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Effective Date: January 1, 2020
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Expiration Date: December 31, 2024

**National Pollutant Discharge Elimination System
Waste Discharge Permit No. WA0001783**


State of Washington
DEPARTMENT OF ECOLOGY
Industrial Section
PO Box 47600
Olympia, WA 98504-7600

In compliance with the provisions of
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1342 et seq.

U.S. Oil & Refining Co.
3001 Marshall Avenue
Tacoma, Washington 98421

is authorized to discharge in accordance with the Special and General Conditions that follow.

<p><u>Facility Location:</u> 3001 Marshall Avenue Tacoma, Washington 98421</p> <p><u>Treatment Type:</u> Flotation, Sedimentation (settling), Flocculation, Mixing, Activated Sludge, Nitrification-Denitrification, Aerobic Digestion, Gravity Thickening, Pressure Filtration</p>	<p><u>Receiving Waters:</u> Blair Waterway (Commencement Bay), Lincoln Avenue ditch, Erdahl ditch</p> <p><u>Industry Type:</u> Petroleum Refining</p> <p><u>SIC Code:</u> 2911</p> <p><u>NAICS Code:</u> 324110</p>
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Industrial Section Manager
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Table of Contents

<i>Summary of Permit Report Submittals</i>	5
<i>Special Conditions</i>	7
S1. Discharge Limits	7
S1.A. Process Wastewater and Stormwater Discharges at Outfall 001A	7
S1.B. Stormwater Allocations for Outfall 001A.....	8
S1.C. Mixing Zone Authorization for Outfall 001A.....	9
S1.D. Stormwater Discharges at Outfalls 001B.....	9
S1.E. Stormwater Discharges at Outfalls 002, 004, and 005.....	10
S1.F. Stormwater Discharges at Outfall 006.....	12
S1.G. Stormwater Discharges at Outfall 003.....	14
S1.H. Stormwater Benchmarks, Prohibitions, and Monitoring Requirements at Outfalls 001B, 002, 003, 004, 005, and 006.....	14
S1.I. Firewater Discharges	18
S2. Monitoring Requirements	18
S2.A. Monitoring Schedule.....	18
S2.B. Sampling and Analytical Procedures	25
S2.C. Flow Measurement, Field Measurement, and Continuous Monitoring Devices	26
S2.D. Laboratory Accreditation.....	27
S2.E. Request for Reduction in Monitoring	27
S3. Reporting and Recording Requirements	27
S3.A. Discharge Monitoring Reports.....	27
S3.B. Permit Submittals and Schedules.....	29
S3.C. Records Retention.....	30
S3.D. Recording of Results.....	30
S3.E. Additional Monitoring by the Permittee	30
S3.F. Reporting Permit Violations	30
S3.G. Other Reporting	32
S3.H. Maintaining a Copy of this Permit.....	32
S4. Operation and Maintenance	32
S4.A. Operations and Maintenance (O&M) Manual	33
S4.B. Bypass Procedures	34
S5. Solid Wastes	36
S5.A. Solid Waste Handling	36
S5.B. Leachate	36
S6. Application for Permit Renewal or Modification for Facility Changes	36
S7. Facility Loading Design Criteria	36
S8. Non-Routine and Unanticipated Discharges	36
S9. Wastewater Treatment Efficiency Study and Updated Engineering Report	37
S10. Pollution Prevention	37

S10.A.	Pollution Prevention Plan Update and Implementation	38
S10.B.	Specific Plan Update Requirements	39
S10.C.	Stormwater Inspections	39
S10.D.	Biennial Reporting	40
S10.E.	Continuous Improvement	40
S11.	Dioxin Study	40
S11.A.	Wastewater Sampling	40
S11.B.	Dioxin Study Report	41
S12.	Sediment Monitoring	41
S12.A.	Sediment Sampling and Analysis Plan	41
S12.B.	Sediment Data Report	42
S13.	Acute Toxicity	42
S13.A.	Effluent Testing	42
S13.B.	Effluent Limit for Acute Toxicity	43
S13.C.	Compliance with the Effluent Limit for Acute Toxicity	43
S13.D.	Compliance Testing for Acute Toxicity	44
S13.E.	Response to Noncompliance with the Effluent Limit for Acute Toxicity	44
S13.F.	Testing When There is no Permit Limit for Acute Toxicity	45
S13.G.	Sampling and Reporting Requirements	46
S14.	Chronic Toxicity	47
S14.A.	Effluent Testing	47
S14.B.	Effluent Limit for Chronic Toxicity	48
S14.C.	Compliance with the Effluent Limit for Chronic Toxicity	48
S14.D.	Compliance Testing for Chronic Toxicity	48
S14.E.	Response to Noncompliance with the Effluent Limit for Chronic Toxicity	49
S14.F.	Testing When There is no Permit Limit for Chronic Toxicity	50
S14.G.	Sampling and Reporting Requirements	51
S15.	AKART Analysis and Engineering Report	52
S16.	Compliance Schedule	53
S17.	Receiving Water Study	54
S18.	Dangerous Wastes – Permit by Rule Requirements	55
S19.	Construction Stormwater	55
S19.A.	Authorization and Conditions to Discharge Construction Stormwater	56
S19.B.	Construction Stormwater Pollution Prevention Plans	57
S19.C.	Site Log Book	57
S19.D.	Site Inspections	57
S19.E.	General Construction Stormwater Sampling Requirements	59
S19.F.	Turbidity Sampling, Benchmark, and Reporting Trigger	60
S19.G.	pH Sampling Requirements	62
S20.	Mixing Study	62
S20.A.	General Requirements	63
S20.B.	Reporting Requirements	63
S20.C.	Protocols	64

<i>General Conditions</i>	65
G1. Signatory Requirements	65
G2. Right of Inspection and Entry	66
G3. Permit Actions	66
G4. Reporting Planned Changes	68
G5. Plan Review Required	68
G6. Compliance with Other Laws and Statutes	68
G7. Transfer of this Permit	68
G8. Reduced Production for Compliance	69
G9. Removed Substances	69
G10. Duty to Provide Information	69
G11. Other Requirements of 40 CFR	69
G12. Additional Monitoring	69
G13. Payment of Fees	69
G14. Penalties for Violating Permit Conditions	70
G15. Upset	70
G16. Property Rights	70
G17. Duty to Comply	71
G18. Toxic Pollutants	71
G19. Penalties for Tampering	71
G20. Reporting Requirements Applicable to Existing Manufacturing, Commercial, Mining, and Silvicultural Dischargers	71
G21. Compliance Schedules	72
<i>Appendix A</i>	73
<i>Appendix B</i>	76
<i>Appendix C</i>	92
<i>Appendix D</i>	103

Summary of Permit Report Submittals

Refer to the Special and General Conditions of this permit for additional submittal requirements.

Permit Section	Submittal	Frequency	First Submittal Date
S1.D	Outfall 001B Notification	As necessary	
S1.F	Outfall 006 Notification	As necessary	
S3.A	Discharge Monitoring Report (DMR)	Monthly	February 15, 2020
S3.A	Discharge Monitoring Report (DMR)	Bimonthly	March 15, 2020
S3.A	Discharge Monitoring Report (DMR)	Quarterly	April 15, 2020
S3.A	Discharge Monitoring Report (DMR)	Annual	January 15, 2021
S3.A	DMR - Priority Pollutant Data - Single Sample Data	Annual	January 15, 2021
S3.F	Reporting Permit Violations	As necessary	
S4.A	Review and Update Operations and Maintenance Manual	As necessary	
S4.A	Treatment System Operating Plan	1/permit cycle	July 1, 2020
S4.A	Treatment System Operating Plan Modification	As necessary	
S4.B	Reporting Bypasses	As necessary	
S6	Application for Permit Renewal	1/permit cycle	July 4, 2024
S8	Non-Routine and Unanticipated Discharges	As necessary	
S9	Wastewater Treatment Efficiency Study Plan	As necessary	
S9	Engineering Report Update	As necessary	
S10.A	Pollution Prevention Plan Update	1/permit cycle	January 1, 2021
S10.D	Pollution Prevention Plan Biennial Progress Report	Every two years	January 1, 2023
S11.B	Dioxin Study Report	1/permit cycle	July 4, 2024
S12.A	Sediment Sampling and Analysis Plan	1/permit cycle	January 1, 2022
S12.B	Sediment Data Report	1/permit cycle	January 1, 2024
S13.A	Acute Toxicity: Effluent Test Results	2/permit cycle	November 30, 2020
S13.D	Acute Toxicity: Compliance Monitoring Reports	As necessary	
S13.E	Acute Toxicity: Response to Noncompliance Reporting	As necessary	

Permit Section	Submittal	Frequency	First Submittal Date
S13.E	Acute Toxicity: TI/TRE Plan	As necessary	
S13.F	Acute Toxicity: Effluent Test Results - Submit with Permit Renewal Application	1/permit cycle	July 4, 2024
S14.A	Chronic Toxicity: Effluent Test Results	2/permit cycle	November 30, 2020
S14.D	Chronic Toxicity: Compliance Monitoring Reports	As necessary	
S14.E	Chronic Toxicity: Response to Noncompliance Reporting	As necessary	
S14.E	Chronic Toxicity: TI/TRE Plan	As necessary	
S14.F	Chronic Toxicity: Effluent Test Results - Submit with Permit Renewal Application	1/permit cycle	July 4, 2024
S15	AKART Analysis and Engineering Report	1/permit cycle	January 1, 2021
S17.1	Receiving Water Metals Study Sampling and Quality Assurance Plan	1/permit cycle	January 1, 2021
S17.4	Receiving Water Metals Study Final Report	1/permit cycle	July 4, 2024
S19.B	Updated Standard CSWPPP	1/permit cycle	July 1, 2020
S19.B	Project Details for Standard CSWPPP and Project-Specific CSWPPP	As necessary	
S20	Mixing Zone Plan of Study	As necessary	
S20	Effluent Mixing Report	As necessary	
G1	Notice of Change in Authorization	As necessary	
G4	Permit Application for Substantive Changes to the Discharge	As necessary	
G5	Engineering Report for Construction or Modification Activities	As necessary	
G7	Notice of Permit Transfer	As necessary	
G10	Duty to Provide Information	As necessary	
G21	Compliance Schedules	As necessary	

Special Conditions

S1. Discharge Limits

S1.A. Process Wastewater and Stormwater Discharges at Outfall 001A

All discharges and activities authorized by this permit must be consistent with the terms and conditions of this permit.

The discharge of any of the following pollutants more frequently than, or at a level in excess of that identified and authorized by this permit violates the terms and conditions of this permit.

Beginning on the effective date of this permit, the Permittee is authorized to discharge treated process water and stormwater from industrial activities to the Blair Waterway at the permitted location specified below subject to complying with the following limits:

Effluent Limits: Outfall 001A
Latitude 47.25693 - Longitude -122.39120

Parameter	Average Monthly ^a	Maximum Daily ^b
Biochemical Oxygen Demand (5-day)	126 pounds/day (lbs/day)	238 lbs/day
Chemical Oxygen Demand	633 lbs/day	1,224 lbs/day
Total Suspended Solids	107 lbs/day	167 lbs/day
Oil and Grease	39 lbs/day	74 lbs/day
Oil and Grease	The concentration of oil and grease in the discharge must at no time exceed 15 mg/L, and must not exceed 10 mg/L more than three days per month.	
Phenolic Compounds	0.65 lbs/day	1.78 lbs/day
Ammonia as N	14 lbs/day	32 lbs/day
Sulfide	0.71 lbs/day	1.57 lbs/day
Hexavalent Chromium	-	50 micrograms/liter (µg/L) and 0.13 lbs/day
Parameter	Minimum Daily ^c	Maximum Daily ^b
pH ^d	6.0 standard units	9.0 standard units

Footnotes

^a Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month. To calculate the discharge value to compare to the limit, add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured.

- b Maximum daily effluent limit is the highest allowable daily discharge. The daily discharge is the average discharge of a pollutant measured during a calendar day. For pollutants with limits expressed in units of mass, calculate the daily discharge as the total mass of the pollutant discharged over the day. For pH, the daily discharge is the maximum discharge of pH measured during a calendar day.
- c Minimum daily effluent limit is the lowest allowable daily discharge. The daily discharge is the minimum discharge of pH measured during a calendar day.
- d When pH is continuously monitored, excursions between 5.0 and 6.0, or 9.0 and 10.0 are not considered violations if no single excursion exceeds 60 minutes in length and total excursions do not exceed 7 hours and 26 minutes per month. Any excursions below 5.0 and above 10.0 at any time are violations.

S1.B. Stormwater Allocations for Outfall 001A

The Permittee is authorized to discharge additional amounts of the flowing parameters based on stormwater flow through Outfall 001A. During the months of June through September, the Permittee must only be allowed to claim the stormwater allocation when it can be demonstrated that measurable rainfall occurred at the refinery site in the previous ten calendar days. If rainfall data on-site is unavailable due to equipment malfunction, data from nearby rainfall gauging stations can be used.

The stormwater flow rate must be defined as the difference between total measured effluent through Outfall 001A and the average dry weather flow rate. The average dry weather flow rate is hereby established as 0.324 million gallons per day.

Stormwater Allocation for Outfall 001A

Parameter	Average Monthly (pounds/million gallons)	Maximum Daily (pounds/million gallons)
Biochemical Oxygen Demand (5-day)	220	400
Chemical Oxygen Demand	1,500	3,000
Total Suspended Solids	180	280
Oil and Grease	67	130

Stormwater flow is equal to the amount of flow in excess of the established dry weather flow rate. For the months of June through September, qualifying stormwater flow days are only those days when measurable rainfall occurred at the refinery site during the previous ten calendar days. The Average Monthly Stormwater Allocation (AMSWA) is defined as the sum of stormwater flows from qualifying stormwater flow days sampled divided by the number of qualifying days multiplied by the average monthly allocation for that parameter. The Total Average Monthly Limit (T) is the sum of the base average monthly limit (B) (listed in Special Condition S1.A) plus the AMSWA ($T = B + \text{AMSWA}$). An example calculation is shown in Appendix A.

S1.C. Mixing Zone Authorization for Outfall 001A

The following paragraphs define the maximum boundaries of the mixing zones:

Chronic Mixing Zone

The mixing zone is a circle with radius of 200 feet measured from the center of the discharge tidal gate. The mixing zone extends from the bottom to the top of the water column. The concentration of pollutants at the edge of the chronic zone must meet chronic aquatic life criteria and human health criteria.

Acute Mixing Zone

The acute mixing zone is a circle with radius of 20 feet measured from the center of the discharge tidal gate. The mixing zone extends from the bottom to the top of the water column. The concentration of pollutants at the edge of the acute zone must meet acute aquatic life criteria.

Available Dilution (dilution factor)

Acute Aquatic Life Criteria	2.0
Chronic Aquatic Life Criteria	71.3
Human Health Criteria - Carcinogen	71.3
Human Health Criteria - Non-carcinogen	71.3

S1.D. Stormwater Discharges at Outfalls 001B

All discharges and activities authorized by this permit must be consistent with the terms and conditions of this permit.

The discharge of any of the following pollutants more frequently than, or at a level in excess of that identified and authorized by this permit violates the terms and conditions of this permit.

Beginning on the effective date of this permit, the Permittee must route all stormwater from the Outfall 001B drainage area to the Permittee's wastewater treatment plant. The Permittee must notify Ecology 30 days in advance of any change in discharge at Outfall 001B. A change in discharge at Outfall 001B means a change in operational status from inactive to active.

While Outfall 001B is inactive, the Permittee is not required to meet the interim and final limits in Special Condition S1.D, the stormwater requirements in Special Condition S1.H, and the monitoring requirements in Special Condition S2. The Permittee cannot discharge firewater through Outfall 001B as specified in Special Condition S1.I while Outfall 001B is inactive.

Beginning 30 days after notifying Ecology that the Permittee plans to change the inactive status of Outfall 001B to active, the Permittee is required to meet the interim and final limits in Special Condition S1.D, the stormwater requirements in Special Condition S1.H, and the monitoring requirements in Special Condition S2.

The Permittee must follow the requirements of Special Condition S15 for Outfall 001B regardless of where the stormwater from the Outfall 001B drainage area is being routed or discharged.

Beginning 30 days after notifying Ecology that the Permittee plans to discharge stormwater through Outfall 001B, the Permittee is authorized to discharge stormwater from industrial activities to the Blair Waterway at this location subject to complying with the following limits:

Effluent Limits: Outfall 001B
Latitude 47.26038 - Longitude -122.39748

Parameter	Average Monthly ^a	Maximum Daily ^b
Oil and Grease	-	15 mg/L
Copper, Total ^c	Interim Limit – 4.1 micrograms/liter (µg/L)	Interim Limit – 5.8 µg/L Final Limit – 5.8 µg/L
Zinc, Total ^c	Interim Limit – 134.8 µg/L	Interim Limit – 138.2 µg/L Final Limit – 95.1 µg/L
Parameter	Minimum Daily ^d	Maximum Daily ^b
pH	5.0 standard units	9.0 standard units

Footnotes

a Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month. To calculate the discharge value to compare to the limit, add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured.

b Maximum daily effluent limit is the highest allowable daily discharge. The daily discharge is the average discharge of a pollutant measured during a calendar day. For pH, the daily discharge is the maximum discharge of a pollutant measured during a calendar day.

c The interim numeric effluent limits are effective on January 1, 2020 through December 30, 2024. The final effluent limits are effective on December 31, 2024.

When only one sample is collected during a month, the one sample is compared to both the average monthly and maximum daily limits.

d Minimum daily effluent limit is the lowest allowable daily discharge. The daily discharge is the minimum discharge of a pollutant measured during a calendar day.

S1.E. Stormwater Discharges at Outfalls 002, 004, and 005

All discharges and activities authorized by this permit must be consistent with the terms and conditions of this permit.

The discharge of any of the following pollutants more frequently than, or at a level in excess of that identified and authorized by this permit violates the terms and conditions of this permit.

Beginning on the effective date of this permit, the Permittee is authorized to discharge stormwater from industrial activities to the Blair Waterway at the permitted locations specified below subject to complying with the following limits:

Effluent Limits: Outfall 002
Latitude 47.25762 - Longitude -122.40165

Parameter	Average Monthly ^a	Maximum Daily ^b
Oil and Grease	-	15 mg/L
Copper, Total ^c	Interim Limit – 4.1 µg/L	Interim Limit – 5.8 µg/L Final Limit – 5.8 µg/L
Parameter	Minimum Daily ^d	Maximum Daily ^b
pH	5.0 standard units	9.0 standard units

Footnotes:

a Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month. To calculate the discharge value to compare to the limit, add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured.

b Maximum daily effluent limit is the highest allowable daily discharge. The daily discharge is the average discharge of a pollutant measured during a calendar day. For pH, the daily discharge is the maximum discharge of a pollutant measured during a calendar day.

c The interim numeric effluent limits are effective on January 1, 2020 through December 30, 2024. The final effluent limits are effective on December 31, 2024.

When only one sample is collected during a month, the one sample is compared to both the average monthly and maximum daily limits.

d Minimum daily effluent limit is the lowest allowable daily discharge. The daily discharge is the minimum discharge of a pollutant measured during a calendar day.

Effluent Limits: Outfall 004
Latitude 47.25382 - Longitude -122.39256

Parameter	Average Monthly ^a	Maximum Daily ^b
Oil and Grease	-	15 mg/L
Copper, Total ^c	Interim Limit – 11.0 µg/L	Interim Limit – 26.9 µg/L Final Limit – 5.8 µg/L
Parameter	Minimum Daily ^d	Maximum Daily ^b
pH	5.0 standard units	9.0 standard units

Footnotes:

a Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month. To calculate the discharge value to compare to the limit, add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured.

b Maximum daily effluent limit is the highest allowable daily discharge. The daily discharge is the average discharge of a pollutant measured during a calendar day. For pH, the daily discharge is the maximum discharge of a pollutant measured during a calendar day.

c The interim numeric effluent limits are effective on January 1, 2020 through December 30, 2024. The final effluent limits are effective on December 31, 2024.

When only one sample is collected during a month, the one sample is compared to both the average monthly and maximum daily limits.

d Minimum daily effluent limit is the lowest allowable daily discharge. The daily discharge is the minimum discharge of a pollutant measured during a calendar day.

Effluent Limits: Outfall 005
Latitude 47.25378 - Longitude -122.38932

Parameter	Average Monthly ^a	Maximum Daily ^b
Oil and Grease	-	15 mg/L
Copper, Total ^c	Interim Limit – 8.0 µg/L	Interim Limit – 12.3 µg/L Final Limit – 5.8 µg/L
Parameter	Minimum Daily ^d	Maximum Daily ^b
pH	5.0 standard units	9.0 standard units

Footnotes:

a Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month. To calculate the discharge value to compare to the limit, add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured.

b Maximum daily effluent limit is the highest allowable daily discharge. The daily discharge is the average discharge of a pollutant measured during a calendar day. For pH, the daily discharge is the maximum discharge of a pollutant measured during a calendar day.

c The interim numeric effluent limits are effective on January 1, 2020 through December 30, 2024. The final effluent limits are effective on December 31, 2024.

When only one sample is collected during a month, the one sample is compared to both the average monthly and maximum daily limits.

d Minimum daily effluent limit is the lowest allowable daily discharge. The daily discharge is the minimum discharge of a pollutant measured during a calendar day.

S1.F. Stormwater Discharges at Outfall 006

All discharges and activities authorized by this permit must be consistent with the terms and conditions of this permit.

The discharge of any of the following pollutants more frequently than, or at a level in excess of that identified and authorized by this permit violates the terms and conditions of this permit.

Beginning on the effective date of this permit, the Permittee must route all stormwater from the Outfall 006 drainage area to Outfall 005.

The Permittee must notify Ecology 30 days in advance of any change in discharge at Outfall 006. A change in discharge at Outfall 006 means a change in operational status from inactive to active.

While Outfall 006 is inactive, the Permittee is not required to meet the interim and final limits in Special Condition S1.F, the stormwater requirements in Special Condition S1.H, and the monitoring requirements in Special Condition S2. The Permittee cannot discharge firewater through Outfall 006 as specified in Special Condition S1.I while Outfall 006 is inactive.

Beginning 30 days after notifying Ecology that the Permittee plans to change the inactive status of Outfall 006 to active, the Permittee is required to meet the interim and final limits in Special Condition S1.F, the stormwater requirements in Special Condition S1.H, and the monitoring requirements in Special Condition S2.

