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 Permit No. WA0002984  
 Issuance Date: March 11, 2014  
 Effective Date: April 1, 2014  
 Expiration Date: March 31, 2019  
 1<sup>st</sup> Modification: February 29, 2016  
 2<sup>nd</sup> Modification: September 9, 2016  
 3<sup>rd</sup> Modification: May 1, 2017

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
 WASTE DISCHARGE PERMIT No. WA0002984

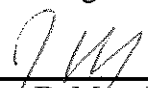
State of Washington  
 Department of Ecology  
 Olympia, Washington 98504-7600

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 1251 et seq.

Phillips 66 Ferndale Refinery  
 PO Box 8  
 Ferndale, WA 98248

<u>Facility Location:</u> 3901 Unick Road Ferndale WA 98246	<u>Receiving Water:</u> Strait of Georgia		
		Latitude	Longitude
	Outfall 001	48.826667	122.715833
	<u>Receiving Water:</u> Unnamed Tributary to Lummi Bay		
	Outfall 002	48.819722	122.684167
	<u>Receiving Water:</u> Unnamed Tributary to Strait of Georgia		
	Outfall 003	48.821944	122.704722
	Outfall 004	48.8275	122.710278
	Outfall 005	48.83	122.710278
	Outfall 006	48.821667	122.696111
	Outfall 007	48.8225	122.701667
<u>Industry Type:</u>	Petroleum Refinery		

is authorized to discharge in accordance with the special and general conditions which follow.


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 James DeMay, P.E.  
 Industrial Section Manager  
 Waste 2 Resources Program

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### 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.A.	Priority Pollutant Testing	Annually	By March 1, 2015
S1.C.	Stormwater Monitoring Results (Outfalls 002, 003, 004, 005, 006, and 007)	Quarterly	By August 15, 2014
S1.C.	Stormwater Outfall Inspections	Quarterly	By August 15, 2014 (with stormwater monitoring results)
S3.A.	Discharge Monitoring Report	Monthly	By May 15, 2014 (the 15 <sup>th</sup> of each month)
S3.A	Begin Electronic Reporting Using WA Web DMR	Monthly	First electronic DMR to be submitted no later than October 15, 2014
S3.D.	Additional Monitoring Results	As necessary	
S3.E.	24-hr Noncompliance Notification Report	As necessary	
S3.E.	Noncompliance Notification Written Report (within 5 days)	As necessary	
S3.E.5	Other Noncompliance Notification	As necessary	
S4.A.	Review and Update Operations and Maintenance Manual – Confirmation Letter	As necessary	
S4.A.	Updated Treatment System Operating Plan	At least 1/permit cycle, other updates as necessary	By October 1, 2018 (with permit renewal application)
S4.B.	Reporting Bypasses	As necessary	

Permit Section	Submittal	Frequency	First Submittal Date
S5.B.	Plans for Maintaining Adequate Capacity	As necessary	
S7.A.	Characterization Acute Toxicity Test Results	Quarterly	By August 31, 2014 (within 60 days of each sample date)
S7.D.	Compliance Acute Toxicity Test Results	As necessary (required if characterization determines that the effluent limit applies)	By November 30, 2015 (within 60 days of sample date if required)
S7.F.	Acute Toxicity Test Results	As necessary (required if there is no permit limit)	By October 1, 2018 (with permit renewal application)
S8.C.	Chronic Toxicity Test Results	Quarterly	By August 31, 2014 (within 60 days of each sample date)
S9.	Wastewater Treatment Efficiency Study Plan	As necessary	Within 90 days of start up of material and substantial alterations to refinery
S9.	Updated Engineering Report	As necessary	Within 180 days after completion of treatment efficiency study
S10.A.	Sediment Sampling and Analysis Plan	1/permit cycle	By October 1, 2014
S10.C.	Sediment Data Report	1/permit cycle	Within 180 days of completion of sampling
S11.B.	Updated Pollution Prevention Plan	1/permit cycle	By October 1, 2015

