J	0.213	0.0490 (S)	0.78	1.001
2,3,3',4,4',5,5'-HpCB	189			1.74	0.173 (S)	1.19	1.000
2,3,3',4,4',5,6-HpCB	190		B	6.16	0.0599 (S)	1.03	0.947
2,3,3',4,4',5',6-HpCB	191			1.18	0.0588 (S)	0.94	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.0653 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		B	17.2	0.0923 (S)	0.90	0.991
2,2',3,3',4,4',5,6-OcCB	195			7.89	0.0997 (S)	0.90	0.945
2,2',3,3',4,4',5,6'-OcCB	196		B	10.2	0.0481 (Q)	0.90	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	3.48	0.0481 (Q)	0.93	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C B	33.7	0.0495 (S)	0.93	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			4.29	0.0481 (Q)	0.92	1.023
2,2',3,3',5,5',6,6'-OcCB	202			8.73	0.0481 (Q)	0.88	1.001
2,2',3,4,4',5,5',6-OcCB	203		B	14.5	0.0481 (Q)	0.94	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0481 (Q)		
2,3,3',4,4',5,5',6-OcCB	205			1.11	0.0909 (S)	0.91	1.000
2,2',3,3',4,4',5,5',6-NoCB	206		B	18.8	0.202 (S)	0.74	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			2.85	0.145 (S)	0.83	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			7.66	0.141 (S)	0.79	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209		B	20.9	0.0797 (S)	1.17	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 11-Jun-2013 15:27:35; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-39_Form1A_PB3C_198S10_SJ1608777.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-11-S
Sample Collection:
07-May-2013 14:07

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-39
Matrix:	SOLID	**Sample Size:**	10.4 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 06:26:07	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_198 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_198 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	57.3

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		34.5
Total Dichloro Biphenyls		182
Total Trichloro Biphenyls		543
Total Tetrachloro Biphenyls		881
Total Pentachloro Biphenyls		913
Total Hexachloro Biphenyls		739
Total Heptachloro Biphenyls		334
Total Octachloro Biphenyls		101
Total Nonachloro Biphenyls		29.3
Decachloro Biphenyl		20.9
TOTAL PCBs		3780

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-39_Form1AHT_SJ1608777.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-11-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4273	**Sample Collection:**	07-May-2013 14:07
		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Matrix:	SOLID	**Lab Sample I.D.:**	L19652-39
Sample Size:	10.4 g (dry)	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg (dry weight basis)	**Sample Data Filename(s):**	**PB3C_198 S: 10**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			22.8	0.0985	0.0001	2.28e-03	2.28e-03	
3,4,4',5-TeCB	81		U		0.0993	0.0003	0.00e+00	1.49e-05	
2,3,3',4,4'-PeCB	105			76.1	0.214	0.00003	2.28e-03	2.28e-03	
2,3,4,4',5-PeCB	114			3.19	0.215	0.00003	9.57e-05	9.57e-05	
2,3',4,4',5-PeCB	118			159	0.208	0.00003	4.77e-03	4.77e-03	
2',3,4,4',5-PeCB	123			3.13	0.218	0.00003	9.39e-05	9.39e-05	
3,3',4,4',5-PeCB	126			1.37	0.235	0.1	1.37e-01	1.37e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	17.1	0.115	0.00003	5.13e-04	5.13e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			6.95	0.0917	0.00003	2.09e-04	2.09e-04	
3,3',4,4',5,5'-HxCB	169		U		0.380	0.03	0.00e+00	5.70e-03	
2,3,3',4,4',5,5'-HpCB	189			1.74	0.173	0.00003	5.22e-05	5.22e-05	
					TOTAL TEQ		0.147	0.153	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 11-Jun-2013 15:28:31; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-39_TEQ_SJ1608777.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-08-S
Sample Collection:
07-May-2013 14:35

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-40
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 14:05:08	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_199 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_199 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	21.9

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			1.97	0.0873 (S)	3.09	1.001
3-MoCB	2			12.3	0.0781 (S)	3.11	0.988
4-MoCB	3		B	2.31	0.0746 (S)	3.43	1.001
2,2'-DiCB	4			2.66	0.455 (S)	1.46	1.002
2,3-DiCB	5		U		0.268 (S)		
2,3'-DiCB	6			1.10	0.240 (S)	1.35	1.176
2,4-DiCB	7			0.536	0.246 (S)	1.76	1.158
2,4'-DiCB	8			8.11	0.226 (S)	1.53	1.208
2,5-DiCB	9			0.416	0.241 (S)	1.48	1.146
2,6-DiCB	10		U		0.256 (S)		
3,3'-DiCB	11			15.0	0.248 (S)	1.53	0.969
3,4-DiCB	12	12 + 13	C	1.67	0.241 (S)	1.56	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K J	0.275	0.239 (S)	1.24	0.926
4,4'-DiCB	15			11.8	0.264 (S)	1.53	1.001
2,2',3-TriCB	16			2.24	0.0864 (S)	1.00	1.165
2,2',4-TriCB	17			3.83	0.0772 (S)	1.04	1.138
2,2',5-TriCB	18	18 + 30	C B	5.84	0.0648 (S)	0.98	1.114
2,2',6-TriCB	19		K	0.736	0.0900 (S)	1.31	1.001
2,3,3'-TriCB	20	20 + 28	C B	30.5	0.0701 (S)	1.05	0.848
2,3,4-TriCB	21	21 + 33	C	7.18	0.0663 (S)	1.02	0.857
2,3,4'-TriCB	22		B	6.78	0.0740 (S)	1.02	0.872
2,3,5-TriCB	23		J	0.115	0.0747 (S)	1.09	1.284
2,3,6-TriCB	24		J	0.180	0.0586 (S)	0.91	1.160
2,3',4-TriCB	25			1.64	0.0613 (S)	1.01	0.825
2,3',5-TriCB	26	26 + 29	C	3.37	0.0705 (S)	1.00	1.302
2,3',6-TriCB	27			0.607	0.0529 (S)	1.09	1.152
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	17.0	0.0656 (S)	1.00	0.837
2,4',6-TriCB	32			3.60	0.0696 (S)	1.02	1.198
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.174	0.0720 (S)	1.01	1.274
3,3',4-TriCB	35			1.29	0.0704 (S)	1.03	0.985
3,3',5-TriCB	36			0.705	0.0664 (S)	0.99	0.932
3,4,4'-TriCB	37			12.2	0.0743 (S)	1.03	1.001
3,4,5-TriCB	38		J	0.126	0.0666 (S)	0.91	0.968
3,4',5-TriCB	39		J	0.221	0.0653 (S)	0.99	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C	8.11	0.0673 (S)	0.75	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			4.90	0.0694 (S)	0.72	1.312
2,2',3,5-TeCB	43		J	0.381	0.0759 (S)	0.76	1.247
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	17.4	0.0629 (S)	0.75	1.285
2,2',3,6-TeCB	45	45 + 51	C	1.82	0.0714 (S)	0.88	1.146
2,2',3,6'-TeCB	46			0.546	0.0816 (S)	0.67	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			2.63	0.0681 (S)	0.69	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	12.0	0.0588 (S)	0.75	1.259
2,2',4,6-TeCB	50	50 + 53	C	1.61	0.0700 (S)	0.84	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	19.3	0.0644 (S)	0.77	1.235
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		K J	0.057	0.0526 (S)	1.04	1.001
2,3,3',4-TeCB	55			0.431	0.104 (S)	0.86	0.889
2,3,3',4'-TeCB	56		B	11.8	0.103 (S)	0.77	0.904
2,3,3',5-TeCB	57		J	0.122	0.102 (S)	0.82	0.844
2,3,3',5'-TeCB	58		K J	0.108	0.104 (S)	0.49	0.851
2,3,3',6-TeCB	59	59 + 62 + 75	C	1.71	0.0510 (S)	0.84	1.302
2,3,4,4'-TeCB	60			7.50	0.102 (S)	0.78	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	47.0	0.101 (S)	0.78	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			1.20	0.0961 (S)	0.75	0.864
2,3,4',6-TeCB	64		B	7.33	0.0490 (Q)	0.78	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	26.3	0.0960 (S)	0.77	0.884
2,3',4,5-TeCB	67			0.889	0.0908 (S)	0.71	0.856
2,3',4,5'-TeCB	68		J	0.315	0.0988 (S)	0.80	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			0.405	0.0966 (S)	0.83	0.823
2,3',5',6-TeCB	73		K J	0.093	0.0557 (S)	0.56	1.242
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			6.08	0.109 (S)	0.78	1.000
3,3',4,5-TeCB	78		U		0.0976 (S)		
3,3',4,5'-TeCB	79			0.517	0.0836 (S)	0.77	0.970
3,3',5,5'-TeCB	80		U		0.0911 (S)		
3,4,4',5-TeCB	81		K J	0.332	0.109 (S)	0.67	1.000
2,2',3,3',4-PeCB	82			3.90	0.0908 (S)	1.74	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	24.4	0.0843 (S)	1.60	0.886
2,2',3,3',6-PeCB	84			5.35	0.0987 (S)	1.62	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	7.76	0.0692 (S)	1.48	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	21.9	0.0727 (S)	1.51	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	3.44	0.0872 (S)	1.55	1.154
2,2',3,4,6'-PeCB	89		J	0.266	0.0896 (S)	1.37	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	33.9	0.0751 (S)	1.55	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			6.25	0.0865 (S)	1.59	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	19.2	0.0862 (S)	1.54	1.121
2,2',3,5,6'-PeCB	94		K J	0.159	0.0965 (S)	1.02	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		J	0.156	0.0490 (Q)	1.36	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		K J	0.374	0.0789 (S)	2.27	1.093
2,2',4,6,6'-PeCB	104		U		0.0490 (Q)		
2,3,3',4,4'-PeCB	105		B	20.1	0.151 (S)	1.61	1.000
2,3,3',4,5-PeCB	106		U		0.137 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	1.41	0.145 (S)	1.66	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			3.83	0.134 (S)	1.54	0.998
2,3,3',4',6-PeCB	110	110 + 115	C B	33.6	0.0624 (S)	1.53	0.925
2,3,3',5,5'-PeCB	111		K J	0.079	0.0620 (S)	1.94	0.946
2,3,3',5,6-PeCB	112		U		0.0636 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			0.784	0.150 (S)	1.60	1.001
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	43.4	0.147 (S)	1.56	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		J	0.343	0.0569 (S)	1.73	0.958
2,3',4,5',6-PeCB	121		U		0.0654 (S)		
2',3,3',4,5-PeCB	122			0.485	0.148 (S)	1.64	1.010
2',3,4,4',5-PeCB	123			0.898	0.156 (S)	1.64	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			0.505	0.161 (S)	1.55	1.000
3,3',4,5,5'-PeCB	127		U		0.135 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C B	8.24	0.0637 (S)	1.27	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	53.8	0.0643 (S)	1.24	0.928
2,2',3,3',4,5'-HxCB	130			3.41	0.0781 (S)	1.36	0.913
2,2',3,3',4,6-HxCB	131			0.447	0.0813 (S)	1.35	1.159
2,2',3,3',4,6'-HxCB	132		B	10.5	0.0820 (S)	1.30	1.174
2,2',3,3',5,5'-HxCB	133			0.976	0.0752 (S)	1.06	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	1.61	0.0792 (S)	1.31	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C B	13.3	0.0687 (S)	1.19	1.104
2,2',3,3',6,6'-HxCB	136			3.34	0.0546 (S)	1.31	1.024
2,2',3,4,4',5-HxCB	137			1.73	0.0739 (S)	1.32	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	0.750	0.0726 (S)	1.42	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		B	4.03	0.0699 (S)	1.25	0.903
2,2',3,4,5,6-HxCB	142		U		0.0795 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		K	1.43	0.0674 (S)	1.02	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0579 (S)		
2,2',3,4',5,5'-HxCB	146		B	9.35	0.0662 (S)	1.23	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	28.6	0.0714 (S)	1.27	1.132
2,2',3,4',5,6'-HxCB	148		J	0.177	0.0715 (S)	1.14	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		K J	0.092	0.0557 (S)	0.77	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0542 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	47.4	0.0586 (S)	1.23	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		K J	0.075	0.0490 (Q)	1.79	1.001
2,3,3',4,4',5-HxCB	156	156 + 157	C B	4.59	0.0632 (S)	1.20	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		B	3.78	0.0514 (S)	1.35	0.938
2,3,3',4,5,5'-HxCB	159		J	0.324	0.0519 (S)	1.29	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.0546 (S)		
2,3,3',4',5,5'-HxCB	162		K J	0.251	0.0527 (S)	1.90	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			2.44	0.0556 (S)	1.17	0.921
2,3,3',5,5',6-HxCB	165		J	0.111	0.0617 (S)	1.20	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		B	1.95	0.0490 (Q)	1.12	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.100 (S)		
2,2',3,3',4,4',5-HpCB	170		B	9.20	0.0773 (S)	1.03	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C B	3.20	0.0725 (S)	1.11	1.162
2,2',3,3',4,5,5'-HpCB	172			1.74	0.0717 (S)	1.00	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		B	7.77	0.0695 (S)	1.01	1.133
2,2',3,3',4,5',6-HpCB	175			0.596	0.0672 (S)	1.20	1.102
2,2',3,3',4,6,6'-HpCB	176			1.08	0.0520 (S)	1.07	1.034
2,2',3,3',4',5,6-HpCB	177		B	7.61	0.0707 (S)	1.08	1.145
2,2',3,3',5,5',6-HpCB	178			3.62	0.0715 (S)	1.02	1.085
2,2',3,3',5,6,6'-HpCB	179		B	4.10	0.0527 (S)	1.03	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	18.2	0.0600 (S)	1.04	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.0697 (S)		
2,2',3,4,4',5,6'-HpCB	182		J	0.140	0.0672 (S)	0.94	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C B	7.56	0.0665 (S)	1.02	1.126
2,2',3,4,4',6,6'-HpCB	184		U		0.0514 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0560 (S)		
2,2',3,4',5,5',6-HpCB	187		B	19.1	0.0650 (S)	1.02	1.110
2,2',3,4',5,6,6'-HpCB	188		J	0.084	0.0490 (Q)	1.08	1.001
2,3,3',4,4',5,5'-HpCB	189			0.524	0.0983 (S)	1.06	1.001
2,3,3',4,4',5,6-HpCB	190		B	1.73	0.0553 (S)	1.03	0.947
2,3,3',4,4',5',6-HpCB	191		K J	0.325	0.0524 (S)	1.22	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.0599 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		B	5.27	0.0800 (S)	0.87	0.991
2,2',3,3',4,4',5,6-OcCB	195			2.02	0.0872 (S)	0.87	0.945
2,2',3,3',4,4',5,6'-OcCB	196		B	3.12	0.0517 (S)	0.91	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C	0.914	0.0490 (Q)	0.77	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C B	8.78	0.0540 (S)	0.86	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			1.10	0.0490 (Q)	0.84	1.023
2,2',3,3',5,5',6,6'-OcCB	202			2.40	0.0490 (Q)	0.85	1.001
2,2',3,4,4',5,5',6-OcCB	203		B	3.75	0.0509 (S)	0.78	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0490 (Q)		
2,3,3',4,4',5,5',6-OcCB	205		J	0.304	0.0725 (S)	0.89	1.001
2,2',3,3',4,4',5,5',6-NoCB	206		B	5.59	0.123 (S)	0.74	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			0.855	0.0952 (S)	0.80	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			2.17	0.0988 (S)	0.84	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209		B	5.87	0.0700 (S)	1.03	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 11-Jun-2013 15:27:35; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-40_Form1A_PB3C_199S5_SJ1609126.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-08-S
Sample Collection:
07-May-2013 14:35

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-40
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 14:05:08	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_199 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_199 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	21.9

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		16.6
Total Dichloro Biphenyls		41.3
Total Trichloro Biphenyls		97.6
Total Tetrachloro Biphenyls		180
Total Pentachloro Biphenyls		232
Total Hexachloro Biphenyls		201
Total Heptachloro Biphenyls		86.3
Total Octachloro Biphenyls		27.7
Total Nonachloro Biphenyls		8.62
Decachloro Biphenyl		5.87
TOTAL PCBs		897

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 11-Jun-2013 15:28:31; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-40_Form1AHT_SJ1609126.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-08-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 07-May-2013 14:35

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-40

Sample Size: 10.2 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_199 S: 5**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			6.08	0.109	0.0001	6.08e-04	6.08e-04	
3,4,4',5-TeCB	81		U		0.109	0.0003	0.00e+00	1.64e-05	
2,3,3',4,4'-PeCB	105			20.1	0.151	0.00003	6.03e-04	6.03e-04	
2,3,4,4',5-PeCB	114			0.784	0.150	0.00003	2.35e-05	2.35e-05	
2,3',4,4',5-PeCB	118			43.4	0.147	0.00003	1.30e-03	1.30e-03	
2',3,4,4',5-PeCB	123			0.898	0.156	0.00003	2.69e-05	2.69e-05	
3,3',4,4',5-PeCB	126			0.505	0.161	0.1	5.05e-02	5.05e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	4.59	0.0632	0.00003	1.38e-04	1.38e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			1.95	0.0490	0.00003	5.85e-05	5.85e-05	
3,3',4,4',5,5'-HxCB	169		U		0.100	0.03	0.00e+00	1.50e-03	
2,3,3',4,4',5,5'-HpCB	189			0.524	0.0983	0.00003	1.57e-05	1.57e-05	
					TOTAL TEQ		0.0533	0.0548	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-06-S
Sample Collection:
07-May-2013 15:30

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-41
Matrix:	SOLID	**Sample Size:**	10.0 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 15:09:15	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_199 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_199 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	69.3

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			10.8	0.0789 (S)	3.15	1.001
3-MoCB	2			38.1	0.0699 (S)	3.07	0.989
4-MoCB	3		B	13.2	0.0652 (S)	3.08	1.001
2,2'-DiCB	4			19.2	0.281 (S)	1.53	1.001
2,3-DiCB	5			1.18	0.180 (S)	1.57	1.197
2,3'-DiCB	6			15.9	0.161 (S)	1.54	1.175
2,4-DiCB	7			7.15	0.166 (S)	1.63	1.157
2,4'-DiCB	8			104	0.152 (S)	1.54	1.207
2,5-DiCB	9			3.54	0.163 (S)	1.58	1.147
2,6-DiCB	10			0.991	0.172 (S)	1.36	1.014
3,3'-DiCB	11			45.3	0.167 (S)	1.54	0.968
3,4-DiCB	12	12 + 13	C K G	14.4	0.162 (S)	1.81	0.983
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	1.84	0.161 (S)	1.23	0.924
4,4'-DiCB	15			141	0.182 (S)	1.54	1.001
2,2',3-TriCB	16			41.4	0.0868 (S)	1.04	1.167
2,2',4-TriCB	17			49.1	0.0775 (S)	1.04	1.139
2,2',5-TriCB	18	18 + 30	C B	88.2	0.0651 (S)	1.04	1.114
2,2',6-TriCB	19			7.06	0.0772 (S)	1.06	1.001
2,3,3'-TriCB	20	20 + 28	C B	386	0.152 (S)	1.02	0.849
2,3,4-TriCB	21	21 + 33	C	108	0.143 (S)	1.03	0.859
2,3,4'-TriCB	22		B	79.6	0.160 (S)	1.02	0.873
2,3,5-TriCB	23		J	0.273	0.162 (S)	0.97	1.282
2,3,6-TriCB	24			1.28	0.0589 (S)	1.08	1.161
2,3',4-TriCB	25			26.6	0.133 (S)	1.02	0.826
2,3',5-TriCB	26	26 + 29	C	43.2	0.153 (S)	1.02	1.301
2,3',6-TriCB	27		G	7.81	0.0531 (S)	1.03	1.152
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	218	0.142 (S)	1.03	0.837
2,4',6-TriCB	32			44.9	0.151 (S)	1.03	1.198
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34			1.41	0.156 (S)	1.01	1.273
3,3',4-TriCB	35			13.8	0.152 (S)	1.01	0.985
3,3',5-TriCB	36			3.66	0.144 (S)	0.99	0.932
3,4,4'-TriCB	37			124	0.177 (S)	1.02	1.001
3,4,5-TriCB	38			1.37	0.144 (S)	1.07	0.968
3,4',5-TriCB	39			3.00	0.141 (S)	0.92	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C	156	0.0789 (S)	0.78	1.334
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			78.8	0.0813 (S)	0.78	1.308
2,2',3,5-TeCB	43			7.96	0.0890 (S)	0.77	1.244
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	292	0.0737 (S)	0.78	1.283
2,2',3,6-TeCB	45	45 + 51	C	31.9	0.0836 (S)	0.77	1.145
2,2',3,6'-TeCB	46			11.8	0.0957 (S)	0.79	1.159
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			45.7	0.0799 (S)	0.80	1.271
2,2',4,5'-TeCB	49	49 + 69	C B	187	0.0689 (S)	0.78	1.257
2,2',4,6-TeCB	50	50 + 53	C	26.7	0.0820 (S)	0.78	1.109
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	324	0.0755 (S)	0.77	1.232
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		J	0.350	0.0516 (S)	0.70	1.001
2,3,3',4-TeCB	55			6.01	0.101 (S)	0.80	0.890
2,3,3',4'-TeCB	56		B	147	0.0994 (S)	0.76	0.905
2,3,3',5-TeCB	57			2.18	0.0981 (S)	0.75	0.844
2,3,3',5'-TeCB	58			1.82	0.100 (S)	0.75	0.851
2,3,3',6-TeCB	59	59 + 62 + 75	C	27.6	0.0598 (S)	0.81	1.299
2,3,4,4'-TeCB	60			88.1	0.0979 (S)	0.77	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	581	0.0971 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			14.7	0.0927 (S)	0.76	0.865
2,3,4',6-TeCB	64		B	113	0.0571 (S)	0.78	1.346
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	311	0.0925 (S)	0.77	0.885
2,3',4,5-TeCB	67			13.3	0.0876 (S)	0.76	0.857
2,3',4,5'-TeCB	68			3.12	0.0953 (S)	0.77	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			5.43	0.0932 (S)	0.75	0.823
2,3',5',6-TeCB	73			5.84	0.0653 (S)	0.77	1.244
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			59.8	0.120 (S)	0.77	1.000
3,3',4,5-TeCB	78		K J	0.386	0.0942 (S)	0.94	0.987
3,3',4,5'-TeCB	79			6.22	0.0806 (S)	0.77	0.970
3,3',5,5'-TeCB	80		K	0.235	0.0878 (S)	0.97	0.924
3,4,4',5-TeCB	81		K	2.24	0.107 (S)	0.81	1.000
2,2',3,3',4-PeCB	82			53.5	0.139 (S)	1.56	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	291	0.129 (S)	1.54	0.885
2,2',3,3',6-PeCB	84			102	0.151 (S)	1.58	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	98.8	0.106 (S)	1.60	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	303	0.112 (S)	1.55	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	56.8	0.134 (S)	1.57	1.153
2,2',3,4,6'-PeCB	89			5.23	0.138 (S)	1.56	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	462	0.115 (S)	1.56	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			86.2	0.133 (S)	1.58	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	328	0.132 (S)	1.54	1.120
2,2',3,5,6'-PeCB	94			2.16	0.148 (S)	1.64	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			2.66	0.0531 (S)	1.56	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			4.42	0.121 (S)	1.54	1.093
2,2',4,6,6'-PeCB	104		U		0.0500 (Q)		
2,3,3',4,4'-PeCB	105		B	206	0.204 (S)	1.54	1.000
2,3,3',4,5-PeCB	106		U		0.176 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	17.6	0.187 (S)	1.53	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			43.3	0.173 (S)	1.54	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	470	0.0958 (S)	1.60	0.925
2,3,3',5,5'-PeCB	111			0.854	0.0952 (S)	1.44	0.945
2,3,3',5,6-PeCB	112		U		0.0977 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			9.41	0.203 (S)	1.51	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	443	0.186 (S)	1.55	1.001
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			3.37	0.0873 (S)	1.68	0.958
2,3',4,5',6-PeCB	121		J	0.230	0.100 (S)	1.55	1.199
2',3,3',4,5-PeCB	122			5.61	0.191 (S)	1.44	1.010
2',3,4,4',5-PeCB	123			9.18	0.198 (S)	1.61	1.000
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			4.08	0.234 (S)	1.47	1.000
3,3',4,5,5'-PeCB	127			0.770	0.174 (S)	1.71	1.042
2,2',3,3',4,4'-HxCB	128	128 + 166	C B	83.7	0.155 (S)	1.24	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	592	0.157 (S)	1.26	0.929
2,2',3,3',4,5'-HxCB	130			39.9	0.191 (S)	1.25	0.913
2,2',3,3',4,6-HxCB	131			5.48	0.198 (S)	1.13	1.159
2,2',3,3',4,6'-HxCB	132		B	154	0.200 (S)	1.21	1.173
2,2',3,3',5,5'-HxCB	133			10.5	0.183 (S)	1.33	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	24.1	0.193 (S)	1.25	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C B	176	0.0705 (S)	1.23	1.104
2,2',3,3',6,6'-HxCB	136			57.3	0.0560 (S)	1.24	1.023
2,2',3,4,4',5-HxCB	137			16.8	0.180 (S)	1.28	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	8.50	0.177 (S)	1.22	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		B	59.9	0.171 (S)	1.27	0.904
2,2',3,4,5,6-HxCB	142		U		0.194 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			20.2	0.0692 (S)	1.23	1.121
2,2',3,4,6,6'-HxCB	145		J	0.188	0.0594 (S)	1.42	1.034
2,2',3,4',5,5'-HxCB	146		B G	87.0	0.161 (S)	1.22	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	400	0.174 (S)	1.24	1.133
2,2',3,4',5,6'-HxCB	148			0.935	0.0734 (S)	1.25	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150			1.47	0.0571 (S)	1.24	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	0.394	0.0556 (S)	1.40	1.006
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	506	0.143 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		K J	0.116	0.0500 (Q)	1.72	1.001
2,3,3',4,4',5-HxCB	156	156 + 157	C B	47.5	0.153 (S)	1.25	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		B	42.7	0.125 (S)	1.25	0.938
2,3,3',4,5,5'-HxCB	159			5.29	0.127 (S)	1.17	0.982
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.133 (S)		
2,3,3',4',5,5'-HxCB	162			2.40	0.129 (S)	1.16	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			34.1	0.136 (S)	1.21	0.921
2,3,3',5,5',6-HxCB	165			0.898	0.151 (S)	1.15	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		B	19.6	0.122 (S)	1.27	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.906 (S)		
2,2',3,3',4,4',5-HpCB	170		B	108	0.156 (S)	1.02	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C B	37.5	0.139 (S)	1.04	1.162
2,2',3,3',4,5,5'-HpCB	172			21.5	0.137 (S)	1.03	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		B	110	0.133 (S)	1.03	1.133
2,2',3,3',4,5',6-HpCB	175			6.80	0.129 (S)	1.08	1.102
2,2',3,3',4,6,6'-HpCB	176			15.4	0.0996 (S)	1.02	1.034
2,2',3,3',4',5,6-HpCB	177		B	85.8	0.135 (S)	1.04	1.145
2,2',3,3',5,5',6-HpCB	178			37.9	0.137 (S)	1.02	1.085
2,2',3,3',5,6,6'-HpCB	179		B	57.4	0.101 (S)	1.04	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	235	0.134 (S)	1.03	1.001
2,2',3,4,4',5,6-HpCB	181		K	0.837	0.134 (S)	0.67	1.156
2,2',3,4,4',5,6'-HpCB	182		K	1.03	0.129 (S)	0.74	1.116
2,2',3,4,4',5',6-HpCB	183	183 + 185	C B	82.1	0.127 (S)	1.03	1.127
2,2',3,4,4',6,6'-HpCB	184		K J	0.334	0.0984 (S)	0.88	1.025
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.107 (S)		
2,2',3,4',5,5',6-HpCB	187		B	207	0.124 (S)	1.02	1.110
2,2',3,4',5,6,6'-HpCB	188		K	0.580	0.0898 (S)	0.80	1.001
2,3,3',4,4',5,5'-HpCB	189			4.45	0.154 (S)	0.92	1.001
2,3,3',4,4',5,6-HpCB	190		B	18.4	0.106 (S)	1.06	0.948
2,3,3',4,4',5',6-HpCB	191			4.10	0.100 (S)	1.06	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.115 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		B	60.8	0.110 (S)	0.87	0.991
2,2',3,3',4,4',5,6-OcCB	195			22.7	0.120 (S)	0.91	0.945
2,2',3,3',4,4',5,6'-OcCB	196		B	33.9	0.0799 (S)	0.90	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	9.64	0.0616 (S)	0.88	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C B	97.6	0.0835 (S)	0.88	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			13.2	0.0607 (S)	0.88	1.023
2,2',3,3',5,5',6,6'-OcCB	202			23.3	0.0609 (S)	0.88	1.001
2,2',3,4,4',5,5',6-OcCB	203		B	42.2	0.0787 (S)	0.88	0.919
2,2',3,4,4',5,6,6'-OcCB	204		K J	0.116	0.0620 (S)	0.56	1.039
2,3,3',4,4',5,5',6-OcCB	205			2.92	0.104 (S)	0.82	1.001
2,2',3,3',4,4',5,5',6-NoCB	206		B	52.9	0.153 (S)	0.78	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			8.49	0.116 (S)	0.77	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			23.2	0.120 (S)	0.76	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209		B	65.6	0.0663 (S)	1.17	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 11-Jun-2013 15:27:35; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-41_Form1A_PB3C_199S6_SJ1609128.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-06-S
Sample Collection:
07-May-2013 15:30

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-41
Matrix:	SOLID	**Sample Size:**	10.0 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 15:09:15	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_199 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_199 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	69.3

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			10.8	0.0789 (S)	3.15	1.001
3-MoCB	2			38.1	0.0699 (S)	3.07	0.989
4-MoCB	3		B	13.2	0.0652 (S)	3.08	1.001
2,2'-DiCB	4			19.2	0.281 (S)	1.53	1.001
2,3-DiCB	5			1.18	0.180 (S)	1.57	1.197
2,3'-DiCB	6			15.9	0.161 (S)	1.54	1.175
2,4-DiCB	7			7.15	0.166 (S)	1.63	1.157
2,4'-DiCB	8			104	0.152 (S)	1.54	1.207
2,5-DiCB	9			3.54	0.163 (S)	1.58	1.147
2,6-DiCB	10			0.991	0.172 (S)	1.36	1.014
3,3'-DiCB	11			45.3	0.167 (S)	1.54	0.968
3,4-DiCB	12	12 + 13	C K G	14.4	0.162 (S)	1.81	0.983
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	1.84	0.161 (S)	1.23	0.924
4,4'-DiCB	15			141	0.182 (S)	1.54	1.001
2,2',3-TriCB	16			41.4	0.0868 (S)	1.04	1.167
2,2',4-TriCB	17			49.1	0.0775 (S)	1.04	1.139
2,2',5-TriCB	18	18 + 30	C B	88.2	0.0651 (S)	1.04	1.114
2,2',6-TriCB	19			7.06	0.0772 (S)	1.06	1.001
2,3,3'-TriCB	20	20 + 28	C B	386	0.152 (S)	1.02	0.849
2,3,4-TriCB	21	21 + 33	C	108	0.143 (S)	1.03	0.859
2,3,4'-TriCB	22		B	79.6	0.160 (S)	1.02	0.873
2,3,5-TriCB	23		J	0.273	0.162 (S)	0.97	1.282
2,3,6-TriCB	24			1.28	0.0589 (S)	1.08	1.161
2,3',4-TriCB	25			26.6	0.133 (S)	1.02	0.826
2,3',5-TriCB	26	26 + 29	C	43.2	0.153 (S)	1.02	1.301
2,3',6-TriCB	27		G	7.81	0.0531 (S)	1.03	1.152
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	218	0.142 (S)	1.03	0.837
2,4',6-TriCB	32			44.9	0.151 (S)	1.03	1.198
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34			1.41	0.156 (S)	1.01	1.273
3,3',4-TriCB	35			13.8	0.152 (S)	1.01	0.985
3,3',5-TriCB	36			3.66	0.144 (S)	0.99	0.932
3,4,4'-TriCB	37			124	0.177 (S)	1.02	1.001
3,4,5-TriCB	38			1.37	0.144 (S)	1.07	0.968
3,4',5-TriCB	39			3.00	0.141 (S)	0.92	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C	156	0.0789 (S)	0.78	1.334
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			78.8	0.0813 (S)	0.78	1.308
2,2',3,5-TeCB	43			8.25	0.0890 (S)	0.75	1.244
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	292	0.0737 (S)	0.78	1.283
2,2',3,6-TeCB	45	45 + 51	C	31.9	0.0836 (S)	0.77	1.145
2,2',3,6'-TeCB	46			11.8	0.0957 (S)	0.79	1.159
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			45.7	0.0799 (S)	0.80	1.271
2,2',4,5'-TeCB	49	49 + 69	C B	187	0.0689 (S)	0.78	1.257
2,2',4,6-TeCB	50	50 + 53	C	26.7	0.0820 (S)	0.78	1.109
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	324	0.0755 (S)	0.77	1.232
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		J	0.350	0.0516 (S)	0.70	1.001
2,3,3',4-TeCB	55			6.01	0.101 (S)	0.80	0.890
2,3,3',4'-TeCB	56		B	147	0.0994 (S)	0.76	0.905
2,3,3',5-TeCB	57			2.18	0.0981 (S)	0.75	0.844
2,3,3',5'-TeCB	58			1.82	0.100 (S)	0.75	0.851
2,3,3',6-TeCB	59	59 + 62 + 75	C	27.6	0.0598 (S)	0.81	1.299
2,3,4,4'-TeCB	60			88.1	0.0979 (S)	0.77	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	581	0.0971 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			14.7	0.0927 (S)	0.76	0.865
2,3,4',6-TeCB	64		B	113	0.0571 (S)	0.78	1.346
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	311	0.0925 (S)	0.77	0.885
2,3',4,5-TeCB	67			13.3	0.0876 (S)	0.76	0.857
2,3',4,5'-TeCB	68			3.12	0.0953 (S)	0.77	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			5.43	0.0932 (S)	0.75	0.823
2,3',5',6-TeCB	73			0.707	0.0653 (S)	0.81	1.239
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			59.8	0.120 (S)	0.77	1.000
3,3',4,5-TeCB	78		K J	0.386	0.0942 (S)	0.94	0.987
3,3',4,5'-TeCB	79			6.22	0.0806 (S)	0.77	0.970
3,3',5,5'-TeCB	80		K J	0.235	0.0878 (S)	0.97	0.924
3,4,4',5-TeCB	81		K	2.24	0.107 (S)	0.81	1.000
2,2',3,3',4-PeCB	82			53.5	0.139 (S)	1.56	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	291	0.129 (S)	1.54	0.885
2,2',3,3',6-PeCB	84			102	0.151 (S)	1.58	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	98.8	0.106 (S)	1.60	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	303	0.112 (S)	1.55	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	56.8	0.134 (S)	1.57	1.153
2,2',3,4,6'-PeCB	89			5.23	0.138 (S)	1.56	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	462	0.115 (S)	1.56	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			86.2	0.133 (S)	1.58	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	328	0.132 (S)	1.54	1.120
2,2',3,5,6'-PeCB	94			2.16	0.148 (S)	1.64	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			2.66	0.0531 (S)	1.56	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			4.42	0.121 (S)	1.54	1.093
2,2',4,6,6'-PeCB	104		U		0.0500 (Q)		
2,3,3',4,4'-PeCB	105		B	206	0.204 (S)	1.54	1.000
2,3,3',4,5-PeCB	106		U		0.176 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	17.6	0.187 (S)	1.53	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			43.3	0.173 (S)	1.54	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	470	0.0958 (S)	1.60	0.925
2,3,3',5,5'-PeCB	111			0.854	0.0952 (S)	1.44	0.945
2,3,3',5,6-PeCB	112		U		0.0977 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			9.41	0.203 (S)	1.51	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	443	0.186 (S)	1.55	1.001
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			3.37	0.0873 (S)	1.68	0.958
2,3',4,5',6-PeCB	121		J	0.230	0.100 (S)	1.55	1.199
2',3,3',4,5-PeCB	122			5.61	0.191 (S)	1.44	1.010
2',3,4,4',5-PeCB	123			9.18	0.198 (S)	1.61	1.000
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			4.08	0.234 (S)	1.47	1.000
3,3',4,5,5'-PeCB	127			0.770	0.174 (S)	1.71	1.042
2,2',3,3',4,4'-HxCB	128	128 + 166	C B	83.7	0.155 (S)	1.24	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	592	0.157 (S)	1.26	0.929
2,2',3,3',4,5'-HxCB	130			39.9	0.191 (S)	1.25	0.913
2,2',3,3',4,6-HxCB	131			5.48	0.198 (S)	1.13	1.159
2,2',3,3',4,6'-HxCB	132		B	154	0.200 (S)	1.21	1.173
2,2',3,3',5,5'-HxCB	133			10.5	0.183 (S)	1.33	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	24.1	0.193 (S)	1.25	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C B	176	0.0705 (S)	1.23	1.104
2,2',3,3',6,6'-HxCB	136			57.3	0.0560 (S)	1.24	1.023
2,2',3,4,4',5-HxCB	137			16.8	0.180 (S)	1.28	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	8.50	0.177 (S)	1.22	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		B	59.9	0.171 (S)	1.27	0.904
2,2',3,4,5,6-HxCB	142		U		0.194 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			20.2	0.0692 (S)	1.23	1.121
2,2',3,4,6,6'-HxCB	145		J	0.188	0.0594 (S)	1.42	1.034
2,2',3,4',5,5'-HxCB	146		B G	87.0	0.161 (S)	1.22	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	400	0.174 (S)	1.24	1.133
2,2',3,4',5,6'-HxCB	148			0.935	0.0734 (S)	1.25	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150			1.47	0.0571 (S)	1.24	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	0.394	0.0556 (S)	1.40	1.006
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	506	0.143 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		K J	0.116	0.0500 (Q)	1.72	1.001
2,3,3',4,4',5-HxCB	156	156 + 157	C B	47.5	0.153 (S)	1.25	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		B	42.7	0.125 (S)	1.25	0.938
2,3,3',4,5,5'-HxCB	159			5.29	0.127 (S)	1.17	0.982
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.133 (S)		
2,3,3',4',5,5'-HxCB	162			2.40	0.129 (S)	1.16	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			34.1	0.136 (S)	1.21	0.921
2,3,3',5,5',6-HxCB	165			0.898	0.151 (S)	1.15	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		B	19.6	0.122 (S)	1.27	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		K	0.906	0.437 (S)	1.93	1.001
2,2',3,3',4,4',5-HpCB	170		B	108	0.156 (S)	1.02	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C B	37.5	0.139 (S)	1.04	1.162
2,2',3,3',4,5,5'-HpCB	172			21.5	0.137 (S)	1.03	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		B	110	0.133 (S)	1.03	1.133
2,2',3,3',4,5',6-HpCB	175			6.80	0.129 (S)	1.08	1.102
2,2',3,3',4,6,6'-HpCB	176			15.4	0.0996 (S)	1.02	1.034
2,2',3,3',4',5,6-HpCB	177		B	85.8	0.135 (S)	1.04	1.145
2,2',3,3',5,5',6-HpCB	178			37.9	0.137 (S)	1.02	1.085
2,2',3,3',5,6,6'-HpCB	179		B	57.4	0.101 (S)	1.04	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	235	0.134 (S)	1.03	1.001
2,2',3,4,4',5,6-HpCB	181		K	0.837	0.134 (S)	0.67	1.156
2,2',3,4,4',5,6'-HpCB	182		K	1.03	0.129 (S)	0.74	1.116
2,2',3,4,4',5',6-HpCB	183	183 + 185	C B	82.1	0.127 (S)	1.03	1.127
2,2',3,4,4',6,6'-HpCB	184		K J	0.334	0.0984 (S)	0.88	1.025
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.107 (S)		
2,2',3,4',5,5',6-HpCB	187		B	207	0.124 (S)	1.02	1.110
2,2',3,4',5,6,6'-HpCB	188		K	0.580	0.0898 (S)	0.80	1.001
2,3,3',4,4',5,5'-HpCB	189			4.45	0.154 (S)	0.92	1.001
2,3,3',4,4',5,6-HpCB	190		B	18.4	0.106 (S)	1.06	0.948
2,3,3',4,4',5',6-HpCB	191			4.10	0.100 (S)	1.06	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.115 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		B	60.8	0.110 (S)	0.87	0.991
2,2',3,3',4,4',5,6-OcCB	195			22.7	0.120 (S)	0.91	0.945
2,2',3,3',4,4',5,6'-OcCB	196		B	33.9	0.0799 (S)	0.90	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	9.64	0.0616 (S)	0.88	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C B	97.6	0.0835 (S)	0.88	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			13.2	0.0607 (S)	0.88	1.023
2,2',3,3',5,5',6,6'-OcCB	202			23.3	0.0609 (S)	0.88	1.001
2,2',3,4,4',5,5',6-OcCB	203		B	42.2	0.0787 (S)	0.88	0.919
2,2',3,4,4',5,6,6'-OcCB	204		K J	0.116	0.0620 (S)	0.56	1.039
2,3,3',4,4',5,5',6-OcCB	205			2.92	0.104 (S)	0.82	1.001
2,2',3,3',4,4',5,5',6-NoCB	206		B	52.9	0.153 (S)	0.78	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			8.49	0.116 (S)	0.77	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			23.2	0.120 (S)	0.76	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209		B	65.6	0.0663 (S)	1.17	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

NOTE: This revised report replaces any previously dated reports as evidenced by the 'Create Date' and identified by: SJ1609128

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 24-Jun-2013 08:54:21; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_L19652-41_Form1A_PB3C_199S6_SJ1609128.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-06-S
Sample Collection:
07-May-2013 15:30

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-41
Matrix:	SOLID	**Sample Size:**	10.0 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 15:09:15	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_199 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_199 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	69.3

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		62.1
Total Dichloro Biphenyls		338
Total Trichloro Biphenyls		1250
Total Tetrachloro Biphenyls		2550
Total Pentachloro Biphenyls		3010
Total Hexachloro Biphenyls		2400
Total Heptachloro Biphenyls		1030
Total Octachloro Biphenyls		306
Total Nonachloro Biphenyls		84.6
Decachloro Biphenyl		65.6
TOTAL PCBs		11100

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 11-Jun-2013 15:28:31; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-41_Form1AHT_SJ1609128.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-06-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	07-May-2013 15:30		
Contract No.:	4273	**Project No.**	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Matrix:	SOLID	**Lab Sample I.D.:**	L19652-41
Sample Size:	10.0 g (dry)	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg (dry weight basis)	**Sample Data Filename(s):**	**PB3C_199 S: 6**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			59.8	0.120	0.0001	5.98e-03	5.98e-03	
3,4,4',5-TeCB	81		U		0.107	0.0003	0.00e+00	1.61e-05	
2,3,3',4,4'-PeCB	105			206	0.204	0.00003	6.18e-03	6.18e-03	
2,3,4,4',5-PeCB	114			9.41	0.203	0.00003	2.82e-04	2.82e-04	
2,3',4,4',5-PeCB	118			443	0.186	0.00003	1.33e-02	1.33e-02	
2',3,4,4',5-PeCB	123			9.18	0.198	0.00003	2.75e-04	2.75e-04	
3,3',4,4',5-PeCB	126			4.08	0.234	0.1	4.08e-01	4.08e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	47.5	0.153	0.00003	1.43e-03	1.43e-03	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			19.6	0.122	0.00003	5.88e-04	5.88e-04	
3,3',4,4',5,5'-HxCB	169		U		0.437	0.03	0.00e+00	6.56e-03	
2,3,3',4,4',5,5'-HpCB	189			4.45	0.154	0.00003	1.34e-04	1.34e-04	
					TOTAL TEQ		0.436	0.443	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-09-S
Sample Collection:
07-May-2013 16:40

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-42
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 16:13:23	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_199 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_199 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	41.4

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			5.05	0.0635 (S)	3.28	1.001
3-MoCB	2			15.7	0.0589 (S)	3.12	0.988
4-MoCB	3		B	4.33	0.0579 (S)	3.04	1.001
2,2'-DiCB	4			6.72	0.269 (S)	1.47	1.002
2,3-DiCB	5		J	0.266	0.165 (S)	1.40	1.198
2,3'-DiCB	6			3.73	0.147 (S)	1.52	1.175
2,4-DiCB	7			1.11	0.152 (S)	1.47	1.159
2,4'-DiCB	8			24.0	0.139 (S)	1.52	1.208
2,5-DiCB	9			0.937	0.149 (S)	1.46	1.146
2,6-DiCB	10		K J	0.258	0.157 (S)	1.11	1.013
3,3'-DiCB	11			42.7	0.152 (S)	1.54	0.969
3,4-DiCB	12	12 + 13	C	5.07	0.148 (S)	1.69	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	0.652	0.147 (S)	0.92	0.926
4,4'-DiCB	15			33.9	0.164 (S)	1.50	1.001
2,2',3-TriCB	16			8.27	0.0775 (S)	1.04	1.165
2,2',4-TriCB	17			11.3	0.0692 (S)	1.07	1.138
2,2',5-TriCB	18	18 + 30	C B	20.1	0.0581 (S)	1.08	1.113
2,2',6-TriCB	19			1.57	0.0770 (S)	1.03	1.002
2,3,3'-TriCB	20	20 + 28	C B	80.3	0.0853 (S)	1.03	0.849
2,3,4-TriCB	21	21 + 33	C	25.7	0.0807 (S)	1.03	0.858
2,3,4'-TriCB	22		B	20.4	0.0901 (S)	1.03	0.873
2,3,5-TriCB	23		U		0.0908 (S)		
2,3,6-TriCB	24		J	0.286	0.0526 (S)	1.10	1.159
2,3',4-TriCB	25			5.27	0.0746 (S)	1.06	0.825
2,3',5-TriCB	26	26 + 29	C	9.97	0.0858 (S)	1.06	1.301
2,3',6-TriCB	27			1.97	0.0474 (S)	1.01	1.152
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	50.5	0.0799 (S)	1.04	0.837
2,4',6-TriCB	32			8.68	0.0847 (S)	1.04	1.198
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.327	0.0876 (S)	1.01	1.273
3,3',4-TriCB	35			3.46	0.0857 (S)	1.05	0.985
3,3',5-TriCB	36			1.99	0.0808 (S)	1.12	0.932
3,4,4'-TriCB	37			31.7	0.0929 (S)	1.02	1.001
3,4,5-TriCB	38			0.396	0.0810 (S)	1.05	0.968
3,4',5-TriCB	39			0.689	0.0794 (S)	1.04	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C	28.3	0.0743 (S)	0.76	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			14.0	0.0766 (S)	0.81	1.311
2,2',3,5-TeCB	43		K	1.42	0.0839 (S)	0.91	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	52.1	0.0695 (S)	0.77	1.285
2,2',3,6-TeCB	45	45 + 51	C	5.22	0.0788 (S)	0.82	1.146
2,2',3,6'-TeCB	46			1.81	0.0902 (S)	0.85	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			8.71	0.0753 (S)	0.78	1.273
2,2',4,5'-TeCB	49	49 + 69	C B	35.1	0.0650 (S)	0.78	1.259
2,2',4,6-TeCB	50	50 + 53	C	4.64	0.0773 (S)	0.80	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	53.8	0.0712 (S)	0.78	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		J	0.101	0.0547 (S)	0.87	1.001
2,3,3',4-TeCB	55			1.18	0.129 (S)	0.86	0.890
2,3,3',4'-TeCB	56		B	33.5	0.128 (S)	0.76	0.905
2,3,3',5-TeCB	57			0.403	0.126 (S)	0.83	0.844
2,3,3',5'-TeCB	58		J	0.315	0.128 (S)	0.79	0.851
2,3,3',6-TeCB	59	59 + 62 + 75	C	4.75	0.0564 (S)	0.74	1.302
2,3,4,4'-TeCB	60			20.3	0.126 (S)	0.75	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	127	0.125 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			3.00	0.119 (S)	0.73	0.864
2,3,4',6-TeCB	64		B	20.8	0.0538 (S)	0.79	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	76.4	0.119 (S)	0.77	0.885
2,3',4,5-TeCB	67			2.47	0.112 (S)	0.73	0.856
2,3',4,5'-TeCB	68			0.753	0.122 (S)	0.83	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			0.971	0.120 (S)	0.68	0.823
2,3',5',6-TeCB	73		J	0.159	0.0615 (S)	0.71	1.241
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			14.8	0.139 (S)	0.77	1.000
3,3',4,5-TeCB	78		U		0.121 (S)		
3,3',4,5'-TeCB	79			1.32	0.103 (S)	0.74	0.970
3,3',5,5'-TeCB	80		U		0.113 (S)		
3,4,4',5-TeCB	81		K	0.606	0.138 (S)	0.66	1.000
2,2',3,3',4-PeCB	82			11.2	0.120 (S)	1.54	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	61.0	0.111 (S)	1.50	0.886
2,2',3,3',6-PeCB	84			16.4	0.131 (S)	1.53	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	20.2	0.0916 (S)	1.56	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	59.3	0.0961 (S)	1.54	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	9.69	0.115 (S)	1.55	1.154
2,2',3,4,6'-PeCB	89		K	0.852	0.119 (S)	2.06	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	86.6	0.0993 (S)	1.54	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			15.1	0.114 (S)	1.60	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	52.0	0.114 (S)	1.53	1.120
2,2',3,5,6'-PeCB	94		J	0.357	0.128 (S)	1.71	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.441	0.0569 (S)	1.66	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			0.887	0.104 (S)	1.78	1.093
2,2',4,6,6'-PeCB	104		U		0.0467 (Q)		
2,3,3',4,4'-PeCB	105		B	59.6	0.281 (S)	1.51	1.000
2,3,3',4,5-PeCB	106		U		0.250 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	4.28	0.266 (S)	1.57	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			9.72	0.246 (S)	1.54	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	96.5	0.0826 (S)	1.56	0.925
2,3,3',5,5'-PeCB	111		K J	0.251	0.0820 (S)	1.31	0.945
2,3,3',5,6-PeCB	112		U		0.0842 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			2.65	0.281 (S)	1.50	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	119	0.275 (S)	1.55	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			0.757	0.0752 (S)	1.58	0.959
2,3',4,5',6-PeCB	121		U		0.0865 (S)		
2',3,3',4,5-PeCB	122			1.37	0.272 (S)	1.47	1.010
2',3,4,4',5-PeCB	123			2.23	0.292 (S)	1.46	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			1.04	0.303 (S)	1.67	1.000
3,3',4,5,5'-PeCB	127		U		0.248 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C B	26.3	0.119 (S)	1.23	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	148	0.120 (S)	1.26	0.928
2,2',3,3',4,5'-HxCB	130			9.21	0.146 (S)	1.32	0.913
2,2',3,3',4,6-HxCB	131			1.01	0.152 (S)	1.06	1.159
2,2',3,3',4,6'-HxCB	132		B	32.3	0.153 (S)	1.23	1.174
2,2',3,3',5,5'-HxCB	133			2.14	0.140 (S)	1.31	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	4.55	0.148 (S)	1.27	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C B	31.9	0.0692 (S)	1.27	1.103
2,2',3,3',6,6'-HxCB	136			8.68	0.0550 (S)	1.24	1.024
2,2',3,4,4',5-HxCB	137			5.45	0.138 (S)	1.29	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	1.76	0.136 (S)	1.19	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		B	13.3	0.131 (S)	1.22	0.903
2,2',3,4,5,6-HxCB	142		U		0.148 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			3.84	0.0679 (S)	1.22	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0583 (S)		
2,2',3,4',5,5'-HxCB	146		B	20.0	0.124 (S)	1.25	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	77.3	0.133 (S)	1.22	1.133
2,2',3,4',5,6'-HxCB	148			0.712	0.0720 (S)	1.12	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	0.196	0.0560 (S)	1.18	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		K J	0.078	0.0546 (S)	0.95	1.007
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	117	0.109 (S)	1.25	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		J	0.057	0.0467 (Q)	1.11	1.001
2,3,3',4,4',5-HxCB	156	156 + 157	C B	21.4	0.117 (S)	1.25	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		B	11.4	0.0959 (S)	1.26	0.938
2,3,3',4,5,5'-HxCB	159			1.06	0.0969 (S)	1.39	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.102 (S)		
2,3,3',4',5,5'-HxCB	162			0.682	0.0983 (S)	1.28	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			7.84	0.104 (S)	1.33	0.921
2,3,3',5,5',6-HxCB	165		J	0.169	0.115 (S)	1.24	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		B	6.42	0.0935 (S)	1.21	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.230 (S)		
2,2',3,3',4,4',5-HpCB	170		B	30.1	0.118 (S)	1.05	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C B	9.05	0.116 (S)	0.99	1.162
2,2',3,3',4,5,5'-HpCB	172			4.37	0.115 (S)	0.94	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		B	23.0	0.111 (S)	1.04	1.133
2,2',3,3',4,5',6-HpCB	175			1.34	0.108 (S)	1.08	1.102
2,2',3,3',4,6,6'-HpCB	176			3.17	0.0834 (S)	1.08	1.034
2,2',3,3',4',5,6-HpCB	177		B	20.3	0.113 (S)	1.06	1.145
2,2',3,3',5,5',6-HpCB	178			7.80	0.115 (S)	1.05	1.085
2,2',3,3',5,6,6'-HpCB	179		B	11.0	0.0846 (S)	1.05	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	48.7	0.0930 (S)	1.04	1.000
2,2',3,4,4',5,6-HpCB	181		K J	0.193	0.112 (S)	1.36	1.156
2,2',3,4,4',5,6'-HpCB	182		J	0.244	0.108 (S)	0.91	1.115
2,2',3,4,4',5',6-HpCB	183	183 + 185	C B	18.6	0.107 (S)	1.08	1.126
2,2',3,4,4',6,6'-HpCB	184		J	0.099	0.0824 (S)	1.00	1.024
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0899 (S)		
2,2',3,4',5,5',6-HpCB	187		B	44.4	0.104 (S)	1.04	1.110
2,2',3,4',5,6,6'-HpCB	188		K J	0.086	0.0720 (S)	1.39	1.001
2,3,3',4,4',5,5'-HpCB	189			1.82	0.137 (S)	0.96	1.000
2,3,3',4,4',5,6-HpCB	190		B	5.79	0.0887 (S)	1.00	0.947
2,3,3',4,4',5',6-HpCB	191			0.990	0.0840 (S)	1.05	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.0961 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		B	12.0	0.107 (S)	0.94	0.991
2,2',3,3',4,4',5,6-OcCB	195			5.70	0.117 (S)	0.89	0.945
2,2',3,3',4,4',5,6'-OcCB	196		B	6.84	0.0780 (S)	0.84	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C	2.14	0.0601 (S)	0.95	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C B	21.2	0.0814 (S)	0.91	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			2.61	0.0593 (S)	0.87	1.023
2,2',3,3',5,5',6,6'-OcCB	202			5.17	0.0594 (S)	0.92	1.001
2,2',3,4,4',5,5',6-OcCB	203		B	10.1	0.0768 (S)	0.91	0.919
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0605 (S)		
2,3,3',4,4',5,5',6-OcCB	205			0.772	0.102 (S)	0.99	1.000
2,2',3,3',4,4',5,5',6-NoCB	206		B	11.8	0.135 (S)	0.78	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			1.56	0.100 (S)	0.78	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			4.45	0.101 (S)	0.80	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209		B	12.0	0.0759 (S)	1.14	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

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Report Filename: 1668_PCB1668_PCBTF_L19652-42_Form1A_PB3C_199S7_SJ1609130.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-09-S
Sample Collection:
07-May-2013 16:40

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-42
Matrix:	SOLID	**Sample Size:**	10.7 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 16:13:23	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_199 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_199 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	41.4

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		25.1
Total Dichloro Biphenyls		118
Total Trichloro Biphenyls		283
Total Tetrachloro Biphenyls		512
Total Pentachloro Biphenyls		630
Total Hexachloro Biphenyls		553
Total Heptachloro Biphenyls		231
Total Octachloro Biphenyls		66.5
Total Nonachloro Biphenyls		17.8
Decachloro Biphenyl		12.0
TOTAL PCBs		2450

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-42_Form1AHT_SJ1609130.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-09-S

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection: 07-May-2013 16:40

Contract No.: 4273

Project No. NORTH OLYMPIC PENINSULA REG. BACKGROUND

Matrix: SOLID

Lab Sample I.D.: L19652-42

Sample Size: 10.7 g (dry)

GC Column ID(s): SPB OCTYL

Concentration Units: ng/kg (dry weight basis)

Sample Data Filename(s): **PB3C_199 S: 7**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			14.8	0.139	0.0001	1.48e-03	1.48e-03	
3,4,4',5-TeCB	81		U		0.138	0.0003	0.00e+00	2.07e-05	
2,3,3',4,4'-PeCB	105			59.6	0.281	0.00003	1.79e-03	1.79e-03	
2,3,4,4',5-PeCB	114			2.65	0.281	0.00003	7.95e-05	7.95e-05	
2,3',4,4',5-PeCB	118			119	0.275	0.00003	3.57e-03	3.57e-03	
2',3,4,4',5-PeCB	123			2.23	0.292	0.00003	6.69e-05	6.69e-05	
3,3',4,4',5-PeCB	126			1.04	0.303	0.1	1.04e-01	1.04e-01	
2,3,3',4,4',5-HxCB	156	156 + 157	C	21.4	0.117	0.00003	6.42e-04	6.42e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			6.42	0.0935	0.00003	1.93e-04	1.93e-04	
3,3',4,4',5,5'-HxCB	169		U		0.230	0.03	0.00e+00	3.45e-03	
2,3,3',4,4',5,5'-HpCB	189			1.82	0.137	0.00003	5.46e-05	5.46e-05	
					TOTAL TEQ		0.112	0.115	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-42_TEQ_SJ1609130.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
RB13-DIS-09-D
Sample Collection:
07-May-2013 16:40

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-43
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 17:17:29	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_199 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_199 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	41.2

This page is part of a total report that contains information necessary for accreditation compliance.
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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			5.59	0.132 (S)	2.94	1.001
3-MoCB	2			17.5	0.109 (S)	3.00	0.988
4-MoCB	3		B	4.78	0.0978 (S)	3.17	1.001
2,2'-DiCB	4			7.04	0.415 (S)	1.52	1.001
2,3-DiCB	5		J	0.299	0.237 (S)	1.58	1.197
2,3'-DiCB	6			4.22	0.212 (S)	1.48	1.176
2,4-DiCB	7			1.23	0.218 (S)	1.52	1.157
2,4'-DiCB	8			26.5	0.200 (S)	1.54	1.207
2,5-DiCB	9			0.914	0.214 (S)	1.74	1.147
2,6-DiCB	10		J	0.246	0.226 (S)	1.33	1.014
3,3'-DiCB	11			45.6	0.219 (S)	1.54	0.968
3,4-DiCB	12	12 + 13	C	5.17	0.213 (S)	1.60	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		K	0.573	0.212 (S)	1.09	0.926
4,4'-DiCB	15			36.1	0.230 (S)	1.57	1.001
2,2',3-TriCB	16			8.42	0.0934 (S)	1.09	1.166
2,2',4-TriCB	17			11.1	0.0835 (S)	1.03	1.139
2,2',5-TriCB	18	18 + 30	C B	21.4	0.0701 (S)	1.02	1.114
2,2',6-TriCB	19			1.76	0.0959 (S)	1.04	1.001
2,3,3'-TriCB	20	20 + 28	C B	86.1	0.0656 (S)	1.03	0.848
2,3,4-TriCB	21	21 + 33	C	27.9	0.0621 (S)	1.06	0.858
2,3,4'-TriCB	22		B	21.4	0.0693 (S)	1.02	0.873
2,3,5-TriCB	23		U		0.0699 (S)		
2,3,6-TriCB	24		J	0.287	0.0634 (S)	1.15	1.157
2,3',4-TriCB	25			5.62	0.0574 (S)	1.03	0.826
2,3',5-TriCB	26	26 + 29	C	10.6	0.0660 (S)	1.02	1.301
2,3',6-TriCB	27			1.95	0.0572 (S)	1.10	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		B	54.4	0.0615 (S)	1.02	0.837
2,4',6-TriCB	32			9.05	0.0652 (S)	1.01	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		J	0.327	0.0674 (S)	1.02	1.274
3,3',4-TriCB	35			3.71	0.0659 (S)	1.07	0.985
3,3',5-TriCB	36			2.17	0.0622 (S)	1.07	0.932
3,4,4'-TriCB	37			33.4	0.0706 (S)	1.04	1.001
3,4,5-TriCB	38		K	0.449	0.0624 (S)	1.41	0.968
3,4',5-TriCB	39			0.673	0.0611 (S)	1.16	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C	29.5	0.0772 (S)	0.77	1.336
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			15.0	0.0796 (S)	0.77	1.311
2,2',3,5-TeCB	43			1.60	0.0871 (S)	0.83	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	54.7	0.0722 (S)	0.78	1.285
2,2',3,6-TeCB	45	45 + 51	C	5.19	0.0819 (S)	0.81	1.147
2,2',3,6'-TeCB	46			1.93	0.0937 (S)	0.83	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			9.34	0.0782 (S)	0.83	1.274
2,2',4,5'-TeCB	49	49 + 69	C B	37.1	0.0675 (S)	0.78	1.259
2,2',4,6-TeCB	50	50 + 53	C	4.99	0.0803 (S)	0.78	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		B	57.7	0.0739 (S)	0.78	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		J	0.085	0.0588 (S)	0.81	1.002
2,3,3',4-TeCB	55			1.22	0.0917 (S)	0.79	0.890
2,3,3',4'-TeCB	56		B	36.5	0.0906 (S)	0.77	0.905
2,3,3',5-TeCB	57			0.450	0.0894 (S)	0.67	0.844
2,3,3',5'-TeCB	58		J	0.347	0.0912 (S)	0.75	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	5.07	0.0586 (S)	0.75	1.301
2,3,4,4'-TeCB	60			22.1	0.0892 (S)	0.78	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	138	0.0885 (S)	0.78	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			3.27	0.0844 (S)	0.73	0.865
2,3,4',6-TeCB	64		B	22.4	0.0559 (S)	0.79	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	82.0	0.0843 (S)	0.76	0.885
2,3',4,5-TeCB	67			2.53	0.0799 (S)	0.78	0.857
2,3',4,5'-TeCB	68			0.827	0.0868 (S)	0.80	0.832
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			1.04	0.0849 (S)	0.75	0.823
2,3',5',6-TeCB	73		K J	0.247	0.0639 (S)	0.92	1.241
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77			15.3	0.0984 (S)	0.77	1.000
3,3',4,5-TeCB	78		K J	0.114	0.0858 (S)	0.91	0.987
3,3',4,5'-TeCB	79			1.23	0.0735 (S)	0.80	0.970
3,3',5,5'-TeCB	80		K J	0.095	0.0800 (S)	1.07	0.925
3,4,4',5-TeCB	81		K	0.567	0.0955 (S)	0.81	1.001
2,2',3,3',4-PeCB	82			11.2	0.0777 (S)	1.53	0.934
2,2',3,3',5-PeCB	83	83 + 99	C B	63.5	0.0721 (S)	1.59	0.885
2,2',3,3',6-PeCB	84			16.0	0.0845 (S)	1.58	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	21.1	0.0593 (S)	1.61	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	60.1	0.0622 (S)	1.55	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	9.80	0.0746 (S)	1.51	1.155
2,2',3,4,6'-PeCB	89		K	0.867	0.0767 (S)	1.31	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	89.9	0.0643 (S)	1.58	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			15.5	0.0741 (S)	1.56	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	53.7	0.0738 (S)	1.59	1.120
2,2',3,5,6'-PeCB	94			0.523	0.0826 (S)	1.63	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			0.428	0.0577 (S)	1.35	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			0.913	0.0675 (S)	1.77	1.093
2,2',4,6,6'-PeCB	104		U		0.0484 (S)		
2,3,3',4,4'-PeCB	105		B	54.0	0.190 (S)	1.56	1.000
2,3,3',4,5-PeCB	106		U		0.173 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	4.05	0.184 (S)	1.61	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			9.67	0.170 (S)	1.58	0.997
2,3,3',4',6-PeCB	110	110 + 115	C B	97.2	0.0535 (S)	1.54	0.925
2,3,3',5,5'-PeCB	111		J	0.183	0.0531 (S)	1.44	0.945
2,3,3',5,6-PeCB	112		U		0.0545 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			2.43	0.194 (S)	1.41	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	114	0.185 (S)	1.54	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		K	0.746	0.0487 (S)	1.31	0.958
2,3',4,5',6-PeCB	121		U		0.0560 (S)		
2',3,3',4,5-PeCB	122			1.31	0.188 (S)	1.57	1.010
2',3,4,4',5-PeCB	123			2.33	0.200 (S)	1.49	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			0.827	0.219 (S)	1.64	1.000
3,3',4,5,5'-PeCB	127		J	0.209	0.171 (S)	1.48	1.042
2,2',3,3',4,4'-HxCB	128	128 + 166	C B	20.1	0.193 (S)	1.26	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	132	0.195 (S)	1.27	0.929
2,2',3,3',4,5'-HxCB	130			8.44	0.237 (S)	1.25	0.913
2,2',3,3',4,6-HxCB	131			1.05	0.247 (S)	1.18	1.159
2,2',3,3',4,6'-HxCB	132		B	31.3	0.249 (S)	1.26	1.173
2,2',3,3',5,5'-HxCB	133			2.01	0.228 (S)	1.33	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	4.62	0.240 (S)	1.30	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C B	33.3	0.0545 (S)	1.22	1.104
2,2',3,3',6,6'-HxCB	136			9.32	0.0470 (Q)	1.26	1.023
2,2',3,4,4',5-HxCB	137			4.01	0.224 (S)	1.29	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	1.87	0.220 (S)	1.30	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		B	12.0	0.212 (S)	1.29	0.904
2,2',3,4,5,6-HxCB	142		U		0.241 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			3.98	0.0534 (S)	1.26	1.121
2,2',3,4,6,6'-HxCB	145		U		0.0470 (Q)		
2,2',3,4',5,5'-HxCB	146		B	20.6	0.201 (S)	1.20	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	76.8	0.217 (S)	1.25	1.133
2,2',3,4',5,6'-HxCB	148			0.546	0.0567 (S)	1.08	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	0.214	0.0470 (Q)	1.18	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	0.091	0.0470 (Q)	1.18	1.006
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	116	0.178 (S)	1.26	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		J	0.049	0.0470 (Q)	1.14	1.001
2,3,3',4,4',5-HxCB	156	156 + 157	C B	12.7	0.190 (S)	1.21	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		B	9.58	0.156 (S)	1.29	0.938
2,3,3',4,5,5'-HxCB	159			1.16	0.158 (S)	1.30	0.982
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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2,3,3',4,5',6-HxCB	161		U		0.166 (S)		
2,3,3',4',5,5'-HxCB	162			0.579	0.160 (S)	1.35	0.989
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			7.25	0.169 (S)	1.26	0.921
2,3,3',5,5',6-HxCB	165		K J	0.198	0.187 (S)	1.00	0.878
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		B	4.82	0.153 (S)	1.24	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.230 (S)		
2,2',3,3',4,4',5-HpCB	170		B	24.0	0.128 (S)	1.03	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C B	8.73	0.127 (S)	1.02	1.162
2,2',3,3',4,5,5'-HpCB	172			4.03	0.126 (S)	1.00	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		B	22.7	0.122 (S)	0.99	1.133
2,2',3,3',4,5',6-HpCB	175			1.25	0.118 (S)	1.13	1.102
2,2',3,3',4,6,6'-HpCB	176			3.28	0.0910 (S)	1.01	1.034
2,2',3,3',4',5,6-HpCB	177		B	20.8	0.124 (S)	1.03	1.145
2,2',3,3',5,5',6-HpCB	178			8.34	0.125 (S)	1.05	1.085
2,2',3,3',5,6,6'-HpCB	179		B	12.1	0.0923 (S)	1.03	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	45.0	0.101 (S)	1.03	1.000
2,2',3,4,4',5,6-HpCB	181		J	0.184	0.122 (S)	1.06	1.156
2,2',3,4,4',5,6'-HpCB	182		J	0.248	0.118 (S)	1.02	1.116
2,2',3,4,4',5',6-HpCB	183	183 + 185	C B	18.7	0.116 (S)	1.04	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.0900 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0981 (S)		
2,2',3,4',5,5',6-HpCB	187		B	46.1	0.114 (S)	1.08	1.109
2,2',3,4',5,6,6'-HpCB	188		J	0.083	0.0780 (S)	1.06	1.001
2,3,3',4,4',5,5'-HpCB	189			1.12	0.166 (S)	1.18	1.000
2,3,3',4,4',5,6-HpCB	190		B	4.81	0.0969 (S)	1.01	0.947
2,3,3',4,4',5',6-HpCB	191			0.886	0.0917 (S)	0.97	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.105 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		B	11.9	0.125 (S)	0.93	0.992
2,2',3,3',4,4',5,6-OcCB	195			5.89	0.137 (S)	0.84	0.946
2,2',3,3',4,4',5,6'-OcCB	196		B	6.98	0.0866 (S)	0.93	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	2.31	0.0667 (S)	0.94	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C B	22.0	0.0904 (S)	0.87	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			2.62	0.0658 (S)	0.80	1.023
2,2',3,3',5,5',6,6'-OcCB	202			5.34	0.0654 (S)	0.90	1.001
2,2',3,4,4',5,5',6-OcCB	203		B	10.4	0.0853 (S)	0.87	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0672 (S)		
2,3,3',4,4',5,5',6-OcCB	205			0.865	0.121 (S)	0.98	1.001
2,2',3,3',4,4',5,5',6-NoCB	206		B	11.8	0.193 (S)	0.79	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			1.70	0.146 (S)	0.83	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			4.57	0.149 (S)	0.81	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209		B	11.4	0.0910 (S)	1.19	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

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Report Filename: 1668_PCB1668_PCBTF_L19652-43_Form1A_PB3C_199S8_SJ1609132.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-09-D
Sample Collection:
07-May-2013 16:40

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19652-43
Matrix:	SOLID	**Sample Size:**	10.6 g (dry)
Sample Receipt Date:	15-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 17:17:29	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_199 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_199 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	41.2

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		27.9
Total Dichloro Biphenyls		127
Total Trichloro Biphenyls		300
Total Tetrachloro Biphenyls		549
Total Pentachloro Biphenyls		629
Total Hexachloro Biphenyls		514
Total Heptachloro Biphenyls		222
Total Octachloro Biphenyls		68.3
Total Nonachloro Biphenyls		18.1
Decachloro Biphenyl		11.4
TOTAL PCBs		2470

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 11-Jun-2013 15:28:31; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-43_Form1AHT_SJ1609132.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
RB13-DIS-09-D

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Sample Collection:	07-May-2013 16:40		
Contract No.:	4273	**Project No.**	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Matrix:	SOLID	**Lab Sample I.D.:**	L19652-43
Sample Size:	10.6 g (dry)	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg (dry weight basis)	**Sample Data Filename(s):**	**PB3C_199 S: 8**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			15.3	0.0984	0.0001	1.53e-03	1.53e-03	
3,4,4',5-TeCB	81		U		0.0955	0.0003	0.00e+00	1.43e-05	
2,3,3',4,4'-PeCB	105			54.0	0.190	0.00003	1.62e-03	1.62e-03	
2,3,4,4',5-PeCB	114			2.43	0.194	0.00003	7.29e-05	7.29e-05	
2,3',4,4',5-PeCB	118			114	0.185	0.00003	3.42e-03	3.42e-03	
2',3,4,4',5-PeCB	123			2.33	0.200	0.00003	6.99e-05	6.99e-05	
3,3',4,4',5-PeCB	126			0.827	0.219	0.1	8.27e-02	8.27e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	12.7	0.190	0.00003	3.81e-04	3.81e-04	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			4.82	0.153	0.00003	1.45e-04	1.45e-04	
3,3',4,4',5,5'-HxCB	169		U		0.230	0.03	0.00e+00	3.45e-03	
2,3,3',4,4',5,5'-HpCB	189			1.12	0.166	0.00003	3.36e-05	3.36e-05	
					TOTAL TEQ		0.0900	0.0934	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19652-43_TEQ_SJ1609132.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
SRS1136
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19665-1
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	17-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 06:20:03	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	100	**Sample Data Filename:**	**PB3C_192 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_192 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	2.42

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1			26.3	0.192 (S)	3.18	1.001
3-MoCB	2			11.5	0.191 (S)	3.09	0.988
4-MoCB	3		B	24.9	0.194 (S)	3.20	1.001
2,2'-DiCB	4			146	0.757 (S)	1.50	1.001
2,3-DiCB	5			5.11	0.508 (S)	1.43	1.197
2,3'-DiCB	6			224	0.471 (S)	1.52	1.175
2,4-DiCB	7			20.6	0.486 (S)	1.54	1.159
2,4'-DiCB	8			458	0.438 (S)	1.51	1.206
2,5-DiCB	9			22.5	0.464 (S)	1.54	1.146
2,6-DiCB	10			5.40	0.480 (S)	1.42	1.013
3,3'-DiCB	11			74.6	0.482 (S)	1.52	0.969
3,4-DiCB	12	12 + 13	C	79.0	0.494 (S)	1.51	0.984
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U		0.471 (S)		
4,4'-DiCB	15			418	0.579 (S)	1.52	1.001
2,2',3-TriCB	16			297	0.308 (S)	1.05	1.165
2,2',4-TriCB	17		B	441	0.260 (S)	1.05	1.138
2,2',5-TriCB	18	18 + 30	C B	836	0.217 (S)	1.06	1.113
2,2',6-TriCB	19			82.5	0.258 (S)	1.04	1.001
2,3,3'-TriCB	20	20 + 28	C B	1620	0.487 (S)	1.01	0.849
2,3,4-TriCB	21	21 + 33	C	622	0.465 (S)	1.02	0.858
2,3,4'-TriCB	22			451	0.508 (S)	1.01	0.873
2,3,5-TriCB	23		J	1.17	0.508 (S)	1.07	1.284
2,3,6-TriCB	24			10.4	0.197 (S)	1.02	1.158
2,3',4-TriCB	25			292	0.425 (S)	1.02	0.826
2,3',5-TriCB	26	26 + 29	C	599	0.485 (S)	1.02	1.301
2,3',6-TriCB	27			98.2	0.178 (S)	1.04	1.152
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			1280	0.456 (S)	1.02	0.837
2,4',6-TriCB	32			303	0.462 (S)	1.01	1.198
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34			11.0	0.482 (S)	1.04	1.274
3,3',4-TriCB	35			26.8	0.496 (S)	1.01	0.985
3,3',5-TriCB	36		J	0.977	0.457 (S)	1.16	0.932
3,4,4'-TriCB	37		B	452	0.582 (S)	1.02	1.001
3,4,5-TriCB	38			2.56	0.465 (S)	1.05	0.969
3,4',5-TriCB	39			11.6	0.462 (S)	1.07	0.947

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C B	833	0.344 (S)	0.78	1.338
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42			493	0.365 (S)	0.80	1.312
2,2',3,5-TeCB	43			71.3	0.454 (S)	0.76	1.247
2,2',3,5'-TeCB	44	44 + 47 + 65	C B	2300	0.316 (S)	0.78	1.286
2,2',3,6-TeCB	45	45 + 51	C	213	0.355 (S)	0.76	1.146
2,2',3,6'-TeCB	46			97.3	0.413 (S)	0.77	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48			307	0.349 (S)	0.79	1.274
2,2',4,5'-TeCB	49	49 + 69	C B	1820	0.295 (S)	0.78	1.260
2,2',4,6-TeCB	50	50 + 53	C	320	0.341 (S)	0.78	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			4030	0.318 (S)	0.79	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54			4.20	0.216 (S)	0.74	1.001
2,3,3',4-TeCB	55			26.2	1.07 (S)	0.80	0.890
2,3,3',4'-TeCB	56		B	756	1.07 (S)	0.78	0.905
2,3,3',5-TeCB	57			16.5	1.04 (S)	0.80	0.844
2,3,3',5'-TeCB	58			8.80	1.05 (S)	0.78	0.852
2,3,3',6-TeCB	59	59 + 62 + 75	C	178	0.259 (S)	0.77	1.302
2,3,4,4'-TeCB	60		B	309	1.04 (S)	0.77	0.911
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C B	3650	1.01 (S)	0.77	0.875
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63			68.8	0.958 (S)	0.78	0.865
2,3,4',6-TeCB	64		B	788	0.254 (S)	0.77	1.348
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		B	1830	0.988 (S)	0.76	0.885
2,3',4,5-TeCB	67			66.4	0.918 (S)	0.76	0.857
2,3',4,5'-TeCB	68			28.8	0.979 (S)	0.76	0.831
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72			44.1	0.960 (S)	0.74	0.823
2,3',5',6-TeCB	73		U		0.254 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		B	173	1.26 (S)	0.76	1.000
3,3',4,5-TeCB	78		U		1.01 (S)		
3,3',4,5'-TeCB	79			51.4	0.863 (S)	0.74	0.970
3,3',5,5'-TeCB	80		U		0.925 (S)		
3,4,4',5-TeCB	81		K	7.87	1.21 (S)	0.81	1.001
2,2',3,3',4-PeCB	82			529	0.985 (S)	1.54	0.933
2,2',3,3',5-PeCB	83	83 + 99	C B	3090	0.937 (S)	1.60	0.885
2,2',3,3',6-PeCB	84			1600	1.07 (S)	1.62	1.163
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C B	810	0.764 (S)	1.60	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C B	3690	0.797 (S)	1.56	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C	826	0.938 (S)	1.57	1.153
2,2',3,4,6'-PeCB	89			50.6	0.969 (S)	1.56	1.182
2,2',3,4',5-PeCB	90	90 + 101 + 113	C B	7990	0.818 (S)	1.61	0.869
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			1340	0.916 (S)	1.59	0.853
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C B	7270	0.920 (S)	1.60	1.120
2,2',3,5,6'-PeCB	94			25.3	1.03 (S)	1.48	1.102
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			36.4	0.280 (S)	1.66	1.015
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			71.2	0.824 (S)	1.56	1.093
2,2',4,6,6'-PeCB	104		J	0.813	0.238 (S)	1.53	1.001
2,3,3',4,4'-PeCB	105		B	1610	4.38 (S)	1.55	1.000
2,3,3',4,5-PeCB	106		U		3.79 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	160	3.99 (S)	1.53	0.990
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			309	3.87 (S)	1.53	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	6970	0.679 (S)	1.57	0.925
2,3,3',5,5'-PeCB	111		K	3.35	0.683 (S)	2.18	0.945
2,3,3',5,6-PeCB	112		U		0.687 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			82.2	4.27 (S)	1.57	1.001
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		B	4370	4.05 (S)	1.54	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			20.7	0.625 (S)	1.54	0.958
2,3',4,5',6-PeCB	121		J	1.73	0.701 (S)	1.53	1.199
2',3,3',4,5-PeCB	122			44.2	3.95 (S)	1.52	1.010
2',3,4,4',5-PeCB	123			75.9	4.41 (S)	1.47	1.000
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126			13.7	4.73 (S)	1.49	1.000
3,3',4,5,5'-PeCB	127			9.24	3.74 (S)	1.62	1.042
2,2',3,3',4,4'-HxCB	128	128 + 166	C	1330	6.23 (S)	1.24	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C B	21300	8.47 (S)	1.26	0.929
2,2',3,3',4,5'-HxCB	130			619	7.42 (S)	1.25	0.913
2,2',3,3',4,6-HxCB	131			126	7.61 (S)	1.21	1.159
2,2',3,3',4,6'-HxCB	132			4880	7.42 (S)	1.24	1.173
2,2',3,3',5,5'-HxCB	133			185	6.82 (S)	1.26	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	1660	17.4 (S)	1.27	1.139
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	6750	0.376 (S)	1.26	1.103
2,2',3,3',6,6'-HxCB	136			2390	0.298 (S)	1.26	1.023
2,2',3,4,4',5-HxCB	137			248	7.32 (S)	1.22	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	117	6.79 (S)	1.18	1.152
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			3890	6.90 (S)	1.25	0.903
2,2',3,4,5,6-HxCB	142		U		7.19 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			932	0.380 (S)	1.26	1.121
2,2',3,4,6,6'-HxCB	145		J	1.90	0.313 (S)	1.13	1.033
2,2',3,4',5,5'-HxCB	146			2200	6.45 (S)	1.25	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C B	15100	6.68 (S)	1.25	1.133
2,2',3,4',5,6'-HxCB	148			14.2	0.393 (S)	1.38	1.083
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150			15.8	0.308 (S)	1.22	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152			5.63	0.284 (S)	1.31	1.007
2,2',4,4',5,5'-HxCB	153	153 + 168	C B	15300	5.40 (S)	1.25	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		J	0.466	0.237 (S)	1.14	1.001
2,3,3',4,4',5-HxCB	156	156 + 157	C	987	6.19 (S)	1.24	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			1350	4.86 (S)	1.25	0.938
2,3,3',4,5,5'-HxCB	159			333	5.13 (S)	1.25	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		4.87 (S)		
2,3,3',4',5,5'-HxCB	162		U		5.29 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			1120	5.07 (S)	1.26	0.921
2,3,3',5,5',6-HxCB	165		U		5.70 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			428	5.23 (S)	1.23	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		11.4 (S)		
2,2',3,3',4,4',5-HpCB	170			6660	0.609 (S)	1.03	1.001
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	2130	0.587 (S)	1.05	1.162
2,2',3,3',4,5,5'-HpCB	172			1180	0.587 (S)	1.04	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			7580	0.539 (S)	1.04	1.133
2,2',3,3',4,5',6-HpCB	175			294	0.523 (S)	1.02	1.102
2,2',3,3',4,6,6'-HpCB	176			942	0.395 (S)	1.03	1.034
2,2',3,3',4',5,6-HpCB	177			4270	0.572 (S)	1.03	1.145
2,2',3,3',5,5',6-HpCB	178			1470	0.553 (S)	1.03	1.084
2,2',3,3',5,6,6'-HpCB	179			3020	0.385 (S)	1.05	1.009
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C B	15200	0.469 (S)	1.03	1.001
2,2',3,4,4',5,6-HpCB	181			23.9	0.568 (S)	0.99	1.156
2,2',3,4,4',5,6'-HpCB	182			14.6	0.531 (S)	1.10	1.116
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	4990	0.534 (S)	1.05	1.126
2,2',3,4,4',6,6'-HpCB	184			1.97	0.388 (S)	0.98	1.024
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.420 (S)		
2,2',3,4',5,5',6-HpCB	187			8900	0.513 (S)	1.04	1.110
2,2',3,4',5,6,6'-HpCB	188			3.82	0.363 (S)	0.92	1.001
2,3,3',4,4',5,5'-HpCB	189			241	1.42 (S)	1.05	1.000
2,3,3',4,4',5,6-HpCB	190			1470	0.459 (S)	1.04	0.947
2,3,3',4,4',5',6-HpCB	191			277	0.433 (S)	1.05	0.918
2,3,3',4,5,5',6-HpCB	192		U		0.479 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194			3360	0.859 (S)	0.90	0.991
2,2',3,3',4,4',5,6-OcCB	195			1470	0.892 (S)	0.89	0.945
2,2',3,3',4,4',5,6'-OcCB	196			1830	0.535 (S)	0.90	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C G	409	0.390 (S)	0.89	1.046
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	3820	0.561 (S)	0.90	1.115
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201			453	0.384 (S)	0.89	1.023
2,2',3,3',5,5',6,6'-OcCB	202			692	0.443 (S)	0.90	1.000
2,2',3,4,4',5,5',6-OcCB	203			2250	0.514 (S)	0.91	0.919
2,2',3,4,4',5,6,6'-OcCB	204		K J	0.475	0.391 (S)	1.57	1.039
2,3,3',4,4',5,5',6-OcCB	205			182	0.761 (S)	0.89	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			724	0.924 (S)	0.79	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207			102	0.686 (S)	0.78	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			164	0.740 (S)	0.78	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			118	0.486 (S)	1.15	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in sample and the associated blank; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