The Permittee must follow the requirements of Special Condition S15 for Outfall 006 regardless of where the stormwater from the Outfall 006 drainage area is being routed or discharged.

Beginning 30 days after notifying Ecology that the Permittee plans to discharge stormwater through Outfall 006, the Permittee is authorized to discharge stormwater from industrial activities to the Blair Waterway at this location subject to complying with the following limits:

Effluent Limits: Outfall 006
Latitude 47.25705 - Longitude -122.38875

Parameter	Average Monthly ^a	Maximum Daily ^b
Oil and Grease	-	15 mg/L
Copper, Total ^c	Interim Limit – 19.3 µg/L	Interim Limit – 24.0 µg/L Final Limit – 5.8 µg/L
Zinc, Total ^c	Interim Limit – 78.5 µg/L	Interim Limit – 102.1 µg/L Final Limit – 95.1 µg/L
Parameter	Minimum Daily ^d	Maximum Daily ^b
pH	5.0 standard units	9.0 standard units

Footnotes:

a Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month. To calculate the discharge value to compare to the limit, add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured.

b Maximum daily effluent limit is the highest allowable daily discharge. The daily discharge is the average discharge of a pollutant measured during a calendar day. For pH, the daily discharge is the maximum discharge of a pollutant measured during a calendar day.

c The interim numeric effluent limits are effective on January 1, 2020 through December 30, 2024. The final effluent limits are effective on December 31, 2024. When only one sample is collected during a month, the one sample is compared to both the average monthly and maximum daily limits.

S1.G. Stormwater Discharges at Outfall 003

All discharges and activities authorized by this permit must be consistent with the terms and conditions of this permit.

The discharge of any of the following pollutants more frequently than, or at a level in excess of that identified and authorized by this permit violates the terms and conditions of this permit.

Beginning on the effective date of this permit, the Permittee is authorized to discharge stormwater from industrial activities to groundwater at the permitted location below subject to complying with the following limits:

Effluent Limits: Outfall 003
Latitude 47.26483 - Longitude -122.39807

Parameter	Minimum Daily ^a	Maximum Daily ^b
Oil and Grease	-	15 milligrams/liter
pH	5.0	9.0

Footnotes:

a Minimum daily effluent limit is the lowest allowable daily discharge. The daily discharge is the minimum discharge of a pollutant measured during a calendar day.

b Maximum daily effluent limit is the highest allowable daily discharge. The daily discharge is the average discharge of a pollutant measured during a calendar day.

S1.H. Stormwater Benchmarks, Prohibitions, and Monitoring Requirements at Outfalls 001B, 002, 003, 004, 005, and 006

1. Authorized Stormwater

Beginning on the effective date of this permit, the Permittee is authorized to discharge stormwater from Outfalls 001B, 002, 003, 004, 005, and 006 to waters of the state. All discharges and activities authorized by this permit must be consistent with the terms and conditions of this permit.

Discharges must not cause or contribute to a violation of Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Quality Standards (Chapter 173-200 WAC), or Sediment Management Standards (Chapter 173-204 WAC). Discharges that are not in compliance with these standards are prohibited.

2. General Prohibitions

The Permittee must manage all stormwater discharges to prevent the discharge of crude, synthetic or processed oil, or oil-containing products as identified by an oil sheen.

3. Monitoring Requirements

Beginning on the effective date of the permit, the Permittee must monitor stormwater from Outfalls 001B, 002, 003, 004, 005, and 006 as follows:

Parameter	Outfalls	Benchmark Value	Monitoring Frequency	Sample Type
Turbidity in Nephelometric Turbidity Units (NTU)	001B, 002, 004, 005, and 006	25	Quarterly	Grab
Oil Sheen	001B, 002, 003, 004, 005, and 006	No visible sheen	Monthly	Visual Observation

- a. After eight quarters of turbidity monitoring (not including quarters where there was no discharge), the Permittee may petition Ecology to reduce or suspend monitoring for turbidity.
- b. Quarters are defined as:
 - First Quarter – January, February, March
 - Second Quarter – April, May, June
 - Third Quarter – July, August, September
 - Fourth Quarter – October, November, December

If there is no discharge during an entire quarter, the Permittee must submit a discharge monitoring report to Ecology stating that no discharge occurred.

The Permittee must:

- i. Collect samples that are representative of the flow and characteristics of the discharge.
- ii. Visually monitor the discharge at the time of sample collection. Visual monitoring must include observations of the presence of floating materials, visible sheen, discoloration, turbidity, odor, etc. in the stormwater discharge.
- iii. Submit monitoring data and visual monitoring observations with the monthly discharge monitoring report (DMR).

The Permittee must sample the stormwater discharges from Outfalls 001B, 002, 004, 005, and 006 during the first fall storm event each year. “First fall storm event” means the first time after October 1st of each year that precipitation occurs and results in a stormwater discharge from a facility.

The Permittee must collect samples within the first 12 hours of stormwater discharge events.

If it is not possible to collect a sample within the first 12 hours of a stormwater discharge event, the Permittee must collect the sample as soon as practicable after the first 12 hours, and keep documentation with the sampling records explaining why they could not collect samples within the first 12 hours.

The Permittee is not required to sample outside of regular environmental staff business hours (Monday-Friday from 8:00 am – 5:00 pm), during unsafe conditions, or during years when there is no discharge.

For each stormwater sample taken, the Permittee must record the following information and retain it on-site for Ecology review for each stormwater sample taken.

- a. Sample date.
- b. Sample time.
- c. A notation describing if the Permittee collected the sample within the first 12 hours of stormwater discharge events.
- d. An explanation of why a sample could not be collected within the first 12 hours of a stormwater discharge event, if it was not possible.
- e. Sample location (using Pollution Prevention Plan identifying number).
- f. Method of sampling, and method of sample preservation, if applicable.
- g. Individual who performed the sampling.

If a stormwater sample was not collected from the site during a given reporting period, the Permittee must submit a report indicating “no sample collected” or “no discharge during the year,” as applicable.

The Permittee must conduct and document visual inspections of Outfalls 001B, 002, 003, 004, 005, and 006 each month. The inspections must be conducted by qualified personnel.

Each inspection must include visual observations made at the stormwater sampling locations and areas where the stormwater is discharged off-site. The inspection must include observations for the presence of floating materials, visible sheen, discoloration, turbidity, odor, or presence of illicit discharges. The inspection must include an assessment of all BMPs that have been implemented, the effectiveness of the BMPs, and whether any maintenance or changes in BMPs are needed.

If an illicit discharge is discovered, the Permittee must notify Ecology within 7 days. The Permittee must eliminate the illicit discharge within 30 days.

The Permittee must record the results of each inspection including:

1. Time and date of the inspection.
2. Locations inspected.

3. Any observations of non-compliance and the remedial actions the Permittee plans to take.
4. Name, title, and signature of the person conducting the inspection.

The Permittee must submit the results of quarterly stormwater monitoring and monthly visual inspections to Ecology by the due dates below:

Reporting Period	Months	Quarterly Results
1 st Quarter	January, February, and March	May 15
2 nd Quarter	April, May, and June	August 15
3 rd Quarter	July, August, and September	November 15
4 th Quarter	October, November, and December	February 15

4. Response to Monitoring Results Above Benchmark Values

Each time that sampling results are above the turbidity benchmark value or there is a visible sheen for the oil sheen benchmark, the Permittee must take the following actions:

- a. Conduct an inspection of the drainage area for the affected outfall to investigate the cause of the benchmark exceedance as promptly as possible, but no later than one week after receipt of sampling results.
- b. Identify the possible sources of stormwater contamination from industrial activity that are causing or contributing to the elevated levels of the benchmark parameter.
- c. Review the Pollution Prevention Plan and ensure that it fully complies with the stormwater pollution prevention requirements of Special Condition S10 and contains the correct best management practices (BMPs) from the *Stormwater Management Manual for Western Washington*.
- d. Evaluate whether any improvements or changes to existing BMPs or additional operational source control, structural source control, or treatment BMPs are warranted to reduce stormwater contamination below the benchmark value.

Any elevated benchmark parameter levels demonstrated to be attributable to vegetative or naturally-occurring conditions do not require additional BMPs.

- e. Implement changes to existing BMPs or additional BMPs identified as needed in the investigation within 90 days of the benchmark exceedance for operational source control BMPs and within 6 months of the benchmark exceedance for structural source control BMPs.

Submit an engineering report to Ecology in accordance with Chapter 173-240 WAC within 9 months of the benchmark exceedance for treatment BMPs. Implement changes to treatment BMPs or construct new treatment BMPs on the schedule in the engineering report approved by Ecology.

The Permittee may petition Ecology to extend these deadlines on a case-by-case basis.

Ecology may waive the requirement for additional controls and/or BMPs based on a technical demonstration by the Permittee that implementation of additional controls is not feasible or not necessary to prevent discharges that may cause or contribute to a violation of a water quality standard.

- f. Include a brief summary of inspection results and remedial actions taken with the monitoring report for the time period in which sample results were above benchmark values.

S1.I. Firewater Discharges

The Permittee is authorized to discharge clean firewater water through Outfalls 001B, 002, 003, 004, 005, 006, or from the dockside firewater system during monthly testing of hydrants and the dockside fire suppression system. The Permittee must report firewater testing on the monthly discharge monitoring report. Duration and an estimated flow volume must be reported.

S2. Monitoring Requirements

S2.A. Monitoring Schedule

The Permittee must monitor in accordance with the following schedule and the requirements specified in Appendix B.

Parameter	Units & Speciation	Minimum Sampling Frequency ^a	Sample Type ^b
(1) Orbal Wastewater Influent			
Flow	million gallons/day (MGD)	Continuous	Metered/recorded
Biochemical Oxygen Demand (5-day) (BOD ₅)	milligrams/liter (mg/L)	Weekly	Composite Sample (24 hour)
BOD ₅	pounds/day (lbs/day)	Weekly	Calculated
(2) Wastewater Effluent at Outfall 001A			
Flow	MGD	Continuous	Metered/recorded
BOD ₅	mg/L and lbs/day	Weekly	Composite Sample (24 hour)

Parameter	Units & Speciation	Minimum Sampling Frequency ^a	Sample Type ^b
Chemical Oxygen Demand	mg/L and lbs/day	Weekly	Composite Sample (24 hour)
Total Suspended Solids	mg/L and lbs/day	1/Day	Composite Sample (24 hour)
Oil and Grease	mg/L and lbs/day	1/Day	Grab
Phenolic Compounds	mg/L and lbs/day	Bimonthly	Composite Sample (24 hour)
Ammonia as Nitrogen	mg/L and lbs/day	Weekly	Composite Sample (24 hour)
Sulfide	mg/L and lbs/day	2/Month	Grab
Hexavalent Chromium	micrograms/liter (µg/L) and lbs/day	Annually	Composite Sample (24 hour)
pH ^c	standard units	Continuous	Metered/recorded
Temperature ^d	degrees Fahrenheit (°F)	Continuous	Metered/recorded
Zinc, Total ^e	µg/L	Quarterly	Composite Sample (24 hour)
(3) Nutrient Monitoring at Outfall 001A ^f			
Particulate Organic Carbon	mg/L	Monthly	Composite Sample (24 hour)
Total Organic Carbon	mg/L	Monthly	Composite Sample (24 hour)
Dissolved Organic Carbon	mg/L	Monthly	Composite Sample (24 hour)
Ammonia as Nitrogen	mg/L	Monthly	Composite Sample (24 hour)
Nitrate as Nitrogen	mg/L	Monthly	Composite Sample (24 hour)
Nitrite as Nitrogen	mg/L	Monthly	Composite Sample (24 hour)
Total Kjeldahl Nitrogen (filtered and unfiltered)	mg/L	Monthly	Composite Sample (24 hour)

Parameter	Units & Speciation	Minimum Sampling Frequency ^a	Sample Type ^b
Total Phosphorus (filtered and unfiltered)	mg/L	Monthly	Composite Sample (24 hour)
Soluble Reactive Phosphorus	mg/L	Monthly	Composite Sample (24 hour)
Carbonaceous Biochemical Oxygen Demand (5-day)	mg/L	Monthly	Composite Sample (24 hour)
Alkalinity	mg/L	Monthly	Composite Sample (24 hour)
(4) Stormwater at Outfall 001B			
Oil and Grease	mg/L	Monthly	Grab
Copper, Total	µg/L	Annually, 2/Month, Monthly ^g	Grab
Zinc, Total	µg/L	Annually, 2/Month, Monthly ^g	Grab
pH	standard units	Monthly	Grab
Turbidity	NTU	Quarterly	Grab
Oil Sheen	No visible sheen	Monthly	Visual Observation
Duration	Minutes	Once per defined event	Estimated
Flow	Gallons	Once per defined event	Estimated
(5) Stormwater at Outfall 002			
Oil and Grease	mg/L	Monthly	Grab
Copper, Total	µg/L	Annually, 2/Month, Monthly ^g	Grab
Zinc, Total	µg/L	Annually, 2/Month, Monthly ^g	Grab
pH	standard units	Monthly	Grab
Turbidity	NTU	Quarterly	Grab
Oil Sheen	No visible sheen	Monthly	Visual Observation
Duration	Minutes	Once per defined event	Estimated

Parameter	Units & Speciation	Minimum Sampling Frequency ^a	Sample Type ^b
Flow	Gallons	Once per defined event	Estimated
(6) Stormwater at Outfall 003			
Oil and Grease	mg/L	Monthly	Grab
pH	standard units	Monthly	Grab
Oil Sheen	No visible sheen	Monthly	Visual Observation
Duration	Minutes	Once per defined event	Estimated
Flow	Gallons	Once per defined event	Estimated
(7) Stormwater at Outfall 004			
Oil and Grease	mg/L	Monthly	Grab
Copper, Total	µg/L	Annually, 2/Month, Monthly ^g	Grab
Zinc, Total	µg/L	Annually, 2/Month, Monthly ^g	Grab
pH	standard units	Monthly	Grab
Turbidity	NTU	Quarterly	Grab
Oil Sheen	No visible sheen	Monthly	Visual Observation
Duration	Minutes	Once per defined event	Estimated
Flow	Gallons	Once per defined event	Estimated
(8) Stormwater at Outfall 005			
Oil and Grease	mg/L	Monthly	Grab
Copper, Total	µg/L	Quarterly, 2/Month, Monthly ^h	Grab
Zinc, Total	µg/L	Quarterly, 2/Month, Monthly ^h	Grab
pH	standard units	Monthly	Grab
Turbidity	NTU	Quarterly	Grab
Oil Sheen	No visible sheen	Monthly	Visual Observation
Duration	Minutes	Once per defined event	Estimated

Parameter	Units & Speciation	Minimum Sampling Frequency ^a	Sample Type ^b
Flow	Gallons	Once per defined event	Estimated
(9) Stormwater at Outfall 006			
Oil and Grease	mg/L	Monthly	Grab
Copper, Total	µg/L	Quarterly, 2/Month, Monthly ^h	Grab
Zinc, Total	µg/L	Quarterly, 2/Month, Monthly ^h	Grab
pH	standard units	Monthly	Grab
Turbidity	NTU	Quarterly	Grab
Oil Sheen	No visible sheen	Monthly	Visual Observation
Duration	Minutes	Once per defined event	Estimated
Flow	Gallons	Once per defined event	Estimated
(10) Dockside Firewater System			
Duration	Minutes	Once per defined event	Estimated
Flow	Gallons	Once per defined event	Estimated
(11) Priority Pollutant Monitoring – Wastewater Effluent at Outfall 001A			
See Appendix B to identify the specific pollutants in the priority pollutant groups listed below.			
Cyanides	µg/L	Annually	Grab
Total Phenolic Compounds	µg/L	Annually	Grab
Priority Pollutants (PP) – Total Metals	µg/L; ng/L for mercury	Annually	Composite Sample (24 hour) Grab for mercury
PP – Acid-extractable Compounds	µg/L	Annually	Composite Sample (24 hour)
PP – Volatile Organic Compounds	µg/L	Annually	Grab
PP – Base-neutral Compounds	µg/L	Annually	Composite Sample (24 hour)

Parameter	Units & Speciation	Minimum Sampling Frequency ^a	Sample Type ^b
PP – Dioxin	pg/L	Annually	Composite Sample (24 hour)
PP – Pesticides/PCBs ⁱ	µg/L	Annually	Composite Sample (24 hour)
(12) Priority Pollutant Monitoring – Stormwater at Outfalls 001B, 002, 003, 004, 005, and 006			
See Appendix B to identify the specific pollutants in the priority pollutant group listed below.			
PP – Total Metals	µg/L; ng/L for mercury	2/Permit Cycle	Grab
(13) Production			
Feedstock Rate ^j	Barrels/stream day	1/Day - recorded but not reported	Calculated
(14) Precipitation at Rain Gauge			
Precipitation	Inches	1/Day	Measurement
(15) Permit Renewal Application Requirements – Wastewater Effluent at Outfall 001A			
See parameters required by the permit application renewal form EPA Form 2C available at https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-quality-permits/Water-Quality-individual-permits .			
(16) Permit Renewal Application Requirements – Stormwater at Outfalls 001B, 002, 003, 004, 005, and 006			
See parameters required by the permit application renewal form EPA Form 2F available at https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-quality-permits/Water-Quality-individual-permits .			
(17) Dioxin Study			
As specified in Special Condition S11.			
(18) Sediment Monitoring			
As specified in Special Condition S12.			
(19) Acute Whole Effluent Toxicity Testing – Final Wastewater Effluent			
As specified in Special Condition S13.			
(20) Chronic Whole Effluent Toxicity Testing – Final Wastewater Effluent			
As specified in Special Condition S14.			
(21) AKART Analysis and Engineering Report			
As specified in Special Condition S15.			
(22) Receiving Water Metals Study			

Parameter	Units & Speciation	Minimum Sampling Frequency ^a	Sample Type ^b
As specified in Special Condition S17.			
(23) Construction Stormwater			
As specified in Special Condition S19.			

Footnotes:

a Continuous means uninterrupted except for brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance. The time interval for the associated data logger must be no greater than 30 minutes. The Permittee must sample one time per day when continuous monitoring is not possible.

Weekly means once per week.

1/Day means once per day (daily).

Bimonthly means once every two months.

2/Month means twice every month.

Annually means once per year.

Monthly means once per month.

Once per defined event means when the Permittee discharges clean firewater water through Outfalls 001B, 002, 003, 004, 005, 006, or from the dockside firewater system during monthly testing of hydrants and the dockside fire suppression system.

Quarterly means once per quarter. Quarterly sampling periods are January through March, April through June, July through September, and October through December. The Permittee must begin quarterly monitoring for the quarter beginning on January 1, 2020 and submit results by April 15, 2020.

2/Permit Cycle means twice during the permit cycle after the Permittee implements changes to existing BMPs and/or implements new BMPs as recommended in the approved AKART Analysis and Engineering Report. Samples should be taken at least one month between sampling events.

1/Day - recorded but not reported means the feedstock rate is calculated once per day but the Permittee only reports the monthly average feedstock rate.

1/Day means once per day.

b Metered/recorded means recording meters such as for flow, temperature, and pH.

Composite Sample (24 hour) means a series of individual samples collected over a 24-hour period into a single container, and analyzed as one sample.

Calculated (for BOD5) means using the following formula: Concentration (in mg/L) X Flow (in MGD) X Conversion Factor (8.34) = lbs/day.

Grab means an individual sample collected over a fifteen (15) minute, or less, period.

Visual observation means visually monitoring the discharge at the time of sample collection. Visual monitoring must include observations of the presence of floating materials, visible sheen, discoloration, turbidity, odor, etc. in the stormwater discharge.

Estimated means an approximation of the duration and flow volume when the Permittee discharges clean firewater water.

Calculated (for Feedstock Rate) means using process meters to determine the throughput of crude oil.

Measurement means measured on site in the Permittee's rain gauge.

c The Permittee must record and report the:

- Number of minutes the pH value measured between 5.0 and 6.0 and between 9.0 and 10.0 for each day.
- Total minutes for the month.
- Monthly instantaneous maximum and minimum pH.

If multiple excursions occur during the day, note the duration for each excursion in the notation field in the parameter notes. Do not average pH values.

d Temperature grab sampling must occur when the effluent is at or near its daily maximum temperature, which usually occurs in the late afternoon. If measuring temperature continuously, the Permittee must determine and report a daily maximum from half-hour measurements in a 24-hour period. Continuous monitoring instruments must achieve an accuracy of 0.2 degrees C and the Permittee must verify accuracy annually.

e The Permittee may request a reduction of the sampling frequency after three (3) years of monitoring. Ecology will review the request and at its discretion grant the request when it reissues the permit or by a permit modification. The Permittee must provide a written request, state the request is for reduced monitoring for zinc at Outfall 001A, and provide the justification for the reduction.

f The Permittee must monitor for nutrients at Outfall 001A during the last three years of the permit cycle.

The weekly ammonia as nitrogen monitoring from Wastewater Effluent at Outfall 001A counts toward the monthly ammonia as nitrogen monitoring from Nutrient Monitoring at Outfall 001A. The Permittee is not required to sample additional ammonia as nitrogen monitoring for the Nutrient Monitoring at Outfall 001A.

g For stormwater Outfalls 001B, 002, and 004, annual monitoring is required from the effective date of the permit until the Permittee implements changes to existing BMPs and/or implements new BMPs as recommended in the approved AKART Analysis and Engineering Report. Twice monthly monitoring is required to begin once the Permittee implements changes to existing BMPs and/or implements new BMPs as recommended in the approved AKART Analysis and Engineering Report. Twice monthly monitoring is required for one year. After the one year of twice monthly monitoring is completed, the Permittee must sample at least monthly.

h For stormwater Outfalls 005 and 006, quarterly monitoring is required from the effective date of the permit until the Permittee implements changes to existing BMPs and/or implements new BMPs as recommended in the approved AKART Analysis and Engineering Report. Twice monthly monitoring is required to begin once the Permittee implements changes to existing BMPs and/or implements new BMPs as recommended in the approved AKART Analysis and Engineering Report. Twice monthly monitoring is required for one year. After the one year of twice monthly monitoring is completed, the Permittee must sample at least monthly.

i The Permittee must sample pesticides and polychlorinated biphenyls (PCBs) only if the Permittee uses pesticides and PCBs onsite.

j The average daily crude throughput must be reported in the monthly discharge monitoring report.