Permit Section	Submittal	Frequency	First Submittal Date
S11.C.	Stormwater Inspection Results	Every 2 years	By September 1, 2014 (with the pollution prevention plan biennial progress report)
S11.D.	Pollution Prevention Biennial Progress Report	Every 2 years	By September 1, 2014 (within 2 years after submittal of Pollution Prevention Plan and every two years thereafter)
S12.	Groundwater Monitoring Results	Semi-annually	Within 60 days of each sample date
S13.	Summary of Off-Site Dangerous Wastes	1/permit cycle	By October 1, 2018 (with the permit renewal application)
S14.	Outfall Evaluation Report	1/permit cycle	Within 90 days of conducting the outfall evaluation but no later than October 1, 2018
S16.	Application for Permit Renewal	1/permit cycle	By October 1, 2018
G1.C.	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	
G20.	Notification of Discharge of Toxic Pollutants	As necessary	

## SPECIAL CONDITIONS

### S1. Discharge Limitations

#### A. Process Wastewater Discharges

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 and lasting through the expiration date, the Permittee is authorized to discharge wastewater treatment plant effluent at the permitted location subject to complying with the following limits:

Parameter	Units	Effluent Limitations: Outfall # 001		Monitoring Frequency	Sample Type
		Average Monthly <sup>a</sup>	Maximum Daily <sup>b</sup>		
Biochemical Oxygen Demand (5-day)	lbs/day	407	732	2/wk	24 hr comp <sub>c</sub>
Chemical Oxygen Demand (COD)	lbs/day	2805	5423	Daily	24 hr comp <sub>c</sub>
Total Suspended Solids (TSS)	lbs/day	325	506	Daily	24 hr comp <sub>c</sub>
Oil and Grease	lbs/day	121	220	Daily	Grab
Oil and Grease	mg/l	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	lbs/day	2.4	5.4	1/wk	24 hr comp <sub>c</sub>
Ammonia as N	lbs/day	248	543	1/wk	24 hr comp <sub>c</sub>
Sulfide	lbs/day	2.0	4.3	Monthly <sup>d</sup>	Grab
Hexavalent Chromium	--	0.050 mg/l and 0.85 lbs/day		Semi- annually	24 hr comp <sub>c</sub>
Fecal Coliform	organism s/100 mls	200	400	2/wk	Grab



Parameter	Units	Effluent Limitations: Outfall # 001		Monitoring Frequency	Sample Type
		Average Monthly <sup>a</sup>	Maximum Daily <sup>b</sup>		
pH <sup>e</sup>		Daily minimum is equal to or greater than 6.0 and the daily maximum is less than or equal to 9.0		Continuous <sub>c,f</sub>	Continuous <sub>c</sub>
Temperature	°C	--	--	Continuous <sub>c</sub>	Continuous <sub>c</sub>
Feedstock Rate <sup>g</sup>	bbls/day	--	--	Daily	Recorded but not reported
Ballast Water Flow	gallons received	--	--	Daily	
Rainfall	inch/day	--	--	Daily	
Final Effluent Flow	MGD	--	--	Continuous <sub>c</sub>	Continuous <sub>c</sub>
Influent Flow to IGF Unit***	MGD			Continuous <sub>c</sub>	Continuous <sub>c</sub>
COD loading to MBBR	mg/L			Quarterly	Grab
Priority Pollutants (PP) <sup>h</sup>	µg/L; ng/L for mercury			Once /year (results due within 90 days of sampling but no later than March 1 <sup>st</sup> of the following year)	Grab
Stormwater Monitoring – See Permit Condition S1.C.					
Acute Toxicity Testing – See Permit Condition S7.					
Chronic Toxicity Testing – See Permit Condition S8.					
Wastewater Treatment Efficiency Study – See Permit Condition S9.					
Sediment Monitoring – See Permit Condition S10.					
Groundwater Monitoring – See Permit Condition S12.					
*** Flow is measured at the IGF influent meter.					