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Report Filename: 1668_PCB1668_PCBTF_L19665-1_Form1A_PB3C_192S11_SJ1607916.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
SRS1136
Sample Collection:
N/A

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Contract No.:	4273	**Lab Sample I.D.:**	L19665-1
Matrix:	SOLID	**Sample Size:**	10.2 g (dry)
Sample Receipt Date:	17-May-2013	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	01-Jun-2013 **Time:** 06:20:03	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	100	**Sample Data Filename:**	**PB3C_192 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_192 S: 1
Concentration Units:	ng/kg (dry weight basis)	**% Moisture:**	2.42

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls		62.7
Total Dichloro Biphenyls		1450
Total Trichloro Biphenyls		7440
Total Tetrachloro Biphenyls		18500
Total Pentachloro Biphenyls		41000
Total Hexachloro Biphenyls		81300
Total Heptachloro Biphenyls		58700
Total Octachloro Biphenyls		14500
Total Nonachloro Biphenyls		990
Decachloro Biphenyl		118
TOTAL PCBs		224000

(1) Where applicable, custom lab flags have been used on this report.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_L19665-1_Form1AHT_SJ1607916.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
SRS1136

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4273	**Sample Collection:**	N/A
		Project No.	NORTH OLYMPIC PENINSULA REG. BACKGROUND
Matrix:	SOLID	**Lab Sample I.D.:**	L19665-1
Sample Size:	10.2 g (dry)	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg (dry weight basis)	**Sample Data Filename(s):**	**PB3C_192 S: 11**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77			173	1.26	0.0001	1.73e-02	1.73e-02	
3,4,4',5-TeCB	81		U		1.21	0.0003	0.00e+00	1.82e-04	
2,3,3',4,4'-PeCB	105			1610	4.38	0.00003	4.83e-02	4.83e-02	
2,3,4,4',5-PeCB	114			82.2	4.27	0.00003	2.47e-03	2.47e-03	
2,3',4,4',5-PeCB	118			4370	4.05	0.00003	1.31e-01	1.31e-01	
2',3,4,4',5-PeCB	123			75.9	4.41	0.00003	2.28e-03	2.28e-03	
3,3',4,4',5-PeCB	126			13.7	4.73	0.1	1.37e+00	1.37e+00	
2,3,3',4,4',5-HxCB	156	156 + 157	C	987	6.19	0.00003	2.96e-02	2.96e-02	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			428	5.23	0.00003	1.28e-02	1.28e-02	
3,3',4,4',5,5'-HxCB	169		U		11.4	0.03	0.00e+00	1.71e-01	
2,3,3',4,4',5,5'-HpCB	189			241	1.42	0.00003	7.23e-03	7.23e-03	
					TOTAL TEQ		1.62	1.79	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

PCB CONGENER ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43679-101
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 22:51:00	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_192 S: 4**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_192 S: 1
Concentration Units:	ng/kg		

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		U		0.106 (S)		
2,2',4-TriCB	17		K J	0.129	0.0897 (S)	1.21	1.127
2,2',5-TriCB	18	18 + 30	C K J	0.163	0.0750 (S)	0.69	1.104
2,2',6-TriCB	19		U		0.0960 (S)		
2,3,3'-TriCB	20	20 + 28	C	0.479	0.0583 (S)	1.03	0.852
2,3,4-TriCB	21	21 + 33	C U		0.0557 (S)		
2,3,4'-TriCB	22		U		0.0608 (S)		
2,3,5-TriCB	23		U		0.0607 (S)		
2,3,6-TriCB	24		U		0.0679 (S)		
2,3',4-TriCB	25		U		0.0509 (S)		
2,3',5-TriCB	26	26 + 29	C U		0.0580 (S)		
2,3',6-TriCB	27		U		0.0615 (S)		
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		U		0.0545 (S)		
2,4',6-TriCB	32		U		0.0552 (S)		
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U		0.0577 (S)		
3,3',4-TriCB	35		U		0.0593 (S)		
3,3',5-TriCB	36		U		0.0547 (S)		
3,4,4'-TriCB	37		J	0.134	0.0673 (S)	1.05	1.001
3,4,5-TriCB	38		U		0.0556 (S)		
3,4',5-TriCB	39		U		0.0553 (S)		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C J	0.216	0.0990 (S)	0.86	1.321
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		U		0.105 (S)		
2,2',3,5-TeCB	43		U		0.131 (S)		
2,2',3,5'-TeCB	44	44 + 47 + 65	C K	0.415	0.0910 (S)	1.13	1.274
2,2',3,6-TeCB	45	45 + 51	C U		0.102 (S)		
2,2',3,6'-TeCB	46		U		0.119 (S)		
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		U		0.101 (S)		
2,2',4,5'-TeCB	49	49 + 69	C J	0.188	0.0850 (S)	0.77	1.247
2,2',4,6-TeCB	50	50 + 53	C U		0.0984 (S)		
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		U		0.0918 (S)		
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.0699 (S)		
2,3,3',4-TeCB	55		U		0.0753 (S)		
2,3,3',4'-TeCB	56		J	0.131	0.0754 (S)	0.77	0.906
2,3,3',5-TeCB	57		U		0.0729 (S)		
2,3,3',5'-TeCB	58		U		0.0737 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C U		0.0747 (S)		
2,3,4,4'-TeCB	60		J	0.107	0.0733 (S)	0.78	0.912
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C	0.490	0.0714 (S)	0.87	0.876
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		U		0.0674 (S)		
2,3,4',6-TeCB	64		J	0.164	0.0732 (S)	0.66	1.334
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		J	0.261	0.0696 (S)	0.68	0.886
2,3',4,5-TeCB	67		U		0.0646 (S)		
2,3',4,5'-TeCB	68		U		0.0689 (S)		
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		U		0.0676 (S)		
2,3',5',6-TeCB	73		U		0.0732 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		K J	0.092	0.0820 (S)	0.93	1.000
3,3',4,5-TeCB	78		U		0.0714 (S)		
3,3',4,5'-TeCB	79		U		0.0608 (S)		
3,3',5,5'-TeCB	80		U		0.0651 (S)		
3,4,4',5-TeCB	81		U		0.0814 (S)		
2,2',3,3',4-PeCB	82		U		0.110 (S)		
2,2',3,3',5-PeCB	83	83 + 99	C J	0.186	0.104 (S)	1.37	0.886
2,2',3,3',6-PeCB	84		U		0.119 (S)		
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C K J	0.117	0.0849 (S)	1.30	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C K J	0.229	0.0885 (S)	1.93	0.902
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C U		0.104 (S)		
2,2',3,4,6'-PeCB	89		U		0.108 (S)		
2,2',3,4',5-PeCB	90	90 + 101 + 113	C J	0.249	0.0908 (S)	1.73	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		U		0.102 (S)		
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C J	0.230	0.102 (S)	1.49	1.117
2,2',3,5,6'-PeCB	94		U		0.115 (S)		
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		U		0.0800 (S)		
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		U		0.0915 (S)		
2,2',4,6,6'-PeCB	104		U		0.0906 (S)		
2,3,3',4,4'-PeCB	105		K J	0.100	0.0852 (S)	0.84	1.000
2,3,3',4,5-PeCB	106		U		0.0774 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C U		0.0816 (S)		
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		U		0.0791 (S)		
2,3,3',4',6-PeCB	110	110 + 115	C U		0.0754 (S)		
2,3,3',5,5'-PeCB	111		U		0.0759 (S)		
2,3,3',5,6-PeCB	112		U		0.0764 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		U		0.0786 (S)		
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		K J	0.249	0.0789 (S)	1.28	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		U		0.0694 (S)		
2,3',4,5',6-PeCB	121		U		0.0779 (S)		
2',3,3',4,5-PeCB	122		U		0.0807 (S)		
2',3,4,4',5-PeCB	123		U		0.0855 (S)		
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		U		0.0926 (S)		
3,3',4,5,5'-PeCB	127		U		0.0765 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C U		0.113 (S)		
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C K J	0.326	0.153 (S)	0.97	0.929
2,2',3,3',4,5'-HxCB	130		U		0.134 (S)		
2,2',3,3',4,6-HxCB	131		U		0.138 (S)		
2,2',3,3',4,6'-HxCB	132		U		0.134 (S)		
2,2',3,3',5,5'-HxCB	133		U		0.123 (S)		
2,2',3,3',5,6-HxCB	134	134 + 143	C U		0.315 (S)		
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C U		0.0977 (S)		
2,2',3,3',6,6'-HxCB	136		U		0.0773 (S)		
2,2',3,4,4',5-HxCB	137		U		0.133 (S)		
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C U		0.123 (S)		
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		U		0.125 (S)		
2,2',3,4,5,6-HxCB	142		U		0.130 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		U		0.0987 (S)		
2,2',3,4,6,6'-HxCB	145		U		0.0813 (S)		
2,2',3,4',5,5'-HxCB	146		U		0.117 (S)		
2,2',3,4',5,6-HxCB	147	147 + 149	C J	0.170	0.121 (S)	1.11	1.133
2,2',3,4',5,6'-HxCB	148		U		0.102 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.0799 (S)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.0738 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C K J	0.160	0.0977 (S)	1.43	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.0845 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C U		0.106 (S)		
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		U		0.0880 (S)		
2,3,3',4,5,5'-HxCB	159		U		0.0928 (S)		
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.0881 (S)		
2,3,3',4',5,5'-HxCB	162		U		0.0958 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		U		0.0917 (S)		
2,3,3',5,5',6-HxCB	165		U		0.103 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		U		0.0832 (S)		
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.0870 (S)		
2,2',3,3',4,4',5-HpCB	170		U		0.101 (S)		
2,2',3,3',4,4',6-HpCB	171	171 + 173	C U		0.0925 (S)		
2,2',3,3',4,5,5'-HpCB	172		U		0.0925 (S)		
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		U		0.0849 (S)		
2,2',3,3',4,5',6-HpCB	175		U		0.0824 (S)		
2,2',3,3',4,6,6'-HpCB	176		U		0.0623 (S)		
2,2',3,3',4',5,6-HpCB	177		U		0.0901 (S)		
2,2',3,3',5,5',6-HpCB	178		U		0.0871 (S)		
2,2',3,3',5,6,6'-HpCB	179		U		0.0606 (S)		
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C K J	0.152	0.0795 (S)	1.58	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.0895 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.0836 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C U		0.0842 (S)		
2,2',3,4,4',6,6'-HpCB	184		U		0.0612 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.0661 (S)		
2,2',3,4',5,5',6-HpCB	187		U		0.0808 (S)		
2,2',3,4',5,6,6'-HpCB	188		U		0.0647 (S)		
2,3,3',4,4',5,5'-HpCB	189		U		0.101 (S)		
2,3,3',4,4',5,6-HpCB	190		U		0.0723 (S)		
2,3,3',4,4',5',6-HpCB	191		U		0.0682 (S)		
2,3,3',4,5,5',6-HpCB	192		U		0.0754 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		U		0.117 (S)		
2,2',3,3',4,4',5,6-OcCB	195		U		0.122 (S)		
2,2',3,3',4,4',5,6'-OcCB	196		U		0.104 (S)		
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C U		0.0756 (S)		
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C U		0.109 (S)		
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		U		0.0744 (S)		
2,2',3,3',5,5',6,6'-OcCB	202		U		0.107 (S)		
2,2',3,4,4',5,5',6-OcCB	203		U		0.0995 (S)		
2,2',3,4,4',5,6,6'-OcCB	204		U		0.0758 (S)		
2,3,3',4,4',5,5',6-OcCB	205		U		0.0859 (S)		
2,2',3,3',4,4',5,5',6-NoCB	206		U		0.185 (S)		
2,2',3,3',4,4',5,6,6'-NoCB	207		U		0.140 (S)		
2,2',3,3',4,5,5',6,6'-NoCB	208		U		0.154 (S)		
2,2',3,3',4,4',5,5',6,6'-DeCB	209		U		0.105 (S)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_WG43679-101_Form1A_PB3C_192S4_SJ1607901.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

PCB CONGENER ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43679-101 W
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	07-Jun-2013 **Time:** 02:21:12	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	200	**Sample Data Filename:**	**PB3C_200 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	10	**Cal. Ver. Data Filename:**	PB3C_200 S: 2
Concentration Units:	ng/kg		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		U D		3.27 (S)		
3-MoCB	2		U D		2.16 (S)		
4-MoCB	3		K D J	1.13	0.930 (S)	4.03	1.000
2,2'-DiCB	4		U D		2.25 (S)		
2,3-DiCB	5		U D		1.68 (S)		
2,3'-DiCB	6		U D		1.51 (S)		
2,4-DiCB	7		U D		1.55 (S)		
2,4'-DiCB	8		U D		1.39 (S)		
2,5-DiCB	9		U D		1.49 (S)		
2,6-DiCB	10		U D		1.56 (S)		
3,3'-DiCB	11		U D		1.56 (S)		
3,4-DiCB	12	12 + 13	C U D		1.52 (S)		
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U D		1.50 (S)		
4,4'-DiCB	15		U D		1.85 (S)		
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		X				
2,3,4',6-TeCB	64		X				
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6-TeCB	73		X				
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5-TeCB	81		X				
2,2',3,3',4-PeCB	82		X				
2,2',3,3',5-PeCB	83	83 + 99	C X				
2,2',3,3',6-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		X				
2,2',3,3',4,4',5,6-OcCB	195		X				
2,2',3,3',4,4',5,6'-OcCB	196		X				
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		X				
2,2',3,3',5,5',6,6'-OcCB	202		X				
2,2',3,4,4',5,5',6-OcCB	203		X				
2,2',3,4,4',5,6,6'-OcCB	204		X				
2,3,3',4,4',5,5',6-OcCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; D = dilution data; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 17-Jun-2013 14:25:33; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_WG43679-101_Form1A_PB3C_200S6_SJ1610044.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43679-101
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	31-May-2013 **Time:** 22:51:00	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename(s):**	**PB3C_192 S: 4, PB3C_200 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_192 S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_192 S: 1
Concentration Units:	ng/kg		

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls	U	
Total Dichloro Biphenyls	U	
Total Trichloro Biphenyls		0.613
Total Tetrachloro Biphenyls		1.56
Total Pentachloro Biphenyls		0.665
Total Hexachloro Biphenyls		0.170
Total Heptachloro Biphenyls	U	
Total Octachloro Biphenyls	U	
Total Nonachloro Biphenyls	U	
Decachloro Biphenyl	U	
TOTAL PCBs		3.01

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 17-Jun-2013 14:26:53; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_WG43679-101_Form1AHT_SJ1607901.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
Lab Blank

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4273	**Sample Collection:**	N/A
		Project No.	N/A
Matrix:	SOLID	**Lab Sample I.D.:**	WG43679-101
Sample Size:	10.0 g	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg	**Sample Data Filename(s):**	**PB3C_192 S: 4** **PB3C_200 S: 6**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77		U		0.0820	0.0001	0.00e+00	4.10e-06	
3,4,4',5-TeCB	81		U		0.0814	0.0003	0.00e+00	1.22e-05	
2,3,3',4,4'-PeCB	105		U		0.0852	0.00003	0.00e+00	1.28e-06	
2,3,4,4',5-PeCB	114		U		0.0786	0.00003	0.00e+00	1.18e-06	
2,3',4,4',5-PeCB	118		U		0.0789	0.00003	0.00e+00	1.18e-06	
2',3,4,4',5-PeCB	123		U		0.0855	0.00003	0.00e+00	1.28e-06	
3,3',4,4',5-PeCB	126		U		0.0926	0.1	0.00e+00	4.63e-03	
2,3,3',4,4',5-HxCB	156	156 + 157	C U		0.106	0.00003	0.00e+00	1.59e-06	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167		U		0.0832	0.00003	0.00e+00	1.25e-06	
3,3',4,4',5,5'-HxCB	169		U		0.0870	0.03	0.00e+00	1.31e-03	
2,3,3',4,4',5,5'-HpCB	189		U		0.101	0.00003	0.00e+00	1.52e-06	
					TOTAL TEQ		0	0.00596	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 17-Jun-2013 14:26:53; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_WG43679-101_TEQ_SJ1607901.html; Workgroup: WG43679; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

PCB CONGENER ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43699-101
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 02:39:52	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_194A S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_194A S: 1
Concentration Units:	ng/kg		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		U		0.167 (S)		
2,2',4-TriCB	17		U		0.143 (S)		
2,2',5-TriCB	18	18 + 30	C U		0.118 (S)		
2,2',6-TriCB	19		U		0.150 (S)		
2,3,3'-TriCB	20	20 + 28	C	0.432	0.112 (S)	1.09	0.852
2,3,4-TriCB	21	21 + 33	C J	0.145	0.113 (S)	1.11	0.860
2,3,4'-TriCB	22		U		0.125 (S)		
2,3,5-TriCB	23		U		0.123 (S)		
2,3,6-TriCB	24		U		0.104 (S)		
2,3',4-TriCB	25		U		0.101 (S)		
2,3',5-TriCB	26	26 + 29	C U		0.116 (S)		
2,3',6-TriCB	27		U		0.0975 (S)		
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		J	0.263	0.107 (S)	1.19	0.841
2,4',6-TriCB	32		U		0.108 (S)		
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U		0.118 (S)		
3,3',4-TriCB	35		U		0.121 (S)		
3,3',5-TriCB	36		U		0.109 (S)		
3,4,4'-TriCB	37		U		0.131 (S)		
3,4,5-TriCB	38		U		0.107 (S)		
3,4',5-TriCB	39		U		0.111 (S)		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C K J	0.195	0.147 (S)	1.00	1.325
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		U		0.157 (S)		
2,2',3,5-TeCB	43		U		0.190 (S)		
2,2',3,5'-TeCB	44	44 + 47 + 65	C J	0.363	0.138 (S)	0.69	1.275
2,2',3,6-TeCB	45	45 + 51	C U		0.155 (S)		
2,2',3,6'-TeCB	46		U		0.179 (S)		
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		U		0.151 (S)		
2,2',4,5'-TeCB	49	49 + 69	C J	0.152	0.129 (S)	0.81	1.249
2,2',4,6-TeCB	50	50 + 53	C U		0.150 (S)		
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		J	0.344	0.140 (S)	0.85	1.226
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.110 (S)		
2,3,3',4-TeCB	55		U		0.124 (S)		
2,3,3',4'-TeCB	56		U		0.121 (S)		
2,3,3',5-TeCB	57		U		0.117 (S)		
2,3,3',5'-TeCB	58		U		0.122 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C U		0.113 (S)		
2,3,4,4'-TeCB	60		U		0.121 (S)		
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C	0.469	0.116 (S)	0.84	0.876
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		U		0.112 (S)		
2,3,4',6-TeCB	64		U		0.108 (S)		
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		J	0.204	0.113 (S)	0.74	0.886
2,3',4,5-TeCB	67		U		0.106 (S)		
2,3',4,5'-TeCB	68		U		0.114 (S)		
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		U		0.112 (S)		
2,3',5',6-TeCB	73		U		0.113 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		U		0.130 (S)		
3,3',4,5-TeCB	78		U		0.115 (S)		
3,3',4,5'-TeCB	79		U		0.0939 (S)		
3,3',5,5'-TeCB	80		U		0.108 (S)		
3,4,4',5-TeCB	81		U		0.127 (S)		
2,2',3,3',4-PeCB	82		U		0.209 (S)		
2,2',3,3',5-PeCB	83	83 + 99	C U		0.198 (S)		
2,2',3,3',6-PeCB	84		U		0.229 (S)		
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C U		0.164 (S)		
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C K J	0.286	0.171 (S)	1.30	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C U		0.198 (S)		
2,2',3,4,6'-PeCB	89		U		0.205 (S)		
2,2',3,4',5-PeCB	90	90 + 101 + 113	C K J	0.219	0.175 (S)	2.26	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		U		0.198 (S)		
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C J	0.251	0.196 (S)	1.75	1.118
2,2',3,5,6'-PeCB	94		U		0.219 (S)		
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		U		0.116 (S)		
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		U		0.181 (S)		
2,2',4,6,6'-PeCB	104		U		0.116 (S)		
2,3,3',4,4'-PeCB	105		U		0.169 (S)		
2,3,3',4,5-PeCB	106		U		0.159 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C U		0.167 (S)		
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		U		0.166 (S)		
2,3,3',4',6-PeCB	110	110 + 115	C J	0.255	0.148 (S)	1.36	0.925
2,3,3',5,5'-PeCB	111		U		0.145 (S)		
2,3,3',5,6-PeCB	112		U		0.147 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		U		0.162 (S)		
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		J	0.331	0.159 (S)	1.77	1.001
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		U		0.137 (S)		
2,3',4,5',6-PeCB	121		U		0.154 (S)		
2',3,3',4,5-PeCB	122		U		0.170 (S)		
2',3,4,4',5-PeCB	123		U		0.171 (S)		
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		U		0.193 (S)		
3,3',4,5,5'-PeCB	127		U		0.157 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C U		0.169 (S)		
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C J	0.321	0.170 (S)	1.28	0.929
2,2',3,3',4,5'-HxCB	130		U		0.209 (S)		
2,2',3,3',4,6-HxCB	131		U		0.214 (S)		
2,2',3,3',4,6'-HxCB	132		U		0.212 (S)		
2,2',3,3',5,5'-HxCB	133		U		0.192 (S)		
2,2',3,3',5,6-HxCB	134	134 + 143	C U		0.210 (S)		
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C U		0.171 (S)		
2,2',3,3',6,6'-HxCB	136		U		0.135 (S)		
2,2',3,4,4',5-HxCB	137		U		0.203 (S)		
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C U		0.189 (S)		
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		U		0.185 (S)		
2,2',3,4,5,6-HxCB	142		U		0.204 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		U		0.174 (S)		
2,2',3,4,6,6'-HxCB	145		U		0.143 (S)		
2,2',3,4',5,5'-HxCB	146		U		0.182 (S)		
2,2',3,4',5,6-HxCB	147	147 + 149	C J	0.245	0.188 (S)	1.22	1.132
2,2',3,4',5,6'-HxCB	148		U		0.176 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.136 (S)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.129 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C K J	0.311	0.148 (S)	0.87	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.124 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C U		0.163 (S)		
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		U		0.134 (S)		
2,3,3',4,5,5'-HxCB	159		U		0.143 (S)		
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.139 (S)		
2,3,3',4',5,5'-HxCB	162		U		0.144 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		U		0.141 (S)		
2,3,3',5,5',6-HxCB	165		U		0.166 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		U		0.132 (S)		
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.138 (S)		
2,2',3,3',4,4',5-HpCB	170		U		0.207 (S)		
2,2',3,3',4,4',6-HpCB	171	171 + 173	C U		0.200 (S)		
2,2',3,3',4,5,5'-HpCB	172		U		0.194 (S)		
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		U		0.183 (S)		
2,2',3,3',4,5',6-HpCB	175		U		0.175 (S)		
2,2',3,3',4,6,6'-HpCB	176		U		0.138 (S)		
2,2',3,3',4',5,6-HpCB	177		U		0.197 (S)		
2,2',3,3',5,5',6-HpCB	178		U		0.185 (S)		
2,2',3,3',5,6,6'-HpCB	179		U		0.135 (S)		
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C U		0.169 (S)		
2,2',3,4,4',5,6-HpCB	181		U		0.189 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.177 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C U		0.182 (S)		
2,2',3,4,4',6,6'-HpCB	184		U		0.135 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.144 (S)		
2,2',3,4',5,5',6-HpCB	187		U		0.173 (S)		
2,2',3,4',5,6,6'-HpCB	188		U		0.131 (S)		
2,3,3',4,4',5,5'-HpCB	189		U		0.190 (S)		
2,3,3',4,4',5,6-HpCB	190		U		0.156 (S)		
2,3,3',4,4',5',6-HpCB	191		U		0.149 (S)		
2,3,3',4,5,5',6-HpCB	192		U		0.166 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		U		0.191 (S)		
2,2',3,3',4,4',5,6-OcCB	195		U		0.200 (S)		
2,2',3,3',4,4',5,6'-OcCB	196		U		0.184 (S)		
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C U		0.135 (S)		
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C U		0.190 (S)		
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		U		0.134 (S)		
2,2',3,3',5,5',6,6'-OcCB	202		U		0.149 (S)		
2,2',3,4,4',5,5',6-OcCB	203		U		0.183 (S)		
2,2',3,4,4',5,6,6'-OcCB	204		U		0.134 (S)		
2,3,3',4,4',5,5',6-OcCB	205		U		0.157 (S)		
2,2',3,3',4,4',5,5',6-NoCB	206		U		0.226 (S)		
2,2',3,3',4,4',5,6,6'-NoCB	207		U		0.174 (S)		
2,2',3,3',4,5,5',6,6'-NoCB	208		U		0.183 (S)		
2,2',3,3',4,4',5,5',6,6'-DeCB	209		U		0.164 (S)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 14-Jun-2013 15:24:25; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_WG43699-101_Form1A_PB3C_194AS5_SJ1608833.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

PCB CONGENER ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43699-101 W
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	07-Jun-2013 **Time:** 12:08:28	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	300	**Sample Data Filename:**	**PB3C_201 S: 4**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	15	**Cal. Ver. Data Filename:**	PB3C_201 S: 1
Concentration Units:	ng/kg		

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		U D		0.993 (S)		
2,2'-DiCB	4		U D		2.64 (S)		
2,3-DiCB	5		U D		1.99 (S)		
2,3'-DiCB	6		U D		1.75 (S)		
2,4-DiCB	7		U D		1.81 (S)		
2,4'-DiCB	8		U D		1.60 (S)		
2,5-DiCB	9		U D		1.76 (S)		
2,6-DiCB	10		U D		1.83 (S)		
3,3'-DiCB	11		U D		1.90 (S)		
3,4-DiCB	12	12 + 13	C U D		1.87 (S)		
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U D		1.78 (S)		
4,4'-DiCB	15		U D		2.12 (S)		
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		X				
2,3,4',6-TeCB	64		X				
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6-TeCB	73		X				
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5-TeCB	81		X				
2,2',3,3',4-PeCB	82		X				
2,2',3,3',5-PeCB	83	83 + 99	C X				
2,2',3,3',6-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		X				
2,2',3,3',4,4',5,6-OcCB	195		X				
2,2',3,3',4,4',5,6'-OcCB	196		X				
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		X				
2,2',3,3',5,5',6,6'-OcCB	202		X				
2,2',3,4,4',5,5',6-OcCB	203		X				
2,2',3,4,4',5,6,6'-OcCB	204		X				
2,3,3',4,4',5,5',6-OcCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; D = dilution data; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

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Report Filename: 1668_PCB1668_PCBTF_WG43699-101_Form1A_PB3C_201S4_SJ1610457.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

PCB CONGENER ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43699-101 W2
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	08-Jun-2013 **Time:** 10:26:45	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	500	**Sample Data Filename:**	**PB3C_203 S: 3**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	25	**Cal. Ver. Data Filename:**	PB3C_203 S: 1
Concentration Units:	ng/kg		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		U D		1.38 (S)		
3-MoCB	2		U D		1.19 (S)		
4-MoCB	3		X				
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		X				
2,3,4',6-TeCB	64		X				
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6-TeCB	73		X				
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5-TeCB	81		X				
2,2',3,3',4-PeCB	82		X				
2,2',3,3',5-PeCB	83	83 + 99	C X				
2,2',3,3',6-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		X				
2,2',3,3',4,4',5,6-OcCB	195		X				
2,2',3,3',4,4',5,6'-OcCB	196		X				
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		X				
2,2',3,3',5,5',6,6'-OcCB	202		X				
2,2',3,4,4',5,5',6-OcCB	203		X				
2,2',3,4,4',5,6,6'-OcCB	204		X				
2,3,3',4,4',5,5',6-OcCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; D = dilution data; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

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Report Filename: 1668_PCB1668_PCBTF_WG43699-101_Form1A_PB3C_203S3_SJ1610517.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43699-101
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	22-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	04-Jun-2013 **Time:** 02:39:52	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename(s):**	**PB3C_194A S: 5, PB3C_201 S: 4, PB3C_203 S: 3**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_194A S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_194A S: 1
Concentration Units:	ng/kg		

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls	U	
Total Dichloro Biphenyls	U	
Total Trichloro Biphenyls		0.840
Total Tetrachloro Biphenyls		1.53
Total Pentachloro Biphenyls		0.837
Total Hexachloro Biphenyls		0.566
Total Heptachloro Biphenyls	U	
Total Octachloro Biphenyls	U	
Total Nonachloro Biphenyls	U	
Decachloro Biphenyl	U	
TOTAL PCBs		3.78

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_WG43699-101_Form1AHT_SJ1608833.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
Lab Blank

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4273	**Sample Collection:**	N/A
		Project No.	N/A
Matrix:	SOLID	**Lab Sample I.D.:**	WG43699-101
Sample Size:	10.0 g	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg	**Sample Data Filename(s):**	**PB3C_194A S: 5** **PB3C_201 S: 4** **PB3C_203 S: 3**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77		U		0.130	0.0001	0.00e+00	6.50e-06	
3,4,4',5-TeCB	81		U		0.127	0.0003	0.00e+00	1.91e-05	
2,3,3',4,4'-PeCB	105		U		0.169	0.00003	0.00e+00	2.54e-06	
2,3,4,4',5-PeCB	114		U		0.162	0.00003	0.00e+00	2.43e-06	
2,3',4,4',5-PeCB	118			0.331	0.159	0.00003	9.93e-06	9.93e-06	
2',3,4,4',5-PeCB	123		U		0.171	0.00003	0.00e+00	2.57e-06	
3,3',4,4',5-PeCB	126		U		0.193	0.1	0.00e+00	9.65e-03	
2,3,3',4,4',5-HxCB	156	156 + 157	C U		0.163	0.00003	0.00e+00	2.45e-06	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167		U		0.132	0.00003	0.00e+00	1.98e-06	
3,3',4,4',5,5'-HxCB	169		U		0.138	0.03	0.00e+00	2.07e-03	
2,3,3',4,4',5,5'-HpCB	189		U		0.190	0.00003	0.00e+00	2.85e-06	
					TOTAL TEQ		0.00000993	0.0118	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Alina Tones_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_WG43699-101_TEQ_SJ1608833.html; Workgroup: WG43699; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

PCB CONGENER ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43721-101
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 11:44:42	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_197A S: 3**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_197 S: 1
Concentration Units:	ng/kg		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		U		0.177 (S)		
2,2',5-TriCB	18	18 + 30	C J	0.184	0.149 (S)	1.11	1.107
2,2',6-TriCB	19		U		0.190 (S)		
2,3,3'-TriCB	20	20 + 28	C	0.490	0.126 (S)	0.97	0.850
2,3,4-TriCB	21	21 + 33	C U		0.124 (S)		
2,3,4'-TriCB	22		J	0.148	0.135 (S)	0.89	0.874
2,3,5-TriCB	23		U		0.137 (S)		
2,3,6-TriCB	24		U		0.129 (S)		
2,3',4-TriCB	25		U		0.112 (S)		
2,3',5-TriCB	26	26 + 29	C U		0.127 (S)		
2,3',6-TriCB	27		U		0.126 (S)		
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		J	0.281	0.118 (S)	0.91	0.840
2,4',6-TriCB	32		U		0.124 (S)		
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U		0.128 (S)		
3,3',4-TriCB	35		U		0.121 (S)		
3,3',5-TriCB	36		U		0.116 (S)		
3,4,4'-TriCB	37		U		0.141 (S)		
3,4,5-TriCB	38		U		0.118 (S)		
3,4',5-TriCB	39		U		0.119 (S)		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C U		0.188 (S)		
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		U		0.194 (S)		
2,2',3,5-TeCB	43		U		0.224 (S)		
2,2',3,5'-TeCB	44	44 + 47 + 65	C	0.476	0.176 (S)	0.85	1.279
2,2',3,6-TeCB	45	45 + 51	C U		0.199 (S)		
2,2',3,6'-TeCB	46		U		0.231 (S)		
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		U		0.191 (S)		
2,2',4,5'-TeCB	49	49 + 69	C J	0.216	0.166 (S)	0.86	1.252
2,2',4,6-TeCB	50	50 + 53	C U		0.195 (S)		
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			0.410	0.183 (S)	0.80	1.228
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.140 (S)		
2,3,3',4-TeCB	55		U		0.153 (S)		
2,3,3',4'-TeCB	56		K J	0.183	0.149 (S)	1.02	0.905
2,3,3',5-TeCB	57		U		0.148 (S)		
2,3,3',5'-TeCB	58		U		0.153 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C U		0.145 (S)		
2,3,4,4'-TeCB	60		U		0.152 (S)		
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C	0.690	0.147 (S)	0.80	0.876
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		U		0.141 (S)		
2,3,4',6-TeCB	64		J	0.170	0.138 (S)	0.81	1.341
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		J	0.316	0.141 (S)	0.77	0.885
2,3',4,5-TeCB	67		U		0.133 (S)		
2,3',4,5'-TeCB	68		U		0.143 (S)		
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		U		0.143 (S)		
2,3',5',6-TeCB	73		U		0.148 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		U		0.158 (S)		
3,3',4,5-TeCB	78		U		0.137 (S)		
3,3',4,5'-TeCB	79		U		0.117 (S)		
3,3',5,5'-TeCB	80		U		0.132 (S)		
3,4,4',5-TeCB	81		U		0.162 (S)		
2,2',3,3',4-PeCB	82		U		0.217 (S)		
2,2',3,3',5-PeCB	83	83 + 99	C K J	0.315	0.212 (S)	2.84	0.886
2,2',3,3',6-PeCB	84		U		0.241 (S)		
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C K J	0.242	0.170 (S)	1.28	0.920
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C	0.600	0.176 (S)	1.72	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C U		0.216 (S)		
2,2',3,4,6'-PeCB	89		U		0.220 (S)		
2,2',3,4',5-PeCB	90	90 + 101 + 113	C	0.707	0.185 (S)	1.33	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		U		0.206 (S)		
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C K	0.632	0.212 (S)	1.28	1.120
2,2',3,5,6'-PeCB	94		U		0.240 (S)		
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		U		0.132 (S)		
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		U		0.196 (S)		
2,2',4,6,6'-PeCB	104		U		0.124 (S)		
2,3,3',4,4'-PeCB	105			0.454	0.211 (S)	1.52	1.000
2,3,3',4,5-PeCB	106		U		0.188 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C U		0.206 (S)		
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		U		0.183 (S)		
2,3,3',4',6-PeCB	110	110 + 115	C	0.887	0.150 (S)	1.46	0.925
2,3,3',5,5'-PeCB	111		U		0.152 (S)		
2,3,3',5,6-PeCB	112		U		0.147 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		U		0.206 (S)		
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		K	0.890	0.198 (S)	1.29	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		U		0.139 (S)		
2,3',4,5',6-PeCB	121		U		0.159 (S)		
2',3,3',4,5-PeCB	122		U		0.209 (S)		
2',3,4,4',5-PeCB	123		U		0.213 (S)		
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		U		0.230 (S)		
3,3',4,5,5'-PeCB	127		U		0.188 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C J	0.202	0.174 (S)	1.37	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C	1.98	0.175 (S)	1.23	0.928
2,2',3,3',4,5'-HxCB	130		U		0.214 (S)		
2,2',3,3',4,6-HxCB	131		U		0.211 (S)		
2,2',3,3',4,6'-HxCB	132		K J	0.392	0.219 (S)	0.94	1.173
2,2',3,3',5,5'-HxCB	133		U		0.202 (S)		
2,2',3,3',5,6-HxCB	134	134 + 143	C U		0.213 (S)		
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C K	0.475	0.194 (S)	1.02	1.104
2,2',3,3',6,6'-HxCB	136		U		0.158 (S)		
2,2',3,4,4',5-HxCB	137		U		0.219 (S)		
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C U		0.198 (S)		
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		K J	0.224	0.192 (S)	2.11	0.904
2,2',3,4,5,6-HxCB	142		U		0.217 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		U		0.197 (S)		
2,2',3,4,6,6'-HxCB	145		U		0.168 (S)		
2,2',3,4',5,5'-HxCB	146		J	0.209	0.178 (S)	1.12	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C G	0.804	0.192 (S)	1.35	1.133
2,2',3,4',5,6'-HxCB	148		U		0.202 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.160 (S)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.156 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C	1.43	0.158 (S)	1.39	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.139 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C J	0.372	0.170 (S)	1.37	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		J	0.199	0.140 (S)	1.10	0.938
2,3,3',4,5,5'-HxCB	159		U		0.142 (S)		
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.150 (S)		
2,3,3',4',5,5'-HxCB	162		U		0.146 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		U		0.141 (S)		
2,3,3',5,5',6-HxCB	165		U		0.167 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		J	0.186	0.133 (S)	1.33	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.133 (S)		
2,2',3,3',4,4',5-HpCB	170			0.658	0.208 (S)	1.19	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C K J	0.194	0.192 (S)	1.37	1.162
2,2',3,3',4,5,5'-HpCB	172		U		0.190 (S)		
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		J	0.346	0.174 (S)	0.92	1.133
2,2',3,3',4,5',6-HpCB	175		U		0.179 (S)		
2,2',3,3',4,6,6'-HpCB	176		U		0.139 (S)		
2,2',3,3',4',5,6-HpCB	177		K J	0.365	0.185 (S)	0.77	1.144
2,2',3,3',5,5',6-HpCB	178		U		0.184 (S)		
2,2',3,3',5,6,6'-HpCB	179		J	0.145	0.137 (S)	1.01	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	1.49	0.166 (S)	1.05	1.001
2,2',3,4,4',5,6-HpCB	181		U		0.185 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.177 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C J	0.321	0.180 (S)	1.20	1.126
2,2',3,4,4',6,6'-HpCB	184		U		0.137 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.149 (S)		
2,2',3,4',5,5',6-HpCB	187			0.702	0.172 (S)	0.95	1.109
2,2',3,4',5,6,6'-HpCB	188		U		0.133 (S)		
2,3,3',4,4',5,5'-HpCB	189		U		0.176 (S)		
2,3,3',4,4',5,6-HpCB	190		J	0.171	0.144 (S)	0.97	0.947
2,3,3',4,4',5',6-HpCB	191		U		0.140 (S)		
2,3,3',4,5,5',6-HpCB	192		U		0.159 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		K	0.598	0.215 (S)	0.74	0.991
2,2',3,3',4,4',5,6-OcCB	195		U		0.230 (S)		
2,2',3,3',4,4',5,6'-OcCB	196		K J	0.286	0.193 (S)	0.48	0.916
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C U		0.150 (S)		
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	0.590	0.203 (S)	1.00	1.114
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		U		0.146 (S)		
2,2',3,3',5,5',6,6'-OcCB	202		U		0.165 (S)		
2,2',3,4,4',5,5',6-OcCB	203			0.425	0.186 (S)	0.96	0.920
2,2',3,4,4',5,6,6'-OcCB	204		U		0.148 (S)		
2,3,3',4,4',5,5',6-OcCB	205		U		0.182 (S)		
2,2',3,3',4,4',5,5',6-NoCB	206		K	0.474	0.300 (S)	0.90	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207		U		0.234 (S)		
2,2',3,3',4,5,5',6,6'-NoCB	208		U		0.242 (S)		
2,2',3,3',4,4',5,5',6,6'-DeCB	209		J	0.272	0.186 (S)	1.10	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

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Report Filename: 1668_PCB1668_PCBTF_WG43721-101_Form1A_PB3C_197AS3_SJ1608679.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

PCB CONGENER ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43721-101 W
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	06-Jun-2013 **Time:** 13:01:00	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_199 S: 4**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_199 S: 1
Concentration Units:	ng/kg		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		NQ				
3-MoCB	2		U		0.359 (S)		
4-MoCB	3		K	0.775	0.373 (S)	18.6	1.000
2,2'-DiCB	4		U		2.16 (S)		
2,3-DiCB	5		U		1.51 (S)		
2,3'-DiCB	6		U		1.35 (S)		
2,4-DiCB	7		U		1.39 (S)		
2,4'-DiCB	8		U		1.27 (S)		
2,5-DiCB	9		U		1.36 (S)		
2,6-DiCB	10		U		1.44 (S)		
3,3'-DiCB	11		U		1.40 (S)		
3,4-DiCB	12	12 + 13	C U		1.36 (S)		
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U		1.35 (S)		
4,4'-DiCB	15		U		1.63 (S)		
2,2',3-TriCB	16		U		0.550 (S)		
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		X				
2,3,4',6-TeCB	64		X				
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6-TeCB	73		X				
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5-TeCB	81		X				
2,2',3,3',4-PeCB	82		X				
2,2',3,3',5-PeCB	83	83 + 99	C X				
2,2',3,3',6-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		X				
2,2',3,3',4,4',5,6-OcCB	195		X				
2,2',3,3',4,4',5,6'-OcCB	196		X				
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		X				
2,2',3,3',5,5',6,6'-OcCB	202		X				
2,2',3,4,4',5,5',6-OcCB	203		X				
2,2',3,4,4',5,6,6'-OcCB	204		X				
2,3,3',4,4',5,5',6-OcCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; C = co-eluting congener; X = result reported separately; NQ = data not quantifiable.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 11-Jun-2013 15:27:35; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_WG43721-101_Form1A_PB3C_199S4_SJ1609123.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43721-101
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	24-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	05-Jun-2013 **Time:** 11:44:42	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename(s):**	**PB3C_197A S: 3, PB3C_199 S: 4**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_197A S: 3
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_197 S: 1
Concentration Units:	ng/kg		

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls [3]	U	
Total Dichloro Biphenyls	U	
Total Trichloro Biphenyls		1.10
Total Tetrachloro Biphenyls		2.28
Total Pentachloro Biphenyls		2.65
Total Hexachloro Biphenyls		5.38
Total Heptachloro Biphenyls		3.83
Total Octachloro Biphenyls		1.02
Total Nonachloro Biphenyls	U	
Decachloro Biphenyl		0.272
TOTAL PCBs [3]		16.5

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.
(3) Incomplete total as some data were not quantifiable.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 11-Jun-2013 15:28:31; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_WG43721-101_Form1AHT_SJ1608679.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
Lab Blank

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4273	**Sample Collection:**	N/A
		Project No.	N/A
Matrix:	SOLID	**Lab Sample I.D.:**	WG43721-101
Sample Size:	10.0 g	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg	**Sample Data Filename(s):**	**PB3C_197A S: 3** **PB3C_199 S: 4**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77		U		0.158	0.0001	0.00e+00	7.90e-06	
3,4,4',5-TeCB	81		U		0.162	0.0003	0.00e+00	2.43e-05	
2,3,3',4,4'-PeCB	105			0.454	0.211	0.00003	1.36e-05	1.36e-05	
2,3,4,4',5-PeCB	114		U		0.206	0.00003	0.00e+00	3.09e-06	
2,3',4,4',5-PeCB	118		U		0.198	0.00003	0.00e+00	2.97e-06	
2',3,4,4',5-PeCB	123		U		0.213	0.00003	0.00e+00	3.20e-06	
3,3',4,4',5-PeCB	126		U		0.230	0.1	0.00e+00	1.15e-02	
2,3,3',4,4',5-HxCB	156	156 + 157	C	0.372	0.170	0.00003	1.12e-05	1.12e-05	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167			0.186	0.133	0.00003	5.58e-06	5.58e-06	
3,3',4,4',5,5'-HxCB	169		U		0.133	0.03	0.00e+00	2.00e-03	
2,3,3',4,4',5,5'-HpCB	189		U		0.176	0.00003	0.00e+00	2.64e-06	
					TOTAL TEQ		0.0000304	0.0136	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: 1668_PCB1668_HomTotals-TEQs_WG43721-101_TEQ_SJ1608679.html; Workgroup: WG43721; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

Form 1A

PCB CONGENER ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	N/A		
Contract No.:	4273	**Lab Sample I.D.:**	WG43769-101
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	31-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	08-Jun-2013 **Time:** 00:12:44	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename:**	**PB3C_202 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_202 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_202 S: 1
Concentration Units:	ng/kg		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		U		0.186 (S)		
2,2',5-TriCB	18	18 + 30	C U		0.158 (S)		
2,2',6-TriCB	19		U		0.180 (S)		
2,3,3'-TriCB	20	20 + 28	C	0.436	0.115 (S)	1.16	0.853
2,3,4-TriCB	21	21 + 33	C J	0.159	0.106 (S)	1.17	0.862
2,3,4'-TriCB	22		J	0.144	0.121 (S)	1.03	0.876
2,3,5-TriCB	23		U		0.117 (S)		
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		U		0.0991 (S)		
2,3',5-TriCB	26	26 + 29	C U		0.114 (S)		
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		K J	0.215	0.105 (S)	1.27	0.842
2,4',6-TriCB	32		U		0.110 (S)		
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U		0.117 (S)		
3,3',4-TriCB	35		U		0.121 (S)		
3,3',5-TriCB	36		U		0.111 (S)		
3,4,4'-TriCB	37		U		0.135 (S)		
3,4,5-TriCB	38		U		0.111 (S)		
3,4',5-TriCB	39		U		0.109 (S)		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C J	0.260	0.168 (S)	0.71	1.316
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		U		0.163 (S)		
2,2',3,5-TeCB	43		U		0.191 (S)		
2,2',3,5'-TeCB	44	44 + 47 + 65	C K J	0.362	0.157 (S)	1.18	1.268
2,2',3,6-TeCB	45	45 + 51	C U		0.174 (S)		
2,2',3,6'-TeCB	46		U		0.196 (S)		
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		U		0.168 (S)		
2,2',4,5'-TeCB	49	49 + 69	C K J	0.179	0.146 (S)	1.23	1.244
2,2',4,6-TeCB	50	50 + 53	C U		0.170 (S)		
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		K J	0.288	0.164 (S)	0.64	1.219
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.115 (S)		
2,3,3',4-TeCB	55		U		0.133 (S)		
2,3,3',4'-TeCB	56		U		0.140 (S)		
2,3,3',5-TeCB	57		U		0.132 (S)		
2,3,3',5'-TeCB	58		U		0.136 (S)		
2,3,3',6-TeCB	59	59 + 62 + 75	C U		0.130 (S)		
2,3,4,4'-TeCB	60		U		0.132 (S)		
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C K J	0.381	0.132 (S)	0.91	0.877
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		U		0.125 (S)		
2,3,4',6-TeCB	64		U		0.120 (S)		
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		K J	0.217	0.127 (S)	0.96	0.886
2,3',4,5-TeCB	67		U		0.117 (S)		
2,3',4,5'-TeCB	68		U		0.131 (S)		
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		U		0.128 (S)		
2,3',5',6-TeCB	73		U		0.130 (S)		
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		U		0.158 (S)		
3,3',4,5-TeCB	78		U		0.137 (S)		
3,3',4,5'-TeCB	79		U		0.113 (S)		
3,3',5,5'-TeCB	80		U		0.123 (S)		
3,4,4',5-TeCB	81		U		0.154 (S)		
2,2',3,3',4-PeCB	82		U		0.205 (S)		
2,2',3,3',5-PeCB	83	83 + 99	C U		0.196 (S)		
2,2',3,3',6-PeCB	84		U		0.217 (S)		
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C U		0.162 (S)		
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C K J	0.194	0.164 (S)	0.93	0.902
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C U		0.192 (S)		
2,2',3,4,6'-PeCB	89		U		0.199 (S)		
2,2',3,4',5-PeCB	90	90 + 101 + 113	C K J	0.238	0.167 (S)	2.09	0.870
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		U		0.190 (S)		
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C K	0.408	0.183 (S)	0.91	1.119
2,2',3,5,6'-PeCB	94		U		0.208 (S)		
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		U		0.118 (S)		
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		U		0.174 (S)		
2,2',4,6,6'-PeCB	104		U		0.102 (S)		
2,3,3',4,4'-PeCB	105		U		0.174 (S)		
2,3,3',4,5-PeCB	106		U		0.148 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C U		0.164 (S)		
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		U		0.144 (S)		
2,3,3',4',6-PeCB	110	110 + 115	C J	0.308	0.142 (S)	1.69	0.925
2,3,3',5,5'-PeCB	111		U		0.143 (S)		
2,3,3',5,6-PeCB	112		U		0.135 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		U		0.162 (S)		
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		J	0.248	0.163 (S)	1.32	1.001
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		U		0.133 (S)		
2,3',4,5',6-PeCB	121		U		0.146 (S)		
2',3,3',4,5-PeCB	122		U		0.169 (S)		
2',3,4,4',5-PeCB	123		U		0.172 (S)		
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		U		0.189 (S)		
3,3',4,5,5'-PeCB	127		U		0.152 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C U		0.229 (S)		
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C J	0.312	0.229 (S)	1.32	0.929
2,2',3,3',4,5'-HxCB	130		U		0.283 (S)		
2,2',3,3',4,6-HxCB	131		U		0.274 (S)		
2,2',3,3',4,6'-HxCB	132		U		0.287 (S)		
2,2',3,3',5,5'-HxCB	133		U		0.262 (S)		
2,2',3,3',5,6-HxCB	134	134 + 143	C U		0.277 (S)		
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C U		0.180 (S)		
2,2',3,3',6,6'-HxCB	136		U		0.141 (S)		
2,2',3,4,4',5-HxCB	137		U		0.283 (S)		
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C U		0.255 (S)		
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		U		0.248 (S)		
2,2',3,4,5,6-HxCB	142		U		0.284 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		U		0.188 (S)		
2,2',3,4,6,6'-HxCB	145		U		0.149 (S)		
2,2',3,4',5,5'-HxCB	146		U		0.241 (S)		
2,2',3,4',5,6-HxCB	147	147 + 149	C U		0.252 (S)		
2,2',3,4',5,6'-HxCB	148		U		0.186 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.142 (S)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.136 (S)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C K J	0.253	0.205 (S)	0.95	0.900
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.113 (S)		
2,3,3',4,4',5-HxCB	156	156 + 157	C U		0.216 (S)		
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		U		0.183 (S)		
2,3,3',4,5,5'-HxCB	159		U		0.187 (S)		
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.190 (S)		
2,3,3',4',5,5'-HxCB	162		U		0.194 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		U		0.188 (S)		
2,3,3',5,5',6-HxCB	165		U		0.224 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		U		0.169 (S)		
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.185 (S)		
2,2',3,3',4,4',5-HpCB	170		U		0.212 (S)		
2,2',3,3',4,4',6-HpCB	171	171 + 173	C U		0.197 (S)		
2,2',3,3',4,5,5'-HpCB	172		U		0.193 (S)		
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		U		0.181 (S)		
2,2',3,3',4,5',6-HpCB	175		U		0.181 (S)		
2,2',3,3',4,6,6'-HpCB	176		U		0.142 (S)		
2,2',3,3',4',5,6-HpCB	177		U		0.195 (S)		
2,2',3,3',5,5',6-HpCB	178		U		0.189 (S)		
2,2',3,3',5,6,6'-HpCB	179		U		0.140 (S)		
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C U		0.172 (S)		
2,2',3,4,4',5,6-HpCB	181		U		0.191 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.179 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C U		0.181 (S)		
2,2',3,4,4',6,6'-HpCB	184		U		0.140 (S)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.150 (S)		
2,2',3,4',5,5',6-HpCB	187		U		0.173 (S)		
2,2',3,4',5,6,6'-HpCB	188		U		0.120 (S)		
2,3,3',4,4',5,5'-HpCB	189		U		0.189 (S)		
2,3,3',4,4',5,6-HpCB	190		U		0.147 (S)		
2,3,3',4,4',5',6-HpCB	191		U		0.144 (S)		
2,3,3',4,5,5',6-HpCB	192		U		0.162 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		U		0.224 (S)		
2,2',3,3',4,4',5,6-OcCB	195		U		0.240 (S)		
2,2',3,3',4,4',5,6'-OcCB	196		U		0.171 (S)		
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C U		0.132 (S)		
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C U		0.181 (S)		
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		U		0.131 (S)		
2,2',3,3',5,5',6,6'-OcCB	202		U		0.140 (S)		
2,2',3,4,4',5,5',6-OcCB	203		U		0.167 (S)		
2,2',3,4,4',5,6,6'-OcCB	204		U		0.131 (S)		
2,3,3',4,4',5,5',6-OcCB	205		U		0.189 (S)		
2,2',3,3',4,4',5,5',6-NoCB	206		U		0.283 (S)		
2,2',3,3',4,4',5,6,6'-NoCB	207		U		0.222 (S)		
2,2',3,3',4,5,5',6,6'-NoCB	208		U		0.231 (S)		
2,2',3,3',4,4',5,5',6,6'-DeCB	209		U		0.171 (S)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 13-Jun-2013 14:00:34; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_WG43769-101_Form1A_PB3C_202S5_SJ1609906.html; Workgroup: WG43769; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

PCB CONGENER ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43769-101 W
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	31-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	10-Jun-2013 **Time:** 23:43:03	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	300	**Sample Data Filename:**	**PB3C_205 S: 4**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_202 S: 5
Dilution Factor:	15	**Cal. Ver. Data Filename:**	PB3C_205 S: 1
Concentration Units:	ng/kg		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2-MoCB	1		NQ				
3-MoCB	2		NQ				
4-MoCB	3		NQ				
2,2'-DiCB	4		U D		1.43 (S)		
2,3-DiCB	5		U D		1.04 (S)		
2,3'-DiCB	6		U D		0.931 (S)		
2,4-DiCB	7		U D		0.946 (S)		
2,4'-DiCB	8		U D		0.849 (S)		
2,5-DiCB	9		U D		0.940 (S)		
2,6-DiCB	10		U D		0.954 (S)		
3,3'-DiCB	11		D J	1.27	1.02 (S)	1.60	0.969
3,4-DiCB	12	12 + 13	C U D		0.969 (S)		
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U D		0.950 (S)		
4,4'-DiCB	15		U D		1.17 (S)		
2,2',3-TriCB	16		U D		0.933 (S)		
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		U D		0.623 (S)		
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		U D		0.576 (S)		
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6-TeCB	62	59 + 62 + 75	C59				
2,3,4',5-TeCB	63		X				
2,3,4',6-TeCB	64		X				
2,3,5,6-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6-TeCB	69	49 + 69	C49				
2,3',4',5-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6-TeCB	73		X				
2,4,4',5-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6-TeCB	75	59 + 62 + 75	C59				
2',3,4,5-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5-TeCB	81		X				
2,2',3,3',4-PeCB	82		X				
2,2',3,3',5-PeCB	83	83 + 99	C X				
2,2',3,3',6-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OcCB	194		X				
2,2',3,3',4,4',5,6-OcCB	195		X				
2,2',3,3',4,4',5,6'-OcCB	196		X				
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OcCB	201		X				
2,2',3,3',5,5',6,6'-OcCB	202		X				
2,2',3,4,4',5,5',6-OcCB	203		X				
2,2',3,4,4',5,6,6'-OcCB	204		X				
2,3,3',4,4',5,5',6-OcCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; D = dilution data; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately; NQ = data not quantifiable.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = contract defined limit.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

For Axys Internal Use Only [XSL Template: Form16681A.xsl; Created: 13-Jun-2013 14:00:34; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_PCBTF_WG43769-101_Form1A_PB3C_205S4_SJ1610389.html; Workgroup: WG43769; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

HOMOLOGUE TOTAL PCB ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4273	**Lab Sample I.D.:**	WG43769-101
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	22-Feb-2013
Extraction Date:	31-May-2013	**Instrument ID:**	HR GC/MS
Analysis Date:	08-Jun-2013 **Time:** 00:12:44	**GC Column ID:**	SPB OCTYL
Extract Volume (uL):	20	**Sample Data Filename(s):**	**PB3C_202 S: 5, PB3C_205 S: 4**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PB3C_202 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PB3C_202 S: 1
Concentration Units:	ng/kg		

PCB HOMOLOGUE GROUP	**LAB FLAG** [1]	**CONC. FOUND**
Total Monochloro Biphenyls [3]	NQ	
Total Dichloro Biphenyls		1.27
Total Trichloro Biphenyls		0.739
Total Tetrachloro Biphenyls		0.260
Total Pentachloro Biphenyls		0.556
Total Hexachloro Biphenyls		0.312
Total Heptachloro Biphenyls	U	
Total Octachloro Biphenyls	U	
Total Nonachloro Biphenyls	U	
Decachloro Biphenyl	U	
TOTAL PCBs [3]		3.14

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; NQ = data not quantifiable.
(2) All header information pertains to the initial instrumental analysis of the sample extract. Additional sample datafiles listed refer to secondary analysis of the sample extract.
(3) Incomplete total as some data were not quantifiable.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: Form1668HTII.xsl; Created: 13-Jun-2013 14:00:56; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_WG43769-101_Form1AHT_SJ1609906.html; Workgroup: WG43769; Design ID: 1645]

AXYS METHOD MLA-010 Rev 11

CLIENT SAMPLE NO.
Lab Blank

Form 1C
PCB CONGENER TEQ ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4273	**Sample Collection:**	N/A
		Project No.	N/A
Matrix:	SOLID	**Lab Sample I.D.:**	WG43769-101
Sample Size:	10.0 g	**GC Column ID(s):**	SPB OCTYL
Concentration Units:	ng/kg	**Sample Data Filename(s):**	**PB3C_202 S: 5** **PB3C_205 S: 4**

COMPOUND	IUPAC NO.	COELUTIONS	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)	WHO 2005 TEF	TEQ U=0	TEQ U=1/2 RL	TEQ U=RL
3,3',4,4'-TeCB	77		U		0.158	0.0001	0.00e+00	7.90e-06	
3,4,4',5-TeCB	81		U		0.154	0.0003	0.00e+00	2.31e-05	
2,3,3',4,4'-PeCB	105		U		0.174	0.00003	0.00e+00	2.61e-06	
2,3,4,4',5-PeCB	114		U		0.162	0.00003	0.00e+00	2.43e-06	
2,3',4,4',5-PeCB	118			0.248	0.163	0.00003	7.44e-06	7.44e-06	
2',3,4,4',5-PeCB	123		U		0.172	0.00003	0.00e+00	2.58e-06	
3,3',4,4',5-PeCB	126		U		0.189	0.1	0.00e+00	9.45e-03	
2,3,3',4,4',5-HxCB	156	156 + 157	C U		0.216	0.00003	0.00e+00	3.24e-06	
2,3,3',4,4',5'-HxCB	157	156 + 157	C156						
2,3',4,4',5,5'-HxCB	167		U		0.169	0.00003	0.00e+00	2.54e-06	
3,3',4,4',5,5'-HxCB	169		U		0.185	0.03	0.00e+00	2.78e-03	
2,3,3',4,4',5,5'-HpCB	189		U		0.189	0.00003	0.00e+00	2.84e-06	
					TOTAL TEQ		0.00000744	0.0123	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; C = co-eluting congener; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

These data are validated and reported as accurate and in accord with AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Shelley Facchin_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: 1668TEQ.xsl; Created: 13-Jun-2013 14:00:56; Application: XMLTransformer-1.13.42;
Report Filename: 1668_PCB1668_HomTotals-TEQs_WG43769-101_TEQ_SJ1609906.html; Workgroup: WG43769; Design ID: 1645]

Matrix	Study ID	Location ID	Date	Time	ARI Lab ID	Grain Size	Conventionals	Total Sulfides	SIM PAH	As & Cd	Hg	QAQC Type
Sediment	RB13	SEQ-05-S	5/9/2013	857	WP62A	X	X	X	X	X	X	
Sediment	RB13	SEQ-08-S	5/9/2013	921	WP62B	X		X			X	
Sediment	RB13	SEQ-02-S	5/9/2013	936	WP62C	X	X	X	X	X	X	
Sediment	RB13	SEQ-06-S	5/9/2013	952	WP62D	X		X			X	
Sediment	RB13	SEQ-04-S	5/9/2013	1011	WP62E	X	X	X	X	X	X	
Sediment	RB13	SEQ-03-S	5/9/2013	1104	WP62F	X	X	X	X	X	X	
Sediment	RB13	SEQ-03-D	5/9/2013	1104	WP62G	X	X	X	X	X	X	Field Duplicate
Sediment	RB13	SEQ-03-T	5/9/2013	1104	WP62H	X	X	X				Field Triplicate
Sediment	RB13	SEQ-07-S	5/9/2013	1124	WP62I	X		X			X	
Sediment	RB13	SEQ-01-S	5/9/2013	1141	WP62J	X	X	X	X	X	X	
Water	RB13	NOP-ER-3	5/9/2013	1042	WP62K				X	X	X	Equipment Rinsate
Sediment	RB13	DIS-14-S	5/8/2013	956	WP47A	X		X			X	
Sediment	RB13	DIS-15-S	5/8/2013	1018	WP47B	X		X			X	
Sediment	RB13	DIS-18-S	5/8/2013	1036	WP47C	X		X			X	
Sediment	RB13	DIS-10-S	5/8/2013	1127	WP47D	X	X	X	X	X	X	
Sediment	RB13	DIS-07-S	5/8/2013	1147	WP47E	X	X	X	X	X	X	
Sediment	RB13	DIS-01-S	5/8/2013	1206	WP47F	X	X	X	X	X	X	
Sediment	RB13	DIS-13-S	5/8/2013	1329	WP47G	X		X			X	
Sediment	RB13	DIS-03-S	5/8/2013	1357	WP47H	X	X	X	X	X	X	
Sediment	RB13	DIS-20-S	5/8/2013	1415	WP47I	X		X			X	
Sediment	RB13	DIS-12-S	5/8/2013	1435	WP47J	X	X	X	X	X	X	
Sediment	RB13	DIS-19-S	5/8/2013	1502	WP47K	X		X			X	
Sediment	RB13	DIS-02-S	5/8/2013	1529	WP47L	X	X	X	X	X	X	
Sediment	RB13	DIS-05-S	5/8/2013	1554	WP47M	X	X	X	X	X	X	
Sediment	RB13	DIS-17-S	5/8/2013	1613	WP47N	X		X			X	
Water	RB13	NOP-ER-2	5/8/2013	1629	WP47O				X	X	X	Equipment Rinsate
Sediment	RB13	DIS-16-S	5/8/2013	1641	WP47P	X		X			X	
Sediment	RB13	DUN-17-S	5/7/2013	902	WP46A	X		X			X	
Sediment	RB13	DUN-19-S	5/7/2013	920	WP46B	X		X			X	
Sediment	RB13	DUN-14-S	5/7/2013	948	WP46C	X		X			X	
Sediment	RB13	DUN-20-S	5/7/2013	1019	WP46D	X		X			X	
Sediment	RB13	DUN-16-S	5/7/2013	1107	WP46E	X		X			X	
Sediment	RB13	DUN-22-S	5/7/2013	1131	WP46F	X		X			X	

Matrix	Study ID	Location ID	Date	Time	ARI Lab ID	Grain Size	Conventionals	Total Sulfides	SIM PAH	As & Cd	Hg	QAQC Type
Sediment	RB13	DUN-21-S	5/7/2013	1150	WP46G	X		X			X	
Sediment	RB13	DUN-15-S	5/7/2013	1219	WP46H	X		X			X	
Sediment	RB13	DIS-04-S	5/7/2013	1342	WP46I	X	X	X	X	X	X	
Sediment	RB13	DIS-11-S	5/7/2013	1407	WP46J	X	X	X	X	X	X	
Sediment	RB13	DIS-08-S	5/7/2013	1429	WP46K	X	X	X	X	X	X	
Sediment	RB13	DIS-06-S	5/7/2013	1530	WP46L	X	X	X	X	X	X	
Water	RB13	NOP-RB	5/7/2013	1605	WP46M				X	X	X	Rinsate Blank
Water	RB13	NOP-ER-1	5/7/2013	1605	WP46N				X	X	X	Equipment Rinsate
Sediment	RB13	DIS-09-S	5/7/2013	1640	WP46O	X	X	X	X	X	X	
Sediment	RB13	DIS-09-D	5/7/2013	1640	WP46P	X	X	X	X	X	X	Field Duplicate
Sediment	RB13	DIS-09-T	5/7/2013	1640	WP46Q	X	X	X				Field Triplicate
Sediment	RB13	DUN-18-S	5/7/2013	1735	WP46R	X		X			X	
Sediment	RB13	DUN-03-S	5/6/2013	1009	WP45A	X	X	X	X	X	X	
Sediment	RB13	DUN-06-S	5/6/2013	1050	WP45B	X	X	X	X	X	X	
Sediment	RB13	DUN-07-S	5/6/2013	1110	WP45C	X	X	X	X	X	X	
Sediment	RB13	DUN-12-S	5/6/2013	1130	WP45D	X	X	X	X	X	X	
Sediment	RB13	DUN-10-S	5/6/2013	1210	WP45E	X	X	X	X	X	X	
Sediment	RB13	DUN-13-S	5/6/2013	1328	WP45F	X	X	X	X	X	X	
Sediment	RB13	DUN-05-S	5/6/2013	1346	WP45G	X	X	X	X	X	X	
Sediment	RB13	DUN-05-D	5/6/2013	1346	WP45H	X	X	X	X	X	X	Field Duplicate
Sediment	RB13	DUN-05-T	5/6/2013	1346	WP45I	X	X	X				Field Triplicate
Sediment	RB13	DUN-09-S	5/6/2013	1425	WP45J	X	X	X	X	X	X	
Sediment	RB13	DUN-04-S	5/6/2013	1446	WP45K	X	X	X	X	X	X	
Sediment	RB13	DUN-02-S	5/6/2013	1509	WP45L	X	X	X	X	X	X	
Sediment	RB13	DUN-11-S	5/6/2013	1549	WP45M	X	X	X	X	X	X	
Sediment	RB13	DUN-01-S	5/6/2013	1613	WP45N	X	X	X	X	X	X	
Sediment	RB13	DUN-08-S	5/6/2013	1638	WP45O	X	X	X	X	X	X	
Sediment	RB13	PT-13-S	5/10/2013	1323	WP72A	X		X			X	
Sediment	RB13	PT-13-D	5/10/2013	1323	WP72B	X		X			X	Field Duplicate
Sediment	RB13	PT-13-T	5/10/2013	1323	WP72C	X		X				Field Triplicate
Sediment	RB13	PT-14-S	5/10/2013	1354	WP72D	X		X			X	
Sediment	RB13	PT-08-S	5/10/2013	1411	WP72E	X	X	X	X	X	X	
Sediment	RB13	PT-15-S	5/10/2013	1431	WP72F	X		X			X	

Matrix	Study ID	Location ID	Date	Time	ARI Lab ID	Grain Size	Convent ionals	Total Sulfides	SIM PAH	As & Cd	Hg	QAQC Type
Sediment	RB13	PT-01-S	5/10/2013	1446	WP72G	X	X	X	X	X	X	
Sediment	RB13	PT-06-S	5/10/2013	909	WP72H	X	X	X	X	X	X	
Sediment	RB13	PT-09-S	5/10/2013	948	WP72I	X	X	X	X	X	X	
Sediment	RB13	PT-04-S	5/10/2013	1008	WP72J	X	X	X	X	X	X	
Sediment	RB13	PT-02-S	5/10/2013	1035	WP72K	X	X	X	X	X	X	
Sediment	RB13	PT-05-S	5/10/2013	1115	WP72L	X	X	X	X	X	X	
Sediment	RB13	PT-10-S	5/10/2013	1133	WP72M	X	X	X	X	X	X	
Sediment	RB13	PT-07-S	5/10/2013	1158	WP72N	X	X	X	X	X	X	
Sediment	RB13	PT-03-S	5/10/2013	1307	WP72O	X	X	X	X	X	X	
Sediment	RB13	PT-12-S	5/10/2013	926	WP72P	X		X			X	
Sediment	RB13	PT-11-S	5/10/2013	1221	WP72Q	X		X			X	
Water	RB13	NOP-ER-4	5/10/2013	1439	WP72R						X	

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Project: North Olympic Peninsula Regional

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BC

Signature

May-28-2013

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

May 29, 2013

Will Hafner
Newfields
115 2nd Avenue North, Suite 100
Edmonds, WA 98026

RE: Project: North Olympic Peninsula Regional Background
ARI Job No.: WP45

Dear Will:

Please find enclosed the Chain-of-Custody records (COCs), sample receipt documentation, and the final data package for samples from the project referenced above.

Sample receipt and details of the analyses are discussed in the Case Narrative.

An electronic copy of this data package will be kept on file with ARI. Should you have any questions or problems, please feel free to contact me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.ariblas.com

cc: eFile WP45

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Documentation

ARI Job ID: WP45

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: WP45	Turn-around Requested: 15 day
ARI Client Company: Newfields	Phone: 425-967-5285 x103
Client Contact: Will Hafner	
Client Project Name: North Olympic Peninsula Regional Background	
Client Project #:	Samplers: WH TH PM

Page: 1	of 2
Date: 5/6/13	Ice Present? Y
No. of Coolers: 9	Cooler Temps: -1.8-4.1

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Grain Size	Total Sulfides	Conventionals (Total Solids, TOC, TVS)	cPAH	As, Cd, Hg				Notes/Comments: Jar #s
RB13-DUN-03-S	5.6.13	1009	SED	5	X	X	X	X	X				1351, 1356, 1352, 1357, 1358
RB13-DUN-06-S	"	1050	"	"	X	X	X	X	X				1291, 1296, 1292, 1297, 1298
RB13-DUN-07-S	"	1110	"	"	X	X	X	X	X				1301, 1306, 1302, 1307, 1308
RB13-DUN-12-S	"	1130	"	"	X	X	X	X	X				1391, 1396, 1392, 1397, 1398
RB13-DUN-10-S	"	1210	"	"	X	X	X	X	X				1321, 1326, 1322, 1327, 1328
RB13-DUN-13-S	"	1328	"	"	X	X	X	X	X				1401, 1406, 1402, 1407, 1408
RB13-DUN-05-S	"	1346	"	"	X	X	X	X	X				1281, 1286, 1282, 1287, 1288
RB13-DUN-05-D	"	1346	"	"	X	X	X	X	X				1289, 1409, 1285, 1395, 1399
RB13-DUN-05-T	"	1346	"	3	X	X	X						1405, 1410, 1290
RB13-DUN-09	"	1425	"	5	X	X	X	X	X				1311, 1316, 1312, 1317, 1318

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by: (Signature)	Received by. (Signature)
	Printed Name: Will Hafner	Printed Name: Rick Hudson	Printed Name:	Printed Name:
	Company: New Fields	Company: ARI	Company	Company:
	Date & Time: 5/9/13 1200	Date & Time: 5/9/13 1200	Date & Time:	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: WP45	Turn-around Requested: 15 day
ARI Client Company: Newfields	Phone: 425-967-5285 x103
Client Contact: Will Hafner	
Client Project Name: North Olympic Peninsula Regional Background	
Client Project #:	Samplers: WH TH PM

Page: 2 of 2	
Date: 5/6/13	Ice Present? Y
No. of Coolers: 9	Cooler Temps: -1.8 - 4.1

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Grain Size	Total Sulfides	Total solids TOC, TVS	cPAH	As, Cu, Hg				Notes/Comments Jar #
RB13-DUN-04-S	5.6.13	1446	Sed	5	X	X	X	X	X				1361 1362 1367 1368 1366
RB13-DUN-02-S	"	1509	"	"	X	X	X	X	X				1271 1272 1276 1277 1278
RB13-DUN-11-S	"	1549	"	"	X	X	X	X	X				1381 1382 1386 1387 1388
RB13-DUN-01-S	"	1613	"	"	X	X	X	X	X				1341 1342 1346 1347 1348
RB13-DUN-08-S	"	1638	"	"	X	X	X	X	X				1371 1372 1376 1377 1378

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Will Hafner	Printed Name: Rich Hudson	Printed Name:	Printed Name:
	Company: Newfields	Company: ARI	Company:	Company:
	Date & Time: 5/9/13 1200	Date & Time: 5/9/13 1200	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Newfield

COC No(s): NA

Assigned ARI Job No: WP45

Project Name: North Olympic Peninsula Regional Background

Delivered by: Fed-Ex UPS Courier Hand Delivered Other

Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc.) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): -1.2 -1.5 -1.6 -.2 4.1 -1.6 -.4 -1.8 -.4

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID# 90877952

Cooler Accepted by: Date: 5/9/13 Time: 1200

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:

Was sufficient ice used (if appropriate)? NA YES NO

Were all bottles sealed in individual plastic bags? YES NO

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI: NA

Was Sample Split by ARI: NA YES Date/Time: Equipment: Split by:

Samples Logged by: JM Date: 5/9/13 Time: 1555

*** Notify Project Manager of discrepancies or concerns ***

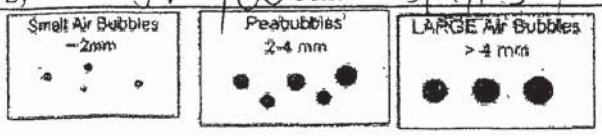
Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC
RB13-DUN-09-S	RB13-DUN-09		

Additional Notes, Discrepancies, & Resolutions:

Some samples were ~~Subm~~ under water line.

No samples were frozen. (See additional pages.)

By: JM/CW Date: 5/9/13 / 5/10/13



Small → "sm"

Peabubbles → "pb"

Large → "lg"

Headspace → "hs"

SAMPLE ID	CONTAINERS UNDER WATER LINE
RB13-DUN-17-S	ALL
RB13-DUN-19-S	ALL
RB13-DUN-14-S	ALL
RB13-DUN-20-S	ALL
RB13-DUN-16-S	ALL
RB13-DUN-22-S	4 oz & 2 oz
RB13-DUN-21-S	ALL
RB13-DUN-15-S	ALL
RB13-DIS-04-S	ALL
RB13-DIS-11-S	ALL
RB13-DIS-08-S	ALL
RB13-DIS-06-S	None
RB13-NOP-RB	2 500 ML AMBER
RB13-NOP-ER1	2 500 ML AMBER
RB13-DIS-09-S	None
RB13-DIS-09-D	None
RB13-DIS-09-T	None
RB13-DUN-18-S	ALL
RB13-DUN-03-S	ALL
RB13-DUN-06-S	ALL
RB13-DUN-07-S	ALL
RB13-DUN-12-S	ALL
RB13-DUN-10-S	ALL
RB13-DUN-13-S	ALL
RB13-DUN-05-S	ALL
RB13-DUN-05-D	ALL
RB13-DUN-05-T	ALL
RB13-DUN-09	ALL
RB13-DUN-04-S	ALL
RB13-DUN-02-S	ALL
RB13-DUN-11-S	ALL
RB13-DUN-01-S	ALL
RB13-DUN-08-S	ALL
RB13-DIS-14-S	4 oz & 2 oz
RB13-DIS-15-S	4 oz & 2 oz
RB13-DIS-18-S	4 oz & 2 oz
RB13-DIS-10-S	16 oz
RB13-DIS-07-S	16 oz
RB13-DIS-01-S	None
RB13-DIS-13-S	None
RB13-DIS-03-S	16 oz & Metals
RB13-DIS-20-S	16 oz & Metals
RB13-DIS-12-S	ALL
RB13-DIS-19-S	None
RB13-DIS-02-S	ALL

UP45 · 00006

RB13-DIS-05-S	None
RB13-DIS-17-S	None
RB13-NOP-ER-2	None
RB13-DIS-16-S	None

UPUS : 00007

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: WP45

ANALYTICAL
RESOURCES
INCORPORATED

Case Narrative

Client: Newfields
Project: North Olympic Peninsula Regional Background
ARI Job No.: WP45

Sample Receipt

Fifteen sediment samples were received May 9, 2013 under ARI jobs WP45. The cooler temperatures measured by IR thermometer following ARI SOP were between -1.8 and 4.1°C. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

Low-Level PAHs by SW8270-SIM

The samples and associated laboratory QC were extracted and analyzed within recommended holding times.

Initial and continuing calibrations were within method requirements. Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limits. The LCS and LCSD percent recoveries were within control limits.

The matrix spike and matrix spike duplicate percent recoveries were within advisory control limits.

Metals/Mercury by SW200.8/7471A

The samples and associated laboratory QC were digested and analyzed within recommended holding times.

The method blanks were clean at the reporting limits. The LCS percent recoveries were within control limits.

The matrix spike percent recoveries and duplicate RPDs were within control limits.

General Chemistry Parameters

The samples and associated laboratory QC were prepared and analyzed within recommended holding times.

The method blanks were clean at the reporting limits. The LCS percent recoveries were within control limits.

The SRM percent recovery was within limits.

The matrix spike percent recoveries and replicate RPDs were within control limits.

Geotechnical Parameters

A laboratory-specific case narrative follows.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: NewFields	**ARI Job No.:** WP45
Client Project: North Olympic Peninsula Regional	

Case Narrative

1. Fifteen samples were submitted for grain size analysis according to Puget Sound Estuary Protocol (PSEP) methodology on May 9, 2013.
2. The samples were run in a single batch and one sample from this job was chosen for triplicate analysis. The triplicate data is reported on the QA summary.
3. Four samples did not contain the required 5 grams of fines for the pipette portion of the analysis. The analytical balance has a capacity of about 200 grams (by 0.0001 grams) and a sample that would yield 5 grams of fines could not be split and stay within the capacity of the balance. These samples have been qualified on the QA summary.
4. During the sieving process on the triplicate sample, the material passing the #230 sieve was added into the wrong settling column. The triplicate was resplit and the original bench sheets are included in the raw data.
5. Nine samples contained woody or other organic matter. Individual organic particles may have broken down during the sieving process affecting the grain size analysis.
6. The data is provided in summary tables and plots.
7. There were no other noted anomalies in this project.