S2.B. Sampling and Analytical Procedures

Samples and measurements taken to meet the requirements of this permit must represent the volume and nature of the monitored parameters, including representative sampling of any unusual discharge or discharge condition, including bypasses, upsets, and maintenance-related conditions affecting effluent quality.

After a portion of the daily composite sample is removed for the Permittee's analysis, the remainder, 2 gallons (minimum) must be retained until 3:00 pm of the following day. The composite sample must be kept refrigerated at or below 6 degrees Celsius in the dark during collection and storage.

On days when the discharge occurs over a period of time too short to collect sufficient sample for testing and retainage, hourly grab samples can be used to provide sufficient volume for testing and retainage.

Sampling and analytical methods used to meet the monitoring requirements specified in this permit must conform to the latest revision of the Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136 (or as applicable in 40 CFR subchapters N [Parts 400–471] or O [Parts 501-503]) unless otherwise specified in this permit. Ecology may only specify alternative methods for parameters without limits and for those parameters without an EPA approved test method in 40 CFR Part 136.

S2.C. Flow Measurement, Field Measurement, and Continuous Monitoring Devices

The Permittee must:

1. Select and use appropriate flow measurement, field measurement, and continuous monitoring devices and methods consistent with accepted scientific practices.
2. Install, calibrate, and maintain these devices to ensure the accuracy of the measurements is consistent with the accepted industry standard, the manufacturer's recommendation, and approved O&M manual procedures for the device and the wastestream.
3. Calibrate continuous monitoring instruments weekly unless it can demonstrate a longer period is sufficient based on monitoring records. The Permittee:
 - a. If applicable, must calibrate apparatus for continuous monitoring of dissolved oxygen by air calibration.
 - b. Must calibrate continuous pH measurement instruments using a grab sample analyzed in the laboratory with a pH meter calibrated with standard buffers and analyzed within 15 minutes of sampling.
 - c. If applicable, must calibrate continuous chlorine measurement instruments using a grab sample analyzed in the laboratory within 15 minutes of sampling.
4. If applicable, calibrate micro-recording temperature devices, known as thermistors, using protocols from Ecology's Quality Assurance Project Plan Development Tool (*Standard Operating Procedures for Continuous Temperature Monitoring of Fresh Water Rivers and Streams Version 1.0 10/26/2011*). This document is available online at: <https://fortress.wa.gov/ecy/publications/summarypages/1703216.pdf>.

Calibration as specified in this document is not required if the Permittee uses recording devices certified by the manufacturer.

5. If applicable, must calibrate thermocouples as directed by the manufacturer.
6. Use field measurement devices as directed by the manufacturer and do not use reagents beyond their expiration dates.
7. Establish a calibration frequency for each device or instrument in the O&M manual that conforms to the frequency recommended by the manufacturer.
8. Calibrate flow-monitoring devices at a minimum frequency of at least one calibration per year.
9. Maintain calibration records for at least three years.

S2.D. Laboratory Accreditation

The Permittee must ensure that all monitoring data required by Ecology for permit specified parameters is prepared by a laboratory registered or accredited under the provisions of chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. Flow, temperature, settleable solids, conductivity, pH, and internal process control parameters are exempt from this requirement. The Permittee must obtain accreditation for conductivity and pH if it must receive accreditation or registration for other parameters. If the Permittee does not perform conductivity testing at the facility, the Permittee does not need to receive accreditation for conductivity.

S2.E. Request for Reduction in Monitoring

The Permittee may request a reduction of the sampling frequency after twelve (12) months of monitoring, unless otherwise specified in this permit. Ecology will review each request and at its discretion grant the request when it reissues the permit or by a permit modification.

The Permittee must:

1. Provide a written request.
2. Clearly state the parameters for which it is requesting reduced monitoring.
3. Clearly state the justification for the reduction.

S3. Reporting and Recording Requirements

The Permittee must monitor and report in accordance with the following conditions. Falsification of information submitted to Ecology is a violation of the terms and conditions of this permit.

S3.A. Discharge Monitoring Reports

The first monitoring period begins on the effective date of the permit (unless otherwise specified). The Permittee must:

1. Summarize, report, and submit monitoring data obtained during each monitoring period on the electronic discharge monitoring report (DMR) form provided by Ecology within the Water Quality Permitting Portal. Include data for each of the parameters tabulated in Special Condition S2 and as required by the form. Report a value for each day sampling occurred (unless specifically exempted in the permit) and for the summary values (when applicable) included on the electronic form. To find out more information and to sign up for the Water Quality Permitting Portal go to:
<https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-database/>.
2. Ensure that DMRs are electronically submitted no later than the dates specified below, unless otherwise specified in this permit.
3. Submit DMRs for parameters with the monitoring frequencies specified in Special Condition S2 (monthly, quarterly, annual, etc.) at the reporting schedule identified below. The Permittee must:
 - a. Submit **monthly DMRs** by the 15th day of the following month.
 - b. Submit **bimonthly DMRs**, unless otherwise specified in the permit, by the 15th day of the month following the monitoring period. Bimonthly sampling periods are January through February, March through April, May through June, July through August, September through October, and November through December. The Permittee must submit the first bimonthly DMR on March 15, 2020 for the bimonthly sampling period beginning on January 1, 2020.
 - c. Submit **quarterly DMRs**, unless otherwise specified in the permit, by the 15th day of the month following the monitoring period. Quarterly sampling periods are January through March, April through June, July through September, and October through December. The Permittee must submit the first quarterly DMR on April 15, 2020 for the quarter beginning on January 1, 2020.
 - d. Submit **annual DMRs**, including priority pollutant sample results, unless otherwise specified in the permit, by January 15 for the previous calendar year. The annual sampling period is the calendar year.

The Permittee must submit the first annual DMR on January 15, 2021 for the annual sampling period beginning on January 1, 2020.
4. Enter the “No Discharge” reporting code for an entire DMR, for a specific monitoring point, or for a specific parameter as appropriate, if the Permittee did not discharge wastewater or a specific pollutant during a given monitoring period.
5. Report single analytical values below detection as “less than the detection level (DL)” by entering < followed by the numeric value of the detection level (e.g. < 2.0) on the DMR.

If the method used did not meet the minimum DL and quantitation level (QL) identified in the permit, report the actual QL and DL in the comments or in the location provided.

6. Report single analytical values between the detection level (DL) and the quantitation level (QL) by entering the estimated value, the code for estimated value/below quantitation limit (j) and any additional information in the comments. Submit a copy of the laboratory report as an attachment using WQWebDMR.
7. Report the test method used for analysis in the comments if the laboratory used an alternative method not specified in the permit and as allowed in Appendix B.
8. Calculate average values and calculated total values (unless otherwise specified in the permit) using:
 - a. The reported numeric value for all parameters measured between the detection value and the quantitation value for the sample analysis.
 - b. One-half the detection value (for values reported below detection) if the laboratory detected the parameter in another sample from the same monitoring point for the reporting period.
 - c. Zero (for values reported below detection) if the laboratory did not detect the parameter in another sample for the reporting period.
9. Report single-sample grouped parameters (for example: priority pollutants) on the WQWebDMR form and include: sample date, concentration detected, detection limit (DL) (as necessary), and laboratory quantitation level (QL) (as necessary).
10. Submit an electronic copy of the contract laboratory report as an attachment using WQWebDMR for single-sample grouped parameters. The contract laboratory reports must also include information on the chain of custody, quality assurance/quality control results, and documentation of accreditation for the parameter.

S3.B. Permit Submittals and Schedules

The Permittee must use the Water Quality Permitting Portal – Permit Submittals application (unless otherwise specified in the permit) to submit all other written permit-required reports by the date specified in the permit.

When another permit condition requires submittal of a paper (hard-copy) report, the Permittee must ensure that it is postmarked or received by Ecology no later than the dates specified by this permit. Send these paper reports to Ecology at:

Water Quality Permit Coordinator
Department of Ecology
Industrial Section
PO Box 47600
Olympia, WA 98504-7600

S3.C. Records Retention

The Permittee must retain records of all monitoring information for a minimum of three (3) years. Such information must include all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit.

The Permittee must extend this period of retention during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology.

S3.D. Recording of Results

For each measurement or sample taken, the Permittee must record the following information:

1. The date, exact place, method, and time of sampling or measurement.
2. The individual who performed the sampling or measurement.
3. The dates the analyses were performed.
4. The individual who performed the analyses.
5. The analytical techniques or methods used.
6. The results of all analyses.

S3.E. Additional Monitoring by the Permittee

If the Permittee monitors any pollutant more frequently than required by Special Condition S2 of this permit, then the Permittee must include the results of such monitoring in the calculation and reporting of the data submitted in the Permittee's DMR unless otherwise specified by Special Condition S2.

S3.F. Reporting Permit Violations

The Permittee must take the following actions when it violates or is unable to comply with any permit condition:

1. Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance and correct the problem.
2. If applicable, immediately repeat sampling and analysis. Submit the results of any repeat sampling to Ecology within thirty (30) days of sampling.

a. Immediate Reporting

The Permittee must immediately report to Ecology and the Department of Health, Shellfish Program (at the numbers listed below), all:

- Collection system overflows discharging to marine surface waters.
- Plant bypasses discharging to marine surface waters.

Southwest Regional Office
Department of Health
Shellfish Program

360-407-6300
360-236-3330 (business hours)
360-789-8962 (after business hours)

b. Twenty-Four-Hour Reporting

The Permittee must report the following occurrences of noncompliance by telephone, to the telephone numbers listed above and the Ecology Industrial Section permit manager, within 24 hours from the time the Permittee becomes aware of any of the following circumstances:

1. Any noncompliance that may endanger health or the environment, unless previously reported under immediate reporting requirements.
2. Any unanticipated bypass that causes an exceedance of any effluent limit in the permit (see Special Condition S4.B, "Bypass Procedures").
3. Any upset that causes an exceedance of an effluent limit in the permit (see General Condition G15, "Upset").
4. Any violation of a maximum daily or instantaneous maximum discharge limit for any of the pollutants in Special Conditions S1.A, S1.D, S1.E, S1.F, and S1.G of this permit.
5. Any overflow prior to the treatment works, whether or not such overflow endangers health or the environment or exceeds any effluent limit in the permit. This requirement does not include industrial process wastewater overflows to impermeable surfaces which are collected and routed to the treatment works.

c. Report within Five Days

The Permittee must also submit a written report within five days of the time that the Permittee becomes aware of any reportable event under subparts a or b, above. The report must contain:

1. A description of the noncompliance and its cause.
2. The period of noncompliance, including exact dates and times.
3. The estimated time the Permittee expects the noncompliance to continue if not yet corrected.
4. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
5. If the noncompliance involves an overflow prior to the treatment works, an estimate of the quantity (in gallons) of untreated overflow.

d. Waiver of Written Reports

Ecology may waive the written report required in subpart c, above, on a case-by-case basis upon request if the Permittee has submitted a timely oral report.

e. All Other Permit Violation Reporting

The Permittee must report all permit violations, which do not require immediate or within 24 hours reporting, when it submits monitoring reports for Special Condition S3.A. The reports must contain the information listed in subpart c, above. Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.

S3.G. Other Reporting

a. Spills of Oil or Hazardous Materials

The Permittee must report a spill of oil or hazardous materials in accordance with the requirements of RCW 90.56.280 and chapter 173-303-145. To find out more information on how to report a spill of oil or hazardous materials, go to ecology.wa.gov/About-us/Get-involved/Report-an-environmental-issue/Report-a-spill.

b. Failure to Submit Relevant or Correct Facts

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to Ecology, it must submit such facts or information promptly.

S3.H. Maintaining a Copy of this Permit

The Permittee must keep a copy of this permit at the facility and make it available upon request to Ecology inspectors.

S4. Operation and Maintenance

The Permittee must, at all times, properly operate and maintain all facilities or systems of treatment and control (and related appurtenances), which are installed to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes keeping a daily operation logbook (paper or electronic), adequate laboratory controls, and appropriate quality assurance procedures. This provision of the permit requires the Permittee to operate backup or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of this permit.

The Permittee must schedule any facility maintenance, which might require interruption of wastewater treatment and degrade effluent quality, during non-critical water quality periods and carry this maintenance out according to the approved operation and maintenance (O&M) manual or as otherwise approved by Ecology.

S4.A. Operations and Maintenance (O&M) Manual

a. O&M Manual Submittal and Requirements

The Permittee must:

1. Maintain and follow the O&M Manual for the wastewater treatment plant.
2. Review and update the O&M Manual when changes occur at the refinery that significantly affect the volume or character of the wastewater processed by the wastewater treatment plant.
3. Confirm this review by letter to Ecology.
4. Keep the approved O&M Manual at the permitted facility.

b. O&M Manual Components

In addition to the requirements of WAC 173-240-150, the O&M Manual must include:

1. Emergency procedures for plant shutdown and cleanup in the event of a wastewater system upset or failure.
2. Procedures to maintain treatment efficiency during scheduled maintenance operations at the wastewater treatment plant.

c. Treatment System Operating Plan

For the purposes of this permit, a Treatment System Operating Plan (TSOP) is a concise summary of specifically defined elements of the O&M Manual. The TSOP must not conflict with the O&M Manual and must include the following information:

1. A baseline operating condition, which describes the operating parameters and procedures, used to meet the effluent limits of Special Condition S1 at the production levels used in developing these limits.
2. The plan must describe the operating procedures and conditions needed to maintain treatment efficiency at less than design loading conditions.
3. In the event of an upset, due to plant maintenance activities, severe stormwater events, startups or shut downs, or other causes, the plan must describe the operating procedures and conditions employed to mitigate the upset.

4. A description of any regularly scheduled maintenance or repair activities at the facility which would significantly affect the volume or character of the wastes discharged to the wastewater treatment system and a plan for treating/controlling the discharge of maintenance-related materials (such as cleaners, degreasers, solvents, etc.).

The Permittee must submit an updated Treatment System Operating Plan to Ecology by July 1, 2020.

This plan must be updated and submitted to Ecology, as necessary during the permit term, to include requirements for any major modifications to the wastewater treatment system.

S4.B. Bypass Procedures

A bypass is the intentional diversion of waste streams from any portion of a treatment facility. This permit prohibits all bypasses except when the bypass is for essential maintenance, as authorized in Special Condition S4.B.1, or is approved by Ecology as an anticipated bypass following the procedures in Special Condition S4.B.2.

1. Bypass for essential maintenance without the potential to cause violation of permit limits or conditions.

This permit allows bypasses for essential maintenance of the treatment system when necessary to ensure efficient operation of the system. The Permittee may bypass the treatment system for essential maintenance only if doing so does not cause violations of effluent limits. The Permittee is not required to notify Ecology when bypassing for essential maintenance. However the Permittee must comply with the monitoring requirements specified in Special Condition S2.B.

2. Anticipated bypasses for non-essential maintenance.

Ecology may approve an anticipated bypass under the conditions listed below. This permit prohibits any anticipated bypass that is not approved through the following process.

- a. If a bypass is for non-essential maintenance, the Permittee must notify Ecology, if possible, at least ten (10) days before the planned date of bypass. The notice must contain:
 - A description of the bypass and the reason the bypass is necessary.
 - An analysis of all known alternatives which would eliminate, reduce, or mitigate the potential impacts from the proposed bypass.
 - A cost-effectiveness analysis of alternatives.
 - The minimum and maximum duration of bypass under each alternative.
 - A recommendation as to the preferred alternative for conducting the bypass.

- The projected date of bypass initiation.
 - A statement of compliance with SEPA.
 - A request for modification of water quality standards as provided for in WAC 173-201A-410, if an exceedance of any water quality standard is anticipated.
 - Details of the steps taken or planned to reduce, eliminate, and prevent recurrence of the bypass.
- b. For probable construction bypasses, the Permittee must notify Ecology of the need to bypass as early in the planning process as possible. The Permittee must consider the analysis required above during the project planning and design process. The project-specific engineering report as well as the plans and specifications must include details of probable construction bypasses to the extent practical. In cases where the Permittee determines the probable need to bypass early, the Permittee must continue to analyze conditions up to and including the construction period in an effort to minimize or eliminate the bypass.
- c. Ecology will determine if the Permittee has met the conditions of Special Condition S4.B.2 a and b and consider the following prior to issuing a determination letter, an administrative order, or a permit modification as appropriate for an anticipated bypass:
- If the Permittee planned and scheduled the bypass to minimize adverse effects on the public and the environment.
 - If the bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
 - If feasible alternatives to the bypass exist, such as:
 - The use of auxiliary treatment facilities.
 - Retention of untreated wastes.
 - Stopping production.
 - Maintenance during normal periods of equipment downtime, but not if the Permittee should have installed adequate backup equipment in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance.
 - Transport of untreated wastes to another treatment facility.

S5. Solid Wastes

S5.A. Solid Waste Handling

The Permittee must handle and dispose of all solid waste material in such a manner as to prevent its entry into state ground or surface water.

S5.B. Leachate

The Permittee must not allow leachate from its solid waste material to enter state waters without providing all known, available, and reasonable methods of treatment, nor allow such leachate to cause violations of the State Surface Water Quality Standards, Chapter 173-201A WAC, or the State Ground Water Quality Standards, Chapter 173-200 WAC. The Permittee must apply for a permit or permit modification as may be required for such discharges to state ground or surface waters.

S6. Application for Permit Renewal or Modification for Facility Changes

The Permittee must submit an application for renewal of this permit by July 4, 2024 (180 days prior to permit expiration date).

The Permittee must also submit a new application or addendum at least one hundred eighty (180) days prior to commencement of discharges, resulting from the activities listed below, which may result in permit violations. These activities include any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility.

S7. Facility Loading Design Criteria

The flows or waste loads for the permitted facility must not exceed the following design criteria as measured at the influent to the Orbal wastewater treatment unit:

Daily Maximum Design Flow: 750 gallons per minute
Monthly Average BOD₅ Influent Loading: 1,380 pounds per day

S8. Non-Routine and Unanticipated Discharges

1. Beginning on the effective date of this permit, the Permittee is authorized to discharge non-routine wastewater or unanticipated wastewater and therefore not listed on the permit application, on a case-by-case basis if approved by Ecology. Prior to any such discharge, the Permittee must contact Ecology and at a minimum provide the following information:
 - a. The proposed discharge location.
 - b. The nature of the activity that will generate the discharge, for example storage tank hydro test water.
 - c. Any alternatives to the discharge, such as reuse, storage, or recycling of the water.
 - d. The total volume of water it expects to discharge.

- e. The results of the chemical analysis of the water.
 - f. The date of proposed discharge.
 - g. The expected rate of discharge, in gallons per minute.
2. The Permittee must analyze the water for all constituents limited for the discharge and report them as required by subpart 1.e above.
The Permittee must also analyze for: total metals (antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc) and total residual chlorine. The analysis must also include any parameter deemed necessary by Ecology. All discharges must comply with the effluent limits as established in Special Condition S1 of this permit, water quality standards, and any other limits imposed by Ecology.
 3. The Permittee must limit the discharge rate, as referenced in subpart 1.g above, so it will not cause erosion of ditches or structural damage to culverts and their entrances or exits.
 4. The discharge cannot proceed until Ecology has reviewed the information provided and has authorized the discharge by letter to the Permittee or by an Administrative Order. Once approved and if the proposed discharge is to a municipal storm drain that is routed to a publicly owned treatment works (POTW), the Permittee must obtain prior approval from the municipality and notify it when it plans to discharge.

S9. Wastewater Treatment Efficiency Study and Updated Engineering Report

Ecology will require a wastewater treatment efficiency study if the Permittee proposes substantial alterations to the refinery that could cause a material change in the quantity or composition of the influent processed by the wastewater treatment system. In the event that Ecology requires a wastewater treatment efficiency study, the Permittee must submit a study plan for Ecology's review and approval. The Permittee must submit the plan within 90 days of startup of the material and substantial alterations to the refinery.

In addition, the Permittee must update the engineering report for the wastewater treatment system to reflect the information from the new wastewater treatment efficiency study and compare the new conditions to the predicted design capacities. The Permittee must submit the updated engineering report to Ecology for review and approval within 180 days after completion of the wastewater treatment efficiency study.

S10. Pollution Prevention

Pollution prevention planning and activities at the facility include the:

- New pollution prevention projects identified for the upcoming permit cycle in the plan update.

- Standard Operating Procedures (SOPs), Best Management Practices (BMPs), and work practices developed and updated from previous permit pollution plans, stormwater pollution prevention plans (SWPPPs), solid waste control plans, and spill plans.

The Permittee must continue to ensure proper operation and maintenance of the refinery process units and wastewater treatment system by following existing SOPs, BMPs, and work practices.

The Permittee must continue to maintain these procedures and other measures and/or facilities currently employed at the refinery to prevent or minimize the potential for release of pollutants to the wastewater treatment system, stormwater, and/or waters of the state unless modified by the pollution prevention plan updated required below.

Stormwater

Stormwater BMPs must:

- Provide all known, available, and reasonable methods of prevention, control, and treatment (AKART) of stormwater pollution from industrial and construction activities at the site.
- Ensure the discharges do not cause or contribute to a violation of the Water Quality Standards.
- Comply with applicable federal technology-based treatment requirements under 40 CFR 125.3.
- Be consistent with the Stormwater Management Manual for Western Washington (2012 edition as amended in December 2014) or provide an equivalent level of pollution prevention approved by Ecology.

Storage Tank Wastewater

The Permittee must remove wastewater from oil, product, and intermediate distillate storage tanks in a manner and with facilities as required to prevent the wastewater from draining or spilling onto the ground.

S10.A. Pollution Prevention Plan Update and Implementation

The Permittee must update its Pollution Prevention Plan and submit it to Ecology for review and approval by January 1, 2021. The Permittee must implement the approved pollution prevention plan update and any approved modifications to the plan and abide by the timeframes identified throughout the term of the permit.

The objective of this update is to identify any new sources of pollutants, to reevaluate previously identified pollution prevention opportunities, and to identify any new opportunities and implement those that are technically and economically achievable.

Previously identified opportunities include those identified in *Water Pollution Prevention Opportunities in Petroleum Refineries* (Ecology Publication No. 02-07-017) available at <https://fortress.wa.gov/ecy/publications/SummaryPages/0207017.html>.

The update must also include an evaluation of the existing SOPs, BMPs, and work practices developed under previous pollution prevention planning/activities.

Specifically, the Permittee should evaluate the following pollution prevention opportunities: 1) metals in stormwater discharges, 2) identifying and managing stormwater that is potentially impacted by spills of heavy crude oil that may sink and where visual inspectors would not recognize the sunk heavy oil, and 3) dioxins and furans in the effluent.