- a The 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, you add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured. Additional allocation may be permitted for stormwater runoff and ballast water according to Permit Condition S1.B.
- b The maximum daily effluent limit means the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day. For pollutants with limits expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For other units of measurement, the daily discharge is the average measurement of the pollutant over the day. Additional allocation may be permitted for stormwater runoff and ballast water according to Permit Condition S1.B.
- c Continuous means uninterrupted except for brief lengths of time for calibration, for power failure, or for necessary equipment repair or maintenance. With the exception of pH, the Permittee must sample every 4 hours when continuous monitoring is not possible. 24-hour composite means a series of individual samples collected over a 24-hour period into a single container and analyzed as one sample. Grab means an individual sample collected over a fifteen (15)-minute or less period.
- d The monitoring frequency for this parameter has been reduced as a result of consistent performance well below the permit limits. Should the treatment performance deteriorate, Department of Ecology (Ecology) may increase the monitoring frequency to the level required in the previous permit (1/week). Ecology will notify the Permittee by letter to increase the monitoring upon deteriorating performance.
- e Indicates the range of permitted values. Any excursions below 5.0 and above 10.0 at any time are violations. The instantaneous maximum and minimum pH must be reported in the monthly. Do not average pH values. When pH is continuously monitored, excursions between 5.0 and 6.0, or 9.0 and 10.0 must not considered violations provided no single excursion exceeds 60 minutes in length and total excursions do not exceed 7 hours and 30 minutes per month.
- f If pH data from the continuous monitor is unavailable, pH monitoring must consist of grab samples collected every 4-hours.
- g The average daily crude throughput must be reported in the monthly DMR.
- h The Permittee must sample the final effluent (Outfall 001) annually and analyze the sample for the priority pollutants listed in Appendix B. See Appendix B for required detection (DL) or quantitation (QL) levels. The detection limit and the method must conform to those listed. The Permittee must submit the results of these analyses to Ecology within 90 days of each sampling event. List the data in tabular form with the method, detection limit, and the measured value including units. The PCBs and pesticides listed in Appendix B are not required to be tested for unless they are used at the refinery.

**B. Ballast and Stormwater Allocations (Outfall 001)**

The Permittee is authorized to discharge additional amounts of the following parameters based on stormwater and ballast water flow through Outfall 001. The Permittee must determine ballast water volume by gauging the ballast water storage tanks and report the cumulative monthly ballast water volume with the DMR if the ballast allocation is not used. If the ballast water allocation is used, the Permittee must submit the DMR with a report showing the daily volume of ballast water released to the wastewater system for treatment.

The Permittee must determine the stormwater flow rate as the difference between total measured effluent through Outfall No. 001 and the sum of ballast water plus the average dry weather flow rate. **The average dry weather flow is hereby established as 1.71 MGD.** The Permittee may only use the maximum daily stormwater allocation on those stormwater flow days when the base limits from S1 above are exceeded. **During the summer months of June through October the Permittee may only claim the stormwater allocation for the maximum daily value when it can demonstrate that measurable rainfall has occurred at the refinery site during the previous 10 calendar days.** If rainfall data on-site is unavailable due to equipment malfunction, data from nearby rainfall gauging stations can be used.

Parameter	Ballast Water Allocation: Outfall #001		Stormwater Allocation: Outfall #001	
	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily
<b>Pounds/Million Gallons</b>				
Biochemical Oxygen Demand (5-Day)	210	400	220	400
Chemical Oxygen Demand	2000	3900	1500	3000
Total Suspended Solids	170	260	180	280
Oil and Grease	67	126	67	130
Phenolic Compounds	N/A	N/A	1.4	2.9

**Stormwater flow** is equal to the amount of flow in excess of the established dry weather flow plus ballast water. **For the months of June through October, qualifying stormwater flow days** are only those days when measurable rainfall occurred at the refinery site during the previous 10 calendar days. **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 times the average monthly allocation for that parameter. The **Total Average Monthly Limitation (T)** is the sum of the base average monthly limit (B) (listed in Condition S1.A) plus the Average Monthly Stormwater Allocation (listed in Condition S1.B). **T = B + AMSWA.** (An example calculation is shown in **Appendix A**).

C. Stormwater Benchmarks, Prohibitions, and Monitoring Requirements (Outfalls 002, 003, 004, 005, 006, and 007)

1. Authorized Stormwater and Non-Stormwater Discharges

Beginning on the effective date of the this permit and lasting through its expiration date, the Permittee is authorized to discharge stormwater and conditionally approved non-stormwater discharges (Non-Routine and Unanticipated Discharges, Condition S6.) from Outfall 003 to waters of the state. All discharges and activities authorized by this permit must be consistent with the terms and conditions of this permit.

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 this permit, the Permittee must monitor stormwater from Outfalls 002, 003, 004, 005, 006 and 007 for the parameters listed in the following tables.