Released by: Katherine J Buchanan — Date: May 23, 2013
Technician

Reviewed by: Susan Curtis — Date: 5/23/13
Geotechnical Laboratory Manager

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: WP45
Client: Newfields
Project Event: N/A
Project Name: North Olympic Peninsula Regional

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	RB13-DUN-03-S	WP45A	13-10093	Sediment	05/06/13 10:09	05/09/13 12:00
2.	RB13-DUN-06-S	WP45B	13-10094	Sediment	05/06/13 10:50	05/09/13 12:00
3.	RB13-DUN-07-S	WP45C	13-10095	Sediment	05/06/13 11:10	05/09/13 12:00
4.	RB13-DUN-12-S	WP45D	13-10096	Sediment	05/06/13 11:30	05/09/13 12:00
5.	RB13-DUN-10-S	WP45E	13-10097	Sediment	05/06/13 12:10	05/09/13 12:00
6.	RB13-DUN-13-S	WP45F	13-10098	Sediment	05/06/13 13:28	05/09/13 12:00
7.	RB13-DUN-05-S	WP45G	13-10099	Sediment	05/06/13 13:46	05/09/13 12:00
8.	RB13-DUN-05-D	WP45H	13-10100	Sediment	05/06/13 13:45	05/09/13 12:00
9.	RB13-DUN-05-T	WP45I	13-10101	Sediment	05/06/13 13:46	05/09/13 12:00
10.	RB13-DUN-09-S	WP45J	13-10102	Sediment	05/06/13 14:25	05/09/13 12:00
11.	RB13-DUN-04-S	WP45K	13-10103	Sediment	05/06/13 14:46	05/09/13 12:00
12.	RB13-DUN-02-S	WP45L	13-10104	Sediment	05/06/13 15:09	05/09/13 12:00
13.	RB13-DUN-11-S	WP45M	13-10105	Sediment	05/06/13 15:49	05/09/13 12:00
14.	RB13-DUN-01-S	WP45N	13-10106	Sediment	05/06/13 16:13	05/09/13 12:00
15.	RB13-DUN-08-S	WP45O	13-10107	Sediment	05/06/13 16:38	05/09/13 12:00

SIM PAH Analysis
Report and Summary QC Forms

ARI Job ID: WP45

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DUN-03-S
SAMPLE

Lab Sample ID: WP45A
LIMS ID: 13-10093
Matrix: Sediment
Data Release Authorized: Mu
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted: 05/16/13
Date Analyzed: 05/22/13 11:24
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.18 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 21.9%

CAS Number	Analyte	LOQ	Result
56-55-3	**Benzo(a)anthracene**	**0.49**	**0.43 J**
218-01-9	**Chrysene**	**0.49**	**1.11**
205-99-2	**Benzo(b)fluoranthene**	**0.49**	**0.80**
207-08-9	**Benzo(k)fluoranthene**	**0.49**	**0.29 J**
50-32-8	**Benzo(a)pyrene**	**0.49**	**0.46 J**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**0.49**	**0.29 J**
53-70-3	Dibenz(a,h)anthracene	0.49	< 0.49 U
TOTBFA	**Total Benzofluoranthenes**	**0.98**	**1.38**

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	82.7%
d10-2-Methylnaphthalene	57.7%
d14-Dibenzo(a,h)anthracen	72.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DUN-06-S
SAMPLE

Lab Sample ID: WP45B
LIMS ID: 13-10094
Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted: 05/16/13
Date Analyzed: 05/22/13 11:53
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.42 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 30.7%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.48	3.04
218-01-9	Chrysene	0.48	6.74
205-99-2	Benzo(b)fluoranthene	0.48	4.53
207-08-9	Benzo(k)fluoranthene	0.48	1.56
50-32-8	Benzo(a)pyrene	0.48	2.65
193-39-5	Indeno(1,2,3-cd)pyrene	0.48	1.79
53-70-3	Dibenz(a,h)anthracene	0.48	0.56
TOTBFA	Total Benzofluoranthenes	0.96	7.73

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	78.3%
d10-2-Methylnaphthalene	62.3%
d14-Dibenzo(a,h)anthracen	70.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DUN-07-S
SAMPLE

Lab Sample ID: WP45C
LIMS ID: 13-10095
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted: 05/16/13
Date Analyzed: 05/21/13 18:23
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.55 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 19.0%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.47	< 0.47 U
218-01-9	**Chrysene**	**0.47**	**0.83**
205-99-2	**Benzo(b)fluoranthene**	**0.47**	**0.35 J**
207-08-9	Benzo(k)fluoranthene	0.47	< 0.47 U
50-32-8	Benzo(a)pyrene	0.47	< 0.47 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.47	< 0.47 U
53-70-3	Dibenz(a,h)anthracene	0.47	< 0.47 U
TOTBFA	Total Benzofluoranthenes	0.95	< 0.95 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	87.3%
d10-2-Methylnaphthalene	62.0%
d14-Dibenzo(a,h)anthracen	75.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DUN-12-S
SAMPLE

Lab Sample ID: WP45D
LIMS ID: 13-10096
Matrix: Sediment
Data Release Authorized:
Reported: 07/24/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted: 05/16/13
Date Analyzed: 05/21/13 18:52
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.34 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 5.00
Percent Moisture: 39.2%

CAS Number	Analyte	LOQ	Result
56-55-3	**Benzo(a)anthracene**	**2.42**	**2.50**
218-01-9	**Chrysene**	**2.42**	**5.92**
205-99-2	**Benzo(b)fluoranthene**	**2.42**	**4.23**
207-08-9	**Benzo(k)fluoranthene**	**2.42**	**1.47 J**
50-32-8	**Benzo(a)pyrene**	**2.42**	**2.42**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**2.42**	**1.29 J**
53-70-3	Dibenz(a,h)anthracene	2.42	< 2.42 U
TOTBFA	**Total Benzofluoranthenes**	**4.84**	**7.11**

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	79.7%
d10-2-Methylnaphthalene	60.0%
d14-Dibenzo(a,h)anthracen	66.2%

7/25/13
AN

FORM I

WP45:00024rev

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DUN-10-S
SAMPLE

Lab Sample ID: WP45E
LIMS ID: 13-10097
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted: 05/16/13
Date Analyzed: 05/22/13 12:22
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.19 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 21.8%

CAS Number	Analyte	LOQ	Result
56-55-3	**Benzo(a)anthracene**	**0.49**	**0.47 J**
218-01-9	**Chrysene**	**0.49**	**1.22**
205-99-2	**Benzo(b)fluoranthene**	**0.49**	**0.91**
207-08-9	**Benzo(k)fluoranthene**	**0.49**	**0.29 J**
50-32-8	**Benzo(a)pyrene**	**0.49**	**0.43 J**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**0.49**	**0.34 J**
53-70-3	Dibenz(a,h)anthracene	0.49	< 0.49 U
TOTBFA	**Total Benzofluoranthenes**	**0.98**	**1.48**

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	78.3%
d10-2-Methylnaphthalene	62.0%
d14-Dibenzo(a,h)anthracen	75.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DUN-13-S
SAMPLE

Lab Sample ID: WP45F
LIMS ID: 13-10098
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted: 05/16/13
Date Analyzed: 05/22/13 12:51
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.17 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 21.8%

CAS Number	Analyte	LOQ	Result
56-55-3	**Benzo(a)anthracene**	**0.49**	**0.46 J**
218-01-9	**Chrysene**	**0.49**	**1.18**
205-99-2	**Benzo(b)fluoranthene**	**0.49**	**0.88**
207-08-9	**Benzo(k)fluoranthene**	**0.49**	**0.28 J**
50-32-8	**Benzo(a)pyrene**	**0.49**	**0.41 J**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**0.49**	**0.32 J**
53-70-3	Dibenz(a,h)anthracene	0.49	< 0.49 U
TOTBFA	**Total Benzofluoranthenes**	**0.98**	**1.44**

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	83.3%
d10-2-Methylnaphthalene	60.3%
d14-Dibenzo(a,h)anthracen	75.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DUN-05-S
SAMPLE

Lab Sample ID: WP45G
LIMS ID: 13-10099
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted: 05/16/13
Date Analyzed: 05/21/13 20:18
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.36 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 5.00
Percent Moisture: 31.0%

CAS Number	Analyte	LOQ	Result
56-55-3	**Benzo(a)anthracene**	**2.41**	**3.32**
218-01-9	**Chrysene**	**2.41**	**8.49**
205-99-2	**Benzo(b)fluoranthene**	**2.41**	**5.26**
207-08-9	**Benzo(k)fluoranthene**	**2.41**	**1.85 J**
50-32-8	**Benzo(a)pyrene**	**2.41**	**3.27**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**2.41**	**1.90 J**
53-70-3	Dibenz(a,h)anthracene	2.41	< 2.41 U
TOTBFA	**Total Benzofluoranthenes**	**4.83**	**9.03**

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	83.0%
d10-2-Methylnaphthalene	62.0%
d14-Dibenzo(a,h)anthracen	65.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DUN-05-D
SAMPLE

Lab Sample ID: WP45H
LIMS ID: 13-10100
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted: 05/16/13
Date Analyzed: 05/21/13 20:47
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.37 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 5.00
Percent Moisture: 31.0%

CAS Number	Analyte	LOQ	Result
56-55-3	**Benzo(a)anthracene**	**2.41**	**3.36**
218-01-9	**Chrysene**	**2.41**	**8.42**
205-99-2	**Benzo(b)fluoranthene**	**2.41**	**5.21**
207-08-9	**Benzo(k)fluoranthene**	**2.41**	**1.81 J**
50-32-8	**Benzo(a)pyrene**	**2.41**	**3.00**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**2.41**	**1.90 J**
53-70-3	Dibenz(a,h)anthracene	2.41	< 2.41 U
TOTBFA	**Total Benzofluoranthenes**	**4.82**	**8.82**

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	86.0%
d10-2-Methylnaphthalene	63.3%
d14-Dibenzo(a,h)anthracen	65.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DUN-09-S
SAMPLE

Lab Sample ID: WP45J
LIMS ID: 13-10102
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted: 05/16/13
Date Analyzed: 05/22/13 13:19
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.09 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 16.2%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.50	< 0.50 U
218-01-9	**Chrysene**	**0.50**	**0.56**
205-99-2	**Benzo(b)fluoranthene**	**0.50**	**0.42 J**
207-08-9	Benzo(k)fluoranthene	0.50	< 0.50 U
50-32-8	Benzo(a)pyrene	0.50	< 0.50 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.50	< 0.50 U
53-70-3	Dibenz(a,h)anthracene	0.50	< 0.50 U
TOTBFA	Total Benzofluoranthenes	0.99	< 0.99 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	88.3%
d10-2-Methylnaphthalene	67.3%
d14-Dibenzo(a,h)anthracen	79.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DUN-04-S
SAMPLE

Lab Sample ID: WP45K
LIMS ID: 13-10103
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted: 05/16/13
Date Analyzed: 05/21/13 22:43
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.09 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 5.00
Percent Moisture: 32.9%

CAS Number	Analyte	LOQ	Result
56-55-3	**Benzo(a)anthracene**	**2.48**	**4.80**
218-01-9	**Chrysene**	**2.48**	**9.33**
205-99-2	**Benzo(b)fluoranthene**	**2.48**	**6.86**
207-08-9	**Benzo(k)fluoranthene**	**2.48**	**2.80**
50-32-8	**Benzo(a)pyrene**	**2.48**	**5.20**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**2.48**	**3.21**
53-70-3	Dibenz(a,h)anthracene	2.48	< 2.48 U
TOTBFA	**Total Benzofluoranthenes**	**4.96**	**12.6**

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	89.2%
d10-2-Methylnaphthalene	66.0%
d14-Dibenzo(a,h)anthracen	70.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DUN-02-S
SAMPLE

Lab Sample ID: WP45L
LIMS ID: 13-10104
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted: 05/16/13
Date Analyzed: 05/22/13 14:46
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.28 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 21.2%

CAS Number	Analyte	LOQ	Result
56-55-3	**Benzo(a)anthracene**	**0.49**	**0.32 J**
218-01-9	**Chrysene**	**0.49**	**0.82**
205-99-2	**Benzo(b)fluoranthene**	**0.49**	**0.56**
207-08-9	Benzo(k)fluoranthene	0.49	< 0.49 U
50-32-8	**Benzo(a)pyrene**	**0.49**	**0.27 J**
193-39-5	Indeno(1,2,3-cd)pyrene	0.49	< 0.49 U
53-70-3	Dibenz(a,h)anthracene	0.49	< 0.49 U
TOTBFA	Total Benzofluoranthenes	0.97	< 0.97 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	84.3%
d10-2-Methylnaphthalene	70.7%
d14-Dibenzo(a,h)anthracen	81.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DUN-11-S
SAMPLE

Lab Sample ID: WP45M
LIMS ID: 13-10105
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted: 05/16/13
Date Analyzed: 05/22/13 15:15
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.26 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 14.5%

CAS Number	Analyte	LOQ	Result
56-55-3	**Benzo(a)anthracene**	**0.49**	**0.32 J**
218-01-9	**Chrysene**	**0.49**	**0.89**
205-99-2	**Benzo(b)fluoranthene**	**0.49**	**0.62**
207-08-9	Benzo(k)fluoranthene	0.49	< 0.49 U
50-32-8	**Benzo(a)pyrene**	**0.49**	**0.33 J**
193-39-5	Indeno(1,2,3-cd)pyrene	0.49	< 0.49 U
53-70-3	Dibenz(a,h)anthracene	0.49	< 0.49 U
TOTBFA	Total Benzofluoranthenes	0.98	< 0.98 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	85.3%
d10-2-Methylnaphthalene	69.0%
d14-Dibenzo(a,h)anthracen	79.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DUN-01-S
SAMPLE

Lab Sample ID: WP45N
LIMS ID: 13-10106
Matrix: Sediment
Data Release Authorized: hw
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted: 05/16/13
Date Analyzed: 05/22/13 15:44
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.33 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 39.3%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.48	7.12
218-01-9	Chrysene	0.48	13.9
205-99-2	Benzo(b)fluoranthene	0.48	9.58
207-08-9	Benzo(k)fluoranthene	0.48	3.66
50-32-8	Benzo(a)pyrene	0.48	6.65
193-39-5	Indeno(1,2,3-cd)pyrene	0.48	4.57
53-70-3	Dibenz(a,h)anthracene	0.48	1.29
TOTBFA	Total Benzofluoranthenes	0.97	17.0

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	79.0%
d10-2-Methylnaphthalene	68.7%
d14-Dibenzo(a,h)anthracen	77.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DUN-08-S
SAMPLE

Lab Sample ID: WP45O
LIMS ID: 13-10107
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted: 05/16/13
Date Analyzed: 05/22/13 16:13
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.63 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 24.2%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.47	2.44
218-01-9	Chrysene	0.47	4.42
205-99-2	Benzo(b)fluoranthene	0.47	3.05
207-08-9	Benzo(k)fluoranthene	0.47	1.18
50-32-8	Benzo(a)pyrene	0.47	2.06
193-39-5	Indeno(1,2,3-cd)pyrene	0.47	1.27
53-70-3	Dibenz(a,h)anthracene	0.47	0.36 J
TOTBFA	Total Benzofluoranthenes	0.94	5.36

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	86.0%
d10-2-Methylnaphthalene	66.7%
d14-Dibenzo(a,h)anthracen	79.7%

ANALYTICAL RESOURCES INCORPORATED

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Sediment

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Client ID	FLN	MNP	DBA	TOT OUT
RB13-DUN-03-S	82.7%	57.7%	72.3%	0
RB13-DUN-06-S	78.3%	62.3%	70.7%	0
RB13-DUN-07-S	87.3%	62.0%	75.3%	0
RB13-DUN-12-S	79.7%	60.0%	66.2%	0
RB13-DUN-10-S	78.3%	62.0%	75.0%	0
RB13-DUN-13-S	83.3%	60.3%	75.0%	0
RB13-DUN-05-S	83.0%	62.0%	65.5%	0
RB13-DUN-05-D	86.0%	63.3%	65.3%	0
MB-051613	86.0%	67.3%	70.3%	0
LCS-051613	86.3%	63.7%	72.3%	0
LCSD-051613	92.0%	71.7%	79.0%	0
RB13-DUN-09-S	88.3%	67.3%	79.7%	0
RB13-DUN-09-S MS	94.0%	72.7%	85.7%	0
RB13-DUN-09-S MSD	91.3%	74.0%	84.0%	0
RB13-DUN-04-S	89.2%	66.0%	70.5%	0
RB13-DUN-02-S	84.3%	70.7%	81.0%	0
RB13-DUN-11-S	85.3%	69.0%	79.0%	0
RB13-DUN-01-S	79.0%	68.7%	77.3%	0
RB13-DUN-08-S	86.0%	66.7%	79.7%	0

	LCS/MB LIMITS	QC LIMITS
(FLN) = d10-Fluoranthene	(30-160)	(30-160)
(MNP) = d10-2-Methylnaphthalene	(30-160)	(30-160)
(DBA) = d14-Dibenzo(a,h)anthracene	(30-160)	(30-160)

Prep Method: SW3546
Log Number Range: 13-10093 to 13-10107

FORM-II SIM SW8270

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS

Sample ID: RB13-DUN-09-S
MATRIX SPIKE

Lab Sample ID: WP45J
LIMS ID: 13-10102
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted MS/MSD: 05/16/13

Date Analyzed MS: 05/22/13 13:48
MSD: 05/22/13 14:17
Instrument/Analyst MS: NT11/VTS
MSD: NT11/VTS

Sample Amount MS: 10.08 g-dry-wt
MSD: 10.07 g-dry-wt
Final Extract Volume MS: 0.50 mL
MSD: 0.50 mL
Dilution Factor MS: 1.00
MSD: 1.00

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Benzo(a)anthracene	< 0.5 U	13.4	14.9	89.9%	13.6	14.9	91.3%	1.5%
Chrysene	0.6	13.2	14.9	84.6%	13.4	14.9	85.9%	1.5%
Benzo(b)fluoranthene	0.4 J	12.0	14.9	77.9%	12.0	14.9	77.9%	0.0%
Benzo(k)fluoranthene	< 0.5 U	13.1	14.9	87.9%	13.4	14.9	89.9%	2.3%
Benzo(a)pyrene	< 0.5 U	12.6	14.9	84.6%	12.8	14.9	85.9%	1.6%
Indeno(1,2,3-cd)pyrene	< 0.5 U	12.0	14.9	80.5%	12.1	14.9	81.2%	0.8%
Dibenz(a,h)anthracene	< 0.5 U	11.7	14.9	78.5%	11.8	14.9	79.2%	0.9%
Total Benzofluoranthenes	< 1.0 U	38.2	44.6	85.7%	38.6	44.7	86.4%	1.0%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DUN-09-S
MATRIX SPIKE

Lab Sample ID: WP45J
LIMS ID: 13-10102
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted: 05/16/13
Date Analyzed: 05/22/13 13:48
Instrument/Analyst: NT11/VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.08 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 16.2%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.50	---
218-01-9	Chrysene	0.50	---
205-99-2	Benzo(b)fluoranthene	0.50	---
207-08-9	Benzo(k)fluoranthene	0.50	---
50-32-8	Benzo(a)pyrene	0.50	---
193-39-5	Indeno(1,2,3-cd)pyrene	0.50	---
53-70-3	Dibenz(a,h)anthracene	0.50	---
TOTBFA	Total Benzofluoranthenes	0.99	---

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	94.0%
d10-2-Methylnaphthalene	72.7%
d14-Dibenzo(a,h)anthracen	85.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DUN-09-S
MATRIX SPIKE DUPLICATE

Lab Sample ID: WP45J
LIMS ID: 13-10102
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Date Extracted: 05/16/13
Date Analyzed: 05/22/13 14:17
Instrument/Analyst: NT11/VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.07 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 16.2%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.50	---
218-01-9	Chrysene	0.50	---
205-99-2	Benzo(b)fluoranthene	0.50	---
207-08-9	Benzo(k)fluoranthene	0.50	---
50-32-8	Benzo(a)pyrene	0.50	---
193-39-5	Indeno(1,2,3-cd)pyrene	0.50	---
53-70-3	Dibenz(a,h)anthracene	0.50	---
TOTBFA	Total Benzofluoranthenes	0.99	---

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	91.3%
d10-2-Methylnaphthalene	74.0%
d14-Dibenzo(a,h)anthracen	84.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS

Sample ID: LCS-051613
LAB CONTROL SAMPLE

Lab Sample ID: LCS-051613
LIMS ID: 13-10102
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 05/16/13

Date Analyzed LCS: 05/21/13 15:58
LCSD: 05/21/13 16:27
Instrument/Analyst LCS: NT11/VTS
LCSD: NT11/VTS

Sample Amount LCS: 10.00 g-dry-wt
LCSD: 10.00 g-dry-wt
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzo(a)anthracene	11.6	15.0	77.3%	12.9	15.0	86.0%	10.6%
Chrysene	11.7	15.0	78.0%	12.9	15.0	86.0%	9.8%
Benzo(b)fluoranthene	10.3	15.0	68.7%	11.6	15.0	77.3%	11.9%
Benzo(k)fluoranthene	12.0	15.0	80.0%	13.3	15.0	88.7%	10.3%
Benzo(a)pyrene	10.4	15.0	69.3%	11.8	15.0	78.7%	12.6%
Indeno(1,2,3-cd)pyrene	10.4	15.0	69.3%	11.7	15.0	78.0%	11.8%
Dibenz(a,h)anthracene	9.84	15.0	65.6%	11.4	15.0	76.0%	14.7%
Total Benzofluoranthenes	34.4	45.0	76.4%	38.3	45.0	85.1%	10.7%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

SIM Semivolatile Surrogate Recovery

	LCS	LCSD
d10-Fluoranthene	86.3%	92.0%
d10-2-Methylnaphthalene	63.7%	71.7%
d14-Dibenzo(a,h)anthracen	72.3%	79.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: MB-051613
METHOD BLANK

Lab Sample ID: MB-051613
LIMS ID: 13-10102
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/23/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 05/16/13
Date Analyzed: 05/21/13 15:29
Instrument/Analyst: NT11/VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.00 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.50	< 0.50 U
218-01-9	Chrysene	0.50	< 0.50 U
205-99-2	Benzo(b)fluoranthene	0.50	< 0.50 U
207-08-9	Benzo(k)fluoranthene	0.50	< 0.50 U
50-32-8	Benzo(a)pyrene	0.50	< 0.50 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.50	< 0.50 U
53-70-3	Dibenz(a,h)anthracene	0.50	< 0.50 U
TOTBFA	Total Benzofluoranthenes	1.00	< 1.00 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	86.0%
d10-2-Methylnaphthalene	67.3%
d14-Dibenzo(a,h)anthracen	70.3%

Metals Analysis
Report and Summary QC Forms

ARI Job ID: WP45

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Newfields

PROJECT: North Olympic Penins

SDG: WP45

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
RB13-DUN-03-S	WP45A	13-10093	
RB13-DUN-03-SD	WP45ADUP	13-10093	
RB13-DUN-03-SS	WP45ASPK	13-10093	
RB13-DUN-06-S	WP45B	13-10094	
PBS	WP45MB1	13-10094	
LCSS	WP45MB1SPK	13-10094	
RB13-DUN-07-S	WP45C	13-10095	
RB13-DUN-12-S	WP45D	13-10096	
RB13-DUN-10-S	WP45E	13-10097	
RB13-DUN-13-S	WP45F	13-10098	
RB13-DUN-05-S	WP45G	13-10099	
RB13-DUN-05-D	WP45H	13-10100	
RB13-DUN-09-S	WP45J	13-10102	
RB13-DUN-04-S	WP45K	13-10103	
RB13-DUN-02-S	WP45L	13-10104	
RB13-DUN-11-S	WP45M	13-10105	
RB13-DUN-01-S	WP45N	13-10106	
RB13-DUN-08-S	WP45O	13-10107	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments: _____

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: Jay Kuhn Name: Jay Kuhn

Date: 5/16/13 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-03-S
SAMPLE

Lab Sample ID: WP45A
LIMS ID: 13-10093
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/06/13
Date Received: 05/09/13

Percent Total Solids: 74.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.3	**2.4**	
3050B	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/13/13	7471A	05/14/13	7439-97-6	Mercury	0.03	0.03	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-06-S
SAMPLE

Lab Sample ID: WP45B
LIMS ID: 13-10094
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/06/13
Date Received: 05/09/13

Percent Total Solids: 65.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.3	**4.3**	
3050B	05/13/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.2	**0.2**	
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.03	**0.05**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-07-S
SAMPLE

Lab Sample ID: WP45C
LIMS ID: 13-10095
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/06/13
Date Received: 05/09/13

Percent Total Solids: 76.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.3	**3.1**	
3050B	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/13/13	7471A	05/14/13	7439-97-6	Mercury	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-12-S
SAMPLE

Lab Sample ID: WP45D
LIMS ID: 13-10096
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/06/13
Date Received: 05/09/13

Percent Total Solids: 58.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.3	**5.5**	
3050B	05/13/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.2	**0.3**	
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.03	**0.05**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-10-S
SAMPLE

Lab Sample ID: WP45E
LIMS ID: 13-10097
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/06/13
Date Received: 05/09/13

Percent Total Solids: 72.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.3	**1.9**	
3050B	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/13/13	7471A	05/14/13	7439-97-6	Mercury	0.03	0.03	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-13-S
SAMPLE

Lab Sample ID: WP45F
LIMS ID: 13-10098
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/06/13
Date Received: 05/09/13

Percent Total Solids: 74.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.3	**2.4**	
3050B	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/13/13	7471A	05/14/13	7439-97-6	Mercury	0.03	0.03	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-05-S
SAMPLE

Lab Sample ID: WP45G
LIMS ID: 13-10099
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/06/13
Date Received: 05/09/13

Percent Total Solids: 65.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.3	**2.9**	
3050B	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.03	**0.04**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-05-D
SAMPLE

Lab Sample ID: WP45H
LIMS ID: 13-10100
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/06/13
Date Received: 05/09/13

Percent Total Solids: 65.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.3	**3.0**	
3050B	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.03	**0.04**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-09-S
SAMPLE

Lab Sample ID: WP45J
LIMS ID: 13-10102
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/06/13
Date Received: 05/09/13

Percent Total Solids: 77.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.2	**2.0**	
3050B	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/13/13	7471A	05/14/13	7439-97-6	Mercury	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-04-S
SAMPLE

Lab Sample ID: WP45K
LIMS ID: 13-10103
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/06/13
Date Received: 05/09/13

Percent Total Solids: 63.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.3	**5.0**	
3050B	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.03	**0.04**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-02-S
SAMPLE

Lab Sample ID: WP45L
LIMS ID: 13-10104
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/06/13
Date Received: 05/09/13

Percent Total Solids: 74.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.2	**2.7**	
3050B	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.03	**0.03**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-11-S
SAMPLE

Lab Sample ID: WP45M
LIMS ID: 13-10105
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/06/13
Date Received: 05/09/13

Percent Total Solids: 79.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.2	**3.6**	
3050B	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/13/13	7471A	05/14/13	7439-97-6	Mercury	0.03	0.03	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-01-S
SAMPLE

Lab Sample ID: WP45N
LIMS ID: 13-10106
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/06/13
Date Received: 05/09/13

Percent Total Solids: 56.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.3	**4.2**	
3050B	05/13/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.2	**0.2**	
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.04	**0.06**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-08-S
SAMPLE

Lab Sample ID: WP45O
LIMS ID: 13-10107
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/06/13
Date Received: 05/09/13

Percent Total Solids: 66.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.3	**2.6**	
3050B	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/13/13	7471A	05/14/13	7439-97-6	Mercury	0.03	0.03	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-03-S
MATRIX SPIKE

Lab Sample ID: WP45A
LIMS ID: 13-10093
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/06/13
Date Received: 05/09/13

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	2.4	34.6	32.7	98.5%	
Cadmium	200.8	0.1 U	32.4	32.7	99.1%	
Mercury	7471A	0.03 U	0.32	0.284	113%	

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-03-S
DUPLICATE

Lab Sample ID: WP45A
LIMS ID: 13-10093
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/06/13
Date Received: 05/09/13

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	2.4	2.5	4.1%	+/- 20%	
Cadmium	200.8	0.1 U	0.1 U	0.0%	+/- 0.1	L
Mercury	7471A	0.03 U	0.03 U	0.0%	+/- 0.03	L

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: WP45LCS
LIMS ID: 13-10094
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	26.1	25.0	104%	
Cadmium	200.8	24.5	25.0	98.0%	
Mercury	7471A	0.50	0.50	100%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: WP45MB
LIMS ID: 13-10094
Matrix: Sediment
Data Release Authorized:
Reported: 05/16/13

QC Report No: WP45-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	7440-38-2	Arsenic	0.2	0.2	U
3050B	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/13/13	7471A	05/14/13	7439-97-6	Mercury	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

General Chemistry Analysis
Report and Summary QC Forms

ARI Job ID: WP45

SAMPLE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Client ID: RB13-DUN-03-S
ARI ID: 13-10093 WP45A

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	73.44
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	72.84
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	1.76
Sulfide	05/10/13 051013#1	EPA 376.2	mg/kg	1.34	2.60
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	0.875

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Client ID: RB13-DUN-06-S
ARI ID: 13-10094 WP45B

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	66.75
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	60.75
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	2.98
Sulfide	05/10/13 051013#1	EPA 376.2	mg/kg	1.63	< 1.63 U
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	1.06

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Client ID: RB13-DUN-07-S
ARI ID: 13-10095 WP45C

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	78.35
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	76.91
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	1.08
Sulfide	05/10/13 051013#1	EPA 376.2	mg/kg	1.19	< 1.19 U
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	0.611

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Client ID: RB13-DUN-12-S
ARI ID: 13-10096 WP45D

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	56.77
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	54.19
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	4.31
Sulfide	05/10/13 051013#1	EPA 376.2	mg/kg	1.81	26.8
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	1.56

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Client ID: RB13-DUN-10-S
ARI ID: 13-10097 WP45E

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	74.35
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	71.80
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	1.71
Sulfide	05/10/13 051013#1	EPA 376.2	mg/kg	1.38	26.6
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	0.949

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Client ID: RB13-DUN-13-S
ARI ID: 13-10098 WP45F

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	75.51
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	73.65
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	1.63
Sulfide	05/10/13 051013#1	EPA 376.2	mg/kg	1.31	< 1.31 U
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	0.631

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Client ID: RB13-DUN-05-S
ARI ID: 13-10099 WP45G

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	65.11
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	64.06
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	2.86
Sulfide	05/10/13 051013#1	EPA 376.2	mg/kg	1.50	2.73
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	0.802

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Client ID: RB13-DUN-05-D
ARI ID: 13-10100 WP45H

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	64.33
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	62.38
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	2.86
Sulfide	05/10/13 051013#1	EPA 376.2	mg/kg	1.57	1.82
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	0.887

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Client ID: RB13-DUN-05-T
ARI ID: 13-10101 WP45I

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	64.10
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	60.19
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	3.24
Sulfide	05/10/13 051013#1	EPA 376.2	mg/kg	1.61	< 1.61 U
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	0.721

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Client ID: RB13-DUN-09-S
ARI ID: 13-10102 WP45J

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	77.39
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	78.11
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	1.33
Sulfide	05/10/13 051013#1	EPA 376.2	mg/kg	1.27	2.31
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	0.521

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Client ID: RB13-DUN-04-S
ARI ID: 13-10103 WP45K

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	64.09
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	64.15
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	3.19
Sulfide	05/10/13 051013#1	EPA 376.2	mg/kg	1.52	8.52
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	1.08

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Client ID: RB13-DUN-02-S
ARI ID: 13-10104 WP45L

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	73.76
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	75.34
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	1.76
Sulfide	05/10/13 051013#1	EPA 376.2	mg/kg	1.30	6.22
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	0.603

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Client ID: RB13-DUN-11-S
ARI ID: 13-10105 WP45M

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	80.41
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	80.95
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	1.51
Sulfide	05/10/13 051013#1	EPA 376.2	mg/kg	1.21	1.33
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	0.418

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Client ID: RB13-DUN-01-S
ARI ID: 13-10106 WP45N

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	58.00
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	47.58
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	3.86
Sulfide	05/10/13 051013#1	EPA 376.2	mg/kg	2.02	2.54
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	1.98

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Client ID: RB13-DUN-08-S
ARI ID: 13-10107 WP45O

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	70.12
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	66.03
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	1.73
Sulfide	05/10/13 051013#1	EPA 376.2	mg/kg	1.49	5.53
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	0.835

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: WP45A Client ID: RB13-DUN-03-S						
Sulfide	05/10/13	mg/kg	2.60	173	213	80.0%
Total Organic Carbon	05/23/13	Percent	0.875	2.93	1.76	116.6%

REPLICATE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/06/13
Date Received: 05/09/13

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: WP45A Client ID: RB13-DUN-03-S					
Total Solids	05/13/13	Percent	73.44	73.21 73.03	0.3%
Preserved Total Solids	05/10/13	Percent	72.84	72.36	0.7%
Total Volatile Solids	05/13/13	Percent	1.76	1.81 1.84	2.2%
Sulfide	05/10/13	mg/kg	2.60	< 1.35	NA
Total Organic Carbon	05/23/13	Percent	0.875	0.793 0.928	7.9%

LAB CONTROL RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Sulfide EPA 376.2	PREP	05/10/13	mg/kg	148	157	94.3%
Total Organic Carbon Plumb,1981	ICVL	05/23/13	Percent	0.108	0.100	108.0%

METHOD BLANK RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Total Solids	05/13/13	Percent	< 0.01 U	ICB
Preserved Total Solids	05/10/13	Percent	< 0.01 U	ICB
Total Volatile Solids	05/13/13	Percent	< 0.01 U	ICB
Sulfide	05/10/13	mg/kg	< 1.00 U	PREP
Total Organic Carbon	05/23/13	Percent	< 0.020 U	ICB

STANDARD REFERENCE RESULTS-CONVENTIONALS
WP45-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon NIST 1941B	05/23/13	Percent	2.90	2.99	97.0%

Geotechnical Analysis
Report and Summary QC Forms

ARI Job ID: WP45

NewFields
North Olympic Peninsula Regional

Apparent Grain Size Distribution Summary
Percent Finer Than Indicated Size

Sample No.	Gravel			Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt				Clay	
Phi Size	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
Sieve Size (microns)	3/8"	#4 (4750)	#10 (2000)	#18 (1000)	#35 (500)	#60 (250)	#120 (125)	#230 (63)	31.00	15.60	7.80	3.90	2.00	1.00
RB13-DUN-12-S	100.0	100.0	99.9	99.2	98.2	97.1	89.7	62.1	36.6	24.2	16.5	12.6	10.3	7.5
	100.0	100.0	99.8	99.1	98.1	96.3	88.9	60.6	37.3	23.9	16.9	12.9	10.2	7.4
	100.0	100.0	99.9	99.4	98.5	97.6	89.9	62.1	37.8	24.6	17.5	13.4	10.5	7.6
RB13-DUN-03-S	100.0	100.0	99.9	98.4	86.2	45.7	10.2	6.1	4.6	3.6	2.9	2.3	1.8	1.3
RB13-DUN-06-S	100.0	100.0	99.9	99.6	99.0	97.3	68.4	37.1	24.2	18.2	14.2	11.3	8.9	6.2
RB13-DUN-07-S	100.0	82.5	81.4	76.7	55.7	14.3	4.9	2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8
RB13-DUN-10-S	100.0	82.1	81.0	79.8	71.2	34.7	5.1	2.9	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9
RB13-DUN-13-S	100.0	96.2	89.6	84.1	75.0	54.5	13.8	6.9	4.1	3.3	2.7	2.2	1.8	1.3
RB13-DUN-05-S	100.0	100.0	99.7	99.2	98.7	96.5	68.5	32.1	21.8	16.7	13.4	10.3	7.9	5.6
RB13-DUN-05-D	100.0	99.9	99.8	99.4	98.8	97.1	67.9	32.3	22.1	16.4	13.2	10.3	8.0	5.5
RB13-DUN-05-T	100.0	99.9	99.7	99.2	98.6	97.0	69.4	33.5	23.2	17.7	14.2	11.0	8.5	6.0
RB13-DUN-09-S	100.0	94.7	85.2	70.7	49.1	15.6	3.5	2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6
RB13-DUN-04-S	100.0	100.0	99.1	97.9	94.7	88.2	68.1	38.1	28.2	21.4	16.9	13.2	10.4	7.5
RB13-DUN-02-S	100.0	96.5	92.3	85.5	65.1	21.5	5.6	4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
RB13-DUN-11-S	100.0	92.6	62.5	29.1	11.0	6.5	5.2	4.3	3.3	2.5	1.9	1.5	1.2	0.9
RB13-DUN-01-S	100.0	100.0	99.4	98.8	97.2	94.9	72.7	57.8	42.9	29.1	21.7	16.9	12.9	9.1
RB13-DUN-08-S	100.0	99.6	99 0	98.3	96.8	83.1	20.6	13.7	10.8	7.8	5.9	4.5	3.6	2.5

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

WP45

WP45 : 09/16/05

NewFields
North Olympic Peninsula Regional

Apparent Grain Size Distribution Summary
Percent Retained in Each Size Fraction

Sample No.	Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Coarse Silt	Medium Silt	Fine Silt	Very Fine Silt	Clay			Total Fines
Phi Size	< -1	-1 to 0	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	> 10	> 4
Sieve Size (microns)	> #10 (2000)	10 to 18 (2000-1000)	18-35 (1000-500)	35-60 (500-250)	60-120 (250-125)	120-230 (125-62)	62 5-31.0	31 0-15.6	15.6-7 8	7.8-3 9	3 9-2.0	2 0-1.0	<1 0	<230 (<62)
RB13-DUN-12-S	0.1	0.7	1.1	1.1	7.3	27.6	25.6	12.3	7.7	3.9	2.3	2.8	7.5	62.1
	0.2	0.7	1.1	1.8	7.3	28.4	23.3	13.4	7.0	4.0	2.8	2.8	7.4	60.6
	0.1	0.5	0.9	0.9	7.7	27.8	24.3	13.2	7.2	4.1	2.8	3.0	7.6	62.1
RB13-DUN-03-S	0.1	1.5	12.2	40.5	35.5	4.1	1.5	1.0	0.7	0.6	0.5	0.5	1.3	6.1
RB13-DUN-06-S	0.1	0.2	0.6	1.6	29.0	31.3	12.9	5.9	4.0	2.9	2.4	2.7	6.2	37.1
RB13-DUN-07-S	18.6	4.7	21.1	41.4	9.4	2.1	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	2.8
RB13-DUN-10-S	19.0	1.3	8.5	36.6	29.6	2.2	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	2.9
RB13-DUN-13-S	10.4	5.5	9.2	20.5	40.7	6.9	2.8	0.8	0.6	0.5	0.4	0.5	1.3	6.9
RB13-DUN-05-S	0.3	0.4	0.5	2.2	27.9	36.5	10.2	5.1	3.4	3.0	2.4	2.4	5.6	32.1
RB13-DUN-05-D	0.2	0.3	0.6	1.8	29.1	35.6	10.3	5.7	3.2	2.9	2.3	2.5	5.5	32.3
RB13-DUN-05-T	0.3	0.4	0.6	1.7	27.5	35.9	10.3	5.5	3.5	3.2	2.5	2.5	6.0	33.5
RB13-DUN-09-S	14.8	14.5	21.5	33.6	12.0	0.9	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	2.6
RB13-DUN-04-S	0.9	1.3	3.1	6.5	20.1	30.0	9.9	6.8	4.6	3.6	2.8	2.9	7.5	38.1
RB13-DUN-02-S	7.7	6.9	20.4	43.6	15.9	1.6	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	4.0
RB13-DUN-11-S	37.5	33.4	18.1	4.6	1 3	0.9	1.0	0.7	0.6	0.4	0.3	0.3	0.9	4.3
RB13-DUN-01-S	0.6	0.6	1 6	2.3	22.2	14.9	14.9	13.7	7.4	4.9	3.9	3.8	9.1	57.8
RB13-DUN-08-S	1.0	0.7	1.5	13.7	62.5	6.9	2.9	3.0	1.9	1.3	1.0	1.1	2.5	13.7

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

WP45

QA SUMMARY

Client:	NewFields	Client Project:	North Olympic Peninsula Regional
ARI Trip Sample ID	WP45D		
Client Trip. Sample ID:	RB13-DUN-12-S	Batch No.:	WP45-1

Relative Standard Deviation, By Phi Size

Sample ID	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
RB13-DUN-12-S	100.0	100 0	99.9	99 2	98 2	97.1	89.7	62.1	36.6	24 2	16.5	12.6	10 3	7.5
	100 0	100.0	99.8	99.1	98.1	96 3	88.9	60.6	37.3	23.9	16.9	12.9	10.2	7.4
	100.0	100 0	99.9	99.4	98.5	97.6	89.9	62.1	37.8	24 6	17.5	13.4	10 5	7.6
AVE	NA	100.00	99 88	99.25	98.25	96.98	89 51	61 59	37.22	24.25	16 97	12.96	10.32	7.48
STDEV	NA	0 00	0.05	0.11	0 24	0.67	0.51	0 90	0.63	0.37	0.46	0 38	0.20	0 11
%RSD	NA	0.00	0.05	0 11	0 24	0.69	0.57	1.46	1.70	1.54	2.73	2 93	1.98	1 44

The Triplicate Applies To The Following Samples

Client ID	Date Sampled	Date Extracted	Date Complete	QA Ratio (95-105)	Data Qualifiers	Pipette Portion (5 0-25.0g)
RB13-DUN-12-S	5/6/2013	5/15/2013	5/22/2013	100 0		14.3
	5/6/2013	5/15/2013	5/22/2013	100 2		14.3
	5/6/2013	5/15/2013	5/22/2013	101 4		14.9
RB13-DUN-03-S	5/6/2013	5/13/2013	5/22/2013	100 3		6.9
RB13-DUN-06-S	5/6/2013	5/13/2013	5/22/2013	101.2		12.6
RB13-DUN-07-S	5/6/2013	5/13/2013	5/22/2013	100 1	SS	3.4
RB13-DUN-10-S	5/6/2013	5/13/2013	5/22/2013	98.6	SS	3.3
RB13-DUN-13-S	5/6/2013	5/13/2013	5/22/2013	101 4		8.1
RB13-DUN-05-S	5/6/2013	5/13/2013	5/22/2013	99.3		9.7
RB13-DUN-05-D	5/6/2013	5/13/2013	5/22/2013	100.6		10.3
RB13-DUN-05-T	5/6/2013	5/13/2013	5/22/2013	99.8		11.3
RB13-DUN-09-S	5/6/2013	5/13/2013	5/22/2013	100.4	SS	3 1
RB13-DUN-04-S	5/6/2013	5/13/2013	5/22/2013	99.7		11 0
RB13-DUN-02-S	5/6/2013	5/13/2013	5/22/2013	100 5	SS	4.5
RB13-DUN-11-S	5/6/2013	5/13/2013	5/22/2013	100.5		5.3
RB13-DUN-01-S	5/6/2013	5/13/2013	5/22/2013	100 3		13 5
RB13-DUN-08-S	5/6/2013	5/13/2013	5/22/2013	99.9		10.6

* ARI Internal QA limits = 95-105%

Notes to the Testing.

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing

Total Solids

ARI Job ID: WP45

Extractions Total Solids-extts
Data By: Alex Choeng
Created: 5/14/13

Worklist: 3709
Analyst: RVR
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

	ARI ID CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids	pH
1.	WP45A 13-10093 RB13-DUN-03-S	1.17	14.29	11.42	78.1	NR
2.	WP45B 13-10094 RB13-DUN-06-S	1.15	12.76	9.19	69.3	NR
3.	WP45C 13-10095 RB13-DUN-07-S	1.16	13.76	11.36	81.0	NR
4.	WP45D 13-10096 RB13-DUN-12-S	1.15	13.28	8.52	60.8	NR
5.	WP45E 13-10097 RB13-DUN-10-S	1.16	11.45	9.21	78.2	NR
6.	WP45F 13-10098 RB13-DUN-13-S	1.16	12.40	9.95	78.2	NR
7.	WP45G 13-10099 RB13-DUN-05-S	1.16	14.24	10.18	69.0	NR
8.	WP45H 13-10100 RB13-DUN-05-D	1.16	12.95	9.29	69.0	NR
9.	WP45J 13-10102 RB13-DUN-09-S	1.17	13.99	11.91	83.8	NR
10.	WP45K 13-10103 RB13-DUN-04-S	1.17	14.98	10.43	67.1	NR
11.	WP45L 13-10104 RB13-DUN-02-S	1.16	13.84	11.15	78.8	NR
12.	WP45M 13-10105 RB13-DUN-11-S	1.16	13.67	11.85	85.5	NR
13.	WP45N 13-10106 RB13-DUN-01-S	1.16	15.40	9.80	60.7	NR

WP115:0091 1

Extractions Total Solids-extts
Data By: Alex Choeng
Created: 5/14/13

Worklist: 3709
Analyst: RVR
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

	ARI ID CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids	pH
14.	WP450 13-10107 RB13-DUN-08-S	1.17	11.66	9.12	75.8	NR

4P4R:0015

Table of Contents: ARI Job WP46

Client: Newfields

Project: North Olympic Peninsula Regional

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BC
Signature

May-28-2013
Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

May 29, 2013

Will Hafner
Newfields
115 2nd Avenue North, Suite 100
Edmonds, WA 98026

RE: Project: North Olympic Peninsula Regional Background
ARI Job No.: WP46

Dear Will:

Please find enclosed the Chain-of-Custody records (COCs), sample receipt documentation, and the final data package for samples from the project referenced above.

Sample receipt and details of the analyses are discussed in the Case Narrative.

An electronic copy of this data package will be kept on file with ARI. Should you have any questions or problems, please feel free to contact me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.ariblas.com

cc: eFile WP46

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Documentation

ARI Job ID: WP46

Chain of Custody Record & Laboratory Analysis Request

Attn: Cheronne Oreiro

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

ARI Assigned Number: WP46	Turn-around Requested: 15 day
ARI Client Company: Newfields	Phone: 425-962-5285 x103
Client Contact: Will Hafner	
Client Project Name: North Olympic Peninsula Regional Background	
Client Project #:	Samplers: WH PM JB

Page: 1	of 2
Date: 5.7.13	Ice Present? Y
No. of Coolers: 9	Cooler Temps: -1.8 - 4.1

Sample ID	Date	Time	Matrix	No Containers	Grain Size	T. Sulfides	TOC, TVS T.Solids	As, Cd, Hg	cPAH				Notes/Comments
RB13-DUN-17-S	5.7.13	902	SED	3	X	X		X					1441, 1442, 1448
RB13-DUN-19-S		920		3	X	X		X					1461, 1462, 1468
RB13-DUN-14-S		948		3	X	X		X					1411, 1412, 1418
RB13-DUN-20-S		1019		3	X	X		X					1471, 1472, 1478
RB13-DUN-16-S		1107		3	X	X		X					1431, 1432, 1438
RB13-DUN-22-S		1131		3	X	X		X					1491, 1492, 1498
RB13-DUN-21-S		1150		3	X	X		X					1481, 1482, 1488
RB13-DUN-15-S		1219		3	X	X		X					1421, 1422, 1428
RB13-DIS-04-S		1342		5	X	X	X	X	X				1111, 1112, 1116, 1117, 1118
RB13-DIS-11-S		1407		5	X	X	X	X	X				1181, 1182, 1186, 1187, 1188

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Will Hafner	Printed Name: Rich Hudson	Printed Name	Printed Name
	Company: Newfields	Company: ARI	Company	Company
	Date & Time: 5/9/13 1200	Date & Time: 5/9/13 1200	Date & Time	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: WP46	Turn-around Requested: 15 day
ARI Client Company: Newfields	Phone: 425 962 5885 x103
Client Contact: Will Hafner	
Client Project Name: North Olympic Peninsula Regional Background	
Client Project #:	Samplers: WH, PM, JB

Page: 2 of 2

Date: 5.7.13 | Ice Present? Y

No. of Coolers: 9 | Cooler Temps: -18 - 4.1

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No Containers	Grain Size	T. Sulfides	TOC, TVS, T. Solids	As, Cd, Hg	cPAHs				Notes/Comments (Tag #'s)
RB13-DIS-11-S	5.7.13	1407	SED	5	X	X	X	X	X				1181 1182 1186 1187 1188
RB13-DIS-08-S	"	1429	"	5	X	X	X	X	X				1151 1152 1156 1157 1158
RB13-DIS-06-S	"	1530	"	5	X	X	X	X	X				1131 1132 1136 1137 1138
RB13-NOP-RB	"	1605	Water	4				X	X				1425 1485 1430 1490
RB13-NOP-ER-1	"	"	"	4				X	X				1495 1435 1500 1440
RB13-DIS-09-S	"	1640	SED	5	X	X	X	X	X				1161 1162 1166 1167 1168
RB13-DIS-09-D	"	"	"	5	X	X	X	X	X				1165 1135 1169 1139 1159
RB13-DIS-09-T	"	"	"	3	X	X	X						1170, 1140, 1160
RB13-DUN-18-S	"	1735	"	3	X	X	X						1451, 1452, 1458

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Will Hafner	Printed Name: Rich Hudson	Printed Name:	Printed Name:
	Company: Newfields	Company: ARI	Company:	Company:
	Date & Time: 5/9/13 1200	Date & Time: 5/9/13 1200	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: New Field

COC No(s): _____ (NA)

Assigned ARI Job No. WP46

Project Name: North Olympic Peninsula Regional

Delivered by Fed-Ex UPS Courier Hand Delivered Other: _____

Tracking No _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES (NO)

Were custody papers included with the cooler? ... (YES) NO

Were custody papers properly filled out (ink, signed, etc) ... (YES) NO

Temperature of Cooler(s) (°C) (recommended 2 0-6 0 °C for chemistry). -1.2 -1.5 -1.6 -.2 4.1 -1.6 -.4 -1.8 -.4

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID# 90877952

Cooler Accepted by: _____ Date: 5/9/13 Time: 1200

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? ... YES (NO)

What kind of packing material was used? ... Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? ... NA (YES) NO

Were all bottles sealed in individual plastic bags? ... YES (NO)

Did all bottles arrive in good condition (unbroken)? ... (YES) NO

Were all bottle labels complete and legible? ... (YES) NO

Did the number of containers listed on COC match with the number of containers received? ... (YES) NO

Did all bottle labels and tags agree with custody papers? ... (YES) NO

Were all bottles used correct for the requested analyses? ... (YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs). . NA (YES) NO

Were all VOC vials free of air bubbles? ... (NA) YES NO

Was sufficient amount of sample sent in each bottle? ... (YES) NO

Date VOC Trip Blank was made at ARI. ... (NA) _____

Was Sample Split by ARI (NA) YES Date/Time: _____ Equipment _____ Split by: _____

Samples Logged by: JM Date: 5/9/13 Time: 1615

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

~~All~~ Some sample containers were under water level of cooler (see additional pages) RB13-DIS-11-S is on COC twice.

By: JM Date 5/9/13

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm	
			Small → "sm"
			Peabubbles → "pb"
			Large → "lg"
			Headspace → "hs"

SAMPLE ID	CONTAINERS UNDER WATER LINE
RB13-DUN-17-S	ALL
RB13-DUN-19-S	ALL
RB13-DUN-14-S	ALL
RB13-DUN-20-S	ALL
RB13-DUN-16-S	ALL
RB13-DUN-22-S	4 oz & 2 oz
RB13-DUN-21-S	ALL
RB13-DUN-15-S	ALL
RB13-DIS-04-S	ALL
RB13-DIS-11-S	ALL
RB13-DIS-08-S	ALL
RB13-DIS-06-S	None
RB13-NOP-RB	2 500 ML AMBER
RB13-NOP-ER1	2 500 ML AMBER
RB13-DIS-09-S	None
RB13-DIS-09-D	None
RB13-DIS-09-T	None
RB13-DUN-18-S	ALL
RB13-DUN-03-S	ALL
RB13-DUN-06-S	ALL
RB13-DUN-07-S	ALL
RB13-DUN-12-S	ALL
RB13-DUN-10-S	ALL
RB13-DUN-13-S	ALL
RB13-DUN-05-S	ALL
RB13-DUN-05-D	ALL
RB13-DUN-05-T	ALL
RB13-DUN-09	ALL
RB13-DUN-04-S	ALL
RB13-DUN-02-S	ALL
RB13-DUN-11-S	ALL
RB13-DUN-01-S	ALL
RB13-DUN-08-S	ALL
RB13-DIS-14-S	4 oz & 2 oz
RB13-DIS-15-S	4 oz & 2 oz
RB13-DIS-18-S	4 oz & 2 oz
RB13-DIS-10-S	16 oz
RB13-DIS-07-S	16 oz
RB13-DIS-01-S	None
RB13-DIS-13-S	None
RB13-DIS-03-S	16 oz & Metals
RB13-DIS-20-S	16 oz & Metals
RB13-DIS-12-S	ALL
RB13-DIS-19-S	None
RB13-DIS-02-S	ALL

UPUS : 00006

RB13-DIS-05-S	None
RB13-DIS-17-S	None
RB13-NOP-ER-2	None
RB13-DIS-16-S	None

UPUS 00007

PRESERVATION VERIFICATION 05/10/13

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **WP46**

Inquiry Number: NONE
Analysis Requested: 05/09/13
Contact: Hafner, Will
Client: Newfields
Logged by: JM
Sample Set Used: Yes-491
Validatable Package: Lv4
Deliverables:

PC: Cheronne
VTSR: 05/09/13

Project #:
Project: North Olympic Peninsula Regional
Sample Site:
SDG No:
Analytical Protocol: PSDDA

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
13-10120 **WP46M**	RB13-NOP-RB						TOT pass															
13-10121 **WP46N**	RB13-NOP-ER-1						TOT pass															

Checked By JM Date 5/9/13

000020 : 5hdh

Subject: RE: WP46 NOP Sample Receipt and COCs
From: "Will Hafner" <whafner@newfields.com>
Date: 5/13/2013 5:23 PM
To: "'Cheronne Oreiro'" <cheronneo@arilabs.com>

Great! I made one more mistake - WP46R should just be analyzed for mercury.
I told you arsenic and cadmium as well.
Thanks for your help,
Will

Will Hafner Ph.D.
Environmental Chemist
115 2nd Ave N, Suite 100
Edmonds, WA 98020
Office: 425-967-5285 Ext. 103
Cell: 425-318-0420
www.newfields.com

-----Original Message-----
From: Cheronne Oreiro [mailto:cheronneo@arilabs.com]
Sent: Monday, May 13, 2013 4:58 PM
To: Will Hafner
Subject: Re: WP46 NOP Sample Receipt and COCs

Will - Good news, we hadn't started any of the analyses (except for sulfide) for this job yet. Attached is the revised sample receipt.
Please let me know if you have any questions.
-Cheronne

Cheronne Oreiro
Project Manager
Analytical Resources, Inc.
4611 S. 134th Place, Suite 100
Tukwila, WA 98168-3240
cheronneo@arilabs.com
(206)-695-6214

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If you have received this correspondence in error, please notify sender immediately. Thank you.

On 5/13/2013 1:45 PM, Cheronne Oreiro wrote:

> Will - I will check in with the lab and let you know what has been started and what hasn't.
> -Cheronne
>
> Cheronne Oreiro
> Project Manager
> Analytical Resources, Inc.
> 4611 S. 134th Place, Suite 100
> Tukwila, WA 98168-3240
> cheronneo@arilabs.com
> (206)-695-6214

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If you have received this correspondence in error, please notify sender immediately. Thank you.

On 5/13/2013 1:31 PM, Will Hafner wrote:

Cheronne,
We had some errors on the COC for WP46. Arsenic and cadmium were marked for samples WP46A through WP46H and they should not have been. If it is not too late, cancel those two metals. If it is too late, let me know.
Arsenic, cadmium, and mercury analysis should be included for sample WP46R.

TOC and TVS should not have been included for WP46R. If you can't cancel the TOC and TVS for WP46R don't worry about it because they aren't very expensive.
Thanks,
Will

Will Hafner Ph.D.
Environmental Chemist
115 2nd Ave N, Suite 100
Edmonds, WA 98020
Office: 425-967-5285 Ext. 103
Cell: 425-318-0420
www.newfields.com

-----Original Message-----
From: Cheronne Oreiro [mailto:cheronneo@arilabs.com]
Sent: Friday, May 10, 2013 10:41 AM
To: Will Hafner
Cc: Tim Hammermeister
Subject: WP46 NOP Sample Receipt and COCs

Hi Will,

Please see attached.
Thanks,
-Cheronne

--
Cheronne Oreiro
Project Manager
Analytical Resources, Inc.
4611 S. 134th Place, Suite 100
Tukwila, WA 98168-3240
cheronneo@arilabs.com
(206)-695-6214

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Matrix	Study ID	Location ID	Date	Time	ARI Lab ID	Grain Size	Conventionals	Total Sulfides	SIM PAH	As & Cd	Hg
Sediment	RB13	DUN-17-S	5/7/2013	902	WP46A					X	
Sediment	RB13	DUN-19-S	5/7/2013	920	WP46B					X	
Sediment	RB13	DUN-14-S	5/7/2013	948	WP46C					X	
Sediment	RB13	DUN-20-S	5/7/2013	1019	WP46D					X	
Sediment	RB13	DUN-16-S	5/7/2013	1107	WP46E					X	
Sediment	RB13	DUN-22-S	5/7/2013	1131	WP46F					X	
Sediment	RB13	DUN-21-S	5/7/2013	1150	WP46G					X	
Sediment	RB13	DUN-15-S	5/7/2013	1219	WP46H					X	
Sediment	RB13	DIS-04-S	5/7/2013	1342	WP46I						
Sediment	RB13	DIS-11-S	5/7/2013	1407	WP46J						
Sediment	RB13	DIS-08-S	5/7/2013	1429	WP46K						
Sediment	RB13	DIS-06-S	5/7/2013	1530	WP46L						
Water	RB13	NOP-RB	5/7/2013	1605	WP46M						
Water	RB13	NOP-ER-1	5/7/2013	1605	WP46N						
Sediment	RB13	DIS-09-S	5/7/2013	1640	WP46O						
Sediment	RB13	DIS-09-D	5/7/2013	1640	WP46P						
Sediment	RB13	DIS-09-T	5/7/2013	1640	WP46Q						
Sediment	RB13	DIS-18-S	5/7/2013	1735	WP46R		X				

should not be included

uPHG : 00021.1

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: WP46

ANALYTICAL
RESOURCES
INCORPORATED

Case Narrative

Client: Newfields
Project: North Olympic Peninsula Regional Background
ARI Job No.: WP46

Sample Receipt

Sixteen sediment samples and two water samples were received May 9, 2013 under ARI jobs WP46. The cooler temperatures measured by IR thermometer following ARI SOP were between -1.8 and 4.1°C. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

Low-Level PAHs by SW8270-SIM

The samples were extracted and analyzed within recommended holding times.

Initial and continuing calibrations were within method requirements. Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blanks were clean at the reporting limits. The LCS and LCSD percent recoveries were within control limits.

Metals/Mercury by SW200.8/7471A/7470A

The samples and associated laboratory QC were digested and analyzed within recommended holding times.

The method blanks were clean at the reporting limits. The LCS percent recoveries were within control limits.

The matrix spike percent recovery of mercury fell outside the control limits low for sample **RB13-DIS-04-S**. All relevant data have been flagged with an "N" qualifier on the appropriate Form V. No further corrective action was taken.

The duplicate RPD of mercury was outside the control limit for sample **RB13-DIS-04-S**. All relevant data have been flagged with a "*" qualifier on the appropriate Form VI. No further corrective action was taken.

General Chemistry Parameters

The samples and associated laboratory QC were prepared and analyzed within recommended holding times.

The method blanks were clean at the reporting limits. The LCS percent recoveries were within control limits.

The SRM percent recovery was within limits.

The matrix spike percent recoveries and replicate RPDs were within control limits.

Geotechnical Parameters

A laboratory-specific case narrative follows.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: NewFields	**ARI Job No.:** WP46
Client Project: North Olympic Peninsula Regional	

Case Narrative

1. Sixteen samples were submitted for grain size analysis according to Puget Sound Estuary Protocol (PSEP) methodology on May 9, 2013.
2. The samples were run in a single batch and one sample from this job was chosen for triplicate analysis. The triplicate data is reported on the QA summary.
3. One sample did not contain the required 5 grams of fines for the pipette portion of the analysis. The analytical balance has a capacity of about 200 grams (by 0.0001 grams) and a sample that would yield 5 grams of fines could not be split and stay within the capacity of the balance. This sample has been qualified on the QA summary.
4. Seven samples contained woody or other organic matter. Individual organic particles may have broken down during the sieving process affecting the grain size analysis.
5. The data is provided in summary tables and plots.
6. There were no other noted anomalies in this project.

Released by: Isabel Noble — Date: May 24, 2013
Technician

Reviewed by: Troy Acker — Date: MAY 24, 2013
Technician

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: WP46
Client: Newfields
Project Event: N/A
Project Name: North Olympic Peninsula Regional

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	RB13-DUN-17-S	WP46A	13-10108	Sediment	05/07/13 09:02	05/09/13 12:00
2.	RB13-DUN-19-S	WP46B	13-10109	Sediment	05/07/13 09:20	05/09/13 12:00
3.	RB13-DUN-14-S	WP46C	13-10110	Sediment	05/07/13 09:48	05/09/13 12:00
4.	RB13-DUN-20-S	WP46D	13-10111	Sediment	05/07/13 10:19	05/09/13 12:00
5.	RB13-DUN-16-S	WP46E	13-10112	Sediment	05/07/13 11:07	05/09/13 12:00
6.	RB13-DUN-22-S	WP46F	13-10113	Sediment	05/07/13 11:31	05/09/13 12:00
7.	RB13-DUN-21-S	WP46G	13-10114	Sediment	05/07/13 11:50	05/09/13 12:00
8.	RB13-DUN-15-S	WP46H	13-10115	Sediment	05/07/13 12:19	05/09/13 12:00
9.	RB13-DIS-04-S	WP46I	13-10116	Sediment	05/07/13 13:42	05/09/13 12:00
10.	RB13-DIS-11-S	WP46J	13-10117	Sediment	05/07/13 14:07	05/09/13 12:00
11.	RB13-DIS-08-S	WP46K	13-10118	Sediment	05/07/13 14:29	05/09/13 12:00
12.	RB13-DIS-06-S	WP46L	13-10119	Sediment	05/07/13 15:30	05/09/13 12:00
13.	RB13-NOP-RB	WP46M	13-10120	Water	05/07/13 16:05	05/09/13 12:00
14.	RB13-NOP-ER-1	WP46N	13-10121	Water	05/07/13 16:05	05/09/13 12:00
15.	RB13-DIS-09-S	WP46O	13-10122	Sediment	05/07/13 16:40	05/09/13 12:00
16.	RB13-DIS-09-D	WP46P	13-10123	Sediment	05/07/13 16:40	05/09/13 12:00
17.	RB13-DIS-09-T	WP46Q	13-10124	Sediment	05/07/13 16:40	05/09/13 12:00
18.	RB13-DUN-18-S	WP46R	13-10125	Sediment	05/07/13 17:35	05/09/13 12:00

WP46:00016

SIM PAH Analysis
Report and Summary QC Forms

ARI Job ID: WP46

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DIS-04-S
SAMPLE

Lab Sample ID: WP46I
LIMS ID: 13-10116
Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Date Extracted: 05/17/13
Date Analyzed: 05/22/13 17:51
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.48 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 52.4%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.48	12.1
218-01-9	Chrysene	0.48	21.4
205-99-2	Benzo(b)fluoranthene	0.48	16.1
207-08-9	Benzo(k)fluoranthene	0.48	7.58
50-32-8	Benzo(a)pyrene	0.48	12.2
193-39-5	Indeno(1,2,3-cd)pyrene	0.48	8.80
53-70-3	Dibenz(a,h)anthracene	0.48	2.27
TOTBFA	Total Benzofluoranthenes	0.95	30.1

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	58.3%
d10-2-Methylnaphthalene	60.0%
d14-Dibenzo(a,h)anthracen	74.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DIS-11-S
SAMPLE

Lab Sample ID: WP46J
LIMS ID: 13-10117
Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Date Extracted: 05/17/13
Date Analyzed: 05/22/13 18:20
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.19 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 59.3%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.49	11.9
218-01-9	Chrysene	0.49	20.4
205-99-2	Benzo(b)fluoranthene	0.49	16.2
207-08-9	Benzo(k)fluoranthene	0.49	7.37
50-32-8	Benzo(a)pyrene	0.49	12.1
193-39-5	Indeno(1,2,3-cd)pyrene	0.49	8.70
53-70-3	Dibenz(a,h)anthracene	0.49	2.20
TOTBFA	Total Benzofluoranthenes	0.98	29.8

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	59.3%
d10-2-Methylnaphthalene	59.7%
d14-Dibenzo(a,h)anthracen	72.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DIS-08-S
SAMPLE

Lab Sample ID: WP46K
LIMS ID: 13-10118
Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Date Extracted: 05/17/13
Date Analyzed: 05/22/13 18:49
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.47 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 25.3%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.48	2.78
218-01-9	Chrysene	0.48	4.52
205-99-2	Benzo(b)fluoranthene	0.48	4.11
207-08-9	Benzo(k)fluoranthene	0.48	1.58
50-32-8	Benzo(a)pyrene	0.48	2.87
193-39-5	Indeno(1,2,3-cd)pyrene	0.48	2.29
53-70-3	Dibenz(a,h)anthracene	0.48	0.54
TOTBFA	Total Benzofluoranthenes	0.96	7.30

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	82.0%
d10-2-Methylnaphthalene	55.3%
d14-Dibenzo(a,h)anthracen	78.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DIS-06-S
SAMPLE

Lab Sample ID: WP46L
LIMS ID: 13-10119
Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Date Extracted: 05/17/13
Date Analyzed: 05/22/13 19:17
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.03 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 70.5%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.50	20.5
218-01-9	Chrysene	0.50	31.8
205-99-2	Benzo(b)fluoranthene	0.50	28.5
207-08-9	Benzo(k)fluoranthene	0.50	14.7
50-32-8	Benzo(a)pyrene	0.50	23.6
193-39-5	Indeno(1,2,3-cd)pyrene	0.50	18.7
53-70-3	Dibenz(a,h)anthracene	0.50	3.96
TOTBFA	Total Benzofluoranthenes	1.00	55.4

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	52.0%
d10-2-Methylnaphthalene	58.3%
d14-Dibenzo(a,h)anthracen	71.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DIS-09-S
SAMPLE

Lab Sample ID: WP46O
LIMS ID: 13-10122
Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Date Extracted: 05/17/13
Date Analyzed: 05/22/13 19:46
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.54 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 44.5%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.47	10.9
218-01-9	Chrysene	0.47	18.1
205-99-2	Benzo(b)fluoranthene	0.47	13.1
207-08-9	Benzo(k)fluoranthene	0.47	5.43
50-32-8	Benzo(a)pyrene	0.47	10.7
193-39-5	Indeno(1,2,3-cd)pyrene	0.47	6.74
53-70-3	Dibenz(a,h)anthracene	0.47	1.95
TOTBFA	Total Benzofluoranthenes	0.95	23.9

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	65.0%
d10-2-Methylnaphthalene	57.0%
d14-Dibenzo(a,h)anthracen	72.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DIS-09-D
SAMPLE

Lab Sample ID: WP46P
LIMS ID: 13-10123
Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Date Extracted: 05/17/13
Date Analyzed: 05/22/13 20:15
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.49 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 44.9%

CAS Number	Analyte	LOQ	Result
56-55-3	**Benzo(a)anthracene**	**0.48**	**10.6**
218-01-9	**Chrysene**	**0.48**	**27.3**
205-99-2	**Benzo(b)fluoranthene**	**0.48**	**13.9**
207-08-9	**Benzo(k)fluoranthene**	**0.48**	**5.20**
50-32-8	**Benzo(a)pyrene**	**0.48**	**9.26**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**0.48**	**6.25**
53-70-3	**Dibenz(a,h)anthracene**	**0.48**	**1.86**
TOTBFA	**Total Benzofluoranthenes**	**0.95**	**24.2**

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	72.3%
d10-2-Methylnaphthalene	55.0%
d14-Dibenzo(a,h)anthracen	73.7%

ANALYTICAL RESOURCES INCORPORATED

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Sediment

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Client ID	FLN	MNP	DBA	TOT OUT
MB-051713	83.3%	59.0%	76.0%	0
LCS-051713	87.7%	63.0%	80.0%	0
RB13-DIS-04-S	58.3%	60.0%	74.3%	0
RB13-DIS-11-S	59.3%	59.7%	72.7%	0
RB13-DIS-08-S	82.0%	55.3%	78.0%	0
RB13-DIS-06-S	52.0%	58.3%	71.0%	0
RB13-DIS-09-S	65.0%	57.0%	72.7%	0
RB13-DIS-09-D	72.3%	55.0%	73.7%	0

	LCS/MB LIMITS	QC LIMITS
(FLN) = d10-Fluoranthene	(30-160)	(30-160)
(MNP) = d10-2-Methylnaphthalene	(30-160)	(30-160)
(DBA) = d14-Dibenzo(a,h)anthracene	(30-160)	(30-160)

Prep Method: SW3546
Log Number Range: 13-10116 to 13-10123

FORM-II SIM SW8270

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3510C

Sample ID: RB13-NOP-RB
SAMPLE

Lab Sample ID: WP46M
LIMS ID: 13-10120
Matrix: Water
Data Release Authorized:
Reported: 05/15/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Date Extracted: 05/13/13
Date Analyzed: 05/15/13 12:24
Instrument/Analyst: NT11/VTS

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	0.010	< 0.010 U
218-01-9	Chrysene	0.010	< 0.010 U
205-99-2	Benzo(b)fluoranthene	0.010	< 0.010 U
207-08-9	Benzo(k)fluoranthene	0.010	< 0.010 U
50-32-8	Benzo(a)pyrene	0.010	< 0.010 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	< 0.010 U
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
TOTBFA	Total Benzofluoranthenes	0.020	< 0.020 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	82.0%
d10-2-Methylnaphthalene	75.0%
d14-Dibenzo(a,h)anthracene	70.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3510C

Sample ID: RB13-NOP-ER-1
SAMPLE

Lab Sample ID: WP46N
LIMS ID: 13-10121
Matrix: Water
Data Release Authorized:
Reported: 05/15/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Date Extracted: 05/13/13
Date Analyzed: 05/15/13 12:53
Instrument/Analyst: NT11/VTS

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	0.010	< 0.010 U
218-01-9	Chrysene	0.010	< 0.010 U
205-99-2	Benzo(b)fluoranthene	0.010	< 0.010 U
207-08-9	Benzo(k)fluoranthene	0.010	< 0.010 U
50-32-8	Benzo(a)pyrene	0.010	< 0.010 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	< 0.010 U
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
TOTBFA	Total Benzofluoranthenes	0.020	< 0.020 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	55.7%
d10-2-Methylnaphthalene	52.0%
d14-Dibenzo(a,h)anthracene	44.7%

ANALYTICAL RESOURCES INCORPORATED

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Client ID	FLN	MNP	DBA	TOT OUT
MB-051313	80.3%	73.0%	67.7%	0
LCS-051313	87.7%	78.0%	77.0%	0
LCSD-051313	86.3%	76.3%	76.3%	0
RB13-NOP-RB	82.0%	75.0%	70.0%	0
RB13-NOP-ER-1	55.7%	52.0%	44.7%	0

	LCS/MB LIMITS	QC LIMITS
(FLN) = d10-Fluoranthene	(30-160)	(30-150)
(MNP) = d10-2-Methylnaphthalene	(40-120)	(35-120)
(DBA) = d14-Dibenzo(a,h)anthracene	(31-120)	(26-120)

Prep Method: SW3510C
Log Number Range: 13-10120 to 13-10121

FORM-II SIM SW8270

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS

Sample ID: LCS-051713
LAB CONTROL SAMPLE

Lab Sample ID: LCS-051713
LIMS ID: 13-10116
Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 05/17/13
Date Analyzed LCS: 05/22/13 17:22
Instrument/Analyst LCS: NT11/VTS

Sample Amount LCS: 10.00 g-dry-wt
Final Extract Volume LCS: 0.50 mL
Dilution Factor LCS: 1.00

Analyte	LCS	Spike Added	Recovery
Benzo(a)anthracene	12.3	15.0	82.0%
Chrysene	12.3	15.0	82.0%
Benzo(b)fluoranthene	11.0	15.0	73.3%
Benzo(k)fluoranthene	12.5	15.0	83.3%
Benzo(a)pyrene	10.7	15.0	71.3%
Indeno(1,2,3-cd)pyrene	11.5	15.0	76.7%
Dibenz(a,h)anthracene	11.2	15.0	74.7%
Total Benzofluoranthenes	36.0	45.0	80.0%

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	87.7%
d10-2-Methylnaphthalene	63.0%
d14-Dibenzo(a,h)anthracen	80.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS

Sample ID: LCS-051313
LAB CONTROL SAMPLE

Lab Sample ID: LCS-051313
LIMS ID: 13-10120
Matrix: Water
Data Release Authorized:
Reported: 05/29/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 05/13/13

Date Analyzed LCS: 05/15/13 10:57
LCSD: 05/15/13 11:26
Instrument/Analyst LCS: NT11/VTS
LCSD: NT11/VTS

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzo(a)anthracene	0.245	0.300	81.7%	0.249	0.300	83.0%	1.6%
Chrysene	0.246	0.300	82.0%	0.250	0.300	83.3%	1.6%
Benzo(b)fluoranthene	0.221	0.300	73.7%	0.229	0.300	76.3%	3.6%
Benzo(k)fluoranthene	0.252	0.300	84.0%	0.255	0.300	85.0%	1.2%
Benzo(a)pyrene	0.203	0.300	67.7%	0.209	0.300	69.7%	2.9%
Indeno(1,2,3-cd)pyrene	0.224	0.300	74.7%	0.230	0.300	76.7%	2.6%
Dibenz(a,h)anthracene	0.218	0.300	72.7%	0.222	0.300	74.0%	1.8%
Total Benzofluoranthenes	0.728	0.900	80.9%	0.744	0.900	82.7%	2.2%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

SIM Semivolatile Surrogate Recovery

	LCS	LCSD
d10-Fluoranthene	87.7%	86.3%
d10-2-Methylnaphthalene	78.0%	76.3%
d14-Dibenzo(a,h)anthracene	77.0%	76.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: MB-051713
METHOD BLANK

Lab Sample ID: MB-051713
LIMS ID: 13-10116
Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 05/17/13
Date Analyzed: 05/22/13 16:53
Instrument/Analyst: NT11/VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.00 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.50	< 0.50 U
218-01-9	Chrysene	0.50	< 0.50 U
205-99-2	Benzo(b)fluoranthene	0.50	< 0.50 U
207-08-9	Benzo(k)fluoranthene	0.50	< 0.50 U
50-32-8	Benzo(a)pyrene	0.50	< 0.50 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.50	< 0.50 U
53-70-3	Dibenz(a,h)anthracene	0.50	< 0.50 U
TOTBFA	Total Benzofluoranthenes	1.00	< 1.00 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	83.3%
d10-2-Methylnaphthalene	59.0%
d14-Dibenzo(a,h)anthracen	76.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3510C

Sample ID: MB-051313
METHOD BLANK

Lab Sample ID: MB-051313
LIMS ID: 13-10120
Matrix: Water
Data Release Authorized:
Reported: 05/15/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 05/13/13
Date Analyzed: 05/15/13 10:28
Instrument/Analyst: NT11/VTS

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	0.010	< 0.010 U
218-01-9	Chrysene	0.010	< 0.010 U
205-99-2	Benzo(b)fluoranthene	0.010	< 0.010 U
207-08-9	Benzo(k)fluoranthene	0.010	< 0.010 U
50-32-8	Benzo(a)pyrene	0.010	< 0.010 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	< 0.010 U
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
TOTBFA	Total Benzofluoranthenes	0.020	< 0.020 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	80.3%
d10-2-Methylnaphthalene	73.0%
d14-Dibenzo(a,h)anthracene	67.7%

Metals Analysis
Report and Summary QC Forms

ARI Job ID: WP46

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INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Newfields

PROJECT: North Olympic Penins

SDG: WP46

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
RB13-DUN-17-S	WP46A	13-10108	
RB13-DUN-19-S	WP46B	13-10109	
RB13-DUN-14-S	WP46C	13-10110	
RB13-DUN-20-S	WP46D	13-10111	
RB13-DUN-16-S	WP46E	13-10112	
RB13-DUN-22-S	WP46F	13-10113	
RB13-DUN-21-S	WP46G	13-10114	
RB13-DUN-15-S	WP46H	13-10115	
RB13-DIS-04-S	WP46I	13-10116	
RB13-DIS-04-SD	WP46IDUP	13-10116	
RB13-DIS-04-SS	WP46ISPK	13-10116	
RB13-DIS-11-S	WP46J	13-10117	
PBS	WP46MB1	13-10117	
LCSS	WP46MB1SPK	13-10117	
RB13-DIS-08-S	WP46K	13-10118	
RB13-DIS-06-S	WP46L	13-10119	
RB13-NOP-RB	WP46M	13-10120	
RB13-NOP-RBD	WP46MDUP	13-10120	
RB13-NOP-RBS	WP46MSPK	13-10120	
PBW	WP46MB2	13-10121	
LCSW	WP46MB2SPK	13-10121	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments: _____

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: _____ Name: Jay Kuhn

Date: 5/20/13 Title: Inorganics Director

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Newfields

PROJECT: North Olympic Penins

SDG: WP46

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
RB13-NOP-ER-1	WP46N	13-10121	
RB13-DIS-09-S	WP46O	13-10122	
RB13-DIS-09-D	WP46P	13-10123	
RB13-DUN-18-S	WP46R	13-10125	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments: _____

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: _____ Name: Jay Kuhn

Date: 5/20/13 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-17-S
SAMPLE

Lab Sample ID: WP46A
LIMS ID: 13-10108
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Percent Total Solids: 62.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.03	**0.04**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-19-S
SAMPLE

Lab Sample ID: WP46B
LIMS ID: 13-10109
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Percent Total Solids: 48.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.04	**0.07**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-14-S
SAMPLE

Lab Sample ID: WP46C
LIMS ID: 13-10110
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Percent Total Solids: 70.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.03	**0.03**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-20-S
SAMPLE

Lab Sample ID: WP46D
LIMS ID: 13-10111
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Percent Total Solids: 70.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/14/13	7471A	05/17/13	7439-97-6	Mercury	0.03	0.03	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-16-S
SAMPLE

Lab Sample ID: WP46E
LIMS ID: 13-10112
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Percent Total Solids: 77.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/14/13	7471A	05/17/13	7439-97-6	Mercury	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-22-S
SAMPLE

Lab Sample ID: WP46F
LIMS ID: 13-10113
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Percent Total Solids: 66.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.03	**0.03**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-21-S
SAMPLE

Lab Sample ID: WP46G
LIMS ID: 13-10114
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Percent Total Solids: 75.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/14/13	7471A	05/17/13	7439-97-6	Mercury	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-15-S
SAMPLE

Lab Sample ID: WP46H
LIMS ID: 13-10115
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Percent Total Solids: 74.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/14/13	7471A	05/17/13	7439-97-6	Mercury	0.03	0.03	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-04-S
SAMPLE

Lab Sample ID: WP46I
LIMS ID: 13-10116
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Percent Total Solids: 44.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/14/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.4	**5.6**	
3050B	05/14/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.2	**0.4**	
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.05	**0.35**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-11-S
SAMPLE

Lab Sample ID: WP46J
LIMS ID: 13-10117
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Percent Total Solids: 38.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/14/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.5	**7.2**	
3050B	05/14/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.3	**0.6**	
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.06	**0.09**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-08-S
SAMPLE

Lab Sample ID: WP46K
LIMS ID: 13-10118
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Percent Total Solids: 71.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/14/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.3	**2.3**	
3050B	05/14/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/14/13	7471A	05/17/13	7439-97-6	Mercury	0.03	0.03	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-06-S
SAMPLE

Lab Sample ID: WP46L
LIMS ID: 13-10119
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Percent Total Solids: 29.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/14/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.7	**14.2**	
3050B	05/14/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.3	**1.9**	
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.07	**0.14**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-09-S
SAMPLE

Lab Sample ID: WP46O
LIMS ID: 13-10122
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Percent Total Solids: 51.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/14/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.4	**4.7**	
3050B	05/14/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.2	**0.3**	
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.04	**0.07**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-09-D
SAMPLE

Lab Sample ID: WP46P
LIMS ID: 13-10123
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Percent Total Solids: 52.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/14/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.4	**4.4**	
3050B	05/14/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.2	**0.3**	
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.04	**0.07**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DUN-18-S
SAMPLE

Lab Sample ID: WP46R
LIMS ID: 13-10125
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Percent Total Solids: 48.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.05	**0.07**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-04-S
MATRIX SPIKE

Lab Sample ID: WP46I
LIMS ID: 13-10116
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	5.6	57.5	53.6	96.8%	
Cadmium	200.8	0.4	52.3	53.6	96.8%	
Mercury	7471A	0.35	0.69	0.495	68.7%	N

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-04-S
DUPLICATE

Lab Sample ID: WP46I
LIMS ID: 13-10116
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	5.6	5.5	1.8%	+/- 20%	
Cadmium	200.8	0.4	0.4	0.0%	+/- 0.2	L
Mercury	7471A	0.35	0.08	126%	+/- 0.05	L*

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: WP46LCS
LIMS ID: 13-10117
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	25.8	25.0	103%	
Cadmium	200.8	24.3	25.0	97.2%	
Mercury	7471A	0.60	0.50	120%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: WP46MB
LIMS ID: 13-10117
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/14/13	200.8	05/15/13	7440-38-2	Arsenic	0.2	0.2	U
3050B	05/14/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/14/13	7471A	05/17/13	7439-97-6	Mercury	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-NOP-RB
SAMPLE

Lab Sample ID: WP46M
LIMS ID: 13-10120
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/13/13	200.8	05/15/13	7440-38-2	Arsenic	0.2	0.2	U
200.8	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
7470A	05/13/13	7470A	05/17/13	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-NOP-ER-1
SAMPLE

Lab Sample ID: WP46N
LIMS ID: 13-10121
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/13/13	200.8	05/15/13	7440-38-2	Arsenic	0.2	0.2	U
200.8	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
7470A	05/13/13	7470A	05/17/13	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-NOP-RB
MATRIX SPIKE

Lab Sample ID: WP46M
LIMS ID: 13-10120
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	0.2 U	25.4	25.0	102%	
Cadmium	200.8	0.1 U	24.2	25.0	96.8%	
Mercury	7470A	0.1 U	1.0	1.0	100%	

Reported in µg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked
NR-Not Recovered

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-NOP-RB DUPLICATE

Lab Sample ID: WP46M
LIMS ID: 13-10120
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/07/13
Date Received: 05/09/13

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	0.2 U	0.2 U	0.0%	+/- 0.2	L
Cadmium	200.8	0.1 U	0.1 U	0.0%	+/- 0.1	L
Mercury	7470A	0.1 U	0.1 U	0.0%	+/- 0.1	L

Reported in µg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: WP46LCS
LIMS ID: 13-10121
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	25.4	25.0	102%	
Cadmium	200.8	24.5	25.0	98.0%	
Mercury	7470A	2.0	2.0	100%	

Reported in µg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: WP46MB
LIMS ID: 13-10121
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP46-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/13/13	200.8	05/15/13	7440-38-2	Arsenic	0.2	0.2	U
200.8	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
7470A	05/13/13	7470A	05/17/13	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL
RL-Reporting Limit

General Chemistry Analysis
Report and Summary QC Forms

ARI Job ID: WP46

SAMPLE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Client ID: RB13-DUN-17-S
ARI ID: 13-10108 WP46A

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	60.72
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	1.64	< 1.64 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Client ID: RB13-DUN-19-S
ARI ID: 13-10109 WP46B

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	41.49
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	2.40	< 2.40 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Client ID: RB13-DUN-14-S
ARI ID: 13-10110 WP46C

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	70.31
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	1.38	< 1.38 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Client ID: RB13-DUN-20-S
ARI ID: 13-10111 WP46D

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	66.91
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	1.49	< 1.49 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Client ID: RB13-DUN-16-S
ARI ID: 13-10112 WP46E

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	77.89
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	1.28	< 1.28 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Client ID: RB13-DUN-22-S
ARI ID: 13-10113 WP46F

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	65.54
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

UP45 : 00106

SAMPLE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Client ID: RB13-DUN-21-S
ARI ID: 13-10114 WP46G

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	72.14
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	1.34	< 1.34 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Client ID: RB13-DUN-15-S
ARI ID: 13-10115 WP46H

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	71.58
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	1.38	< 1.38 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Client ID: RB13-DIS-04-S
ARI ID: 13-10116 WP46I

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	45.56
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	39.83
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	5.58
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	2.43	< 2.43 U
Total Organic Carbon	05/22/13 052213#1	Plumb,1981	Percent	0.020	2.32

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Client ID: RB13-DIS-11-S
ARI ID: 13-10117 WP46J

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	38.05
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	36.46
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	6.98
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	27.3	219
Total Organic Carbon	05/22/13 052213#1	Plumb,1981	Percent	0.020	2.29

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Client ID: RB13-DIS-08-S
ARI ID: 13-10118 WP46K

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	70.34
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	59.68
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	2.07
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	3.29	30.9
Total Organic Carbon	05/22/13 052213#1	Plumb,1981	Percent	0.020	2.10

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Client ID: RB13-DIS-06-S
ARI ID: 13-10119 WP46L

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	28.93
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	21.81
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	9.50
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	96.1	1,400
Total Organic Carbon	05/22/13 052213#1	Plumb,1981	Percent	0.020	3.80

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Client ID: RB13-DIS-09-S
ARI ID: 13-10122 WP46O

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	54.27
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	45.68
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	4.70
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	2.18	10.5
Total Organic Carbon	05/22/13 052213#1	Plumb,1981	Percent	0.020	1.19

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Client ID: RB13-DIS-09-D
ARI ID: 13-10123 WP46P

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	54.30
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	64.83
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	4.59
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	3.08	32.6
Total Organic Carbon	05/22/13 052213#1	Plumb,1981	Percent	0.020	1.05

RL Analytical reporting limit
U Undetected at reported detection limit

UPUS : 0014

SAMPLE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Client ID: RB13-DIS-09-T
ARI ID: 13-10124 WP46Q

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	55.39
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	45.04
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	4.73
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	2.20	7.22
Total Organic Carbon	05/22/13 052213#1	Plumb,1981	Percent	0.020	1.76

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Client ID: RB13-DUN-18-S
ARI ID: 13-10125 WP46R

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	43.41
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	2.27	< 2.27 U

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: WP46A Client ID: RB13-DUN-17-S						
Sulfide	05/13/13	mg/kg	< 1.64	231	245	94.3%

REPLICATE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/07/13
Date Received: 05/09/13

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: WP46A Client ID: RB13-DUN-17-S					
Preserved Total Solids	05/10/13	Percent	60.72	60.63	0.1%
Sulfide	05/13/13	mg/kg	< 1.64	< 1.64	NA

UPUS : 00119

LAB CONTROL RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Sulfide EPA 376.2	PREP	05/13/13	mg/kg	144	150	96.3%
Total Organic Carbon Plumb,1981	ICVL	05/22/13	Percent	0.103	0.100	103.0%

METHOD BLANK RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Total Solids	05/13/13	Percent	< 0.01 U	ICB
	05/13/13		< 0.01 U	ICB
Preserved Total Solids	05/10/13	Percent	< 0.01 U	ICB
Total Volatile Solids	05/13/13	Percent	< 0.01 U	ICB
	05/13/13		< 0.01 U	ICB
Sulfide	05/13/13	mg/kg	< 1.00 U	PREP
Total Organic Carbon	05/22/13	Percent	< 0.020 U	ICB

STANDARD REFERENCE RESULTS-CONVENTIONALS
WP46-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon NIST 1941B	05/22/13	Percent	2.76	2.99	92.3%

Geotechnical Analysis
Report and Summary QC Forms

ARI Job ID: WP46

NewFields
North Olympic Peninsula Regional

Apparent Grain Size Distribution Summary
Percent Finer Than Indicated Size

Sample No.	Gravel			Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt				Clay	
Phi Size	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
Sieve Size (microns)	3/8"	#4 (4750)	#10 (2000)	#18 (1000)	#35 (500)	#60 (250)	#120 (125)	#230 (63)	31.00	15.60	7.80	3.90	2.00	1.00
RB13-DUN-19-S	100.0	100.0	99.9	99.6	98.9	97.9	96.9	89.3	67.4	46.9	33.1	25.0	20.5	15.4
	100.0	100.0	100.0	99.6	98.7	98.1	97.0	89.4	67.0	46.8	34.3	26.3	20.4	15.1
	100.0	100.0	99.9	99.5	98.8	98.3	97.5	90.1	66.6	46.4	34.3	26.5	20.3	15.0
RB13-DUN-17-S	100.0	100.0	99.9	99.6	98.7	93.9	53.5	37.8	27.1	19.1	14.1	11.0	8.5	6.1
RB13-DUN-14-S	100.0	100.0	99.9	99.6	99.2	96.9	51.2	16.4	10.3	8.0	6.4	5.2	4.2	3.0
RB13-DUN-20-S	100.0	100.0	99.9	99.7	98.2	87.3	44.6	19.1	13.4	10.7	8.5	6.8	5.3	3.7
RB13-DUN-16-S	100.0	97.1	92.4	81.3	59.3	17.9	1.9	1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
RB13-DUN-22-S	100.0	100.0	100.0	99.7	98.9	95.6	52.4	29.2	20.5	15.6	12.3	9.4	7.2	5.2
RB13-DUN-21-S	100.0	97.6	94.4	89.5	72.2	31.4	12.6	8.0	5.3	4.1	3.3	2.6	2.0	1.4
RB13-DUN-15-S	100.0	99.1	96.7	93.1	85.2	61.0	16.0	7.1	5.6	4.5	3.6	2.9	2.3	1.7
RB13-DIS-04-S	100.0	100.0	100.0	99.4	98.4	97.1	96.0	89.0	62.1	44.8	32.6	24.0	18.0	12.5
RB13-DIS-11-S	100.0	100.0	99.9	98.4	96.4	95.5	94.3	90.3	76.2	53.5	38.1	26.1	20.0	13.5
RB13-DIS-08-S	100.0	99.8	98.8	96.9	85.6	48.8	23.6	20.4	17.7	13.7	10.3	7.4	5.4	3.6
RB13-DIS-06-S	100.0	100.0	100.0	99.0	97.6	96.3	95.7	95.1	92.7	76.8	57.8	40.1	27.3	18.5
RB13-DIS-09-S	100.0	100.0	99.9	99.6	99.0	98.3	95.5	79.5	52.2	36.8	27.2	21.0	16.3	11.7
RB13-DIS-09-D	100.0	100.0	99.9	99.3	98.4	97.7	94.8	78.7	51.4	35.5	26.6	20.7	15.8	11.2
RB13-DIS-09-T	100.0	100.0	99.9	99.5	98.9	98.4	95.7	79.5	52.4	36.2	26.7	21.0	16.9	11.8
RB13-DUN-18-S	100.0	100.0	99.7	98.7	97.3	95.7	89.6	75.0	53.4	37.8	28.0	22.0	16.9	12.0

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

UPDIS : 080123

NewFields
North Olympic Peninsula Regional

Apparent Grain Size Distribution Summary
Percent Retained in Each Size Fraction

Sample No.	Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Coarse Silt	Medium Silt	Fine Silt	Very Fine Silt	Clay			Total Fines
Phi Size	< -1	-1 to 0	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	> 10	> 4
Sieve Size (microns)	> #10 (2000)	10 to 18 (2000-1000)	18-35 (1000-500)	35-60 (500-250)	60-120 (250-125)	120-230 (125-62)	62 5-31.0	31.0-15.6	15 6-7 8	7.8-3.9	3 9-2.0	2 0-1 0	<1 0	<230 (<62)
RB13-DUN-19-S	0.1	0.3	0.7	1.0	1.0	7.6	22.0	20.5	13.8	8.1	4.4	5.2	15.4	89.3
	0.0	0.4	0.9	0.7	1.1	7.6	22.4	20.2	12.5	8.0	5.9	5.2	15.1	89.4
	0.1	0.3	0.7	0.5	0.8	7.4	23.5	20.2	12.1	7.8	6.2	5.3	15.0	90.1
RB13-DUN-17-S	0.1	0.3	0.9	4.8	40.4	15.7	10.7	8.0	5.1	3.0	2.6	2.4	6.1	37.8
RB13-DUN-14-S	0.1	0.3	0.4	2.3	45.7	34.8	6.1	2.3	1.6	1.2	1.0	1.2	3.0	16.4
RB13-DUN-20-S	0.1	0.3	1.4	10.9	42.7	25.5	5.7	2.8	2.1	1.7	1.5	1.6	3.7	19.1
RB13-DUN-16-S	7.6	11.1	22.0	41.4	16.0	0.6	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	1.3
RB13-DUN-22-S	0.0	0.3	0.8	3.3	43.2	23.3	8.7	4.9	3.3	2.9	2.2	2.0	5.2	29.2
RB13-DUN-21-S	5.6	4.8	17.3	40.8	18.8	4.6	2.6	1.2	0.9	0.7	0.6	0.5	1.4	8.0
RB13-DUN-15-S	3.3	3.6	7.9	24.2	44.9	8.9	1.5	1.1	0.9	0.7	0.6	0.6	1.7	7.1
RB13-DIS-04-S	0.0	0.5	1.0	1.3	1.1	7.0	27.0	17.2	12.3	8.6	5.9	5.5	12.5	89.0
RB13-DIS-11-S	0.1	1.5	1.9	0.9	1.2	4.0	14.1	22.7	15.3	12.1	6.1	6.5	13.5	90.3
RB13-DIS-08-S	1.2	2.0	11.3	36.8	25.1	3.2	2.7	4.0	3.4	2.9	2.1	1.7	3.6	20.4
RB13-DIS-06-S	0.0	1.0	1.5	1.3	0.6	0.6	2.3	15.9	19.0	17.7	12.8	8.9	18.5	95.1
RB13-DIS-09-S	0.1	0.3	0.6	0.8	2.7	16.1	27.3	15.4	9.7	6.2	4.6	4.6	11.7	79.5
RB13-DIS-09-D	0.1	0.5	0.9	0.7	2.9	16.1	27.3	16.0	8.8	5.9	4.9	4.5	11.2	78.7
RB13-DIS-09-T	0.1	0.4	0.6	0.5	2.7	16.2	27.1	16.3	9.5	5.7	4.1	5.1	11.8	79.5
RB13-DUN-18-S	0.3	1.0	1.4	1.6	6.1	14.5	21.7	15.6	9.8	5.9	5.2	4.9	12.0	75.0

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

QA SUMMARY

Client	NewFields	Client Project:	North Olympic Peninsula Regional
ARI Trip. Sample ID.	WP46B		
Client Trip. Sample ID	RB13-DUN-19-S	Batch No :	WP46-1

Relative Standard Deviation, By Phi Size

Sample ID	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
RB13-DUN-19-S	100 0	100 0	99 9	99.6	98.9	97.9	96.9	89.3	67.4	46.9	33.1	25.0	20.5	15.4
	100.0	100.0	100.0	99.6	98.7	98.1	97 0	89 4	67 0	46.8	34.3	26.3	20 4	15.1
	100 0	100 0	99.9	99.5	98.8	98.3	97.5	90.1	66.6	46.4	34.3	26.5	20.3	15.0
AVE	NA	100.00	99.93	99.58	98 81	98.09	97.14	89.61	67.00	46 70	33 90	25.90	20.40	15.17
STDEV	NA	0.00	0.06	0 03	0.10	0.17	0.32	0.43	0.39	0.27	0.70	0.82	0.14	0.18
%RSD	NA	0.00	0.06	0.03	0.10	0 18	0 33	0 48	0 58	0.58	2.06	3.17	0 70	1.18

The Triplicate Applies To The Following Samples

Client ID	Date Sampled	Date Extracted	Date Complete	QA Ratio (95-105)	Data Qualifiers	Pipette Portion (5 0-25.0g)
RB13-DUN-19-S	5/7/2013	5/15/2013	5/23/2013	99.3		15.7
	5/7/2013	5/15/2013	5/23/2013	100.7		15.5
	5/7/2013	5/15/2013	5/23/2013	100.4		15.8
RB13-DUN-17-S	5/7/2013	5/15/2013	5/23/2013	99.6		11.4
RB13-DUN-14-S	5/7/2013	5/15/2013	5/23/2013	100 1		10.7
RB13-DUN-20-S	5/7/2013	5/15/2013	5/23/2013	100 5		10.7
RB13-DUN-16-S	5/7/2013	5/15/2013	5/23/2013	99.2	SS	1.6
RB13-DUN-22-S	5/7/2013	5/15/2013	5/23/2013	100.0		10.6
RB13-DUN-21-S	5/7/2013	5/15/2013	5/23/2013	101.0		9.5
RB13-DUN-15-S	5/7/2013	5/15/2013	5/23/2013	99.9		8.1
RB13-DIS-04-S	5/7/2013	5/15/2013	5/23/2013	99.7		18.8
RB13-DIS-11-S	5/7/2013	5/15/2013	5/23/2013	98 2		13 8
RB13-DIS-08-S	5/7/2013	5/15/2013	5/23/2013	100.3		11.6
RB13-DIS-06-S	5/7/2013	5/15/2013	5/23/2013	99.0		11 5
RB13-DIS-09-S	5/7/2013	5/15/2013	5/23/2013	101.2		17.1
RB13-DIS-09-D	5/7/2013	5/15/2013	5/23/2013	100.8		17.5
RB13-DIS-09-T	5/7/2013	5/15/2013	5/23/2013	102.2		17.6
RB13-DUN-18-S	5/7/2013	5/15/2013	5/23/2013	101.6		15.1

* ARI Internal QA limits = 95-105%

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution See narrative for discussion of the testing.