S10.B. Specific Plan Update Requirements

The Permittee must update the following plan elements as necessary to address changes: the policy statement and signature, employee involvement, training and awareness, descriptions of current pollution prevention activities, and the description of potential pollutants and sources. Appendix C includes references to guidance documents, specific items to be included in the plan, and procedures for identifying, evaluating, and prioritizing pollution prevention opportunities. Other information available to the Permittee may also be used in preparing the plan.

The updated plan must include a schedule for implementation of each newly selected opportunity. If a detailed analysis of technical and economic feasibility for any pollution prevention opportunity will extend beyond the deadline for submitting the updated plan, the Permittee must include a schedule for completing the analysis in the plan submittal. The timeframe for implementing any opportunities scheduled for further evaluation and then selected must be provided in the biennial report.

The Permittee must modify the plan if the Permittee or Ecology determine during inspections or investigations, that existing BMPs are, or would be, ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The Permittee must modify the plan as necessary to include additional or modified BMPs designed to correct problems identified.

The Permittee must modify the plan whenever there is a change in design, construction, operation, or maintenance at the facility that significantly changes the nature of pollutants in wastewater or stormwater from the facility; significantly increases the quantity of pollutants discharged; or causes the pollution prevention plan, existing SOPs, BMPs, or work practices to be less effective in controlling pollutants. The Permittee must provide for implementation of any modifications to the pollution prevention plan in a timely manner.

S10.C. Stormwater Inspections

The Permittee must conduct two stormwater inspections per year; one during the wet season (October 1st through April 30th) and the other during the dry season (May 1st through September 30th).

The Permittee must conduct the wet season inspection during a rainfall event and must include observations of the presence of any floating materials, suspended solids, oil and grease, discolorations, turbidity, odor, etc. in stormwater runoff throughout the refinery that could contribute to a discharge off-site.

The Permittee must conduct the dry season inspection at least ten days after a rainfall event and must determine the presence of unpermitted non-stormwater discharges such as sanitary wastewater, non-contact cooling water, process wastewater, and drainage from raw material/product/waste storage to the stormwater drainage system. If an unpermitted, non-stormwater discharge is discovered, the Permittee must immediately notify Ecology.

Inspections must be conducted by personnel who are knowledgeable and trained in the application of BMPs and pollution prevention activities at the refinery. Results from the stormwater visual inspections must be reported in the pollution prevention plan biennial update reports.

S10.D. Biennial Reporting

The Permittee must periodically evaluate and modify, as necessary, the pollution prevention plan and existing SOPs, BMPs, and work practices to ensure that it has been updated or otherwise modified to reflect current conditions, that measures to reduce or eliminate pollutant loadings selected in the plan are adequate and are being properly implemented in accordance with the terms of the permit, and whether any additional controls are needed.

The Permittee must submit a pollution prevention plan biennial progress report by January 1, 2023 and every two years thereafter.

The report must identify the implementation status of each pollution prevention opportunity selected, and any modification or updates to the plan. The report must also include a summary of the results of stormwater inspections.

S10.E. Continuous Improvement

In maintaining, implementing, and updating the pollution prevention plan, the Permittee should employ continuous improvement principles, including the systematic and ongoing identification, evaluation, and implementation of pollution prevention opportunities in all decisions having environmental consequences.

S11. Dioxin Study

S11.A. Wastewater Sampling

The Permittee must:

1. Sample the final effluent (Outfall 001A) and the upstream wastewater streams from the catalytic reformer units for chlorinated dioxins and furans (2,3,7,8-Cl substituted tetra- through octa-congeners) twice (two different sample events) during the permit cycle.

2. For each sample event, collect a grab sample of the caustic wash from each catalytic reformer unit during two different catalyst regeneration events (one sample for Catalytic Reformer Unit #1 and one sample for Catalytic Reformer Unit #2).
3. Collect a 24-hour composite sample of the final effluent (Outfall 001A) during two different catalyst regeneration events (one sample for Catalytic Reformer Unit #1 and one sample for Catalytic Reformer Unit #2).

Sampling events must be timed to capture effluent that is most likely to contain wastewater generated during the catalytic reformer regeneration events that are sampled for dioxins in the caustic wash water.

4. Conduct the analysis, including sample containers and quality assurance/quality control, in accordance with Method 1613: Tetra- through Octa- Chlorinated Dioxins and Furans by Isotopic Dilution HRGC/HRMS, USEPA Office of Water, Engineering and Analysis Division, Revision A. The Minimum Level (ML) of detection for 2,3,7,8-TCDD/TCDF must be 5 parts per quadrillion or less.
5. Report the lowest detected concentrations of all 2,3,7,8-Cl substituted dioxins and furans that meet the quality assurance specifications of Method 1613, including all detected concentrations below the calibration limits of Method 1613.

S11.B. Dioxin Study Report

The Permittee must submit to Ecology a Dioxin Study Report including the results of the sampling and analysis by July 4, 2024.

The Dioxin Study Report must include: date sampled, total flow for each wash, and the concentration of the 2,3,7,8-Cl substituted tetra- through octa- dioxin and furan congeners from each caustic wash. The Permittee must require the laboratory to report for each sample set: the analytical holding times, summary of internal precision and recovery, calibration data, analysis sequence (run logs), daily checks (ongoing precision and accuracy standards, blanks, instrument checks), quality assurance/quality control data (duplicates, matrix spikes/labeled analog spikes), and raw data (chromatograms).

S12. Sediment Monitoring

S12.A. Sediment Sampling and Analysis Plan

The Permittee must submit to Ecology for review and approval a sediment sampling and analysis plan for sediment monitoring by January 1, 2022.

The purpose of the plan is to recharacterize sediment quality (the nature and extent of chemical contamination and biological toxicity) in the vicinity of the Permittee's discharge from Outfall 001 in the Blair Waterway.

The Permittee must follow the guidance provided in the *Sediment Cleanup User's Manual II, Appendix A: Sampling Guidance for NPDES Permits under the Sediment Management Standards* (Ecology, 2015).

S12.B. Sediment Data Report

Following Ecology approval of the sediment sampling and analysis plan, the Permittee must collect sediments between August 15th and September 30th.

The Permittee must submit to Ecology a sediment data report containing the results of the sediment sampling and analysis no later than January 1, 2024. The sediment data report must conform to the approved sediment sampling and analysis plan. The report must document when the data was successfully loaded into EIM as required below.

In addition to a sediment data report, submit the sediment chemical and biological data to Ecology's EIM database (<https://ecology.wa.gov/Research-Data/Data-resources/Environmental-Information-Management-database/>). Data must be submitted to EIM according to the instructions on the EIM website. The data submittal portion of the EIM website (<https://ecology.wa.gov/Research-Data/Data-resources/Environmental-Information-Management-database/EIM-submit-data/>) provides information and help on formats and requirements for submitting tabular data.

In addition to the EIM data submittal, Ecology's MyEIM tools (<https://ecology.wa.gov/Research-Data/Data-resources/Environmental-Information-Management-database/Using-MyEIM/>) must be used to confirm that the submitted data was accurately entered into EIM. Any differences between the MyEIM analytical results and sediment data report must be identified and explained.

S13. Acute Toxicity

S13.A. Effluent Testing

The Permittee must:

1. Conduct acute toxicity testing on the final effluent twice; once in the summer of 2020 and once in the winter of 2020/2021.
2. The Permittee must submit the first report by November 30, 2020 for the acute toxicity testing on the final effluent from the summer of 2020 and the second report by May 30, 2021 for the acute toxicity testing on the final effluent from the winter of 2020/2021. Further instructions on testing conditions and test report content are in Special Condition S13.G.
3. Use a dilution series consisting of a minimum of five concentrations and a control. The five concentrations should include the ACEC of 50.0% effluent.
4. Conduct the following two acute toxicity tests on each sample:

Acute Toxicity Tests	Species	Method
Fathead minnow 96-hour static-renewal test	<i>Pimephales promelas</i>	EPA-821-R-02-012
Daphnid 48-hour static test	<i>Ceriodaphnia dubia</i> , <i>Daphnia pulex</i> , or <i>Daphnia magna</i>	EPA-821-R-02-012

5. The effluent limit for acute toxicity listed in Special Condition S13.B applies if after one year of effluent testing:
- The median survival of any species in 100% effluent is below 80%.
 - Any one test of any species exhibits less than 65% survival in 100% effluent.

If the limit applies, then the Permittee must follow the instructions in Special Conditions S13.B, S13.C, S13.D, S13.E, S13.F, and S13.G. If the limit does not apply, then the Permittee must follow the instructions in Special Conditions S13.F and S13.G.

S13.B. Effluent Limit for Acute Toxicity

The effluent limit for acute toxicity is:

No acute toxicity detected in a test concentration representing the acute critical effluent concentration (ACEC).

The ACEC means the maximum concentration of effluent during critical conditions at the boundary of the acute mixing zone, defined in Special Condition S1.C of this permit. The ACEC equals 50.0% effluent.

S13.C. Compliance with the Effluent Limit for Acute Toxicity

Compliance with the effluent limit for acute toxicity means the results of the testing specified in Special Condition S13.D show no statistically significant difference in survival between the control and the ACEC.

If the test results show a statistically significant difference in survival between the control and the ACEC, and Ecology has not determined the test result to be anomalous under Special Condition S13.E, and the test is otherwise valid, the result is a violation of the effluent limit for acute toxicity. The Permittee must immediately conduct the additional testing described in Special Condition S13.E.

The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in survival between the control and the ACEC is less than 10%, the Permittee must conduct the hypothesis test at the 0.01 level of significance.

S13.D. Compliance Testing for Acute Toxicity

The Permittee must:

1. Perform the acute toxicity tests with 100% effluent, the ACEC, and a control, or with a full dilution series.
2. Conduct quarterly acute toxicity testing on the final effluent if testing determines that the effluent limit for acute toxicity applies. Testing must begin in the first quarter of 2021. Quarters means January through March, April through June, July through September, and October through December.
3. Submit a quarterly written report to Ecology within 45 days of sampling and starting no later than April 30, 2021. Each subsequent report is due on July 30th, October 30th, January 30th, and April 30th of each year.

Further instructions on testing conditions and test report content are in Special Condition S13.G.

4. The Permittee must perform compliance tests using each of the species and protocols listed below on a rotating basis:

Acute Toxicity Tests	Species	Method
Fathead minnow 96-hour static-renewal test	<i>Pimephales promelas</i>	EPA-821-R-02-012
Daphnid 48-hour static test	<i>Ceriodaphnia dubia</i> , <i>Daphnia pulex</i> , or <i>Daphnia magna</i>	EPA-821-R-02-012

S13.E. Response to Noncompliance with the Effluent Limit for Acute Toxicity

If a toxicity test conducted under Special Condition S13.D determines a statistically significant difference in response between the ACEC and the control, using the statistical test described in Special Condition S13.C, the Permittee must begin additional testing within one week from the time of receiving the test results. The Permittee must:

1. Conduct one additional test each week for four consecutive weeks, using the same test and species as the failed compliance test.
2. Test at least five effluent concentrations and a control to determine appropriate point estimates. One of these effluent concentrations must equal the ACEC. The results of the test at the ACEC will determine compliance with the effluent limit for acute toxicity as described in Special Condition S13.B.
3. Return to the original monitoring frequency in Special Condition S13.D after completion of the additional compliance monitoring.

Anomalous test results: If a toxicity test conducted under Special Condition S13.D indicates noncompliance with the acute toxicity limit and the Permittee believes that the test result is anomalous, the Permittee may notify Ecology that the compliance test result may be anomalous.

The Permittee may take one additional sample for toxicity testing and wait for notification from Ecology before completing the additional testing. The Permittee must submit the notification with the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous.

If Ecology determines that the test result was not anomalous, the Permittee must complete all of the additional monitoring required in this section. Or,

If the one additional sample fails to comply with the effluent limit for acute toxicity, then the Permittee must complete all of the additional monitoring required in this section. Or,

If Ecology determines that the test result was anomalous, the one additional test result will replace the anomalous test result for the purpose of determining compliance with the acute toxicity limit.

If all of the additional testing in Special Condition S13.E.1 complies with the permit limit, the Permittee must submit a report to Ecology on possible causes and preventive measures for the transient toxicity event, which triggered the additional compliance monitoring. This report must include a search of all pertinent and recent facility records, including:

- Operating records
- Monitoring results
- Inspection records
- Spill reports
- Weather records
- Production records
- Raw material purchases
- Pretreatment records, etc.

If the additional testing in this section shows another violation of the acute toxicity limit, the Permittee must submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to Ecology within sixty (60) days after the sample date (WAC 173-205-100(2)).

S13.F. Testing When There is no Permit Limit for Acute Toxicity

The Permittee must:

1. Conduct acute toxicity testing on final effluent once in the last summer and once in the last winter prior to submission of the application for permit renewal.
2. Conduct acute toxicity testing on a series of at least five concentrations of effluent, including 100% effluent and a control.

3. Use each of the following species and protocols for each acute toxicity test:

Acute Toxicity Tests	Species	Method
Fathead minnow 96-hour static-renewal test	<i>Pimephales promelas</i>	EPA-821-R-02-012
Daphnid 48-hour static test	<i>Ceriodaphnia dubia</i> , <i>Daphnia pulex</i> , or <i>Daphnia magna</i>	EPA-821-R-02-012

4. Submit the results to Ecology by July 4, 2024.

S13.G. Sampling and Reporting Requirements

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*.

Reports must contain toxicity data, bench sheets, and reference toxicant results for test methods. In addition, the Permittee must submit toxicity test data in electronic format (CETIS export file preferred) for entry into Ecology's database.

2. The Permittee must collect grab samples for toxicity testing. The Permittee must cool the samples to 0 - 6 degrees Celsius during collection and send them to the lab immediately upon completion. The laboratory must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.
3. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*.
4. All toxicity tests must meet quality assurance criteria and test conditions specified in the most recent versions of the EPA methods listed in Special Condition S13.C and the Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If Ecology determines any test results to be invalid or anomalous, the Permittee must repeat the testing with freshly collected effluent.
5. The laboratory must use control water and dilution water meeting the requirements of the EPA methods listed in Special Condition S13.A or pristine natural water of sufficient quality for good control performance.
6. The Permittee must conduct whole effluent toxicity tests on an unmodified sample of final effluent.
7. The Permittee may choose to conduct a full dilution series test during compliance testing in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control.

The series of concentrations must include the acute critical effluent concentration (ACEC). The ACEC equals 50.0% effluent.

8. All whole effluent toxicity tests, effluent screening tests, and rapid screening tests that involve hypothesis testing must comply with the acute statistical power standard of 29% as defined in WAC 173-205-020. If the test does not meet the power standard, the Permittee must repeat the test on a fresh sample with an increased number of replicates to increase the power.

S14. Chronic Toxicity

S14.A. Effluent Testing

The Permittee must:

1. Conduct chronic toxicity testing on the final effluent twice; once in the summer of 2020 and once in the winter of 2020/2021.
2. The Permittee must submit the first report by November 30, 2020 for the chronic toxicity testing on the final effluent from the summer of 2020 and the second report by May 30, 2021 for the chronic toxicity testing on the final effluent from the winter of 2020/2021. Further instructions on testing conditions and test report content are in Special Condition S13.G
3. Conduct chronic toxicity testing during effluent testing on a series of at least five concentrations of effluent and a control. This series of dilutions must include the acute critical effluent concentration (ACEC). The ACEC equals 50.0% effluent. The series of dilutions should also contain the CCEC of 1.4% effluent.
4. Conduct the following two chronic toxicity tests on each sample:

Saltwater Chronic Test	Species	Method
Topsmelt survival and growth	<i>Atherinops affinis</i>	EPA-821-R-02-012
Mysid shrimp survival and growth	<i>Americamysis bahia</i> (formerly <i>Mysidopsis bahia</i>)	EPA-821-R-02-012

5. The effluent limit for chronic toxicity listed in Special Condition S14.B below applies if after one year of effluent testing any test shows a significant difference between the control and the ACEC at the 0.05 level of significance using hypothesis testing (Appendix H, EPA/600/4-89/001).

If the limit applies, then the Permittee must follow the instructions in Special Conditions S14.B, S14.C, S14.D, S14.E, S14.F, and S14.G.

If the limit does not apply, then the Permittee must follow the instructions in Special Conditions S14.F and S14.G.

S14.B. Effluent Limit for Chronic Toxicity

The effluent limit for chronic toxicity is:

No toxicity detected in a test concentration representing the chronic critical effluent concentration (CCEC).

The CCEC means the maximum concentration of effluent during critical conditions at the boundary of the mixing zone, defined in Special Condition S1.C of this permit. The CCEC equals 1.4% effluent.

S14.C. Compliance with the Effluent Limit for Chronic Toxicity

Compliance with the effluent limit for chronic toxicity means the results of the testing specified in Special Condition S14.D show no statistically significant difference in response between the control and the CCEC.

If the test results show a statistically significant difference in survival between the control and the CCEC, and Ecology has not determined the test result to be anomalous under Special Condition S14.E, and the test is otherwise valid, the result is a violation of the effluent limit for chronic toxicity. The Permittee must immediately conduct the additional testing described in Special Condition S14.E.

The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in response between the control and the CCEC is less than 20%, the Permittee must conduct the hypothesis test at the 0.01 level of significance.

Ecology will reevaluate the need for the chronic toxicity limit in future permits. Therefore, the Permittee must also conduct this same hypothesis test (Appendix H, EPA/600/4-89/001) to determine whether a statistically significant difference in response exists between the acute critical effluent concentration (ACEC) and the control.

S14.D. Compliance Testing for Chronic Toxicity

The Permittee must:

1. Perform the chronic toxicity tests using the CCEC, the ACEC, and a control, or with a full dilution series.
2. Conduct quarterly chronic toxicity testing on the final effluent if testing determines that the effluent limit for chronic toxicity applies. Testing must begin in the first quarter of 2021. Quarters means January through March, April through June, July through September, and October through December.
3. Submit a quarterly written report to Ecology within 45 days of sampling and starting no later than April 30, 2021. Each subsequent report is due on July 30th, October 30th, January 30th, and April 30th of each year.

Further instructions on testing conditions and test report content are in Special Condition S14.G.

4. Perform compliance tests using the following species on a rotating basis and the most recent version of the following protocols:

Saltwater Chronic Test	Species	Method
Topsmelt survival and growth	<i>Atherinops affinis</i>	EPA-821-R-02-012
Mysid shrimp survival and growth	<i>Americamysis bahia</i> (formerly <i>Mysidopsis bahia</i>)	EPA-821-R-02-012

S14.E. Response to Noncompliance with the Effluent Limit for Chronic Toxicity

If a toxicity test conducted under Special Condition S14.D determines a statistically significant difference in response between the CCEC and the control using the statistical test described in Special Condition S14.C, the Permittee must begin additional testing within one week from the time of receiving the test results. The Permittee must:

1. Conduct additional testing each month for three consecutive months using the same test and species as the failed compliance test.
2. Use a series of at least five effluent concentrations and a control to determine appropriate point estimates. One of these effluent concentrations must equal the CCEC. The results of the test at the CCEC will determine compliance with the effluent limit for chronic toxicity as described in Special Condition S14.B.
3. Return to the original monitoring frequency in Special Condition S14.D after completion of the additional compliance monitoring.

Anomalous test results: If a toxicity test conducted under Special Condition S14.D indicates noncompliance with the chronic toxicity limit and the Permittee believes that the test result is anomalous, the Permittee may notify Ecology that the compliance test result may be anomalous. The Permittee may take one additional sample for toxicity testing and wait for notification from Ecology before completing the additional testing. The Permittee must submit the notification with the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous.

If Ecology determines that the test result was not anomalous, the Permittee must complete all of the additional monitoring required in this section. Or,

If the one additional sample fails to comply with the effluent limit for chronic toxicity, then the Permittee must complete all of the additional monitoring required in this section.

Or,

If Ecology determines that the test result was anomalous, the one additional test result will replace the anomalous test result for the purpose of determining compliance with the chronic toxicity limit.

If all of the additional testing required in Special Condition S14.E.1 complies with the permit limit, the Permittee must submit a report to Ecology on possible causes and preventive measures for the transient toxicity event, which triggered the additional compliance monitoring. This report must include a search of all pertinent and recent facility records, including:

- Operating records
- Monitoring results
- Inspection records
- Spill reports
- Weather records
- Production records
- Raw material purchases
- Pretreatment records, etc.

If the additional testing required by this section shows another violation of the chronic toxicity limit, the Permittee must submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to Ecology within 60 days after the sample date (WAC 173-205-100(2)).

S14.F. Testing When There is no Permit Limit for Chronic Toxicity

The Permittee must:

1. Conduct chronic toxicity testing on final effluent once in the last winter and once in the last summer prior to submission of the application for permit renewal.
2. Conduct chronic toxicity testing on a series of at least five concentrations of effluent and a control. This series of dilutions must include the acute critical effluent concentration (ACEC). The ACEC equals 50.0% effluent. The series of dilutions should also contain the CCEC of 1.4% effluent.
3. Compare the ACEC to the control using hypothesis testing at the 0.05 level of significance as described in Appendix H, EPA/600/4-89/001.
4. Submit the results to Ecology by July 4, 2024.
5. Perform chronic toxicity tests with all of the following species and the most recent version of the following protocols:

Saltwater Chronic Test	Species	Method
Topsmelt survival and growth	<i>Atherinops affinis</i>	EPA-821-R-02-012
Mysid shrimp survival and growth	<i>Americamysis bahia</i> (formerly <i>Mysidopsis bahia</i>)	EPA-821-R-02-012

S14.G. Sampling and Reporting Requirements

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. Reports must contain toxicity data, bench sheets, and reference toxicant results for test methods. In addition, the Permittee must submit toxicity test data in electronic format (CETIS export file preferred) for entry into Ecology's database.
2. The Permittee must collect grab samples for toxicity testing. The Permittee must cool the samples to 0 - 6 degrees Celsius during collection and send them to the lab immediately upon completion.

The laboratory must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.

3. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*.
4. All toxicity tests must meet quality assurance criteria and test conditions specified in the most recent versions of the EPA methods listed in Special Condition S14.C and the Ecology Publication no. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If Ecology determines any test results to be invalid or anomalous, the Permittee must repeat the testing with freshly collected effluent.
5. The laboratory must use control water and dilution water meeting the requirements of the EPA methods listed in Special Condition S14.A. or pristine natural water of sufficient quality for good control performance.
6. The Permittee must conduct whole effluent toxicity tests on an unmodified sample of final effluent.
7. The Permittee may choose to conduct a full dilution series test during compliance testing in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations must include the CCEC and the ACEC. The CCEC and the ACEC may either substitute for the effluent concentrations that are closest to them in the dilution series or be extra effluent concentrations. The CCEC equals 1.4% effluent. The ACEC equals 50.0% effluent.
8. All whole effluent toxicity tests that involve hypothesis testing must comply with the chronic statistical power standard of 39% as defined in WAC 173-205-020. If the test does not meet the power standard, the Permittee must repeat the test on a fresh sample with an increased number of replicates to increase the power.

S15. AKART Analysis and Engineering Report

The Permittee must determine if the existing Best Management Practices (BMPs) employed at the facility provide all known, available, and reasonable methods of prevention, control, and treatment (AKART) for stormwater, with emphasis on copper, zinc, and total suspended solids. If the evaluation demonstrates that the Permittee is not providing AKART for stormwater, the Permittee must propose changes to the existing BMPs or new BMPs to meet the AKART standard and a schedule for implementing the proposed changes or new BMPs.

The AKART analysis must consist of a site assessment that identifies sources of pollutants in the stormwater discharges. The evaluation must also include an economic analysis, environmental analysis, and industry analysis of stormwater BMPs.

The AKART analysis must be conducted by an engineer who has experience and/or training in pollutant sources in stormwater and stormwater BMPs.

The Permittee must submit an AKART Analysis and Engineering Report to Ecology for review and approval by January 1, 2021.

The Permittee may request additional time to submit the AKART Analysis and Engineering Report. If Ecology agrees to give additional time to submit the AKART Analysis and Engineering Report, approval will be by letter to the Permittee.

The engineering report must be prepared by or under the supervision of a licensed professional engineer. The report must include:

1. A site map identifying significant features including, but not limited to, stormwater drainage areas, stormwater drainage/conveyance infrastructure, tanks, sampling locations, pervious and impervious areas, buildings, and surface waters.
2. A description of the stormwater discharges at Outfalls 001B, 002, 004, 005, and 006.
3. An assessment and description of existing and potential sources of pollutants in stormwater, with emphasis on copper, zinc, and total suspended solids.
4. A description of existing operational, structural, and treatment BMPs applied to the stormwater discharges or pollutant sources.
5. An evaluation of existing operational, structural, and treatment BMPs to determine if they are adequate to attain AKART and meet water quality standards in the receiving water.
6. An identification of the range of management options for prevention, control, and treatment of pollutants in the stormwater discharges including operational source controls, structural source controls, and treatment measures.

At a minimum, the Permittee must evaluate applicable BMPs in the *Stormwater Management Manual for Western Washington* (2012 edition as amended in December 2014) and the BMPs in *Suggested Practices to Reduce Zinc Concentrations in Industrial Stormwater Discharges* (Ecology Publication No. 08-10-025).

7. An engineering economic analysis addressing the cost for the management options identified above. The economic analysis must address the cost of implementation including installation, operation and maintenance, housekeeping, and regulatory compliance costs and evaluate the overall cost per amount of pollutant prevented, treated, or otherwise controlled.
8. An environmental analysis addressing the benefit to the receiving water of the pollutant prevented, treated, or controlled for each option. This analysis must include the ability for each option to meet applicable water quality standards in the receiving water.
9. An analysis of practices of comparable industrial facilities for similar sources of stormwater.
10. Recommendations and implementation schedules for changes to existing operational, structural, or treatment BMPs.
11. Recommendations and implementation schedules for new operational, structural, or treatment BMPs.

After Ecology reviews the AKART Analysis and Engineering Report and agrees with any proposed recommendations that include new structural or treatment BMPs, the Permittee will be required to submit an engineering design report per WAC 173-240-110 and -130.

Any proposed changes to existing BMPs or new BMPs identified by the AKART Analysis and Engineering Report must be implemented on a schedule approved by Ecology but no later than June 30, 2023.

Following the implementation of any changes to existing BMPs or new BMPs, the Permittee must monitor copper and zinc at Outfalls 001B, 002, 004, 005, and 006 twice monthly for one year. The Permittee must analyze the samples in accordance with the requirements in Appendix B. The monitoring results must be reported in the monthly DMR per Special Condition S3.A.

The Permittee must also update the Pollution Prevention Plan to incorporate any changes to existing BMPs or new BMPs recommended in the approved AKART Analysis and Engineering Report. The Permittee must modify the Pollution Prevention Plan within sixty (60) days of implementing changes to existing BMPs or new BMPs.

S16. Compliance Schedule

The Permittee must meet water quality-based effluent limits (WQBELs) for copper and zinc by December 31, 2024. The following compliance schedule establishes milestones for meeting this requirement.

Tasks	Due Date
1. Submit AKART Analysis and Engineering Report	January 1, 2021

Tasks	Due Date
2. Implement changes to existing BMPs and/or implement new BMPs as proposed in the approved AKART Analysis and Engineering Report	June 30, 2023
3. Begin twice monthly monitoring of copper and zinc for one year	June 30, 2023
4. Update the Pollution Prevention Plan to include changes to existing BMPs or new BMPs	Within 60 days of implementing changes
5. Meet WQBELs for copper and zinc	December 31, 2024

S17. Receiving Water Study

The Permittee must collect receiving water information necessary to determine if the effluent has a reasonable potential to cause a violation of the water quality standards. If reasonable potential exists, Ecology will use the study information to calculate effluent limits.

The Permittee must:

1. Submit a sampling and quality assurance plan for Ecology review and approval by January 1, 2021. Prepare all quality assurance plans in accordance with the guidelines given in *Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies* (Ecology Publication No. 04-03-030). This document is available at: <https://fortress.wa.gov/ecy/publications/summarypages/0403030.html>.
2. Conduct the sampling during the first critical condition following Ecology's approval of the sampling and quality assurance plan. Conduct all sampling and analysis in accordance with the approved sampling and quality assurance plan.
 - a. Locate the receiving water sampling locations outside the zone of influence of the effluent.
 - b. Use sampling station accuracy requirements of ± 20 meters, or more accurate if available.
 - c. Time the sampling as close as possible to the critical period.
 - d. Follow the clean sampling techniques (Method 1669: *Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels*, EPA Publication No. 821-R-95-034, April 1995).
 - e. Collect at least ten receiving water samples from the Blair Waterway and analyze the samples for the dissolved and total recoverable fractions of the 13 priority pollutant metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc). Also analyze the samples for total suspended solids, sulfide, pH, salinity, and temperature.

- f. Collect at least ten receiving water samples from the Lincoln Avenue ditch and analyze the samples for hardness.
 - g. Collect at least ten receiving water samples from the Erdahl ditch and analyze the samples for hardness.
 - h. Conduct all chemical analysis using the methods and the detection levels identified in Appendix B.
3. Submit data to Ecology's Environmental Information Management system (EIM). Data must be submitted to EIM according to the instructions on the EIM website.
- The data submittal portion of the EIM website (<https://ecology.wa.gov/Research-Data/Data-resources/Environmental-Information-Management-database/EIM-submit-data>) provides information and help on formats and requirements for submitting tabular data. Specific questions about data submittal may be directed to the EIM Data Coordinator.
4. Submit the final report, summarizing the results of the study to Ecology by July 4, 2024. The final report must document when the data was successfully loaded into EIM.

Any subsequent sampling and analysis must also meet these requirements. The Permittee may conduct a cooperative receiving water study with other NPDES permittees. The cooperative receiving water study must meet all of the requirements of Special Condition S17. If the cooperative receiving water study occurs before the due dates specified in Special Condition S17 and is approved by Ecology, then the cooperative receiving water study will satisfy the requirements of Special Condition S17.

S18. Dangerous Wastes – Permit by Rule Requirements

The Permittee is authorized to treat dangerous wastes, generated on or off-site, at the wastewater treatment facility under the permit by rule provisions of Chapter WAC 173-303-802(5). This authorization is limited to the onsite and off-site waste streams identified on the permit application and application amendments as approved by Ecology.

The Permittee must maintain records of the off-site waste streams treated at the wastewater facility. The origin, volume, known waste constituents, any analytical data, and date of addition must be recorded. This information must be available to an authorized representative of Ecology per General Condition G2.

S19. Construction Stormwater

Construction stormwater includes stormwater associated with construction activity and construction support activities at the construction site (an onsite portable rock crusher, equipment staging yards, material storage areas, borrow areas, etc.).

S19.A. Authorization and Conditions to Discharge Construction Stormwater

Beginning on the effective date of this permit, the Permittee is authorized to discharge construction stormwater to the Permittee's wastewater treatment plant and at Outfalls 001B, 002, 003, 004, 005, and 006 subject to the following requirements and limitations:

1. Construction stormwater discharges must not cause or contribute to a violation of surface water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC), and sediment management standards (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (40 CFR Part 131.36). Discharges that do not comply with these standards are not authorized.
2. Prior to the discharge of construction stormwater to waters of the state, the Permittee must apply all known, available, and reasonable methods of prevention, control, and treatment (AKART). This includes the preparation and implementation of an adequate Construction Stormwater Pollution Prevention Plan (CSWPPP) with all appropriate best management practices (BMPs) installed and maintained in accordance with the CSWPPP and the terms and conditions of this permit.
3. Ecology presumes that a Permittee complies with water quality standards unless discharge monitoring data or other site-specific information demonstrates that a discharge causes or contributes to a violation of water quality standards, when the Permittee complies with the following conditions. The Permittee must fully:
 - a. Comply with all permit conditions – including planning, sampling, monitoring, reporting, and recordkeeping conditions.
 - b. Implement construction stormwater BMPs contained in Ecology's 2012 *Stormwater Management Manual for Western Washington* as amended in December 2014, or construction stormwater BMPs that are *demonstrably equivalent* to BMPs contained in stormwater technical manuals published or approved by Ecology, including the proper selection, implementation, and maintenance of all applicable and appropriate BMPs for on-site pollution control.
4. The Permittee must notify Ecology 15 calendar days prior to the discharge of construction stormwater at Outfall 003 and receive Ecology's approval. Ecology may require USOR to test the construction stormwater prior to discharging to Outfall 003.
5. This authorization only applies to stormwater associated with construction activities or construction support activities conducted within the boundaries of the permitted facility. This authorization does not apply to construction stormwater that has come in contact with contaminated soil and/or contaminated groundwater.

6. Should the Permittee generate stormwater outside the boundaries of the permitted facility from construction activities or construction support activities, the Permittee is authorized to receive this stormwater for treatment in the Permittee's wastewater treatment system.
7. All construction stormwater discharges must comply with the effluent limits in Special Condition S1 of this permit and any other limits imposed by Ecology.

S19.B. Construction Stormwater Pollution Prevention Plans

A standard Construction Stormwater Pollution Prevention Plan (CSWPPP) for construction activities greater than one acre and less than five (1-5) acres, including construction dewatering, must be updated (prepared) and submitted to Ecology by July 1, 2020. Project details for each construction project and for any site-specific issues for that project that require additional BMPs must be submitted to Ecology at least 90 days prior to the start of construction.

The Permittee must prepare a project-specific CSWPPP for construction activity occurring on sites greater than 5 acres, including construction dewatering, prior to the start of each construction project. The Permittee must submit the project-specific CSWPPP to Ecology at least 90 days prior to the start of construction.

Each CSWPPP must be prepared in accordance with the objectives and requirements identified in Appendix D of this permit. The Permittee must implement each CSWPPP in accordance with the requirements of this permit beginning with initial soil disturbance and until final stabilization.

S19.C. Site Log Book

The Permittee must maintain a site log book that contains a record of implementation of its CSWPPP and other permit requirements including the installation and maintenance of construction stormwater BMPs, site inspections, and stormwater monitoring.

S19.D. Site Inspections

Site inspections must include all areas disturbed by construction activities, all construction stormwater BMPs, and all stormwater discharge points.

Construction sites one acre or larger that discharge stormwater to surface waters of the state must have site inspections conducted by a Certified Erosion and Sediment Control Lead (CESCL). Sites that are less than one acre may have a person without CESCL certification conduct inspections.

1. The Permittee must examine stormwater visually for the presence of suspended sediment, turbidity, discoloration, and oil sheen. The Permittee must evaluate the effectiveness of BMPs and determine if it is necessary to install, maintain, or repair BMPs to improve the quality of stormwater discharges.

Based on the results of the inspection, the Permittee must correct the problems identified by:

- a. Reviewing the CSWPPP for compliance with Appendix D and making appropriate revisions within 7 days of the inspection;
- b. Immediately beginning the process of fully implementing and maintaining appropriate construction stormwater source control and/or treatment BMPs as soon as possible, addressing the problems no later than within 10 days of the inspection.

If installation of necessary treatment BMPs is not feasible with 10 days, Ecology may approve additional time when an extension is requested by the Permittee within the initial 10-day response period; and

- c. Documenting BMP implementation and maintenance in the site log book.
2. The Permittee must inspect all areas disturbed by construction activities, all BMPs, and all stormwater discharge points at least once every calendar week and within 24 hours of any discharge from the site. (For purposes of this condition, individual discharge events that last more than one day do not require daily inspections. For example, if a construction stormwater pond discharges continuously over the course of a week, only one inspection is required that week.) The Permittee may reduce the inspection frequency for temporarily stabilized, inactive sites to once every calendar month.
 3. The Permittee must have staff knowledgeable in the principles and practices of erosion and sediment control. The CESCL (sites one acre or more) or inspector (sites less than one acre) must have the skills to assess the:
 - a. Site conditions and construction activities that could impact the quality of stormwater, and
 - b. Effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges.
 4. The CSWPPP must identify the CESCL or inspector, who must be present on site or on-call at all times. The CESCL must obtain certification through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology (see BMP C160 in the *Stormwater Management Manual for Western Washington*, amended December 2014).
 5. The inspector must summarize the results of each inspection in an inspection report or checklist and enter the report/checklist into, or attach it to, the site log book.

At a minimum, each inspection report or checklist must include:

- a. Inspection date and time.

- b. Weather information, the general conditions during the inspection and the approximate amount of precipitation since the last inspection, and precipitation within the last 24 hours.
- c. A summary or list of all implemented BMPs, including observations of all erosion/sediment control structures or practices.
- d. A description of the locations of:
 - BMPs inspected;
 - BMPs that need maintenance and why;
 - BMPs that failed to operate as designed or intended; and
 - Where additional or different BMPs are needed, and why.
- e. A description of stormwater discharged from the construction site. The inspector must note the presence of suspended sediment, turbidity, discoloration, and oil sheen, as applicable.
- f. Any water quality monitoring performed during the inspection.
- g. General comments and notes, including a brief description of any BMP repairs, maintenance, or installations made following the inspection.
- h. A summary report and a schedule of implementation of the remedial actions that the Permittee plans to take if the site inspection indicates that the site is out of compliance. The remedial actions taken must meet the requirements of the CSWPPP and the permit.
- i. The name, title, and signature of the person conducting the site inspection, a phone number or other reliable method to reach this person, and the following statement: "I certify that this report is true, accurate, and complete, to the best of my knowledge and belief".

S19.E. General Construction Stormwater Sampling Requirements

1. The Permittee must sample the stormwater discharge from construction sites >1 acre that discharge directly off site.
2. Sampling is not required for stormwater that is discharged directly to the Permittee's onsite wastewater treatment system.
3. Sampling is not required outside of normal working hours or during unsafe conditions.
4. If a Permittee is unable to sample during a monitoring period, the Permittee must include a brief explanation in the monthly DMR.
5. Sampling is required at all discharge points where stormwater is discharged off-site.
6. The Permittee must identify all sampling point(s) on the CSWPPP site map and clearly mark these points in the field with a flag, tape, stake or other visible marker.

7. Samples must be representative of the flow and characteristics of the discharge.

The monitoring requirements for projects that discharge off-site are summarized below:

Size of Soil Disturbance ^a	Weekly Site Inspections	Weekly Turbidity Sampling	Weekly pH Sampling ^b	CESCL Required for Inspections?
Sites less than 1 acre	Required	Not Required	Not required unless construction activity involves significant concrete work or the use of engineered soils	No
Sites 1 acre or more	Required	Required	Required	Yes

Footnotes:

a Soil disturbance is calculated by adding together all areas that will be affected by construction activity. Construction activity means clearing, grading, excavation, and any other activity that disturbs the surface of the land, including ingress/egress from the site.

b If construction activity involves significant concrete work (1,000 cubic yards of poured concrete or recycled concrete over the life of a project) or the use of engineering soils (soil amendments including but not limited to Portland cement-treated base (CTB), cement kiln dust (CKD), or fly ash), the Permittee must conduct pH sampling.

S19.F. Turbidity Sampling, Benchmark, and Reporting Trigger

If construction activity involves the disturbance of 1 or more acres, the Permittee must conduct turbidity sampling. Sampling is not required on sites that disturb less than an acre.

2. The Permittee must sample all discharge points at least once every calendar week when stormwater discharges from the site. Sampling is not required when there is no discharge during a calendar week.
3. The Permittee may reduce the sampling frequency for temporarily stabilized, inactive sites to once every calendar month.
4. The Permittee must perform turbidity analysis with a calibrated turbidity meter (turbidimeter) either on-site or at an accredited laboratory. The Permittee must record the results in the site log book in Nephelometric Turbidity Units (NTU).
5. The benchmark value for turbidity is 25 NTUs or less.
 - a. Turbidity 26 -249 NTUs

If the discharge turbidity is 26 to 249 NTUs, the Permittee must:

- i. Review the CSWPPP for compliance with Appendix D and make appropriate revisions within 7 days of the date the discharge exceeded the benchmark.

- ii. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems within 10 days of the date of the discharge exceeded the benchmark.

If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.

- iii. Document BMP implementation and maintenance in the site log book.

b. Turbidity 250 NTUs or greater

If the discharge turbidity is greater than or equal to 250 NTUs, the Permittee must complete the reporting and adaptive management process described below:

- i. Report the exceedance to the Ecology regional office at the telephone number listed below and to the Industrial Section permit manager within 24 hours, in accordance with Special Condition S3.E.
- ii. Review the CSWPPP for compliance with Appendix D and make appropriate revisions within 7 days of the date the discharge exceeded the benchmark.

Southwest Regional Office (360) 407-6300

- iii. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems within 10 days of the date of the discharge exceeded the benchmark.

If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.

- iv. Document BMP implementation and maintenance in the site log book.
- v. Sample discharge daily until turbidity is 25 NTUs or lower.

Parameter	Units	Analytical Method	Sampling Frequency	Benchmark Value	Phone Reporting Trigger Value
Turbidity	NTU	SM2130	Weekly, if discharging	25	250

S19.G. pH Sampling Requirements

For sites one acre or greater, and where construction activity involves significant concrete work or the use of engineered soils, the Permittee must conduct pH sampling.

1. For sites less than one acre, pH analysis is required once per week when there is active concrete work in progress or when engineered soils are in use.
2. For sites with significant concrete work, the Permittee must begin the pH sampling when the concrete is first poured and exposed to precipitation and continue sampling weekly throughout and after the concrete pour and curing period until the stormwater pH is in the range of 6.5 to 8.5 standard units.
3. For sites with recycled concrete work, the Permittee must begin the weekly pH sampling period when the recycled concrete is first exposed to precipitation and continue sampling weekly throughout until the recycled concrete is fully stabilized with the stormwater pH in the range of 6.5 to 8.5.
4. For sites with engineered soils, the Permittee must begin the pH sampling period when the soil amendments are first exposed to precipitation and continue sampling weekly throughout until the engineered soils are fully stabilized with the stormwater pH in the range of 6.5 to 8.5.
5. The Permittee must sample pH in the sediment trap/pond(s) or other locations that receive stormwater runoff from the area of significant concrete work or engineered soils before the stormwater discharges to surface waters.
6. The Permittee must perform pH analysis on-site with a calibrated pH meter, pH test kit, or wide range pH indicator paper.
7. The Permittee must record pH sampling results in the site log book.
8. The benchmark value for pH is 8.5. Any time sampling indicates that pH is 8.5 or greater, the Permittee must either:
 - a. Prevent the high pH water (8.5 or above) from entering storm sewer systems or surface waters; or
 - b. If necessary, adjust or neutralize the high pH water, until it is in the range of 6.5 to 8.5 using an appropriate treatment BMP such as carbon dioxide (CO₂) sparging or dry ice.

The Permittee must obtain written approval from Ecology before using any form of chemical treatment other than CO₂ sparging or dry ice.

S20. Mixing Study

The Permittee may choose to perform mixing studies for Outfalls 001B, 002, 004, 005, or 006. If the Permittee chooses to perform mixing studies for one or more of these outfalls, the Permittee must meet the following requirements for each outfall.

S20.A. General Requirements

The Permittee must:

1. Submit a Plan of Study to Ecology for review and approval at least 180 days prior to conducting the effluent mixing study.
2. Use the Guidance for Conducting Mixing Zone Analyses (Appendix C of Ecology's *Permit Writer's Manual*, 2018) and the protocols identified in S20.C. Include citations of any other guidance or reports referenced in the Plan of Study.
3. Include the results of the effluent mixing study in the Effluent Mixing Report and submit it to Ecology for approval no later than one (1) year after the Plan of Study is approved by Ecology.

S20.B. Reporting Requirements

The mixing zone study must include:

1. A statement confirming that all known, available, and reasonable methods of prevention, control, and treatment (AKART) has been applied to the discharge.
2. A description of the size of the mixing zone used for the study.
3. A description of the critical conditions used for the dilution factors.
4. Outfall information:
 - a. Location and description.
 - b. Plan view maps showing the mixing zone size and dimensions in relation to the outfall.
 - c. Schematic of waterbody cross-section, showing channel width, depth, and outfall location.
5. Discharge characteristics:
 - a. Existing and projected maximum daily, maximum monthly average, and annual average flows.
 - b. Discharge density (temperature and salinity).
6. Ambient water characteristics:
 - a. Critical flow.
 - b. Velocity in the vicinity of the outfall.
 - c. Manning's roughness coefficient, if used.

- d. Available information regarding background concentrations of chemical substances in the receiving water for which there are criteria in chapter 173-201A WAC.
7. Model selection and results:
 - a. Model selection and application discussion.
 - b. Description of mixing and plume dynamics.
 - c. Sensitivity analysis.
 - d. Calibration to empirical data (tracer studies), if applicable.
 - e. Provide model output and summary table of results.