<b>Outfalls 002, 003, 004, 005, 006, and 007</b>			
<b>Parameter</b>	<b>Benchmark Value</b>	<b>Monitoring Frequency<sup>a, b</sup></b>	<b>Sample Type</b>
Turbidity	25 NTU	Quarterly	Grab
TSS	30 mg/L	Quarterly	Grab
Oil and Grease	15 mg/L	Quarterly	Grab
Total Copper	14 µg/L	Quarterly	Grab
Total Zinc	117 µg/L	Quarterly	Grab
pH	6-9 SU	Quarterly	Grab
Hardness	NA	Annually	Grab
Visual Monitoring as described below.	--	Monthly	--
<sup>a</sup>	The Permittee may petition Ecology to reduce or suspend monitoring for one or more of these parameters upon consistent attainment of benchmark values. Consistent attainment is defined as eight consecutive quarters where the reported values are equal to or less than benchmark values.		
<sup>b</sup>	Quarters are defined as: First Quarter – January, February, and March		

Outfalls 002, 003, 004, 005, 006, and 007			
Parameter	Benchmark Value	Monitoring Frequency <sup>a, b</sup>	Sample Type
	Second Quarter – April, May, and June Third Quarter – July, August, and September Fourth Quarter – October, November, and December		

Benchmark values are not water quality standards or permit limits. They are indicator values. Values at or below the benchmark are considered unlikely to cause a water quality violation.

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 sample the stormwater discharges from Outfalls 002, 003, 004, 005, 006, and 007 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 8:00am - 5:00pm), during unsafe conditions, or during quarters where 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 it could not collect a sample within the first 12 hours of a stormwater discharge event, if it was not possible.
- e. Sample location (using SWPPP identifying number).
- f. Method of sampling, and method of sample preservation, if applicable.
- g. Individual who performed the sampling.

If no stormwater sample was sampled from the site during a given reporting period, the Permittee must submit the report indicating “no sample sampled”, or “no discharge during the quarter”, as applicable.

The Permittee must conduct and document visual inspections of Outfalls 002, 003, 004, 005, 006, and 007 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:

- a. Time and date of the inspection
- b. Locations inspected.
- c. Any observations of non-compliance and the remedial actions the Permittee plans to take.
- d. 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
1st Quarter	January, February, and March	May 15
2nd Quarter	April, May, and June	August 15
3rd Quarter	July, August, and September	November 15
4th Quarter	October, November, and December	February 15

4. Response to Monitoring Results above Benchmark Values

Each time that sampling results are above benchmark value or outside the benchmark range for pH, the Permittee must take the following actions:

- a. Conduct an inspection of the drainage area for the affected outfall as promptly as possible, but **no later than two weeks** 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 best management practices (BMPs) to ensure that they fully comply with the Pollution Prevention Plan requirements of Permit Condition S11.
- 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 benchmark values.

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 as identified as needed in the investigation on a schedule approved by Ecology. 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.

D. Firewater Testing

The Permittee is authorized to discharge treated effluent via the dockside firewater system during monthly testing of the fire suppression system and Emergency Response Team (ERT) training. The Permittee is required to meet the discharge requirements for Outfall 001 as listed above. The Permittee must **not** use foam during firewater testing or during the ERT training. The Permittee must report firewater testing for the above events in the monthly discharge monitoring report and must report duration and an estimated flow volume.

E. Mixing Zone Authorization

Mixing Zone For Outfall 001

The following paragraphs define the maximum boundaries or flow-volume restriction of the mixing zones:

Chronic Mixing Zone

The mixing zone is a circle with a radius of 231 feet (70.4 meters) measured from the center of each of the diffuser ports. The mixing zone extends from the seabed to

the top of the water surface. 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 zone is a circle with a radius of 23 feet (7 meters) measured from the center of each discharge port. The mixing zone extends from the seabed to the top of the water surface. The concentration of pollutants at the edge of the acute zone must meet acute aquatic life criteria.

	<u>Available Dilution</u>
Acute Aquatic Life Criteria	27
Chronic Aquatic Life Criteria	94
Human Health Criteria - Carcinogen	103
Human Health Criteria - Non-carcinogen	103

## **S2. Monitoring Requirements**

### A. Monitoring Schedule

The Permittee must monitor in accordance with the schedules specified for the final effluent and stormwater discharges in Permit Condition S1 and the requirements specified in Appendix B.

### B. Sampling and Analytical Procedures

Samples and measurements taken to meet the requirements of this permit must be representative of 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 sample is removed for the Permittee's analysis, the remainder, 2-3 gallons (minimum) must be retained until 3:00pm of the following day. The composite sample must be kept refrigerated at or below 6° Celsius (°C) 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.