WP46 : 001225

Total Solids

ARI Job ID: WP46

Extractions Total Solids-extts
Data By: Alex Choeng
Created: 5/10/13

Worklist: 2995
Analyst: RVR
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

	ARI ID CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids	pH
1.	WP46I 13-10116 RB13-DIS-04-S	1.16	13.17	6.88	47.6	NR
2.	WP46J 13-10117 RB13-DIS-11-S	1.17	12.20	5.66	40.7	NR
3.	WP46K 13-10118 RB13-DIS-08-S	1.16	15.56	11.92	74.7	NR
4.	WP46L 13-10119 RB13-DIS-06-S	1.16	13.21	4.72	29.5	NR
5.	WP46O 13-10122 RB13-DIS-09-S	1.17	14.62	8.63	55.5	NR
6.	WP46P 13-10123 RB13-DIS-09-D	1.16	13.17	7.78	55.1	NR

Table of Contents: ARI Job WP47, WP62

Client: Newfields

Project: North Olympic Peninsula Regional

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AV
Signature

May-30-2013
Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

June 4, 2013

Will Hafner
Newfields
115 2nd Avenue North, Suite 100
Edmonds, WA 98026

RE: Project: North Olympic Peninsula Regional Background
ARI Job Nos.: WP47 & WP62

Dear Will:

Please find enclosed the Chain-of-Custody records (COCs), sample receipt documentation, and the final data package for samples from the project referenced above.

Sample receipt and details of the analyses are discussed in the Case Narrative.

An electronic copy of this data package will be kept on file with ARI. Should you have any questions or problems, please feel free to contact me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.ariblas.com

cc: eFile WP47_WP62

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Documentation

ARI Job ID: WP47, WP62

Chain of Custody Record & Laboratory Analysis Request

Attn: Cheronne Oreiro

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

ARI Assigned Number: WP47	Turn-around Requested: 15 day
ARI Client Company: Newfields	Phone: 425-967-5285 x103
Client Contact: Will Hafner	
Client Project Name: North Olympic Peninsula Reg Background	
Client Project #:	Samplers: WH PM JB

Page: of

Date: 5/8/13 Ice Present? Y

No. of Coolers: 9 Cooler Temps: -1.8 - 4.1

Sample ID	Date	Time	Matrix	No Containers	Grainsize	Conventionals	Sulfides	SIM cPAH	As, Cd	Hg			Notes/Comments
RB13-DIS-14-S	5/8/13	0956	Sed	3	X		X			X			1331 1332 1338
RB13-DIS-15-S	5/8/13	1018	Sed	3	X		X			X			1211 1212 1218
RB13-DIS-18-S	5/8/13	1036	Sed	3	X		X			X			1241 1242 1248
RB13-DIS-10-S	5/8/13	1127	Sed	5	X	X	X	X	X	X			1171 1176 1172 1177 1178
RB13-DIS-07-S	5/8/13	1147	Sed	5	X	X	X	X	X	X			1141 1146 1142 1147 ~~1148~~
RB13-DIS-01-S	5/8/13	1206	Sed	5	X	X	X	X	X	X			1081 1086 1082 1087 1088
~~RB13-DIS-13-S~~	~~5/8/13~~	~~1329~~	~~Sed~~	~~5~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~—~~			
RB13-DIS-13-S	5/8/13	1329	Sed	3	X		X			X			1201 ~~1206~~ 1202 ~~1207~~ 1208
RB13-DIS-03-S	5/8/13	1357	Sed	5	X	X	X	X	X	X			1101 ~~1106~~ 1102 1107 1108
RB13-DIS-20-S	5/8/13	1415	Sed	3	X		X			X			1261 1262 1268

Comments/Special Instructions
Conventionals =
TOC
TVS
Total Solids

Relinquished by: (Signature)	Received by. (Signature)	Relinquished by (Signature)	Received by: (Signature)
Printed Name: Will Hafner	Printed Name. Rick Hudson	Printed Name	Printed Name:
Company: Newfields	Company ARI	Company:	Company:
Date & Time. 5/9/13 1200	Date & Time 5/9/13 1200	Date & Time.	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

WP47 : 00003

Chain of Custody Record & Laboratory Analysis Request

Attn: Cheronne Orevo

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

ARI Assigned Number: WP47	Turn-around Requested: 15 day
ARI Client Company: New Fields	Phone: 425-967-5285x103
Client Contact: Will Hafner	
Client Project Name: North Olympic Peninsula Reg. Background	
Client Project #:	Samplers: WH PM JB

Page:	of
Date: 5/8/13	Ice Present? Y
No. of Coolers: 9	Cooler Temps: -1.8 - 4.1

Sample ID	Date	Time	Matrix	No. Containers	Grain size	Conventionals	Sulfides	SIM cPAH	As, Cd	Hg			Notes/Comments
RB13-DIS-12-S	5/8/13	1435	Sed	5	X	X	X	X	X	X			1191 1196 1192 1197 1198
RB13-DIS-19-S	5/8/13	1502	Sed	3	X		X			X			1251 1252 1258
RB13-DIS-02-S	5/8/13	1529	Sed	5	X	X	X	X	X	X			1091 1096 1092 1097 1098
RB13-DIS-05-S	5/8/13	1554	Sed	5	X	X	X	X	X	X			1121 1126 1122 1127 1128
RB13-DIS-17-S	5/8/13	1613	Sed	3	X		X			X			1231 1232 1238
RB13-NOP-ER-2	5/8/13	1629	Water	4				X	X	X			1129 1130 1239 1240
RB13-DIS-16-S	5/8/13	1641	Sed	3	X		X			X			1221 1222 1228

Comments/Special Instructions

Conventionals =
TOC
TVS
Total Solids

Relinquished by (Signature): [signature]	Received by (Signature): [signature]	Relinquished by (Signature):	Received by (Signature):
Printed Name: Will Hafner	Printed Name: Rich Hudson	Printed Name:	Printed Name:
Company: New Fields	Company: ARI	Company:	Company:
Date & Time: 5/9/13 1200	Date & Time: 5/9/13 1200	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Newfield

COC No(s): _____ NA

Assigned ARI Job No: WP47

Project Name: North Olympic Peninsula Regional

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc.) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): -1.2 -1.5 -1.6 -.2 4.1 -1.6 -.4 -1.8 -.4

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90877952

Cooler Accepted by: _____ Date: 5/9/13 Time: 1200

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? NA YES NO

Were all bottles sealed in individual plastic bags? YES NO

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI: NA _____

Was Sample Split by ARI: NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JM Date: 5/9/13 Time: 1630

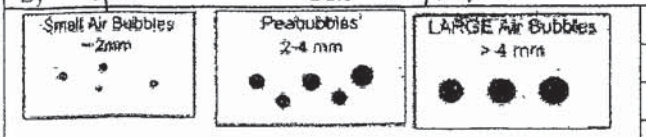
*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

Melted ice in coolers Some sample jars were under water line, submerged. (see additional pages)

By: gw Date: 5/10/13



Small → "sm"	
Peabubbles → "pb"	
Large → "lg"	
Headspace → "hs"	

SAMPLE ID	CONTAINERS UNDER WATER LINE
RB13-DUN-17-S	ALL
RB13-DUN-19-S	ALL
RB13-DUN-14-S	ALL
RB13-DUN-20-S	ALL
RB13-DUN-16-S	ALL
RB13-DUN-22-S	4 oz & 2 oz
RB13-DUN-21-S	ALL
RB13-DUN-15-S	ALL
RB13-DIS-04-S	ALL
RB13-DIS-11-S	ALL
RB13-DIS-08-S	ALL
RB13-DIS-06-S	None
RB13-NOP-RB	2 500 ML AMBER
RB13-NOP-ER1	2 500 ML AMBER
RB13-DIS-09-S	None
RB13-DIS-09-D	None
RB13-DIS-09-T	None
RB13-DUN-18-S	ALL
RB13-DUN-03-S	ALL
RB13-DUN-06-S	ALL
RB13-DUN-07-S	ALL
RB13-DUN-12-S	ALL
RB13-DUN-10-S	ALL
RB13-DUN-13-S	ALL
RB13-DUN-05-S	ALL
RB13-DUN-05-D	ALL
RB13-DUN-05-T	ALL
RB13-DUN-09	ALL
RB13-DUN-04-S	ALL
RB13-DUN-02-S	ALL
RB13-DUN-11-S	ALL
RB13-DUN-01-S	ALL
RB13-DUN-08-S	ALL
RB13-DIS-14-S	4 oz & 2 oz
RB13-DIS-15-S	4 oz & 2 oz
RB13-DIS-18-S	4 oz & 2 oz
RB13-DIS-10-S	16 oz
RB13-DIS-07-S	16 oz
RB13-DIS-01-S	None
RB13-DIS-13-S	None
RB13-DIS-03-S	16 oz & Metals
RB13-DIS-20-S	16 oz & Metals
RB13-DIS-12-S	ALL
RB13-DIS-19-S	None
RB13-DIS-02-S	ALL

WP47 : 00006

RB13-DIS-05-S	None
RB13-DIS-17-S	None
RB13-NOP-ER-2	None
RB13-DIS-16-S	None

WP47 : 00027

NEWFIELDS

NewFields Northwest, LLC.
Shipping: 4729 NE View Dr.
Mailing: P.O. Box 216
Port Gamble, WA. 98364
Tel: (360) 297-6040, Fax: (360)297-7268

CHAIN OF CUSTODY

13638

WPS2

Destination Lab: ARI	Sample Originator: New Fields	Report Results To: Will Hafner	Phone
Destination Contact: Cheyenne Oreiro	Contact Name: Will Hafner	Contact Name	Fax
Date: 5/9/13	Address: 115 2nd Ave N, Edmonds WA 98020	Address	Email
Turn-Around-Time: 15 day			
Project Name: North Olympic Peninsula Regional Background	Phone: 425 967 5265 x103	Invoicing To:	
Contract/PO	Fax	Comments or Special Instructions:	
	E-mail: whafner@newfields.com		

No.	Sample ID	Matrix	No. & Type of Container	Date & Time	Grain Size	Sed Conventionals	Total Sulfides	Cadmium Arsenic Mercury	SIM cPAH		Preservation	Sample Temp Upon Receipt	LAB ID
1	RB13-SEQ-05-S	sed	5	5/9/13 8:57	X	X	X	X	X				1041, 1046, 1042, 1047, 1048
2	RB13-SEQ-08-S	sed	3	5/9/13 9:21	X		X	X			* only analyze Hg from metals		1071, 1072, 1078
3	RB13-SEQ-02-S	sed	5	5/9/13 9:36	X	X	X	X	X				1011, 1006, 1012, 1017, 1018
4	RB13-SEQ-06-S	sed	3	5/9/13 9:52	X		X	X			*		1051, 1052, 1058
5	RB13-SEQ-04-S	sed	5	5/9/13 10:11	X	X	X	X	X				1031, 1036, 1032, 1037, 1038
6	RB13-SEQ-03-S	sed	5	5/9/13 11:04	X	X	X	X	X				1021, 1026, 1022, 1027, 1028
7	RB13-SEQ-03-D	sed	5	5/9/13 11:04	X	X	X	X	X				1029, 1030, 1015, 1079, 1075
8	RB13-SEQ-03-T	sed	3	5/9/13 11:04	X	X	X						1025, 1019, 1020
9	RB13-SEQ-07-S	sed	3	5/9/13 11:24	X		X	X			*		1061, 1062, 1068
10	RB13-SEQ-01-S	sed	5	5/9/13 11:41	X	X	X	X	X				1001, 1006, 1002, 1007, 1008
11	RB13-NOP-ER-3	water	4	5/9/13 10:42				X	X				1229, 1225, 1230, 1339
12													
13													
14													
15													
16													
17													
18													
19													
20													

Relinquished by:	Recieved by:	Relinquished by:	Recieved by:
Print Name: Jon Nuwer	Print Name: Taylor Stevenson	Print Name	Print Name
Signature: [signature]	Signature: [signature]	Signature	Signature
Affiliation: NewFields	Affiliation: ARI	Affiliation	Affiliation
Date/Time: 5/10/13 14:40	Date/Time: 5-10-13 1440	Date/Time.	Date/Time

Matrix Codes
FW = Fresh Water
WW = Waste Water
SB = Salt & Brackish Water
SS = Soil & Sediment
TS = plant & Animal Tissue
OT = Other

WHITE – return to originator • YELLOW – lab • PINK – retained by originator

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: NewFields
COC No(s): NA
Assigned ARI Job No: WP62

Project Name: North olympic
Delivered by: Fed-Ex UPS Courier Hand Delivered Other
Tracking No: NA

Preliminary Examination Phase.

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6 0 °C for chemistry): 2.6 1.4 3.4

If cooler temperature is out of compliance fill out form 00070F — Temp Gun ID# 90877452

Cooler Accepted by: TS Date: 5-16-13 Time:

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:			
Was sufficient ice used (if appropriate)?	NA	YES	NO
Were all bottles sealed in individual plastic bags?		YES	NO
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs).	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI.	NA		

Was Sample Split by ARI: NA YES Date/Time: Equipment: Split by:

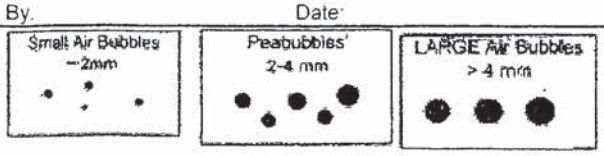
Samples Logged by: TS Date: 5-16-13 Time: 1511

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm"
Peabubbles → "pb"
Large → "lg"
Headspace → "hs"

NP417 : 00009

PRESERVATION VERIFICATION 05/10/13

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **WP62**

PC: Cheronne
VTSR: 05/10/13

Inquiry Number: NONE
Analysis Requested: 05/10/13
Contact: Hafner, Will
Client: Newfields
Logged by: TS
Sample Set Used: Yes-491
Validatable Package: Lv4
Deliverables:

Project #:
Project: North Olympic Peninsula Regional
Sample Site:
SDG No:
Analytical Protocol: PSDDA

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
13-10214 **WP62K**	RB13-NOP-ER-3						TOT Pb															

Checked By TJ Date 5-10-3

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: WP47, WP62

ANALYTICAL
RESOURCES
INCORPORATED

Case Narrative

Client: Newfields
Project: North Olympic Peninsula Regional Background
ARI Job Nos.: WP47 & WP62

Sample Receipt

Fifteen sediment samples and one water sample were received May 9, 2013 under ARI job WP47. The cooler temperatures measured by IR thermometer following ARI SOP were between -1.8 and 4.1°C. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

Ten sediment samples and one water sample were received May 10, 2013 under ARI job WP62. The cooler temperatures measured by IR thermometer following ARI SOP were 1.4, 2.6, and 3.4°C. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

Low-Level PAHs by SW8270-SIM

The samples and associated laboratory QC were extracted and analyzed within recommended holding times.

Initial and continuing calibrations were within method requirements. Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blanks were clean at the reporting limits. The LCS and LCSD percent recoveries were within control limits.

The matrix spike and matrix spike duplicate percent recoveries were within advisory control limits.

Metals/Mercury by SW200.8/7471A/7470A

The samples and associated laboratory QC were digested and analyzed within recommended holding times.

The method blanks were clean at the reporting limits. The LCS percent recoveries were within control limits.

The matrix spike percent recoveries and duplicate RPDs were within control limits.

General Chemistry Parameters

The samples and associated laboratory QC were prepared and analyzed within recommended holding times.

The method blanks were clean at the reporting limits. The LCS percent recoveries were within control limits.

The SRM percent recovery was within limits.

The matrix spike percent recovery of TOC fell outside the control limits low for sample **RB13-DIS-10-S**. All other quality control parameters were met for this analysis. No corrective action was taken.

The matrix spike percent recovery of sulfide fell outside the control limits low for sample **RB13-SEQ-07-S**. All other quality control parameters were met for this analysis. No corrective action was taken.

The replicate RPDs were in control.

Geotechnical Parameters

A laboratory-specific case narrative follows.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: NewFields	**ARI Job No.:** WP47
Client Project: North Olympic Peninsula Regional	

Case Narrative

1. Fifteen samples were submitted for grain size analysis according to Puget Sound Estuary Protocol (PSEP) methodology on May 9, 2013.
2. The samples were run in a single batch and one sample from this job was chosen for triplicate analysis. The triplicate data is reported on the QA summary.
3. Thirteen samples contained woody or other organic matter. Individual organic particles may have broken down during the sieving process affecting the grain size analysis.
4. The data is provided in summary tables and plots.
5. There were no other noted anomalies in this project.

Released by: E Sabet Dokht — Date: May 28, 2013
Technician

Reviewed by: Gwenna Curtis — Date: 5/28/13
Geotechnical Laboratory Manager

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: NewFields	**ARI Job No.:** WP62
Client Project: North Olympic Peninsula Regional	

Case Narrative

1. Ten samples were submitted for grain size analysis according to Puget Sound Estuary Protocol (PSEP) methodology on May 10, 2013.
2. The samples were run in a single batch and one sample from this job was chosen for triplicate analysis. The triplicate data is reported on the QA summary.
3. One sample, RB13-SEQ-02-S was resieved due to a typo on the bench sheet. The resieve has been noted on the bench sheet and is included in the raw data.
4. The samples contained woody or other organic matter. Individual organic particles may have broken down during the sieving process affecting the grain size analysis.
5. The data is provided in summary tables and plots.
6. There were no other noted anomalies in this project.

Released by: _____ Date: May 30, 2013
Technician

Reviewed by: _____ Date: 5/30/13
Geotechnical Laboratory Manager

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: WP47
Client: Newfields
Project Event: N/A
Project Name: North Olympic Peninsula Regional

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	RB13-DIS-14-S	WP47A	13-10126	Sediment	05/08/13 09:56	05/09/13 12:00
2.	RB13-DIS-15-S	WP47B	13-10127	Sediment	05/08/13 10:18	05/09/13 12:00
3.	RB13-DIS-18-S	WP47C	13-10128	Sediment	05/08/13 10:36	05/09/13 12:00
4.	RB13-DIS-10-S	WP47D	13-10129	Sediment	05/08/13 11:27	05/09/13 12:00
5.	RB13-DIS-07-S	WP47E	13-10130	Sediment	05/08/13 11:47	05/09/13 12:00
6.	RB13-DIS-01-S	WP47F	13-10131	Sediment	05/08/13 12:06	05/09/13 12:00
7.	RB13-DIS-13-S	WP47G	13-10132	Sediment	05/08/13 13:29	05/09/13 12:00
8.	RB13-DIS-03-S	WP47H	13-10133	Sediment	05/08/13 13:57	05/09/13 12:00
9.	RB13-DIS-20-S	WP47I	13-10134	Sediment	05/08/13 14:15	05/09/13 12:00
10.	RB13-DIS-12-S	WP47J	13-10135	Sediment	05/08/13 14:35	05/09/13 12:00
11.	RB13-DIS-19-S	WP47K	13-10136	Sediment	05/08/13 15:02	05/09/13 12:00
12.	RB13-DIS-02-S	WP47L	13-10137	Sediment	05/08/13 15:29	05/09/13 12:00
13.	RB13-DIS-05-S	WP47M	13-10138	Sediment	05/08/13 15:54	05/09/13 12:00
14.	RB13-DIS-17-S	WP47N	13-10139	Sediment	05/08/13 16:13	05/09/13 12:00
15.	RB13-NOP-ER-2	WP47O	13-10140	Water	05/08/13 16:29	05/09/13 12:00
16.	RB13-DIS-16-S	WP47P	13-10141	Sediment	05/08/13 16:41	05/09/13 12:00

WP47:0001S

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: WP62
Client: Newfields
Project Event: N/A
Project Name: North Olympic Peninsula Regional

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	RB13-SEQ-05-S	WP62A	13-10204	Sediment	05/09/13 08:57	05/10/13 14:40
2.	RB13-SEQ-08-S	WP62B	13-10205	Sediment	05/09/13 09:21	05/10/13 14:40
3.	RB13-SEQ-02-S	WP62C	13-10206	Sediment	05/09/13 09:36	05/10/13 14:40
4.	RB13-SEQ-06-S	WP62D	13-10207	Sediment	05/09/13 09:52	05/10/13 14:40
5.	RB13-SEQ-04-S	WP62E	13-10208	Sediment	05/09/13 10:11	05/10/13 14:40
6.	RB13-SEQ-03-S	WP62F	13-10209	Sediment	05/09/13 11:04	05/10/13 14:40
7.	RB13-SEQ-03-D	WP62G	13-10210	Sediment	05/09/13 11:04	05/10/13 14:40
8.	RB13-SEQ-03-T	WP62H	13-10211	Sediment	05/09/13 11:04	05/10/13 14:40
9.	RB13-SEQ-07-S	WP62I	13-10212	Sediment	05/09/13 11:24	05/10/13 14:40
10.	RB13-SEQ-01-S	WP62J	13-10213	Sediment	05/09/13 11:41	05/10/13 14:40
11.	RB13-NOP-ER-3	WP62K	13-10214	Water	05/09/13 10:42	05/10/13 14:40

UP47:00017

SIM PAH Analysis
Report and Summary QC Forms

ARI Job ID: WP47, WP62

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DIS-10-S
SAMPLE

Lab Sample ID: WP47D
LIMS ID: 13-10129
Matrix: Sediment
Data Release Authorized:
Reported: 06/04/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Date Extracted: 05/17/13
Date Analyzed: 05/22/13 20:44
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.17 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 70.1%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.49	11.5
218-01-9	Chrysene	0.49	19.6
205-99-2	Benzo(b)fluoranthene	0.49	16.0
207-08-9	Benzo(k)fluoranthene	0.49	7.33
50-32-8	Benzo(a)pyrene	0.49	11.9
193-39-5	Indeno(1,2,3-cd)pyrene	0.49	8.26
53-70-3	Dibenz(a,h)anthracene	0.49	2.12
TOTBFA	Total Benzofluoranthenes	0.98	29.4

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	60.3%
d10-2-Methylnaphthalene	57.7%
d14-Dibenzo(a,h)anthracen	63.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DIS-07-S
SAMPLE

Lab Sample ID: WP47E
LIMS ID: 13-10130
Matrix: Sediment
Data Release Authorized:
Reported: 05/24/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Date Extracted: 05/17/13
Date Analyzed: 05/22/13 21:13
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.04 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 70.5%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.50	15.3
218-01-9	Chrysene	0.50	25.2
205-99-2	Benzo(b)fluoranthene	0.50	21.0
207-08-9	Benzo(k)fluoranthene	0.50	10.0
50-32-8	Benzo(a)pyrene	0.50	15.5
193-39-5	Indeno(1,2,3-cd)pyrene	0.50	11.5
53-70-3	Dibenz(a,h)anthracene	0.50	2.88
TOTBFA	Total Benzofluoranthenes	1.00	39.3

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	58.7%
d10-2-Methylnaphthalene	54.7%
d14-Dibenzo(a,h)anthracen	63.0%

UPLT : 00039

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DIS-01-S
SAMPLE

Lab Sample ID: WP47F
LIMS ID: 13-10131
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/24/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Date Extracted: 05/17/13
Date Analyzed: 05/22/13 21:42
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.17 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 77.9%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.49	18.8
218-01-9	Chrysene	0.49	28.0
205-99-2	Benzo(b)fluoranthene	0.49	27.3
207-08-9	Benzo(k)fluoranthene	0.49	10.8
50-32-8	Benzo(a)pyrene	0.49	21.8
193-39-5	Indeno(1,2,3-cd)pyrene	0.49	15.7
53-70-3	Dibenz(a,h)anthracene	0.49	3.37
TOTBFA	Total Benzofluoranthenes	0.98	49.2

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	49.3%
d10-2-Methylnaphthalene	60.0%
d14-Dibenzo(a,h)anthracen	71.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DIS-03-S
SAMPLE

Lab Sample ID: WP47H
LIMS ID: 13-10133
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/24/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Date Extracted: 05/17/13
Date Analyzed: 05/22/13 22:11
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.48 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 19.6%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.48	1.24
218-01-9	Chrysene	0.48	1.86
205-99-2	Benzo(b)fluoranthene	0.48	1.74
207-08-9	Benzo(k)fluoranthene	0.48	0.93
50-32-8	Benzo(a)pyrene	0.48	1.44
193-39-5	Indeno(1,2,3-cd)pyrene	0.48	0.96
53-70-3	Dibenz(a,h)anthracene	0.48	0.27 J
TOTBFA	Total Benzofluoranthenes	0.95	3.41

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	87.0%
d10-2-Methylnaphthalene	53.3%
d14-Dibenzo(a,h)anthracen	74.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DIS-12-S
SAMPLE

Lab Sample ID: WP47J
LIMS ID: 13-10135
Matrix: Sediment
Data Release Authorized:
Reported: 05/24/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Date Extracted: 05/17/13
Date Analyzed: 05/23/13 12:32
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.24 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 21.5%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.49	1.96
218-01-9	Chrysene	0.49	3.13
205-99-2	Benzo(b)fluoranthene	0.49	2.98
207-08-9	Benzo(k)fluoranthene	0.49	1.13
50-32-8	Benzo(a)pyrene	0.49	2.08
193-39-5	Indeno(1,2,3-cd)pyrene	0.49	1.77
53-70-3	Dibenz(a,h)anthracene	0.49	0.41 J
TOTBFA	Total Benzofluoranthenes	0.98	5.27

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	85.3%
d10-2-Methylnaphthalene	55.0%
d14-Dibenzo(a,h)anthracen	78.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DIS-02-S
SAMPLE

Lab Sample ID: WP47L
LIMS ID: 13-10137
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/24/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Date Extracted: 05/17/13
Date Analyzed: 05/23/13 13:59
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.23 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 71.6%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.49	12.6
218-01-9	Chrysene	0.49	21.3
205-99-2	Benzo(b)fluoranthene	0.49	16.8
207-08-9	Benzo(k)fluoranthene	0.49	7.13
50-32-8	Benzo(a)pyrene	0.49	12.9
193-39-5	Indeno(1,2,3-cd)pyrene	0.49	9.82
53-70-3	Dibenz(a,h)anthracene	0.49	2.51
TOTBFA	Total Benzofluoranthenes	0.98	30.7

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	39.7%
d10-2-Methylnaphthalene	54.0%
d14-Dibenzo(a,h)anthracen	64.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DIS-05-S
SAMPLE

Lab Sample ID: WP47M
LIMS ID: 13-10138
Matrix: Sediment
Data Release Authorized:
Reported: 05/24/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Date Extracted: 05/17/13
Date Analyzed: 05/23/13 14:28
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.16 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 51.6%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.49	12.7
218-01-9	Chrysene	0.49	19.5
205-99-2	Benzo(b)fluoranthene	0.49	14.6
207-08-9	Benzo(k)fluoranthene	0.49	6.49
50-32-8	Benzo(a)pyrene	0.49	12.7
193-39-5	Indeno(1,2,3-cd)pyrene	0.49	9.11
53-70-3	Dibenz(a,h)anthracene	0.49	2.40
TOTBFA	Total Benzofluoranthenes	0.98	27.3

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	53.0%
d10-2-Methylnaphthalene	54.0%
d14-Dibenzo(a,h)anthracen	77.7%

ANALYTICAL RESOURCES INCORPORATED

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Sediment

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Client ID	FLN	MNP	DBA	TOT OUT
RB13-DIS-10-S	60.3%	57.7%	63.7%	0
RB13-DIS-07-S	58.7%	54.7%	63.0%	0
RB13-DIS-01-S	49.3%	60.0%	71.7%	0
RB13-DIS-03-S	87.0%	53.3%	74.3%	0
MB-051713	83.3%	59.0%	76.0%	0
LCS-051713	87.7%	63.0%	80.0%	0
RB13-DIS-12-S	85.3%	55.0%	78.3%	0
RB13-DIS-12-S MS	88.7%	56.3%	84.3%	0
RB13-DIS-12-S MSD	88.7%	57.0%	85.0%	0
RB13-DIS-02-S	39.7%	54.0%	64.3%	0
RB13-DIS-05-S	53.0%	54.0%	77.7%	0

	LCS/MB LIMITS	QC LIMITS
(FLN) = d10-Fluoranthene	(30-160)	(30-160)
(MNP) = d10-2-Methylnaphthalene	(30-160)	(30-160)
(DBA) = d14-Dibenzo(a,h)anthracene	(30-160)	(30-160)

Prep Method: SW3546
Log Number Range: 13-10129 to 13-10138

FORM-II SIM SW8270

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-SEQ-05-S
SAMPLE

Lab Sample ID: WP62A
LIMS ID: 13-10204
Matrix: Sediment
Data Release Authorized: MM
Reported: 05/24/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Date Extracted: 05/17/13
Date Analyzed: 05/23/13 15:26
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.28 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 67.9%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.49	11.2
218-01-9	Chrysene	0.49	18.5
205-99-2	Benzo(b)fluoranthene	0.49	18.4
207-08-9	Benzo(k)fluoranthene	0.49	7.94
50-32-8	Benzo(a)pyrene	0.49	12.4
193-39-5	Indeno(1,2,3-cd)pyrene	0.49	12.7
53-70-3	Dibenz(a,h)anthracene	0.49	2.74
TOTBFA	Total Benzofluoranthenes	0.97	33.9

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	57.3%
d14-Dibenzo(a,h)anthracen	79.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-SEQ-02-S
SAMPLE

Lab Sample ID: WP62C
LIMS ID: 13-10206
Matrix: Sediment
Data Release Authorized:
Reported: 05/24/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Date Extracted: 05/17/13
Date Analyzed: 05/23/13 15:55
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.32 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 63.2%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.48	13.6
218-01-9	Chrysene	0.48	22.0
205-99-2	Benzo(b)fluoranthene	0.48	19.7
207-08-9	Benzo(k)fluoranthene	0.48	9.37
50-32-8	Benzo(a)pyrene	0.48	14.2
193-39-5	Indeno(1,2,3-cd)pyrene	0.48	12.4
53-70-3	Dibenz(a,h)anthracene	0.48	2.87
TOTBFA	Total Benzofluoranthenes	0.97	36.6

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	61.3%
d14-Dibenzo(a,h)anthracen	77.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-SEQ-04-S
SAMPLE

Lab Sample ID: WP62E
LIMS ID: 13-10208
Matrix: Sediment
Data Release Authorized:
Reported: 05/24/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Date Extracted: 05/17/13
Date Analyzed: 05/23/13 16:24
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.36 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 56.9%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.48	11.1
218-01-9	Chrysene	0.48	19.8
205-99-2	Benzo(b)fluoranthene	0.48	16.2
207-08-9	Benzo(k)fluoranthene	0.48	7.98
50-32-8	Benzo(a)pyrene	0.48	11.4
193-39-5	Indeno(1,2,3-cd)pyrene	0.48	9.51
53-70-3	Dibenz(a,h)anthracene	0.48	2.37
TOTBFA	Total Benzofluoranthenes	0.96	30.3

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	59.7%
d14-Dibenzo(a,h)anthracen	78.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-SEQ-03-S
SAMPLE

Lab Sample ID: WP62F
LIMS ID: 13-10209
Matrix: Sediment
Data Release Authorized:
Reported: 05/24/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Date Extracted: 05/17/13
Date Analyzed: 05/23/13 16:53
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.10 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 65.2%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.50	14.7
218-01-9	Chrysene	0.50	24.2
205-99-2	Benzo(b)fluoranthene	0.50	22.2
207-08-9	Benzo(k)fluoranthene	0.50	10.9
50-32-8	Benzo(a)pyrene	0.50	16.0
193-39-5	Indeno(1,2,3-cd)pyrene	0.50	12.6
53-70-3	Dibenz(a,h)anthracene	0.50	3.05
TOTBFA	Total Benzofluoranthenes	0.99	41.8

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	57.7%
d14-Dibenzo(a,h)anthracen	80.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-SEQ-03-D
SAMPLE

Lab Sample ID: WP62G
LIMS ID: 13-10210
Matrix: Sediment
Data Release Authorized:
Reported: 05/24/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Date Extracted: 05/17/13
Date Analyzed: 05/23/13 17:22
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.16 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 66.2%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.49	14.0
218-01-9	Chrysene	0.49	21.7
205-99-2	Benzo(b)fluoranthene	0.49	23.3
207-08-9	Benzo(k)fluoranthene	0.49	8.59
50-32-8	Benzo(a)pyrene	0.49	15.4
193-39-5	Indeno(1,2,3-cd)pyrene	0.49	11.8
53-70-3	Dibenz(a,h)anthracene	0.49	2.84
TOTBFA	Total Benzofluoranthenes	0.98	40.2

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	58.7%
d14-Dibenzo(a,h)anthracen	74.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-SEQ-01-S
SAMPLE

Lab Sample ID: WP62J
LIMS ID: 13-10213
Matrix: Sediment
Data Release Authorized:
Reported: 05/24/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Date Extracted: 05/17/13
Date Analyzed: 05/23/13 17:51
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.12 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 71.1%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.49	14.3
218-01-9	Chrysene	0.49	22.9
205-99-2	Benzo(b)fluoranthene	0.49	21.0
207-08-9	Benzo(k)fluoranthene	0.49	10.3
50-32-8	Benzo(a)pyrene	0.49	15.7
193-39-5	Indeno(1,2,3-cd)pyrene	0.49	10.9
53-70-3	Dibenz(a,h)anthracene	0.49	2.68
TOTBFA	Total Benzofluoranthenes	0.99	39.5

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	57.7%
d14-Dibenzo(a,h)anthracen	73.7%

ANALYTICAL RESOURCES INCORPORATED

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Sediment

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Client ID	MNP	DBA	TOT OUT
MB-051713	59.0%	76.0%	0
LCS-051713	63.0%	80.0%	0
RB13-SEQ-05-S	57.3%	79.3%	0
RB13-SEQ-02-S	61.3%	77.7%	0
RB13-SEQ-04-S	59.7%	78.0%	0
RB13-SEQ-03-S	57.7%	80.3%	0
RB13-SEQ-03-D	58.7%	74.7%	0
RB13-SEQ-01-S	57.7%	73.7%	0

	LCS/MB LIMITS	QC LIMITS
(MNP) = d10-2-Methylnaphthalene	(30-160)	(30-160)
(DBA) = d14-Dibenzo(a,h)anthracene	(30-160)	(30-160)

Prep Method: SW3546
Log Number Range: 13-10204 to 13-10213

FORM-II SIM SW8270

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS

Sample ID: RB13-DIS-12-S
MATRIX SPIKE

Lab Sample ID: WP47J
LIMS ID: 13-10135
Matrix: Sediment
Data Release Authorized:
Reported: 05/24/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Date Extracted MS/MSD: 05/17/13

Date Analyzed MS: 05/23/13 13:01
MSD: 05/23/13 13:30
Instrument/Analyst MS: NT11/VTS
MSD: NT11/VTS

Sample Amount MS: 10.22 g-dry-wt
MSD: 10.23 g-dry-wt
Final Extract Volume MS: 0.50 mL
MSD: 0.50 mL
Dilution Factor MS: 1.00
MSD: 1.00

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Benzo(a)anthracene	2.0	14.6	14.7	85.7%	15.2	14.7	89.8%	4.0%
Chrysene	3.1	15.1	14.7	81.6%	15.8	14.7	86.4%	4.5%
Benzo(b)fluoranthene	3.0	14.3	14.7	76.9%	15.1	14.7	82.3%	5.4%
Benzo(k)fluoranthene	1.1	13.4	14.7	83.7%	13.9	14.7	87.1%	3.7%
Benzo(a)pyrene	2.1	14.1	14.7	81.6%	14.8	14.7	86.4%	4.8%
Indeno(1,2,3-cd)pyrene	1.8	13.6	14.7	80.3%	14.3	14.7	85.0%	5.0%
Dibenz(a,h)anthracene	0.4 J	11.9	14.7	78.2%	12.5	14.7	82.3%	4.9%
Total Benzofluoranthenes	5.3	39.7	44.0	78.2%	41.7	44.0	82.7%	4.9%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DIS-12-S
MATRIX SPIKE

Lab Sample ID: WP47J
LIMS ID: 13-10135
Matrix: Sediment
Data Release Authorized:
Reported: 05/24/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Date Extracted: 05/17/13
Date Analyzed: 05/23/13 13:01
Instrument/Analyst: NT11/VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.22 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 21.5%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.49	---
218-01-9	Chrysene	0.49	---
205-99-2	Benzo(b)fluoranthene	0.49	---
207-08-9	Benzo(k)fluoranthene	0.49	---
50-32-8	Benzo(a)pyrene	0.49	---
193-39-5	Indeno(1,2,3-cd)pyrene	0.49	---
53-70-3	Dibenz(a,h)anthracene	0.49	---
TOTBFA	Total Benzofluoranthenes	0.98	---

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	88.7%
d10-2-Methylnaphthalene	56.3%
d14-Dibenzo(a,h)anthracen	84.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-DIS-12-S
MATRIX SPIKE DUPLICATE

Lab Sample ID: WP47J
LIMS ID: 13-10135
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/24/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Date Extracted: 05/17/13
Date Analyzed: 05/23/13 13:30
Instrument/Analyst: NT11/VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.23 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 21.5%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.49	---
218-01-9	Chrysene	0.49	---
205-99-2	Benzo(b)fluoranthene	0.49	---
207-08-9	Benzo(k)fluoranthene	0.49	---
50-32-8	Benzo(a)pyrene	0.49	---
193-39-5	Indeno(1,2,3-cd)pyrene	0.49	---
53-70-3	Dibenz(a,h)anthracene	0.49	---
TOTBFA	Total Benzofluoranthenes	0.98	---

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	88.7%
d10-2-Methylnaphthalene	57.0%
d14-Dibenzo(a,h)anthracen	85.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS

Sample ID: LCS-051713
LAB CONTROL SAMPLE

Lab Sample ID: LCS-051713
LIMS ID: 13-10135
Matrix: Sediment
Data Release Authorized:
Reported: 05/24/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 05/17/13
Date Analyzed LCS: 05/22/13 17:22
Instrument/Analyst LCS: NT11/VTS

Sample Amount LCS: 10.00 g-dry-wt
Final Extract Volume LCS: 0.50 mL
Dilution Factor LCS: 1.00

Analyte	LCS	Spike Added	Recovery
Benzo(a)anthracene	12.3	15.0	82.0%
Chrysene	12.3	15.0	82.0%
Benzo(b)fluoranthene	11.0	15.0	73.3%
Benzo(k)fluoranthene	12.5	15.0	83.3%
Benzo(a)pyrene	10.7	15.0	71.3%
Indeno(1,2,3-cd)pyrene	11.5	15.0	76.7%
Dibenz(a,h)anthracene	11.2	15.0	74.7%
Total Benzofluoranthenes	36.0	45.0	80.0%

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	87.7%
d10-2-Methylnaphthalene	63.0%
d14-Dibenzo(a,h)anthracen	80.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: MB-051713
METHOD BLANK

Lab Sample ID: MB-051713
LIMS ID: 13-10135
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/24/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 05/17/13
Date Analyzed: 05/22/13 16:53
Instrument/Analyst: NT11/VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.00 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.50	< 0.50 U
218-01-9	Chrysene	0.50	< 0.50 U
205-99-2	Benzo(b)fluoranthene	0.50	< 0.50 U
207-08-9	Benzo(k)fluoranthene	0.50	< 0.50 U
50-32-8	Benzo(a)pyrene	0.50	< 0.50 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.50	< 0.50 U
53-70-3	Dibenz(a,h)anthracene	0.50	< 0.50 U
TOTBFA	Total Benzofluoranthenes	1.00	< 1.00 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	83.3%
d10-2-Methylnaphthalene	59.0%
d14-Dibenzo(a,h)anthracen	76.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3510C

Sample ID: RB13-NOP-ER-2
SAMPLE

Lab Sample ID: WP470
LIMS ID: 13-10140
Matrix: Water
Data Release Authorized:
Reported: 05/15/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Date Extracted: 05/13/13
Date Analyzed: 05/15/13 13:22
Instrument/Analyst: NT11/VTS

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	0.010	< 0.010 U
218-01-9	Chrysene	0.010	< 0.010 U
205-99-2	Benzo(b)fluoranthene	0.010	< 0.010 U
207-08-9	Benzo(k)fluoranthene	0.010	< 0.010 U
50-32-8	Benzo(a)pyrene	0.010	< 0.010 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	< 0.010 U
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
TOTBFA	Total Benzofluoranthenes	0.020	< 0.020 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	77.0%
d10-2-Methylnaphthalene	66.0%
d14-Dibenzo(a,h)anthracene	61.3%

ANALYTICAL RESOURCES INCORPORATED

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Client ID	FLN	MNP	DBA	TOT OUT
MB-051313	80.3%	73.0%	67.7%	0
LCS-051313	87.7%	78.0%	77.0%	0
LCSD-051313	86.3%	76.3%	76.3%	0
RB13-NOP-ER-2	77.0%	66.0%	61.3%	0

	LCS/MB LIMITS	QC LIMITS
(FLN) = d10-Fluoranthene	(30-160)	(30-150)
(MNP) = d10-2-Methylnaphthalene	(40-120)	(35-120)
(DBA) = d14-Dibenzo(a,h)anthracene	(31-120)	(26-120)

Prep Method: SW3510C
Log Number Range: 13-10140 to 13-10140

FORM-II SIM SW8270

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3510C

Sample ID: RB13-NOP-ER-3
SAMPLE

Lab Sample ID: WP62K
LIMS ID: 13-10214
Matrix: Water
Data Release Authorized:
Reported: 05/15/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Date Extracted: 05/13/13
Date Analyzed: 05/15/13 13:51
Instrument/Analyst: NT11/VTS

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	0.010	< 0.010 U
218-01-9	Chrysene	0.010	< 0.010 U
205-99-2	Benzo(b)fluoranthene	0.010	< 0.010 U
207-08-9	Benzo(k)fluoranthene	0.010	< 0.010 U
50-32-8	Benzo(a)pyrene	0.010	< 0.010 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	< 0.010 U
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
TOTBFA	Total Benzofluoranthenes	0.020	< 0.020 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	68.0%
d14-Dibenzo(a,h)anthracene	61.0%

ANALYTICAL RESOURCES INCORPORATED

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Client ID	MNP	DBA	TOT OUT
MB-051313	73.0%	67.7%	0
LCS-051313	78.0%	77.0%	0
LCSD-051313	76.3%	76.3%	0
RB13-NOP-ER-3	68.0%	61.0%	0

	LCS/MB LIMITS	QC LIMITS
(MNP) = d10-2-Methylnaphthalene	(40-120)	(35-120)
(DBA) = d14-Dibenzo(a,h)anthracene	(31-120)	(26-120)

Prep Method: SW3510C
Log Number Range: 13-10214 to 13-10214

FORM-II SIM SW8270

WP47:00053

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS

Sample ID: LCS-051313
LAB CONTROL SAMPLE

Lab Sample ID: LCS-051313
LIMS ID: 13-10140
Matrix: Water
Data Release Authorized:
Reported: 05/15/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 05/13/13

Date Analyzed LCS: 05/15/13 10:57
LCSD: 05/15/13 11:26
Instrument/Analyst LCS: NT11/VTS
LCSD: NT11/VTS

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzo(a)anthracene	0.245	0.300	81.7%	0.249	0.300	83.0%	1.6%
Chrysene	0.246	0.300	82.0%	0.250	0.300	83.3%	1.6%
Benzo(b)fluoranthene	0.221	0.300	73.7%	0.229	0.300	76.3%	3.6%
Benzo(k)fluoranthene	0.252	0.300	84.0%	0.255	0.300	85.0%	1.2%
Benzo(a)pyrene	0.203	0.300	67.7%	0.209	0.300	69.7%	2.9%
Indeno(1,2,3-cd)pyrene	0.224	0.300	74.7%	0.230	0.300	76.7%	2.6%
Dibenz(a,h)anthracene	0.218	0.300	72.7%	0.222	0.300	74.0%	1.8%
Total Benzofluoranthenes	0.728	0.900	80.9%	0.744	0.900	82.7%	2.2%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

SIM Semivolatile Surrogate Recovery

	LCS	LCSD
d10-Fluoranthene	87.7%	86.3%
d10-2-Methylnaphthalene	78.0%	76.3%
d14-Dibenzo(a,h)anthracene	77.0%	76.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3510C

Sample ID: MB-051313
METHOD BLANK

Lab Sample ID: MB-051313
LIMS ID: 13-10140
Matrix: Water
Data Release Authorized:
Reported: 05/15/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 05/13/13
Date Analyzed: 05/15/13 10:28
Instrument/Analyst: NT11/VTS

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	0.010	< 0.010 U
218-01-9	Chrysene	0.010	< 0.010 U
205-99-2	Benzo(b)fluoranthene	0.010	< 0.010 U
207-08-9	Benzo(k)fluoranthene	0.010	< 0.010 U
50-32-8	Benzo(a)pyrene	0.010	< 0.010 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	< 0.010 U
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
TOTBFA	Total Benzofluoranthenes	0.020	< 0.020 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	80.3%
d10-2-Methylnaphthalene	73.0%
d14-Dibenzo(a,h)anthracene	67.7%

Metals Analysis
Report and Summary QC Forms

ARI Job ID: WP47, WP62

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INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Newfields

PROJECT: North Olympic Penins

SDG: WP47

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
RB13-DIS-14-S	WP47A	13-10126	
RB13-DIS-15-S	WP47B	13-10127	
RB13-DIS-18-S	WP47C	13-10128	
RB13-DIS-10-S	WP47D	13-10129	
RB13-DIS-10-SD	WP47DDUP	13-10129	
RB13-DIS-10-SS	WP47DSPK	13-10129	
RB13-DIS-07-S	WP47E	13-10130	
PBS	WP47MB1	13-10130	
LCSS	WP47MB1SPK	13-10130	
RB13-DIS-01-S	WP47F	13-10131	
RB13-DIS-13-S	WP47G	13-10132	
RB13-DIS-03-S	WP47H	13-10133	
RB13-DIS-20-S	WP47I	13-10134	
RB13-DIS-12-S	WP47J	13-10135	
RB13-DIS-19-S	WP47K	13-10136	
RB13-DIS-02-S	WP47L	13-10137	
RB13-DIS-05-S	WP47M	13-10138	
RB13-DIS-17-S	WP47N	13-10139	
PBW	WP47MB2	13-10140	
LCSW	WP47MB2SPK	13-10140	
RB13-NOP-ER-2	WP47O	13-10140	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments: _____

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: _____ Name: Jay Kuhn

Date: 5/20/13 Title: Inorganics Director

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Newfields

PROJECT: North Olympic Penins

SDG: WP47

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
RB13-NOP-ER-2D	WP47ODUP	13-10140	
RB13-NOP-ER-2S	WP47OSPK	13-10140	
RB13-DIS-16-S	WP47P	13-10141	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments: _____

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: _____ Name: Jay Kuhn

Date: 5/20/13 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-14-S
SAMPLE

Lab Sample ID: WP47A
LIMS ID: 13-10126
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

Percent Total Solids: 54.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.04	**0.05**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-15-S
SAMPLE

Lab Sample ID: WP47B
LIMS ID: 13-10127
Matrix: Sediment
Data Release Authorized
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

Percent Total Solids: 48.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.05	**0.08**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-18-S
SAMPLE

Lab Sample ID: WP47C
LIMS ID: 13-10128
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

Percent Total Solids: 49.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.04	**0.07**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-10-S
SAMPLE

Lab Sample ID: WP47D
LIMS ID: 13-10129
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

Percent Total Solids: 26.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.7	**8.3**	
3050B	05/13/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.4	**0.7**	
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.08	**0.11**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-07-S
SAMPLE

Lab Sample ID: WP47E
LIMS ID: 13-10130
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

Percent Total Solids: 26.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.7	**13.5**	
3050B	05/13/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.4	**1.3**	
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.07	**0.12**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-01-S
SAMPLE

Lab Sample ID: WP47F
LIMS ID: 13-10131
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

Percent Total Solids: 20.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.9	**11.8**	
3050B	05/13/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.5	**2.6**	
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.1	**0.1**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-13-S
SAMPLE

Lab Sample ID: WP47G
LIMS ID: 13-10132
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

Percent Total Solids: 65.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.03	**0.03**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-03-S
SAMPLE

Lab Sample ID: WP47H
LIMS ID: 13-10133
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

Percent Total Solids: 75.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.3	**2.2**	
3050B	05/13/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.1	**0.2**	
CLP	05/13/13	7471A	05/14/13	7439-97-6	Mercury	0.03	0.03	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-20-S
SAMPLE

Lab Sample ID: WP47I
LIMS ID: 13-10134
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

Percent Total Solids: 26.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.08	**0.12**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-12-S
SAMPLE

Lab Sample ID: WP47J
LIMS ID: 13-10135
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

Percent Total Solids: 71.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.3	**3.2**	
3050B	05/13/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.1	**0.1**	
CLP	05/13/13	7471A	05/14/13	7439-97-6	Mercury	0.03	0.03	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-19-S
SAMPLE

Lab Sample ID: WP47K
LIMS ID: 13-10136
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

Percent Total Solids: 76.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/13/13	7471A	05/14/13	7439-97-6	Mercury	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-02-S
SAMPLE

Lab Sample ID: WP47L
LIMS ID: 13-10137
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

Percent Total Solids: 25.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.8	**10.1**	
3050B	05/13/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.4	**1.0**	
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.08	**0.09**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-05-S
SAMPLE

Lab Sample ID: WP47M
LIMS ID: 13-10138
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

Percent Total Solids: 46.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.4	**6.5**	
3050B	05/13/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.2	**0.5**	
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.05	**0.09**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-17-S
SAMPLE

Lab Sample ID: WP47N
LIMS ID: 13-10139
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

Percent Total Solids: 35.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.06	**0.12**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-NOP-ER-2
SAMPLE

Lab Sample ID: WP47O
LIMS ID: 13-10140
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/13/13	200.8	05/15/13	7440-38-2	Arsenic	0.2	0.2	U
200.8	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
7470A	05/13/13	7470A	05/17/13	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-16-S
SAMPLE

Lab Sample ID: WP47P
LIMS ID: 13-10141
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

Percent Total Solids: 41.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/13/13	7471A	05/14/13	**7439-97-6**	**Mercury**	0.05	**0.10**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-10-S
MATRIX SPIKE

Lab Sample ID: WP47D
LIMS ID: 13-10129
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	8.3	97.6	92.0	97.1%	
Cadmium	200.8	0.7	87.7	92.0	94.6%	
Mercury	7471A	0.11	1.03	0.823	112%	

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-DIS-10-S
DUPLICATE

Lab Sample ID: WP47D
LIMS ID: 13-10129
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	8.3	8.3	0.0%	+/- 20%	
Cadmium	200.8	0.7	0.7	0.0%	+/- 0.4	L
Mercury	7471A	0.11	0.11	0.0%	+/- 0.08	L

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-NOP-ER-2
MATRIX SPIKE

Lab Sample ID: WP47O
LIMS ID: 13-10140
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	0.2 U	24.4	25.0	97.6%	
Cadmium	200.8	0.1 U	23.7	25.0	94.8%	
Mercury	7470A	0.1 U	1.0	1.0	100%	

Reported in µg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked
NR-Not Recovered

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-NOP-ER-2
DUPLICATE

Lab Sample ID: WP47O
LIMS ID: 13-10140
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/08/13
Date Received: 05/09/13

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	0.2 U	0.2 U	0.0%	+/- 0.2	L
Cadmium	200.8	0.1 U	0.1 U	0.0%	+/- 0.1	L
Mercury	7470A	0.1 U	0.1 U	0.0%	+/- 0.1	L

Reported in µg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: WP47LCS
LIMS ID: 13-10130
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	25.1	25.0	100%	
Cadmium	200.8	23.8	25.0	95.2%	
Mercury	7471A	0.54	0.50	108%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: WP47LCS
LIMS ID: 13-10140
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	25.5	25.0	102%	
Cadmium	200.8	24.4	25.0	97.6%	
Mercury	7470A	2.1	2.0	105%	

Reported in µg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: WP47MB
LIMS ID: 13-10130
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/13/13	200.8	05/15/13	7440-38-2	Arsenic	0.2	0.2	U
3050B	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/13/13	7471A	05/14/13	7439-97-6	Mercury	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: WP47MB
LIMS ID: 13-10140
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP47-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/13/13	200.8	05/15/13	7440-38-2	Arsenic	0.2	0.2	U
200.8	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
7470A	05/13/13	7470A	05/17/13	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL
RL-Reporting Limit

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INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Newfields

PROJECT: North Olympic Penins

SDG: WP62

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
RB13-SEQ-05-S	WP62A	13-10204	
RB13-SEQ-05-SD	WP62ADUP	13-10204	
RB13-SEQ-05-SS	WP62ASPK	13-10204	
RB13-SEQ-08-S	WP62B	13-10205	
RB13-SEQ-02-S	WP62C	13-10206	
PBS	WP62MB1	13-10206	
LCSS	WP62MB1SPK	13-10206	
RB13-SEQ-06-S	WP62D	13-10207	
RB13-SEQ-04-S	WP62E	13-10208	
RB13-SEQ-03-S	WP62F	13-10209	
RB13-SEQ-03-D	WP62G	13-10210	
RB13-SEQ-07-S	WP62I	13-10212	
RB13-SEQ-01-S	WP62J	13-10213	
RB13-NOP-ER-3	WP62K	13-10214	
RB13-NOP-ER-3D	WP62KDUP	13-10214	
RB13-NOP-ER-3S	WP62KSPK	13-10214	
PBW	WP62MB2	13-10214	
LCSW	WP62MB2SPK	13-10214	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments: _____

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: _____ Name: Jay Kuhn

Date: 5/20/13 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-SEQ-05-S
SAMPLE

Lab Sample ID: WP62A
LIMS ID: 13-10204
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/09/13
Date Received: 05/10/13

Percent Total Solids: 30.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/14/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.6	**7.7**	
3050B	05/14/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.3	**3.6**	
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.07	**0.09**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

UPU7:09:24

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-SEQ-08-S
SAMPLE

Lab Sample ID: WP62B
LIMS ID: 13-10205
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/09/13
Date Received: 05/10/13

Percent Total Solids: 33.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.07	**0.10**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-SEQ-02-S
SAMPLE

Lab Sample ID: WP62C
LIMS ID: 13-10206
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/09/13
Date Received: 05/10/13

Percent Total Solids: 34.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/14/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.5	**7.9**	
3050B	05/14/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.3	**1.4**	
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.05	**0.10**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-SEQ-06-S
SAMPLE

Lab Sample ID: WP62D
LIMS ID: 13-10207
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/09/13
Date Received: 05/10/13

Percent Total Solids: 33.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.06	**0.09**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-SEQ-04-S
SAMPLE

Lab Sample ID: WP62E
LIMS ID: 13-10208
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/09/13
Date Received: 05/10/13

Percent Total Solids: 42.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/14/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.5	**7.5**	
3050B	05/14/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.2	**1.1**	
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.05	**0.08**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-SEQ-03-S
SAMPLE

Lab Sample ID: WP62F
LIMS ID: 13-10209
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/09/13
Date Received: 05/10/13

Percent Total Solids: 31.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/14/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.6	**8.0**	
3050B	05/14/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.3	**2.1**	
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.07	**0.09**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-SEQ-03-D
SAMPLE

Lab Sample ID: WP62G
LIMS ID: 13-10210
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/09/13
Date Received: 05/10/13

Percent Total Solids: 32.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/14/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.6	**7.7**	
3050B	05/14/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.3	**1.9**	
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.06	**0.10**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-SEQ-07-S
SAMPLE

Lab Sample ID: WP62I
LIMS ID: 13-10212
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/09/13
Date Received: 05/10/13

Percent Total Solids: 27.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.06	**0.09**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-SEQ-01-S
SAMPLE

Lab Sample ID: WP62J
LIMS ID: 13-10213
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/09/13
Date Received: 05/10/13

Percent Total Solids: 27.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/14/13	200.8	05/15/13	**7440-38-2**	**Arsenic**	0.7	**7.0**	
3050B	05/14/13	200.8	05/15/13	**7440-43-9**	**Cadmium**	0.4	**1.7**	
CLP	05/14/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.07	**0.08**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-NOP-ER-3
SAMPLE

Lab Sample ID: WP62K
LIMS ID: 13-10214
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/09/13
Date Received: 05/10/13

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/13/13	200.8	05/15/13	7440-38-2	Arsenic	0.2	0.2	U
200.8	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
7470A	05/13/13	7470A	05/17/13	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-SEQ-05-S
MATRIX SPIKE

Lab Sample ID: WP62A
LIMS ID: 13-10204
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/09/13
Date Received: 05/10/13

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	7.7	82.9	79.8	94.2%	
Cadmium	200.8	3.6	77.9	79.8	93.1%	
Mercury	7471A	0.09	0.99	0.725	124%	

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

WP47:00131

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-SEQ-05-S
DUPLICATE

Lab Sample ID: WP62A
LIMS ID: 13-10204
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/09/13
Date Received: 05/10/13

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	7.7	7.9	2.6%	+/- 20%	
Cadmium	200.8	3.6	3.6	0.0%	+/- 20%	
Mercury	7471A	0.09	0.09	0.0%	+/- 0.07	L

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-NOP-ER-3
MATRIX SPIKE

Lab Sample ID: WP62K
LIMS ID: 13-10214
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/09/13
Date Received: 05/10/13

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	0.2 U	25.5	25.0	102%	
Cadmium	200.8	0.1 U	24.2	25.0	96.8%	
Mercury	7470A	0.1 U	1.0	1.0	100%	

Reported in µg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked
NR-Not Recovered

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-NOP-ER-3
DUPLICATE

Lab Sample ID: WP62K
LIMS ID: 13-10214
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/09/13
Date Received: 05/10/13

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	0.2 U	0.2 U	0.0%	+/- 0.2	L
Cadmium	200.8	0.1 U	0.1 U	0.0%	+/- 0.1	L
Mercury	7470A	0.1 U	0.1 U	0.0%	+/- 0.1	L

Reported in µg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: WP62LCS
LIMS ID: 13-10206
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	25.4	25.0	102%	
Cadmium	200.8	24.0	25.0	96.0%	
Mercury	7471A	0.59	0.50	118%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: WP62LCS
LIMS ID: 13-10214
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	25.8	25.0	103%	
Cadmium	200.8	24.8	25.0	99.2%	
Mercury	7470A	2.0	2.0	100%	

Reported in µg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: WP62MB
LIMS ID: 13-10206
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/14/13	200.8	05/15/13	7440-38-2	Arsenic	0.2	0.2	U
3050B	05/14/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/14/13	7471A	05/17/13	7439-97-6	Mercury	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: WP62MB
LIMS ID: 13-10214
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP62-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/13/13	200.8	05/15/13	7440-38-2	Arsenic	0.2	0.2	U
200.8	05/13/13	200.8	05/15/13	7440-43-9	Cadmium	0.1	0.1	U
7470A	05/13/13	7470A	05/17/13	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL
RL-Reporting Limit

General Chemistry Analysis
Report and Summary QC Forms

ARI Job ID: WP47, WP62

SAMPLE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Client ID: RB13-DIS-14-S
ARI ID: 13-10126 WP47A

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	46.69
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	2.13	37.8

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Client ID: RB13-DIS-15-S
ARI ID: 13-10127 WP47B

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	39.99
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	2.48	< 2.48 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Client ID: RB13-DIS-18-S
ARI ID: 13-10128 WP47C

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	42.07
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	2.35	9.56

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Client ID: RB13-DIS-10-S
ARI ID: 13-10129 WP47D

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	26.75
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	20.99
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	8.41
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	93.8	1,690
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	5.79

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Client ID: RB13-DIS-07-S
ARI ID: 13-10130 WP47E

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	28.38
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	22.41
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	8.80
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	87.7	1,490
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	8.29

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Client ID: RB13-DIS-01-S
ARI ID: 13-10131 WP47F

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	20.93
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	20.52
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	10.42
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	96.7	1,100
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	3.02

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Client ID: RB13-DIS-13-S
ARI ID: 13-10132 WP47G

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	55.89
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	8.86	73.7

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Client ID: RB13-DIS-03-S
ARI ID: 13-10133 WP47H

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	76.01
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	72.37
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	1.31
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	1.26	1.54
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	0.733

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Client ID: RB13-DIS-20-S
ARI ID: 13-10134 WP47I

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	21.40
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	89.9	1,480

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Client ID: RB13-DIS-12-S
ARI ID: 13-10135 WP47J

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	73.28
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	68.88
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	2.01
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	1.40	< 1.40 U
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	2.49

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Client ID: RB13-DIS-19-S
ARI ID: 13-10136 WP47K

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	73.97
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	1.34	< 1.34 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Client ID: RB13-DIS-02-S
ARI ID: 13-10137 WP47L

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	25.90
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	21.08
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	8.82
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	235	2,420
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	1.94

RL Analytical reporting limit
U Undetected at reported detection limit

WP47:00171

SAMPLE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Client ID: RB13-DIS-05-S
ARI ID: 13-10138 WP47M

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	47.40
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	36.98
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	5.13
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	5.38	68.9
Total Organic Carbon	05/23/13 052313#1	Plumb,1981	Percent	0.020	1.97

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Client ID: RB13-DIS-17-S
ARI ID: 13-10139 WP47N

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	29.31
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	16.7	304

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Client ID: RB13-DIS-16-S
ARI ID: 13-10141 WP47P

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	39.06
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	12.3	180

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: WP47A Client ID: RB13-DIS-14-S						
Sulfide	05/14/13	mg/kg	37.8	306	310	86.5%
ARI ID: WP47D Client ID: RB13-DIS-10-S						
Total Organic Carbon	05/23/13	Percent	5.79	9.53	5.00	74.8%

REPLICATE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/08/13
Date Received: 05/09/13

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: WP47A Client ID: RB13-DIS-14-S					
Preserved Total Solids	05/10/13	Percent	46.69	46.63	0.1%
Sulfide	05/14/13	mg/kg	37.8	35.9	5.2%
ARI ID: WP47D Client ID: RB13-DIS-10-S					
Total Solids	05/13/13	Percent	26.75	27.34 27.27	1.2%
Total Volatile Solids	05/13/13	Percent	8.41	8.57 8.44	1.0%
Total Organic Carbon	05/23/13	Percent	5.79	4.78 4.69	12.0%

LAB CONTROL RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Sulfide EPA 376.2	PREP	05/14/13	mg/kg	151	146	103.6%
Total Organic Carbon Plumb,1981	ICVL	05/23/13	Percent	0.108	0.100	108.0%

METHOD BLANK RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Total Solids	05/13/13	Percent	< 0.01 U	ICB
Preserved Total Solids	05/10/13	Percent	< 0.01 U	ICB
Total Volatile Solids	05/13/13	Percent	< 0.01 U	ICB
Sulfide	05/14/13	mg/kg	< 1.00 U	PREP
Total Organic Carbon	05/23/13	Percent	< 0.020 U	ICB

STANDARD REFERENCE RESULTS-CONVENTIONALS
WP47-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon NIST 1941B	05/23/13	Percent	2.90	2.99	97.0%

SAMPLE RESULTS-CONVENTIONALS
WP62-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Client ID: RB13-SEQ-05-S
ARI ID: 13-10204 WP62A

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	30.47
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	29.33
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	9.23
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	34.0	341
Total Organic Carbon	05/22/13 052213#1	Plumb,1981	Percent	0.020	3.30

RL Analytical reporting limit
U Undetected at reported detection limit

WP47:09180

SAMPLE RESULTS-CONVENTIONALS
WP62-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Client ID: RB13-SEQ-08-S
ARI ID: 13-10205 WP62B

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	32.30
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	15.1	84.8

RL Analytical reporting limit
U Undetected at reported detection limit

UP47:00181

SAMPLE RESULTS-CONVENTIONALS
WP62-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Client ID: RB13-SEQ-02-S
ARI ID: 13-10206 WP62C

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	35.96
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	29.24
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	7.18
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	33.8	302
Total Organic Carbon	05/22/13 052213#1	Plumb,1981	Percent	0.020	2.73

RL Analytical reporting limit
U Undetected at reported detection limit

UP47:00182

SAMPLE RESULTS-CONVENTIONALS
WP62-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Client ID: RB13-SEQ-06-S
ARI ID: 13-10207 WP62D

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	29.37
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	6.62	44.8

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP62-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Client ID: RB13-SEQ-04-S
ARI ID: 13-10208 WP62E

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	42.37
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	36.72
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	7.05
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	13.4	212
Total Organic Carbon	05/22/13 052213#1	Plumb,1981	Percent	0.020	1.52

RL Analytical reporting limit
U Undetected at reported detection limit

UP47:00194

SAMPLE RESULTS-CONVENTIONALS
WP62-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 07/25/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Client ID: RB13-SEQ-03-S
ARI ID: 13-10209 WP62F

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	32.63
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	31.43
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	7.39
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	31.8	443
Total Organic Carbon	05/22/13 052213#1	Plumb,1981	Percent	0.020	2.41

RL Analytical reporting limit
U Undetected at reported detection limit

7/25/13
WP47.00185rev AN

SAMPLE RESULTS-CONVENTIONALS
WP62-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Client ID: RB13-SEQ-03-D
ARI ID: 13-10210 WP62G

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	32.29
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	30.27
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	7.47
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	16.5	310
Total Organic Carbon	05/22/13 052213#1	Plumb,1981	Percent	0.020	1.35

RL Analytical reporting limit
U Undetected at reported detection limit

UPH7:00186

SAMPLE RESULTS-CONVENTIONALS
WP62-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Client ID: RB13-SEQ-03-T
ARI ID: 13-10211 WP62H

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	37.75
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	28.70
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	7.35
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	17.3	276
Total Organic Carbon	05/22/13 052213#1	Plumb,1981	Percent	0.020	2.12

RL Analytical reporting limit
U Undetected at reported detection limit

WP97.00197

SAMPLE RESULTS-CONVENTIONALS
WP62-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Client ID: RB13-SEQ-07-S
ARI ID: 13-10212 WP62I

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	24.71
Sulfide	05/13/13 051313#1	EPA 376.2	mg/kg	49.0	974

RL Analytical reporting limit
U Undetected at reported detection limit

WP47:00100

SAMPLE RESULTS-CONVENTIONALS
WP62-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Client ID: RB13-SEQ-01-S
ARI ID: 13-10213 WP62J

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/13/13 051313#1	SM2540B	Percent	0.01	27.67
Preserved Total Solids	05/10/13 051013#1	SM2540B	Percent	0.01	24.74
Total Volatile Solids	05/13/13 051313#1	SM2540E	Percent	0.01	8.01
Sulfide	05/14/13 051413#1	EPA 376.2	mg/kg	39.9	707
Total Organic Carbon	05/22/13 052213#1	Plumb,1981	Percent	0.020	1.94

RL Analytical reporting limit
U Undetected at reported detection limit

UP17:00109

MS/MSD RESULTS-CONVENTIONALS
WP62-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: WP62I Client ID: RB13-SEQ-07-S						
Sulfide	05/13/13	mg/kg	974	1,230	589	43.5%

REPLICATE RESULTS-CONVENTIONALS
WP62-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/09/13
Date Received: 05/10/13

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: WP62A Client ID: RB13-SEQ-05-S					
Preserved Total Solids	05/10/13	Percent	29.33	29.43	0.3%
ARI ID: WP62I Client ID: RB13-SEQ-07-S					
Sulfide	05/13/13	mg/kg	974	893	8.7%

LAB CONTROL RESULTS-CONVENTIONALS
WP62-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Sulfide	PREP	05/13/13	mg/kg	144	150	96.3%
EPA 376.2	PREP	05/13/13		153	150	102.3%
	PREP	05/14/13		151	146	103.6%
Total Organic Carbon Plumb,1981	ICVL	05/22/13	Percent	0.103	0.100	103.0%

METHOD BLANK RESULTS-CONVENTIONALS
WP62-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Total Solids	05/13/13	Percent	< 0.01 U	ICB
Preserved Total Solids	05/10/13	Percent	< 0.01 U	ICB
Total Volatile Solids	05/13/13	Percent	< 0.01 U	ICB
Sulfide	05/13/13	mg/kg	< 1.00 U	PREP
	05/13/13		< 1.00 U	PREP
	05/14/13		< 1.00 U	PREP
Total Organic Carbon	05/22/13	Percent	< 0.020 U	ICB

STANDARD REFERENCE RESULTS-CONVENTIONALS
WP62-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/23/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon NIST 1941B	05/22/13	Percent	2.76	2.99	92.3%

Geotechnical Analysis
Report and Summary QC Forms

ARI Job ID: WP47, WP62

Newfields
North Olympic Peninsula Regional

Apparent Grain Size Distribution Summary
Percent Finer Than Indicated Size

Sample No.	Gravel			Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt				Clay	
Phi Size	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
Sieve Size (microns)	3/8"	#4 (4750)	#10 (2000)	#18 (1000)	#35 (500)	#60 (250)	#120 (125)	#230 (63)	31.00	15.60	7.80	3.90	2.00	1.00
RB13-DIS-14-S	100.0	100.0	100.0	99.7	99.3	98.8	94.3	76.4	51.1	33.9	26.2	20.7	15.6	11.1
	100.0	100.0	99.8	99.2	98.5	97.8	93.4	74.8	50.5	34.8	25.4	20.2	15.4	11.0
	100.0	100.0	100.0	99.7	98.8	97.8	92.8	74.3	49.6	34.1	25.5	19.6	14.9	10.7
RB13-DIS-15-S	100.0	100.0	100.0	99.7	99.3	98.9	98.1	89.1	61.7	42.4	31.3	24.2	17.8	12.2
RB13-DIS-18-S	100.0	100.0	99.7	99.5	99.0	97.0	92.7	82.9	58.2	41.0	29.6	22.4	16.8	11.7
RB13-DIS-10-S	100.0	100.0	99.6	99.5	99.2	98.1	97.4	96.2	88.5	63.7	45.5	31.2	22.0	15.0
RB13-DIS-07-S	100.0	100.0	99.8	98.3	96 9	95.9	95.3	94.5	86.1	68.3	50.4	34.3	23.6	15.0
RB13-DIS-01-S	100.0	100.0	99.8	97.7	96.1	95.1	94.2	92.9	86.6	66.9	49.4	35.0	26.3	19.4
RB13-DIS-13-S	100.0	93.2	92.7	92.0	87.6	66.6	23.7	12.4	12.1	10.0	7.8	5.5	3.9	2.3
RB13-DIS-03-S	100.0	100.0	99.9	98.6	89.6	62.0	19.8	5.9	5.4	4.9	4.1	3.2	2.4	1.6
RB13-DIS-20-S	100.0	100.0	100.0	99.0	97.9	97.2	96.5	95.5	89.3	72.0	51.8	35.3	25.1	16.8
RB13-DIS-12-S	100.0	99.7	98.4	93.4	80.4	48.0	20.0	11.4	10.5	8.9	7.0	5.2	3.7	2.4
RB13-DIS-19-S	100.0	99.6	99.0	93.8	78.8	48.5	18.7	6.5	4.7	3.9	3.2	2.5	1.9	1.4
RB13-DIS-02-S	100.0	100.0	100.0	99.9	99.6	98.0	97.1	96.2	92.0	71.0	52.1	35.7	25.7	17.0
RB13-DIS-05-S	100.0	94.9	94.4	94.2	93.5	91.8	87.2	78.0	61.6	42.7	30.4	22.0	16.4	11.0
RB13-DIS-17-S	100.0	100.0	99.9	90.9	87.4	84.7	83.2	81.1	72.3	54.6	38.5	27.2	19.5	13.0
RB13-DIS-16-S	100.0	99.9	99.4	93.1	89.5	87.2	85.5	81.4	67.2	48.1	33.6	24.0	17.7	12.0