S20.C. Protocols

The Permittee must determine the dilution ratio using protocols outlined in the following references, approved modifications thereof, or by another method approved by Ecology:

1. Doneker, R.L. and G.H. Jirka, *CORMIX User Manual: A Hydrodynamic Mixing Zone Model and Decision Support System for Pollutant Discharges into Surface Waters*, EPA-823-K-07-001, Dec. 2007.
<http://www.mixzon.com/downloads/>

A complete list of general reference for CORMIX is at:
<http://www.cormix.info/references.php>.
2. Frick, W.E., Roberts, P.J.W., Davis, L.R., Keyes, D.J., Baumgartner, George, K.P. 2003. *Dilution Models for Effluent Discharges, 4th Edition (Visual Plumes)*. Ecosystems Research Div., USEPA, Athens, GA, USA.
3. Ecology, Water Quality Program, *Permit Writer's Manual*. 2018. Washington State Department of Ecology. Publication No. 92-109, Revised January 2015.
<https://fortress.wa.gov/ecy/publications/documents/92109.pdf>.
4. Ecology, Guidance for conducting mixing zone analysis (Appendix C, Water Quality Program *Permit Writer's Manual*. 2018).
<https://fortress.wa.gov/ecy/publications/parts/92109part1.pdf>.
5. Kilpatrick, F.A., and E.D. Cobb, *Measurement of Discharge Using Tracers, Chapter A16, Techniques of Water-Resources Investigations of the USGS*, Book 3, Application of Hydraulics, USGS, U.S. Department of the Interior, Reston, VA, 1985.
6. Wilson, J.F., E.D. Cobb, and F.A. Kilpatrick, *Fluorometric Procedures for Dye Tracing, Chapter A12. Techniques of Water-Resources Investigations of the USGS*, Book 3, Application of Hydraulics, USGS, U.S. Department of the Interior, Reston, VA, 1986.

General Conditions

G1. Signatory Requirements

1. All applications submitted to Ecology must be signed and certified.
 - a. In the case of corporations, by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
 - A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or
 - The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
 - b. In the case of a partnership, by a general partner.
 - c. In the case of sole proprietorship, by the proprietor.
 - d. In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.

Applications for permits for domestic wastewater facilities that are either owned or operated by, or under contract to, a public entity shall be submitted by the public entity.

2. All reports required by this permit and other information requested by Ecology must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described above and submitted to Ecology.
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

3. Changes to authorization. If an authorization under paragraph G1.2, above, is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph G1.2, above, must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.
4. Certification. Any person signing a document under this section must make the following certification:

“I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

G2. Right of Inspection and Entry

The Permittee must allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law:

1. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit.
2. To have access to and copy, at reasonable times and at reasonable cost, any records required to be kept under the terms and conditions of this permit.
3. To inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
4. To sample or monitor, at reasonable times, any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

G3. Permit Actions

This permit may be modified, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon Ecology’s initiative. However, the permit may only be modified, revoked and reissued, or terminated for the reasons specified in 40 CFR 122.62, 122.64 or WAC 173-220-150 according to the procedures of 40 CFR 124.5.

1. The following are causes for terminating this permit during its term, or for denying a permit renewal application:
 - a. Violation of any permit term or condition.

- b. Obtaining a permit by misrepresentation or failure to disclose all relevant facts.
 - c. A material change in quantity or type of waste disposal.
 - d. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations and can only be regulated to acceptable levels by permit modification or termination.
 - e. A change in any condition that requires either a temporary or permanent reduction, or elimination of any discharge or sludge use or disposal practice controlled by the permit.
 - f. Nonpayment of fees assessed pursuant to RCW 90.48.465.
 - g. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.
2. The following are causes for modification but not revocation and reissuance except when the Permittee requests or agrees:
- a. A material change in the condition of the waters of the state.
 - b. New information not available at the time of permit issuance that would have justified the application of different permit conditions.
 - c. Material and substantial alterations or additions to the permitted facility or activities which occurred after this permit issuance.
 - d. Promulgation of new or amended standards or regulations having a direct bearing upon permit conditions, or requiring permit revision.
 - e. The Permittee has requested a modification based on other rationale meeting the criteria of 40 CFR Part 122.62.
 - f. Ecology has determined that good cause exists for modification of a compliance schedule, and the modification will not violate statutory deadlines.
 - g. Incorporation of an approved local pretreatment program into a municipality's permit.
3. The following are causes for modification or alternatively revocation and reissuance:
- a. When cause exists for termination for reasons listed in 1.a through 1.g of this section, and Ecology determines that modification or revocation and reissuance is appropriate.
 - b. When Ecology has received notification of a proposed transfer of the permit. A permit may also be modified to reflect a transfer after the effective date of an automatic transfer (General Condition G7) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new Permittee.

G4. Reporting Planned Changes

The Permittee must, as soon as possible, but no later than one hundred eighty (180) days prior to the proposed changes, give notice to Ecology of planned physical alterations or additions to the permitted facility, production increases, or process modification which will result in:

1. The permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b).
2. A significant change in the nature or an increase in quantity of pollutants discharged.
3. A significant change in the Permittee's sludge use or disposal practices. Following such notice, and the submittal of a new application or supplement to the existing application, along with required engineering plans and reports, this permit may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

G5. Plan Review Required

Prior to constructing or modifying any wastewater control facilities, an engineering report and detailed plans and specifications must be submitted to Ecology for approval in accordance with chapter 173-240 WAC. Engineering reports, plans, and specifications must be submitted at least one hundred eighty (180) days prior to the planned start of construction unless a shorter time is approved by Ecology. Facilities must be constructed and operated in accordance with the approved plans.

G6. Compliance with Other Laws and Statutes

Nothing in this permit excuses the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G7. Transfer of this Permit

In the event of any change in control or ownership of facilities from which the authorized discharge emanate, the Permittee must notify the succeeding owner or controller of the existence of this permit by letter, a copy of which must be forwarded to Ecology.

1. Transfers by Modification
Except as provided in paragraph (2) below, this permit may be transferred by the Permittee to a new owner or operator only if this permit has been modified or revoked and reissued under 40 CFR 122.62(b)(2), or a minor modification made under 40 CFR 122.63(d), to identify the new Permittee and incorporate such other requirements as may be necessary under the Clean Water Act.
2. Automatic Transfers
This permit may be automatically transferred to a new Permittee if:

- a. The Permittee notifies Ecology at least thirty (30) days in advance of the proposed transfer date.
- b. The notice includes a written agreement between the existing and new Permittees containing a specific date transfer of permit responsibility, coverage, and liability between them.
- c. Ecology does not notify the existing Permittee and the proposed new Permittee of its intent to modify or revoke and reissue this permit. A modification under this subparagraph may also be minor modification under 40 CFR 122.63. If this notice is not received, the transfer is effective on the date specified in the written agreement.

G8. Reduced Production for Compliance

The Permittee, in order to maintain compliance with its permit, must control production and/or all discharges upon reduction, loss, failure, or bypass of the treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost, or fails.

G9. Removed Substances

Collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must not be resuspended or reintroduced to the final effluent stream for discharge to state waters.

G10. Duty to Provide Information

The Permittee must submit to Ecology, within a reasonable time, all information which Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee must also submit to Ecology upon request, copies of records required to be kept by this permit.

G11. Other Requirements of 40 CFR

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

G12. Additional Monitoring

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G13. Payment of Fees

The Permittee must submit payment of fees associated with this permit as assessed by Ecology.

G14. Penalties for Violating Permit Conditions

Any person who is found guilty of willfully violating the terms and conditions of this permit is deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars (\$10,000) and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit may incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars (\$10,000) for every such violation. Each and every such violation is a separate and distinct offense, and in case of a continuing violation, every day's continuance is deemed to be a separate and distinct violation.

G15. Upset

Definition – “Upset” means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limits if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that the Permittee can identify the cause(s) of the upset.
2. The permitted facility was being properly operated at the time of the upset.
3. The Permittee submitted notice of the upset as required in Special Condition S3.F.
4. The Permittee complied with any remedial measures required under S3.F of this permit.

In any enforcement action the Permittee seeking to establish the occurrence of an upset has the burden of proof.

G16. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

G17. Duty to Comply

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

G18. Toxic Pollutants

The Permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

G19. Penalties for Tampering

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two (2) years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment shall be a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or by both.

G20. Reporting Requirements Applicable to Existing Manufacturing, Commercial, Mining, and Silvicultural Dischargers

The Permittee belonging to the categories of existing manufacturing, commercial, mining, or silviculture must notify Ecology as soon as they know or have reason to believe:

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following “notification levels:”
 - a. One hundred micrograms per liter (100 µg/L).
 - b. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony.
 - c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
 - d. The level established by the Director in accordance with 40 CFR 122.44(f).
2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following “notification levels:”
 - a. Five hundred micrograms per liter (500µg/L).

- b. One milligram per liter (1 mg/L) for antimony.
- c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
- d. The level established by the Director in accordance with 40 CFR 122.44(f).

G21. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than fourteen (14) days following each schedule date.

Appendix A

Calculating Stormwater Allocations

Special Condition S1.A effluent limitations are base permit limits that apply to process water flow (these values are fixed).

Special Condition S1.B. effluent limitations in the permit are used to calculate incremental limits that apply to stormwater (the Special Condition S1.B limitations are multipliers). The incremental limit, using one of the multipliers, is added to the base permit limit for process and stormwater commingled discharges.

Stormwater flow is calculated by the subtraction of an estimated dry weather flow from the total flow discharged each day.

The stormwater allocations in the permit are based on guidelines in 40 CFR 419.22(e). The allocations for stormwater are intended to apply to runoff from areas associated with industrial activity, not outlying areas such as parking lots and surrounding acreage.

Daily maximum stormwater allocations may only be used on an individual parameter basis when mass loading in the effluent exceeds daily maximum base permit limitations and when measurable rainfall has occurred within the timeframes established in the permit. The permit states that during specified summer months, the permittee will only be allowed to claim the stormwater allocation when it can be demonstrated that measurable rainfall has occurred at the refinery site during the previous 10 calendar days.

In calculating stormwater allocations, the Permittee will consider the days where total effluent flow exceeds the established dry weather flow. The difference is flow due to stormwater. If the stormwater allocation can be claimed per the conditions of the previous paragraph, the Permittee may multiply the additional flow (in MGD) by the appropriate allocation provided in the permit. This is an incremental permit limit in lbs/day.

Evaluating compliance with the maximum daily permit limitation is on a day-by-day basis comparing the maximum daily discharge for a parameter to the base permit limitation plus the stormwater allocation calculated for that parameter.

Example Calculation 1

Dry weather flow: 0.324 MGD

Parameter: O&G

O&G maximum daily base permit limitation: 74 lbs/day

Maximum daily O&G discharge: 80 lbs/day

Total effluent flow: 0.5 MGD

Flow rate due to rainfall: $0.5 \text{ MGD} - 0.329 \text{ MGD} = 0.176 \text{ MGD}$

O&G maximum daily stormwater allocation: 130 lbs/million gallons

O&G incremental limit due to stormwater: $0.176 \text{ MGD} \times 130 \text{ lbs/MG} = 22.88 \text{ lbs/day}$

O&G maximum daily permit limitation: $74 \text{ lbs/day} + 22.88 \text{ lbs/day} = 96.88 \text{ lbs/day}$

Note: Since 80 lbs/day is less than 96.88 lbs/day, the Permittee would be in compliance with the oil and grease maximum daily permit limitation on the day evaluated.

To evaluate compliance with the monthly average permit limitation, the Permittee would determine the days where effluent flow exceeds dry weather flow and sampling occurred. Sum the excess flow for these days and divide the result by the number of days. Then, multiply this by the monthly average storm water allocation. This is the incremental stormwater allocation. Compare the monthly average discharge for a parameter (total mass loading for the month divided by the days in the month) to the base permit limitation plus the stormwater allocation calculated for that parameter.

Example Calculation 2

Dry weather flow: 0.324 MGD

Parameter: TSS

Example Sample Data:

Day of Month	Flow (MGD)	TSS (lbs/day)	Day of Month	Flow (MGD)	TSS (lbs/day)
1	0.332		16	0.355	155
2	0.304	96	17	0.414	
3	0.418		18	0.417	149
4	0.323	151	19	0.377	
5	0.407		20	0.319	70
6	0.342	111	21	0.271	
7	0.487		22	0.334	
8	0.422		23	0.333	140
9	0.354	125	24	0.422	
10	0.411		25	0.364	115
11	0.356	105	26	0.467	
12	0.352		27	0.334	132
13	0.322	30	28	0.386	
14	0.305		29	0.406	
15	0.282		30	0.321	109

During the eight sampling days where the effluent flow exceeded the dry weather flow and sampling occurred (grayed out in the table), the total stormwater flow excess: 0.263 million gallons (MG)

Average stormwater flow excess: $0.263 \text{ MG} / 8 \text{ days} = 0.033 \text{ MGD}$

TSS average monthly base permit limitation: 107 lbs/day

Average monthly TSS discharge: 114 lbs/day

TSS average monthly stormwater allocation: 180 lbs/MG

TSS incremental limit due to storm water: $0.033 \text{ MGD} \times 180 \text{ lbs/MG} = 5.9 \text{ lbs/day}$

TSS average monthly permit limitation: $5.9 \text{ lbs/day} + 107 \text{ lbs/day} = 112.9 \text{ lbs/day}$

Note: Since 114 lbs/day is greater than 112.9 lbs/day, the TSS average monthly permit limit would be exceeded.

Appendix B

List of Pollutants with Analytical Methods, Detection Limits and Quantitation Levels

The Permittee must use the specified analytical methods, detection limits (DLs) and quantitation levels (QLs) in the following table for permit and application required monitoring unless:

- Another permit condition specifies other methods, detection levels, or quantitation levels.
- The method used produces measurable results in the sample and EPA has listed it as an EPA-approved method in 40 CFR Part 136.

If the Permittee uses an alternative method, not specified in the permit and as allowed above, it must report the test method, DL, and QL on the discharge monitoring report or in the required report.

If the Permittee is unable to obtain the required DL and QL in its effluent due to matrix effects, the Permittee must submit a matrix-specific detection limit (MDL) and a quantitation limit (QL) to Ecology with appropriate laboratory documentation.

When the permit requires the Permittee to measure the base neutral compounds in the list of priority pollutants, it must measure all of the base neutral pollutants listed in the table below. The list includes EPA required base neutral priority pollutants and several additional polynuclear aromatic hydrocarbons (PAHs). The Water Quality Program added several PAHs to the list of base neutrals below from Ecology's Persistent Bioaccumulative Toxics (PBT) List. It only added those PBT parameters of interest to Appendix B that did not increase the overall cost of analysis unreasonably.

Ecology added this appendix to the permit in order to reduce the number of analytical "non-detects" in permit-required monitoring and to measure effluent concentrations near or below criteria values where possible at a reasonable cost.

The lists below include conventional pollutants (as defined in CWA section 502(6) and 40 CFR Part 122.), toxic or priority pollutants as defined in CWA section 307(a)(1) and listed in 40 CFR Part 122 Appendix D, 40 CFR Part 401.15 and 40 CFR Part 423 Appendix A), and nonconventionals. 40 CFR Part 122 Appendix D (Table V) also identifies toxic pollutants and hazardous substances which are required to be reported by dischargers if expected to be present. This permit Appendix B list does not include those parameters.

Conventional Pollutants	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Biochemical Oxygen Demand		SM5210-B		2 mg/L
Biochemical Oxygen Demand, Soluble		SM5210-B ³		2 mg/L
Fecal Coliform		SM 9221E,9222	N/A	Specified in method - sample aliquot dependent
Oil and Grease (HEM) (Hexane Extractable Material)		1664 A or B	1,400	5,000
pH		SM4500-H ⁺ B	N/A	N/A
Total Suspended Solids		SM2540-D		5 mg/L

Nonconventional Pollutants	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Alkalinity, Total		SM2320-B		5 mg/L as CaCO ₃
Aluminum, Total	7429-90-5	200.8	2.0	10
Ammonia, Total (as N)		SM4500-NH ₃ -B and C/D/E/G/H		20
Barium Total	7440-39-3	200.8	0.5	2.0
BTEX (benzene + toluene + ethylbenzene + m,o,p xylenes)		EPA SW 846 8021/8260	1	2

Nonconventional Pollutants	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ $\mu\text{g/L}$ unless specified	Quantitation Level (QL) ² $\mu\text{g/L}$ unless specified
Boron, Total	7440-42-8	200.8	2.0	10.0
Carbonaceous Biochemical Oxygen Demand (5-day)		SM5210-B		2 mg/L
Chemical Oxygen Demand		SM5220-D		10 mg/L
Chloride		SM4500-Cl B/C/D/E and SM4110 B		Sample and limit dependent
Chlorine, Total Residual		SM4500 Cl G		50.0
Cobalt, Total	7440-48-4	200.8	0.05	0.25
Color		SM2120 B/C/E		10 color units
Dissolved Organic Carbon		SM5310-B/C/D		1 mg/L
Dissolved oxygen		SM4500-OC/OG		0.2 mg/L
Flow		Calibrated device		
Fluoride	16984-48-8	SM4500-F E	25	100
Hardness, Total		SM2340B		200 as CaCO ₃
Iron, Total	7439-89-6	200.7	12.5	50
Magnesium, Total	7439-95-4	200.7	10	50
Manganese, Total	7439-96-5	200.8	0.1	0.5
Molybdenum, Total	7439-98-7	200.8	0.1	0.5

Nonconventional Pollutants	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ $\mu\text{g/L}$ unless specified	Quantitation Level (QL) ² $\mu\text{g/L}$ unless specified
Nitrate Nitrogen (as N)		SM4500-NO3-D		100
Nitrate + Nitrite Nitrogen (as N)		SM4500-NO3-E/F/H		100
Nitrite Nitrogen (as N)		SM4500-NO2-B SM4500-NO3-E/F		100
Nitrogen, Total Kjeldahl (as N)		SM4500-N _{org} B/C and SM4500NH ₃ -B/C/D/EF/G/H		300
NWTPH D _x ⁴		Ecology NWTPH D _x	250	250
NWTPH G _x ⁵		Ecology NWTPH G _x	250	250
Particulate Organic Carbon		SM5310-B/C/D		1 mg/L
Phosphorus, Total (as P)		SM 4500 PB followed by SM4500-PE/PF	3	10
Salinity		SM2520-B		3 practical salinity units or scale (PSU or PSS)
Settleable Solids		SM2540 -F		Sample and limit dependent

Nonconventional Pollutants	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ $\mu\text{g/L}$ unless specified	Quantitation Level (QL) ² $\mu\text{g/L}$ unless specified
Soluble Reactive Phosphorus (as P)		SM4500-P E/F/G	3	10
Sulfate (as mg/L SO ₄)		SM4110-B		0.2 mg/L
Sulfide (as mg/L S)		SM4500-S ² F/D/E/G		0.2 mg/L
Sulfite (as mg/L SO ₃)		SM4500-SO3B		2 mg/L
Temperature (max. 7-day avg.)		Analog recorder or Use micro-recording devices known as thermistors		0.2° C
Tin, Total	7440-31-5	200.8	0.3	1.5
Titanium, Total	7440-32-6	200.8	0.5	2.5
Total Coliform		SM 9221B, 9222B, 9223B	N/A	Specified in method - sample aliquot dependent
Total Organic Carbon		SM5310-B/C/D		1 mg/L
Total dissolved solids		SM2540 C		20 mg/L
Turbidity		EPA 180.1 or Meter		0.5 NTU

Metals, Cyanide & Total Phenols

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Antimony, Total	114	7440-36-0	200.8	0.3	1.0
Arsenic, Total	115	7440-38-2	200.8	0.1	0.5
Beryllium, Total	117	7440-41-7	200.8	0.1	0.5
Cadmium, Total	118	7440-43-9	200.8	0.05	0.25
Chromium (hex) dissolved	119	18540-29-9	SM3500-Cr C	0.3	1.2
Chromium, Total	119	7440-47-3	200.8	0.2	1.0
Copper, Total	120	7440-50-8	200.8	0.4	2.0
Lead, Total	122	7439-92-1	200.8	0.1	0.5
Mercury, Total	123	7439-97-6	1631E	0.0002	0.0005
Nickel, Total	124	7440-02-0	200.8	0.1	0.5
Selenium, Total	125	7782-49-2	200.8	1.0	1.0
Silver, Total	126	7440-22-4	200.8	0.04	0.2
Thallium, Total	127	7440-28-0	200.8	0.09	0.36
Zinc, Total	128	7440-66-6	200.8	0.5	2.5
Cyanide, Total	121	57-12-5	335.4	5	10
Cyanide, Weak Acid Dissociable	121		SM4500-CN I	5	10
Cyanide, Free Amenable to Chlorination (Available Cyanide)	121		SM4500-CN G	5	10

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ <i>µg/L unless specified</i>	Quantitation Level (QL) ² <i>µg/L unless specified</i>
Phenols, Total	65		EPA 420.1		50

Acid Compounds

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ <i>µg/L unless specified</i>	Quantitation Level (QL) ² <i>µg/L unless specified</i>
2-Chlorophenol	24	95-57-8	625.1	3.3	9.9
2,4-Dichlorophenol	31	120-83-2	625.1	2.7	8.1
2,4-Dimethylphenol	34	105-67-9	625.1	2.7	8.1
4,6-dinitro-o-cresol (2-methyl-4,6-dinitrophenol)	60	534-52-1	625.1/1625B	24	72
2,4-Dinitrophenol	59	51-28-5	625.1	42	126
2-Nitrophenol	57	88-75-5	625.1	3.6	10.8
4-Nitrophenol	58	100-02-7	625.1	2.4	7.2
Parachlorometa cresol (4-chloro-3-methylphenol)	22	59-50-7	625.1	3.0	9.0
Pentachlorophenol	64	87-86-5	625.1	3.6	10.8
Phenol	65	108-95-2	625.1	1.5	4.5
2,4,6-Trichlorophenol	21	88-06-2	625.1	2.7	8.1