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 and the manufacturer's recommendation for that type of device.
3. If the Permittee uses micro-recording temperature devices known as thermistors, it must calibrate the devices using protocols from Ecology's Quality Assurance Project Plan Development Tool (*Continuous Temperature Sampling Protocols for the Environmental Monitoring and Trends*). This document is available online at <http://www.ecy.wa.gov/programs/eap/qa/docs/QAPPtool/Mod6%20Ecology%20SOPs/Protocols/ContinuousTemperatureSampling.pdf> . Calibration as specified in this document is not required if the Permittee uses recording devices which are certified by the manufacturer.
4. Use field measurement devices as directed by the manufacturer and do not use reagents beyond their expiration dates.
5. Calibrate these devices at the frequency recommended by the manufacturer
6. Calibrate flow monitoring devices at a minimum frequency of at least one calibration per year.
7. Maintain calibration records for at least three years.

D. Laboratory Accreditation

The Permittee must ensure that the laboratory it uses to perform analyses required by Ecology is 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 pH if it must receive accreditation or registration for other parameters. Crops and soils data are process control parameters which do not require preparation by an accredited laboratory. However, the Permittee must obtain this data from a reputable agricultural test lab that is an active participant in a nationally recognized agricultural laboratory proficiency testing program.

### S3. Reporting and Recordkeeping Requirements

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

#### A. Reporting

The first monitoring period begins on the effective date of the permit. The Permittee must:

1. Submit monitoring results each month unless otherwise specified in the permit.
2. Summarize, report, and submit monitoring data obtained during each monitoring period on the electronic Discharge Monitoring Report (DMR) form provided by Ecology within WAWebDMR. Include data for each of the parameters tabulated in Special Condition S1 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 WAWebDMR go to:  
<http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html>

The Permittee may submit DMRs on the paper form provided by Ecology until **October 15, 2014**.

3. Submit DMR forms monthly whether or not the facility was discharging. 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.

Until the compliance date identified in S3.A.2., the Permittee must submit the paper DMR form required with the words “NO DISCHARGE” entered in place of the monitoring results if the facility did not discharge during a given monitoring period.

4. 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.

5. 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 or Condition S1.
6. Calculate average values (unless otherwise specified in the permit) using:
  - a. The reported numeric value for all parameters measured between the agency-required detection value and the agency-required quantitation value.
  - b. One-half the detection value (for values reported below detection) if the lab detected the parameter in another sample for the reporting period.
  - c. Zero (for values reported below detection) if the lab did not detect the parameter in another sample for the reporting period.
7. Report all priority pollutant data on the WAWebDMR form and include: sample date, concentration detected, detection limit (DL) (as necessary), and laboratory quantitation level (QL) (as necessary). The Permittee must also submit an electronic pdf copy of the laboratory report using WAWebDMR. A paper copy of the laboratory report must be provided if the Permittee is submitting priority pollutant data prior to the compliance date for electronic reporting.

The laboratory report must include the following information: date sampled, sample location, date of analysis, parameter name, CAS number, analytical method/number, detection limit (DL), laboratory quantitation level (QL), reporting units, and concentration detected. The contract laboratory reports must also include information on the chain of custody, QA/QC results, and documentation of accreditation for the parameter.

8. Ensure that DMRs are electronically submitted no later than the 15<sup>th</sup> day of the month following the completed monitoring period, unless otherwise specified in this permit. Until the compliance date identified in S3.A.2., the Permittee must ensure that paper DMR forms are postmarked or received by Ecology no later than the 15<sup>th</sup> day of the month following the completed monitoring period, unless otherwise specified in this permit.
9. Send reports to Ecology online using Ecology's electronic WAWebDMR submittal forms (electronic DMRs) as required above. Send paper reports to Ecology at:

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

B. Records Retention

The Permittee must retain records of all monitoring information (sampling results, inspection reports/checklists, site log books, etc.), Stormwater Pollution Prevention Plans, and any other documentation of compliance with permit requirements for a minimum of three (3) years and the entire life of any construction project. 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.

C. 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.

D. Additional Monitoring by the Permittee

If the Permittee monitors any pollutant more frequently than required by Condition S1 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. This requirement relates only to the parameters and locations specified in Condition S1 and only to monitoring using test procedures approved under 40 CFR Part 136, or another method required for an industry specific waste stream under 40 CFR subchapters.

E. Reporting Permit Violations

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

- a. Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance and correct the problem when it is safe to proceed.