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

4/24/17 : 0021 55

Newfields
North Olympic Peninsula Regional

Apparent Grain Size Distribution Summary
Percent Retained in Each Size Fraction

Sample No.	Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Coarse Silt	Medium Silt	Fine Silt	Very Fine Silt	Clay			Total Fines
Phi Size	< -1	-1 to 0	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	> 10	> 4
Sieve Size (microns)	> #10 (2000)	10 to 18 (2000-1000)	18-35 (1000-500)	35-60 (500-250)	60-120 (250-125)	120-230 (125-62)	62.5-31.0	31 0-15 6	15 6-7 8	7.8-3.9	3 9-2.0	2.0-1.0	<1 0	<230 (<62)
RB13-DIS-14-S	0.0	0.2	0.4	0.5	4.6	17.9	25.3	17.2	7.7	5.5	5.1	4.5	11.1	76.4
	0.2	0.6	0.6	0.7	4.4	18.7	24.2	15.7	9.4	5.2	4.8	4.4	11.0	74.8
	0.0	0.3	0.9	1.0	5.0	18.5	24.8	15.5	8.6	5.8	4.7	4.2	10.7	74.3
RB13-DIS-15-S	0.0	0.3	0.4	0.4	0.8	9.0	27.4	19.3	11.1	7.1	6.4	5.6	12.2	89.1
RB13-DIS-18-S	0.3	0.2	0.5	2.0	4.3	9.7	24.7	17.2	11.4	7.2	5.6	5.1	11.7	82.9
RB13-DIS-10-S	0.4	0.1	0.3	1 1	0.7	1.1	7.8	24.7	18.2	14.3	9.3	7.0	15.0	96.2
RB13-DIS-07-S	0.2	1.5	1.4	1.0	0.6	0.8	8.4	17.8	17.9	16.1	10.6	8.6	15.0	94.5
RB13-DIS-01-S	0.2	2.1	1.6	0.9	0.9	1.4	6.2	19.8	17.5	14.3	8.7	6.9	19.4	92.9
RB13-DIS-13-S	7.3	0.8	4.4	21.0	42.9	11.3	0.3	2.1	2.2	2.3	1.7	1.5	2.3	12.4
RB13-DIS-03-S	0.1	1.4	8.9	27.6	42.2	13.9	0.5	0.5	0.8	0.9	0.8	0.8	1.6	5.9
RB13-DIS-20-S	0.0	1.0	1.0	0.7	0.7	1.0	6.2	17.3	20.2	16.4	10.2	8.3	16.8	95.5
RB13-DIS-12-S	1.6	5.0	13.0	32.3	28.0	8.6	0.9	1.6	1.9	1.8	1.5	1.2	2.4	11.4
RB13-DIS-19-S	1.0	5.2	15.1	30.3	29.8	12.1	1.8	0.8	0.7	0.7	0.6	0.5	1.4	6.5
RB13-DIS-02-S	0.0	0.1	0.3	1.7	0.9	0.8	4.2	21.0	18.9	16.4	10.0	8.7	17.0	96.2
RB13-DIS-05-S	5.6	0.2	0.7	1.6	4.7	9.1	16.5	18.9	12.3	8.4	5.6	5.4	11.0	78.0
RB13-DIS-17-S	0.1	9.0	3.5	2.7	1 5	2.2	8.8	17.8	16.1	11.3	7.7	6.4	13.0	81.1
RB13-DIS-16-S	0.6	6.3	3.5	2.3	1.7	4.1	14.2	19.1	14.5	9.6	6.3	5.7	12.0	81.4

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

WP47 : 001 97

QA SUMMARY

Client	Newfields	Client Project.	North Olympic Peninsula Regional
ARI Trip. Sample ID	WP47A		
Client Trip. Sample ID:	RB13-DIS-14-S	Batch No ·	WP47-1

Relative Standard Deviation, By Phi Size

Sample ID	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
RB13-DIS-14-S	100.0	100 0	100.0	99.7	99.3	98.8	94 3	76 4	51 1	33.9	26 2	20.7	15.6	11.1
	100 0	100 0	99 8	99.2	98.5	97.8	93.4	74.8	50 5	34.8	25.4	20.2	15.4	11.0
	100.0	100.0	100.0	99.7	98 8	97.8	92.8	74 3	49.6	34.1	25.5	19 6	14 9	10.7
AVE	NA	100.00	99.91	99.52	98.89	98.14	93.49	75.16	50 41	34 26	25.68	20.19	15.32	10 95
STDEV	NA	0.00	0 09	0.32	0 40	0 60	0 73	1 07	0.76	0.46	0 44	0.54	0 35	0.24
%RSD	NA	0 00	0.09	0.32	0 41	0.61	0 78	1 43	1.52	1.36	1.73	2.66	2 30	2.16

The Triplicate Applies To The Following Samples

Client ID	Date Sampled	Date Extracted	Date Complete	QA Ratio (95-105)	Data Qualifiers	Pipette Portion (5 0-25.0g)
RB13-DIS-14-S	5/8/2013	5/16/2013	5/24/2013	99 9		16 5
	5/8/2013	5/16/2013	5/24/2013	101.0		16.2
	5/8/2013	5/16/2013	5/24/2013	100.0		16.1
RB13-DIS-15-S	5/8/2013	5/16/2013	5/24/2013	102.4		17.7
RB13-DIS-18-S	5/8/2013	5/16/2013	5/24/2013	102.1		17.3
RB13-DIS-10-S	5/8/2013	5/16/2013	5/24/2013	97 0		12.1
RB13-DIS-07-S	5/8/2013	5/16/2013	5/24/2013	96.2		12.1
RB13-DIS-01-S	5/8/2013	5/16/2013	5/24/2013	97.7		8.8
RB13-DIS-13-S	5/8/2013	5/16/2013	5/24/2013	98.4		7.4
RB13-DIS-03-S	5/8/2013	5/16/2013	5/24/2013	99 6		6.7
RB13-DIS-20-S	5/8/2013	5/16/2013	5/24/2013	98.9		10.0
RB13-DIS-12-S	5/8/2013	5/16/2013	5/24/2013	99.9		9 9
RB13-DIS-19-S	5/8/2013	5/16/2013	5/24/2013	100.4		7.9
RB13-DIS-02-S	5/8/2013	5/16/2013	5/24/2013	97.7		10.6
RB13-DIS-05-S	5/8/2013	5/16/2013	5/24/2013	99.9		16.4
RB13-DIS-17-S	5/8/2013	5/16/2013	5/24/2013	100.3		11.4
RB13-DIS-16-S	5/8/2013	5/16/2013	5/24/2013	100.9		13.6

* ARI Internal QA limits = 95-105%

Notes to the Testing·

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

NewFields
North Olympic Peninsula Regional

Apparent Grain Size Distribution Summary
Percent Finer Than Indicated Size

Sample No.	Gravel			Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt				Clay	
Phi Size	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
Sieve Size (microns)	3/8"	#4 (4750)	#10 (2000)	#18 (1000)	#35 (500)	#60 (250)	#120 (125)	#230 (63)	31.00	15.60	7.80	3.90	2.00	1.00
RB13-SEQ-05-S	100.0	100.0	99.6	98.8	96.7	92.4	89.2	85.7	80.2	59.0	39.9	27.9	20.1	12.6
	100.0	100.0	99.9	99.7	98.3	94.5	90.0	85.5	79.7	62.9	44.5	31.1	22.1	14.4
	100.0	100.0	99.9	99.1	96.5	92.1	88.3	84.0	80.2	63.1	45.7	31.7	22.3	15.0
RB13-SEQ-08-S	100.0	100.0	100.0	99.9	99.5	97.5	93.6	88.5	82.7	66.3	48 4	34.4	24.4	16.1
RB13-SEQ-02-S	100.0	100.0	100.0	100.0	99.2	95.4	91.2	82.6	72.3	57.0	43.8	33.2	23.9	16.3
RB13-SEQ-06-S	100.0	100.0	100.0	99.8	98.9	96.4	92.9	85.1	75.9	60.4	46.8	35.0	26.0	17.7
RB13-SEQ-04-S	100.0	100.0	100.0	99.5	99.1	98.0	87.4	75.1	67.2	55.5	43.8	34.4	25.5	17.5
RB13-SEQ-03-S	100.0	100.0	100.0	99.9	99.7	99.1	97.3	92.0	80.4	61.8	45.5	33.9	24.8	16.9
RB13-SEQ-03-D	100.0	100.0	100.0	99.9	99.6	98.9	97.2	92.0	79.9	61.8	46.2	33.8	25.2	17.4
RB13-SEQ-03-T	100.0	100.0	100.0	99.9	99.8	99.4	97.8	92.7	81.3	62.4	46.5	34.5	25.1	17.5
RB13-SEQ-07-S	100.0	100.0	100.0	99.9	99.2	98.3	97.3	93.7	85.9	65.0	48.6	35.3	26.2	18.2
RB13-SEQ-01-S	100.0	100.0	100.0	99.6	99.6	98.6	95.5	91.3	85.1	66.8	51.2	37.4	28.4	19.9

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

WP62

NewFields
North Olympic Peninsula Regional

Apparent Grain Size Distribution Summary
Percent Retained in Each Size Fraction

Sample No.	Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Coarse Silt	Medium Silt	Fine Silt	Very Fine Silt	Clay			Total Fines
Phi Size	< -1	-1 to 0	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	> 10	> 4
Sieve Size (microns)	> #10 (2000)	10 to 18 (2000-1000)	18-35 (1000-500)	35-60 (500-250)	60-120 (250-125)	120-230 (125-62)	62.5-31 0	31 0-15 6	15.6-7 8	7.8-3.9	3.9-2 0	2 0-1 0	<1 0	<230 (<62)
RB13-SEQ-05-S	0.4	0.7	2.2	4.3	3.1	3.5	5.5	21.2	19.1	12.0	7.9	7.4	12.6	85.7
	0.1	0.2	1.3	3.8	4.5	4.6	5.7	16.8	18.4	13.5	8.9	7.7	14.4	85.5
	0.1	0.9	2.6	4.4	3.8	4.2	3.8	17.1	17.4	14.0	9.4	7.3	15.0	84.0
RB13-SEQ-08-S	0.0	0.1	0.4	2.0	3.9	5.1	5.8	16.4	17.9	14.0	10.0	8.3	16.1	88 5
RB13-SEQ-02-S	0.0	0.0	0.8	3.9	4.1	8.7	10.3	15.3	13.2	10.6	9.3	7.6	16.3	82.6
RB13-SEQ-06-S	0.0	0.2	0.8	2.5	3.5	7.8	9.3	15.4	13.7	11.7	9.0	8.3	17.7	85.1
RB13-SEQ-04-S	0.0	0.4	0.5	1.1	10.6	12.3	7.9	11.7	11.6	9.4	8.9	8.0	17.5	75.1
RB13-SEQ-03-S	0.0	0.0	0.2	0.5	1.8	5.3	11.7	18.6	16.3	11.6	9.1	7.9	16.9	92.0
RB13-SEQ-03-D	0.0	0.1	0.3	0.7	1.7	5.2	12.1	18.1	15.6	12.4	8.6	7.8	17.4	92.0
RB13-SEQ-03-T	0.0	0.0	0.2	0.4	1.6	5.1	11.3	18.9	15.9	12.0	9.4	7.7	17.5	92.7
RB13-SEQ-07-S	0.0	0 1	0.6	1.0	0.9	3.6	7.8	20.9	16.4	13.3	9.1	8.0	18.2	93.7
RB13-SEQ-01-S	0.0	0.4	0.0	1.0	3.1	4.2	6.2	18.3	15.7	13.8	9.0	8.4	19.9	91.3

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

WP62

UPL 7 : 002205

QA SUMMARY

Client	NewFields	Client Project	North Olympic Peninsula Regional
ARI Trip Sample ID	WP62A		
Client Trip Sample ID.	RB13-SEQ-05-S	Batch No..	WP62-1

Relative Standard Deviation, By Phi Size

Sample ID	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
RB13-SEQ-05-S	100.0	100 0	99 6	98.8	96 7	92.4	89 2	85.7	80.2	59.0	39 9	27 9	20 1	12.6
	100 0	100 0	99.9	99.7	98.3	94 5	90.0	85.5	79 7	62.9	44.5	31.1	22.1	14 4
	100 0	100 0	99.9	99.1	96.5	92.1	88.3	84.0	80 2	63.1	45.7	31.7	22.3	15 0
AVE	NA	100.00	99 79	99 19	97.17	93.00	89 19	85.07	80 05	61 68	43.40	30 25	21.49	14.02
STDEV	NA	0 00	0.20	0.43	1.01	1 31	0.89	0.89	0.28	2.31	3 06	2.02	1.24	1 25
%RSD	NA	0 00	0.20	0.43	1.04	1.41	1.00	1.05	0.36	3.75	7 05	6.68	5.78	8.91

The Triplicate Applies To The Following Samples

Client ID	Date Sampled	Date Extracted	Date Complete	QA Ratio (95-105)	Data Qualifiers	Pipette Portion (5.0-25.0g)
RB13-SEQ-05-S	5/9/2013	5/20/2013	5/29/2013	100.6		11 7
	5/9/2013	5/20/2013	5/29/2013	99.0		11 6
	5/9/2013	5/20/2013	5/29/2013	98.9		11 6
RB13-SEQ-08-S	5/9/2013	5/20/2013	5/29/2013	98.8		13.4
RB13-SEQ-02-S	5/9/2013	5/20/2013	5/29/2013	98.5		12.2
RB13-SEQ-06-S	5/9/2013	5/20/2013	5/29/2013	99.4		12 1
RB13-SEQ-04-S	5/9/2013	5/20/2013	5/29/2013	98.6		13 1
RB13-SEQ-03-S	5/9/2013	5/20/2013	5/29/2013	100.0		13.7
RB13-SEQ-03-D	5/9/2013	5/20/2013	5/29/2013	99.6		13.6
RB13-SEQ-03-T	5/9/2013	5/20/2013	5/29/2013	98.7		13.9
RB13-SEQ-07-S	5/9/2013	5/20/2013	5/29/2013	98.7		12 1
RB13-SEQ-01-S	5/9/2013	5/20/2013	5/29/2013	98 8		11 5

* ARI Internal QA limits = 95-105%

Notes to the Testing

1 Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution See narrative for discussion of the testing

4P41 7 : 02285

Total Solids

ARI Job ID: WP47, WP62

Extractions Total Solids-extts
Data By: Alex Choeng
Created: 5/14/13

Worklist: 3710
Analyst: RVR
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

	ARI ID CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids	pH
1.	WP47D 13-10129 RB13-DIS-10-S	1.18	13.68	4.92	29.9	NR
2.	WP47E 13-10130 RB13-DIS-07-S	1.16	13.48	4.79	29.5	NR
3.	WP47F 13-10131 RB13-DIS-01-S	1.17	12.92	3.77	22.1	NR
4.	WP47H 13-10133 RB13-DIS-03-S	1.15	15.04	12.32	80.4	NR
5.	WP47J 13-10135 RB13-DIS-12-S	1.16	13.77	11.06	78.5	NR
6.	WP47L 13-10137 RB13-DIS-02-S	1.17	14.91	5.07	28.4	NR
7.	WP47M 13-10138 RB13-DIS-05-S	1.16	12.01	6.41	48.4	NR

UP17:00212

Extractions Total Solids-extts
Data By: Alex Choeng
Created: 5/14/13

Worklist: 3712
Analyst: RVR
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

	ARI ID CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids	pH
1.	WP62A 13-10204 RB13-SEQ-05-S	1.15	13.50	5.12	32.1	NR
2.	WP62C 13-10206 RB13-SEQ-02-S	1.18	12.03	5.17	36.8	NR
3.	WP62E 13-10208 RB13-SEQ-04-S	1.14	13.68	6.54	43.1	NR
4.	WP62F 13-10209 RB13-SEQ-03-S	1.14	13.44	5.42	34.8	NR
5.	WP62G 13-10210 RB13-SEQ-03-D	1.15	12.85	5.11	33.8	NR
6.	WP62J 13-10213 RB13-SEQ-01-S	1.15	11.94	4.27	28.9	NR

WP47:00214

Table of Contents: ARI Job WP72

Client: Newfields

Project: North Olympic Peninsula Regional

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Signature

May-31-2013
Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

June 4, 2013

Will Hafner
Newfields
115 2nd Avenue North, Suite 100
Edmonds, WA 98026

RE: Project: North Olympic Peninsula Regional Background
ARI Job No.: WP72

Dear Will:

Please find enclosed the Chain-of-Custody records (COCs), sample receipt documentation, and the final data package for samples from the project referenced above.

Sample receipt and details of the analyses are discussed in the Case Narrative.

An electronic copy of this data package will be kept on file with ARI. Should you have any questions or problems, please feel free to contact me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.ariblas.com

cc: eFile WP72

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Documentation

ARI Job ID: WP72

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: 15 day
ARI Client Company: New Fields	Phone: 425-967-5285 x103
Client Contact: Will Hafner	
Client Project Name: North Olympic Peninsula Reg. Background	
Client Project #:	Samplers: WH JNok JW

Page: 1 of 2

Date: 5/13/13 | Ice Present?

No. of Coolers: | Cooler Temps:

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No Containers	Grain Size	Total Sulfides	TOC, TVS, Tot. Solids	Arsenic, Cadmium	Mercury	cPAH			Notes/Comments: NewFields Jar #
RB13-PT-13-S	5/10/13	1323	Sed	3	X	X			X				1621 1622 1628
RB13-PT-13-D	5/10/13	1323	Sed	3	X	X			X				1625 1629 1529
RB13-PT-13-T	5/10/13	1323	Sed	2	X	X							1530 1630
RB13-PT-14-S	5/10/13	1354	Sed	3	X	X			X				1631 1632 1638
RB13-PT-08-S	5/10/13	1411	Sed	5	X	X	X	X	X	X			1571 1576 1572 1577 1578
RB13-PT-15-S	5/10/13	1431	Sed	3	X	X			X				1641 1642 1648
RB13-PT-01-S	5/10/13	1446	Sed	5	X	X	X	X	X	X			1501 1506 1502 1507 1508
RB13-NOP-ER-4	5/10/13	1439	Water	2					X				1649 1650

Comments/Special Instructions

Relinquished by (Signature): Jasper Boas	Received by (Signature):	Relinquished by (Signature):	Received by (Signature):
Printed Name: Jasper Boas	Printed Name: Taylor Streeter	Printed Name:	Printed Name:
Company: New Fields	Company: ARI	Company:	Company:
Date & Time: 5/13/13 13:00	Date & Time: 5-13-13 1300	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: 15 day
ARI Client Company: NewFields	Phone: 425-967-5285 x103
Client Contact: Will Hafner	
Client Project Name: North Olympic Peninsula Reg. Background	
Client Project #:	Samplers: WH JNak JW

Page: 2 of 2

Date: 5/13/13 | Ice Present? Y

No. of Coolers: 4 | Cooler Temps: 3. 9. 5.6

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Grain Size	Total Solids	TOC, TVS, Tot. Solids	Arsenic, Cadmium	Mercury	cPAH			Notes/Comments
RB13-PT-06-S	5/10/13	909	Sed	5	X	X	X	X	X	X			NewFields Job # 1551 1556 1552 1557 1558
RB13-PT-12-S	5/10/13	926	Sed	3	X	X			X				1611 1612 1618
RB13-PT-09-S	5/10/13	948	Sed	5	X	X	X	X	X	X			1581 1586 1582 1587 1588
RB13-PT-04-S	5/10/13	1008	Sed	5	X	X	X	X	X	X			1531 1536 1532 1537 1538
RB13-PT-02-S	5/10/13	1035	Sed	5	X	X	X	X	X	X			1511 1516 1512 1517 1518
RB13-PT-05-S	5/10/13	1115	Sed	5	X	X	X	X	X	X			1541 1546 1542 1547 1548
RB13-PT-10-S	5/10/13	1133	Sed	5	X	X	X	X	X	X			1591 1596 1592 1597 1598
RB13-PT-07-S	5/10/13	1158	Sed	5	X	X	X	X	X	X			1561 1566 1562 1567 1568
RB13-PT-11-S	5/10/13	1221	Sed	3	X	X			X				1601 1602 1608
RB13-PT-03-S	5/10/13	1307	Sed	5	X	X	X	X	X	X			1521 1526 1522 1527 1528

Comments/Special Instructions

Relinquished by (Signature) Jasper Bous	Received by: (Signature)	Relinquished by. (Signature)	Received by: (Signature)
Printed Name Jasper Bous	Printed Name Taylor Streeter	Printed Name.	Printed Name:
Company NewFields	Company. ARI	Company	Company.
Date & Time 5/13/13 13:00	Date & Time. 5.13.13 1300	Date & Time	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: NewFields

Project Name: North Olympic Peninsula

COC No(s) _____ NA

Delivered by Fed-Ex UPS Courier Hand Delivered Other. _____

Assigned ARI Job No. WP72

Tracking No _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6 0 °C for chemistry). 3.9 5.2 11.5 5.6

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID# 90877952

Cooler Accepted by: TB Date: 5-13-13 Time: 1300

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? NA YES NO

Were all bottles sealed in individual plastic bags? YES NO

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI. NA _____

Was Sample Split by ARI : NA YES Date/Time _____ Equipment _____ Split by: _____

Samples Logged by: TB Date: 5-13-13 Time: 1530

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By Date

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm	
			Small → "sm"
			Peabubbles → "pb"
			Large → "lg"
			Headspace → "hs"

WP72 00005

PRESERVATION VERIFICATION 05/13/13

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **WP72**

PC: Cheronne
VTSR: 05/13/13

Inquiry Number: NONE
Analysis Requested: 05/13/13
Contact: Hafner, Will
Client: Newfields
Logged by: TS
Sample Set Used: Yes-491
Validatable Package: Lv4
Deliverables:

Project #:
Project: North Olympic Peninsula Regional
Sample Site:
SDG No:
Analytical Protocol: PSDDA

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
13-10365 **WP72R**	RB13-NOP-ER-4						TOT Pass															

Checked By TS Date 5-13-13

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: WP72

ANALYTICAL
RESOURCES
INCORPORATED

Case Narrative

Client: Newfields
Project: North Olympic Peninsula Regional Background
ARI Job No.: WP72

Sample Receipt

Seventeen sediment samples and one water sample were received May 13, 2013 under ARI job WP72. The cooler temperatures measured by IR thermometer following ARI SOP were between 3.9 and 5.6°C. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

Low-Level PAHs by SW8270-SIM

The samples and associated laboratory QC were extracted and analyzed within recommended holding times.

Initial and continuing calibrations were within method requirements. Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limits. The LCS and LCSD percent recoveries were within control limits.

The matrix spike and matrix spike duplicate percent recoveries were within advisory control limits.

Metals/Mercury by SW200.8/7471A/7470A

The samples and associated laboratory QC were digested and analyzed within recommended holding times.

The method blanks were clean at the reporting limits. The LCS percent recoveries were within control limits.

The matrix spike percent recoveries and duplicate RPDs were within control limits.

General Chemistry Parameters

The samples and associated laboratory QC were prepared and analyzed within recommended holding times.

The method blanks were clean at the reporting limits.

The LCS percent recovery of sulfide was outside the control limits high. Although the the matrix spike percent recovery was within control limits, associated samples were re-analyzed outside the recommended holding time to confirm results. Re-analysis results were comparable to the initial analysis with the exception of samples **RB13-PT-01-S**, **RB13-PT-09-S**, and **RB13-PT-07-S**. Only the initial analysis data have been reported. Raw data for both analyses have been included in this data package. No further corrective action was taken.

The SRM percent recovery was within limits.

The matrix spike percent recoveries were within control limits.

The replicate RPD of sulfide was outside the control limit for sample **RB13-PT-13-S**. No corrective action was taken.

Geotechnical Parameters

A laboratory-specific case narrative follows.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: NewFields	**ARI Job No.:** WP72
Client Project: North Olympic Peninsula Regional	

Case Narrative

1. Seventeen samples were submitted for grain size analysis according to Puget Sound Estuary Protocol (PSEP) methodology on May 13, 2013.
2. The samples were run in a single batch and one sample from this job was chosen for triplicate analysis. The triplicate data is reported on the QA summary.
3. One sample was split outside of the allowed range of fine material (5-25 grams dry weight). The sample was resplit and still did not contain the required 5 grams of fines for the pipette portion of the analysis. The analytical balance has a capacity of about 200 grams (by 0.0001 grams) and a sample that would yield 5 grams of fines could not be split and stay within the capacity of the balance. The sample has been qualified on the QA summary and the original bench sheet is included in the raw data.
4. Three samples contained woody or other organic matter and twelve samples contained shells and/or shell fragments. Individual particles may have broken down during the sieving process affecting the grain size analysis.
5. The data is provided in summary tables and plots.
6. There were no other noted anomalies in this project.

Released by: Robert Doble — Date: June 3, 2013
Technician

Reviewed by: Luanna Curtis — Date: 6/3/13
Geotechnical Laboratory Manager

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: WP72
Client: Newfields
Project Event: N/A
Project Name: North Olympic Peninsula Regional

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	RB13-PT-13-S	WP72A	13-10348	Sediment	05/10/13 13:23	05/13/13 13:00
2.	RB13-PT-13-D	WP72B	13-10349	Sediment	05/10/13 13:23	05/13/13 13:00
3.	RB13-PT-13-T	WP72C	13-10350	Sediment	05/10/13 13:23	05/13/13 13:00
4.	RB13-PT-14-S	WP72D	13-10351	Sediment	05/10/13 13:54	05/13/13 13:00
5.	RB13-PT-08-S	WP72E	13-10352	Sediment	05/10/13 14:11	05/13/13 13:00
6.	RB13-PT-15-S	WP72F	13-10353	Sediment	05/10/13 14:31	05/13/13 13:00
7.	RB13-PT-01-S	WP72G	13-10354	Sediment	05/10/13 14:46	05/13/13 13:00
8.	RB13-PT-06-S	WP72H	13-10355	Sediment	05/10/13 09:09	05/13/13 13:00
9.	RB13-PT-09-S	WP72I	13-10356	Sediment	05/10/13 09:48	05/13/13 13:00
10.	RB13-PT-04-S	WP72J	13-10357	Sediment	05/10/13 10:08	05/13/13 13:00
11.	RB13-PT-02-S	WP72K	13-10358	Sediment	05/10/13 10:35	05/13/13 13:00
12.	RB13-PT-05-S	WP72L	13-10359	Sediment	05/10/13 11:15	05/13/13 13:00
13.	RB13-PT-10-S	WP72M	13-10360	Sediment	05/10/13 11:33	05/13/13 13:00
14.	RB13-PT-07-S	WP72N	13-10361	Sediment	05/10/13 11:58	05/13/13 13:00
15.	RB13-PT-03-S	WP72O	13-10362	Sediment	05/10/13 13:07	05/13/13 13:00
16.	RB13-PT-12-S	WP72P	13-10363	Sediment	05/10/13 09:26	05/13/13 13:00
17.	RB13-PT-11-S	WP72Q	13-10364	Sediment	05/10/13 12:21	05/13/13 13:00
18.	RB13-NOP-ER-4	WP72R	13-10365	Water	05/10/13 14:39	05/13/13 13:00

WP72:00011

SIM PAH Analysis
Report and Summary QC Forms

ARI Job ID: WP72

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-PT-08-S
SAMPLE

Lab Sample ID: WP72E
LIMS ID: 13-10352
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/28/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Date Extracted: 05/21/13
Date Analyzed: 05/23/13 20:16
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.29 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 57.2%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.49	25.7
218-01-9	Chrysene	0.49	41.1
205-99-2	Benzo(b)fluoranthene	0.49	26.1
207-08-9	Benzo(k)fluoranthene	0.49	11.6
50-32-8	Benzo(a)pyrene	0.49	20.4
193-39-5	Indeno(1,2,3-cd)pyrene	0.49	10.6
53-70-3	Dibenz(a,h)anthracene	0.49	2.99
TOTBFA	Total Benzofluoranthenes	0.97	48.4

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	67.3%
d14-Dibenzo(a,h)anthracen	73.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-PT-01-S
SAMPLE

Lab Sample ID: WP72G
LIMS ID: 13-10354
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/28/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Date Extracted: 05/21/13
Date Analyzed: 05/23/13 20:45
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.45 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 54.7%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.48	15.2
218-01-9	Chrysene	0.48	24.9
205-99-2	Benzo(b)fluoranthene	0.48	18.5
207-08-9	Benzo(k)fluoranthene	0.48	7.46
50-32-8	Benzo(a)pyrene	0.48	15.2
193-39-5	Indeno(1,2,3-cd)pyrene	0.48	8.02
53-70-3	Dibenz(a,h)anthracene	0.48	2.19
TOTBFA	Total Benzofluoranthenes	0.96	33.1

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	65.7%
d14-Dibenzo(a,h)anthracen	69.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-PT-06-S
SAMPLE

Lab Sample ID: WP72H
LIMS ID: 13-10355
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/28/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Date Extracted: 05/21/13
Date Analyzed: 05/23/13 21:14
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.43 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 35.0%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.48	5.92
218-01-9	Chrysene	0.48	10.5
205-99-2	Benzo(b)fluoranthene	0.48	8.47
207-08-9	Benzo(k)fluoranthene	0.48	3.05
50-32-8	Benzo(a)pyrene	0.48	5.91
193-39-5	Indeno(1,2,3-cd)pyrene	0.48	3.16
53-70-3	Dibenz(a,h)anthracene	0.48	0.93
TOTBFA	Total Benzofluoranthenes	0.96	14.5

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	60.7%
d14-Dibenzo(a,h)anthracen	70.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-PT-09-S
SAMPLE

Lab Sample ID: WP72I
LIMS ID: 13-10356
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/28/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Date Extracted: 05/21/13
Date Analyzed: 05/23/13 21:43
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.42 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 20.1%

CAS Number	Analyte	LOQ	Result
56-55-3	**Benzo(a)anthracene**	**0.48**	**0.96**
218-01-9	**Chrysene**	**0.48**	**1.71**
205-99-2	**Benzo(b)fluoranthene**	**0.48**	**1.41**
207-08-9	**Benzo(k)fluoranthene**	**0.48**	**0.59**
50-32-8	**Benzo(a)pyrene**	**0.48**	**0.95**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**0.48**	**0.63**
53-70-3	Dibenz(a,h)anthracene	0.48	< 0.48 U
TOTBFA	**Total Benzofluoranthenes**	**0.96**	**2.55**

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	62.0%
d14-Dibenzo(a,h)anthracen	74.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-PT-04-S
SAMPLE

Lab Sample ID: WP72J
LIMS ID: 13-10357
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/28/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Date Extracted: 05/21/13
Date Analyzed: 05/23/13 23:10
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.56 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 44.5%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.47	12.6
218-01-9	Chrysene	0.47	19.7
205-99-2	Benzo(b)fluoranthene	0.47	15.2
207-08-9	Benzo(k)fluoranthene	0.47	6.44
50-32-8	Benzo(a)pyrene	0.47	12.3
193-39-5	Indeno(1,2,3-cd)pyrene	0.47	6.26
53-70-3	Dibenz(a,h)anthracene	0.47	1.90
TOTBFA	Total Benzofluoranthenes	0.95	27.9

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	64.0%
d14-Dibenzo(a,h)anthracen	67.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-PT-02-S
SAMPLE

Lab Sample ID: WP72K
LIMS ID: 13-10358
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/28/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Date Extracted: 05/21/13
Date Analyzed: 05/24/13 14:08
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.50 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 52.4%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.48	17.3
218-01-9	Chrysene	0.48	28.8
205-99-2	Benzo(b)fluoranthene	0.48	22.0
207-08-9	Benzo(k)fluoranthene	0.48	8.20
50-32-8	Benzo(a)pyrene	0.48	15.3
193-39-5	Indeno(1,2,3-cd)pyrene	0.48	10.7
53-70-3	Dibenz(a,h)anthracene	0.48	2.83
TOTBFA	Total Benzofluoranthenes	0.95	38.3

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	63.7%
d14-Dibenzo(a,h)anthracen	78.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-PT-05-S
SAMPLE

Lab Sample ID: WP72L
LIMS ID: 13-10359
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/28/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Date Extracted: 05/21/13
Date Analyzed: 05/24/13 14:37
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.10 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 56.2%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.50	20.9
218-01-9	Chrysene	0.50	32.8
205-99-2	Benzo(b)fluoranthene	0.50	25.2
207-08-9	Benzo(k)fluoranthene	0.50	9.08
50-32-8	Benzo(a)pyrene	0.50	17.1
193-39-5	Indeno(1,2,3-cd)pyrene	0.50	12.0
53-70-3	Dibenz(a,h)anthracene	0.50	3.06
TOTBFA	Total Benzofluoranthenes	0.99	43.2

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	59.0%
d14-Dibenzo(a,h)anthracen	67.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-PT-10-S
SAMPLE

Lab Sample ID: WP72M
LIMS ID: 13-10360
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/28/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Date Extracted: 05/21/13
Date Analyzed: 05/24/13 15:06
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.17 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 60.9%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.49	19.3
218-01-9	Chrysene	0.49	31.7
205-99-2	Benzo(b)fluoranthene	0.49	22.3
207-08-9	Benzo(k)fluoranthene	0.49	11.9
50-32-8	Benzo(a)pyrene	0.49	18.4
193-39-5	Indeno(1,2,3-cd)pyrene	0.49	11.9
53-70-3	Dibenz(a,h)anthracene	0.49	3.07
TOTBFA	Total Benzofluoranthenes	0.98	43.6

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	64.0%
d14-Dibenzo(a,h)anthracen	77.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-PT-07-S
SAMPLE

Lab Sample ID: WP72N
LIMS ID: 13-10361
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/28/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Date Extracted: 05/21/13
Date Analyzed: 05/24/13 15:35
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.49 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 19.4%

CAS Number	Analyte	LOQ	Result
56-55-3	**Benzo(a)anthracene**	**0.48**	**0.45 J**
218-01-9	**Chrysene**	**0.48**	**0.62**
205-99-2	**Benzo(b)fluoranthene**	**0.48**	**0.63**
207-08-9	**Benzo(k)fluoranthene**	**0.48**	**0.25 J**
50-32-8	**Benzo(a)pyrene**	**0.48**	**0.39 J**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**0.48**	**0.27 J**
53-70-3	Dibenz(a,h)anthracene	0.48	< 0.48 U
TOTBFA	**Total Benzofluoranthenes**	**0.95**	**1.11**

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	56.3%
d14-Dibenzo(a,h)anthracen	81.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-PT-03-S
SAMPLE

Lab Sample ID: WP72O
LIMS ID: 13-10362
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/28/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Date Extracted: 05/21/13
Date Analyzed: 05/24/13 16:04
Instrument/Analyst: /VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.32 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 57.1%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.48	19.4
218-01-9	Chrysene	0.48	29.8
205-99-2	Benzo(b)fluoranthene	0.48	21.4
207-08-9	Benzo(k)fluoranthene	0.48	11.0
50-32-8	Benzo(a)pyrene	0.48	17.2
193-39-5	Indeno(1,2,3-cd)pyrene	0.48	11.4
53-70-3	Dibenz(a,h)anthracene	0.48	2.90
TOTBFA	Total Benzofluoranthenes	0.97	41.0

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	61.0%
d14-Dibenzo(a,h)anthracen	72.7%

ANALYTICAL RESOURCES INCORPORATED

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Sediment

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Client ID	MNP	DBA	TOT OUT
RB13-PT-08-S	67.3%	73.3%	0
RB13-PT-01-S	65.7%	69.7%	0
RB13-PT-06-S	60.7%	70.0%	0
MB-052113	65.7%	73.0%	0
LCS-052113	68.0%	80.7%	0
LCSD-052113	66.0%	79.7%	0
RB13-PT-09-S	62.0%	74.7%	0
RB13-PT-09-S MS	59.7%	72.3%	0
RB13-PT-09-S MSD	59.0%	72.3%	0
RB13-PT-04-S	64.0%	67.3%	0
RB13-PT-02-S	63.7%	78.3%	0
RB13-PT-05-S	59.0%	67.0%	0
RB13-PT-10-S	64.0%	77.3%	0
RB13-PT-07-S	56.3%	81.7%	0
RB13-PT-03-S	61.0%	72.7%	0

	LCS/MB LIMITS	QC LIMITS
(MNP) = d10-2-Methylnaphthalene	(30-160)	(30-160)
(DBA) = d14-Dibenzo(a,h)anthracene	(30-160)	(30-160)

Prep Method: SW3546
Log Number Range: 13-10352 to 13-10362

FORM-II SIM SW8270

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS

Sample ID: RB13-PT-09-S
MATRIX SPIKE

Lab Sample ID: WP72I
LIMS ID: 13-10356
Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Date Extracted MS/MSD: 05/21/13

Date Analyzed MS: 05/23/13 22:12
MSD: 05/23/13 22:41
Instrument/Analyst MS: NT11/VTS
MSD: NT11/VTS

Sample Amount MS: 10.39 g-dry-wt
MSD: 10.40 g-dry-wt
Final Extract Volume MS: 0.50 mL
MSD: 0.50 mL
Dilution Factor MS: 1.00
MSD: 1.00

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Benzo(a)anthracene	1.0	12.9	14.4	82.6%	13.1	14.4	84.0%	1.5%
Chrysene	1.7	13.1	14.4	79.2%	13.1	14.4	79.2%	0.0%
Benzo(b)fluoranthene	1.4	12.7	14.4	78.5%	12.8	14.4	79.2%	0.8%
Benzo(k)fluoranthene	0.6	11.5	14.4	75.7%	11.5	14.4	75.7%	0.0%
Benzo(a)pyrene	0.9	12.2	14.4	78.5%	12.3	14.4	79.2%	0.8%
Indeno(1,2,3-cd)pyrene	0.6	10.6	14.4	69.4%	10.8	14.4	70.8%	1.9%
Dibenz(a,h)anthracene	< 0.5 U	9.8	14.4	68.1%	10.0	14.4	69.4%	2.0%
Total Benzofluoranthenes	2.6	36.0	43.3	77.1%	36.2	43.3	77.6%	0.6%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-PT-09-S
MATRIX SPIKE

Lab Sample ID: WP72I
LIMS ID: 13-10356
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/28/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Date Extracted: 05/21/13
Date Analyzed: 05/23/13 22:12
Instrument/Analyst: NT11/VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.39 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 20.1%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.48	---
218-01-9	Chrysene	0.48	---
205-99-2	Benzo(b)fluoranthene	0.48	---
207-08-9	Benzo(k)fluoranthene	0.48	---
50-32-8	Benzo(a)pyrene	0.48	---
193-39-5	Indeno(1,2,3-cd)pyrene	0.48	---
53-70-3	Dibenz(a,h)anthracene	0.48	---
TOTBFA	Total Benzofluoranthenes	0.96	---

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	59.7%
d14-Dibenzo(a,h)anthracen	72.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: RB13-PT-09-S
MATRIX SPIKE DUPLICATE

Lab Sample ID: WP72I
LIMS ID: 13-10356
Matrix: Sediment
Data Release Authorized: MW
Reported: 05/28/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Date Extracted: 05/21/13
Date Analyzed: 05/23/13 22:41
Instrument/Analyst: NT11/VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.40 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 20.1%

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.48	---
218-01-9	Chrysene	0.48	---
205-99-2	Benzo(b)fluoranthene	0.48	---
207-08-9	Benzo(k)fluoranthene	0.48	---
50-32-8	Benzo(a)pyrene	0.48	---
193-39-5	Indeno(1,2,3-cd)pyrene	0.48	---
53-70-3	Dibenz(a,h)anthracene	0.48	---
TOTBFA	Total Benzofluoranthenes	0.96	---

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	59.0%
d14-Dibenzo(a,h)anthracen	72.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS

Sample ID: LCS-052113
LAB CONTROL SAMPLE

Lab Sample ID: LCS-052113
LIMS ID: 13-10356
Matrix: Sediment
Data Release Authorized: MM
Reported: 05/28/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 05/21/13

Date Analyzed LCS: 05/23/13 18:49
LCSD: 05/23/13 19:18
Instrument/Analyst LCS: NT11/VTS
LCSD: NT11/VTS

Sample Amount LCS: 10.00 g-dry-wt
LCSD: 10.00 g-dry-wt
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzo(a)anthracene	12.4	15.0	82.7%	12.8	15.0	85.3%	3.2%
Chrysene	11.8	15.0	78.7%	12.5	15.0	83.3%	5.8%
Benzo(b)fluoranthene	11.9	15.0	79.3%	12.3	15.0	82.0%	3.3%
Benzo(k)fluoranthene	12.2	15.0	81.3%	11.8	15.0	78.7%	3.3%
Benzo(a)pyrene	11.6	15.0	77.3%	11.8	15.0	78.7%	1.7%
Indeno(1,2,3-cd)pyrene	11.2	15.0	74.7%	11.4	15.0	76.0%	1.8%
Dibenz(a,h)anthracene	11.2	15.0	74.7%	11.4	15.0	76.0%	1.8%
Total Benzofluoranthenes	35.3	45.0	78.4%	36.6	45.0	81.3%	3.6%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

SIM Semivolatile Surrogate Recovery

	LCS	LCSD
d10-2-Methylnaphthalene	68.0%	66.0%
d14-Dibenzo(a,h)anthracen	80.7%	79.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: MB-052113
METHOD BLANK

Lab Sample ID: MB-052113
LIMS ID: 13-10356
Matrix: Sediment
Data Release Authorized:
Reported: 05/28/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 05/21/13
Date Analyzed: 05/23/13 18:20
Instrument/Analyst: NT11/VTS
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.00 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	LOQ	Result
56-55-3	Benzo(a)anthracene	0.50	< 0.50 U
218-01-9	Chrysene	0.50	< 0.50 U
205-99-2	Benzo(b)fluoranthene	0.50	< 0.50 U
207-08-9	Benzo(k)fluoranthene	0.50	< 0.50 U
50-32-8	Benzo(a)pyrene	0.50	< 0.50 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.50	< 0.50 U
53-70-3	Dibenz(a,h)anthracene	0.50	< 0.50 U
TOTBFA	Total Benzofluoranthenes	1.00	< 1.00 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	65.7%
d14-Dibenzo(a,h)anthracen	73.0%

Metals Analysis
Report and Summary QC Forms

ARI Job ID: WP72

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Newfields

PROJECT: North Olympic Penins

SDG: WP72

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
RB13-PT-13-S	WP72A	13-10348	
RB13-PT-13-D	WP72B	13-10349	
RB13-PT-14-S	WP72D	13-10351	
RB13-PT-08-S	WP72E	13-10352	
RB13-PT-08-SD	WP72EDUP	13-10352	
RB13-PT-08-SS	WP72ESPK	13-10352	
RB13-PT-15-S	WP72F	13-10353	
RB13-PT-01-S	WP72G	13-10354	
PBS	WP72MB1	13-10354	
LCSS	WP72MB1SPK	13-10354	
RB13-PT-06-S	WP72H	13-10355	
RB13-PT-09-S	WP72I	13-10356	
RB13-PT-04-S	WP72J	13-10357	
RB13-PT-02-S	WP72K	13-10358	
RB13-PT-05-S	WP72L	13-10359	
RB13-PT-10-S	WP72M	13-10360	
RB13-PT-07-S	WP72N	13-10361	
RB13-PT-03-S	WP72O	13-10362	
RB13-PT-12-S	WP72P	13-10363	
RB13-PT-11-S	WP72Q	13-10364	
PBW	WP72MB2	13-10365	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments: _____

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: _____ Name: Jay Kuhn

Date: 5/20/13 Title: Inorganics Director

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Newfields

PROJECT: North Olympic Penins

SDG: WP72

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
LCSW	WP72MB2SPK	13-10365	
RB13-NOP-ER-4	WP72R	13-10365	
RB13-NOP-ER-4D	WP72RDUP	13-10365	
RB13-NOP-ER-4S	WP72RSPK	13-10365	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments: _____

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: Jay Kuhn Name: Jay Kuhn

Date: 5/20/13 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-13-S
SAMPLE

Lab Sample ID: WP72A
LIMS ID: 13-10348
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Percent Total Solids: 39.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/15/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.05	**0.09**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-13-D
SAMPLE

Lab Sample ID: WP72B
LIMS ID: 13-10349
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Percent Total Solids: 39.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/15/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.05	**0.09**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-14-S
SAMPLE

Lab Sample ID: WP72D
LIMS ID: 13-10351
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Percent Total Solids: 38.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/15/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.05	**0.08**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-08-S
SAMPLE

Lab Sample ID: WP72E
LIMS ID: 13-10352
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Percent Total Solids: 40.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/15/13	200.8	05/17/13	**7440-38-2**	**Arsenic**	0.5	**5.1**	
3050B	05/15/13	200.8	05/17/13	7440-43-9	Cadmium	0.2	0.2	U
CLP	05/15/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.06	**0.09**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-15-S
SAMPLE

Lab Sample ID: WP72F
LIMS ID: 13-10353
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Percent Total Solids: 42.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/15/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.04	**0.09**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-01-S
SAMPLE

Lab Sample ID: WP72G
LIMS ID: 13-10354
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Percent Total Solids: 41.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/15/13	200.8	05/17/13	**7440-38-2**	**Arsenic**	0.5	**5.7**	
3050B	05/15/13	200.8	05/17/13	**7440-43-9**	**Cadmium**	0.2	**0.3**	
CLP	05/15/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.04	**0.10**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-06-S
SAMPLE

Lab Sample ID: WP72H
LIMS ID: 13-10355
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Percent Total Solids: 60.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/15/13	200.8	05/17/13	**7440-38-2**	**Arsenic**	0.3	**4.0**	
3050B	05/15/13	200.8	05/17/13	**7440-43-9**	**Cadmium**	0.2	**0.2**	
CLP	05/15/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.04	**0.04**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-09-S
SAMPLE

Lab Sample ID: WP72I
LIMS ID: 13-10356
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Percent Total Solids: 73.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/15/13	200.8	05/17/13	**7440-38-2**	**Arsenic**	0.3	**2.7**	
3050B	05/15/13	200.8	05/17/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/15/13	7471A	05/17/13	7439-97-6	Mercury	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-04-S
SAMPLE

Lab Sample ID: WP72J
LIMS ID: 13-10357
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Percent Total Solids: 52.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/15/13	200.8	05/17/13	**7440-38-2**	**Arsenic**	0.4	**5.0**	
3050B	05/15/13	200.8	05/17/13	**7440-43-9**	**Cadmium**	0.2	**0.3**	
CLP	05/15/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.03	**0.06**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-02-S
SAMPLE

Lab Sample ID: WP72K
LIMS ID: 13-10358
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Percent Total Solids: 44.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/15/13	200.8	05/17/13	**7440-38-2**	**Arsenic**	0.4	**6.1**	
3050B	05/15/13	200.8	05/17/13	**7440-43-9**	**Cadmium**	0.2	**0.2**	
CLP	05/15/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.04	**0.08**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-05-S
SAMPLE

Lab Sample ID: WP72L
LIMS ID: 13-10359
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Percent Total Solids: 40.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/15/13	200.8	05/17/13	**7440-38-2**	**Arsenic**	0.5	**6.0**	
3050B	05/15/13	200.8	05/17/13	**7440-43-9**	**Cadmium**	0.2	**0.4**	
CLP	05/15/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.05	**0.08**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-10-S
SAMPLE

Lab Sample ID: WP72M
LIMS ID: 13-10360
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Percent Total Solids: 37.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/15/13	200.8	05/17/13	**7440-38-2**	**Arsenic**	0.5	**6.0**	
3050B	05/15/13	200.8	05/17/13	**7440-43-9**	**Cadmium**	0.3	**0.4**	
CLP	05/15/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.05	**0.09**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-07-S
SAMPLE

Lab Sample ID: WP72N
LIMS ID: 13-10361
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Percent Total Solids: 72.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/15/13	200.8	05/17/13	**7440-38-2**	**Arsenic**	0.3	**1.9**	
3050B	05/15/13	200.8	05/17/13	**7440-43-9**	**Cadmium**	0.1	**0.2**	
CLP	05/15/13	7471A	05/17/13	7439-97-6	Mercury	0.03	0.03	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-03-S
SAMPLE

Lab Sample ID: WP72O
LIMS ID: 13-10362
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Percent Total Solids: 40.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/15/13	200.8	05/17/13	**7440-38-2**	**Arsenic**	0.5	**6.4**	
3050B	05/15/13	200.8	05/17/13	**7440-43-9**	**Cadmium**	0.2	**0.5**	
CLP	05/15/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.04	**0.09**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-12-S
SAMPLE

Lab Sample ID: WP72P
LIMS ID: 13-10363
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Percent Total Solids: 55.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/15/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.04	**0.05**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-11-S
SAMPLE

Lab Sample ID: WP72Q
LIMS ID: 13-10364
Matrix: Sediment
Data Release Authorized
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Percent Total Solids: 36.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
CLP	05/15/13	7471A	05/17/13	**7439-97-6**	**Mercury**	0.06	**0.11**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-08-S
MATRIX SPIKE

Lab Sample ID: WP72E
LIMS ID: 13-10352
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	5.1	58.2	58.5	90.8%	
Cadmium	200.8	0.2 U	53.6	58.5	91.6%	
Mercury	7471A	0.09	0.84	0.611	123%	

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-PT-08-S
DUPLICATE

Lab Sample ID: WP72E
LIMS ID: 13-10352
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	5.1	5.3	3.8%	+/- 20%	
Cadmium	200.8	0.2 U	0.2 U	0.0%	+/- 0.2	L
Mercury	7471A	0.09	0.09	0.0%	+/- 0.06	L

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: WP72LCS
LIMS ID: 13-10354
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	26.2	25.0	105%	
Cadmium	200.8	25.8	25.0	103%	
Mercury	7471A	0.59	0.50	118%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: WP72MB
LIMS ID: 13-10354
Matrix: Sediment
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	05/15/13	200.8	05/17/13	7440-38-2	Arsenic	0.2	0.2	U
3050B	05/15/13	200.8	05/17/13	7440-43-9	Cadmium	0.1	0.1	U
CLP	05/15/13	7471A	05/17/13	7439-97-6	Mercury	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-NOP-ER-4
SAMPLE

Lab Sample ID: WP72R
LIMS ID: 13-10365
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
7470A	05/15/13	7470A	05/17/13	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-NOP-ER-4
MATRIX SPIKE

Lab Sample ID: WP72R
LIMS ID: 13-10365
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Mercury	7470A	0.1 U	1.0	1.0	100%	

Reported in µg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked
NR-Not Recovered

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB13-NOP-ER-4
DUPLICATE

Lab Sample ID: WP72R
LIMS ID: 13-10365
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: 05/10/13
Date Received: 05/13/13

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Mercury	7470A	0.1 U	0.1 U	0.0%	+/- 0.1	L

Reported in µg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: WP72LCS
LIMS ID: 13-10365
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Mercury	7470A	1.8	2.0	90.0%	

Reported in µg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: WP72MB
LIMS ID: 13-10365
Matrix: Water
Data Release Authorized:
Reported: 05/20/13

QC Report No: WP72-Newfields
Project: North Olympic Peninsula Regional

Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
7470A	05/15/13	7470A	05/17/13	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL
RL-Reporting Limit

General Chemistry Analysis
Report and Summary QC Forms

ARI Job ID: WP72

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-13-S
ARI ID: 13-10348 WP72A

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	32.64
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	3.06	19.5

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-13-D
ARI ID: 13-10349 WP72B

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	34.95
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	5.61	98.1

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-13-T
ARI ID: 13-10350 WP72C

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	33.82
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	2.96	27.0

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-14-S
ARI ID: 13-10351 WP72D

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	34.43
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	2.93	3.64

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-08-S
ARI ID: 13-10352 WP72E

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	41.72
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	36.37
Total Volatile Solids	05/14/13 051413#1	SM2540E	Percent	0.01	6.59
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	2.72	4.18
Total Organic Carbon	05/24/13 052413#1	Plumb,1981	Percent	0.020	2.06

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-15-S
ARI ID: 13-10353 WP72F

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	35.67
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	2.80	3.13

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-01-S
ARI ID: 13-10354 WP72G

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	44.39
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	40.76
Total Volatile Solids	05/14/13 051413#1	SM2540E	Percent	0.01	5.82
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	2.40	3.16
Total Organic Carbon	05/24/13 052413#1	Plumb,1981	Percent	0.020	1.41

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-06-S
ARI ID: 13-10355 WP72H

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	61.90
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	51.90
Total Volatile Solids	05/14/13 051413#1	SM2540E	Percent	0.01	3.12
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	1.89	2.64
Total Organic Carbon	05/24/13 052413#1	Plumb,1981	Percent	0.020	0.978

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-09-S
ARI ID: 13-10356 WP72I

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	75.54
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	72.53
Total Volatile Solids	05/14/13 051413#1	SM2540E	Percent	0.01	1.22
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	1.33	1.75
Total Organic Carbon	05/24/13 052413#1	Plumb,1981	Percent	0.020	0.851

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-04-S
ARI ID: 13-10357 WP72J

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	53.57
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	46.40
Total Volatile Solids	05/14/13 051413#1	SM2540E	Percent	0.01	4.38
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	2.15	7.56
Total Organic Carbon	05/24/13 052413#1	Plumb,1981	Percent	0.020	0.751

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-02-S
ARI ID: 13-10358 WP72K

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	45.20
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	36.67
Total Volatile Solids	05/14/13 051413#1	SM2540E	Percent	0.01	5.88
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	2.72	7.99
Total Organic Carbon	05/24/13 052413#1	Plumb,1981	Percent	0.020	1.82

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-05-S
ARI ID: 13-10359 WP72L

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	41.49
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	36.22
Total Volatile Solids	05/14/13 051413#1	SM2540E	Percent	0.01	6.42
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	13.3	120
Total Organic Carbon	05/24/13 052413#1	Plumb,1981	Percent	0.020	2.20

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-10-S
ARI ID: 13-10360 WP72M

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	38.66
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	32.36
Total Volatile Solids	05/14/13 051413#1	SM2540E	Percent	0.01	7.84
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	3.09	56.9
Total Organic Carbon	05/24/13 052413#1	Plumb,1981	Percent	0.020	3.02

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-07-S
ARI ID: 13-10361 WP72N

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	72.56
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	72.57
Total Volatile Solids	05/14/13 051413#1	SM2540E	Percent	0.01	0.87
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	13.7	179
Total Organic Carbon	05/24/13 052413#1	Plumb,1981	Percent	0.020	0.564

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-03-S
ARI ID: 13-10362 WP72O

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	41.01
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	37.27
Total Volatile Solids	05/14/13 051413#1	SM2540E	Percent	0.01	6.96
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	12.9	152
Total Organic Carbon	05/24/13 052413#1	Plumb,1981	Percent	0.020	2.79

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-12-S
ARI ID: 13-10363 WP72P

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	50.87
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	1.93	30.3

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Client ID: RB13-PT-11-S
ARI ID: 13-10364 WP72Q

Analyte	Date	Method	Units	RL	Sample
Preserved Total Solids	05/14/13 051413#1	SM2540B	Percent	0.01	30.52
Sulfide	05/15/13 051513#1	EPA 376.2	mg/kg	3.22	7.35

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: WP72A Client ID: RB13-PT-13-S						
Sulfide	05/15/13	mg/kg	19.5	393	383	97.5%
ARI ID: WP72E Client ID: RB13-PT-08-S						
Total Organic Carbon	05/24/13	Percent	2.06	4.11	2.23	92.1%

REPLICATE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: 05/10/13
Date Received: 05/13/13

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: WP72A Client ID: RB13-PT-13-S					
Preserved Total Solids	05/14/13	Percent	32.64	32.76	0.4%
Sulfide	05/15/13	mg/kg	19.5	40.2	69.3%
ARI ID: WP72E Client ID: RB13-PT-08-S					
Total Solids	05/14/13	Percent	41.72	42.81 41.79	1.4%
Total Volatile Solids	05/14/13	Percent	6.59	7.03 6.56	3.9%
Total Organic Carbon	05/24/13	Percent	2.06	1.87 2.06	5.5%

LAB CONTROL RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Sulfide EPA 376.2	PREP	05/15/13	mg/kg	172	135	127.4%
Total Organic Carbon Plumb,1981	ICVL	05/24/13	Percent	0.102	0.100	102.0%

METHOD BLANK RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Total Solids	05/14/13	Percent	< 0.01 U	ICB
Preserved Total Solids	05/14/13	Percent	< 0.01 U	ICB
Total Volatile Solids	05/14/13	Percent	< 0.01 U	ICB
Sulfide	05/15/13	mg/kg	< 1.00 U	PREP
Total Organic Carbon	05/24/13	Percent	< 0.020 U	ICB

STANDARD REFERENCE RESULTS-CONVENTIONALS
WP72-Newfields

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 05/29/13

Project: North Olympic Peninsula Regi
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon NIST 1941B	05/24/13	Percent	2.61	2.99	87.3%

Geotechnical Analysis
Report and Summary QC Forms

ARI Job ID: WP72

NewFields
North Olympic Peninsula Regional

Apparent Grain Size Distribution Summary
Percent Finer Than Indicated Size

Sample No.	Gravel			Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt				Clay	
Phi Size	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
Sieve Size (microns)	3/8"	#4 (4750)	#10 (2000)	#18 (1000)	#35 (500)	#60 (250)	#120 (125)	#230 (63)	31.00	15.60	7.80	3 90	2.00	1.00
RB13-PT-13-S	100.0	100 0	100.0	99.9	99.4	98.9	97.2	93 0	84.4	65.0	47.7	36.6	26.2	18.7
	100.0	100.0	100.0	99.8	99.3	98.7	97.0	92.8	88.2	64.9	47.8	36.6	25.8	19.1
	100.0	100.0	99.7	99.3	98.3	97.5	95.5	91.2	84.7	65.5	47.7	36.2	25.8	18.6
RB13-PT-13-D	100.0	100.0	99.8	99.6	99.1	98.6	97.0	92.8	83.8	66.2	48.2	36.4	25.9	18.8
RB13-PT-13-T	100.0	100.0	100.0	99.8	99.4	98.9	97.2	93.1	85.4	66.4	48.6	36.4	26.6	18.4
RB13-PT-14-S	100.0	97.7	97.3	97.0	96.8	96.4	96.0	93.0	82.9	62.6	47.7	37.2	27.5	20.1
RB13-PT-08-S	100.0	100.0	99.4	99.1	98.7	98.4	98.0	95.1	79.8	59.3	43.0	33.2	24.8	18.0
RB13-PT-15-S	100.0	99.9	99.9	99.5	99.0	98.3	97.2	93.3	78.6	56.3	39.4	29.5	21.1	14.9
RB13-PT-01-S	100.0	100.0	99.7	99.5	99.1	98.9	98.1	91.8	73.2	52.9	40.7	31.3	22.9	16.5
RB13-PT-06-S	100.0	100.0	99.8	99.5	99.2	98.2	80.2	39.9	30.5	23.4	18.9	15.2	11.2	8.0
RB13-PT-09-S	100.0	100.0	99.6	99.2	91.9	56.4	19.0	8.0	5.9	4.8	4.1	3.4	2.7	2.0
RB13-PT-04-S	100.0	100.0	99.9	99.7	99.3	98 7	95.1	65.5	46.6	34.7	27.6	21.3	16.2	11.8
RB13-PT-02-S	100.0	98.3	98.2	98.0	97.6	97.1	95.4	88.6	72.1	52.8	40.4	30.9	23.2	16.5
RB13-PT-05-S	100.0	96.6	96.5	96.2	95.8	95.2	91.8	84.1	70.1	54.4	42.6	32.1	23.6	16.6
RB13-PT-10-S	100.0	100.0	99.5	99.3	98.7	98.1	96.1	91.9	86.5	70.6	52.7	38.1	27.4	18.7
RB13-PT-07-S	100.0	100.0	100.0	99.9	99.3	60.2	2.1	1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
RB13-PT-03-S	100.0	100.0	100.0	99.7	98.7	97.0	87.5	78.7	75.5	62.5	48.8	36.5	26.4	18.2
RB13-PT-12-S	100.0	100.0	99 8	99.2	98.6	96.9	75.1	49.8	36.2	28.9	23.6	18.3	13.2	9.4
RB13-PT-11-S	100.0	100.0	100.0	99.5	98.5	97.6	95.9	90.4	84.0	69.7	52.5	37.8	27.1	18.6

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

WP72

NewFields
North Olympic Peninsula Regional

Apparent Grain Size Distribution Summary
Percent Retained in Each Size Fraction

Sample No.	Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Coarse Silt	Medium Silt	Fine Silt	Very Fine Silt	Clay			Total Fines
Phi Size	< -1	-1 to 0	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	> 10	> 4
Sieve Size (microns)	> #10 (2000)	10 to 18 (2000-1000)	18-35 (1000-500)	35-60 (500-250)	60-120 (250-125)	120-230 (125-62)	62.5-31.0	31.0-15 6	15.6-7.8	7 8-3.9	3 9-2 0	2 0-1 0	<1.0	<230 (<62)
RB13-PT-13-S	0.0	0.1	0.5	0.5	1.7	4.2	8.7	19.4	17.3	11.2	10.3	7.5	18.7	93.0
	0.0	0.2	0.5	0.5	1.8	4.1	4.6	23.4	17.0	11.2	10.8	6.7	19.1	92.8
	0.3	0.4	1.0	0.8	2.0	4.2	6.5	19.2	17.8	11.4	10.5	7.1	18.6	91.2
RB13-PT-13-D	0.2	0.2	0.5	0.5	1.6	4.2	9.1	17.6	17.9	11.8	10.5	7.1	18.8	92.8
RB13-PT-13-T	0.0	0.2	0.5	0.4	1.7	4.2	7.6	19.1	17.8	12.1	9.9	8.1	18.4	93.1
RB13-PT-14-S	2.7	0.3	0.3	0.3	0.5	3.0	10.1	20.3	14.9	10.5	9.7	7.4	20.1	93.0
RB13-PT-08-S	0.6	0.3	0.5	0.3	0.4	2.9	15.3	20.5	16.3	9.8	8.4	6.8	18.0	95.1
RB13-PT-15-S	0.1	0.4	0.5	0.7	1.1	3.9	14.7	22.3	16.8	10.0	8.4	6.2	14.9	93.3
RB13-PT-01-S	0.3	0.2	0.3	0.3	0.7	6.3	18.6	20.3	12.3	9.4	8.4	6.4	16.5	91.8
RB13-PT-06-S	0.2	0.3	0.4	1.0	17.9	40.4	9.4	7.1	4.5	3.7	4.0	3.2	8.0	39.9
RB13-PT-09-S	0.4	0.4	7.3	35.5	37.4	11.0	2.1	1 0	0.7	0.7	0.8	0.7	2.0	8.0
RB13-PT-04-S	0.1	0.2	0.4	0.6	3.7	29.6	18.8	11.9	7.1	6.3	5.1	4.4	11.8	65.5
RB13-PT-02-S	1.8	0.2	0.4	0.5	1.7	6.9	16.5	19.3	12.4	9.5	7.7	6.7	16.5	88.6
RB13-PT-05-S	3.5	0.3	0.5	0.6	3.4	7.7	14.0	15.7	11.7	10.6	8.5	7.1	16.6	84.1
RB13-PT-10-S	0.5	0.2	0.6	0.6	1.9	4.2	5.4	15.9	17.9	14.6	10.7	8.7	18.7	91.9
RB13-PT-07-S	0.0	0.1	0.6	39.1	58.1	0.9	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	1.2
RB13-PT-03-S	0.0	0.3	1.0	1.6	9.5	8.8	3.2	13.0	13.7	12.3	10.1	8.2	18.2	78.7
RB13-PT-12-S	0.2	0.6	0.6	1.7	21.9	25.2	13.7	7.3	5.3	5.3	5.1	3.9	9.4	49.8
RB13-PT-11-S	0.0	0.5	1.1	0.9	1.6	5.5	6.4	14.3	17.2	14.7	10.7	8.5	18.6	90.4

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

WP72

QA SUMMARY

Client.	NewFields	Client Project:	North Olympic Peninsula Regional
ARI Trip Sample ID.	WP72A		
Client Trip Sample ID:	RB13-PT-13-S	Batch No.:	WP72-1

Relative Standard Deviation, By Phi Size

Sample ID	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
RB13-PT-13-S	100.0	100 0	100.0	99.9	99.4	98.9	97.2	93.0	84 4	65.0	47.7	36.6	26.2	18 7
	100.0	100 0	100.0	99.8	99.3	98.7	97.0	92.8	88 2	64.9	47.8	36.6	25.8	19.1
	100.0	100 0	99 7	99.3	98.3	97.5	95.5	91 2	84.7	65.5	47.7	36.2	25.8	18.6
AVE	NA	100.00	99.91	99 65	98 98	98 37	96 54	92.36	85.76	65.11	47.74	36.48	25.94	18.83
STDEV	NA	0.00	0 15	0 28	0.61	0.78	0.96	1.01	2.15	0.31	0.10	0 21	0.24	0.24
%RSD	NA	0.00	0.15	0 28	0 61	0.79	0 99	1.09	2.51	0.48	0.20	0.57	0.91	1.29

The Triplicate Applies To The Following Samples

Client ID	Date Sampled	Date Extracted	Date Complete	QA Ratio (95-105)	Data Qualifiers	Pipette Portion (5.0-25.0g)
RB13-PT-13-S	5/10/2013	5/23/2013	5/31/2013	99.9		14.4
	5/10/2013	5/23/2013	5/31/2013	99.7		13 6
	5/10/2013	5/23/2013	5/31/2013	100.1		12.7
RB13-PT-13-D	5/10/2013	5/23/2013	5/31/2013	98.8		14.0
RB13-PT-13-T	5/10/2013	5/23/2013	5/31/2013	98.6		13.6
RB13-PT-14-S	5/10/2013	5/23/2013	5/31/2013	98.6		14.9
RB13-PT-08-S	5/10/2013	5/23/2013	5/31/2013	100.3		15.1
RB13-PT-15-S	5/10/2013	5/23/2013	5/31/2013	100.4		13.6
RB13-PT-01-S	5/10/2013	5/23/2013	5/31/2013	100.5		14.4
RB13-PT-06-S	5/10/2013	5/23/2013	5/31/2013	101.3		9.9
RB13-PT-09-S	5/10/2013	5/23/2013	5/31/2013	100 5		5.2
RB13-PT-04-S	5/10/2013	5/23/2013	5/31/2013	100.7		11.9
RB13-PT-02-S	5/10/2013	5/23/2013	5/31/2013	99.7		15.4
RB13-PT-05-S	5/10/2013	5/23/2013	5/31/2013	97 4		12.2
RB13-PT-10-S	5/10/2013	5/23/2013	5/31/2013	98 0		12.6
RB13-PT-07-S	5/10/2013	5/28/2013	5/31/2013	99 6	SS	1.3
RB13-PT-03-S	5/10/2013	5/23/2013	5/31/2013	98.7		11.9
RB13-PT-12-S	5/10/2013	5/23/2013	5/31/2013	100 2		9.8
RB13-PT-11-S	5/10/2013	5/23/2013	5/31/2013	98.5		12 7

* ARI Internal QA limits = 95-105%

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

Analytical Resources, Inc.

Geotechnical Data Qualifiers
PSEP Grain Size Analysis

SM - The sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations.

SS – The sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis.

W – The weight of the sample in some pipette aliquots was below the level required for accurate weighing.

F – The samples were frozen prior to particle size determination.

Appendix G.
EcoChem, Inc. Data Validation Reports

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EcoChem, INC.
Environmental Data Quality

DATA VALIDATION REPORT

North Olympic Peninsula
Regional Background Sediment Characterization

Prepared for:

NewFields
115 2nd Ave N
Suite 100
Edmonds, WA 98020

Prepared by:

EcoChem, Inc.
1011 Western Ave., Suite 1011
Seattle, Washington 98104

EcoChem Project: C24703-1

July 31, 2013

Approved for Release

Chris Ransom

Basis for Data Validation

This report summarizes the results of QA-2 validation (EPA Stage 3/4) performed on sediment, and quality control (QC) sample data for the Regional Background Study – North Olympic Peninsula. Rinsate blanks received a QA-1 (EPA Stage 2A) level of rveview. A list of all samples is provided in the **Sample Index**. Laboratory batch ID numbers and associated levels of validation are provided at the beginning of each technical section.

Samples were analyzed by Analytical Resources, Inc., Tukwila, Washington and Axys Analytical, Sidney, British Columbia, Canada. The analytical methods and EcoChem project chemists are listed below.

Analysis	Method of Analysis	Primary Review	Secondary Review
Polycyclic Aromatic Hydrocarbons	SW8270D-SIM	Julie Holder	Christine Ransom
Dioxin & Furan Compounds	EPA 1613B	Mark Brindle	
PCB Congeners	EPA 1668A	Melissa. Swanson	
Metals and Mercury	200.8, 7470A, 7471A	Yas Hida	Dorothy Kerlin
Total Organic Carbon	Plumb 1981		
Grain Size	PSEP		
Preserved Total Solids & Total Solids	SM 2540B		
Sulfide	EPA 376.2		
Total Volatile Solids	SM2540E		

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *North Olympic Peninsula Regional Background Sediment Characterization Sampling and Analysis Plan* (NewFields, May 3, 2013); *USEPA National Functional Guidelines for Chlorinated Dioxin/Furan Data Review* (USEPA, September 2010); *National Functional Guidelines for Organic Data Review* (USEPA 2008); and *USEPA National Functional Guidelines for Inorganic Data Review* (USEPA 2010).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, reason codes, and validation criteria are included as **Appendix A**. The qualified data summary table is included as **Appendix B.** Data Validation Worksheets and the associated communication records will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) has also been submitted as a deliverable for this project.

Sample Index
North Olympic Peninsula - Regional Background Sediment Characterization
Analytical Resources, Inc.

SDG	Sample ID	Laboratory ID	PAH	Metals	Mercury	TOC, TVS	Sulfide	Grain Size
WP45	RB13-DUN-03-S	WP45A	✓	✓	✓	✓	✓	✓
WP45	RB13-DUN-06-S	WP45B	✓	✓	✓	✓	✓	✓
WP45	RB13-DUN-07-S	WP45C	✓	✓	✓	✓	✓	✓
WP45	RB13-DUN-12-S	WP45D	✓	✓	✓	✓	✓	✓
WP45	RB13-DUN-10-S	WP45E	✓	✓	✓	✓	✓	✓
WP45	RB13-DUN-13-S	WP45F	✓	✓	✓	✓	✓	✓
WP45	RB13-DUN-05-S	WP45G	✓	✓	✓	✓	✓	✓
WP45	RB13-DUN-05-D	WP45H	✓	✓	✓	✓	✓	✓
WP45	RB13-DUN-05-T	WP45I				✓	✓	✓
WP45	RB13-DUN-09-S	WP45J	✓	✓	✓	✓	✓	✓
WP45	RB13-DUN-04-S	WP45K	✓	✓	✓	✓	✓	✓
WP45	RB13-DUN-02-S	WP45L	✓	✓	✓	✓	✓	✓
WP45	RB13-DUN-11-S	WP45M	✓	✓	✓	✓	✓	✓
WP45	RB13-DUN-01-S	WP45N	✓	✓	✓	✓	✓	✓
WP45	RB13-DUN-08-S	WP45O	✓	✓	✓	✓	✓	✓
WP46	RB13-DUN-17-S	WP46A			✓		✓	✓
WP46	RB13-DUN-19-S	WP46B			✓		✓	✓
WP46	RB13-DUN-14-S	WP46C			✓		✓	✓
WP46	RB13-DUN-20-S	WP46D			✓		✓	✓
WP46	RB13-DUN-16-S	WP46E			✓		✓	✓
WP46	RB13-DUN-22-S	WP46F			✓		✓	✓
WP46	RB13-DUN-21-S	WP46G			✓		✓	✓
WP46	RB13-DUN-15-S	WP46H			✓		✓	✓
WP46	RB13-DIS-04-S	WP46I	✓	✓	✓	✓	✓	✓
WP46	RB13-DIS-11-S	WP46J	✓	✓	✓	✓	✓	✓
WP46	RB13-DIS-08-S	WP46K	✓	✓	✓	✓	✓	✓
WP46	RB13-DIS-06-S	WP46L	✓	✓	✓	✓	✓	✓
WP46	RB13-NOP-RB	WP46M	✓	✓	✓			
WP46	RB13-NOP-ER-1	WP46N	✓	✓	✓			
WP46	RB13-DIS-09-S	WP46O	✓	✓	✓	✓	✓	✓
WP46	RB13-DIS-09-D	WP46P	✓	✓	✓	✓	✓	✓
WP46	RB13-DIS-09-T	WP46Q				✓	✓	✓
WP46	RB13-DUN-18-S	WP46R			✓		✓	✓
WP47	RB13-DIS-14-S	WP47A			✓		✓	✓
WP47	RB13-DIS-15-S	WP47B			✓		✓	✓
WP47	RB13-DIS-18-S	WP47C			✓		✓	✓
WP47	RB13-DIS-10-S	WP47D	✓	✓	✓	✓	✓	✓
WP47	RB13-DIS-07-S	WP47E	✓	✓	✓	✓	✓	✓
WP47	RB13-DIS-01-S	WP47F	✓	✓	✓	✓	✓	✓
WP47	RB13-DIS-13-S	WP47G			✓		✓	✓
WP47	RB13-DIS-03-S	WP47H	✓	✓	✓	✓	✓	✓
WP47	RB13-DIS-20-S	WP47I			✓		✓	✓
WP47	RB13-DIS-12-S	WP47J	✓	✓	✓	✓	✓	✓
WP47	RB13-DIS-19-S	WP47K			✓		✓	✓
WP47	RB13-DIS-02-S	WP47L	✓	✓	✓	✓	✓	✓
WP47	RB13-DIS-05-S	WP47M	✓	✓	✓	✓	✓	✓

Sample Index
North Olympic Peninsula - Regional Background Sediment Characterization
Analytical Resources, Inc.

SDG	Sample ID	Laboratory ID	PAH	Metals	Mercury	TOC, TVS	Sulfide	Grain Size
WP47	RB13-DIS-17-S	WP47N			✓		✓	✓
WP47	RB13-NOP-ER-2	WP47O	✓	✓	✓			
WP47	RB13-DIS-16-S	WP47P			✓		✓	✓
WP62	RB13-SEQ-05-S	WP62A	✓	✓	✓	✓	✓	✓
WP62	RB13-SEQ-08-S	WP62B			✓		✓	✓
WP62	RB13-SEQ-02-S	WP62C	✓	✓	✓	✓	✓	✓
WP62	RB13-SEQ-06-S	WP62D			✓		✓	✓
WP62	RB13-SEQ-04-S	WP62E	✓	✓	✓	✓	✓	✓
WP62	RB13-SEQ-03-S	WP62F	✓	✓	✓	✓	✓	✓
WP62	RB13-SEQ-03-D	WP62G	✓	✓	✓	✓	✓	✓
WP62	RB13-SEQ-03-T	WP62H				✓	✓	✓
WP62	RB13-SEQ-07-S	WP62I			✓		✓	✓
WP62	RB13-SEQ-01-S	WP62J	✓	✓	✓	✓	✓	✓
WP62	RB13-NOP-ER-3	WP62K	✓	✓	✓			
WP72	RB13-PT-13-S	WP72A			✓		✓	✓
WP72	RB13-PT-13-D	WP72B			✓		✓	✓
WP72	RB13-PT-13-T	WP72C					✓	✓
WP72	RB13-PT-14-S	WP72D			✓		✓	✓
WP72	RB13-PT-08-S	WP72E	✓	✓	✓	✓	✓	✓
WP72	RB13-PT-15-S	WP72F			✓		✓	✓
WP72	RB13-PT-01-S	WP72G	✓	✓	✓	✓	✓	✓
WP72	RB13-PT-06-S	WP72H	✓	✓	✓	✓	✓	✓
WP72	RB13-PT-09-S	WP72I	✓	✓	✓	✓	✓	✓
WP72	RB13-PT-04-S	WP72J	✓	✓	✓	✓	✓	✓
WP72	RB13-PT-02-S	WP72K	✓	✓	✓	✓	✓	✓
WP72	RB13-PT-05-S	WP72L	✓	✓	✓	✓	✓	✓
WP72	RB13-PT-10-S	WP72M	✓	✓	✓	✓	✓	✓
WP72	RB13-PT-07-S	WP72N	✓	✓	✓	✓	✓	✓
WP72	RB13-PT-03-S	WP72O	✓	✓	✓	✓	✓	✓
WP72	RB13-PT-12-S	WP72P			✓		✓	✓
WP72	RB13-PT-11-S	WP72Q			✓		✓	✓
WP72	RB13-NOP-ER-4	WP72R			✓			

Sample Index
North Olympic Peninsula - Regional Background Sediment Characterization
Axys Analytical

SDG	Sample ID	Laboratory ID	Dioxins	PCB Congeners
WG43679	RB13-DUN-03-S	L19652-1	✓	✓
WG43679	RB13-DUN-06-S	L19652-2	✓	✓
WG43679	RB13-DUN-07-S	L19652-3	✓	✓
WG43679	RB13-DUN-12-S	L19652-4	✓	✓
WG43679	RB13-DUN-10-S	L19652-5	✓	✓
WG43679	RB13-DUN-13-S	L19652-6	✓	✓
WG43679	RB13-DUN-05-S	L19652-7	✓	✓
WG43679	RB13-DUN-05-D	L19652-8		✓
WG43679	RB13-DUN-09-S	L19652-9	✓	✓
WG43679	RB13-DUN-04-S	L19652-10	✓	✓
WG43679	RB13-DUN-02-S	L19652-11	✓	✓
WG43679	RB13-DUN-11-S	L19652-12	✓	✓
WG43679	RB13-DUN-01-S	L19652-13	✓	✓
WG43679	RB13-DUN-08-S	L19652-14	✓	✓
WG43679	RB13-PT-06-S	L19652-15	✓	✓
WG43699	RB13-PT-09-S	L19652-16	✓	✓
WG43699	RB13-PT-04-S	L19652-17	✓	✓
WG43699	RB13-PT-05-S	L19652-19	✓	✓
WG43699	RB13-PT-10-S	L19652-20	✓	✓
WG43699	RB13-PT-07-S	L19652-21	✓	✓
WG43699	RB13-PT-03-S	L19652-22	✓	✓
WG43699	RB13-PT-08-S	L19652-23	✓	✓
WG43699	RB13-PT01-S	L19652-24	✓	✓
WG43699	RB13-SEQ-05-S	L19652-25	✓	✓
WG43699	RB13-SEQ-02-S	L19652-26	✓	✓
WG43699	RB13-SEQ-04-S	L19652-27	✓	✓
WG43699	RB13-SEQ-03-S	L19652-28	✓	✓
WG43699	RB13-SEQ-03-D	L19652-29	✓	✓
WG43721	RB13-SEQ-01-S	L19652-30	✓	✓
WG43721	RB13-DIS-10-S	L19652-31		✓
WG43721	RB13-DIS-07-S	L19652-32	✓	✓
WG43721	RB13-DIS-01-S	L19652-33	✓	✓
WG43721	RB13-DIS-03-S	L19652-34	✓	✓
WG43721	RB13-DIS-12-S	L19652-35	✓	✓
WG43721	RB13-DIS-02-S	L19652-36	✓	✓
WG43721	RB13-DIS-05-S	L19652-37	✓	✓
WG43721	RB13-DIS-04-S	L19652-38	✓	✓
WG43721	RB13-DIS-11-S	L19652-39	✓	✓
WG43721	RB13-DIS-08-S	L19652-40	✓	✓
WG43721	RB13-DIS-06-S	L19652-41	✓	✓
WG43721	RB13-DIS-09-S	L19652-42	✓	✓
WG43721	RB13-DIS-09-D	L19652-43	✓	✓
WG43769	RB13-PT-02-S	L19652-18	✓	✓
WG43834	RB13-DUN-05-D	L19652-8	✓	
WG43834	RB13-DIS-10-S	L19652-31	✓	

DATA VALIDATION REPORT
North Olympic Peninsula
Regional Background Sediment Characterization
Dioxin & Furan Compounds by Axys Method MLA-017 (EPA 1613B)

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Axys Analytical Services, Ltd. of Sidney, British Columbia, Canada. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	Validation Level
WG43679	15 Sediment	QA-2 (EPA Stage 4)
WG43699	13 Sediment	QA-2 (EPA Stage 4)
WG43721	13 Sediment	QA-2 (EPA Stage 4)
WG43769	1 Sediment	QA-2 (EPA Stage 4)
WG43834	2 Sediment	QA-2 (EPA Stage 4)

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO LABORATORY REPORT PACKAGE VERIFICATION

A complete (100%) verification of the electronic data deliverable (EDD) results was performed by comparison to the laboratory data package. Laboratory QC results were also verified (10%). No errors were noted.

III. TECHNICAL DATA VALIDATION

The QC requirements reviewed are summarized in the following table:

√	Sample Receipt, Preservation, and Holding Time	**1**	Reference Materials (RM)
√	System Performance and Resolution Checks	**2**	Field Duplicates
√	Initial Calibration (ICAL)	√	Laboratory Duplicates
√	Calibration Verification (CVER)	√	Target Analyte List
2	Method Blanks	**2**	Reported Results
2	Labeled Compound Recovery	**2**	Compound Identification
√	Ongoing Precision and Recovery (OPR)	**1**	Calculation Verification

√ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.
[1] Quality control results are discussed below, but no data were qualified.
[2] Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Method Blanks

In order to assess the impact of blank contamination on the reported sample results, action levels are established at five times the blank concentrations. If the concentrations in the associated field samples are less than the action levels, the results are qualified as not detected (U-7).

The laboratory assigned K-flags to dioxin and furan values when a peak was detected but did not meet identification criteria. These values cannot be considered as positive identifications, but are "estimated maximum possible concentrations". When these occurred in the method blank the results were considered as false positives. No action levels were established for these analytes.

SDG WG43679: The following results were qualified as not-detected based on method blank contamination:

Sample ID	Congener
RB13-DUN-08-S RB13-DUN-07-S RB13-DUN-12-S RB13-DUN-05-S	1,2,3,4,7,8-HxCDD
RB13-DUN-03-S RB13-DUN-02-S RB13-DUN-11-S RB13-DUN-07-S RB13-DUN-10-S	1,2,3,6,7,8-HxCDD
RB13-DUN-01-S	1,2,3,7,8,9-HxCDF
RB13-DUN-02-S RB13-DUN-11-S RB13-DUN-09-S	OCDF

SDG WG43699: The analyte OCDD was detected in the method blank; however all associated sample results were greater than the action level. No qualifiers were required.

SDG WG43721: The analytes 1,2,3,4,6,7,8-HpCDD, OCDD, and OCDF were detected in the method blank. All associated sample results were greater than the action levels. No qualifiers were required.

SDG WG43769: The analyte OCDD was detected in the method blank; however all associated sample results were greater than the action level. No qualifiers were required.

Labeled Compound Recovery

SDG WG43699: The percent recovery (%R) for the labeled compound $^{13}C_{12}$-OCDD was less than the lower control limit in Sample RB13-PT-03-S. The OCDD result for this sample was estimated (J-13L) to indicate a potential low bias.