Volatile Compounds

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ <i>µg/L unless specified</i>	Quantitation Level (QL) ² <i>µg/L unless specified</i>
Acrolein	2	107-02-8	624	5	10
Acrylonitrile	3	107-13-1	624	1.0	2.0
Benzene	4	71-43-2	624.1	4.4	13.2
Bromoform	47	75-25-2	624.1	4.7	14.1
Carbon tetrachloride	6	56-23-5	624.1/601 or SM6230B	2.8	8.4
Chlorobenzene	7	108-90-7	624.1	6.0	18.0
Chloroethane	16	75-00-3	624/601	1.0	2.0
2-Chloroethylvinyl Ether	19	110-75-8	624	1.0	2.0
Chloroform	23	67-66-3	624.1 or SM6210B	1.6	4.8
Dibromochloromethane (chlordibromomethane)	51	124-48-1	624.1	3.1	9.3
1,2-Dichlorobenzene	25	95-50-1	624	1.9	7.6
1,3-Dichlorobenzene	26	541-73-1	624	1.9	7.6
1,4-Dichlorobenzene	27	106-46-7	624	4.4	17.6
Dichlorobromomethane	48	75-27-4	624.1	2.2	6.6
1,1-Dichloroethane	13	75-34-3	624.1	4.7	14.1
1,2-Dichloroethane	10	107-06-2	624.1	2.8	8.4
1,1-Dichloroethylene	29	75-35-4	624.1	2.8	8.4

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
1,2-Dichloropropane	32	78-87-5	624.1	6.0	18.0
1,3-dichloropropene (mixed isomers) (1,2-dichloropropylene) ⁶	33	542-75-6	624.1	5.0	15.0
Ethylbenzene	38	100-41-4	624.1	7.2	21.6
Methyl bromide (Bromomethane)	46	74-83-9	624/601	5.0	10.0
Methyl chloride (Chloromethane)	45	74-87-3	624	1.0	2.0
Methylene chloride	44	75-09-2	624.1	2.8	8.4
1,1,2,2-Tetrachloroethane	15	79-34-5	624.1	6.9	20.7
Tetrachloroethylene	85	127-18-4	624.1	4.1	12.3
Toluene	86	108-88-3	624.1	6.0	18.0
1,2-Trans-Dichloroethylene (Ethylene dichloride)	30	156-60-5	624.1	1.6	4.8
1,1,1-Trichloroethane	11	71-55-6	624.1	3.8	11.4
1,1,2-Trichloroethane	14	79-00-5	624.1	5.0	15.0
Trichloroethylene	87	79-01-6	624.1	1.9	5.7
Vinyl chloride	88	75-01-4	624/SM6200B	1.0	2.0

Base/Neutral Compounds (compounds in bold are Ecology PBTs)

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ μg/L unless specified	Quantitation Level (QL) ² μg/L unless specified
Acenaphthene	1	83-32-9	625.1	1.9	5.7
Acenaphthylene	77	208-96-8	625.1	3.5	10.5
Anthracene	78	120-12-7	625.1	1.9	5.7
Benzidine	5	92-87-5	625.1	44	132
Benzyl butyl phthalate	67	85-68-7	625.1	2.5	7.5
Benzo(a)anthracene	72	56-55-3	625.1	7.8	23.4
Benzo(b)fluoranthene (3,4-benzofluoranthene) ⁷	74	205-99-2	610/625.1	4.8	14.4
Benzo(j)fluoranthene ⁷		205-82-3	625	0.5	1.0
Benzo(k)fluoranthene (11,12-benzofluoranthene) ⁷	75	207-08-9	610/625.1	2.5	7.5
Benzo(r,s,t)pentaphene		189-55-9	625	1.3	5.0
Benzo(a)pyrene	73	50-32-8	610/625.1	2.5	7.5
Benzo(ghi)Perylene	79	191-24-2	610/625.1	4.1	12.3
Bis(2-chloroethoxy)methane	43	111-91-1	625.1	5.3	15.9
Bis(2-chloroethyl)ether	18	111-44-4	611/625.1	5.7	17.1
Bis(2-chloro-1-methylethyl)Ether (Bis(2-chloroisopropyl) ether) ¹⁰	42	108-60-1	625.1	5.7	17.1

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ <i>µg/L unless specified</i>	Quantitation Level (QL) ² <i>µg/L unless specified</i>
Bis(2-ethylhexyl)phthalate	66	117-81-7	625.1	2.5	7.5
4-Bromophenyl phenyl ether	41	101-55-3	625.1	1.9	5.7
2-Chloronaphthalene	20	91-58-7	625.1	1.9	5.7
4-Chlorophenyl phenyl ether	40	7005-72-3	625.1	4.2	12.6
Chrysene	76	218-01-9	610/625.1	2.5	7.5
Dibenzo (a,h)acridine		226-36-8	610M/625M	2.5	10.0
Dibenzo (a,j)acridine		224-42-0	610M/625M	2.5	10.0
Dibenzo(a-h)anthracene (1,2,5,6-dibenzanthracene)	82	53-70-3	625.1	2.5	7.5
Dibenzo(a,e)pyrene		192-65-4	610M/625M	2.5	10.0
Dibenzo(a,h)pyrene		189-64-0	625M	2.5	10.0
3,3-Dichlorobenzidine	28	91-94-1	605/625.1	16.5	49.5
Diethyl phthalate	70	84-66-2	625.1	1.9	5.7
Dimethyl phthalate	71	131-11-3	625.1	1.6	4.8
Di-n-butyl phthalate	68	84-74-2	625.1	2.5	7.5
2,4-dinitrotoluene	35	121-14-2	609/625.1	5.7	17.1
2,6-dinitrotoluene	36	606-20-2	609/625.1	1.9	5.7
Di-n-octyl phthalate	69	117-84-0	625.1	2.5	7.5

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
1,2-Diphenylhydrazine (as Azobenzene)	37	122-66-7	1625B	5.0	20
Fluoranthene	39	206-44-0	625.1	2.2	6.6
Fluorene	80	86-73-7	625.1	1.9	5.7
Hexachlorobenzene	9	118-74-1	612/625.1	1.9	5.7
Hexachlorobutadiene	52	87-68-3	625.1	0.9	2.7
Hexachlorocyclopentadiene	53	77-47-4	1625B/625	2.0	4.0
Hexachloroethane	12	67-72-1	625.1	1.6	4.8
Indeno(1,2,3-cd)Pyrene	83	193-39-5	610/625.1	3.7	11.1
Isophorone	54	78-59-1	625.1	2.2	6.6
3-Methyl cholanthrene		56-49-5	625	2.0	8.0
Naphthalene	55	91-20-3	625.1	1.6	4.8
Nitrobenzene	56	98-95-3	625.1	1.9	5.7
N-Nitrosodimethylamine	61	62-75-9	607/625	2.0	4.0
N-Nitrosodi-n-propylamine	63	621-64-7	607/625	0.5	1.0
N-Nitrosodiphenylamine	62	86-30-6	625	1.0	2.0
Perylene		198-55-0	625	1.9	7.6
Phenanthrene	81	85-01-8	625.1	5.4	16.2
Pyrene	84	129-00-0	625.1	1.9	5.7
1,2,4-Trichlorobenzene	8	120-82-1	625.1	1.9	5.7

Dioxin

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (2,3,7,8 TCDD)	129	1746-01-6	1613B	1.3 pg/L	5 pg/L

Pesticides/PCBs

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Aldrin	89	309-00-2	608.3	4.0 ng/L	12 ng/L
alpha-BHC	102	319-84-6	608.3	3.0 ng/L	9.0 ng/L
beta-BHC	103	319-85-7	608.3	6.0 ng/L	18 ng/L
gamma-BHC (Lindane)	104	58-89-9	608.3	4.0 ng/L	12 ng/L
delta-BHC	105	319-86-8	608.3	9.0 ng/L	27 ng/L
Chlordane ⁸	91	57-74-9	608.3	14 ng/L	42 ng/L
4,4'-DDT	92	50-29-3	608.3	12 ng/L	36 ng/L
4,4'-DDE	93	72-55-9	608.3	4.0 ng/L	12 ng/L
4,4' DDD	94	72-54-8	608.3	11 ng/L	33 ng/L
Dieldrin	90	60-57-1	608.3	2.0 ng/L	6.0 ng/L
alpha-Endosulfan	95	959-98-8	608.3	14 ng/L	42 ng/L
beta-Endosulfan	96	33213-65-9	608.3	4.0 ng/L	12 ng/L

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ μg/L unless specified	Quantitation Level (QL) ² μg/L unless specified
Endosulfan Sulfate	97	1031-07-8	608.3	66 ng/L	198 ng/L
Endrin	98	72-20-8	608.3	6.0 ng/L	18 ng/L
Endrin Aldehyde	99	7421-93-4	608.3	23 ng/L	70 ng/L
Heptachlor	100	76-44-8	608.3	3.0 ng/L	9.0 ng/L
Heptachlor Epoxide	101	1024-57-3	608.3	83 ng/L	249 ng/L
PCB-1242 ⁹	106	53469-21-9	608.3	0.065	0.195
PCB-1254	107	11097-69-1	608.3	0.065	0.195
PCB-1221	108	11104-28-2	608.3	0.065	0.195
PCB-1232	109	11141-16-5	608.3	0.065	0.195
PCB-1248	110	12672-29-6	608.3	0.065	0.195
PCB-1260	111	11096-82-5	608.3	0.065	0.195
PCB-1016 ⁹	112	12674-11-2	608.3	0.065	0.195
Toxaphene	113	8001-35-2	608.3	240 ng/L	720 ng/L

Nonconventionals - Furan

Pollutant	CAS Number (if available)	Recommended Analytical Protocol	Detection Level (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
2,3,7,8-Tetrachlorodibenzofuran (2,3,7,8 TCDF)	51207-31-9	1613	1.3 pg/L	5 pg/L

1. Detection level (DL) or detection limit means the minimum concentration of an analyte (substance) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero as determined by the procedure given in 40 CFR Part 136, Appendix B.
2. Quantitation Level (QL) also known as Minimum Level of Quantitation (ML) – The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that the laboratory has used all method-specified sample weights, volumes, and cleanup procedures.

The QL is calculated by multiplying the MDL by 3.18 and rounding the result to the number nearest to (1, 2, or 5) x 10ⁿ, where n is an integer. (64 FR 30417). ALSO GIVEN AS:

The smallest detectable concentration of analyte greater than the Detection Limit (DL) where the accuracy (precision & bias) achieves the objectives of the intended purpose (Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs Submitted to the US Environmental Protection Agency December 2007).

3. Soluble Biochemical Oxygen Demand method note: First, filter the sample through a Millipore Nylon filter (or equivalent) - pore size of 0.45-0.50 µm (prep all filters by filtering 250 ml of laboratory grade deionized water through the filter and discard). Then, analyze sample as per method 5210-B.
4. NWTPH Dx - Northwest Total Petroleum Hydrocarbons Diesel Extended Range – see <https://fortress.wa.gov/ecy/publications/summarypages/97602.html>.
5. NWTPH Gx - Northwest Total Petroleum Hydrocarbons Gasoline Extended Range – see <https://fortress.wa.gov/ecy/publications/summarypages/97602.html>.
6. 1, 3-dichloropropylene (mixed isomers) - You may report this parameter as two separate parameters: cis-1, 3-dichloropropene (10061-01-5) and trans-1, 3-dichloropropene (10061-02-6).

7. Total Benzofluoranthenes - Because Benzo(b)fluoranthene, Benzo(j)fluoranthene and Benzo(k)fluoranthene co-elute you may report these three isomers as total benzofluoranthenes.
8. Chlordane - You may report alpha-chlordane (5103-71-9) and gamma-chlordane (5103-74-2) in place of chlordane (57-74-9). If you report alpha and gamma-chlordane, the DL/PQLs that apply are 14/42 ng/L.
9. PCB 1016 & PCB 1242 - You may report these two PCB compounds as one parameter called PCB 1016/1242.
10. Bis(2-Chloro-1-Methylethyl) Ether - This compound was previously listed as Bis(2-Chloroisopropyl) Ether (39638-32-9).

Appendix C

Refinery NPDES Pollution Prevention Plan – General and Specific Requirements

Guidance Documents

Guidance documents that must be used when developing or updating a pollution prevention plan include the *Stormwater Management Manual for Western Washington* published August 2012 (as amended in December 2014) by Ecology (Publication number 12-10-030), the ‘Pollution Prevention and Best Management Practices’ section of the *Ecology Permit Writer’s Manual*, Chapter XII (Publication number 92-109), EPA’s *An Organizational Guide to Pollution Prevention*, 2001 available at <https://www.epa.gov/sites/production/files/2014-01/documents/organizationalguide.pdf>, and other information provided by the Ecology Permit Manager.

Plan Requirements

A. General Requirements

1. Policy Statement and Signature

The pollution prevention plan must include a policy statement articulating management and corporate support for the plan and a commitment to implement the plan and to continued pursuit of pollution prevention opportunities. The plan, plan updates, and modifications must be signed in accordance with General Condition G1.

2. Employee Involvement, Training, and Awareness

The pollution prevention plan must include a description of personnel training and employee involvement programs that emphasize pollution prevention and solicit employee ideas about pollution prevention opportunities and other environmental issues. Staff training records must be maintained onsite and be available for inspection.

3. Other Pollution Prevention Plans

The Permittee may incorporate applicable portions of plans prepared for their facility for other purposes. Plans or portions of plans incorporated into the Pollution Prevention Plan become enforceable requirements of this permit.

B. Specific Requirements

The Pollution Prevention Plan must contain a site map, detailed assessment of the facility, detailed description of BMPs, spill prevention and emergency cleanup procedures, and sampling requirements.

1. The site map must identify:

- a. The scale or include relative distances between significant structures and drainage systems.
- b. Significant features.

- c. The stormwater drainage and discharge structures.
 - d. The stormwater drainage areas for each stormwater discharge point off-site (including discharges to groundwater) and identifying number for each discharge point.
 - e. Each sampling location by identifying number.
 - f. Paved areas and buildings.
 - g. Areas of pollutant contact (actual and potential) associated with specific industrial activities.
 - h. Surface water locations (including wetlands and drainage ditches)
 - i. Areas of existing and potential soil erosion (in a significant amount).
 - j. Vehicle maintenance areas.
 - k. Lands and waters adjacent to the site that may be helpful in identifying discharge points or drainage routes.
2. The facility assessment must include a description of the facility; an inventory of facility activities and equipment that contribute to or have the potential to contribute any pollutants to the wastewater treatment system, stormwater, and/or waters of the state; and an inventory of materials that contribute to or have the potential to contribute pollutants to the wastewater treatment system, stormwater, and/or waters of the state.
- a. The facility description must describe:
 - i. The industrial and construction activities conducted at the site.
 - ii. Regular business hours and seasonal variations in business hours or industrial activities.
 - iii. The general layout of the facility including buildings and storage of raw materials, and the flow of goods and materials through the facility.
 - b. The inventory of industrial activities must identify all areas associated with industrial activities that have been or may potentially be sources of pollutants, including, but not limited to, the following:
 - i. Loading and unloading of dry bulk materials or liquids.
 - ii. Outdoor storage of materials or products.
 - iii. Outdoor manufacturing and processing.
 - iv. On-site dust or particulate generating processes.
 - v. On-site waste treatment, storage, or disposal.
 - vi. Vehicle and equipment fueling, maintenance, and/or cleaning (includes washing).

- vii. Roofs or other surfaces exposed to air emissions from a manufacturing building or a process area.
- viii. Roofs or other surfaces composed of materials that may be mobilized by stormwater (e.g., galvanized roofs, galvanized fences, etc.).
- c. The inventory of materials must list:
 - i. The types of materials handled at the site that potentially may be exposed to precipitation or runoff and could result in stormwater pollution.
 - ii. A short narrative for each material describing the potential of the pollutant to be present in stormwater discharges. The Permittee must update this narrative when data become available to verify the presence or absence of these pollutants.
 - iii. A narrative description of any potential sources of pollutants from past activities, materials and spills that were previously handled, treated, stored, or disposed of in a manner to allow ongoing exposure to stormwater. Include the method and location of on-site storage or disposal. List significant spills and significant leaks of toxic or hazardous pollutants.
- 3. The Pollution Prevention Plan must identify specific individuals by name or title within the organization (pollution prevention team) whose responsibilities include: Pollution Prevention Plan development, implementation, maintenance, and modification.
- 4. Best Management Practices (BMPs)
 - a. The Permittee must describe each BMP selected to eliminate or reduce the potential to contaminate stormwater and/or waters of the state and prevent violations of water quality standards.
 - b. The Permittee must include each of the following mandatory BMPs in the Pollution Prevention Plan and implement the BMPs. The Permittee may omit individual BMPs if site conditions render the BMP unnecessary, infeasible, or the Permittee provides alternative and equally effective BMPs, if the Permittee clearly justifies each BMP omission in the Pollution Prevention Plan. The Permittee must document in the Pollution Prevention Plan that the BMPs selected are demonstrably equivalent to practices contained in stormwater technical manuals approved by Ecology.
 - i. Operational Source Control BMPs
 - 1) The Pollution Prevention Plan must include Operational Source Control BMPs listed as “applicable” in the *Stormwater Management Manual for Western Washington* (2012) or other guidance documents or manuals approved by Ecology.
 - 2) Good Housekeeping: The Pollution Prevention Plan must include BMPs that define ongoing maintenance and cleanup, as appropriate, of areas which may contribute pollutants to stormwater discharges.

The Pollution Prevention Plan must include the schedule/frequency for completing each housekeeping task, based upon industrial activity, sampling results, and observations made during inspections. The Permittee must:

- a) Vacuum paved surfaces with a vacuum sweeper (or a sweeper with a vacuum attachment) to remove accumulated pollutants a minimum of once per quarter.
 - b) Identify and control all on-site sources of dust to minimize stormwater contamination from the deposition of dust on areas exposed to precipitation.
 - c) Inspect and maintain baghouses monthly to prevent the escape of dust from the system. Immediately remove any accumulated dust at the base of exterior baghouses.
 - d) Keep all dumpsters under cover or fit with a lid that must remain closed when not in use.
- 3) Preventive Maintenance: The Pollution Prevention Plan must include BMPs to inspect and maintain the stormwater drainage, source controls, treatment systems (if any), and plant equipment and systems that could fail and result in contamination of stormwater. The Pollution Prevention Plan must include the schedule/frequency for completing each maintenance task. The Permittee must:
- a) Clean catch basins when the depth of debris reaches 60% of the sump depth. In addition, the Permittee must keep the debris surface at least 6 inches below the outlet pipe.
 - b) Inspect all equipment and vehicles monthly for leaking fluids such as oil, antifreeze, etc. Take leaking equipment and vehicles out of service or prevent leaks from spilling on the ground until repaired.
 - c) Immediately clean up spills and leaks (e.g., using absorbents, vacuuming, etc.) to prevent the discharge of pollutants.
- 4) Spill Prevention and Emergency Cleanup: The Pollution Prevention Plan must include BMPs to prevent spills that can contaminate stormwater. As applicable, other documents may be referenced to meet this requirement. The Pollution Prevention Plan must specify BMPs for material handling procedures, storage requirements, cleanup equipment and procedures, and spill logs, as appropriate. The Permittee must:
- a) Store all chemical liquids, fluids, and petroleum products, on an impervious surface that is surrounded with a containment berm or dike that is capable of containing 10% of the total enclosed tank volume or 110% of the volume contained in the largest tank, whichever is greater.

- b) Prevent precipitation from accumulating in containment areas with a roof or equivalent structure or include a plan on how it will manage and dispose of accumulated water if a containment cover is not practical.
 - c) Locate spill kits within 25 feet of all stationary fueling stations, fuel transfer stations, and mobile fueling units. At a minimum, spill kits must include:
 - i) Oil absorbents capable of absorbing 15 gallons of fuel.
 - ii) A storm drain plug or cover kit.
 - iii) A non-water containment boom, a minimum of 10 feet in length with a 12-gallon absorbent capacity.
 - iv) A non-metallic shovel.
 - v) Two five-gallon buckets with lids.
 - d) Not lock shut-off fueling nozzles in the open position. Do not “top off” tanks being refueled.
 - e) Block, plug, or cover storm drains that receive runoff from areas where fueling, during fueling.
 - f) Use drip pans or equivalent containment measures during all petroleum transfer operations.
 - g) Locate materials, equipment, and activities so that leaks are contained in existing containment and diversion systems (confine the storage of leaky or leak-prone vehicles and equipment awaiting maintenance to protected areas).
 - h) Use drip pans and absorbents under or around leaky vehicles and equipment or store indoors where feasible. Drain fluids from equipment and vehicles prior to on-site storage or disposal.
 - i) Maintain a spill log that includes the following information for chemical and petroleum spills: date, time, amount, location, and reason for spill; and date/time cleanup completed, notifications made, and staff involved.
- 5) Employee Training: The Pollution Prevention Plan must include BMPs to provide pollution prevention plan training for employees. At a minimum, the training plan must include:
- a) The content of the training:
 - i) An overview of what is in the Pollution Prevention Plan.
 - ii) How employees make a difference in complying with the Pollution Prevention Plan and preventing contamination of stormwater and/or waters of the state.

- iii) Spill response procedures, good housekeeping, maintenance requirements, and material management practices.
 - b) How the Permittee will conduct the training.
 - c) The frequency/schedule of training. The Permittee must train employees annually, at a minimum.
 - d) A log of the dates on which specific employees received training.
- 6) Inspections and Recordkeeping: The Pollution Prevention Plan must include documentation of procedures to ensure compliance with permit requirements for inspections and recordkeeping. At a minimum, the Pollution Prevention Plan must:
- a) Identify facility personnel who will inspect designated equipment and facility areas as required by Special Condition S10.
 - b) Contain a visual inspection report or checklist that includes all items required by Special Condition S10.
 - c) Provide a tracking or follow-up procedure to ensure that a report is prepared and any appropriate action taken in response to visual inspections.
- 7) Illicit Discharges: The Pollution Prevention Plan must include measures to identify and eliminate the discharges of process wastewater, domestic wastewater, non-contact cooling water, and other illicit discharges, to stormwater sewers, or to surface waters, or ground waters of the state. The Permittee can find BMPs to identify and eliminate illicit discharges in Volume IV of the *Stormwater Management Manual for Western Washington* (2012).
- Water from washing vehicles or equipment, steam cleaning and/or pressure washing is considered process wastewater. The Permittee must not allow this process wastewater to commingle with stormwater or enter storm drains.

ii. Structural Source Control BMPs

- 1) The Pollution Prevention Plan must include Operational Source Control BMPs listed as “applicable” in the *Stormwater Management Manual for Western Washington* (2012) or other guidance documents or manuals approved by Ecology.
- 2) The Pollution Prevention Plan must include BMPs to minimize the exposure of manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and runoff by either locating these industrial materials and activities inside or protecting them with storm resistant coverings.