- b. If applicable, immediately repeat sampling and analysis. Submit the results of any repeat sampling to Ecology within thirty (30) days of sampling.

1. Immediate Reporting

The Permittee must report any failure of the disinfection system, any collection system overflows which may reach surface waters or any plant bypass discharging to a shellfish area immediately to Ecology, the Department of Health, and Shellfish Program at the numbers listed below:

Department of Ecology,	(425) 649-7000
Northwest Regional Office	
Department of Health,	1-800-521-0323 (business hours)
Shellfish Program	(360) 236-3330 (business hours)
	(360) 789-8962 (after business hours)

The Permittee must also notify Ecology's Industrial Section permit manager by telephone for any of the above situations. Outside of normal working hours, a voice mail notification to the Industrial Section permit manager or their designated backup will meet this requirement.

2. Twenty-four-hour Reporting

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

- a. Any noncompliance that may endanger health or the environment, unless previously reported under subpart 1, above.
- b. Any unanticipated **bypass** that exceeds any effluent limitation in the permit (See Part S4.B., "Bypass Procedures").
- c. Any **upset** that exceeds any effluent limitation in the permit (See G.15, "Upset").
- d. Any violation of a maximum daily or instantaneous maximum discharge limitation for any of the pollutants in Section S1.A of this permit.
- e. Any wastewater overflow that is not treated in accordance with the Ecology approved engineering report, whether or not such overflow endangers health or the environment or exceeds any effluent limitation in the permit.

3. Report within Five Days

The Permittee must also provide a written submission within five days of the time that the Permittee becomes aware of any event required to be reported under subparts 1 or 2, above. The written submission must contain:

- a. A description of the noncompliance and its cause.
- b. The period of noncompliance, including exact dates and times.
- c. The estimated time noncompliance is expected to continue if it has not been corrected.
- d. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
- e. If the noncompliance involves an overflow prior to the treatment works, an estimate of the quantity (in gallons) of untreated overflow.

4. Waiver of Written Reports

Ecology may waive the written report required in subpart 3, above, on a case-by-case basis upon request if a timely oral report has been received.

5. 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 S3.A ("Reporting"). The reports must contain the information listed in Section E.3, 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.

6. Report Submittal

The Permittee must submit reports to the address listed in S3.

F. Other Reporting

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. You can obtain further instructions at the following website:

<http://www.ecy.wa.gov/programs/spills/other/reportaspill.htm> .

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.

The Permittee must submit a new application or supplement 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.

G. 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 industrial wastewater and stormwater 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 includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by a Permittee when the operation is necessary to achieve compliance with the conditions of this permit.

A. Operations and Maintenance Manual

The Permittee must:

1. Maintain and follow the Operations and Maintenance (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.

In addition to the requirements of WAC 173-240-150(1) and (2), the O&M manual must include:

1. Emergency procedures for plant shutdown and cleanup in event of wastewater system upset or failure.

2. Procedures to maintain treatment efficiency during scheduled maintenance operations at the wastewater treatment plant.

For the purposes of this NPDES 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 in 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, start ups 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 **October 1, 2018** (with the permit renewal application). 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.

**B. Bypass Procedures**

This permit prohibits a bypass which is the intentional diversion of waste streams from any portion of a treatment facility. Ecology may take enforcement action against a Permittee for a bypass unless one of the following circumstances (1, 2, or 3) applies.

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

Bypass is authorized if it is for essential maintenance and does not have the potential to cause violations of limitations or other conditions of this permit, or adversely impact public health as determined by Ecology prior to the bypass. The Permittee must submit prior notice, if possible, at least ten (10)



days before the date of the bypass. Notice is not required where redundant equipment is available to perform the functions of equipment scheduled for bypass during maintenance.

2. Bypass which is unavoidable, unanticipated, and results in noncompliance of this permit.

This bypass is permitted only if:

- a. 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.
  - b. No 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.
    - Transport of untreated wastes to another treatment facility or preventative maintenance), or transport of untreated wastes to another treatment facility.
  - c. Ecology is properly notified of the bypass as required in condition S3E of this permit.
3. If bypass is anticipated and has the potential to result in noncompliance of this permit.
    - a. The Permittee must notify Ecology at least thirty (30) days before the planned date of bypass. The notice must contain:
      - A description of the bypass and its cause.
      - An analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.
      - A cost-effectiveness analysis of alternatives including comparative resource damage assessment.
      - 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 reoccurrence 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 preparation of the engineering report or facilities plan and plans and specifications and must include these 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 consider the following prior to issuing an administrative order for this type of bypass:
- If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
  - If feasible alternatives to bypass exist, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
  - If the Permittee planned and scheduled the bypass to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, Ecology will approve or deny the request. Ecology will give the public an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Ecology will approve a request to bypass by issuing an administrative order under RCW 90.48.120.