SDG WG43721: The following labeled compound outliers were noted:

Sample ID	Labeled Congener	Bias	Qualifier Assigned
RB13-DIS-12-S	$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	Low	J-13L
RB13-DIS-06-S	$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	Low	
	$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	Low	
RB13-DIS-09-S	$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	Low	

SDG WG43834: The %R value for the clean-up standard ^{37}Cl-2,3,7,8-TCDD was less than the lower control limit in Sample RB13-DUN-05-D. No qualifiers were assigned as all labeled compound recoveries were acceptable.

Reference Materials

SDG WG43679: The Puget Sound Sediment Reference Material was analyzed with the samples in this SDG. The current acceptance limits are +/-50% of the average concentration. The result for 1,2,3,7,8,9-HxCDF was less than the lower control limit and the result for OCDF was greater than the upper control limit. No data were qualified based on these outliers as this reference material is still undergoing evaluation and is not yet certified.

Field Duplicates

The following acceptance criteria were used to evaluate field precision: the relative percent difference (RPD) control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the difference between the sample and duplicate must be less than 2x the RL.

SDG WG43699: One set of field duplicates, RB13-SEQ-03-S and RB13-SEQ-03-D, were submitted. The RPD values were within control limits. Field precision was acceptable.

SDG WG43721: One set of field duplicates, RB13-DIS-09-S and RB13-DIS-09-D, were submitted. The RPD value for total tetra dioxins was greater than the control limit; these results were estimated in the field duplicate samples.

SDG WG43834: One set of field duplicates, RB13-DUN-05-S (from SDG WG43679) and RB13-DUN-05-D, were submitted. The RPD values were within control limits. Field precision was acceptable.

Reported Results

All results for 2,3,7,8-TCDF were confirmed on a DB-225 column as required by the method. The 2,3,7,8-TCDF results from both columns were reported. The 2,3,7,8-TCDF results from the DB-5 column were qualified do-not-report (DNR-11).

Compound Identification

The laboratory assigned a" K" flag to one or more analytes in all samples to indicate the ion ratio criterion were not met. Since the ion abundance ratio is the primary identification criterion for high resolution mass spectroscopy, an outlier indicates that the reported result may be a false positive. All “K” flagged results were qualified as not detected (U-25) at the reported concentration.

SDG WG43721: Sample RB13-DIS-09-D exhibited lock-mass disturbances that affected one target analyte. The laboratory assigned a "G" flag to the 1,2,3,7,8-PeCDD result. This “G” flagged result was estimated (J-14).

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were noted.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the labeled compound, reference material, and on-going precision and recovery standard recoveries and precision was acceptable as demonstrated by the laboratory and field duplicate RPD values.

Detection limits were elevated based on ion ratio outliers and method blank contamination. Data were estimated due to labeled compound recovery outliers, a field duplicate RPD outlier, and lock-mass disturbances.

Results for 2,3,7,8-TCDF on the DB-5 column were qualified do-not-report (DNR). A usable result remains for this compound in all samples; completeness was unaffected.

Data that have been flagged DNR are not useable for any purpose.

All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
North Olympic Peninsula
Regional Background Sediment Characterization
PCB Congeners by Axys Method MLA-010 (EPA 1668)

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Axys Analytical Services Ltd. of Sydney, British Columbia, Canada. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	Validation Level
WG43679	15 Sediment	QA-2 (EPA Stage 4)
WG43699	13 Sediment	QA-2 (EPA Stage 4)
WG43721	14 Sediment	QA-2 (EPA Stage 4)
WG43769	1 Sediment	QA-2 (EPA Stage 4)

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO LABORATORY REPORT PACKAGE VERIFICATION

A complete (100%) verification of the electronic data deliverable (EDD) results was performed by comparison to the laboratory data package. Laboratory QC results were also verified (10%). No errors were noted.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	√	Laboratory Duplicates
√	GC/MS Instrument Performance Check	**1**	Reference Materials
√	Initial Calibration (ICAL)	**2**	Field Duplicates
√	Continuing Calibration (CCAL)	**2**	Compound Identification
2	Method Blanks	**2**	Reported Results
2	Labeled Compounds	**1**	Reporting Limits
2	Ongoing Precision and Recovery (OPR)	**1**	Calculation Verification

√ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.
[1] Quality control results are discussed below, but no data were qualified.
[2] Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

SDG WG43721: The sample ID on the sample container RB13-DIS-**03**-S, did not match the sample ID listed on the chain-of-custody (RB13-DIS-**01**-S). The laboratory contacted the client and was instructed to use the sample ID listed on the sample container for all tracking and analyses.

Method Blanks

Method blanks were analyzed at the appropriate frequency. To assess the impact of each blank contaminant on the reported sample results, an action level was established at five times the concentration detected in the blank and the sample results were compared to these action levels. The laboratory assigned K-flags to values when a peak was detected but did not meet identification criteria. These values cannot be considered as positive identifications, but are "estimated maximum possible concentrations". When these occurred in the method blank the results were considered as false positives. No action levels were established for these analytes.

Several PCB congeners were detected in the method blanks however, only PCB-167, PCB-190, and PCB-203 in Sample RB13-DIS-10-S were qualified as not detected (U-7). All other associated results were either greater than the action levels or not-detected.

Labeled Compound Recovery

Labeled compounds were added to all samples. The labeled compound percent recovery (%R) values were evaluated using the laboratory control limits.

SDG WG43721: The recoveries for PCB 1L, PCB 4L, and PCB 19L in Sample RB13-DIS-10-S were less than the lower control limit. The associated results were estimated (J/UJ-13L) to indicate a potential low bias.

Ongoing Precision and Recovery

SDG WG43721: For the ongoing precision and recovery (OPR) standard analyzed with this data set, the laboratory noted instrumental interferences in the quantitation of PCB 1 and PCB 3. The extract for the OPR sample was re-analyzed at dilution with no change. Because these congeners could not be quantitated in the OPR, the results for PCB 1 and PCB 3 in the associated samples were estimated (J-10).

Reference Materials

SDG WG43679: The Puget Sound Sediment Reference Material was analyzed with the samples in this SDG. The published acceptance criteria are ±50% of the average value. The recoveries for PCB 3, PCB 4, and PCB 56 were less than the lower control limits and the recoveries for PCB 129/138/160/163 and PCB 134/143 were greater than the upper control limits. No data were qualified based on these outliers as this reference material is still undergoing evaluation and is not yet certified.

Field Duplicates

The following acceptance criteria were used to evaluate field precision: the relative percent difference (RPD) control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the difference between the sample and duplicate must be less than 2x the RL. The following field duplicates were collected:

SDG	Parent Sample ID	Duplicate Sample ID
WG43679	RB13-DUN-05-S	RB13-DUN-05-D
WG43699	RB13-SEQ-03-S	RB13-SEQ-03-D
WG43721	RB13-DIS-09-S	RB13-DIS-09-D

SDG WG43721: For samples RB13-DIS-09-S and RB13-DIS-09D, the RPD for PCB 156 was greater than the control limit. Results for this congener were estimated (J-9) in both samples.

Compound Identification

The laboratory assigned a "K" flag to one or more analytes in all samples to indicate the ion ratio criterion were not met. Since the ion abundance ratio is the primary identification criterion for high resolution mass spectroscopy, an outlier indicates that the reported result may be a false positive. These “K” flagged results were qualified as not-detected (U-25) at elevated detection limits.

Reported Results

Lock-mass interferences were present that affected the quantitation and/or resolution of one or more results in several samples. These samples were diluted and re-analyzed, the laboratory reported only the most appropriate result for each congener. The laboratory assigned a "G" flag to results affected by lock-mass disturbances. These "G" flagged results were estimated (J/UJ-24).

Reporting Limits

SDGs WG43679 & WG43699: Several samples in these SDG were reanalyzed at dilution (10x) due to lock mass disturbances. Reporting limits were elevated accordingly.

Calculation Verification

Several results were verified by recalculation from the raw data. No transcription or calculation errors were found.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the labeled compound and OPR recoveries and precision was acceptable as demonstrated by the RPD values for the laboratory and field duplicates.

Data were estimated due to lock-mass interferences, labeled compound outliers, OPR outliers, and a field duplicate RPD outlier. Detection limits were elevated due to ion ratio outliers and method blank contamination.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
North Olympic Peninsula
Regional Background Sediment Characterization
Polycyclic Aromatic Hydrocarbons by SW846 Method 8270D-SIM

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. Analytical Resources, Inc., Tukwila, Washington, analyzed the samples. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	Validation Level
WP45	14 Sediment	QA-2 (EPA Stage 4)
WP46	6 Sediment 2 Equipment Rinsate	QA-2 (EPA Stage 4) QA-1 (EPA Stage 2A)
WP47	7 Sediment 1 Equipment Rinsate	QA-2 (EPA Stage 4) QA-1 (EPA Stage 2A)
WP62	6 Sediment 1 Equipment Rinsate	QA-2 (EPA Stage 4) QA-1 (EPA Stage 2A)
WP72	10 Sediment	QA-2 (EPA Stage 4)

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO LABORATORY REPORT PACKAGE VERIFICATION

A complete (100%) verification of the electronic data deliverable (EDD) results was performed by comparison to the laboratory data package. No errors were noted.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	**1**	Field Duplicates
√	Initial Calibration (ICAL)	√	Internal Standards
√	Continuing Calibration (CCAL)	√	Target Analyte List
√	Laboratory Blanks	**1**	Reporting Limits
1	Field Blanks	√	Compound Identification
√	Surrogate Compounds	**1**	Reported Results
√	Laboratory Control Samples (LCS/LCSD)	**1**	Calculation Verification
√	Matrix Spike/Matrix Spike Duplicates (MS/MSD)		

√ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.
[1] Quality control results are discussed below, but no data were qualified.
[2] Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 2° to 6°C. The laboratory received several sample coolers with temperatures less than the advisory control limits, the lowest at -1.8°C. It was determined that these outliers did not impact data quality and no qualifiers were assigned.

SDG WP45: The sample ID on the sample container, RB13-DUN-09-S, did not match the chain of custody (RB13-DUN-09). The laboratory logged the sample in using the ID on the sample container as it followed project naming conventions.

Field Blanks

SDG WP46: Two equipment rinsates, RB13-NOP-RB and RB13-NOP-ER-1, were submitted. No target analytes were detected in these field blanks.

SDG WP47: One equipment rinsate, RB13-NOP-ER-2, was submitted. No target analytes were detected in this field blank.

SDG WP62: One equipment rinsate, RB13-NOP-ER-3, was submitted. No target analytes were detected in this field blank.

Field Duplicates

For results greater than five times the reporting limit (RL), the relative percent difference (RPD) control limit is 50%. For results less than five times the RL, the difference between the sample and duplicate must be less than twice the RL.

SDG WP45: One set of field duplicates, RB13-DUN-05-S & RB13-DUN-05-D, were submitted. Field precision was acceptable.

SDG WP46: One set of field duplicates, RB13-DIS-09-S & RB13-DIS-09-D, were submitted. All field precision criteria were met.

SDG WP62: One set of field duplicates, RB13-SEQ-03-S & RB13-SEQ-03-D, were submitted. Field precision was acceptable.

Reporting Limits

SDG WP45: Several samples were analyzed at dilution due to high concentrations of target analytes; reporting limits were elevated accordingly.

Reported Results

The QAPP specified that non-detected result should be reported at the MDL. The lab reported down to the MDL, however the laboratory reporting system is set up to report non-detects at the reporting limit (RL). During validation, the results in the EDD were changed to be ND at the MDL. No further action was taken

SDG WP45: The indeno(1,2,3-cd)pyrene result for Sample RB13-DUN-12-S was detected at a level greater than the MDL, but was reported with a "U" flag. The laboratory was contacted and resubmitted the summary form with a "J" flag for this result. The EDD was also corrected during validation.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, matrix spike/matrix spike duplicate (MS/MSD), and laboratory control sample/laboratory control sample duplicate (LCS/LCSD) percent recovery values. Precision was also acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
North Olympic Peninsula
Regional Background Sediment Characterization
Metals by Methods 200.8, 7470A, and 7471A

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	Validation Level
WP45	14 Sediment	QA-2 (EPA Stage 3)
WP46	15 Sediment 2 Rinsate Blank	QA-2 (EPA Stage 3) QA-1 (EPA Stage 2A)
WP47	15 Sediment 1 Rinsate Blank	QA-2 (EPA Stage 3) QA-1 (EPA Stage 2A)
WP62	9 Sediment 1 Rinsate Blank	QA-2 (EPA Stage 3) QA-1 (EPA Stage 2A)
WP72	16 Sediment 1 Rinsate Blank	QA-2 (EPA Stage 3) QA-1 (EPA Stage 2A)

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A complete (100%) verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data package; no errors were found.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	2	Laboratory Duplicates
√	Initial Calibration	1	Field Duplicates
√	Calibration Verification	√	Interference Check Samples
√	Reporting Limit Standards	√	Serial Dilutions
√	Laboratory Blanks	√	ICP-MS Internal Standards
1	Field Blanks	√	Reporting Limits
√	Laboratory Control Samples (LCS)	√	Reported Results
2	Matrix Spikes (MS)		

√ ***Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.***
[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 2° to 6°C. The laboratory received sample coolers with temperatures less than the lower control limit, the lowest at -1.8°C. It was determined that these outliers did not impact data quality and no action was necessary.

SDG WP45: The sample ID on the sample container, RB13-DUN-09-S, did not match the chain of custody (RB13-DUN-09). The laboratory logged the sample in using the ID on the sample container as it followed project naming conventions.

Field Blanks

SDG WP46: This SDG included two rinsate samples: RB13-NOP-RB and RB13-NOP-ER-1. No target analytes were detected in these blanks.

SDG WP47: This SDG included one rinsate sample: RB13-NOP-ER-2. No target analytes were detected in the blank.

SDG WP62: This SDG included one rinsate sample: RB13-NOP-ER-3. No target analytes were detected in the blank.

SDG WP72: This SDG included one rinsate sample: RB13-NOP-ER-4. No target analytes were detected in the blank.

Matrix Spikes

SDG WP46: For the sediment QC sample, the mercury percent recovery (%R) was less than the lower control limit of 75%; the mercury results in the associated samples were estimated (J/UJ-8L) to indicate a potential low bias.

Laboratory Duplicates

SDG WP46: For the sediment QC sample, the mercury relative percent difference (RPD) value was greater than the control limit of 50%; all associate mercury results were estimated (J/UJ-9).

Field Duplicates

For results greater than five times the reporting limit (RL), the relative percent difference (RPD) control limit is 50%. For results less than five times the RL, the difference between the sample and duplicate must be less than twice the RL.

SDG WP45: One set of field duplicates were submitted: RB13-DUN-05-S and RB13-DUN-05-D. Field precision was acceptable.

SDG WP46: One set of field duplicates were submitted: RB13-DIS-09-S and RB13-DIS-09-D. Field precision was acceptable.

SDG WP62: One set of field duplicates were submitted: RB13-SEQ-03-S and RB13-SEQ-03-D. All field precision criteria were met.

SDG WP72: One set of field duplicates were submitted: RB13-PT-13-S and RB13-PT-13-D. All field precision criteria were met.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical methods. With the exception noted above, accuracy was acceptable as demonstrated by the laboratory control sample and MS recoveries and precision was acceptable as demonstrated by the RPD values for the laboratory and field duplicate samples.

Data were estimated based on matrix spike recovery and duplicate precision outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
North Olympic Peninsula
Regional Background Sediment Characterization
Conventionals Analyses

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

WP45	15 Sediment	QA-2 (EPA Stage 3)
WP46	16 Sediment	QA-2 (EPA Stage 3)
WP47	15 Sediment	QA-2 (EPA Stage 3)
WP62	10 Sediment	QA-2 (EPA Stage 3)
WP72	17 Sediment	QA-2 (EPA Stage 3)

The analytical tests that were performed are summarized below:

Parameter	Method
Grain Size	PSEP-PS
Total Organic Carbon	Plumb, 1981
Total Solids	SM2540B
Preserved Total Solids	SM2540B
Total Volatile Solids	SM2540E
Sulfide	EPA 376.2

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all necessary deliverables for a summary validation. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A complete (100%) verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data package; no errors were found.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table.

1	Sample Receipt, Preservation, and Holding Times	2	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
√	Initial Calibration	2	Laboratory Replicates
√	Calibration Verification	2	Field Replicates
√	Laboratory Blanks	√	Reporting Limits
2	Laboratory Control Samples (LCS)	1	Reported Results
1	Reference Materials	1	Calculation Verification

√ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.
[1] Quality control results are discussed below, but no data were qualified.
[2] Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 2° to 6°C. The laboratory received sample coolers with temperatures less than the lower control limit, the lowest at -1.8°C. It was determined that these outliers did not impact data quality and no action was necessary.

SDG WP45: The sample ID on the sample container, RB13-DUN-09-S, did not match the chain of custody (RB13-DUN-09). The laboratory logged the sample in using the ID on the sample container as it followed project naming conventions.

Laboratory Control Samples (LCS)

SDG WP72: The percent recovery (%R) for sulfide was greater than the upper control limit of 125%; all associated sulfide results were estimated (J-10H) to indicate a potential high bias.

Reference Materials

The standard reference material NIST #1941B was analyzed for total organic carbon (TOC). All recoveries were within the certified acceptance ranges.

Matrix Spike/Matrix Spike Duplicates (MS/MSD)

SDG WP47: The total organic carbon (TOC) %R value was less than the lower control limit of 75%; the TOC results in the associated samples were estimated (J-8L) to indicate a potential low bias.

SDG WP62: The sulfide %R value was less than the lower control limit of 75%; the sulfide results in the associated samples were estimated (J-8L) to indicate a potential low bias.

Laboratory Replicates

SDG WP72: For QC Sample RB13-PT-13-S, the relative percent difference (RPD) value for sulfide was greater than the control limit of 50%; all associated sulfide results were estimated (J-9).

Field Replicates

For results greater than five times the reporting limit (RL), the percent relative standard deviation (%RSD) control limit is 50%. For results less than five times the RL, the difference between the replicates must be less than twice the RL.

SDG WP45: One set of field triplicates was submitted: RB13-DUN-05-S, RB13-DUN-05-D and RB13-DUN-05-T. Field precision was acceptable.

SDG WP46: One set of field triplicates was submitted: RB13-DIS-09-S, RB13-DIS-09-D and RB13-DIS-09-T. The %RSD value for sulfide was greater than the control limit of 50%. The sulfide results in these three samples were estimated (J-9).

SDG WP62: One set of field triplicates was submitted: RB13-SEQ-03-S, RB13-SEQ-03-S and RB13-SEQ-03-S. All field precision criteria were met.

SDG WP72: One set of field triplicates was submitted: RB13-PT-13-S, RB13-PT-13-D and RB13-PT-13-T. The %RSD value for sulfide was greater than the control limit of 50%. The sulfide results for these samples were estimated (J-9).

Reported Results

SDG WP62: For Sample RB13-SEQ-03-S, the raw data was missing the dilution factor for sulfide, which resulted in an error in the reported result. The laboratory was contacted and submitted revised summary forms and raw data. The result in the EDD was corrected during validation.

Calculation Verification

Several results were verified by recalculation from the raw data. With the exception noted above, no calculation or transcription errors were noted.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the laboratory control sample, reference material, and matrix spike (MS) recoveries and precision was acceptable as demonstrated by the % RPD and RSD values for the laboratory and field replicate samples.

Data were estimated based on field replicate and laboratory duplicate precision outliers and matrix spike recovery outliers.

All data, as qualified, are acceptable for use.

EcoChem, INC.
Environmental Data Quality

APPENDIX A

DATA QUALIFIER DEFINITIONS
REASON CODES
AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES
National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown)
	5A	Initial Calibration (RF, %RSD, r^2)
	5B	Calibration Verification (ICV, CCV, CCAL; RF, %D, %R) Use bias flags (H,L)[1] where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L)[1] for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS &/or MSD) Recoveries Use bias flags (H,L)[1] where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L)[1] where appropriate
	12	Reference Material Use bias flags (H,L)[1] where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L)[1] where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L)[1] where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)
	26	Method QC information not provided

[1] H = high bias indicated
L = low bias indicated

EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler/Storage Temperature	Waters/Solids < 4°C Tissues <-10°C	EcoChem PJ, see TM-05	1
Holding Time	Extraction - Water: 30 days from collection *Note:* Under CWA, SDWA, and RCRA the HT for H2O is 7 days* Extraction - Soil: 30 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext > 30 days J(+)/UJ(-) if analysis > 40 Days EcoChem PJ, see TM-05	1
Mass Resolution	>=10,000 resolving power at m/z 304.9824 Exact mass of m/z 380.9760 w/in 5 ppm of theoretical value (380.97410 to 380.97790) . Analyzed prior to ICAL and at the start and end of each 12 hr. shift	R(+/-) if not met	14
Window Defining Mix and Column Performance Mix	Window defining mixture/Isomer specificity std run before ICAL and CCAL Valley < 25% (valley = (x/y)*100%) x = ht. of TCDD y = baseline to bottom of valley For all isomers eluting near 2378-TCDD/TCDF isomers (TCDD only for 8290)	J(+) if valley > 25%	5A (ICAL) 5B (CCAL
Initial Calibration	Minimum of five standards %RSD < 20% for native compounds %RSD <30% for labeled compounds (%RSD <35% for labeled compounds under 1613b)	J(+) natives if %RSD > 20%	5A
	Abs. RT of $^{13}C_{12}$-1234-TCDD >25 min on DB5 >15 min on DB-225	EcoChem PJ, see TM-05	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	EcoChem PJ, see TM-05	
	S/N ratio > 10 for all native and labeled compounds in CS1 std.	If <10, elevate Det. Limit or R(-)	

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Continuing Calibration	Analyzed at the start and end of each 12 hour shift. %D+/-20% for native compounds %D +/-30% for labeled compounds (Must meet limits in Table 6, Method 1613B) (If %Ds in the closing CCAL are w/in 25%/35% the avg RF from the two CCAL may be used to calculate samples per Method 8290, Section 8.3.2.4)	Do not qualify labeled compounds. Narrate in report for labeled compound %D outliers. For native compound %D outliers: 8290: J(+)/UJ(-) if %D = 20% - 75% J(+)/R(-) if %D > 75% 1613: J(+)/UJ(-) if %D is outside Table 6 limits J(+)/R(-) if %D is +/- 75% of Table 6 limit	5B
	Abs. RT of $^{13}C_{12}$-1234-TCDD and ^{13}C12-123789-HxCDD +/- 15 sec of ICAL.	EcoChem PJ, see ICAL section of TM-05	
	RRT of all other compounds must meet Table 2 of 1613B.	EcoChem PJ, see TM-05	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	EcoChem PJ, see TM-05	
	S/N ratio > 10	If <10, elevate Det. Limit or R(-)	
Method Blank	One per matrix per batch No positive results	If sample result <5X action level, qualify U at reported value.	7
Field Blanks (Not Required)	No positive results	If sample result <5X action level, qualify U at reported value.	6
LCS / OPR	Concentrations must meet limits in Table 6, Method 1613B or lab limits.	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
MS/MSD (recovery)	May not analyze MS/MSD %R should meet lab limits.	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	May not analyze MS/MSD RPD < 20%	J(+) in parent sample if RPD > CL	9

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Lab Duplicate	RPD <25% if present.	J(+)/UJ(-) if outside limts	9
Labeled Compounds / Internal Standards	*Method 8290:* %R = 40% - 135% in all samples *Method 1613B:* %R must meet limits specified in Table 7, Method 1613	J(+)/UJ(-) if %R = 10% to LCL J(+) if %R > UCL J(+)/R(-) if %R < 10%	13
Quantitation/ Identification	Ions for analyte, IS, and rec. std. must max w/in 2 sec. S/N >2.5 IA ratios meet limits in Table 9 of 1613B or Table 8 of 8290 RRTs w/in limits in Table 2 of 1613B	If RT criteria not met, use PJ (see TM-05) If S/N criteria not met, J(+). if unlabelled ion abundance not met, change to EMPC If labelled ion abundance not met, J(+).	21
EMPC (estimated maximum possible concentration)	If quantitation idenfication criteria are not met, laboratory should report an EMPC value.	If laboratory correctly reported an EMPC value, qualify with U to indicate that the value is a detection limit.	14
Interferences	PCDF interferences from PCDPE	If both detected, change PCDF result to EMPC	14
Second Column Confirmation	All 2378-TCDF hits must be confirmed on a DB-225 (or equiv) column. All QC specs in this table must be met for the confirmation analysis.	Report lower of the two values. If not performed use PJ (see TM-05).	3
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (EcoChem PJ)	9
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used	11

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EcoChem Validation Guidelines for PCB Congener Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 1, 12/1995 & EPA SW-846, Method 1668)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler/Storage Temperature	Waters/Solids <4°C Tissues <-10°C	EcoChem PJ, see TM-05	1
Holding Time	Samples: Up to one year if stored in the dark & temp as above. Extracts: Up to 1 year if stored at <-10°C and in the dark	J(+)/UJ(-) if HT > 1 year EcoChem PJ, see TM-05	1
Mass Resolution	>=10,000 resolving power at m/z 330.9792 <5 ppm deviation from each m/z listed in Table 7 of method. Analyzed prior to ICAL and at the beginning and end of each 12 hr. shift	R(+/-) if not met	14
Column Resolution 209 Congener Solution	Mix of all 209 PCBs run prior to each ICAL and each 12 hour shift RT of PCB209 must be > 55 min PCB 156 & 157 must coelute w/in 2 sec PCB34 & 23 and PCB187 & 182 must be resolved where ((x/y)*100%) < 40% x = ht. of valley and y = ht of shortest peak	J(+) if valley >40%	5A (ICAL) 5B (CCAL)
Initial Calibration	Minimum of five standards %RSD < 20% for native compounds %RSD < 35% for labeled compounds	J(+) natives if %RSD > 20%	5A
	Ion Abundance ratios within QC limits (Method 1668, Table 8) in CS1 std.	EcoChem PJ, see TM-05	
	S/N ratio > 10 for all native and labeled compounds in CS1 std.	If <10, elevate Det. Limit or R(-)	
Continuing Calibration	Every 12 hours: Concentrations must meet criteria specified in Method 1668, Table 6	J(+)/(UJ(-) natives if %D = 30% - 50% J(+)/R(-) natives if %D > 75%	5B
	Absolute RT of all Labelled Compounds and Window Defining Congeners must be +/- 15 sec of RT in ICAL RRT of all compounds must meet Table 2 of method.	EcoChem PJ, see ICAL section of TM-05	
	S/N ratio > 10	If <10, elevate Det. Limit or R(-)	
	Ion Abundance ratios must meet criteria specified in Method 1668, Table 8	EcoChem PJ, see TM-05	
Method Blank	One per matrix per batch No positive results	If sample result <5X action level, qualify U at reported value.	7

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EcoChem Validation Guidelines for PCB Congener Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 1, 12/1995 & EPA SW-846, Method 1668)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Rinse/Field Blank (if required)	One per matrix per batch No positive results	If sample result <5X action level, qualify U at reported value.	6
LCS / OPR	One per matrix per batch %R Values w/in limits specified in Method 1668, Table 6	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
MS/MSD (if required)	Accuracy: %R values within laboratory limits	Qualify parent sample only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
	Precision: RPD < 20%	J(+) in parent sample if RPD > 20%	9
Duplicate (if required)	RPD <25%	J(+)/UJ(-) if outside limts	9
Labeled Compounds / Internal Standards	%R must meet limits specified in Method 1668, Table 6.	J(+)/UJ(-) if %R = 10% to LCL J(+) if %R > UCL J(+)/R(-) if %R < 10%	13
Quantitation/ Identification	Ions for analyte, IS, and rec. std. must max w/in 2 sec. S/N >2.5 Ion abundance (IA ratios) must meet limits stated in Table 8 of Method 1668 Relative retention times (RRT) must be w/in limits stated in Table 2 of Method 1668	If RT criteria not met, use PJ (see TM-05) J(+) if S/N criteria not met if unlabelled ion abundance not met, change to EMPC J(+) if labelled ion abundance not met.	21
Interferences	Lock masses must not deviate +/- 20%	Change result to EMPC	14
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (EcoChem PJ)	9
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used to avoid reporting two results for one sample	11

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EcoChem Validation Guidelines for Semivolatile Analysis by GC/MS
(Based on Organic NFG 1999)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature	4°C ±2°	J(+)/UJ(-) if greater than 6 deg. C (EcoChem PJ)	1
Holding Time	Water: 7 days from collection Soil: 14 days from collection Analysis: 40 days from extraction	Water: J(+)/UJ(-) if ext. > 7 and < 21 days J(+)/R(-) if ext > 21 days (EcoChem PJ) Solids/Wastes: J(+)/UJ(-) if ext. > 14 and < 42 days J(+)/R(-) if ext. > 42 days (EcoChem PJ) J(+)/UJ(-) if analysis >40 days	1
Tuning	DFTPP Beginning of each 12 hour period Method acceptance criteria	R(+/-) all analytes in all samples associated with the tune	5A
Initial Calibration (Minimum 5 stds.)	RRF > 0.05	(EcoChem PJ, see TM-06) If MDL= reporting limit: J(+)/R(-) if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05	5A
	%RSD < 30%	(EcoChem PJ, see TM-06) J(+) if %RSD > 30%	5A
Continuing Calibration (Prior to each 12 hr. shift)	RRF > 0.05	(EcoChem PJ, see TM-06) If MDL= reporting limit: J(+)/R(-) if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05	5B
	%D <25%	(EcoChem PJ, see TM-06) If > +/-90%: J+/R- If -90% to -26%: J+ (high bias) If 26% to 90%: J+/UJ- (low bias)	5B
Method Blank	One per matrix per batch No results > CRQL	U(+) if sample (+) result is less than CRQL and less than appropriate 5X or 10X rule (raise sample value to CRQL)	7
		U(+) if sample (+) result is greater than or equal to CRQL and less than appropriate 5X and 10X rule (at reported sample value)	7
	No TICs present	R(+) TICs using 10X rule	7
Field Blanks (Not Required)	No results > CRQL	Apply 5X/10X rule; U(+) < action level	6

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EcoChem Validation Guidelines for Semivolatile Analysis by GC/MS
(Based on Organic NFG 1999)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
MS/MSD (recovery)	One per matrix per batch Use method acceptance criteria	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	One per matrix per batch Use method acceptance criteria	J(+) in parent sample if RPD > CL	9
LCS low conc. H2O SVOA	One per lab batch Within method control limits	J(+) assoc. cmpd if > UCL J(+)/R(-) assoc. cmpd if < LCL J(+)/R(-) all cmpds if half are < LCL	10
LCS regular SVOA (H2O & solid)	One per lab batch Lab or method control limits	J(+) if %R > UCL J(+)/UJ(-) if %R <LCL J(+)/R(-) if %R < 10% (EcoChem PJ)	10
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J(+)/UJ(-) assoc. cmpd. in all samples	9
Surrogates	Minimum of 3 acid and 3 base/neutral compounds Use method acceptance criteria	Do not qualify if only 1 acid and/or 1 B/N surrogate is out unless <10% J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) if %R < 10%	13
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	J(+) if > 200% J(+)/UJ(-) if < 50% J(+)/R(-) if < 25% RT>30 seconds, narrate and Notify PM	19
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (EcoChem PJ)	9
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NJ the TIC unless: R(+) common laboratory contaminants See Technical Director for ID issues	4
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	See Technical Director if outliers	14 21 (false +)

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EcoChem Validation Guidelines for Metals Analysis by ICP-MS
(Based on Inorganic NFG 1994 & 2004)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature and Preservation	Cooler temperature: 4°C ±2° Waters: Nitric Acid to pH < 2 For Dissolved Metals: 0.45um filter & preserve after filtration	EcoChem Professional Judgment - no qualification based on cooler temperature outliers J(+)/UJ(-) if pH preservation requirements are not met	1
Holding Time	180 days from date sampled Frozen tissues - HT extended to 2 years	J(+)/UJ(-) if holding time exceeded	1
Tune	Prior to ICAL monitoring compounds analyzed 5 times wih Std Dev. ≤ 5% mass calibration <0.1 amu from True Value Resolution < 0.9 AMU @ 10% peak height or <0.75 amu @ 5% peak height	Use Professional Judgment to evaluate tune J(+)/UJ(-) if tune criteria not met	5A
Initial Calibration	Blank + minimum 1 standard If more than 1 standard, r>0.995	J(+)/UJ(-) if r<0.995 (for multi point cal)	5A
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R within ±10% of true value	J(+)/UJ(-) if %R 75-89% J(+) if %R = 111-125% R(+) if %R > 125% R(+/-) if %R < 75%	5A
Continuing Calibration Verification (CCV)	Every ten samples, immediately following ICV/ICB and at end of run ±10% of true value	J(+)/UJ(-) if %R = 75-89% J(+) if %R 111-125% R(+) if %R > 125% R(+/-) if %R < 75%	5B

Initial and Continuing Calibration Blanks (ICB/CCB)	After each ICV and CCV
	every ten samples and end of run
	| blank | < IDL (MDL)
		Action level is 5x absolute value of blank conc.
		For (+) blanks, U(+) results < action level
		For (-) blanks, J(+)/UJ(-) results < action level
		refer to **TM-02** for additional details
			7

Reporting Limit Standard (CRI)	2x RL analyzed beginning of run Not required for Al, Ba, Ca, Fe, Mg, Na, K %R = 70%-130% (50%-150% Co,Mn, Zn)	R(-),(+) < 2x RL if %R < 50% (< 30% Co,Mn, Zn) J(+) < 2x RL, UJ(-) if %R 50-69% (30%-49% Co,Mn, Zn) J(+) < 2x RL if %R 130%-180% (150%-200% Co,Mn, Zn) R(+) < 2x RL if %R > 180% (200% Co, Mn, Zn)	14
Interference Check Samples (ICSA/ICSAB)	Required by SW 6020, but not 200.8 ICSAB %R 80% - 120% for all spiked elements | ICSA | < IDL (MDL) for all unspiked elements	For samples with Al, Ca, Fe, or Mg > ICS levels R(+/-) if %R < 50% J(+) if %R >120% J(+)/UJ(-) if %R = 50% to 79% Use Professional Judgment for ICSA to determine if bias is present see **TM-09** for additional details	17
Method Blank	One per matrix per batch (batch not to exceed 20 samples) blank < MDL	Action level is 5x blank concentration U(+) results < action level	7

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EcoChem Validation Guidelines for Metals Analysis by ICP-MS
(Based on Inorganic NFG 1994 & 2004)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Laboratory Control Sample (LCS)	One per matrix per batch Blank Spike: %R within 80%-120%	R(+/-) if %R < 50% J(+)/UJ(-) if %R = 50-79% J(+) if %R >120%	10
	CRM: Result within manufacturer's certified acceptance range or project guidelines	J(+)/UJ(-) if < LCL, J(+) if > UCL	
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	One per matrix per batch 75-125% for samples where results do not exceed 4x spike level	J(+) if %R>125% J(+)/UJ(-) if %R <75% J(+)/R(-) if %R<30% **or** J(+)/UJ(-) if Post Spike %R 75%-125% Qualify all samples in batch	8
Post-digestion Spike	If Matrix Spike is outside 75-125%, Spike parent sample at 2x the sample conc.	No qualifiers assigned based on this element	
Laboratory Duplicate (or MS/MSD)	One per matrix per batch RPD < 20% for samples > 5x RL Diff ≤ RL for samples >RL and < 5x RL (Diff ≤ 2x RL for solids)	J(+)/UJ(-) if RPD > 20% or diff > RL all samples in batch	9
Serial Dilution	5x dilution one per matrix %D < 10% for original sample values > 50x MDL	J(+)/UJ(-) if %D >10% All samples in batch	16
Internal Standards	Every sample SW6020: 60%-125% of cal blank IS 200.8: 30%-120% of cal blank IS	J (+)/UJ (-) all analytes associated with IS outlier	19
Field Blank	Blank < MDL	Action level is 5x blank conc. U(+) sample values < AL in associated field samples only	6
Field Duplicate	For results > 5x RL: Water: RPD < 35% Solid: RPD < 50% For results < 5 x RL: Water: Diff < RL Solid: Diff < 2x RL	J(+)/UJ(-) in parent samples only	9
Linear Range	Sample concentrations must fall within range	J values over range	20

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EcoChem Validation Guidelines for Mercury Analysis by CVAA
(Based on Inorganic NFG 1994 & 2004)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature and Preservation	Cooler temperature: 4°C ±2° Waters: Nitric Acid to pH < 2 For Dissolved Metals: 0.45um filter & preserve after filtration	EcoChem Professional Judgment - no qualification based on cooler temperature outliers J(+)/UJ(-) if pH preservation requirements are not met	1
Holding Time	28 days from date sampled Frozen tissues: HT extended to 6 months	J(+)/UJ(-) if holding time exceeded	1
Initial Calibration	Blank + 4 standards, one at RL r > 0.995	J(+)/UJ(-) if r<0.995	5A
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R within ±20% of true value	J(+)/UJ(-) if %R = 65%-79% J(+) if %R = 121-135% R(+/-) if %R < 65% R(+) if %R > 135%	5A
Continuing Calibration Verification (CCV)	Every ten samples, immediately following ICV/ICB and at end of run %R within ±20% of true value	J(+)/UJ(-) if %R = 65%-79% J(+) if %R = 121-135% R(+/-) if %R < 65% R(+) if %R > 135%	5B

Initial and Continuing Calibration Blanks (ICB/CCB)	after each ICV and CCV
	every ten samples and end of run
	| blank | < IDL (MDL)
		Action level is 5x absolute value of blank conc.
		For (+) blanks, U(+) results < action level
		For (-) blanks, J(+)/UJ(-) results < action level
		refer to **TM-02** for additional details
			7

Reporting Limit Standard (CRA)	conc at RL - analyzed beginning of run %R = 70-130%	R(-),(+)<2xRL if %R <50% J(+)<2x RL, UJ(-) if %R 50-69% J(+) <2x RL if %R 130-180% R(+)<2x RL if %R>180%	14
Method Blank	One per matrix per batch (batch not to exceed 20 samples) blank < MDL	Action level is 5x blank concentration U(+) results < action level	7
Laboratory Control Sample (LCS)	One per matrix per batch		10
	Blank Spike: %R within 80-120%	R(+/-) if %R < 50% J(+)/UJ(-) if %R = 50-79% J(+) if %R >120%	
	CRM: Result within manufacturer's certified acceptance range or project guidelines	J(+)/UJ(-) if < LCL, J(+) if > UCL	
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	One per matrix per batch 5% frequency 75-125% for samples less than 4x spike level	J(+) if %R>125% J(+)/UJ(-) if %R <75% J(+)/R(-) if %R<30% all samples in batch	8
Laboratory Duplicate (or MS/MSD)	One per matrix per batch RPD < 20% for samples > 5x RL Diff ≤ RL for samples >RL and < 5x RL (Diff ≤ 2x RL for solids)	J(+)/UJ(-) if RPD > 20% or diff > RL all samples in batch	9

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EcoChem Validation Guidelines for Mercury Analysis by CVAA
(Based on Inorganic NFG 1994 & 2004)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Field Blank	Blank < MDL	Action level is 5x blank conc. U(+) sample values < action level in associated field samples only	6
Field Duplicate	For results > 5x RL: Water: RPD < 35% Solid: RPD < 50% For results < 5x RL: Water: Diff<RL Solid: Diff < 2x RL	J(+)/UJ(-) in parent samples only	9
Linear Range	Sample concentrations must be less than 110% of high standard	J values over range	20

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EcoChem Validation Guidelines for Conventional Chemistry Analysis (Based on EPA Standard Methods)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature and Preservation	Cooler Temperature 4°C ±2°C Preservation: Method Specific	Use Professional Judgment to qualify based to qualify for coole temp outliers J(+)/UJ(-) if preservation requirements not met	1
Holding Time	Method Specific	Professional Judgment J(+)/UJ(-) if holding time exceeded J(+)/R(-) if HT exceeded by > 3X	1
Initial Calibration	Method specific r>0.995	Use professional judgment J(+)/UJ(-) for r < 0.995	5A
Initial Calibration Verification (ICV)	Where applicable to method Independent source analyzed immediately after calibration %R method specific, usually 90% - 110%	R(+/-) if %R significantly < LCL J(+)/UJ(-) if %R < LCL J(+) if %R > UCL R(+) if %R significantly > UCL	5A
Continuing Cal Verification (CCV)	Where applicable to method Every ten samples, immed. following ICV/ICB and end of run %R method specific, usually 90% - 110%	R(+/-) if %R significantly < LCL J(+)/UJ(-) if %R < LCL J(+) if %R > UCL R(+) if %R significantly > UCL	5B

Initial and Continuing Cal Blanks (ICB/CCB)	Where applicable to method
	After each ICV and CCV every ten samples and end of run
	| blank| < MDL
		Action level is 5x absolute value of blank conc.
		For (+) blanks, U(+) results < action level
		For (-) blanks, J(+)/UJ(-) results < action level
		refer to TM-02 for additional details
			7

Method Blank	One per matrix per batch
	(not to exceed 20 samples)
	blank < MDL
		Action level is 5x absolute value of blank conc.
		For (+) blk value, U(+) results < action level
		For (-) blk value, J(+)/UJ(-) results < action level
			7

Laboratory Control Sample	Waters: One per matrix per batch %R (80-120%)	R(+/-) if %R < 50% J(+)/UJ(-) if %R = 50-79% J(+) if %R >120%	10
	Soils: One per matrix per batch Result within manufacturer's certified acceptance range	J(+)/UJ(-) if < LCL, J(+) if > UCL	10
Matrix Spike	One per matrix per batch; 5% frequency 75-125% for samples less than 4 x spike level	J(+) if %R > 125% or < 75% UJ(-) if %R = 30-74% R(+/-) results < IDL if %R < 30%	8
Laboratory Duplicate	One per matrix per batch RPD <20% for samples > 5x RL Diff <RL for samples >RL and <5 x RL (may use RPD < 35%, Diff < 2X RL for solids)	J(+)/UJ(-) if RPD > 20% or diff > RL all samples in batch	9

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EcoChem Validation Guidelines for Conventional Chemistry Analysis
(Based on EPA Standard Methods)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Field Blank	blank < MDL	Action level is 5x blank conc. U(+) sample values < action level in associated field samples only	6
Field Duplicate	For results > 5X RL: Water: RPD < 35% Solid: RPD < 50% For results < 5 x RL: Water: Diff<RL Solid: Diff < 2X RL	J(+)/UJ(-) in parent samples only	9

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Environmental Data Quality

APPENDIX B
QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
North Olympic Peninsula - Regional Background Sediment Characterization

Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	DV Qual	DV Reason
RB13-DUN-03-S	L19652-1	E1613	1,2,3,4,7,8-HXCDD	0.06	NG/KG	KBJ	U	25
RB13-DUN-03-S	L19652-1	E1613	1,2,3,4,7,8-HXCDF	0.06	NG/KG	KBJ	U	25
RB13-DUN-03-S	L19652-1	E1613	1,2,3,6,7,8-HXCDD	0.258	NG/KG	BJ	U	7
RB13-DUN-03-S	L19652-1	E1613	1,2,3,7,8,9-HXCDD	0.211	NG/KG	KBJ	U	25
RB13-DUN-03-S	L19652-1	E1613	1,2,3,7,8-PECDD	0.096	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1613	1,2,3,7,8-PECDF	0.068	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1613	2,3,7,8-TCDD	0.052	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1613	2,3,7,8-TCDF	0.225	NG/KG		DNR	11
RB13-DUN-04-S	L19652-10	E1613	2,3,7,8-TCDF	1.25	NG/KG		DNR	11
RB13-DUN-02-S	L19652-11	E1613	1,2,3,4,7,8-HXCDD	0.049	NG/KG	KBJ	U	25
RB13-DUN-02-S	L19652-11	E1613	1,2,3,6,7,8-HXCDD	0.145	NG/KG	BJ	U	7
RB13-DUN-02-S	L19652-11	E1613	1,2,3,7,8-PECDD	0.061	NG/KG	KJ	U	25
RB13-DUN-02-S	L19652-11	E1613	2,3,4,7,8-PECDF	0.055	NG/KG	KBJ	U	25
RB13-DUN-02-S	L19652-11	E1613	2,3,7,8-TCDD	0.051	NG/KG	KJ	U	25
RB13-DUN-02-S	L19652-11	E1613	2,3,7,8-TCDF	0.231	NG/KG		DNR	11
RB13-DUN-02-S	L19652-11	E1613	OCDF	0.377	NG/KG	BJ	U	7
RB13-DUN-11-S	L19652-12	E1613	1,2,3,6,7,8-HXCDD	0.117	NG/KG	BJ	U	7
RB13-DUN-11-S	L19652-12	E1613	2,3,4,7,8-PECDF	0.048	NG/KG	KBJ	U	25
RB13-DUN-11-S	L19652-12	E1613	2,3,7,8-TCDF	0.103	NG/KG	J	DNR	11
RB13-DUN-11-S	L19652-12	E1613	OCDF	0.301	NG/KG	BJ	U	7
RB13-DUN-01-S	L19652-13 (A)	E1613	1,2,3,7,8,9-HXCDF	0.068	NG/KG	BJ	U	7
RB13-DUN-01-S	L19652-13 (A)	E1613	2,3,7,8-TCDF	1.71	NG/KG		DNR	11
RB13-DUN-08-S	L19652-14	E1613	1,2,3,4,7,8-HXCDD	0.179	NG/KG	BJ	U	7
RB13-DUN-08-S	L19652-14	E1613	2,3,4,6,7,8-HXCDF	0.123	NG/KG	KJ	U	25
RB13-DUN-08-S	L19652-14	E1613	2,3,7,8-TCDD	0.099	NG/KG	KJ	U	25
RB13-DUN-08-S	L19652-14	E1613	2,3,7,8-TCDF	0.473	NG/KG		DNR	11
RB13-PT-06-S	L19652-15	E1613	1,2,3,4,7,8-HXCDF	0.346	NG/KG	KBJ	U	25
RB13-PT-06-S	L19652-15	E1613	2,3,7,8-TCDD	0.155	NG/KG	KJ	U	25
RB13-PT-06-S	L19652-15	E1613	2,3,7,8-TCDF	0.76	NG/KG	K	U	25
RB13-PT-06-S	L19652-15	E1613	2,3,7,8-TCDF	1.36	NG/KG		DNR	11
RB13-PT-09-S	L19652-16 i	E1613	1,2,3,4,7,8-HXCDD	0.137	NG/KG	KJ	U	25
RB13-PT-09-S	L19652-16 i	E1613	2,3,4,6,7,8-HXCDF	0.094	NG/KG	KJ	U	25
RB13-PT-09-S	L19652-16 i	E1613	2,3,4,7,8-PECDF	0.112	NG/KG	KBJ	U	25
RB13-PT-09-S	L19652-16 i	E1613	2,3,7,8-TCDD	0.052	NG/KG	KJ	U	25
RB13-PT-09-S	L19652-16 i	E1613	2,3,7,8-TCDF	0.331	NG/KG		DNR	11
RB13-PT-04-S	L19652-17	E1613	1,2,3,7,8,9-HXCDF	0.057	NG/KG	KJ	U	25
RB13-PT-04-S	L19652-17	E1613	2,3,7,8-TCDD	0.245	NG/KG	K	U	25
RB13-PT-04-S	L19652-17	E1613	2,3,7,8-TCDF	1.93	NG/KG		DNR	11
RB13-PT-02-S	L19652-18 R	E1613	1,2,3,7,8,9-HXCDF	0.053	NG/KG	KJ	U	25
RB13-PT-02-S	L19652-18 R	E1613	2,3,7,8-TCDF	3.23	NG/KG		DNR	11
RB13-PT-05-S	L19652-19	E1613	2,3,7,8-TCDF	3.38	NG/KG		DNR	11
RB13-DUN-06-S	L19652-2	E1613	1,2,3,4,7,8,9-HPCDF	0.106	NG/KG	KJ	U	25
RB13-DUN-06-S	L19652-2	E1613	2,3,7,8-TCDF	0.797	NG/KG		DNR	11
RB13-PT-10-S	L19652-20	E1613	1,2,3,7,8,9-HXCDF	0.137	NG/KG	KJ	U	25
RB13-PT-10-S	L19652-20	E1613	2,3,4,7,8-PECDF	0.765	NG/KG	KBJ	U	25
RB13-PT-10-S	L19652-20	E1613	2,3,7,8-TCDF	3.01	NG/KG		DNR	11
RB13-PT-07-S	L19652-21 (A)	E1613	1,2,3,4,6,7,8-HPCDF	0.311	NG/KG	KJ	U	25
RB13-PT-07-S	L19652-21 (A)	E1613	1,2,3,4,7,8,9-HPCDF	0.068	NG/KG	KJ	U	25
RB13-PT-07-S	L19652-21 (A)	E1613	1,2,3,4,7,8-HXCDD	0.099	NG/KG	KJ	U	25

Qualified Data Summary Table
North Olympic Peninsula - Regional Background Sediment Characterization

Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	DV Qual	DV Reason
RB13-PT-07-S	L19652-21 (A)	E1613	1,2,3,4,7,8-HXCDF	0.049	NG/KG	KJ	U	25
RB13-PT-07-S	L19652-21 (A)	E1613	1,2,3,6,7,8-HXCDF	0.068	NG/KG	KJ	U	25
RB13-PT-07-S	L19652-21 (A)	E1613	1,2,3,7,8,9-HXCDD	0.2	NG/KG	KJ	U	25
RB13-PT-07-S	L19652-21 (A)	E1613	2,3,4,6,7,8-HXCDF	0.086	NG/KG	KJ	U	25
RB13-PT-07-S	L19652-21 (A)	E1613	2,3,7,8-TCDD	0.055	NG/KG	KJ	U	25
RB13-PT-07-S	L19652-21 (A)	E1613	2,3,7,8-TCDF	0.097	NG/KG	KJ	U	25
RB13-PT-07-S	L19652-21 (A)	E1613	2,3,7,8-TCDF	0.166	NG/KG	KJ	DNR	11
RB13-PT-07-S	L19652-21 (A)	E1613	OCDF	0.686	NG/KG	KJ	U	25
RB13-PT-03-S	L19652-22	E1613	2,3,7,8-TCDF	2.91	NG/KG		DNR	11
RB13-PT-03-S	L19652-22	E1613	OCDD	204	NG/KG	B	J	13L
RB13-PT-08-S	L19652-23	E1613	1,2,3,7,8,9-HXCDF	0.129	NG/KG	KJ	U	25
RB13-PT-08-S	L19652-23	E1613	2,3,7,8-TCDF	3.83	NG/KG		DNR	11
RB13-PT01-S	L19652-24	E1613	2,3,7,8-TCDF	2.56	NG/KG		DNR	11
RB13-SEQ-05-S	L19652-25	E1613	2,3,7,8-TCDF	1.3	NG/KG		DNR	11
RB13-SEQ-02-S	L19652-26	E1613	2,3,7,8-TCDF	1.5	NG/KG		DNR	11
RB13-SEQ-04-S	L19652-27	E1613	1,2,3,4,7,8-HXCDF	0.378	NG/KG	KJ	U	25
RB13-SEQ-04-S	L19652-27	E1613	2,3,7,8-TCDF	1.52	NG/KG		DNR	11
RB13-SEQ-03-S	L19652-28	E1613	1,2,3,4,7,8-HXCDD	0.764	NG/KG	KJ	U	25
RB13-SEQ-03-S	L19652-28	E1613	2,3,7,8-TCDF	2.41	NG/KG		DNR	11
RB13-SEQ-03-D	L19652-29	E1613	2,3,7,8-TCDF	2.14	NG/KG		DNR	11
RB13-DUN-07-S	L19652-3	E1613	1,2,3,4,6,7,8-HPCDF	0.269	NG/KG	KBJ	U	25
RB13-DUN-07-S	L19652-3	E1613	1,2,3,4,7,8-HXCDD	0.075	NG/KG	BJ	U	7
RB13-DUN-07-S	L19652-3	E1613	1,2,3,4,7,8-HXCDF	0.055	NG/KG	KBJ	U	25
RB13-DUN-07-S	L19652-3	E1613	1,2,3,6,7,8-HXCDD	0.164	NG/KG	BJ	U	7
RB13-DUN-07-S	L19652-3	E1613	1,2,3,7,8-PECDD	0.064	NG/KG	KJ	U	25
RB13-DUN-07-S	L19652-3	E1613	2,3,7,8-TCDF	0.119	NG/KG	J	DNR	11
RB13-DUN-07-S	L19652-3	E1613	2,3,7,8-TCDF	0.06	NG/KG	KJ	U	25
RB13-SEQ-01-S	L19652-30	E1613	1,2,3,4,7,8-HXCDF	0.835	NG/KG	KJ	U	25
RB13-SEQ-01-S	L19652-30	E1613	2,3,4,6,7,8-HXCDF	0.556	NG/KG	KJ	U	25
RB13-SEQ-01-S	L19652-30	E1613	2,3,7,8-TCDF	2.11	NG/KG		DNR	11
RB13-DIS-10-S	L19652-31 R	E1613	2,3,7,8-TCDF	2.82	NG/KG		DNR	11
RB13-DIS-07-S	L19652-32	E1613	1,2,3,7,8,9-HXCDF	0.087	NG/KG	KJ	U	25
RB13-DIS-07-S	L19652-32	E1613	2,3,7,8-TCDF	3.54	NG/KG		DNR	11
RB13-DIS-01-S	L19652-33	E1613	1,2,3,7,8,9-HXCDF	0.081	NG/KG	KJ	U	25
RB13-DIS-01-S	L19652-33	E1613	2,3,7,8-TCDF	3.34	NG/KG		DNR	11
RB13-DIS-03-S	L19652-34 (A)	E1613	1,2,3,4,7,8-HXCDD	0.099	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1613	1,2,3,4,7,8-HXCDF	0.09	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1613	1,2,3,6,7,8-HXCDD	0.326	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1613	1,2,3,7,8-PECDD	0.087	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1613	2,3,4,6,7,8-HXCDF	0.061	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1613	2,3,7,8-TCDD	0.06	NG/KG	KBJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1613	2,3,7,8-TCDF	0.269	NG/KG		DNR	11
RB13-DIS-12-S	L19652-35	E1613	1,2,3,4,6,7,8-HPCDF	1.41	NG/KG		J	13L
RB13-DIS-12-S	L19652-35	E1613	1,2,3,7,8-PECDF	0.093	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1613	2,3,7,8-TCDD	0.071	NG/KG	KBJ	U	25
RB13-DIS-12-S	L19652-35	E1613	2,3,7,8-TCDF	0.444	NG/KG		DNR	11
RB13-DIS-02-S	L19652-36	E1613	2,3,7,8-TCDD	0.301	NG/KG	KB	U	25
RB13-DIS-02-S	L19652-36	E1613	2,3,7,8-TCDF	2.73	NG/KG		DNR	11
RB13-DIS-05-S	L19652-37	E1613	2,3,7,8-TCDF	1.98	NG/KG		DNR	11

Qualified Data Summary Table
North Olympic Peninsula - Regional Background Sediment Characterization

Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	DV Qual	DV Reason
RB13-DIS-04-S	L19652-38	E1613	2,3,7,8-TCDF	2.08	NG/KG		DNR	11
RB13-DIS-11-S	L19652-39	E1613	2,3,7,8-TCDF	2.09	NG/KG		DNR	11
RB13-DUN-12-S	L19652-4	E1613	1,2,3,4,7,8-HXCDD	0.221	NG/KG	BJ	U	7
RB13-DUN-12-S	L19652-4	E1613	1,2,3,4,7,8-HXCDF	0.135	NG/KG	KBJ	U	25
RB13-DUN-12-S	L19652-4	E1613	2,3,4,7,8-PECDF	0.074	NG/KG	KBJ	U	25
RB13-DUN-12-S	L19652-4	E1613	2,3,7,8-TCDD	0.086	NG/KG	KJ	U	25
RB13-DUN-12-S	L19652-4	E1613	2,3,7,8-TCDF	0.566	NG/KG		DNR	11
RB13-DIS-08-S	L19652-40	E1613	1,2,3,4,7,8-HXCDD	0.185	NG/KG	KJ	U	25
RB13-DIS-08-S	L19652-40	E1613	2,3,7,8-TCDD	0.082	NG/KG	KBJ	U	25
RB13-DIS-08-S	L19652-40	E1613	2,3,7,8-TCDF	0.612	NG/KG		DNR	11
RB13-DIS-06-S	L19652-41	E1613	1,2,3,4,6,7,8-HPCDF	13.3	NG/KG		J	13L
RB13-DIS-06-S	L19652-41	E1613	1,2,3,4,7,8-HXCDD	1.44	NG/KG		J	13L
RB13-DIS-06-S	L19652-41	E1613	2,3,7,8-TCDF	3.96	NG/KG		DNR	11
RB13-DIS-09-S	L19652-42	E1613	1,2,3,4,6,7,8-HPCDF	3.62	NG/KG		J	13L
RB13-DIS-09-S	L19652-42	E1613	2,3,7,8-TCDF	1.42	NG/KG		DNR	11
RB13-DIS-09-S	L19652-42	E1613	TOTAL TETRA-DIOXINS	2	NG/KG		J	9
RB13-DIS-09-D	L19652-43	E1613	1,2,3,7,8-PECDD	0.473	NG/KG	JG	J	24
RB13-DIS-09-D	L19652-43	E1613	2,3,7,8-TCDF	1.55	NG/KG		DNR	11
RB13-DIS-09-D	L19652-43	E1613	TOTAL TETRA-DIOXINS	3.69	NG/KG		J	9
RB13-DUN-10-S	L19652-5	E1613	1,2,3,4,6,7,8-HPCDF	0.419	NG/KG	KBJ	U	25
RB13-DUN-10-S	L19652-5	E1613	1,2,3,4,7,8-HXCDD	0.076	NG/KG	KBJ	U	25
RB13-DUN-10-S	L19652-5	E1613	1,2,3,4,7,8-HXCDF	0.059	NG/KG	KBJ	U	25
RB13-DUN-10-S	L19652-5	E1613	1,2,3,6,7,8-HXCDD	0.251	NG/KG	BJ	U	7
RB13-DUN-10-S	L19652-5	E1613	1,2,3,7,8,9-HXCDD	0.21	NG/KG	KBJ	U	25
RB13-DUN-10-S	L19652-5	E1613	1,2,3,7,8-PECDD	0.072	NG/KG	KJ	U	25
RB13-DUN-10-S	L19652-5	E1613	2,3,4,6,7,8-HXCDF	0.058	NG/KG	KJ	U	25
RB13-DUN-10-S	L19652-5	E1613	2,3,7,8-TCDF	0.233	NG/KG		DNR	11
RB13-DUN-13-S	L19652-6	E1613	1,2,3,4,7,8-HXCDD	0.065	NG/KG	KBJ	U	25
RB13-DUN-13-S	L19652-6	E1613	1,2,3,6,7,8-HXCDD	0.243	NG/KG	KBJ	U	25
RB13-DUN-13-S	L19652-6	E1613	2,3,7,8-TCDD	0.062	NG/KG	KJ	U	25
RB13-DUN-13-S	L19652-6	E1613	2,3,7,8-TCDF	0.277	NG/KG	K	DNR	11
RB13-DUN-05-S	L19652-7	E1613	1,2,3,4,7,8-HXCDD	0.208	NG/KG	BJ	U	7
RB13-DUN-05-S	L19652-7	E1613	1,2,3,4,7,8-HXCDF	0.231	NG/KG	KBJ	U	25
RB13-DUN-05-S	L19652-7	E1613	2,3,7,8-TCDF	0.803	NG/KG		DNR	11
RB13-DUN-05-D	L19652-8 R	E1613	1,2,3,4,7,8,9-HPCDF	0.149	NG/KG	KJ	U	25
RB13-DUN-05-D	L19652-8 R	E1613	1,2,3,7,8-PECDD	0.258	NG/KG	KJ	U	25
RB13-DUN-05-D	L19652-8 R	E1613	1,2,3,7,8-PECDF	0.14	NG/KG	KJ	U	25
RB13-DUN-05-D	L19652-8 R	E1613	2,3,7,8-TCDD	0.102	NG/KG	KJ	U	25
RB13-DUN-05-D	L19652-8 R	E1613	2,3,7,8-TCDF	0.732	NG/KG		DNR	11
RB13-DUN-09-S	L19652-9	E1613	1,2,3,6,7,8-HXCDD	0.102	NG/KG	KBJ	U	25
RB13-DUN-09-S	L19652-9	E1613	2,3,4,7,8-PECDF	0.052	NG/KG	KBJ	U	25
RB13-DUN-09-S	L19652-9	E1613	2,3,7,8-TCDF	0.147	NG/KG	J	DNR	11
RB13-DUN-09-S	L19652-9	E1613	OCDF	0.28	NG/KG	BJ	U	7
RB13-DIS-03-S	WG43721-103	E1613	2,3,7,8-TCDF	0.226	NG/KG		DNR	11
RB13-DUN-03-S	L19652-1	E1668A	2,2',3,3',4,5',6-HPCB	0.171	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1668A	2,2',3,3',4,6,6'-HPCB	0.34	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1668A	2,2',3,3',4-PECB	0.811	NG/KG	G	J	24
RB13-DUN-03-S	L19652-1	E1668A	2,2',3,3',5,5',6,6'-OCCB	0.584	NG/KG	K	U	25
RB13-DUN-03-S	L19652-1	E1668A	2,2',3,3',5,5'-HXCB	0.272	NG/KG	KJ	U	25

Qualified Data Summary Table
North Olympic Peninsula - Regional Background Sediment Characterization

Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	DV Qual	DV Reason
RB13-DUN-03-S	L19652-1	E1668A	2,2',3,4,4',6-HXCB	0.201	NG/KG	CKJ	U	25
RB13-DUN-03-S	L19652-1	E1668A	2,2',3,4,5',6-HXCB	0.38	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1668A	2,2',3,4,6'-PECB	0.081	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1668A	2,2',3,5-TECB	0.169	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1668A	2,2',4,5',6-PECB	0.103	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1668A	2,3,3',4,4',5,5'-HPCB	0.177	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1668A	2,3,3',4,4',5',6-HPCB	0.119	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1668A	2,3,3',4,6-PECB	1.24	NG/KG	K	U	25
RB13-DUN-03-S	L19652-1	E1668A	2,3,3',4-TECB	0.132	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1668A	2,3,4,4',5-PECB	0.216	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1668A	2,3',4,5,5'-PECB	0.076	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1668A	2,3',6-TRICB	0.05	NG/KG	JG	J	24
RB13-DUN-03-S	L19652-1	E1668A	2,3,6-TRICB		NG/KG	UG	UJ	24
RB13-DUN-03-S	L19652-1	E1668A	2,4-DICB	0.378	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1668A	2,5-DICB	0.36	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1668A	3,3',4,5'-TECB	0.325	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1	E1668A	3,4',5-TRICB	0.089	NG/KG	KJ	U	25
RB13-DUN-03-S	L19652-1 W	E1668A	2-MOCB	0.833	NG/KG	KDJ	U	25
RB13-DUN-03-S	L19652-1 W	E1668A	3,4-DICB	8.23	NG/KG	CKD	U	25
RB13-DUN-03-S	L19652-1 W	E1668A	4-MOCB	1.7	NG/KG	KBDJ	U	25
RB13-DUN-04-S	L19652-10 i2	E1668A	2,2',3,3',4,4',6,6'-OCCB	1.88	NG/KG	CG	J	24
RB13-DUN-04-S	L19652-10 i2	E1668A	2',3,3',4,5-PECB	0.918	NG/KG	K	U	25
RB13-DUN-04-S	L19652-10 i2	E1668A	2,3,3',5,5'-PECB	0.156	NG/KG	KJ	U	25
RB13-DUN-02-S	L19652-11 M	E1668A	2,2',3,3',4,4',5-HPCB	1.04	NG/KG	G	J	24
RB13-DUN-02-S	L19652-11 M	E1668A	2,2',3,3',4,5',6,6'-OCCB	0.115	NG/KG	KJ	U	25
RB13-DUN-02-S	L19652-11 M	E1668A	2,2',3,3',4',5,6-HPCB	0.992	NG/KG	K	U	25
RB13-DUN-02-S	L19652-11 M	E1668A	2,2',3,3',4,5'-HXCB	0.499	NG/KG	K	U	25
RB13-DUN-02-S	L19652-11 M	E1668A	2,2',3,3',4-PECB	0.409	NG/KG	KG	UJ	24,25
RB13-DUN-02-S	L19652-11 M	E1668A	2,2',3,3',5,5',6-HPCB	0.42	NG/KG	K	U	25
RB13-DUN-02-S	L19652-11 M	E1668A	2,2',3,4,4',5,5'-HPCB	2.18	NG/KG	CBG	J	24
RB13-DUN-02-S	L19652-11 M	E1668A	2,2',3,4,4',5-HXCB	0.245	NG/KG	KJ	U	25
RB13-DUN-02-S	L19652-11 M	E1668A	2,2',3,4,5',6-HXCB	0.183	NG/KG	KJ	U	25
RB13-DUN-02-S	L19652-11 M	E1668A	2,2',5-TRICB	0.931	NG/KG	CBG	J	24
RB13-DUN-02-S	L19652-11 M	E1668A	2,2',6-TRICB	0.13	NG/KG	KJ	U	25
RB13-DUN-02-S	L19652-11 M	E1668A	2,3,3',4,4',5,6-HPCB	0.259	NG/KG	KJ	U	25
RB13-DUN-02-S	L19652-11 M	E1668A	2',3,4,4',5-PECB	0.151	NG/KG	KJ	U	25
RB13-DUN-02-S	L19652-11 M	E1668A	2,3',6-TRICB	0.105	NG/KG	JG	J	24
RB13-DUN-02-S	L19652-11 M	E1668A	2,3,6-TRICB		NG/KG	UG	UJ	24
RB13-DUN-02-S	L19652-11 M	E1668A	2,4'-DICB	1.48	NG/KG	G	J	24
RB13-DUN-02-S	L19652-11 M	E1668A	2,5-DICB	0.415	NG/KG	K	U	25
RB13-DUN-02-S	L19652-11 M	E1668A	2-MOCB	0.731	NG/KG	K	U	25
RB13-DUN-02-S	L19652-11 M	E1668A	3,3',4,4',5-PECB	0.129	NG/KG	KJ	U	25
RB13-DUN-02-S	L19652-11 M	E1668A	3,3',4,5'-TECB	0.101	NG/KG	KJ	U	25
RB13-DUN-02-S	L19652-11 M	E1668A	3,4-DICB	1.64	NG/KG	CKG	UJ	24,25
RB13-DUN-02-S	L19652-11 M	E1668A	3,5-DICB	0.298	NG/KG	KJ	U	25
RB13-DUN-02-S	L19652-11 M	E1668A	4-MOCB	0.93	NG/KG	KB	U	25
RB13-DUN-11-S	L19652-12	E1668A	2,2',3,3',4,4',5,6'-OCCB	0.277	NG/KG	KJ	U	25
RB13-DUN-11-S	L19652-12	E1668A	2,2',3,3',4,4',5,6-OCCB	0.303	NG/KG	KJ	U	25
RB13-DUN-11-S	L19652-12	E1668A	2,2',3,3',4,4',6,6'-OCCB	0.129	NG/KG	CKJ	U	25

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Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	DV Qual	DV Reason
RB13-DUN-11-S	L19652-12	E1668A	2,2',3,3',4,4',6-HPCB	0.396	NG/KG	CK	U	25
RB13-DUN-11-S	L19652-12	E1668A	2,2',3,3',4,5,5'-HPCB	0.21	NG/KG	KJ	U	25
RB13-DUN-11-S	L19652-12	E1668A	2,2',3,3',4,5',6-HPCB	0.109	NG/KG	KJ	U	25
RB13-DUN-11-S	L19652-12	E1668A	2,2',3,3',4,5'-HXCB	0.46	NG/KG	K	U	25
RB13-DUN-11-S	L19652-12	E1668A	2,2',3,3',4,6,6'-HPCB	0.152	NG/KG	KJ	U	25
RB13-DUN-11-S	L19652-12	E1668A	2,2',3,3',4-PECB	0.437	NG/KG	G	J	24
RB13-DUN-11-S	L19652-12	E1668A	2,2',3,3',5,5',6,6'-OCCB	0.296	NG/KG	KJ	U	25
RB13-DUN-11-S	L19652-12	E1668A	2,2',3,3',5,5',6-HPCB	0.481	NG/KG	K	U	25
RB13-DUN-11-S	L19652-12	E1668A	2,2',3,3',5,5'-HXCB	0.151	NG/KG	KJ	U	25
RB13-DUN-11-S	L19652-12	E1668A	2,2',3,3',5,6-HXCB	0.211	NG/KG	CKJ	U	25
RB13-DUN-11-S	L19652-12	E1668A	2,2',3,4,5,5'-HXCB	0.567	NG/KG	K	U	25
RB13-DUN-11-S	L19652-12	E1668A	2,3,3',4,6-PECB	0.632	NG/KG	K	U	25
RB13-DUN-11-S	L19652-12	E1668A	2,3,4,4',5-PECB	0.126	NG/KG	KJ	U	25
RB13-DUN-11-S	L19652-12	E1668A	2,3',4,5,5'-PECB	0.064	NG/KG	KJ	U	25
RB13-DUN-11-S	L19652-12	E1668A	2,5-DICB	0.364	NG/KG	KJ	U	25
RB13-DUN-11-S	L19652-12	E1668A	3,3',4-TRICB	0.288	NG/KG	KJ	U	25
RB13-DUN-11-S	L19652-12	E1668A	3,4-DICB	0.934	NG/KG	CK	U	25
RB13-DUN-11-S	L19652-12	E1668A	4-MOCB	0.717	NG/KG	KB	U	25
RB13-DUN-01-S	L19652-13 i (A)	E1668A	2,2',3,3',4,4',6,6'-OCCB	2.06	NG/KG	CG	J	24
RB13-DUN-01-S	L19652-13 i (A)	E1668A	2,2',3,4',5,5'-HXCB	17.9	NG/KG	G	J	24
RB13-DUN-01-S	L19652-13 i (A)	E1668A	2,2',3,4',6,6'-HXCB	0.211	NG/KG	KJ	U	25
RB13-DUN-01-S	L19652-13 i (A)	E1668A	2,2',3,4,6'-PECB	0.925	NG/KG	K	U	25
RB13-DUN-01-S	L19652-13 i (A)	E1668A	2,2',3,5,6,6'-HXCB	0.08	NG/KG	KJ	U	25
RB13-DUN-01-S	L19652-13 i (A)	E1668A	2,2',3,6,6'-PECB	0.367	NG/KG	KJ	U	25
RB13-DUN-01-S	L19652-13 i (A)	E1668A	2,3,3',5,5'-PECB	0.19	NG/KG	KJ	U	25
RB13-DUN-01-S	L19652-13 i (A)	E1668A	2,3',4,5',6-PECB	0.081	NG/KG	KJ	U	25
RB13-DUN-01-S	L19652-13 i (A)	E1668A	3,5-DICB	0.466	NG/KG	K	U	25
RB13-DUN-08-S	L19652-14	E1668A	2,2',3,3',4,4',6,6'-OCCB	0.594	NG/KG	CG	J	24
RB13-DUN-08-S	L19652-14	E1668A	2,2',3,3',4,5',6-HPCB	0.341	NG/KG	KJ	U	25
RB13-DUN-08-S	L19652-14	E1668A	2,2',3,3',5,5',6-HPCB	2.04	NG/KG	K	U	25
RB13-DUN-08-S	L19652-14	E1668A	2,2',3,3',5,5'-HXCB	0.553	NG/KG	K	U	25
RB13-DUN-08-S	L19652-14	E1668A	2,2',3,4',5,5'-HXCB	5.48	NG/KG	G	J	24
RB13-DUN-08-S	L19652-14	E1668A	2,2',3,4',5,6'-HXCB	0.163	NG/KG	KJ	U	25
RB13-DUN-08-S	L19652-14	E1668A	2,2',3,5-TECB	0.3	NG/KG	KJ	U	25
RB13-DUN-08-S	L19652-14	E1668A	2,2',3,6,6'-PECB	0.12	NG/KG	KJ	U	25
RB13-DUN-08-S	L19652-14	E1668A	2,2',3,6'-TECB	0.387	NG/KG	K	U	25
RB13-DUN-08-S	L19652-14	E1668A	2,2',3,6-TECB	1.29	NG/KG	CK	U	25
RB13-DUN-08-S	L19652-14	E1668A	2,2',4,5',6-PECB	0.254	NG/KG	KJ	U	25
RB13-DUN-08-S	L19652-14	E1668A	2,2',5-TRICB	3.36	NG/KG	CBG	J	24
RB13-DUN-08-S	L19652-14	E1668A	2,3,3',4,4',5,5',6-OCCB	0.161	NG/KG	KJ	U	25
RB13-DUN-08-S	L19652-14	E1668A	2,3,3',4,5,5'-HXCB	0.299	NG/KG	KJ	U	25
RB13-PT-06-S	L19652-15	E1668A	2,2',3,3',4,4',6,6'-OCCB	1.8	NG/KG	CG	J	24
RB13-PT-06-S	L19652-15	E1668A	2,2',3,3',4,6-HXCB	0.874	NG/KG	K	U	25
RB13-PT-06-S	L19652-15	E1668A	2,2',3,4,4',5,6'-HPCB	0.177	NG/KG	KJ	U	25
RB13-PT-06-S	L19652-15	E1668A	2,2',3,4,4',5,6-HPCB	0.226	NG/KG	KJ	U	25
RB13-PT-06-S	L19652-15	E1668A	2,2',3,4',5,5'-HXCB	15.9	NG/KG	G	J	24
RB13-PT-06-S	L19652-15	E1668A	2,2',3,4',5,6,6'-HPCB	0.141	NG/KG	KJ	U	25
RB13-PT-06-S	L19652-15	E1668A	2,2',3,4',5,6'-HXCB	0.465	NG/KG	K	U	25
RB13-PT-06-S	L19652-15	E1668A	2,2',3,5,6,6'-HXCB	0.079	NG/KG	KJ	U	25

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Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	DV Qual	DV Reason
RB13-PT-06-S	L19652-15	E1668A	2,2',3,5,6'-PECB	0.378	NG/KG	KJ	U	25
RB13-PT-06-S	L19652-15	E1668A	2,2',3,6,6'-PECB	0.414	NG/KG	K	U	25
RB13-PT-06-S	L19652-15	E1668A	2,3,3',5,5',6-HXCB	0.231	NG/KG	KJ	U	25
RB13-PT-06-S	L19652-15	E1668A	2,3,3',5,5'-PECB	0.181	NG/KG	KJ	U	25
RB13-PT-09-S	L19652-16 i	E1668A	2,2',3,3',4,6,6'-HPCB	0.712	NG/KG	K	U	25
RB13-PT-09-S	L19652-16 i	E1668A	2,3,3',4,4',5,6-HPCB	0.707	NG/KG	K	U	25
RB13-PT-09-S	L19652-16 i	E1668A	2,3',4,5,5'-PECB	0.21	NG/KG	KJ	U	25
RB13-PT-09-S	L19652-16 i	E1668A	3,3',4,5'-TECB	0.266	NG/KG	KJ	U	25
RB13-PT-04-S	L19652-17	E1668A	2,2',3,3',4,4',6,6'-OCCB	2.32	NG/KG	CG	J	24
RB13-PT-04-S	L19652-17	E1668A	2,2',3,4,4',5,6-HPCB	0.358	NG/KG	KJ	U	25
RB13-PT-04-S	L19652-17	E1668A	2,2',3,4',5,6'-HXCB	0.604	NG/KG	K	U	25
RB13-PT-04-S	L19652-17	E1668A	2,3,3',5,5'-PECB	0.192	NG/KG	KJ	U	25
RB13-PT-04-S	L19652-17	E1668A	2,3,6-TRICB	0.233	NG/KG	KJ	U	25
RB13-PT-02-S	L19652-18 R	E1668A	2,2',3,4,4',5,6'-HPCB	0.41	NG/KG	K	U	25
RB13-PT-02-S	L19652-18 R	E1668A	2,2',3,4',6,6'-HXCB	0.402	NG/KG	K	U	25
RB13-PT-02-S	L19652-18 R	E1668A	2,2',6,6'-TECB	0.267	NG/KG	KJ	U	25
RB13-PT-02-S	L19652-18 R	E1668A	2,3,3',5,5'-PECB	0.252	NG/KG	KJ	U	25
RB13-PT-02-S	L19652-18 R	E1668A	2,3',5',6-TECB	0.237	NG/KG	KJ	U	25
RB13-PT-02-S	L19652-18 R	E1668A	3,3',4,5,5'-PECB	0.364	NG/KG	KJ	U	25
RB13-PT-02-S	L19652-18 R	E1668A	3,4,4',5-TECB	0.94	NG/KG	K	U	25
RB13-PT-02-S	L19652-18 R	E1668A	3,4-DICB	10.7	NG/KG	CK	U	25
RB13-PT-02-S	L19652-18 R	E1668A	3,5-DICB	1.19	NG/KG	K	U	25
RB13-PT-05-S	L19652-19	E1668A	2,2',3,3',4,4',6,6'-OCCB	3.35	NG/KG	CG	J	24
RB13-PT-05-S	L19652-19	E1668A	2,2',3,4',5,6,6'-HPCB	0.262	NG/KG	KJ	U	25
RB13-PT-05-S	L19652-19	E1668A	2,2',3,4',5,6'-HXCB	0.225	NG/KG	KJ	U	25
RB13-PT-05-S	L19652-19	E1668A	2,3,3',4',5,5'-HXCB	0.799	NG/KG	K	U	25
RB13-PT-05-S	L19652-19	E1668A	2,3,6-TRICB	0.319	NG/KG	KJ	U	25
RB13-PT-05-S	L19652-19	E1668A	3,5-DICB	0.946	NG/KG	K	U	25
RB13-DUN-06-S	L19652-2	E1668A	2,2',3,3',4-PECB	3.06	NG/KG	G	J	24
RB13-DUN-06-S	L19652-2	E1668A	2,2',3,4,4',5,6-HPCB	0.075	NG/KG	KJ	U	25
RB13-DUN-06-S	L19652-2	E1668A	2,2',3,4',5,6'-HXCB	0.114	NG/KG	KJG	UJ	24,25
RB13-DUN-06-S	L19652-2	E1668A	2,2',3,4',6,6'-HXCB	0.145	NG/KG	KJ	U	25
RB13-DUN-06-S	L19652-2	E1668A	2,2',3,4,6'-PECB	0.364	NG/KG	KJ	U	25
RB13-DUN-06-S	L19652-2	E1668A	2,2',3,5,6,6'-HXCB	0.066	NG/KG	KJ	U	25
RB13-DUN-06-S	L19652-2	E1668A	2,2',3,5,6'-PECB	0.224	NG/KG	KJ	U	25
RB13-DUN-06-S	L19652-2	E1668A	2,2',4-TRICB	4.87	NG/KG	BG	J	24
RB13-DUN-06-S	L19652-2	E1668A	2,2',5-TRICB	8.23	NG/KG	CBG	J	24
RB13-DUN-06-S	L19652-2	E1668A	2,2',6,6'-TECB	0.05	NG/KG	KJ	U	25
RB13-DUN-06-S	L19652-2	E1668A	2,3,3',4,4',5',6-HPCB	0.452	NG/KG	K	U	25
RB13-DUN-06-S	L19652-2	E1668A	2,3,3',4',5,5'-HXCB	0.221	NG/KG	KJ	U	25
RB13-DUN-06-S	L19652-2	E1668A	2,3,3',4,5,5'-HXCB	0.42	NG/KG	K	U	25
RB13-DUN-06-S	L19652-2	E1668A	2,3',6-TRICB	0.501	NG/KG	G	J	24
RB13-DUN-06-S	L19652-2	E1668A	2,3,6-TRICB	0.1	NG/KG	KJ	U	25
RB13-DUN-06-S	L19652-2	E1668A	3,3',4,4'-TECB	6.26	NG/KG	BG	J	24
RB13-DUN-06-S	L19652-2	E1668A	3,3'-DICB	21.8	NG/KG	G	J	24
RB13-DUN-06-S	L19652-2	E1668A	3,5-DICB	0.633	NG/KG	KG	UJ	24,25
RB13-PT-10-S	L19652-20	E1668A	2,2',6,6'-TECB	0.133	NG/KG	KJ	U	25
RB13-PT-10-S	L19652-20	E1668A	2,3,3',4,4',5,5'-HPCB	1.04	NG/KG	K	U	25
RB13-PT-10-S	L19652-20	E1668A	2,3,3',4',5,5'-HXCB	0.478	NG/KG	K	U	25