The Permittee must:

- a) Use grading, berming, or curbing to prevent runoff of contaminated flows and divert run-on away from these areas.
- b) Perform all cleaning operations indoors, under cover, or in bermed areas that prevent stormwater runoff and run-on and also that capture any overspray.
- c) Ensure that all wash water drains to a collection system that directs wash water to further treatment or storage and not to the stormwater drainage system.

iii. Treatment BMPs

The Permittee must:

- 1) Use Treatment BMPs consistent with the *Stormwater Management Manual for Western Washington* (2012) or other guidance documents or manuals approved by Ecology.
- 2) Employ oil/water separators, booms, skimmers, or other methods to eliminate or minimize oil and grease contamination of stormwater discharges.
- 3) Obtain Ecology approval before beginning construction/installation of all treatment BMPs that include the addition of chemicals to provide treatment.

iv. Stormwater Peak Runoff Rate and Volume Control BMPs

- 1) Facilities with new development or redevelopment must evaluate whether flow control BMPs are necessary to satisfy the state's AKART requirements and prevent violations of water quality standards. If flow control BMPs are required, they must be consistent with the *Stormwater Management Manual for Western Washington* (2012) or other guidance documents or manuals approved by Ecology.

v. Erosion and Sediment Control BMPs

The Pollution Prevention Plan must describe BMPs necessary to prevent erosion of soils and other earthen materials (crushed rock/gravel, etc.) and prevent off-site sedimentation and violations of water quality standards. The Permittee must implement and maintain:

- 1) Sediment control BMPs such as detention or retention ponds or traps, vegetated filter strips, bioswales, or other permanent sediment control BMPs to minimize sediment loads in stormwater discharges.
- 2) Filtration BMPs to remove solids from catch basins, sumps, or other stormwater collection and conveyance system components (filter socks, modular canisters, sand filtration, centrifugal separators, etc.).

5. Sampling Plan

The Pollution Prevention Plan must include a stormwater sampling plan. The plan must:

- a. Identify points of discharge to surface water, storm sewers, or discrete ground water infiltration locations such as dry wells or detention ponds.
- b. Include documentation on why each discharge point is not sampled (if applicable):
 - i. Location of which discharge points the Permittee does not sample because pollutant concentrations are substantially identical to a discharge point being sampled.
 - ii. Reasons why the Permittee expects the discharge points to discharge substantially identical effluents.
 - iii. General industrial activities conducted in the drainage areas of each discharge point.
 - iv. Best Management Practices conducted in the drainage area of each outfall.
 - v. Exposed materials located in the drainage area of each discharge point that are likely to be significant contributors of pollutants to stormwater discharges.
 - vi. Impervious surfaces in the drainage area that could affect the percolation stormwater runoff into the ground (e.g., asphalt, crushed rock, grass, etc.).
- c. Identify each sampling location by its unique identifying number.
- d. Identify staff responsible for conducting stormwater sampling.
- e. Specify procedures for sample collection and handling.
- f. Specify procedures for sending samples to a laboratory.
- g. Identify parameters for analysis, holding times and preservative, laboratory quantitation levels, and analytical methods.
- h. Specify the procedure for submitting results to Ecology.

C. Identifying and Evaluating Pollution Prevention Opportunities

1. Description of Current Pollution Prevention Activities

The plan must include a description of preventive measures and facilities already employed at the refinery to prevent, reduce, eliminate, or control releases of pollutants to influent wastewater streams, storm water, and/or waters of the state.

2. Description of Potential Pollutants and Sources

The pollution prevention plan must include a detailed description of the processes or activities that contribute or potentially contribute pollutants to the treatment plant influent, stormwater, groundwater, and wetlands.

Influent wastewater streams must include those having daily average flow rates equal to or greater than 30 gallons per minute at the point where the wastewater stream enters the collection system, the catalytic wash water, spent caustic, and wash water waste streams. Minor incidental waste streams to stormwater, such as landscaping fertilizers, do not have to be included. The plan must identify the materials used, processed, stored, treated, or disposed of at the facility and the pollutants that are generated or potentially generated or released. The level of detail provided in the plan should be sufficient to help identify and understand how and why materials are used and pollutants generated or released. Process flow diagrams and/or material input/output information must be included on a process unit basis.

The Permittee must include in the plan all materials which may become pollutants or cause pollution upon reaching state waters, including, but not limited to:

1. Persistent bioaccumulative and toxic chemicals (PBTs),
2. Oil and petroleum products, and
3. Materials which, when spilled or otherwise released into the environment, would be designated Dangerous Waste (DW) or Extremely Hazardous Waste (EHW) by the procedures set forth in WAC 173-303-070.

In determining which sources and pollutants to address in the plan, the Permittee must use available sampling data, as well as knowledge of processes and materials, and available information on the relative toxicity or hazard of materials. Sources of PBTs must be included in the analysis. The Permittee must not be required to sample each stream analytically and may use engineering judgment to assess and quantify material inputs and outputs on a process unit basis.

3. Identification & Preliminary Evaluation of Pollution Prevention Opportunities

The plan must identify pollution prevention opportunities and provide a detailed analysis of each opportunity's technical (including safety considerations) and economic feasibility. Opportunities determined to be technically and economically feasible will be considered as known, available, and reasonable and therefore are required to be selected and scheduled for implementation. For each pollution prevention opportunity selected, the plan must identify the process(es) or activities it affects, an estimate of the amount of pollutants reduced, and the environmental or other benefits that will be achieved.

The Permittee must concentrate on opportunities that reduce or eliminate PBTs, priority pollutant metals, and methyldiethanolamine (MDEA) to influent and upstream flows to the oily water sewer. Solids and hydrocarbon loadings to the oily water sewer must also be evaluated. Stormwater must be evaluated for oil and grease and solids loading as well as toxics.

In identifying and evaluating pollution prevention opportunities, the Permittee must consider the following:

- All reasonably expected activities and conditions, such as normal operations, maintenance, and other ancillary activities; equipment failure; improper operation; upsets, accidents, spills, leaks; and natural events such as rainfall, snowfall, etc.
- All areas of the refinery with potential to generate water pollutants including process units, raw material and product storage, handling and transfer facilities, material handling areas, maintenance areas, solid and hazardous waste storage, treatment, and disposal, and stormwater systems.

The following are examples of pollution prevention strategies that may warrant evaluation:

- Improving and/or establishing new management practices and standard operating procedures addressing: increased training or supervision; improvements in inventory control, materials and waste handling, general operations, and housekeeping; preventive maintenance; and remedial measures
- Process or equipment modifications, including re-engineering processes to use less toxic input materials or to utilize by-products
- Material substitution
- Reducing material inputs
- Recycle/reuse of refinery waste, by-products, or process materials and fluids
- Application of water conservation methods, including water reuse
- Waste segregation and separation
- Alternative and/or enhanced treatment technology, including upstream treatment of pollutants

Cross-media shift of pollutants should be avoided, unless a clear net environmental benefit results and compliance with standards applicable to other media or management programs would be maintained.

4. Prioritization & Selection of Pollution Prevention Opportunities

The plan must prioritize pollution prevention opportunities. The Permittee must provide their rationale for how the pollution prevention opportunities are prioritized. In addition to technical and economic feasibility, other factors may influence ranking of opportunities and should be included in the discussion. These factors may include capital projects planned or ongoing at the refinery that will provide a benefit to environmental media other than water, corresponding reduction in safety risks, etc.

Projects that achieve the highest environmental benefit must have greater priority. In prioritizing and selecting pollution prevention opportunities, the Permittee must give preference first to those that eliminate, avoid, or reduce the generation of water pollutants at the source, second to those that recycle or reuse the pollutants, and third to those that provide at-source or near-source treatment to remove pollutants or render them less toxic or harmful.

In ranking opportunities, the Permittee must also consider pollutant loading and toxicity and the potential to achieve the greatest reduction with respect to time and costs.

The Permittee is expected to establish reasonable priorities and schedules for implementation to achieve the greatest reduction in pollutant quantity and toxicity, as well as for management and fiscal necessity.

Appendix D

Construction Stormwater Pollution Prevention Plan Requirements

The Permittee must prepare and properly implement an adequate Construction Stormwater Pollution Prevention Plan (CSWPPP) for construction activity in accordance with the following requirements beginning with initial soil disturbance and until final stabilization.

A. The Permittee's CSWPPP must meet the following objectives:

1. To implement best management practices (BMPs) to prevent erosion and sedimentation, and to identify, reduce, eliminate or prevent stormwater contamination and water pollution from construction activity.
2. To prevent violations of surface water quality, ground water quality, or sediment management standards.
3. To control peak volumetric flow rates and velocities of stormwater discharges.

B. General Requirements

1. The CSWPPP must include a narrative and drawings. All BMPs must be clearly referenced in the narrative and marked on the drawings. The CSWPPP narrative must include documentation to explain and justify the pollution prevention decisions made for the project. Documentation must include:
 - a. Information about existing site conditions (topography, drainage, soils, vegetation, etc.).
 - b. Potential erosion problem areas.
 - c. The 13 elements of a CSWPPP in Sections D.1-13, including BMPs used to address each element.
 - d. Construction phasing/sequence and general BMP implementation schedule.
 - e. The actions to be taken if BMP performance goals are not achieved—for example, a contingency plan for additional treatment and/or storage of stormwater that would violate the water quality standards if discharged.
 - f. Engineering calculations for ponds, treatment systems, and any other designed structures. When a treatment system requires engineering calculations, these calculations must be included in the CSWPPP. Engineering calculations do not need to be included in the CSWPPP for treatment systems that do not require such calculations.
2. The Permittee must modify the CSWPPP if, during inspections or investigations conducted by the owner/operator, or the applicable local or state regulatory authority, it is determined that the CSWPPP is, or would be, ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The Permittee must then:

- a. Review the CSWPPP for compliance with the requirements of this appendix and make appropriate revisions within 7 days of the inspection or investigation.
- b. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems no later than 10 days from the inspection or investigation. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a Permittee within the initial 10-day response period.
- c. Document BMP implementation and maintenance in the site log book.

The Permittee must modify the CSWPPP whenever there is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the State.

C. Stormwater Best Management Practices (BMPs)

BMPs must be consistent with Ecology's 2012 *Stormwater Management Manual for Western Washington* as amended in December 2014.

1. Revisions to the *Stormwater Management Manual for Western Washington*, or other stormwater management guidance documents or manuals which provide an equivalent level of pollution prevention, that are approved by Ecology and incorporated into this permit in accordance with the permit modification requirements of WAC 173-220-190; or
2. Documentation in the CSWPPP that the BMPs selected provide an equivalent level of pollution prevention, compared to the applicable Stormwater Management Manuals, including:
 - a. The technical basis for the selection of all stormwater BMPs (scientific, technical studies, and/or modeling) that support the performance claims for the BMPs being selected.
 - b. An assessment of how the selected BMP will satisfy AKART requirements and the applicable federal technology-based treatment requirements under 40 CFR part 125.3.

D. CSWPPP – Narrative Contents and Requirements

The Permittee must include each of the 13 elements below in the narrative of the CSWPPP and implement them unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the CSWPPP.

1. Preserve Vegetation/Mark Clearing Limits
 - a. Before beginning land-disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area.
 - b. Retain the duff layer, native topsoil, and natural vegetation in an undisturbed state to the maximum degree practicable.

2. Establish Construction Access

- a. Limit construction vehicle access and exit to one route, if possible.
- b. Stabilize access points with a pad of quarry spalls, crushed rock, or other equivalent BMPs, to minimize tracking sediment onto roads.
- c. Locate wheel wash or tire baths on site, if the stabilized construction entrance is not effective in preventing tracking sediment onto roads.
- d. If sediment is tracked off site, clean the affected roadway thoroughly at the end of each day, or more frequently as necessary (for example, during wet weather). Remove sediment from roads by shoveling, sweeping, or pickup and transport of the sediment to a controlled sediment disposal area.
- e. Conduct street washing only after sediment removal in accordance with Section D.2.d. Control street wash wastewater by pumping back on site or otherwise preventing it from discharging into systems tributary to waters of the State.

3. Control Flow Rates

- a. Protect properties and waterways downstream of development sites from erosion and the associated discharge of turbid waters due to increases in the velocity and peak volumetric flow rate of stormwater runoff from the project site, as required by local plan approval authority.
- b. Where necessary to comply with Section D.3.a, construct stormwater retention or detention facilities as one of the first steps in grading. Assure that detention facilities function properly before constructing site improvements (for example, impervious surfaces).
- c. If permanent infiltration ponds are used for flow control during construction, protect these facilities from siltation during the construction phase.

4. Install Sediment Controls

The Permittee must design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, the Permittee must design, install and maintain such controls to:

- a. Construct sediment control BMPs (sediment ponds, traps, filters, infiltration facilities, etc.) as one of the first steps in grading. These BMPs must be functional before other land disturbing activities take place.
- b. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site.
- c. Direct stormwater runoff from disturbed areas through a sediment pond or other appropriate sediment removal BMP, before the runoff leaves a construction site or before discharge to an infiltration facility.

Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but must meet the flow control performance standard in Section D.3.a above.

- d. Locate BMPs intended to trap sediment on site in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or drainages.
 - e. Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible.
 - f. Where feasible, design outlet structures that withdraw impounded stormwater from the surface to avoid discharging sediment that is still suspended lower in the water column.
5. Stabilize Soils
- a. The Permittee must stabilize exposed and unworked soils by application of effective BMPs that prevent erosion. Applicable BMPs include, but are not limited to: temporary and permanent seeding, sodding, mulching, plastic covering, erosion control fabrics and matting, soil application of polyacrylamide (PAM), the early application of gravel base on areas to be paved, and dust control.
 - b. The Permittee must control stormwater volume and velocity within the site to minimize soil erosion.
 - c. The Permittee must control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion.
 - d. The Permittee must not allow soils to remain exposed and unworked for more than the time periods set forth below to prevent erosion:
During the dry season (May 1 - September 30): 7 days
During the wet season (October 1 - April 30): 2 days
 - e. The Permittee must stabilize soils at the end of the shift before a holiday or weekend if needed based on the weather forecast.
 - f. The Permittee must stabilize soil stockpiles from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways, and drainage channels.
 - g. The Permittee must minimize the amount of soil exposed during construction activity.
 - h. The Permittee must minimize the disturbance of steep slopes.
 - i. The Permittee must minimize soil compaction and, unless infeasible, preserve topsoil.

6. Protect Slopes

- a. The Permittee must design and construct cut-and-fill slopes in a manner to minimize erosion. Applicable practices include, but are not limited to, reducing continuous length of slope with terracing and diversions, reducing slope steepness, and roughening slope surfaces (for example, track walking).
- b. The Permittee must divert off-site stormwater (run-on) or ground water away from slopes and disturbed areas with interceptor dikes, pipes, and/or swales. Off-site stormwater should be managed separately from stormwater generated on the site.
- c. At the top of slopes, collect drainage in pipe slope drains or protected channels to prevent erosion. Temporary pipe slope drains must handle the peak 10-minute flow rate from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate predicted by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the Western Washington Hydrology Model (WWHM) to predict flows, bare soil areas should be modeled as "landscaped area."
- d. Place excavated material on the uphill side of trenches, consistent with safety and space considerations.
- e. Place check dams at regular intervals within constructed channels that are cut down a slope.

7. Protect Drain Inlets

- a. Protect all storm drain inlets made operable during construction so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.
- b. Clean or remove and replace inlet protection devices when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).

8. Stabilize Channels and Outlets

- a. Design, construct and stabilize all on-site conveyance channels to prevent erosion from the following expected peak flows. Channels must handle the peak 10-minute flow rate from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate indicated by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits.

For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the WWHM to predict flows, bare soil areas should be modeled as "landscaped area."

- b. Provide stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches at the outlets of all conveyance systems.
9. Control Pollutants

Design, install, implement and maintain effective pollution prevention measures to minimize the discharge of pollutants. The Permittee must:

- a. Handle and dispose of all pollutants, including waste materials and demolition debris that occur on site in a manner that does not cause contamination of stormwater.
- b. Provide cover, containment, and protection from vandalism for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment. On-site fueling tanks must include secondary containment. Secondary containment means placing tanks or containers within an impervious structure capable of containing 110% of the volume contained in the largest tank within the containment structure. Double walled tanks do not require additional secondary containment.
- c. Conduct maintenance, fueling, and repair of heavy equipment and vehicles using spill prevention and control measures. Clean contaminated surfaces immediately following any spill incident.
- d. Discharge wheel wash or tire bath wastewater to a separate on-site treatment system that prevents discharge to surface water, such as closed-loop recirculation or upland land application, or to the sanitary sewer with local sewer district approval.
- e. Apply fertilizers and pesticides in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Follow manufacturers' label requirements for application rates and procedures.
- f. Use BMPs to prevent contamination of stormwater runoff by pH-modifying sources. The sources for this contamination include, but are not limited to: bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, recycled concrete stockpiles, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, concrete pumping and mixer washout waters, or other concrete wastewater
- g. Adjust the pH of stormwater or authorized non-stormwater if necessary to prevent an exceedance of groundwater and/or surface water quality standards.
- h. Assure that washout of concrete trucks is performed off-site or in designated concrete washout areas only.

Do not wash out concrete truck drums or concrete handling equipment onto the ground, or into storm drains, open ditches, streets, or streams. Washout of concrete handling equipment may be disposed of in a designated concrete washout area or in a formed area awaiting concrete where it will not contaminate surface or ground water. Do not dump excess concrete on site, except in designated concrete washout areas. Concrete spillage or concrete discharge directly to groundwater or surface waters of the State is prohibited. Do not wash out to formed areas awaiting LID facilities.

- i. Obtain written approval from Ecology before using any chemical treatment, with the exception of CO₂ or dry ice used to adjust pH.
 - j. Uncontaminated water from water-only based shaft drilling for construction of building, road, and bridge foundations may be infiltrated provided the wastewater is managed in a way that prohibits discharge to surface waters. Prior to infiltration, water from water-only based shaft drilling that comes into contact with curing concrete must be neutralized until pH is in the range of 6.5 to 8.5 (su).
10. Control Dewatering
- a. Permittees must discharge foundation, vault, and trench dewatering water, which have characteristics similar to stormwater runoff at the site, into a controlled conveyance system before discharge to a sediment trap or sediment pond.
 - b. Permittees may discharge clean, non-turbid dewatering water, such as wellpoint ground water, to systems tributary to, or directly into surface waters of the State, as specified in Section D.8, provided the dewatering flow does not cause erosion or flooding of receiving waters. Do not route clean dewatering water through stormwater sediment ponds. Note that “surface waters of the State” may exist on a construction site as well as off site; for example, a creek running through a site.
 - c. Other dewatering treatment or disposal options may include:
 - i. Infiltration.
 - ii. Transport off site in a vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters.
 - iii. Ecology-approved on-site chemical treatment or other suitable treatment technologies (see Section D.9.i. regarding chemical treatment written approval).
 - iv. Sanitary or combined sewer discharge with local sewer district approval, if there is no other option.
 - v. Use of a sedimentation bag with discharge to a ditch or swale for small volumes of localized dewatering.
 - d. Permittees must handle highly turbid or contaminated dewatering water separately from stormwater.

11. Maintain BMPs

- a. Permittees must maintain and repair all temporary and permanent erosion and sediment control BMPs as needed to assure continued performance of their intended function in accordance with BMP specifications.
- b. Permittees must remove all temporary erosion and sediment control BMPs within 30 days after achieving final site stabilization or after the temporary BMPs are no longer needed.

12. Manage the Project

- a. Phase development projects to the maximum degree practicable and take into account seasonal work limitations.
- b. Inspection and monitoring – Inspect, maintain and repair all BMPs as needed to assure continued performance of their intended function. Conduct site inspections and monitoring in accordance with Special Condition S19.
- c. Maintaining an updated CSWPPP – Maintain, update, and implement the CSWPPP in accordance with Special Condition S19.

13. Protect Low Impact Development (LID) BMPs

The primary purpose of LID BMPs/On-site LID Stormwater Management BMPs is to reduce the disruption of the natural site hydrology. LID BMPs are permanent facilities.

- a. Permittees must protect all Bioretention and Rain Garden facilities from sedimentation through installation and maintenance of erosion and sediment control BMPs on portions of the site that drain into the Bioretention and/or Rain Garden facilities. Restore the facilities to their fully functioning condition if they accumulate sediment during construction. Restoring the facility must include removal of sediment and any sediment-laden Bioretention/Rain Garden soils, and replacing the removed soils with soils meeting the design specification.
- b. Permittees must maintain the infiltration capabilities of Bioretention and Rain Garden facilities by protecting against compaction by construction equipment and foot traffic. Protect completed lawn and landscaped areas from compaction due to construction equipment.
- c. Permittees must control erosion and avoid introducing sediment from surrounding land uses onto permeable pavements. Do not allow muddy construction equipment on the base material or pavement. Do not allow sediment-laden runoff onto permeable pavements.
- d. Permittees must clean permeable pavements fouled with sediments or no longer passing an initial infiltration test using local stormwater manual methodology or the manufacturer's procedures.
- e. Permittees must keep all heavy equipment off existing soils under LID facilities that have been excavated to final grade to retain the infiltration rate of the soils.

E. CSWPPP – Map Contents and Requirements

The Permittee's CSWPPP must also include a vicinity map or general location map (for example, a USGS quadrangle map, a portion of a county or city map, or other appropriate map) with enough detail to identify the location of the construction site and receiving waters within one mile of the site.

The CSWPPP must also include a legible site map (or maps) showing the entire construction site. The following features must be identified, unless not applicable due to site conditions:

1. The direction of north, property lines, and existing structures and roads.
2. Cut and fill slopes indicating the top and bottom of slope catch lines.
3. Approximate slopes, contours, and direction of stormwater flow before and after major grading activities.
4. Areas of soil disturbance and areas that will not be disturbed.
5. Locations of structural and nonstructural controls (BMPs) identified in the CSWPPP.
6. Locations of off-site material, stockpiles, waste storage, borrow areas, and vehicle/equipment storage areas.
7. Locations of all surface water bodies, including wetlands.
8. Locations where stormwater or non-stormwater discharges off-site and/or to a surface waterbody, including wetlands.
9. Location of water quality sampling station(s), if sampling is required by state or local permitting authority.
10. Areas where final stabilization has been accomplished and no further construction phase permit requirements apply.
11. Location or proposed location of LID facilities.