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Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	DV Qual	DV Reason
RB13-PT-10-S	L19652-20	E1668A	3,4,5-TRICB	0.367	NG/KG	KJ	U	25
RB13-PT-10-S	L19652-20	E1668A	3,5-DICB	0.995	NG/KG	K	U	25
RB13-PT-10-S	L19652-20 W	E1668A	2,2',3,6'-TECB	1.67	NG/KG	KDJ	U	25
RB13-PT-10-S	L19652-20 W	E1668A	2,3,4',5-TECB	3.47	NG/KG	KDJ	U	25
RB13-PT-10-S	L19652-20 W	E1668A	2,3',5',6-TECB	1.17	NG/KG	KDJ	U	25
RB13-PT-10-S	L19652-20 W	E1668A	3,3',4,5'-TECB	1.97	NG/KG	KDJ	U	25
RB13-PT-10-S	L19652-20 W	E1668A	3,4-DICB	10.8	NG/KG	CKD	U	25
RB13-PT-07-S	L19652-21 (A)	E1668A	2,2',3,3',4,6,6'-HPCB	0.287	NG/KG	KJ	U	25
RB13-PT-07-S	L19652-21 (A)	E1668A	2,2',3,3',4-PECB	0.74	NG/KG	K	U	25
RB13-PT-07-S	L19652-21 (A)	E1668A	2,3',6-TRICB	0.148	NG/KG	KJ	U	25
RB13-PT-03-S	L19652-22	E1668A	2,2',3,3',4,4',6,6'-OCCB	2.39	NG/KG	CG	J	24
RB13-PT-03-S	L19652-22	E1668A	2,2',3,4,4',6,6'-HPCB	0.102	NG/KG	KJ	U	25
RB13-PT-03-S	L19652-22	E1668A	2,2',3,4',6,6'-HXCB	0.31	NG/KG	KJ	U	25
RB13-PT-03-S	L19652-22	E1668A	2,2',3,5,6,6'-HXCB	0.11	NG/KG	KJ	U	25
RB13-PT-03-S	L19652-22	E1668A	2,2',3,6,6'-PECB	0.572	NG/KG	K	U	25
RB13-PT-03-S	L19652-22	E1668A	2,3,3',4',5,5'-HXCB	0.605	NG/KG	K	U	25
RB13-PT-03-S	L19652-22	E1668A	2,3,3',5,5'-PECB	0.213	NG/KG	KJ	U	25
RB13-PT-03-S	L19652-22	E1668A	2,3',4,5,5'-PECB	0.863	NG/KG	K	U	25
RB13-PT-08-S	L19652-23	E1668A	2,2',3,3',4,4',6,6'-OCCB	3.26	NG/KG	CG	J	24
RB13-PT-08-S	L19652-23	E1668A	2,2',3,4,4',6,6'-HPCB	0.118	NG/KG	KJ	U	25
RB13-PT-08-S	L19652-23	E1668A	2,2',3,4,6,6'-HXCB	0.111	NG/KG	KJ	U	25
RB13-PT-08-S	L19652-23	E1668A	2,3,3',4',5,5'-HXCB	0.911	NG/KG	K	U	25
RB13-PT-08-S	L19652-23	E1668A	2,3,3',5,5',6-HXCB	0.276	NG/KG	KJ	U	25
RB13-PT-08-S	L19652-23	E1668A	2,3,3',5,5'-PECB	0.212	NG/KG	KJ	U	25
RB13-PT-01-S	L19652-24	E1668A	2,2',3,3',4,4',6,6'-OCCB	2.47	NG/KG	CG	J	24
RB13-PT-01-S	L19652-24	E1668A	2,2',3,4',5,6'-HXCB	0.537	NG/KG	K	U	25
RB13-PT-01-S	L19652-24	E1668A	2,3,3',4',5,5'-HXCB	0.573	NG/KG	K	U	25
RB13-PT-01-S	L19652-24	E1668A	2,3',4,5,5'-PECB	0.868	NG/KG	K	U	25
RB13-PT-01-S	L19652-24	E1668A	2,3,6-TRICB	0.305	NG/KG	KJ	U	25
RB13-SEQ-05-S	L19652-25	E1668A	2,2',3,5,6'-PECB	0.473	NG/KG	K	U	25
RB13-SEQ-05-S	L19652-25	E1668A	2,3,3',5,5',6-HXCB	0.191	NG/KG	KJ	U	25
RB13-SEQ-02-S	L19652-26	E1668A	2,2',3,3',4,4',6,6'-OCCB	1.69	NG/KG	CG	J	24
RB13-SEQ-02-S	L19652-26	E1668A	2,2',3,4',5,6'-HXCB	0.356	NG/KG	KJ	U	25
RB13-SEQ-02-S	L19652-26	E1668A	2,3,3',5,5'-PECB	0.17	NG/KG	KJ	U	25
RB13-SEQ-04-S	L19652-27	E1668A	2,2',3,4',5,6,6'-HPCB	0.211	NG/KG	KJ	U	25
RB13-SEQ-04-S	L19652-27	E1668A	2,2',3,4',5,6'-HXCB	0.171	NG/KG	KJ	U	25
RB13-SEQ-04-S	L19652-27	E1668A	2,3,3',4,4',5',6-HPCB	0.557	NG/KG	K	U	25
RB13-SEQ-04-S	L19652-27	E1668A	2,3,3',4,5,5'-HXCB	0.921	NG/KG	K	U	25
RB13-SEQ-04-S	L19652-27	E1668A	2,3,3',5,5'-PECB	0.153	NG/KG	KJ	U	25
RB13-SEQ-04-S	L19652-27	E1668A	2,3',4,5,5'-PECB	0.752	NG/KG	K	U	25
RB13-SEQ-04-S	L19652-27	E1668A	3,4,4',5-TECB	0.451	NG/KG	K	U	25
RB13-SEQ-04-S	L19652-27	E1668A	3,4,5-TRICB	0.323	NG/KG	KJ	U	25
RB13-SEQ-04-S	L19652-27	E1668A	3,5-DICB	0.803	NG/KG	K	U	25
RB13-SEQ-03-S	L19652-28	E1668A	2,2',3,3',4,4',6,6'-OCCB	2.6	NG/KG	CG	J	24
RB13-SEQ-03-S	L19652-28	E1668A	2,2',3,4,4',5,6-HPCB	0.227	NG/KG	KJ	U	25
RB13-SEQ-03-S	L19652-28	E1668A	2,2',3,4',6,6'-HXCB	0.337	NG/KG	KJ	U	25
RB13-SEQ-03-S	L19652-28	E1668A	2,2',3,5,6,6'-HXCB	0.131	NG/KG	KJ	U	25
RB13-SEQ-03-S	L19652-28	E1668A	2,3,3',4',5,5'-HXCB	0.637	NG/KG	K	U	25
RB13-SEQ-03-S	L19652-28	E1668A	2,3,3',5,5'-PECB	0.224	NG/KG	KJ	U	25

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Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	DV Qual	DV Reason
RB13-SEQ-03-S	L19652-28	E1668A	2,3,6-TRICB	0.227	NG/KG	KJ	U	25
RB13-SEQ-03-S	L19652-28	E1668A	3,4,5-TRICB	0.499	NG/KG	K	U	25
RB13-SEQ-03-D	L19652-29	E1668A	2,2',3,4,4',5,6'-HPCB	0.375	NG/KG	KJ	U	25
RB13-SEQ-03-D	L19652-29	E1668A	2,2',3,4',5,6'-HXCB	0.178	NG/KG	KJ	U	25
RB13-SEQ-03-D	L19652-29	E1668A	2,3,3',5,5'-PECB	0.24	NG/KG	KJ	U	25
RB13-SEQ-03-D	L19652-29	E1668A	2,3,6-TRICB	0.286	NG/KG	KJ	U	25
RB13-SEQ-03-D	L19652-29	E1668A	3,5-DICB	0.944	NG/KG	K	U	25
RB13-DUN-07-S	L19652-3	E1668A	2,2',3,3',4,4',5,5',6-NOCB	0.719	NG/KG	K	U	25
RB13-DUN-07-S	L19652-3	E1668A	2,2',3,3',4,4',5-HPCB	1.51	NG/KG	K	U	25
RB13-DUN-07-S	L19652-3	E1668A	2,2',3,3',4,5,5'-HPCB	0.224	NG/KG	KJ	U	25
RB13-DUN-07-S	L19652-3	E1668A	2,2',3,3',4,5',6-HPCB	0.068	NG/KG	KJ	U	25
RB13-DUN-07-S	L19652-3	E1668A	2,2',3,3',4,5'-HXCB	0.532	NG/KG	K	U	25
RB13-DUN-07-S	L19652-3	E1668A	2,2',3,3',4-PECB	0.376	NG/KG	KJG	UJ	24,25
RB13-DUN-07-S	L19652-3	E1668A	2,2',3,3',5,5'-HXCB	0.13	NG/KG	KJ	U	25
RB13-DUN-07-S	L19652-3	E1668A	2,2',3,3',5,6-HXCB	0.631	NG/KG	CK	U	25
RB13-DUN-07-S	L19652-3	E1668A	2,2',3,3',6,6'-HXCB	0.398	NG/KG	K	U	25
RB13-DUN-07-S	L19652-3	E1668A	2,2',3,4,4',5',6-HPCB	0.94	NG/KG	CK	U	25
RB13-DUN-07-S	L19652-3	E1668A	2,2',3,4,4',5-HXCB	0.244	NG/KG	KJ	U	25
RB13-DUN-07-S	L19652-3	E1668A	2,2',3,4,4',6-HXCB	0.114	NG/KG	CKJ	U	25
RB13-DUN-07-S	L19652-3	E1668A	2,2',4,5',6-PECB	0.064	NG/KG	KJ	U	25
RB13-DUN-07-S	L19652-3	E1668A	2,3,3',4,5,5'-HXCB	0.065	NG/KG	KJ	U	25
RB13-DUN-07-S	L19652-3	E1668A	2',3,3',4,5-PECB	0.086	NG/KG	KJ	U	25
RB13-DUN-07-S	L19652-3	E1668A	2,3',4,4',5,5'-HXCB	0.297	NG/KG	KJ	U	25
RB13-DUN-07-S	L19652-3	E1668A	2,3',4,5-TECB	0.157	NG/KG	KJ	U	25
RB13-DUN-07-S	L19652-3	E1668A	3,4,5-TRICB	0.06	NG/KG	KJ	U	25
RB13-DUN-07-S	L19652-3 W	E1668A	3,4-DICB	8.72	NG/KG	CKD	U	25
RB13-DUN-07-S	L19652-3 W	E1668A	4,4'-DICB	2.2	NG/KG	KDJ	U	25
RB13-SEQ-01-S	L19652-30	E1668A	2,2',3,3',4,4',6,6'-OCCB	3.54	NG/KG	CG	J	24
RB13-SEQ-01-S	L19652-30	E1668A	2,2',3,4,4',6,6'-HPCB	0.153	NG/KG	KJ	U	25
RB13-SEQ-01-S	L19652-30	E1668A	2,2',3,4',5,5'-HXCB	32.1	NG/KG	BG	J	24
RB13-SEQ-01-S	L19652-30	E1668A	2,2',3,4',5,6'-HXCB	0.529	NG/KG	K	U	25
RB13-SEQ-01-S	L19652-30	E1668A	2,2',5-TRICB	23.1	NG/KG	CBG	J	24
RB13-SEQ-01-S	L19652-30	E1668A	2,2',6,6'-TECB	0.145	NG/KG	KJ	U	25
RB13-SEQ-01-S	L19652-30	E1668A	2,3,3',5,5'-PECB	0.385	NG/KG	KJ	U	25
RB13-SEQ-01-S	L19652-30	E1668A	2,3',5',6-TECB	0.166	NG/KG	KJ	U	25
RB13-SEQ-01-S	L19652-30	E1668A	2,3,6-TRICB	0.408	NG/KG	K	U	25
RB13-SEQ-01-S	L19652-30	E1668A	2-MOCB	5.12	NG/KG		J	10
RB13-SEQ-01-S	L19652-30	E1668A	3,3',4,5,5'-PECB	0.239	NG/KG	KJ	U	25
RB13-SEQ-01-S	L19652-30	E1668A	3,4,4',5-TECB	0.816	NG/KG	K	U	25
RB13-SEQ-01-S	L19652-30	E1668A	3,5-DICB	1.17	NG/KG	K	U	25
RB13-SEQ-01-S	L19652-30	E1668A	4-MOCB	6.78	NG/KG	B	J	10
RB13-DIS-10-S	L19652-31	E1668A	2,2',3,3',4,4',6,6'-OCCB	3.94	NG/KG	CG	J	24
RB13-DIS-10-S	L19652-31	E1668A	2,2',3,3',5,5'-HXCB	4.07	NG/KG	K	U	25
RB13-DIS-10-S	L19652-31	E1668A	2,2',3,4,4',5,6'-HPCB	0.494	NG/KG	K	U	25
RB13-DIS-10-S	L19652-31	E1668A	2,2',3,4',5,5'-HXCB	33.7	NG/KG	BG	J	24
RB13-DIS-10-S	L19652-31	E1668A	2,2',3,4',5,6'-HXCB	0.515	NG/KG	K	U	25
RB13-DIS-10-S	L19652-31	E1668A	2,2',3,4',6,6'-HXCB	0.485	NG/KG	K	U	25
RB13-DIS-10-S	L19652-31	E1668A	2,2',3-TRICB	12.4	NG/KG		J	13L
RB13-DIS-10-S	L19652-31	E1668A	2,2',4-TRICB	15.2	NG/KG		J	13L

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Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	DV Qual	DV Reason
RB13-DIS-10-S	L19652-31	E1668A	2,2',5-TRICB	23.9	NG/KG	CB	J	13L
RB13-DIS-10-S	L19652-31	E1668A	2,2',6-TRICB	2.32	NG/KG		J	13L
RB13-DIS-10-S	L19652-31	E1668A	2,2'-DICB	9.08	NG/KG		J	13L
RB13-DIS-10-S	L19652-31	E1668A	2,3,3',5,5',6-HXCB	0.447	NG/KG	KJ	U	25
RB13-DIS-10-S	L19652-31	E1668A	2,3,3'-TRICB	132	NG/KG	CB	J	13L
RB13-DIS-10-S	L19652-31	E1668A	2,3',4-TRICB	8.85	NG/KG		J	13L
RB13-DIS-10-S	L19652-31	E1668A	2,3,4'-TRICB	31.7	NG/KG	B	J	13L
RB13-DIS-10-S	L19652-31	E1668A	2,3,4-TRICB	42.1	NG/KG	C	J	13L
RB13-DIS-10-S	L19652-31	E1668A	2',3,5-TRICB	0.496	NG/KG	K	UJ	13L,25
RB13-DIS-10-S	L19652-31	E1668A	2,3',5-TRICB	15.1	NG/KG	C	J	13L
RB13-DIS-10-S	L19652-31	E1668A	2,3,5-TRICB		NG/KG	U	UJ	13L
RB13-DIS-10-S	L19652-31	E1668A	2,3',6-TRICB	2.73	NG/KG		J	13L
RB13-DIS-10-S	L19652-31	E1668A	2,3,6-TRICB	0.29	NG/KG	KJ	UJ	13L,25
RB13-DIS-10-S	L19652-31	E1668A	2,3'-DICB	5.84	NG/KG		J	13L
RB13-DIS-10-S	L19652-31	E1668A	2,3-DICB	0.528	NG/KG		J	13L
RB13-DIS-10-S	L19652-31	E1668A	2,4',5-TRICB	82.8	NG/KG	B	J	13L
RB13-DIS-10-S	L19652-31	E1668A	2,4',6-TRICB	12.5	NG/KG		J	13L
RB13-DIS-10-S	L19652-31	E1668A	2,4'-DICB	37.3	NG/KG		J	13L
RB13-DIS-10-S	L19652-31	E1668A	2,4-DICB	2.16	NG/KG		J	13L
RB13-DIS-10-S	L19652-31	E1668A	2,5-DICB	1.43	NG/KG	K	UJ	13L,25
RB13-DIS-10-S	L19652-31	E1668A	2,6-DICB	0.359	NG/KG	J	J	13L
RB13-DIS-10-S	L19652-31	E1668A	2-MOCB	6.52	NG/KG		J	10,13L
RB13-DIS-10-S	L19652-31	E1668A	3,3',4-TRICB	5.77	NG/KG		J	13L
RB13-DIS-10-S	L19652-31	E1668A	3,3',5-TRICB	3.21	NG/KG		J	13L
RB13-DIS-10-S	L19652-31	E1668A	3,3'-DICB	67.2	NG/KG		J	13L
RB13-DIS-10-S	L19652-31	E1668A	3,4,4',5-TECB	0.914	NG/KG	K	U	25
RB13-DIS-10-S	L19652-31	E1668A	3,4',5-TRICB	1.11	NG/KG		J	13L
RB13-DIS-10-S	L19652-31	E1668A	3,4,5-TRICB	0.749	NG/KG		J	13L
RB13-DIS-10-S	L19652-31	E1668A	3,4-DICB	9.73	NG/KG	C	J	13L
RB13-DIS-10-S	L19652-31	E1668A	3,5-DICB	1.18	NG/KG	K	UJ	13L,25
RB13-DIS-10-S	L19652-31	E1668A	3-MOCB	41.5	NG/KG		J	13L
RB13-DIS-10-S	L19652-31	E1668A	4-MOCB	7.16	NG/KG	B	J	10
RB13-DIS-07-S	L19652-32	E1668A	2,2',3,3',4,4',6,6'-OCCB	4.87	NG/KG	CG	J	24
RB13-DIS-07-S	L19652-32	E1668A	2,2',3,3',4,6-HXCB	2.53	NG/KG	K	U	25
RB13-DIS-07-S	L19652-32	E1668A	2,2',3,4,4',6,6'-HPCB	0.165	NG/KG	KJ	U	25
RB13-DIS-07-S	L19652-32	E1668A	2,2',3,4',5,5',6-HPCB	109	NG/KG	BG	J	24
RB13-DIS-07-S	L19652-32	E1668A	2,2',3,4',5,5'-HXCB	47.9	NG/KG	BG	J	24
RB13-DIS-07-S	L19652-32	E1668A	2,2',3,5,6'-PECB	1.02	NG/KG	K	U	25
RB13-DIS-07-S	L19652-32	E1668A	2,2',6,6'-TECB	0.16	NG/KG	KJ	U	25
RB13-DIS-07-S	L19652-32	E1668A	2-MOCB	7.64	NG/KG		J	10
RB13-DIS-07-S	L19652-32	E1668A	3,4,4',5-TECB	1.42	NG/KG	K	U	25
RB13-DIS-07-S	L19652-32	E1668A	3,4,5-TRICB	0.722	NG/KG	K	U	25
RB13-DIS-07-S	L19652-32	E1668A	4-MOCB	9.16	NG/KG	B	J	10
RB13-DIS-01-S	L19652-33	E1668A	2,2',3,3',4,4',6,6'-OCCB	4.11	NG/KG	CG	J	24
RB13-DIS-01-S	L19652-33	E1668A	2,2',3,4,4',5,6,6'-OCCB	0.054	NG/KG	KJ	U	25
RB13-DIS-01-S	L19652-33	E1668A	2,2',3,4,4',5,6'-HPCB	0.519	NG/KG	K	U	25
RB13-DIS-01-S	L19652-33	E1668A	2,2',3,4',5,5',6-HPCB	91.8	NG/KG	BG	J	24
RB13-DIS-01-S	L19652-33	E1668A	2,2',3,4',5,5'-HXCB	42.9	NG/KG	BG	J	24
RB13-DIS-01-S	L19652-33	E1668A	2,2',3,4',5,6'-HXCB	0.507	NG/KG	K	U	25

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RB13-DIS-01-S	L19652-33	E1668A	2,2',4,5',6-PECB	2.05	NG/KG	K	U	25
RB13-DIS-01-S	L19652-33	E1668A	2,2',6,6'-TECB	0.145	NG/KG	KJ	U	25
RB13-DIS-01-S	L19652-33	E1668A	2,3-DICB	0.532	NG/KG	K	U	25
RB13-DIS-01-S	L19652-33	E1668A	2-MOCB	7.79	NG/KG		J	10
RB13-DIS-01-S	L19652-33	E1668A	3,4,4',5-TECB	1.03	NG/KG	K	U	25
RB13-DIS-01-S	L19652-33	E1668A	3,5-DICB	1.22	NG/KG	K	U	25
RB13-DIS-01-S	L19652-33	E1668A	4-MOCB	8.44	NG/KG	B	J	10
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,2',3,3',4,4',6,6'-OCCB	0.407	NG/KG	CKG	UJ	24,25
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,2',3,3',4,6,6'-HPCB	0.557	NG/KG	K	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,2',3,3',4,6-HXCB	0.184	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,2',3,3',4-PECB	1.56	NG/KG	G	J	24
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,2',3,4',5,6'-HXCB		NG/KG	UG	UJ	24
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,2',3,4,5',6-HXCB	0.616	NG/KG	K	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,2',3,4,6'-PECB	0.162	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,2',3,6,6'-PECB	0.09	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,3,3',4,4',5,5',6-OCCB	0.113	NG/KG	J	U	7
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,3,3',4,4',5,5'-HPCB	0.252	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,3,3',4,4',5',6-HPCB	0.145	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,3,3',4,4',5,6-HPCB	0.672	NG/KG	B	U	7
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,3,3',4',5,5'-HXCB	0.107	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,3,3',5,5',6-HXCB	0.07	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,3,3',6-TECB	0.704	NG/KG	CK	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,3',4,4',5,5'-HXCB	0.904	NG/KG	B	U	7
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,3',4,5'-TECB	0.143	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,3',6-TRICB	0.259	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,3,6-TRICB	0.048	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	2,5-DICB	0.197	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	2-MOCB	0.847	NG/KG		J	10
RB13-DIS-03-S	L19652-34 (A)	E1668A	3,3',4,4',5-PECB	0.147	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	3,4,4',5-TECB	0.102	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	3,4,5-TRICB	0.268	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	3,4-DICB	1.28	NG/KG	CK	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	3,5-DICB	0.201	NG/KG	KJ	U	25
RB13-DIS-03-S	L19652-34 (A)	E1668A	4-MOCB	1.03	NG/KG	B	J	10
RB13-DIS-12-S	L19652-35	E1668A	2,2',3,3',4,6-HXCB	0.316	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,2',3,3',4-PECB	2.93	NG/KG	G	J	24
RB13-DIS-12-S	L19652-35	E1668A	2,2',3,4,4',5,6-HPCB	0.073	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,2',3,4',5,6,6'-HPCB	0.054	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,2',3,4',5,6'-HXCB	0.084	NG/KG	KJG	UJ	24,25
RB13-DIS-12-S	L19652-35	E1668A	2,2',3,4',6,6'-HXCB	0.079	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,2',3,4,6'-PECB	0.268	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,2',3,5,6'-PECB	0.187	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,2',3,6,6'-PECB	0.134	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,2',3,6'-TECB	0.547	NG/KG	K	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,3,3',4,4',5,5',6-OCCB	0.28	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,3,3',4,4',5,5'-HPCB	0.504	NG/KG	K	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,3,3',4',5,5'-HXCB	0.223	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,3,3',4,5,5'-HXCB	0.354	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,3,3',5,5'-PECB	0.069	NG/KG	KJ	U	25

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Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	DV Qual	DV Reason
RB13-DIS-12-S	L19652-35	E1668A	2,3,3',5'-TECB	0.103	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,3',4,5,5'-PECB	0.282	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,3',5,5'-TECB	0.35	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,3',5',6-TECB	0.048	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2',3,5-TRICB	0.115	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,3,6-TRICB	0.073	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,4-DICB	0.318	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2,5-DICB	0.325	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	2-MOCB	2.15	NG/KG		J	10
RB13-DIS-12-S	L19652-35	E1668A	3,4,4',5-TECB	0.171	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	3,4-DICB	2.73	NG/KG	CK	U	25
RB13-DIS-12-S	L19652-35	E1668A	3,5-DICB	0.3	NG/KG	KJ	U	25
RB13-DIS-12-S	L19652-35	E1668A	4-MOCB	2.88	NG/KG	B	J	10
RB13-DIS-02-S	L19652-36	E1668A	2,2',3,3',4,4',6,6'-OCCB	3.68	NG/KG	CG	J	24
RB13-DIS-02-S	L19652-36	E1668A	2,2',3,4',5,5',6-HPCB	82	NG/KG	BG	J	24
RB13-DIS-02-S	L19652-36	E1668A	2,2',3,4',5,5'-HXCB	39.2	NG/KG	BG	J	24
RB13-DIS-02-S	L19652-36	E1668A	2,2',3,5,6,6'-HXCB	0.173	NG/KG	KJ	U	25
RB13-DIS-02-S	L19652-36	E1668A	2,2',4,4',6,6'-HXCB	0.151	NG/KG	KJ	U	25
RB13-DIS-02-S	L19652-36	E1668A	2,2',5-TRICB	27.1	NG/KG	CBG	J	24
RB13-DIS-02-S	L19652-36	E1668A	2-MOCB	7.48	NG/KG		J	10
RB13-DIS-02-S	L19652-36	E1668A	3,3',4,5,5'-PECB	0.574	NG/KG	K	U	25
RB13-DIS-02-S	L19652-36	E1668A	3,4,4',5-TECB	0.969	NG/KG	K	U	25
RB13-DIS-02-S	L19652-36	E1668A	3,5-DICB	1.32	NG/KG	K	U	25
RB13-DIS-02-S	L19652-36	E1668A	4-MOCB	8.23	NG/KG	B	J	10
RB13-DIS-05-S	L19652-37 L	E1668A	2,2',3,4,4',5,6'-HPCB	0.409	NG/KG	K	U	25
RB13-DIS-05-S	L19652-37 L	E1668A	2,2',3,4,4',5,6-HPCB	0.582	NG/KG	K	U	25
RB13-DIS-05-S	L19652-37 L	E1668A	2,2',3,4',5,6,6'-HPCB	0.176	NG/KG	KJ	U	25
RB13-DIS-05-S	L19652-37 L	E1668A	2,2',3,4',5,6'-HXCB	0.643	NG/KG	K	U	25
RB13-DIS-05-S	L19652-37 L	E1668A	2,2',3,5,6,6'-HXCB	0.237	NG/KG	KJ	U	25
RB13-DIS-05-S	L19652-37 L	E1668A	2,2',3,5-TECB	2.13	NG/KG	K	U	25
RB13-DIS-05-S	L19652-37 L	E1668A	2,2',3,6,6'-PECB	1.04	NG/KG	K	U	25
RB13-DIS-05-S	L19652-37 L	E1668A	2,3,3',4,4',5,5',6-OCCB	1.13	NG/KG	K	U	25
RB13-DIS-05-S	L19652-37 L	E1668A	2,3,3',5,5',6-HXCB	0.379	NG/KG	K	U	25
RB13-DIS-05-S	L19652-37 L	E1668A	2,3,3',5,5'-PECB	0.339	NG/KG	KJ	U	25
RB13-DIS-05-S	L19652-37 L	E1668A	2,3',5',6-TECB	0.24	NG/KG	KJ	U	25
RB13-DIS-05-S	L19652-37 L	E1668A	2,3,6-TRICB	0.328	NG/KG	KJ	U	25
RB13-DIS-05-S	L19652-37 L	E1668A	2,3-DICB	0.33	NG/KG	KJ	U	25
RB13-DIS-05-S	L19652-37 L	E1668A	2,5-DICB	1.04	NG/KG	K	U	25
RB13-DIS-05-S	L19652-37 L	E1668A	2-MOCB	5.71	NG/KG		J	10
RB13-DIS-05-S	L19652-37 L	E1668A	3,4,4',5-TECB	0.693	NG/KG	K	U	25
RB13-DIS-05-S	L19652-37 L	E1668A	4-MOCB	5.47	NG/KG	B	J	10
RB13-DIS-04-S	L19652-38	E1668A	2,2',3,3',4,4',6,6'-OCCB	2.75	NG/KG	CG	J	24
RB13-DIS-04-S	L19652-38	E1668A	2,2',3,3',4-PECB	12.2	NG/KG	G	J	24
RB13-DIS-04-S	L19652-38	E1668A	2,2',3,4,4',5,6-HPCB	0.225	NG/KG	KJ	U	25
RB13-DIS-04-S	L19652-38	E1668A	2,2',3,4',5,5',6-HPCB	57.1	NG/KG	BG	J	24
RB13-DIS-04-S	L19652-38	E1668A	2,2',3,4',5,5'-HXCB	24.1	NG/KG	BG	J	24
RB13-DIS-04-S	L19652-38	E1668A	2,2',3,4',5,6,6'-HPCB	0.115	NG/KG	KJ	U	25
RB13-DIS-04-S	L19652-38	E1668A	2,2',3,4',5,6'-HXCB	0.482	NG/KG	KG	UJ	24,25
RB13-DIS-04-S	L19652-38	E1668A	2,2',3,4,6,6'-HXCB	0.059	NG/KG	KJ	U	25

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Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	DV Qual	DV Reason
RB13-DIS-04-S	L19652-38	E1668A	2,2',3,5,6,6'-HXCB	0.118	NG/KG	KJ	U	25
RB13-DIS-04-S	L19652-38	E1668A	2,2',3,6,6'-PECB	0.579	NG/KG	K	U	25
RB13-DIS-04-S	L19652-38	E1668A	2,2',4,4',6,6'-HXCB	0.051	NG/KG	KJ	U	25
RB13-DIS-04-S	L19652-38	E1668A	2,2',6,6'-TECB	0.076	NG/KG	KJ	U	25
RB13-DIS-04-S	L19652-38	E1668A	2,3,3',4,4',5,5'-HPCB	1.18	NG/KG	K	U	25
RB13-DIS-04-S	L19652-38	E1668A	2,3',4,5',6-PECB	0.079	NG/KG	KJ	U	25
RB13-DIS-04-S	L19652-38	E1668A	2-MOCB	6.21	NG/KG		J	10
RB13-DIS-04-S	L19652-38	E1668A	3,3',4,5,5'-PECB	0.177	NG/KG	KJ	U	25
RB13-DIS-04-S	L19652-38	E1668A	3,3',4,5-TECB	0.1	NG/KG	KJ	U	25
RB13-DIS-04-S	L19652-38	E1668A	3,4,4',5-TECB	0.738	NG/KG	K	U	25
RB13-DIS-04-S	L19652-38	E1668A	3,5-DICB	0.638	NG/KG	K	U	25
RB13-DIS-04-S	L19652-38	E1668A	4-MOCB	5.25	NG/KG	B	J	10
RB13-DIS-11-S	L19652-39	E1668A	2,2',3,3',4,4',6,6'-OCCB	3.48	NG/KG	CG	J	24
RB13-DIS-11-S	L19652-39	E1668A	2,2',3,4',5,5',6-HPCB	71.7	NG/KG	BG	J	24
RB13-DIS-11-S	L19652-39	E1668A	2,2',3,4',5,5'-HXCB	30.6	NG/KG	BG	J	24
RB13-DIS-11-S	L19652-39	E1668A	2,2',3,4',5,6,6'-HPCB	0.213	NG/KG	KJ	U	25
RB13-DIS-11-S	L19652-39	E1668A	2,2',3,4',6,6'-HXCB	0.408	NG/KG	K	U	25
RB13-DIS-11-S	L19652-39	E1668A	2,3,3',5,5'-PECB	0.285	NG/KG	KJ	U	25
RB13-DIS-11-S	L19652-39	E1668A	2,3',4,5',6-PECB	0.087	NG/KG	KJ	U	25
RB13-DIS-11-S	L19652-39	E1668A	2,3-DICB	0.569	NG/KG	K	U	25
RB13-DIS-11-S	L19652-39	E1668A	2,6-DICB	0.38	NG/KG	KJ	U	25
RB13-DIS-11-S	L19652-39	E1668A	2-MOCB	6.49	NG/KG		J	10
RB13-DIS-11-S	L19652-39	E1668A	3,3',4,5,5'-PECB	0.349	NG/KG	KJ	U	25
RB13-DIS-11-S	L19652-39	E1668A	3,4,4',5-TECB	0.996	NG/KG	K	U	25
RB13-DIS-11-S	L19652-39	E1668A	3,5-DICB	0.992	NG/KG	K	U	25
RB13-DIS-11-S	L19652-39	E1668A	4-MOCB	5.98	NG/KG	B	J	10
RB13-DUN-12-S	L19652-4	E1668A	2,2',3,3',4,4',6,6'-OCCB	0.501	NG/KG	CKG	UJ	24,25
RB13-DUN-12-S	L19652-4	E1668A	2,2',3,4,4',5-HXCB	1.3	NG/KG	K	U	25
RB13-DUN-12-S	L19652-4	E1668A	2,2',3,4',5,6'-HXCB	0.052	NG/KG	KJG	UJ	24,25
RB13-DUN-12-S	L19652-4	E1668A	2,2',3,4',6,6'-HXCB	0.072	NG/KG	KJ	U	25
RB13-DUN-12-S	L19652-4	E1668A	2,2',3,4,6'-PECB	0.24	NG/KG	KJ	U	25
RB13-DUN-12-S	L19652-4	E1668A	2,2',3,5,6,6'-HXCB	0.048	NG/KG	KJ	U	25
RB13-DUN-12-S	L19652-4	E1668A	2,2',3,5,6'-PECB	0.132	NG/KG	KJ	U	25
RB13-DUN-12-S	L19652-4	E1668A	2,2',4,4',6,6'-HXCB	0.052	NG/KG	KJ	U	25
RB13-DUN-12-S	L19652-4	E1668A	2,2',4,5',6-PECB	0.331	NG/KG	KJ	U	25
RB13-DUN-12-S	L19652-4	E1668A	2,3,3',4,4',5,5'-HPCB	0.45	NG/KG	K	U	25
RB13-DUN-12-S	L19652-4	E1668A	2,3,3',5,5',6-HXCB	0.069	NG/KG	KJ	U	25
RB13-DUN-12-S	L19652-4	E1668A	2,3,3',5,5'-PECB	0.085	NG/KG	KJ	U	25
RB13-DUN-12-S	L19652-4	E1668A	2,3,3',5-TECB	0.165	NG/KG	KJ	U	25
RB13-DUN-12-S	L19652-4	E1668A	2,3',4,5,5'-PECB	0.27	NG/KG	KJG	UJ	24,25
RB13-DUN-12-S	L19652-4	E1668A	2,3-DICB	0.113	NG/KG	KJ	U	25
RB13-DUN-12-S	L19652-4	E1668A	3,4,4',5-TECB	0.277	NG/KG	KJ	U	25
RB13-DUN-12-S	L19652-4	E1668A	3,5-DICB	0.628	NG/KG	K	U	25
RB13-DIS-08-S	L19652-40	E1668A	2,2',3,4,5',6-HXCB	1.43	NG/KG	K	U	25
RB13-DIS-08-S	L19652-40	E1668A	2,2',3,4',6,6'-HXCB	0.092	NG/KG	KJ	U	25
RB13-DIS-08-S	L19652-40	E1668A	2,2',3,5,6'-PECB	0.159	NG/KG	KJ	U	25
RB13-DIS-08-S	L19652-40	E1668A	2,2',4,4',6,6'-HXCB	0.075	NG/KG	KJ	U	25
RB13-DIS-08-S	L19652-40	E1668A	2,2',4,5',6-PECB	0.374	NG/KG	KJ	U	25
RB13-DIS-08-S	L19652-40	E1668A	2,2',6,6'-TECB	0.057	NG/KG	KJ	U	25

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Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	DV Qual	DV Reason
RB13-DIS-08-S	L19652-40	E1668A	2,2',6-TRICB	0.736	NG/KG	K	U	25
RB13-DIS-08-S	L19652-40	E1668A	2,3,3',4,4',5',6-HPCB	0.325	NG/KG	KJ	U	25
RB13-DIS-08-S	L19652-40	E1668A	2,3,3',4',5,5'-HXCB	0.251	NG/KG	KJ	U	25
RB13-DIS-08-S	L19652-40	E1668A	2,3,3',5,5'-PECB	0.079	NG/KG	KJ	U	25
RB13-DIS-08-S	L19652-40	E1668A	2,3,3',5'-TECB	0.108	NG/KG	KJ	U	25
RB13-DIS-08-S	L19652-40	E1668A	2,3',5',6-TECB	0.093	NG/KG	KJ	U	25
RB13-DIS-08-S	L19652-40	E1668A	2-MOCB	1.97	NG/KG		J	10
RB13-DIS-08-S	L19652-40	E1668A	3,4,4',5-TECB	0.332	NG/KG	KJ	U	25
RB13-DIS-08-S	L19652-40	E1668A	3,5-DICB	0.275	NG/KG	KJ	U	25
RB13-DIS-08-S	L19652-40	E1668A	4-MOCB	2.31	NG/KG	B	J	10
RB13-DIS-06-S	L19652-41	E1668A	2,2',3,3',4,4',6,6'-OCCB	9.64	NG/KG	CG	J	24
RB13-DIS-06-S	L19652-41	E1668A	2,2',3,4,4',5,6,6'-OCCB	0.116	NG/KG	KJ	U	25
RB13-DIS-06-S	L19652-41	E1668A	2,2',3,4,4',5,6'-HPCB	1.03	NG/KG	K	U	25
RB13-DIS-06-S	L19652-41	E1668A	2,2',3,4,4',5,6-HPCB	0.837	NG/KG	K	U	25
RB13-DIS-06-S	L19652-41	E1668A	2,2',3,4,4',6,6'-HPCB	0.334	NG/KG	KJ	U	25
RB13-DIS-06-S	L19652-41	E1668A	2,2',3,4',5,5'-HXCB	87	NG/KG	BG	J	24
RB13-DIS-06-S	L19652-41	E1668A	2,2',3,4',5,6,6'-HPCB	0.58	NG/KG	K	U	25
RB13-DIS-06-S	L19652-41	E1668A	2,2',4,4',6,6'-HXCB	0.116	NG/KG	KJ	U	25
RB13-DIS-06-S	L19652-41	E1668A	2,3',6-TRICB	7.81	NG/KG	G	J	24
RB13-DIS-06-S	L19652-41	E1668A	2-MOCB	10.8	NG/KG		J	10
RB13-DIS-06-S	L19652-41	E1668A	3,3',4,4',5,5'-HXCB	0.906	NG/KG	K	U	25
RB13-DIS-06-S	L19652-41	E1668A	3,3',4,5-TECB	0.386	NG/KG	KJ	U	25
RB13-DIS-06-S	L19652-41	E1668A	3,3',5,5'-TECB	0.235	NG/KG	KJ	U	25
RB13-DIS-06-S	L19652-41	E1668A	3,4,4',5-TECB	2.24	NG/KG	K	U	25
RB13-DIS-06-S	L19652-41	E1668A	3,4-DICB	14.4	NG/KG	CKG	UJ	24,25
RB13-DIS-06-S	L19652-41	E1668A	3,5-DICB	1.84	NG/KG	K	U	25
RB13-DIS-06-S	L19652-41	E1668A	4-MOCB	13.2	NG/KG	B	J	10
RB13-DIS-09-S	L19652-42	E1668A	2,2',3,4,4',5,6-HPCB	0.193	NG/KG	KJ	U	25
RB13-DIS-09-S	L19652-42	E1668A	2,2',3,4',5,6,6'-HPCB	0.086	NG/KG	KJ	U	25
RB13-DIS-09-S	L19652-42	E1668A	2,2',3,4,6'-PECB	0.852	NG/KG	K	U	25
RB13-DIS-09-S	L19652-42	E1668A	2,2',3,5,6,6'-HXCB	0.078	NG/KG	KJ	U	25
RB13-DIS-09-S	L19652-42	E1668A	2,2',3,5-TECB	1.42	NG/KG	K	U	25
RB13-DIS-09-S	L19652-42	E1668A	2,3,3',4,4',5-HXCB	21.4	NG/KG	CB	J	9
RB13-DIS-09-S	L19652-42	E1668A	2,3,3',5,5'-PECB	0.251	NG/KG	KJ	U	25
RB13-DIS-09-S	L19652-42	E1668A	2,6-DICB	0.258	NG/KG	KJ	U	25
RB13-DIS-09-S	L19652-42	E1668A	2-MOCB	5.05	NG/KG		J	10
RB13-DIS-09-S	L19652-42	E1668A	3,4,4',5-TECB	0.606	NG/KG	K	U	25
RB13-DIS-09-S	L19652-42	E1668A	3,5-DICB	0.652	NG/KG	K	U	25
RB13-DIS-09-S	L19652-42	E1668A	4-MOCB	4.33	NG/KG	B	J	10
RB13-DIS-09-D	L19652-43	E1668A	2,2',3,3',4,4',6,6'-OCCB	2.31	NG/KG	CG	J	24
RB13-DIS-09-D	L19652-43	E1668A	2,2',3,4,6'-PECB	0.867	NG/KG	K	U	25
RB13-DIS-09-D	L19652-43	E1668A	2,3,3',4,4',5-HXCB	12.7	NG/KG	CB	J	9
RB13-DIS-09-D	L19652-43	E1668A	2,3,3',5,5',6-HXCB	0.198	NG/KG	KJ	U	25
RB13-DIS-09-D	L19652-43	E1668A	2,3',4,5,5'-PECB	0.746	NG/KG	K	U	25
RB13-DIS-09-D	L19652-43	E1668A	2,3',5',6-TECB	0.247	NG/KG	KJ	U	25
RB13-DIS-09-D	L19652-43	E1668A	2-MOCB	5.59	NG/KG		J	10
RB13-DIS-09-D	L19652-43	E1668A	3,3',4,5-TECB	0.114	NG/KG	KJ	U	25
RB13-DIS-09-D	L19652-43	E1668A	3,3',5,5'-TECB	0.095	NG/KG	KJ	U	25
RB13-DIS-09-D	L19652-43	E1668A	3,4,4',5-TECB	0.567	NG/KG	K	U	25

Qualified Data Summary Table
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Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	DV Qual	DV Reason
RB13-DIS-09-D	L19652-43	E1668A	3,4,5-TRICB	0.449	NG/KG	K	U	25
RB13-DIS-09-D	L19652-43	E1668A	3,5-DICB	0.573	NG/KG	K	U	25
RB13-DIS-09-D	L19652-43	E1668A	4-MOCB	4.78	NG/KG	B	J	10
RB13-DUN-10-S	L19652-5	E1668A	2,2',3,3',4,4',5,6'-OCCB	0.619	NG/KG	K	U	25
RB13-DUN-10-S	L19652-5	E1668A	2,2',3,3',4-PECB	0.581	NG/KG	G	J	24
RB13-DUN-10-S	L19652-5	E1668A	2,2',3,3',5,5',6-HPCB	0.838	NG/KG	K	U	25
RB13-DUN-10-S	L19652-5	E1668A	2,2',3,3',5,5'-HXCB	0.238	NG/KG	KJ	U	25
RB13-DUN-10-S	L19652-5	E1668A	2,2',3,3',5,6-HXCB	0.939	NG/KG	CK	U	25
RB13-DUN-10-S	L19652-5	E1668A	2,2',3,4',5,6'-HXCB		NG/KG	UG	UJ	24
RB13-DUN-10-S	L19652-5	E1668A	2,2',3,5,5'-PECB	1.68	NG/KG	K	U	25
RB13-DUN-10-S	L19652-5	E1668A	2,2',3,5-TECB	0.166	NG/KG	KJ	U	25
RB13-DUN-10-S	L19652-5	E1668A	2,3,3',4,4',6-HXCB	0.931	NG/KG	K	U	25
RB13-DUN-10-S	L19652-5	E1668A	2',3,3',4,5-PECB	0.124	NG/KG	KJ	U	25
RB13-DUN-10-S	L19652-5	E1668A	2',3,4,4',5-PECB	0.267	NG/KG	KJ	U	25
RB13-DUN-10-S	L19652-5	E1668A	2,3,4,4',5-PECB	0.239	NG/KG	KJ	U	25
RB13-DUN-10-S	L19652-5	E1668A	2,3',4,5-TECB	0.317	NG/KG	KJ	U	25
RB13-DUN-10-S	L19652-5	E1668A	2,3',6-TRICB	0.088	NG/KG	JG	J	24
RB13-DUN-10-S	L19652-5	E1668A	2,3,6-TRICB	0.051	NG/KG	KJG	UJ	24,25
RB13-DUN-10-S	L19652-5	E1668A	2,3'-DICB	0.467	NG/KG	K	U	25
RB13-DUN-10-S	L19652-5	E1668A	2,4-DICB	0.311	NG/KG	KJ	U	25
RB13-DUN-10-S	L19652-5	E1668A	2,5-DICB	0.365	NG/KG	K	U	25
RB13-DUN-10-S	L19652-5	E1668A	3,4,4',5-TECB	0.103	NG/KG	KJ	U	25
RB13-DUN-10-S	L19652-5	E1668A	3,4-DICB	5.74	NG/KG	CKG	UJ	24,25
RB13-DUN-10-S	L19652-5	E1668A	3,5-DICB	0.325	NG/KG	KJ	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,2',3,3',4,4',5,5',6,6'-DECB	1.52	NG/KG	K	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,2',3,3',4,4',5,6,6'-NOCB	0.198	NG/KG	KJ	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,2',3,3',4,4',5,6-OCCB	0.752	NG/KG	K	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,2',3,3',4,4',5-HPCB	2.85	NG/KG	K	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,2',3,3',4,4',6,6'-OCCB	0.18	NG/KG	CKJ	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,2',3,3',4,5',6,6'-OCCB	0.24	NG/KG	KJ	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,2',3,3',4,5',6-HPCB	0.172	NG/KG	KJ	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,2',3,3',4-PECB	0.815	NG/KG	G	J	24
RB13-DUN-13-S	L19652-6	E1668A	2,2',3,3',5,6-HXCB	1.17	NG/KG	CK	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,2',3,4,4',6-HXCB	0.224	NG/KG	CKJ	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,2',3,4',5,6,6'-HPCB	0.05	NG/KG	KJ	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,2',3,4',5,6'-HXCB		NG/KG	UG	UJ	24
RB13-DUN-13-S	L19652-6	E1668A	2,2',3,4,6'-PECB	0.115	NG/KG	KJ	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,2',3,6,6'-PECB	0.059	NG/KG	KJ	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,3,3',4,4',5,5',6-OCCB	0.082	NG/KG	KJ	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,3,3',4,4',5',6-HPCB	0.073	NG/KG	KJ	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,3,3',4',5,5'-HXCB	0.06	NG/KG	KJ	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,3,3',4,5,5'-HXCB	0.116	NG/KG	KJ	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,3,3',4',5-PECB	0.435	NG/KG	CK	U	25
RB13-DUN-13-S	L19652-6	E1668A	2',3,4,4',5-PECB	0.252	NG/KG	KJ	U	25
RB13-DUN-13-S	L19652-6	E1668A	2',3,5-TRICB	0.047	NG/KG	KJ	U	25
RB13-DUN-13-S	L19652-6	E1668A	2,3',6-TRICB	0.15	NG/KG	JG	J	24
RB13-DUN-13-S	L19652-6	E1668A	2,5-DICB	0.423	NG/KG	K	U	25
RB13-DUN-13-S	L19652-6	E1668A	3,4,4',5-TECB	0.078	NG/KG	KJ	U	25
RB13-DUN-13-S	L19652-6	E1668A	3,4,5-TRICB	0.171	NG/KG	KJ	U	25

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Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	DV Qual	DV Reason
RB13-DUN-13-S	L19652-6	E1668A	3,4-DICB	3.38	NG/KG	CKG	UJ	24,25
RB13-DUN-13-S	L19652-6	E1668A	3,5-DICB	0.243	NG/KG	KJ	U	25
RB13-DUN-05-S	L19652-7 M	E1668A	2,2',3,3',4,4',6,6'-OCCB	0.807	NG/KG	CG	J	24
RB13-DUN-05-S	L19652-7 M	E1668A	2,2',3,3',4-PECB	3.28	NG/KG	G	J	24
RB13-DUN-05-S	L19652-7 M	E1668A	2,2',3,4',5,5'-HXCB	8.31	NG/KG	G	J	24
RB13-DUN-05-S	L19652-7 M	E1668A	2,2',3,4',5,6'-HXCB	0.161	NG/KG	KJG	UJ	24,25
RB13-DUN-05-S	L19652-7 M	E1668A	2,2',3,6,6'-PECB	0.162	NG/KG	KJ	U	25
RB13-DUN-05-S	L19652-7 M	E1668A	2,2',4-TRICB	4.56	NG/KG	BG	J	24
RB13-DUN-05-S	L19652-7 M	E1668A	2,2',5-TRICB	7.28	NG/KG	CBG	J	24
RB13-DUN-05-S	L19652-7 M	E1668A	2,3,3',4,4',5,5'-HPCB	0.513	NG/KG	K	U	25
RB13-DUN-05-S	L19652-7 M	E1668A	2,3',4,5,5'-PECB	0.315	NG/KG	KJ	U	25
RB13-DUN-05-S	L19652-7 M	E1668A	2,3',6-TRICB	0.592	NG/KG	G	J	24
RB13-DUN-05-S	L19652-7 M	E1668A	2,4'-DICB	11.5	NG/KG	G	J	24
RB13-DUN-05-S	L19652-7 M	E1668A	3,4-DICB	3.14	NG/KG	CKG	UJ	24,25
RB13-DUN-05-S	L19652-7 M	E1668A	3,5-DICB	0.282	NG/KG	KJ	U	25
RB13-DUN-05-S	L19652-7 W	E1668A	4-MOCB	3.86	NG/KG	KBDJ	U	25
RB13-DUN-05-D	L19652-8 i	E1668A	2,2',3,3',4,4',6,6'-OCCB	1.14	NG/KG	CG	J	24
RB13-DUN-05-D	L19652-8 i	E1668A	2,2',3,4',6,6'-HXCB	0.101	NG/KG	KJ	U	25
RB13-DUN-05-D	L19652-8 i	E1668A	3,5-DICB	0.295	NG/KG	KJ	U	25
RB13-DUN-09-S	L19652-9 M	E1668A	2,2',3,3',4,4',5,5',6,6'-DECB	0.501	NG/KG	K	U	25
RB13-DUN-09-S	L19652-9 M	E1668A	2,2',3,3',4,5',6,6'-OCCB	0.125	NG/KG	KJ	U	25
RB13-DUN-09-S	L19652-9 M	E1668A	2,2',3,3',4-PECB	0.402	NG/KG	G	J	24
RB13-DUN-09-S	L19652-9 M	E1668A	2,2',3,3',5,5',6,6'-OCCB	0.235	NG/KG	KJ	U	25
RB13-DUN-09-S	L19652-9 M	E1668A	2,2',3,3',5,5'-HXCB	0.125	NG/KG	KJ	U	25
RB13-DUN-09-S	L19652-9 M	E1668A	2,2',3,3',5,6-HXCB	0.128	NG/KG	CKJ	U	25
RB13-DUN-09-S	L19652-9 M	E1668A	2,2',3,6'-TECB	0.127	NG/KG	KJ	U	25
RB13-DUN-09-S	L19652-9 M	E1668A	2,2',5-TRICB	0.829	NG/KG	CBG	J	24
RB13-DUN-09-S	L19652-9 M	E1668A	2,3,3',4',5',6-HXCB	0.29	NG/KG	KJ	U	25
RB13-DUN-09-S	L19652-9 M	E1668A	2,3,4,4',5-PECB	0.136	NG/KG	KJ	U	25
RB13-DUN-09-S	L19652-9 M	E1668A	2,4'-DICB	1.29	NG/KG	G	J	24
RB13-DUN-09-S	L19652-9 M	E1668A	2,5-DICB	0.344	NG/KG	KJ	U	25
RB13-DUN-09-S	L19652-9 M	E1668A	3,3',4,4',5-PECB	0.102	NG/KG	KJ	U	25
RB13-DIS-09-S	WP46O	EPA376.2	Sulfide	10.5	mg/kg		J	9
RB13-DIS-09-D	WP46P	EPA376.2	Sulfide	32.6	mg/kg		J	9
RB13-DIS-09-T	WP46Q	EPA376.2	Sulfide	7.22	mg/kg		J	9
RB13-PT-13-S	WP72A	EPA376.2	Sulfide	19.5	mg/kg		J	9,10H
RB13-PT-13-D	WP72B	EPA376.2	Sulfide	98.1	mg/kg		J	9,10H
RB13-PT-13-T	WP72C	EPA376.2	Sulfide	27.0	mg/kg		J	9,10H
RB13-PT-14-S	WP72D	EPA376.2	Sulfide	3.64	mg/kg		J	9,10H
RB13-PT-08-S	WP72E	EPA376.2	Sulfide	4.18	mg/kg		J	9,10H
RB13-PT-15-S	WP72F	EPA376.2	Sulfide	3.13	mg/kg		J	9,10H
RB13-PT-01-S	WP72G	EPA376.2	Sulfide	3.16	mg/kg		J	9,10H
RB13-PT-06-S	WP72H	EPA376.2	Sulfide	2.64	mg/kg		J	9,10H
RB13-PT-09-S	WP72I	EPA376.2	Sulfide	1.75	mg/kg		J	9,10H
RB13-PT-04-S	WP72J	EPA376.2	Sulfide	7.56	mg/kg		J	9,10H
RB13-PT-02-S	WP72K	EPA376.2	Sulfide	7.99	mg/kg		J	9,10H
RB13-PT-05-S	WP72L	EPA376.2	Sulfide	120	mg/kg		J	9,10H
RB13-PT-10-S	WP72M	EPA376.2	Sulfide	56.9	mg/kg		J	9,10H
RB13-PT-07-S	WP72N	EPA376.2	Sulfide	179	mg/kg		J	9,10H

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Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	DV Qual	DV Reason
RB13-PT-03-S	WP72O	EPA376.2	Sulfide	152	mg/kg		J	9,10H
RB13-PT-12-S	WP72P	EPA376.2	Sulfide	30.3	mg/kg		J	9,10H
RB13-PT-11-S	WP72Q	EPA376.2	Sulfide	7.35	mg/kg		J	9,10H
RB13-DIS-10-S	WP47D	PLUMB81TC	Total Organic Carbon	5.79	%		J	8L
RB13-DIS-07-S	WP47E	PLUMB81TC	Total Organic Carbon	8.29	%		J	8L
RB13-DIS-01-S	WP47F	PLUMB81TC	Total Organic Carbon	3.02	%		J	8L
RB13-DIS-03-S	WP47H	PLUMB81TC	Total Organic Carbon	0.733	%		J	8L
RB13-DIS-12-S	WP47J	PLUMB81TC	Total Organic Carbon	2.49	%		J	8L
RB13-DIS-02-S	WP47L	PLUMB81TC	Total Organic Carbon	1.94	%		J	8L
RB13-DIS-05-S	WP47M	PLUMB81TC	Total Organic Carbon	1.97	%		J	8L
RB13-DUN-17-S	WP46A	SW7471A	Mercury	0.04	mg/kg		J	8L,9
RB13-DUN-19-S	WP46B	SW7471A	Mercury	0.07	mg/kg		J	8L,9
RB13-DUN-14-S	WP46C	SW7471A	Mercury	0.03	mg/kg		J	8L,9
RB13-DUN-20-S	WP46D	SW7471A	Mercury	0.03	mg/kg	U	UJ	8L,9
RB13-DUN-16-S	WP46E	SW7471A	Mercury	0.02	mg/kg	U	UJ	8L,9
RB13-DUN-22-S	WP46F	SW7471A	Mercury	0.03	mg/kg		J	8L,9
RB13-DUN-21-S	WP46G	SW7471A	Mercury	0.02	mg/kg	U	UJ	8L,9
RB13-DUN-15-S	WP46H	SW7471A	Mercury	0.03	mg/kg	U	UJ	8L,9
RB13-DIS-04-S	WP46I	SW7471A	Mercury	0.35	mg/kg		J	8L,9
RB13-DIS-11-S	WP46J	SW7471A	Mercury	0.09	mg/kg		J	8L,9
RB13-DIS-08-S	WP46K	SW7471A	Mercury	0.03	mg/kg	U	UJ	8L,9
RB13-DIS-06-S	WP46L	SW7471A	Mercury	0.14	mg/kg		J	8L,9
RB13-DIS-09-S	WP46O	SW7471A	Mercury	0.07	mg/kg		J	8L,9
RB13-DIS-09-D	WP46P	SW7471A	Mercury	0.07	mg/kg		J	8L,9
RB13-DUN-18-S	WP46R	SW7471A	Mercury	0.07	mg/kg		J	8L,9

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Appendix H.
Bay- and Contaminant-Specific Analysis of Data

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Appendix H: Bay- and Contaminant-Specific Analysis of Data

Various statistical methods were used to evaluate the contaminant of concern (COC) data from each of the four North Olympic Peninsula (NOP) bays. This appendix represents a record of the analyses performed.

Distributional Analysis

The distributions for each COC were evaluated separately within each bay. The data distributions were evaluated in R (R Core Team 2013) to generate normal probability plots and in ProUCL 4.1 (USEPA 2010) for formal goodness-of-fit tests against the standard distributions (i.e., normal, lognormal, and gamma). The normal probability plots are shown in Figures H-1 through H-7 for each of the COCs. These plots were used, in part, to evaluate the shape of the data distribution. The results of the goodness-of-fit tests ($\alpha = 0.05$) are shown in Table H-1.

Table H-1. Data distribution for each bay and contaminant of concern

Contaminant of Concern	Discovery Bay	Dungeness Bay	Port Townsend Bay	Sequim Bay
Arsenic	Normal	Normal	Normal	Normal
Cadmium	Normal	--	Normal	Normal
Mercury	Lognormal	Normal	Normal	Normal
cPAH TEQ	Normal	Gamma	Normal	Normal
Dioxin/Furan TEQ	Normal	Normal	Normal	Normal
PCB TEQ	Normal	Normal	Normal	Normal
Total PCBs	Normal	Gamma	Normal	Normal

Notes:
-- = not calculated due to frequent non-detects
cPAH = carcinogenic polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
TEQ = toxicity equivalent

Most of the chemical distributions within each bay did not deviate significantly from a normal distribution. For select bays and COCs, the distribution could be considered normal with elevated concentrations present, or the data could be considered skewed to where a lognormal or gamma distribution provided a better fit. All of the data sets appeared to be uncontaminated normal distributions, except the following:

- **Mercury in Discovery Bay** – a lognormal distribution was the best fit to all of the detected data, while a normal distribution was a good fit if location DIS-04 was excluded (Section 5.3.2 of the NOP Regional Background Sediment Characterization Data and Evaluation Report; hereafter, referred to as the main text).
- **Carcinogenic Polycyclic Aromatic Hydrocarbon (cPAH) Toxicity Equivalent (TEQ) in Dungeness Bay** – a gamma distribution was a good fit for the detected data.

- **Polychlorinated Biphenyl (PCB) Congener TEQ and Total PCBs in Discovery Bay** – the detected data followed a normal distribution if location DIS-06 was excluded as an outlier (Section 5.3.2 of the main text).
- **Total PCBs in Dungeness Bay** – a gamma distribution was a good fit for the detected data.

Investigation of Extreme Values

The term "extreme value" is used to define a result that deviates from the population mean but may still be representative of background (Ecology 2013). Extreme values are common in data sets that lack sufficient sample sizes, such as some of the individual bays of NOP, to capture the full range of values. Essentially, it is unknown whether an extreme value is an outlier unless more samples are available. The individual bay/COC combinations were screened for extreme values using a variety of approaches:

- Single extreme values within each bay were identified using Dixon's formal outlier test (conducted in ProUCL; $\alpha = 0.05$) for data that fit a normal distribution (see Table H-1).
- Extreme values were identified when the single highest concentration sample was the difference between a normal and a non-normal distribution (i.e., if the high-concentration sample was excluded, the distribution would be normal).
- High values were flagged as extreme based on the boxplots for metals in Figure H-8 and the organic COCs in Figure H-9, along with Tukey's rule of thumb[1].

Screening for extreme values was done to determine whether specific samples may be skewing the distribution for an individual bay. Several values identified as extreme for the embayment from which they were sampled were within the range of values for the combined three or four bays data set. The final decision to exclude individual sample values as outliers was based on the multivariate outlier analysis in Section 5.3.2.2 of the main text. A summary of the presence of extreme values for each COC in the individual bays follows:

- Arsenic presented no extreme values within any bay (Figures H-1 and H-8).
- Cadmium presented no extreme values for the formal test (Dixon's $p>0.05$). Tukey's rule of thumb identified extreme values from Discovery Bay (DIS-01) and Sequim Bay (SEQ-05) (Figures H-2 and H-8).
- Mercury presented one extreme value in Discovery Bay (DIS-04), with a concentration of 0.35 milligrams per kilogram (mg/kg) (Dixon's $p < 0.05$). If the distribution of these data was allowed to follow a skewed distribution (e.g., lognormal or gamma), this value was not considered unusual (Figures H-3 and H-8).
- cPAH TEQ presented no extreme values for the formal test (Dixon's $p> 0.05$). However, Tukey's rule of thumb identified two extreme values from Discovery Bay (DIS-06 and DIS-01) and two from Dungeness Bay (DUN-01 and DUN-04) (Figures H-4 and H-9). The

[1] Tukey's rule of thumb flags values as extreme when they exceed the median +/- 1.5*IQR (IQR = interquartile range = 3rd quartile minus the 1st quartile). These points fall outside the whiskers on the boxplots.

complete set of data for each of these bays was captured by either a symmetric normal distribution (Discovery Bay) or a skewed gamma distribution (Dungeness Bay).

- Dioxin/Furan TEQs presented no extreme values for the formal test (Dixon's $p > 0.05$). Tukey's rule of thumb identified one sample from Dungeness Bay (DUN-01) (Figures H-5 and H-9).
- PCB TEQs and total PCBs (sum of detected congeners) presented one extreme value in Discovery Bay (DIS-06) by Dixon's test ($p<0.05$), with a concentration of 0.44 nanograms TEQ per kilogram (ng TEQ/kg) for PCB TEQ and of 11,100 nanograms per kilogram (ng/kg) for total PCBs (Figures H-6, H-7, and H-9).

Ultimately, three of these extreme values were identified as outliers using multivariate methods (Section 5.3.2 of the main text). These were samples SEQ-05 for cadmium, DIS-04 for mercury, and DIS-06 for PCB TEQ and total PCB.

Correlation to Grain Size

One of the primary questions for this data set was whether or not it constituted a single population or whether it was a mixture population comprised of up to four distinct signals. Preliminary comparisons of concentrations among the four bays used simple graphical displays, such as the boxplots shown in Figures H-8 and H-9. These figures show that there are concentration differences between some bays for select COCs.

In particular, Dungeness Bay typically has the lowest concentrations and Sequim Bay has some of the highest. However, these boxplots ignore the grain size differences that exist between the four bays (Figure H-8).

The relationships between grain size (as percent fines) and COC concentrations are presented graphically as scatterplots for the individual bays in Figures H-10 through H-16. The scatterplots show that there is a consistent correlation between the COCs and percent fines, although the magnitudes of the slopes vary among embayments, sometimes quite substantially (e.g., arsenic, Figure H-10). These data are not ideal for making strong inference about the grain size versus COC concentration relationships because of either gaps in the grain size distributions (e.g., Discovery Bay), or too narrow of a range of grain sizes (e.g., Dungeness Bay and Sequim Bay).

What these regressions do provide, however, is the indication that there are trends present throughout the NOP that associate chemical concentration with percent fines. A full range of grain sizes is present in the total data set, with percent fines ranging from 1 to 96 percent (Figure H-8). Dungeness Bay is predominantly coarser grained with associated lower chemical concentrations, while Sequim Bay is predominantly finer grained with associated higher concentrations. Both Port Townsend and Discovery Bay tend towards finer-grained sediments but have a range of both grain size and chemical concentrations.

The differences in concentrations among bays appear to be partially driven by the differences in grain sizes (Figures H-10 through H-16). The slopes and intercepts of these relationships for each bay differ, potentially indicating a different local signal for each bay. Again, the lack of complete grain size distributions within each bay precludes making a more-quantitative determination and comparison of these regression relationships. Qualitatively, the slopes for the metals are highest for Discovery Bay and lower for Port Townsend and Dungeness Bay. For the organic COCs, the slopes for Dungeness Bay are the lowest.

A flatter slope in these regressions indicates that sediment concentrations are less influenced by grain size, potentially indicative of less contaminant load from the watershed. The flatter slopes observed for Dungeness Bay also may suggest a natural, rather than regional, background signal, particularly for the organics. However, the absence of finer-grained material to flesh out the upper end of the regressions (for all COCs except mercury) limits the inference that can be made from these relationships regarding a different contaminant signal in Dungeness Bay. Further investigation into local differences in contaminant signals for the four bays was done using multivariate analysis of the available data (Section 5.3.2.1 of the main text).

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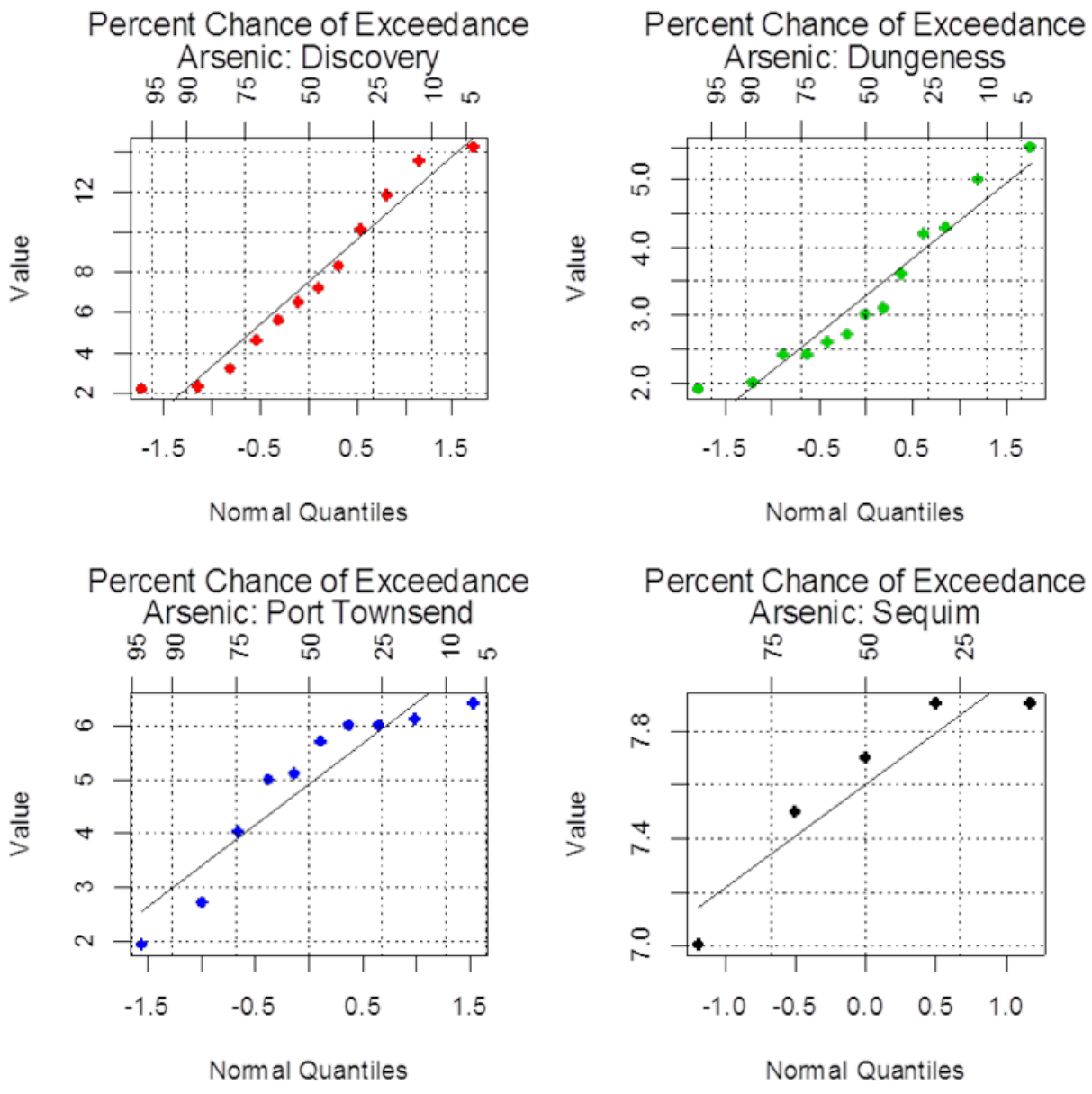

Figure H-1. Normal probability plots for arsenic in the four North Olympic Peninsula embayments

Note: The quantiles observed from the sample data (y-axis) are plotted on the y-axis against the corresponding quantiles from the standard normal distribution (x-axis). When the data points fall along a straight line, they are approximately normally distributed. Extreme values and systematic deviations from normality can be observed on these plots based on where the data points fall relative to the line

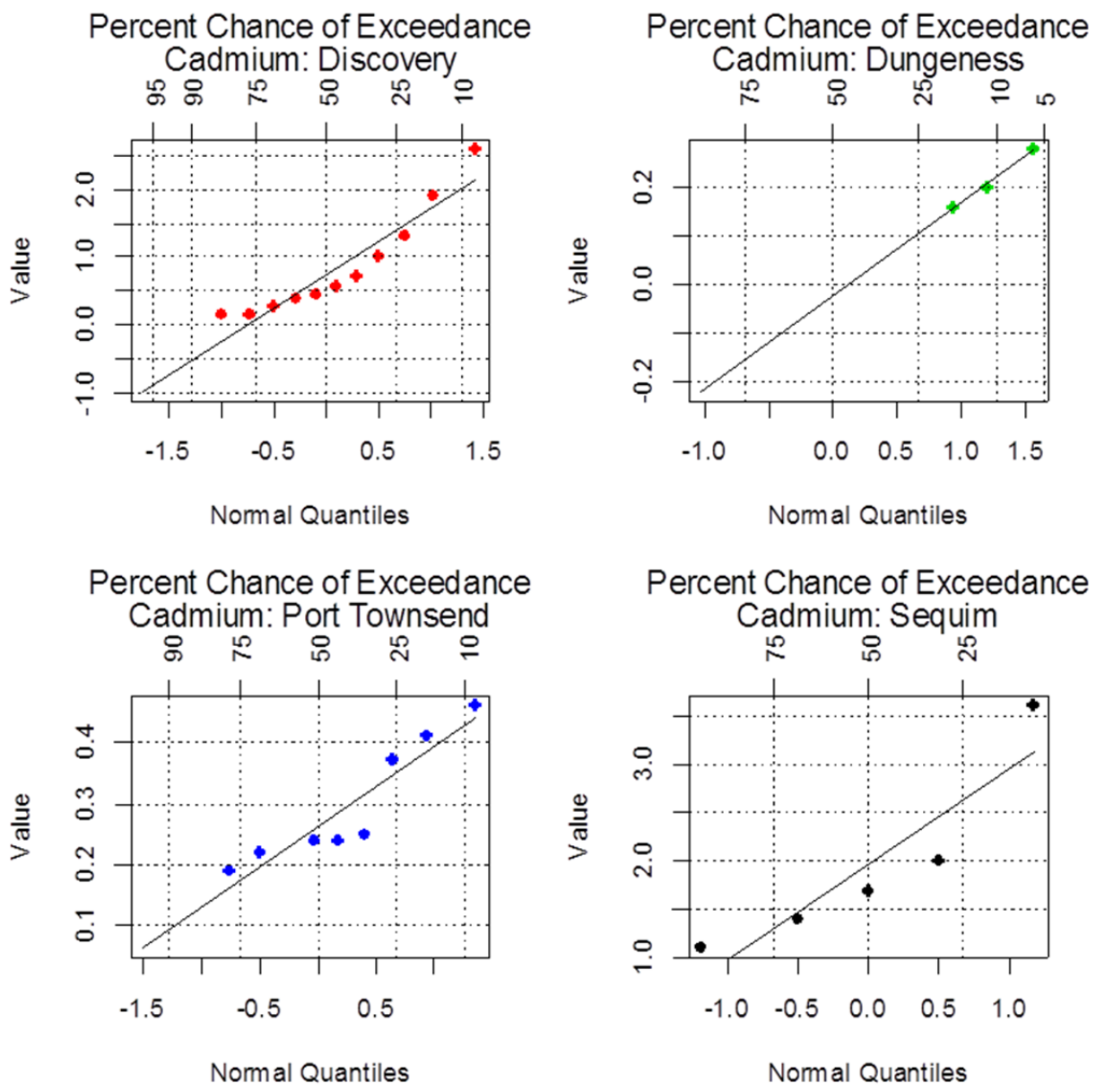

Figure H-2. Normal probability plots for cadmium in the four North Olympic Peninsula embayments

Note: Censored (non-detect) data are not shown on the graphs but were included in the calculation of the quantiles. The quantiles observed from the sample data (y-axis) are plotted on the y-axis against the corresponding quantiles from the standard normal distribution (x-axis). When the data points fall along a straight line, they are approximately normally distributed. Extreme values and systematic deviations from normality can be observed on these plots based on where the data points fall relative to the line

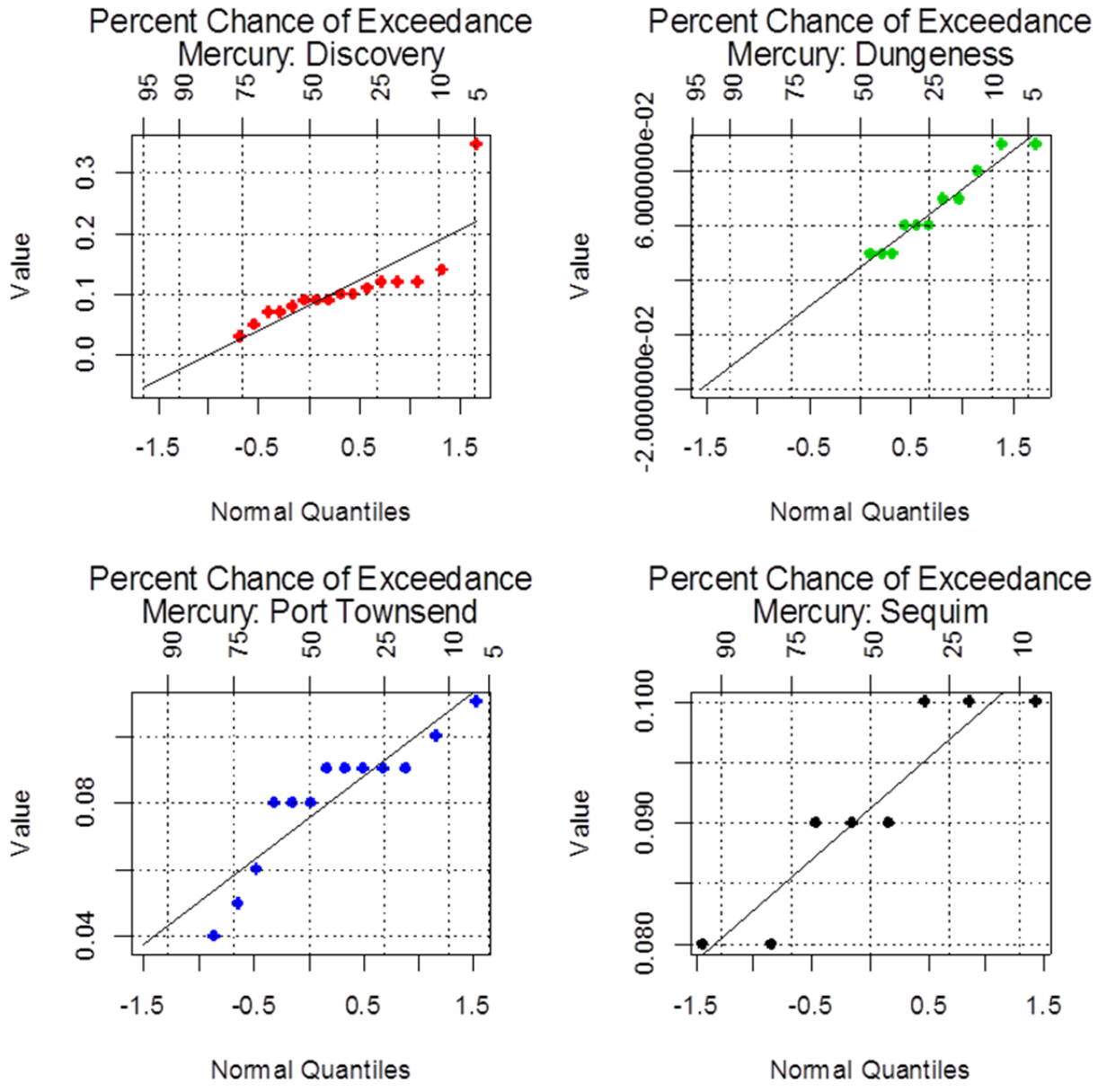

Figure H-3. Normal probability plots for mercury in the four North Olympic Peninsula embayments

Note: Censored (non-detect) data are not shown on the graphs but were included in the calculation of the quantiles. The quantiles observed from the sample data (y-axis) are plotted on the y-axis against the corresponding quantiles from the standard normal distribution (x-axis). When the data points fall along a straight line, they are approximately normally distributed. Extreme values and systematic deviations from normality can be observed on these plots based on where the data points fall relative to the line

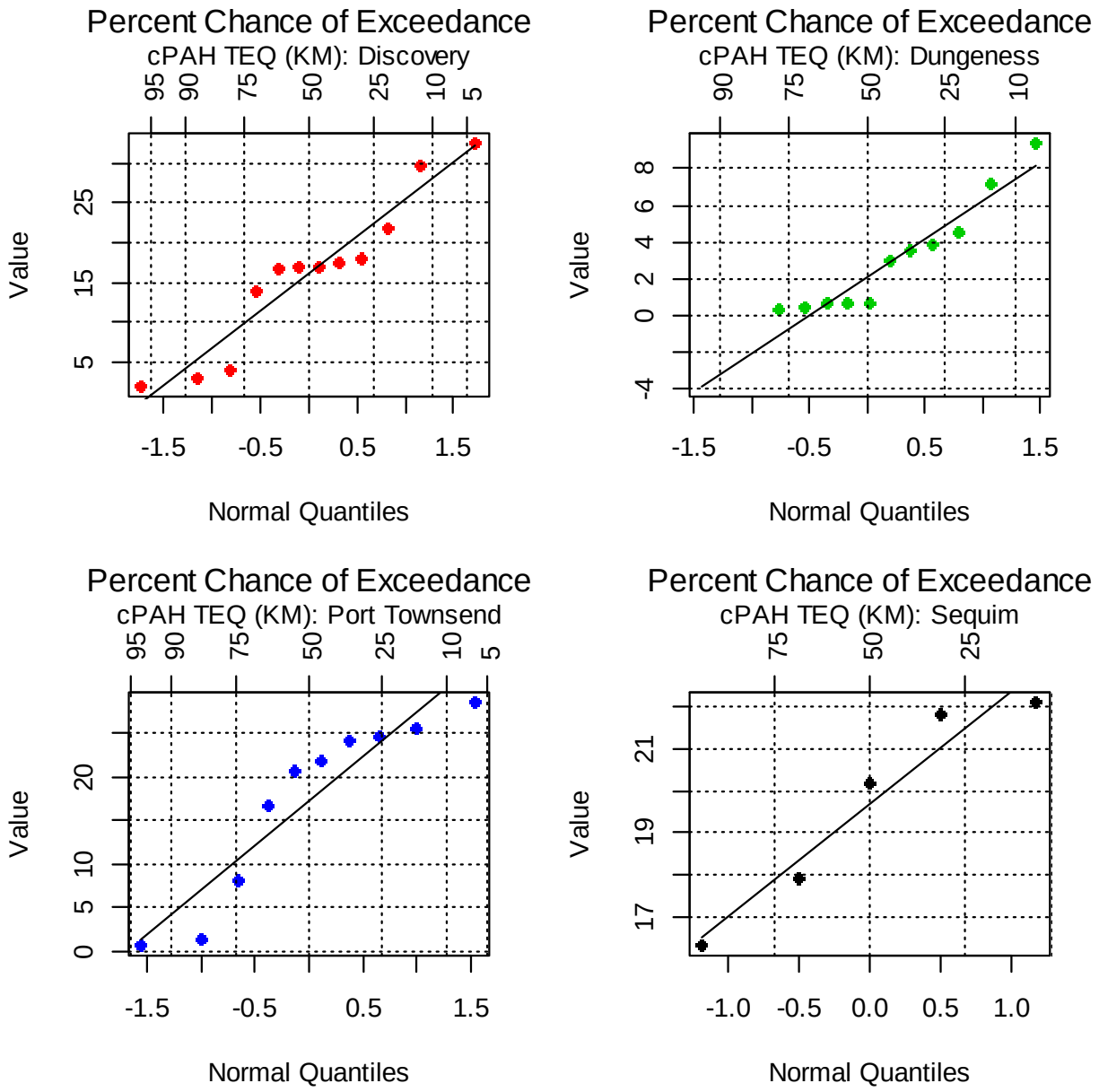

Figure H-4. Normal probability plots for carcinogenic polycyclic aromatic hydrocarbon toxicity equivalent (Kaplan-Meier) in the four North Olympic Peninsula embayments

Note: Censored ('L'-qualified results, Section 4.1 of the main text) data are not shown on the graphs but were included in the calculation of the quantiles. The quantiles observed from the sample data (y-axis) are plotted on the y-axis against the corresponding quantiles from the standard normal distribution (x-axis). When the data points fall along a straight line, they are approximately normally distributed. Extreme values and systematic deviations from normality can be observed on these plots based on where the data points fall relative to the line

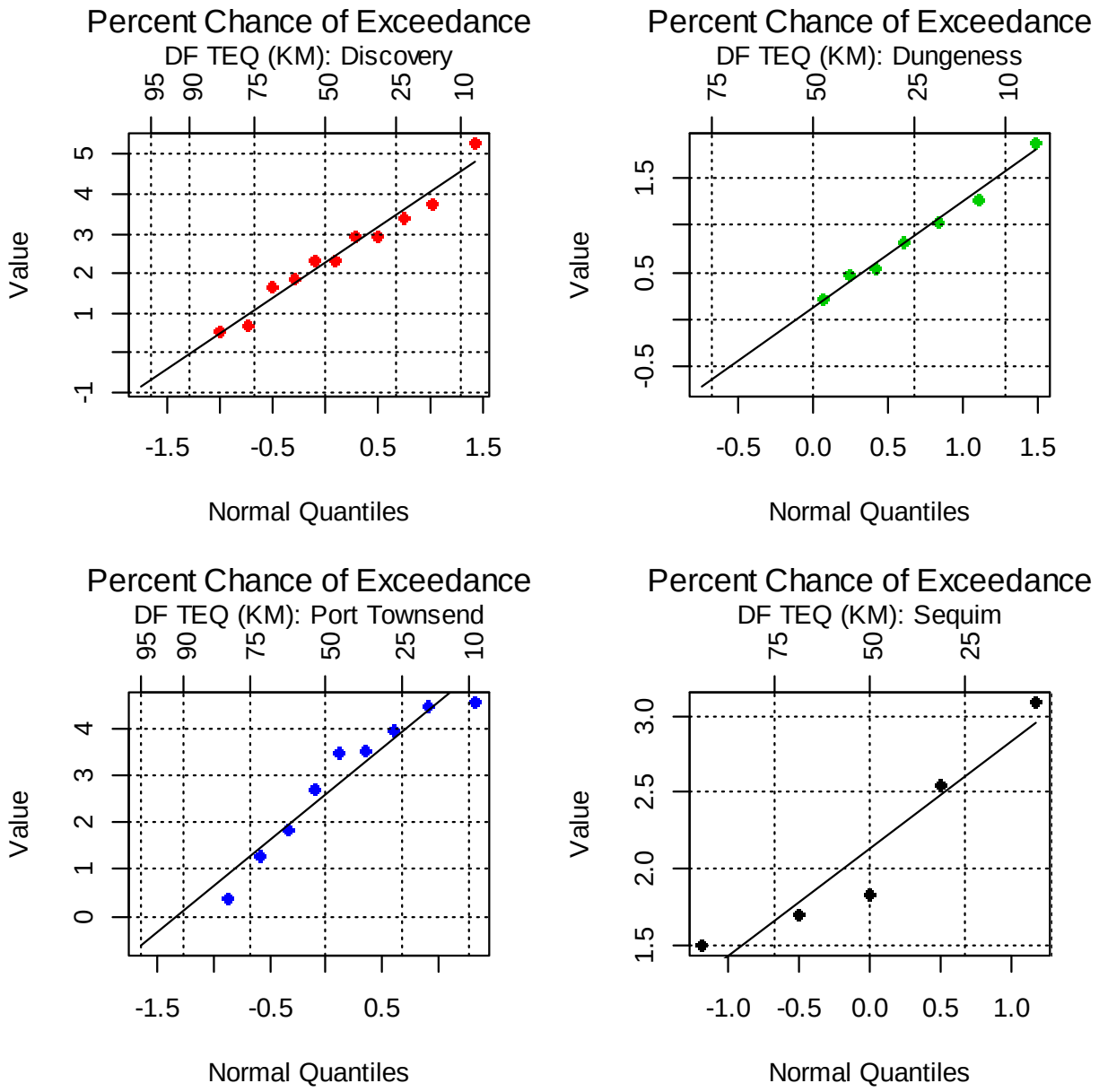

Figure H-5. Normal probability plots for dioxin/furan toxicity equivalent (Kaplan-Meier) in the four North Olympic Peninsula embayments

Note: Censored ('L'-qualified results, Section 4.1 of the main text) data are not shown on the graphs but were included in the calculation of the quantiles. The quantiles observed from the sample data (y-axis) are plotted on the y-axis against the corresponding quantiles from the standard normal distribution (x-axis). When the data points fall along a straight line, they are approximately normally distributed. Extreme values and systematic deviations from normality can be observed on these plots based on where the data points fall relative to the line

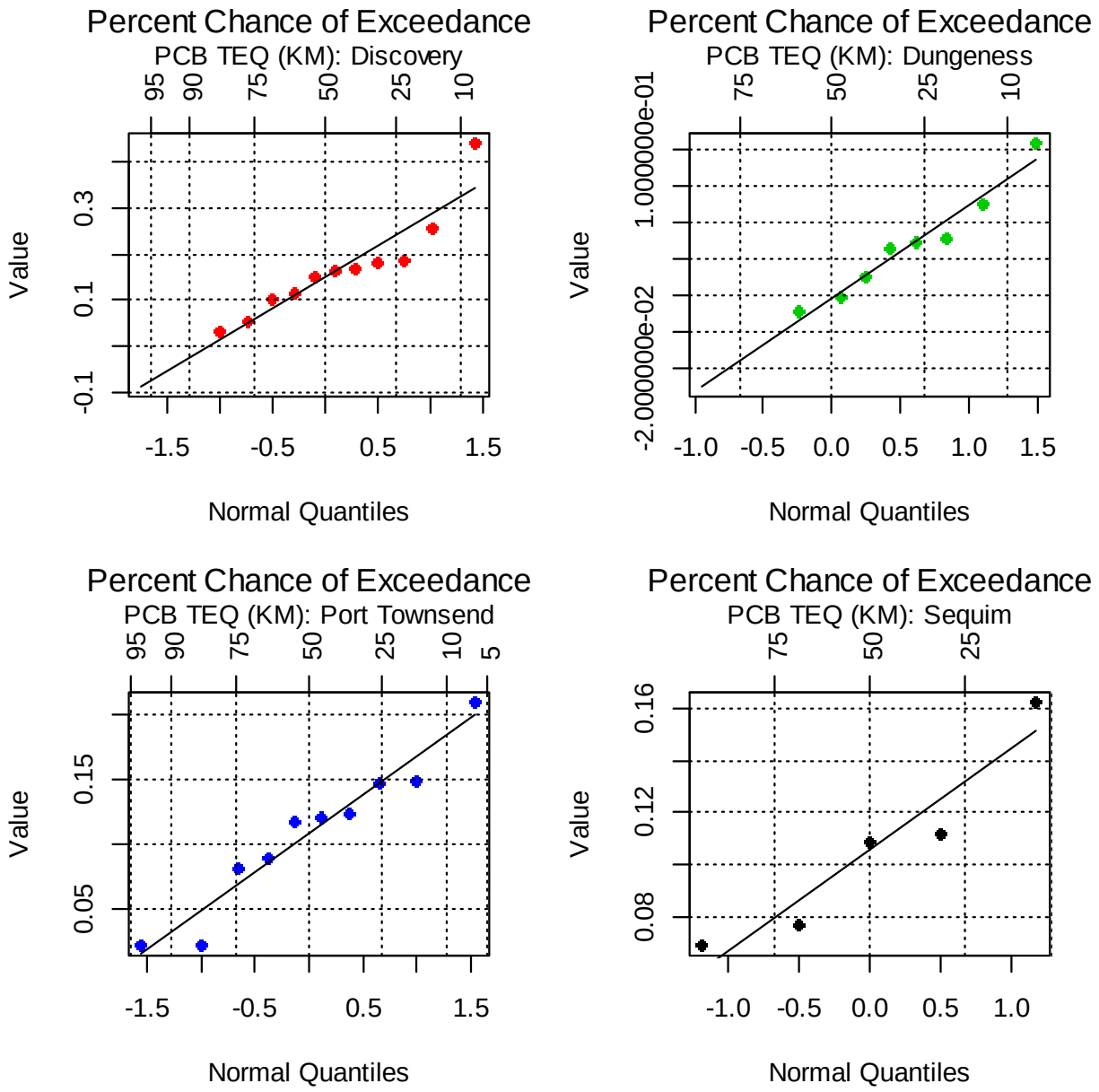

Figure H-6. Normal probability plots for polychlorinated biphenyl congener toxicity equivalent (Kaplan-Meier) in the four North Olympic Peninsula embayments

Note: Censored ('L'-qualified results, Section 4.1 of the main text) data are not shown on the graphs but were included in the calculation of the quantiles. The quantiles observed from the sample data (y-axis) are plotted on the y-axis against the corresponding quantiles from the standard normal distribution (x-axis). When the data points fall along a straight line, they are approximately normally distributed. Extreme values and systematic deviations from normality can be observed on these plots based on where the data points fall relative to the line

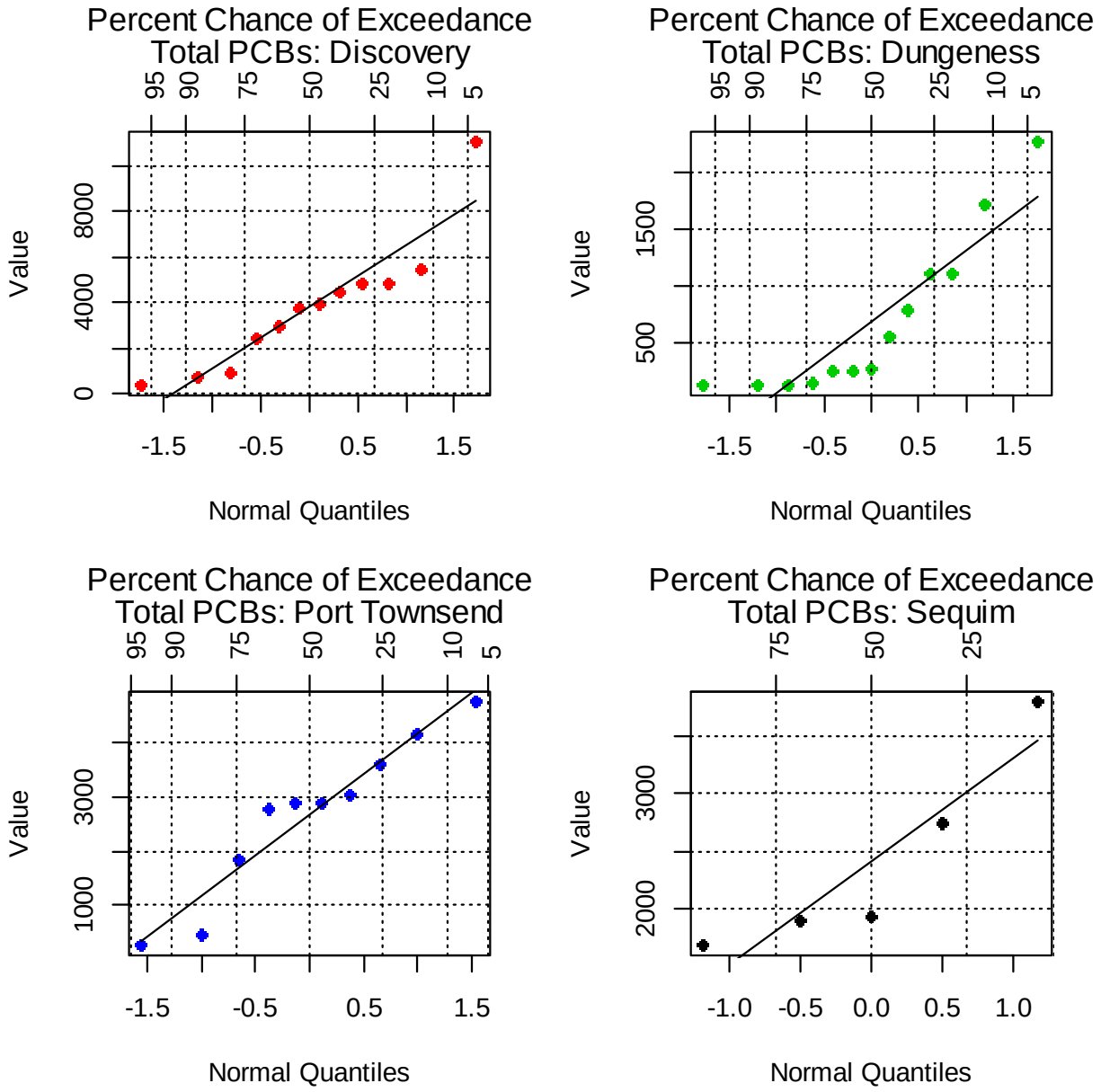

Figure H-7. Normal probability plots for total polychlorinated biphenyls (sum of detected congeners only) in the four North Olympic Peninsula embayments

The quantiles observed from the sample data (y-axis) are plotted on the y-axis against the corresponding quantiles from the standard normal distribution (x-axis). When the data points fall along a straight line, they are approximately normally distributed. Extreme values and systematic deviations from normality can be observed on these plots based on where the data points fall relative to the line

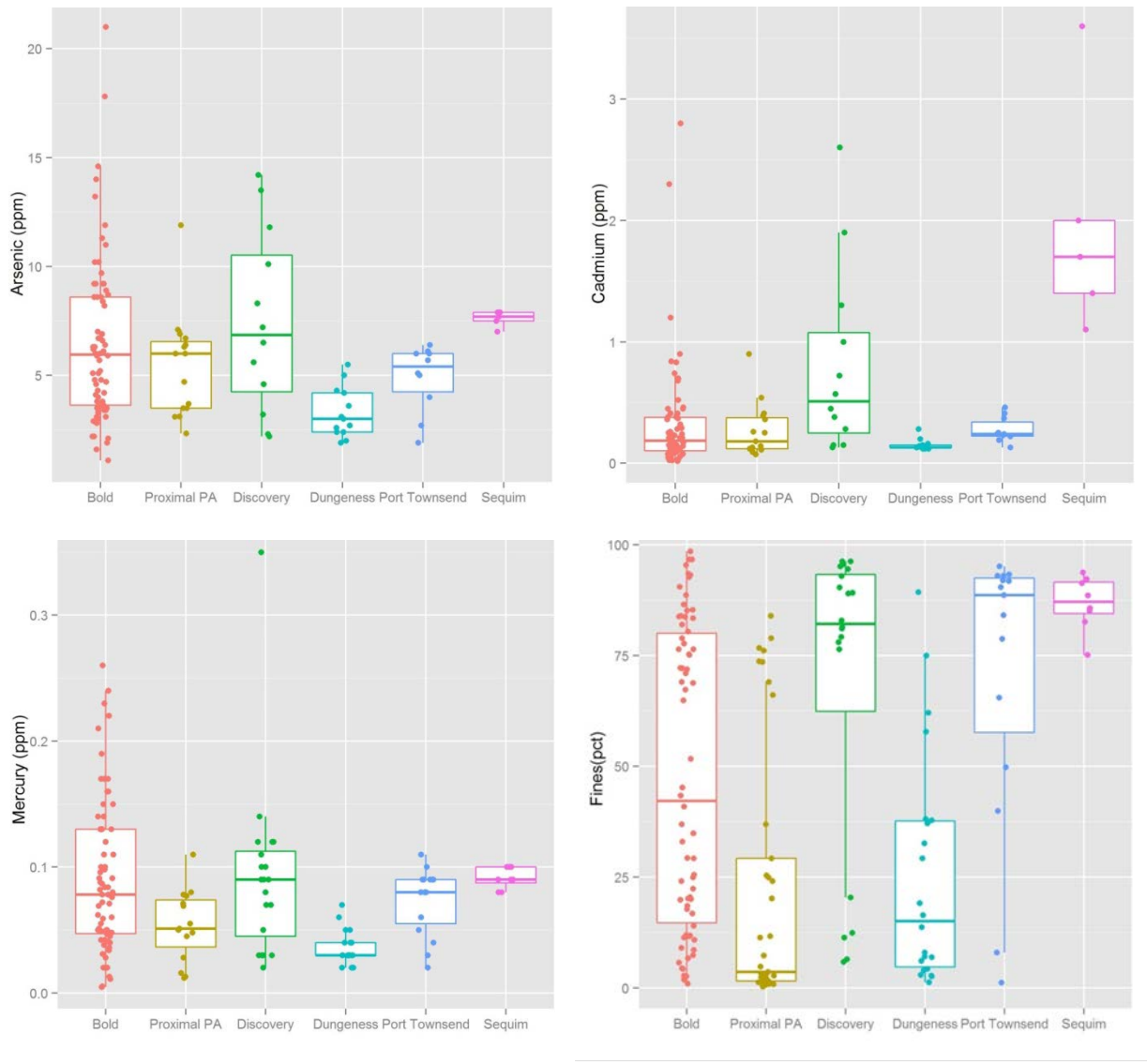

Figure H-8. Boxplots showing the distribution of metals and percent fines in the 2008 OSV Bold Survey data set, the Port Angeles proximal data set, and the four North Olympic Peninsula embayments. Individual observations from each data set are overlaid on the boxplots

Note: Non-detected values are shown at the reported detection limit

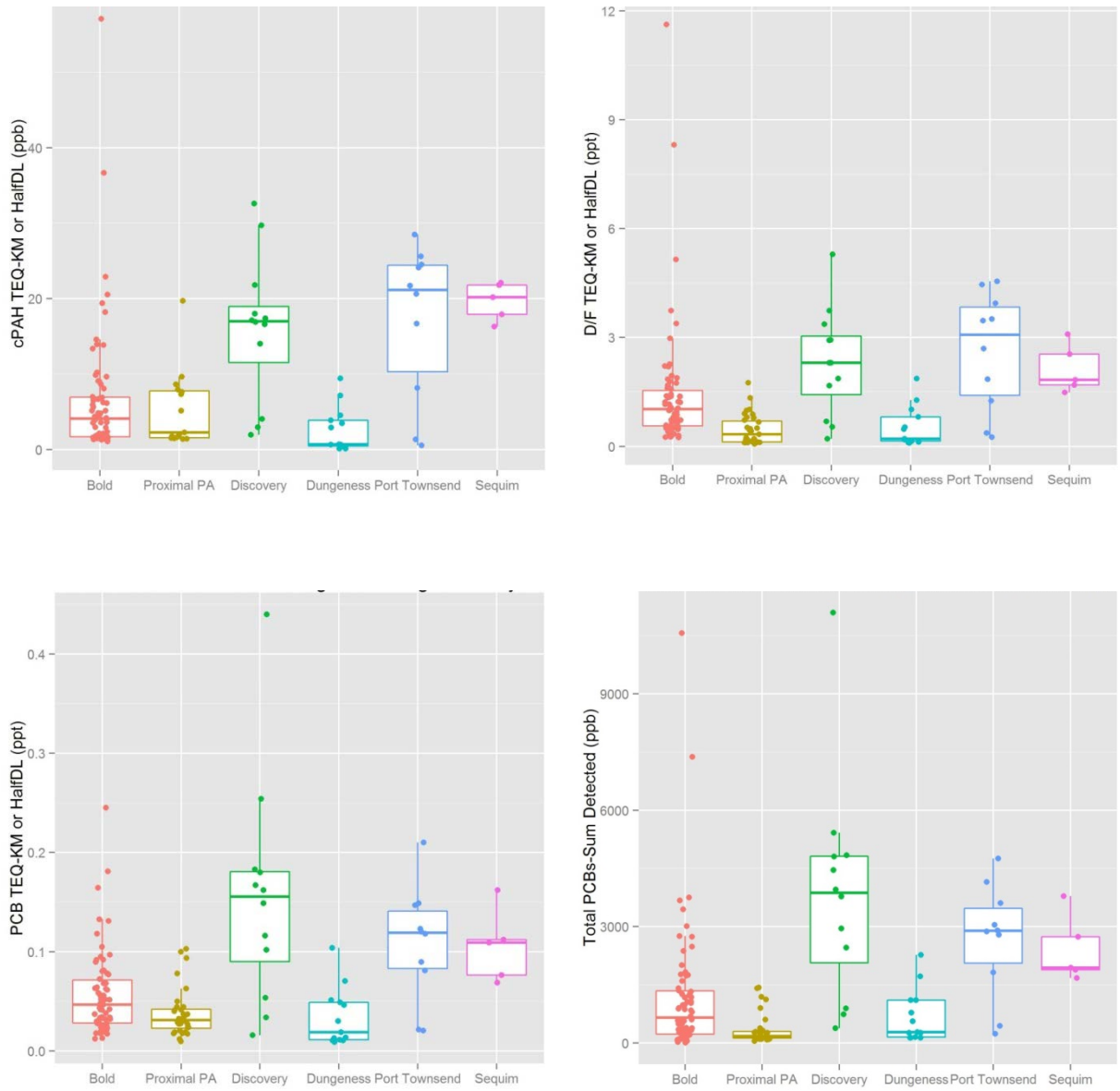

Figure H-9. Boxplots showing the distribution of organic contaminants of concern in the 2008 OSV Bold Survey data set, the Port Angeles proximal data set, and the four North Olympic Peninsula embayments. Individual observations from each data set are overlaid on the boxplots

Note: Toxicity equivalents were calculated using the Kaplan-Meier method for the North Olympic Peninsula data set and using substitution at half the detection limit for non-detects in the 2008 OSV Bold Survey and Port Angeles Proximal Area data sets

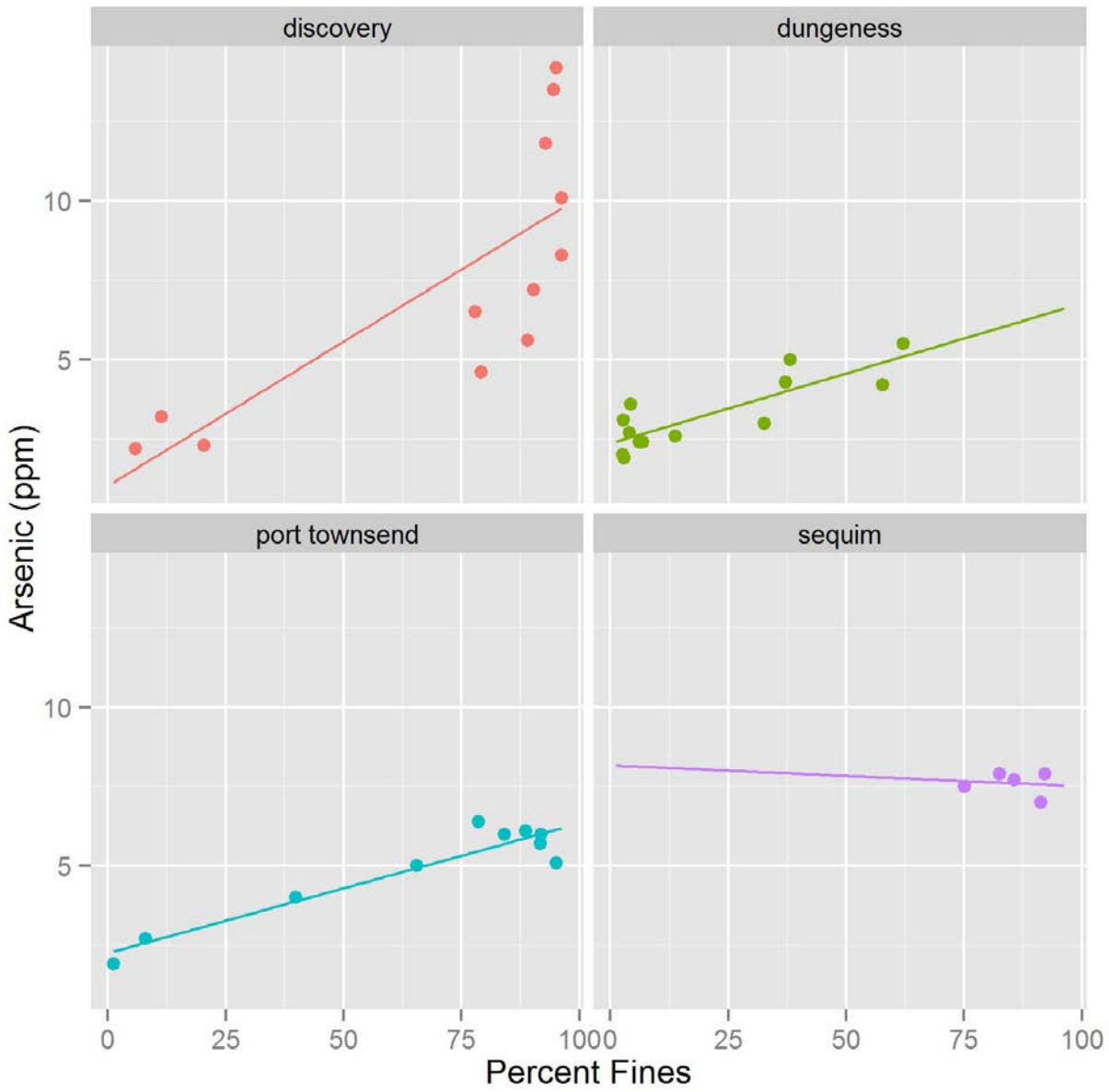

Figure H-10. Relationship between percent fines and arsenic in each of the four North Olympic Peninsula bays

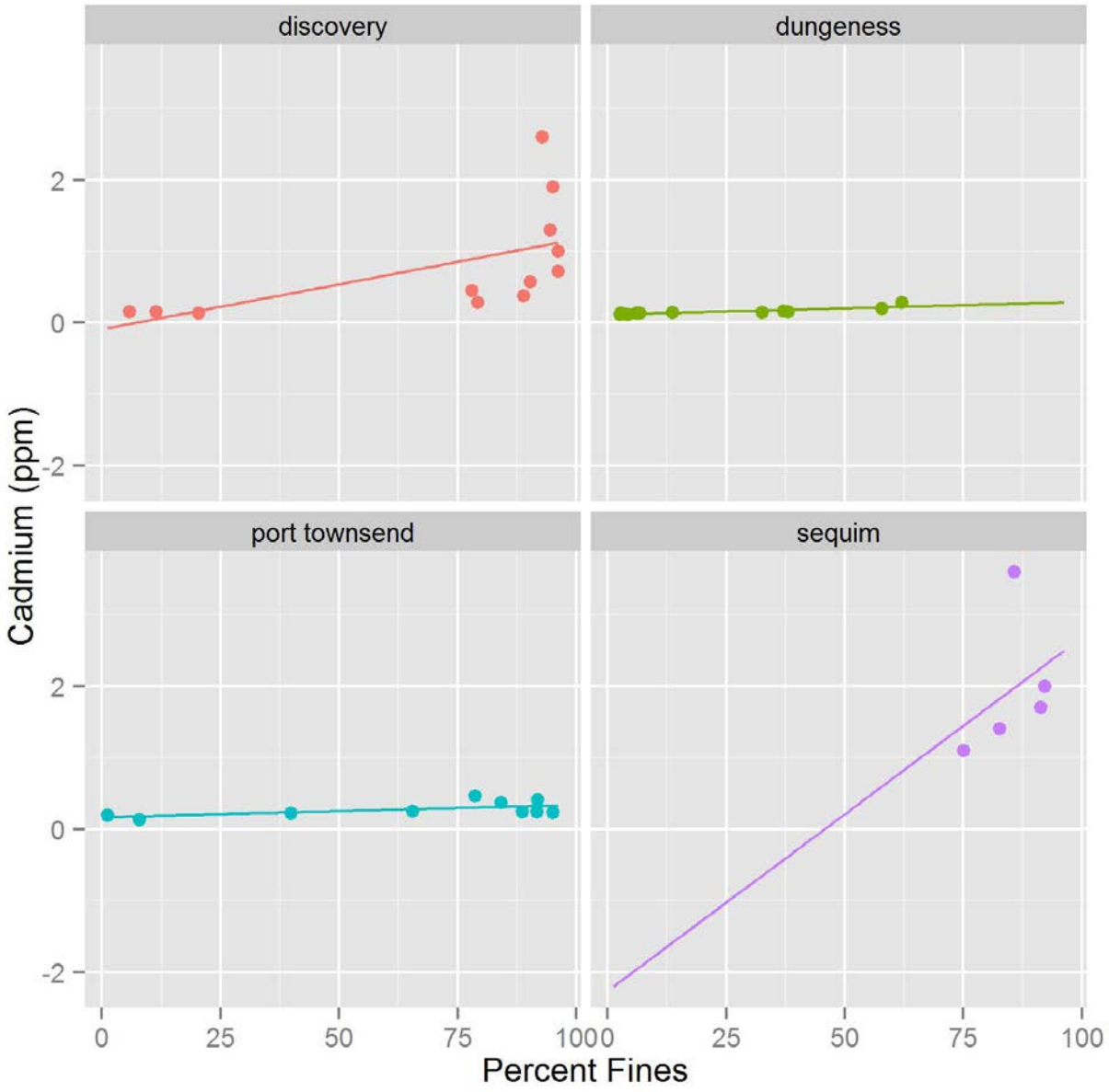

Figure H-11. Relationship between percent fines and cadmium in each of the four North Olympic Peninsula bays

Note: Non-detected values are shown at the reported detection limit

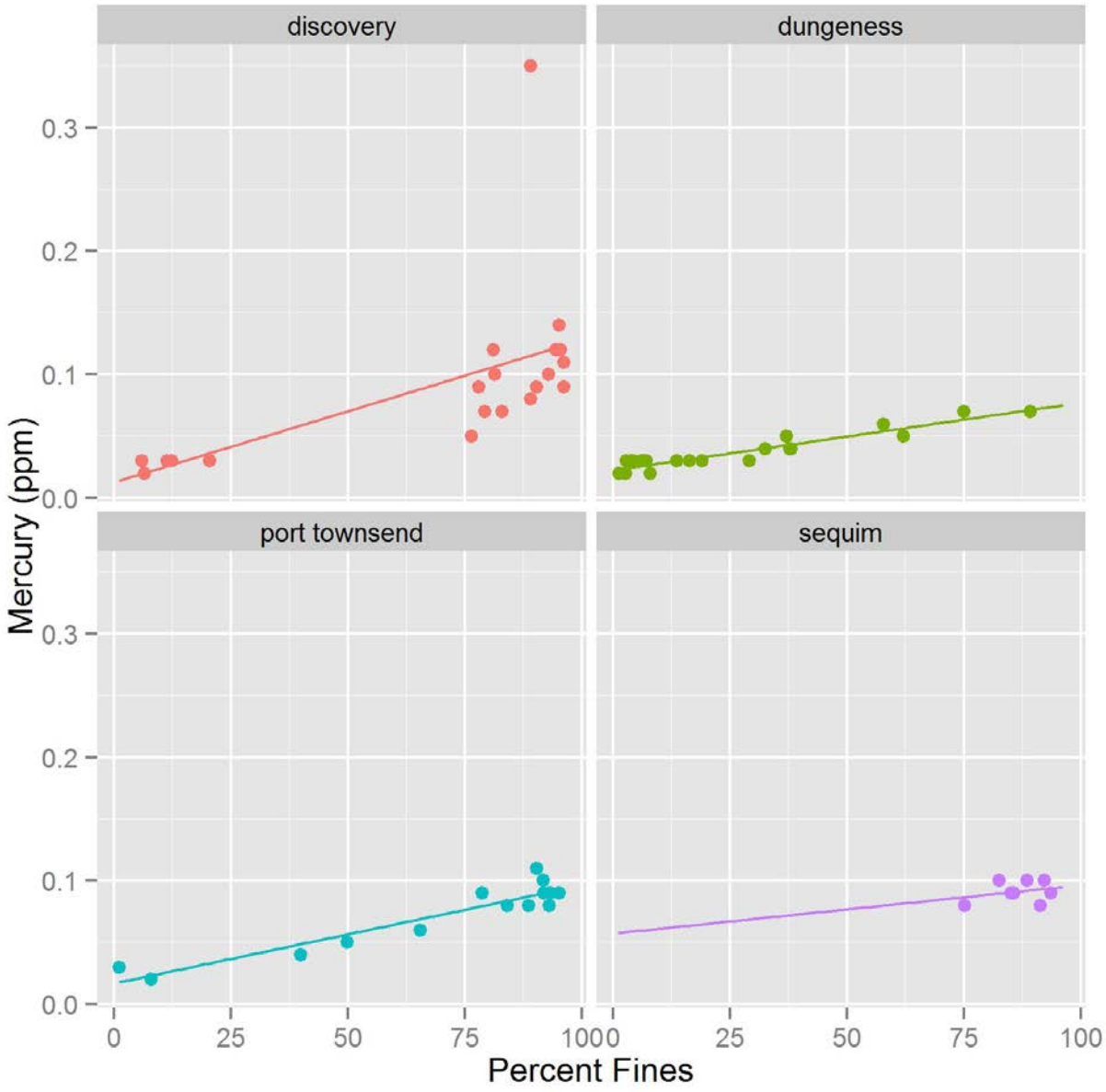

Figure H-12. Relationship between percent fines and mercury in each of the four North Olympic Peninsula bays

Note: Non-detected values are shown at the reported detection limit

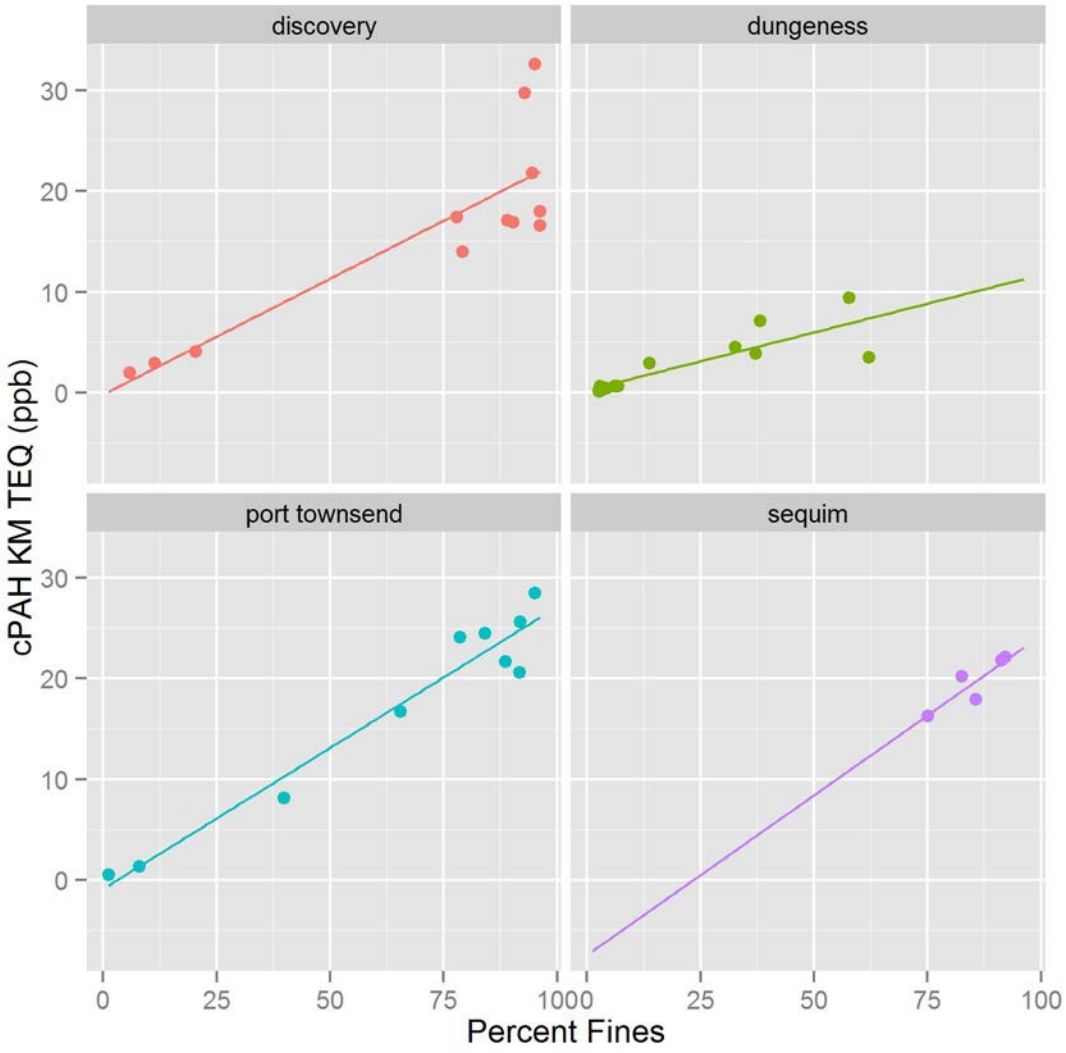

Figure H-13. Relationship between percent fines and carcinogenic polycyclic aromatic hydrocarbon toxicity equivalent (Kaplan-Meier) in each of the four North Olympic Peninsula bays

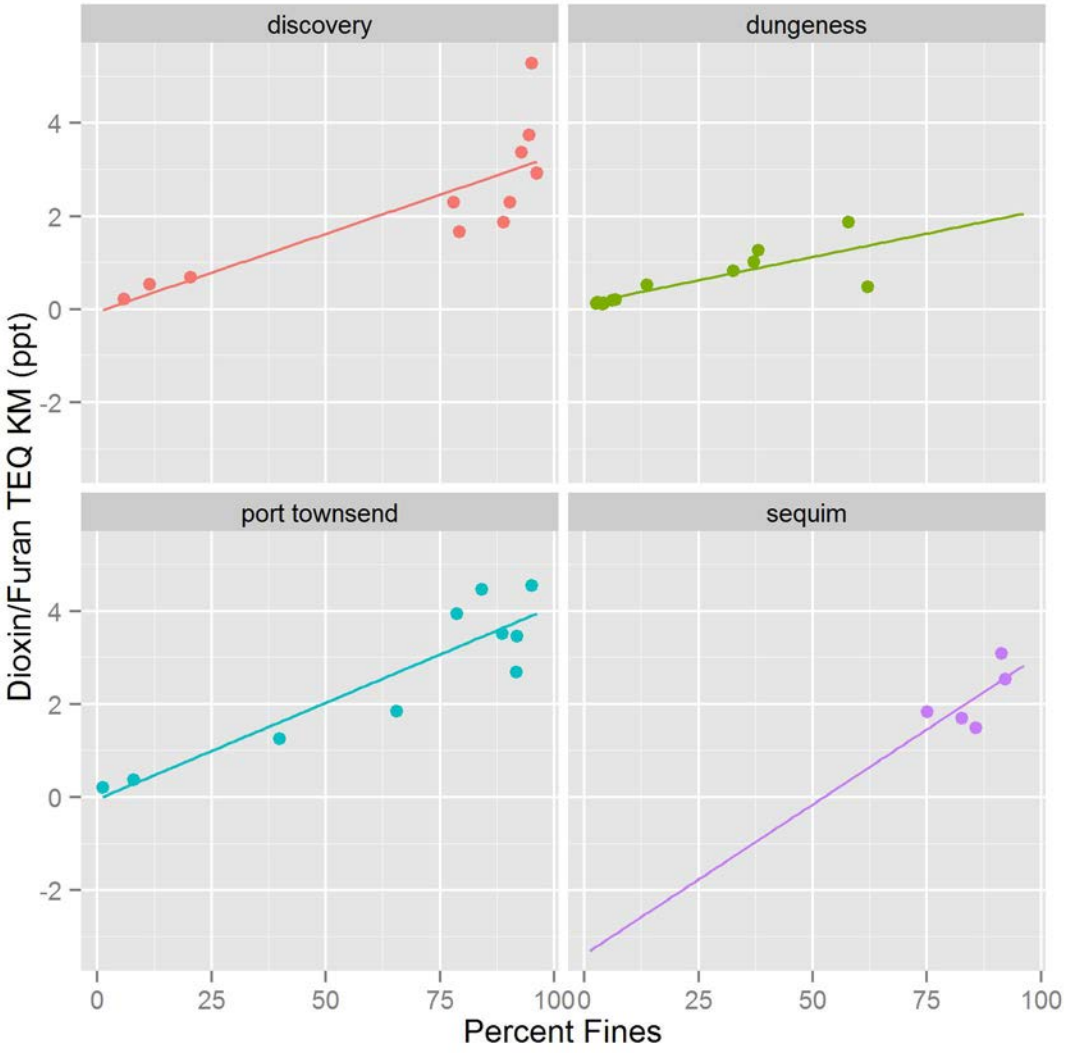

Figure H-14. Relationship between percent fines and dioxin/furan congener toxicity equivalent (Kaplan-Meier) in each of the four North Olympic Peninsula bays

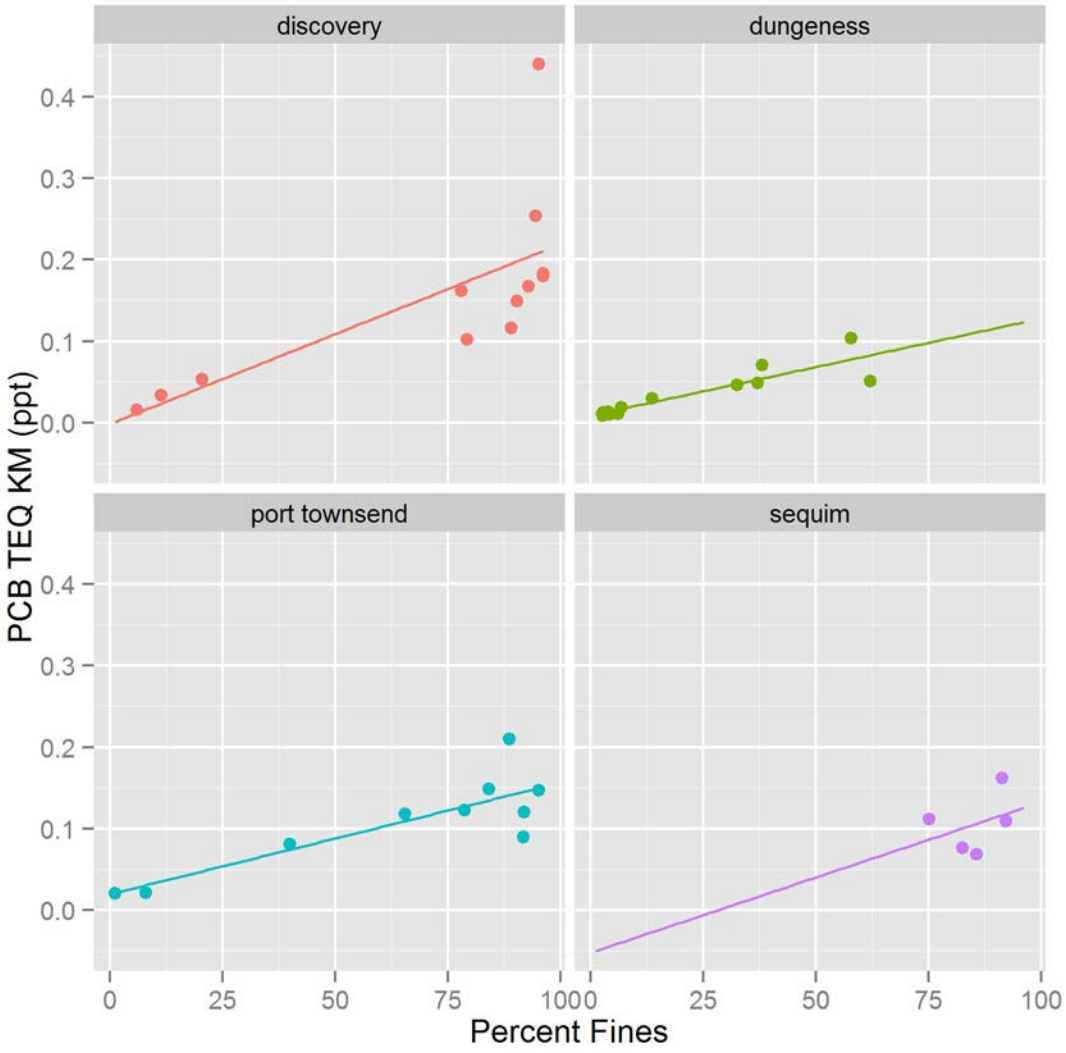

Figure H-15. Relationship between percent fines and polychlorinated biphenyl congener toxicity equivalent (Kaplan-Meier) in each of the four North Olympic Peninsula bays

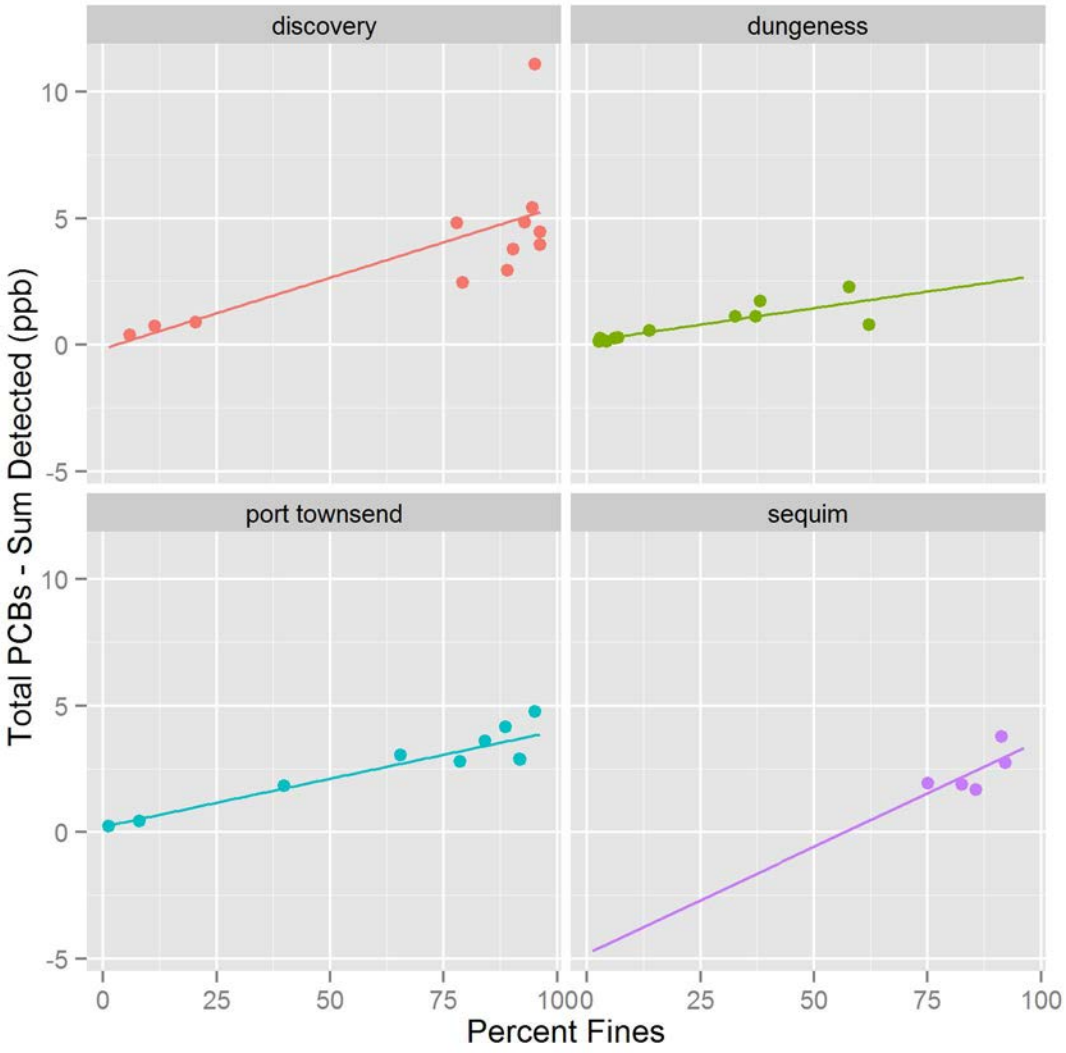

Figure H-16. Relationship between percent fines and total polychlorinated biphenyls (sum of detected congeners) in each of the four North Olympic Peninsula bays

Appendix I.
Non-Parametric Bootstrap-Based Tolerance Limits

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Appendix I: Non-Parametric Bootstrap-Based Tolerance Limits

Bootstrapping is a statistical resampling procedure that uses the observed sample data set to represent the entire population and can be used to construct confidence limits around some population parameter. Bootstrapping assumes that the observed sample data are independent and representative of the underlying population; therefore, random sampling is a prerequisite for appropriate application of this method. For the North Olympic Peninsula (NOP) regional background data set, there is a mixture population comprised of three different embayments. Random sampling was used within each embayment, and sample sizes were approximately proportional to the area of each bay relative to the whole NOP area of interest (AOI) (i.e., the sum of the areas of the three embayments). A stratified bootstrap with proportional and independent resampling within each embayment was used to simulate the mixture population.

The bootstrap-*t* procedure relies on the concept of a pivotal statistic. A statistic (T) is said to be pivotal if its distribution is independent of the underlying population parameters, even if the statistic itself depends on estimates of those parameters. For example, the "Student-t" transformation applied to a set of means $\{\bar{x}_i\}$ repeatedly drawn from any distribution results in a set of transformed values $t_i = \frac{(\bar{x}_i - \bar{\bar{x}})}{s_{\bar{x}}}$ that are approximately *t*-distributed with a 0 mean and standard deviation of 1, regardless of the true mean of the underlying distribution.

Once the pivotal statistic is transformed to its "studentized" version (i.e., subtract the mean and divide by the standard deviation), the bootstrap-*t* method (see for example, Manly 1997, pp. 56-59; or Lunneborg 2000, pp. 129-131) can be applied to estimate confidence limits on the original statistic. The bootstrap-*t* method entails calculating the pivotal statistic for each bootstrap replicate (T_b^*). After repeating this procedure many times, the distribution of the bootstrapped statistic is used to construct a confidence limit by using a percentile from this distribution as a critical value. This is analogous to how the 95th percentile from the *t*-distribution is used as a critical value for constructing the 95 upper confidence limit of the mean of a normal distribution. This approach is quite versatile and can be applied to construct confidence limits for any pivotal statistic, including tolerance limits (i.e., confidence limits for quantiles) of a mixture distribution (Rebafka et al. 2007, Fernholz and Gillespie 2001, Smith 2002).

To estimate the tolerance limit of the NOP mixture distribution, a double bootstrap is used (i.e., for each bootstrap replicate, the β-quantile is estimated using a separate independent nested bootstrap). Each bootstrap sample mimics the same proportional mixing of the four embayments, with each bay contributing to the whole in direct proportion to its area. The specific steps used to compute an upper tolerance limit (UTL) with (1-α) percent confidence and β percent coverage using the bootstrap-*t* method are described below (for the 90/90 UTL, both (1-α) and β are 0.90):

1. Generate B = 10,000 independent bootstrap samples $\{x_b^*\}$, with replacement from the original sample data. Samples are independent within each embayment to generate a stratified bootstrap sample with n_j (j=1 to 4) from each of the four embayments. This stratified bootstrap sample maintains constant proportions of each bay in the bootstrap sample.

   For the NOP baseline data set, the n_j = 12, 10, and 5 for Discovery, Port Townsend, and Sequim Bays, respectively. For mercury, the n_j = 20, 15, and 8, respectively. This generates samples that are somewhat disproportional to the area weights (e.g., sample size proportions for the baseline sample are 37, 44, and 19 percent compared to 32, 51, and 17 percent for the areas of the four bays, respectively), but it keeps the bootstrap samples true to the original sample sizes and, hence, maintains the power of the original sample design.

2. For *b* from 1 to B, repeat:

   a. Generate C = 1,000 independent sample observations $z_1^*, \ldots, z_C^*$ drawn with replacement from the observed data $\{X_i\}$, using probabilities proportional to the size of the bay. So, each observation from the *j*th bay has a probability of being sampled equivalent to $\left({}^{a_j}/_{A}\right)\left({}^{1}/_{n_j}\right)$, j=1 to 4. Thus, all observations within each bay have equal probability of being sampled, but the entire NOP population is sampled proportional to area: 51 percent from Discovery Bay, 32 percent from Port Townsend, and 17 percent from Sequim Bay. This maintains relatively constant proportions of each bay in the random sampling of the C observations from the mixture population.

   b. For each *c* from 1 to C, calculate the bootstrap replicates $T_{b,c}^* = \frac{(z_c^* - \bar{x}_b^*)}{\hat{\sigma}(x_b^*)}$, where $\bar{x}_b^*$ and $\hat{\sigma}(x_b^*)$ are the arithmetic mean and standard deviation of the bootstrap sample of the NOP mixture population $\{x_b^*\}$.

   c. Find the β-sample quantile $\hat{t}_\beta(b)$ from the set of $\{T_{b,c}^*\}$. For the 90/90 UTL, this is the 90th percentile of the "studentized" observations generated in Step 2b. There will be one $\hat{t}_{0.9}(b)$ generated for each of the B (10,000) bootstrap replicates.

   d. $\Pr\left(\frac{(z_c^* - \bar{x}_b^*)}{\hat{\sigma}(x_b^*)} < \hat{t}_\beta(b)\right) = \beta.$

3. Find *k*, such that (1-α) percent of the $\{\hat{t}_\beta(b)\}$ values generated in Step 2c is completely less than *k*.

For β=0.9, each $\hat{t}_{0.9}(b)$ represents the number of standard deviates from the mean that the 90th percentile falls within each bootstrap sample. The *k* value indicates the standardized distance from the mean that holds for 90 percent of the bootstrap samples. If the bootstrap world mirrors the real world, then this *k* value can be applied to the scale and location (standard deviation and mean) of the observed data and calculate the UTL given in Step 4.

4. The estimated "guaranteed" coverage tolerance limit is given by$(\bar{X} + k\hat{\sigma})$, where $\bar{X}$ and $\hat{\sigma}$ are the arithmetic mean and standard deviation of the observed sample data from the mixture population.

Results and Discussion

The primary assumption of non-parametric bootstrapping is that the observed sample is an independent sample representative of the population about which to make inference. The NOP AOI is a mixture of three sub-populations represented by the three embayments. As long as the bootstrap sampling approach maintains the same proportional contribution of the samples from each bay, the inference from the bootstrap should apply to the entire NOP AOI.

Non-parametric bootstrapping can sometimes produce slightly different bootstrap estimates upon repeated runs of the procedure. This is typically resolved by using a very large number of bootstrap samples (C = 1,000 and B = 10,000 qualify as "very large"). The variability among multiple runs of the bootstrap (Table I-1) can be evaluated, and if the variability in the bootstrap result exceeds the number of significant figures one wishes to report, then either more bootstrap samples are needed, or one should consider what might be influencing the variability in the bootstrap results. Table I-1 indicates that the UTL results are consistent if the values are rounded to two to three significant figures.

Figures I-1 through I-10 show the distribution of the bootstrap-*t* statistics, $\hat{t}_{0.9}(b)$, which is the 90th percentile of the "studentized" observations among the C bootstrapped observations within the bootstrap replicate b, for b = 1 to 10,000.

The distribution of bootstrap statistics, $\hat{t}_{0.9}(b)$, should be approximately normally distributed. Individual data points can be highly influential either when the sample is small and the data are heterogeneous or there are extreme values present. The influence of the two statistical outliers identified in Section 5.3.2.2 of the NOP Regional Background Sediment Characterization Data and Evaluation Report (i.e., DIS-04 for mercury and ID-06 for polychlorinated biphenyls [PCBs]) is evident in the figures. Figure I-3 shows the distribution of $\hat{t}_{0.9}(b)$ for mercury, including sample DIS-04. There is a clear bimodality to this distribution, indicating that whenever sample DIS-04 was included in a bootstrap replicate, there was a distinctively higher modal value than when sample DIS-04 was not selected. When sample DIS-04 was excluded from the data set, the distinct bimodality of the distribution of the $\hat{t}_{0.9}(b)$ values nearly disappears (Figure I-4). There are still two modes very near the median of this distribution. The

reason for this is that mercury concentrations were only reported to two decimal places; therefore, there were many samples with the same reported concentrations. The highest value (0.14 parts per million) was not all that extreme relative to the other concentrations, but its presence or absence in a bootstrap replicate had a small, but noticeable effect on the $\hat{t}_{0.9}(b)$ value. The distribution is still symmetric, and results are consistent (Table I-1); therefore, there is no reason to reject the bootstrap results from this mercury data set. The same influence of the PCB statistical outlier (sample DIS-06) can be seen in the distributional plots in Figures I-7 through I-10. When sample DIS-06 is excluded, the bootstrap results are well-behaved (Figures I-8 and I-10 and Table I-1).

The sample sizes used for bootstrapping within each embayment are the minimum of what is generally recommended for bootstrapping (e.g., sample sizes of 10 to 15 are recommended by ProUCL Technical Guidance; Lunneborg 2000 recommends a minimum of 10). The Sequim Bay sample size (n = 5 for all contaminants of concern [COCs], except mercury, which had n = 8) would usually not be used for bootstrapping. However, the distribution of concentrations within Sequim Bay had low variability for every COC (i.e., all coefficients of variation $\leq$0.50) indicating a homogeneous sample, at least. The spatial distribution of sampling locations across the bay ensured that the samples were evenly distributed and represented an unbiased picture of conditions within the bay. Given that Sequim Bay represents only 11 percent of the total NOP AOI, a wider distribution of concentrations in this bay would actually have very little impact on the outcome of the UTLs. Therefore, one can proceed with the assumption that the sample adequately represents the population of Sequim Bay.

The bootstrap-based tolerance limits generated from this data set are considered to be robust and representative of the mixture population that is present in the NOP AOI.

The script written in R to generate the bootstrap estimates:

```
#version.string R version 3.0.0 (2013-04-03)
#nickname    Masked Marvel
#### Libraries
 library(boot)
 library(NADA)

# initialize
 B.rep <- 10000
 C.rep <- 1000

## The sampling weights for the initial (external) bootstrap for:
which.dat <- nop.data[nop.data$category == "NOP" & !is.na(nop.data$arsenic),]
 which.dat$bay <- factor(as.character(which.dat$bay))
 my.prob <- data.frame(bay = which.dat$bay, prob = c(rep(0.33*(1/12),12), rep(0.35*(1/13), 13),
rep(0.21*(1/10),10), rep(0.11*(1/5),5)))
 sum(my.prob$prob)                                    # confirm that they sum to 1
 tapply(my.prob$prob, my.prob$bay, sum)   #should sum to appropriate proportions within bay
 #create prob.ex for when DIS-06 is excluded from PCBs:
 my.prob$prob.ex <- my.prob$prob
```

```
 my.prob$prob.ex[my.prob$bay == "discovery"] <- rep(0.33*(1/11),12)
 my.prob$prob.ex[which.dat$locationID == "DIS-06"] <- 0
 sum(my.prob$prob.ex)
 tapply(my.prob$prob.ex, my.prob$bay, sum)
 # generate similar vector of probabilities for the different sample sizes in mercury
## The function applied to each bootstrap replicate, this is called from boot()
mybootT2.fun <- function(data, indices, probs){
 # data is a 2 column data frame with concentration & censoring indicator (T/F)
 # data by itself is the original data;
 # data[indices,] reorders data (with repeats) for the bootstrap sample, xstar.
            d <- data[indices,]            # this is xstar(b)
             #Draw zstar, the weighted independent random sample (proportionally
             # weighted by bay area) from the original sample; treat the NDs at
             # the DL (simplifying assumption since I am calculating an upper bound
             # of this dist'n, would not be okay if I wanted a lower bound):
            zstar <- sample(data$conc, size=C.rep, replace=TRUE, prob=probs)
             #straight-up mean and sd for a mixture distribution (constant proportions
             # of mixing) when censoring is present:
            my.cenfit <- cenfit(d$conc, d$cens)
            xstar.mean <- mean(my.cenfit)[1]
            xstar.sd <- sd(my.cenfit)
            T.star <- (zstar - xstar.mean)/xstar.sd
             #return the 90th percentile (the coverage for the 90/90 UTL)
            return(quantile(T.star, 0.9))}

## The function that calculates the UTL for each COC after boot() is used:
my.bootT2.utl.fun <- function(my.boot, data){
            # uses straight up mean and sd, same as was used for T.star in the nested bootstrap.
            #find the k-value, which is the confidence level (0.90 for the 90/90 UTL)
            # this is the 90th percentile (confidence=0.90) of the 90th percentiles
            # (coverage = 0.90) of the bootstrapped standardized deviates.
 my.kfactor <- quantile(my.boot$t, 0.901)
            # compute the mean and sd on observed data of the mixture, use cenfit() in case there are
            # censored values:
 obs.mean.se <- cenfit(data$conc, data$cens)
            # The estimated "guaranteed" coverage tolerance limit ("90% confidence that
            # at least 90% of the distribution is below this threshold") is:
 return(mean(obs.mean.se)[1] + my.kfactor*sd(obs.mean.se))}

### TEST IT
#Identify the dataframe, reduce to the subset without missing values,
# and remove empty levels in the bay (strata) factor.
# for example,
 which.dat <- nop.data[!is.na(nop.data$arsenic) & nop.data$category == "NOP",]
 which.dat$bay <- factor(as.character(which.dat$bay))
 #create the $conc and $cens columns for this chemical:
 which.dat$conc <- which.dat$arsenic
 which.dat$cens <- substring(which.dat$arsenic.q, 1, 1) == "U"

#run the bootstrap, R=10000 bootstrapped replicates, with bootstrap samples
 # generated independently within the strata (bay), and on each bootstrap rep
 # do the "statistic":
```

```
 foo.bootT2 <- boot(data = which.dat, statistic=mybootT2.fun, R = B.rep, stype="i", strata=which.dat$bay,
probs = my.prob$prob)
plot(foo.bootT2)
 #the distribution of bootstrapped t* should look like a t-distribution (unimodal, and smooth).
#The 90/90 UTL estimates k-value from the boot object, and the mean and sd from the original data:
my.bootT2.utl.fun(foo.bootT2, which.dat)
```

References

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Table I-1. Repeat results of 10 iterations of the bootstrap-based UTL estimates for each COC (C = 1,000 and B = 10,000)

COC	UTL Values	Mean	Standard Deviation	Coefficient of Variation
Arsenic	11.5385, 11.5320, 11.5383, 11.5136, 11.4780, 11.4998, 11.5138, 11.5100, 11.5199, 11.5145 **All values = 11.5 (three sig. figs.)**	11.5158 **(11.5)**	0.01835	0.0016
Cadmium	2.3307, 2.3517, 2.3116, 2.3278, 2.3231, 2.3215, 2.3197, 2.3277, 2.3335, 2.3316 **Nine values = 2.3 (two sig. figs.)** **One value = 2.4**	2.32789 **(2.3)**	0.01065	0.0046
Mercury	0.14012, 0.13980, 0.14001, 0.14013, 0.13931, 0.13967, 0.13995, 0.13998, 0.13985, 0.14016 **All values = 0.14 (two sig. figs.)**	0.13990 **(0.14)**	0.00026	0.0018
Mercury (excluding DIS-04)	0.1143161, 0.1143405, 0.1143315, 0.1142577, 0.1140758, 0.1141961, 0.1144737, 0.1143666, 0.1144298, 0.1142983 **All values = 0.11 (two sig. figs.)**	0.1143086 **(0.11)**	0.0001138	0.0010
cPAH TEQ	27.40129, 27.37753, 27.41112, 27.38586, 27.40941, 27.37702, 27.37068, 27.37963, 27.38695, 27.43149 **All values = 27.4 (three sig. figs.)**	27.3931 **(27.4)**	0.019456	0.0007
Dioxin/Furan TEQ	4.274069, 4.259713, 4.267755, 4.264017, 4.255193, 4.259161, 4.258059, 4.260554, 4.256520, 4.260082 **All values = 4.3 (two sig. figs.)**	4.261512 **(4.3)**	0.005690	0.0013
PCB TEQ	0.2299, 0.2301, 0.2296, 0.2307, 0.2299, 0.2303, 0.2305, 0.2306, 0.2301, 0.2308 **All values = 0.23 (two sig. figs.)**	0.23025 **(0.23)**	0.000395	0.0017
PCB TEQ (excluding DIS-06)	0.20069, 0.20072, 0.20123, 0.20145, 0.20133, 0.20119, 0.20126, 0.20056, 0.20133, 0.20061 **All values = 0.20 (two sig. figs.)**	0.201037 **(0.20)**	0.00035	0.0017
Total PCBs	6.064, 6.069, 6.091, 6.069, 6.081, 6.087, 6.088, 6.061, 6.096, 6.083 **All values = 6.1 (two sig. figs.)**	6.0789 **(6.1)**	0.0122	0.0020
Total PCBs (excluding DIS-06)	5.247, 5.242, 5.232, 5.231, 5.218, 5.231, 5.222, 5.237, 5.233, 5.238 **All values = 5.2 (two sig. figs.)**	5.2331 **(5.2)**	0.0086	0.0017

Notes:
cPAH = carcinogenic polycyclic aromatic hydrocarbon
COC = contaminant of concern
PCB = polychlorinated biphenyl
sig. figs. = significant figures
TEQ = toxicity equivalent
UTL = upper tolerance limit

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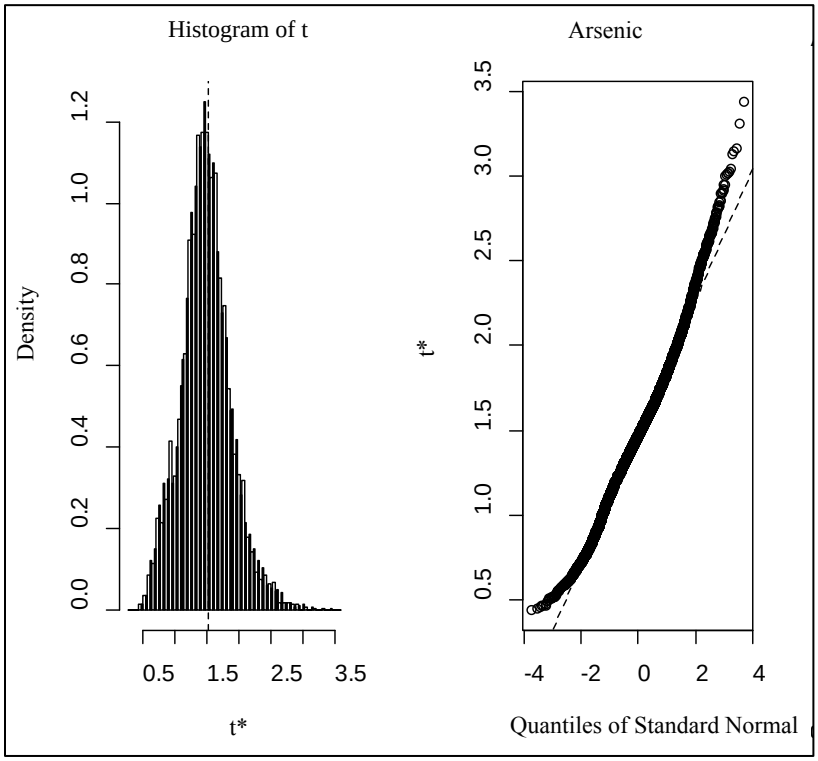

Figure I-1. Distribution of the $\hat{t}_{0.9}(b)$ for arsenic for the baseline samples, B = 10,000 and C = 1,000

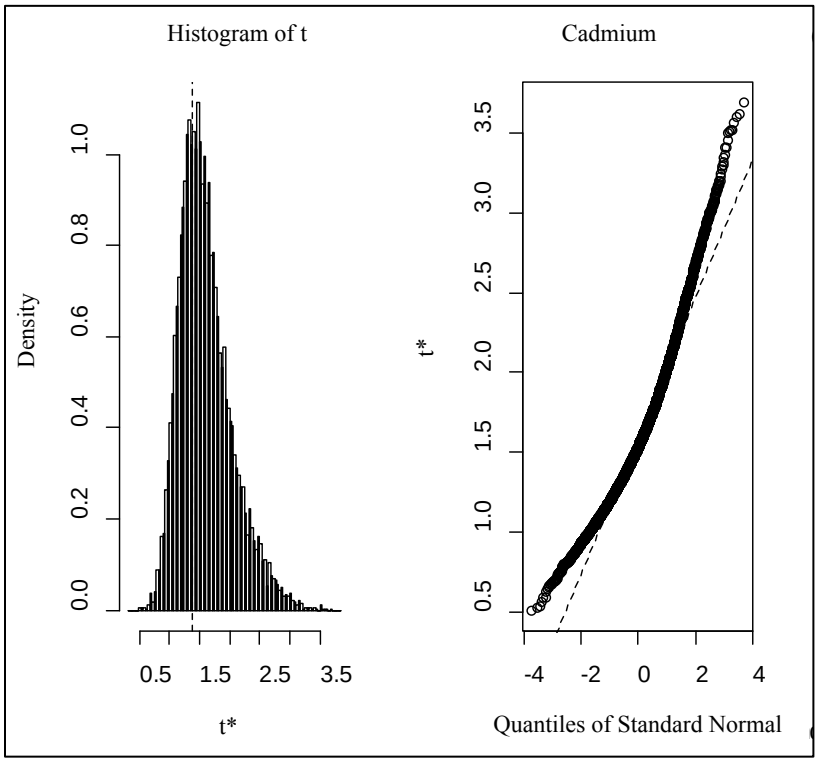

Figure I-2. Distribution of the $\hat{t}_{0.9}(b)$ for cadmium for the baseline samples, B = 10,000 and C = 1,000

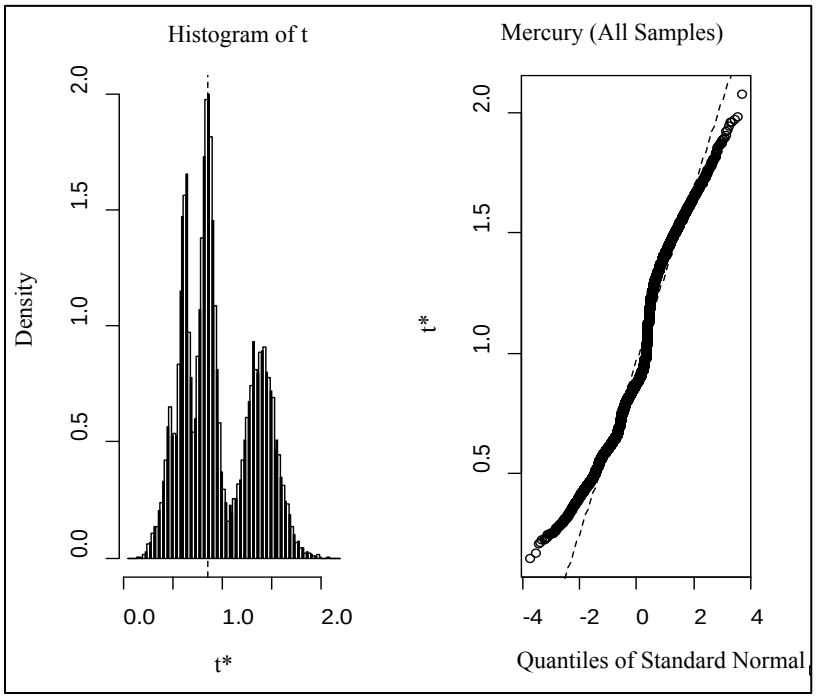

Figure I-3. Distribution of the $\hat{t}_{0.9}(\boldsymbol{b})$ for mercury for the baseline samples, B = 10,000 and C = 1,000

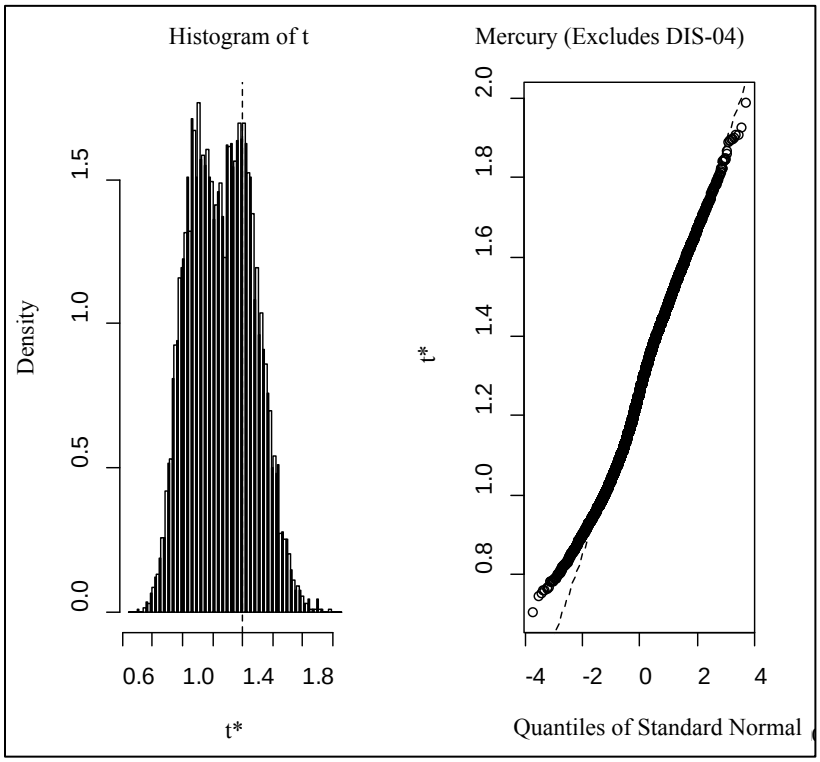

Figure I-4. Distribution of the $\hat{t}_{0.9}(\boldsymbol{b})$ for mercury (excluding DIS-04) for the baseline samples, B = 10,000 and C = 1,000

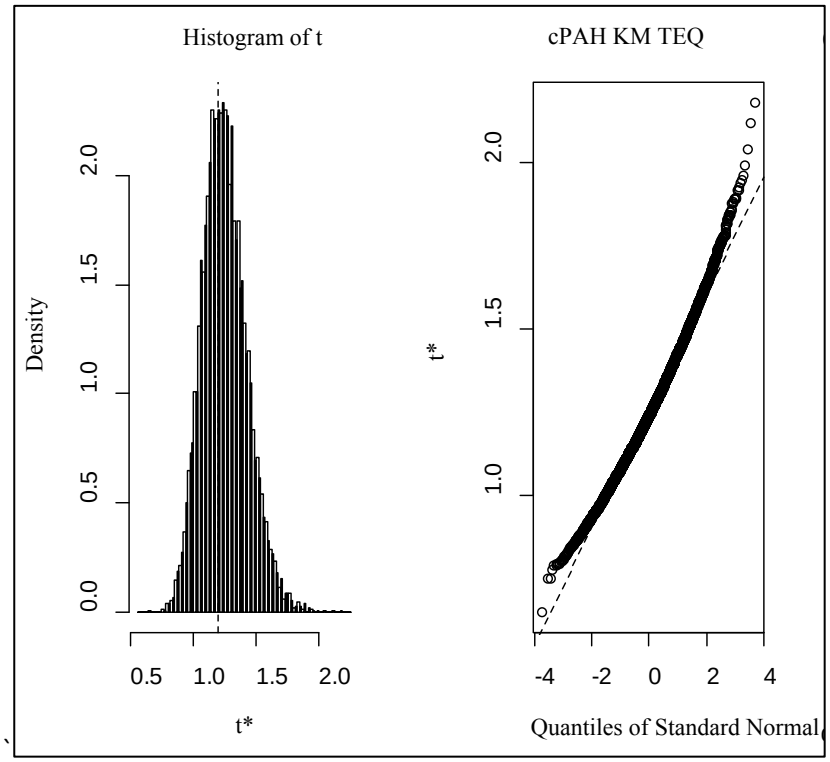

Figure I-5. Distribution of the $\hat{t}_{0.9}(b)$ for carcinogenic polycyclic aromatic hydrocarbon toxicity equivalent for the baseline samples, B = 10,000 and C = 1,000

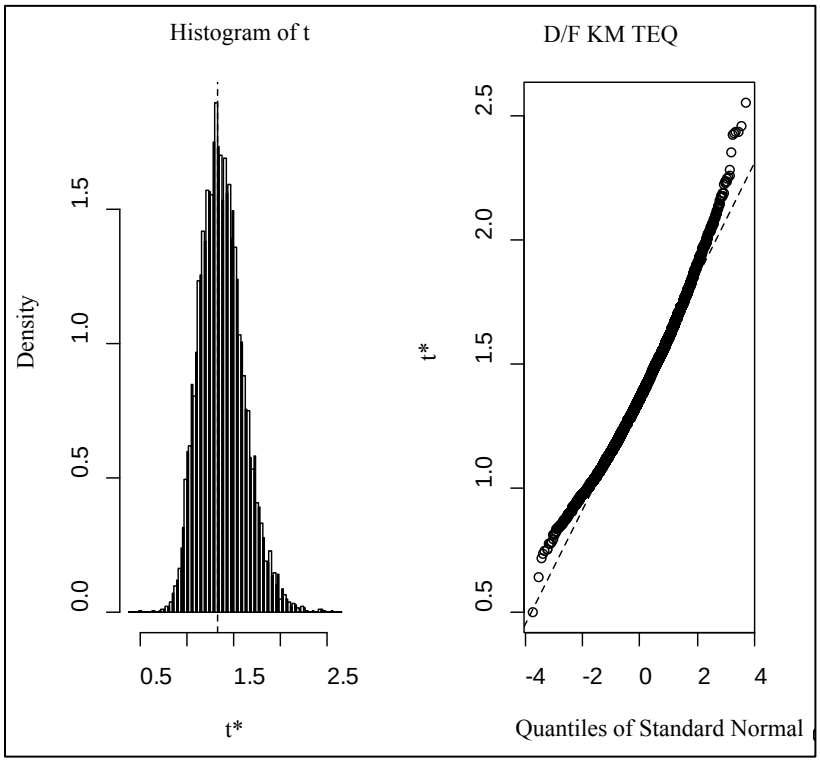

Figure I-6. Distribution of the $\hat{t}_{0.9}(b)$ for dioxin/furan toxicity equivalent for the baseline samples, B = 10,000 and C = 1,000

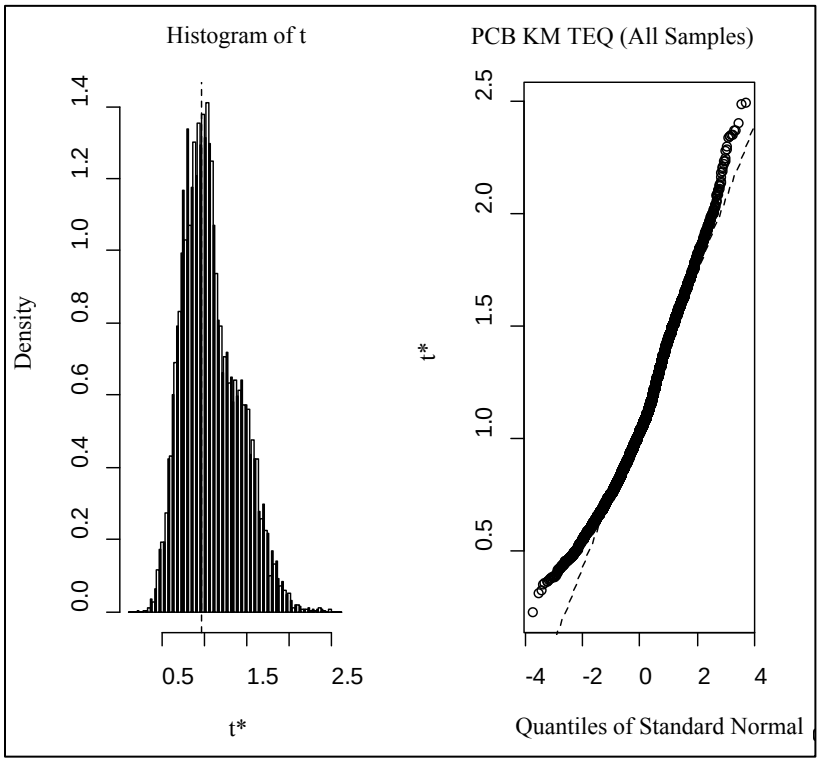

Figure I-7. Distribution of the $\hat{t}_{0.9}(b)$ for polychlorinated biphenyl toxicity equivalent (all samples) for the baseline samples, B = 10,000 and C = 1,000

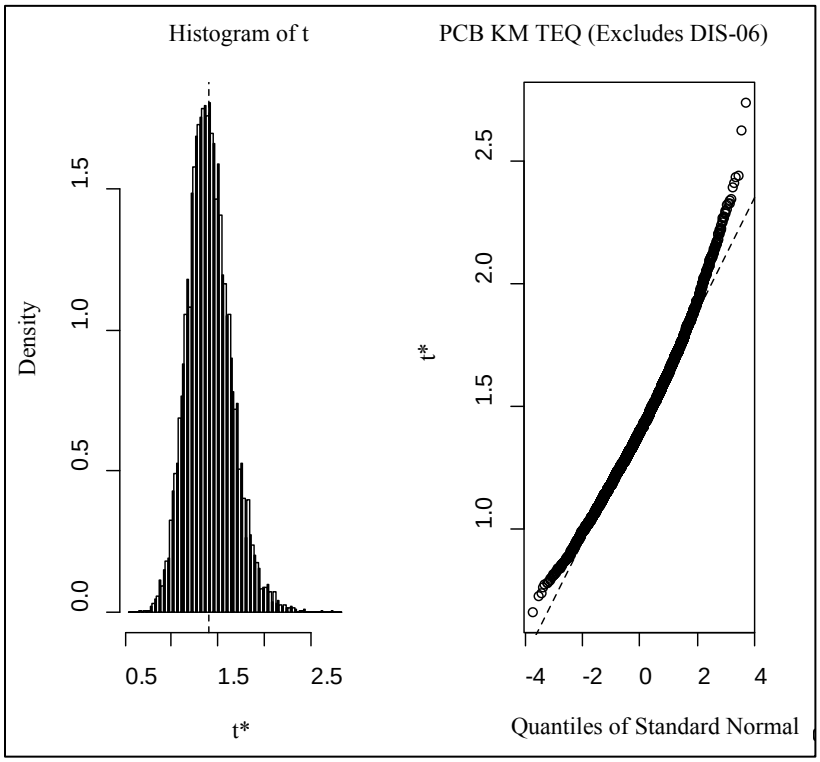

Figure I-8. Distribution of the $\hat{t}_{0.9}(b)$ for polychlorinated biphenyl toxicity equivalent (excluding DIS-06) for the baseline samples, B = 10,000 and C = 1,000

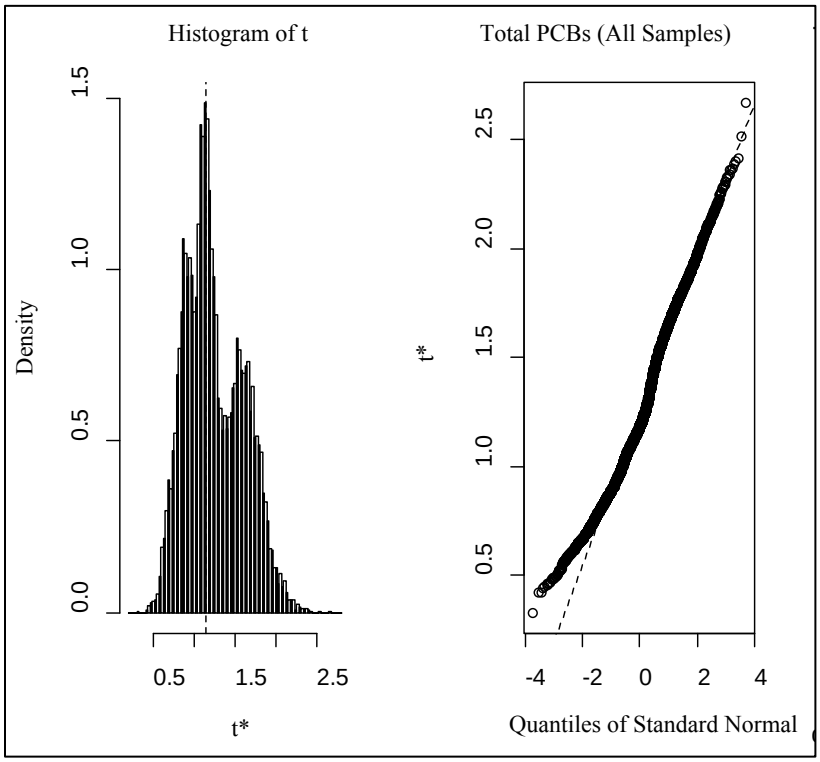

Figure I-9. Distribution of the $\hat{t}_{0.9}(b)$ for total polychlorinated biphenyls (all samples) for the baseline samples, B = 10,000 and C = 1,000

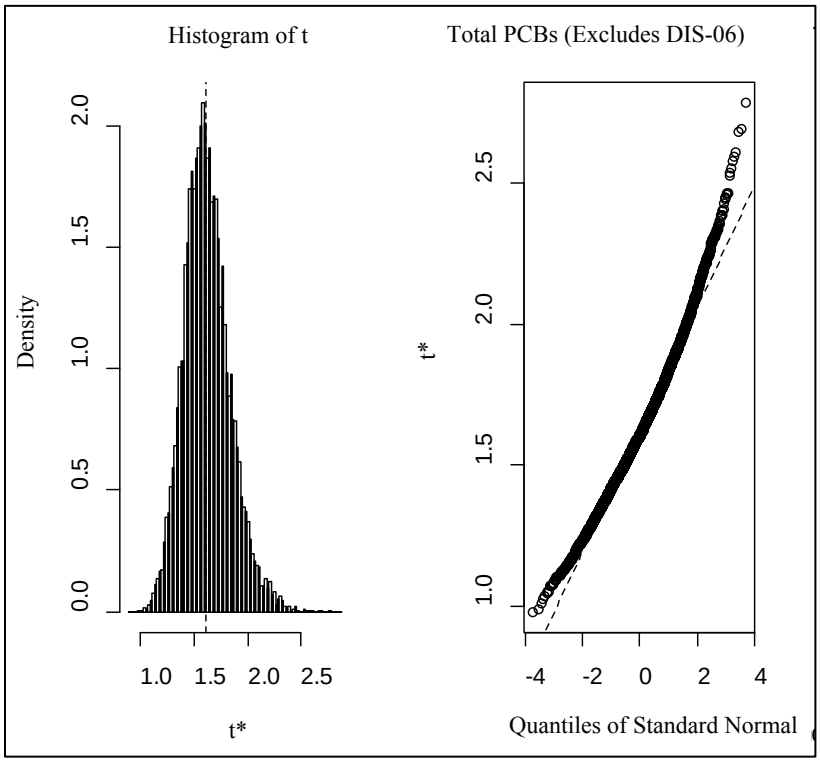

Figure I-10. Distribution of the $\hat{t}_{0.9}(b)$ for total polychlorinated biphenyls (excluding DIS-06) for the baseline samples, B = 10,000 and C = 1,000