C. Duty to Mitigate

The Permittee is required to take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

**S5. Facility Loading**

A. Design Criteria

The flows or waste loads for the permitted facility must not exceed the following design criteria:

<b>Parameter</b>	<b>Design Quantity</b>
Maximum flow through the API oil/water separators <sup>1</sup>	2380 gpm
Maximum COD loading to the MBBR unit	1700 mg/L

<sup>1</sup> As measured at the influent to the IGF unit

B. Plans for Maintaining Adequate Capacity

The Permittee must submit to Ecology a plan and a schedule for continuing to maintain capacity when:

1. The actual flow or waste load reaches 85 percent of any one of the design criteria in S5.A for three consecutive months; or
2. The projected increase would reach design capacity within five years, whichever occurs first.

If such a plan is required, it must contain provisions and a schedule for continuing to maintain capacity. The capacity as outlined in this plan must be sufficient to achieve the effluent limitations and other conditions of this permit. The plan must address the following actions and any others necessary to meet the objective of maintaining capacity.

1. Analysis of the present design including the introduction of any process modifications that would affect the ability of the existing facility to achieve effluent limits and other requirements of this permit at levels in excess of the existing design criteria specified in paragraph A, above.
2. Reduction or elimination of excessive infiltration and inflow into the sewer system.
3. Limitation on future additional waste loads.
4. Modification or expansion of facilities necessary to accommodate increased flow or waste load.

Engineering documents associated with the plan must meet the requirements of WAC 173-240-130, "Engineering Report," and be approved by Ecology prior to any construction.

**S6. Non-Routine and Unanticipated Discharges**

- A. Beginning on the effective date of this permit, the Permittee may discharge non-routine wastewater or clean water such as storage tank hydro test water or fire system test water 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:
1. The proposed discharge location.
  2. The nature of the activity that will generate the discharge.
  3. Any alternatives to the discharge, such as reuse, storage, or recycling of the water.
  4. The total volume of water it expects to discharge.
  5. The results of the chemical analysis of the water. The Permittee must analyze the water for all constituents limited for the discharge. The analysis must also include hardness, any metals that are limited by water quality standards, and any other parameter deemed necessary by Ecology. All discharges must comply with the effluent limits as established in Condition S1. of this permit, water quality standards, and any other limits imposed by Ecology.
  6. The date of proposed discharge.
  7. The expected rate of discharge discharged, in gallons per minute. The Permittee must limit the discharge rate so it will not cause erosion of ditches or structural damage to culverts and their entrances or exits.
- B. The discharge cannot proceed until Ecology has reviewed the information provided and has authorized the discharge by email/letter to the Permittee or by an Administrative Order.

**S7. Acute Toxicity**

A. Effluent Characterization

The Permittee must:

1. Conduct acute toxicity testing on the final effluent **quarterly** for one year by July 1, 2014 (within 90 days of the permit effective date). Quarterly means

January through March, April through June, July through September, and October through December.

- a. Submit a written report to Ecology within sixty (60) days after each sample date.
- b. Use a dilution series consisting of a minimum of five concentrations and a control. The five concentrations must include the ACEC of 3.7% effluent.
- c. Conduct the following **two** acute toxicity tests on each sample:

Acute Toxicity Tests	Species	Method
Topsmelt 96-hour static-renewal test	<i>Atherinops affinis</i>	EPA-821-R-02-012
Mysid shrimp 48-hour static test	<i>Mysidopsis bahia</i> / <i>Americamysis bahia</i>	EPA-821-R-02-012

- d. The effluent limit for acute toxicity listed in Subsection B. below applies if after one year of effluent characterization:
  - The median survival of either topsmelt or mysid shrimp in 100% effluent is below 80%.
  - Any one test of either topsmelt or mysid shrimp exhibits less than 65% survival in 100% effluent.

If the limit applies, the Permittee must immediately follow the instructions in Subsections B, C, D, E, and G. If the limit does not apply, the Permittee must follow the instructions in Subsections F and G.

**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 Section S1.E. of this permit. The ACEC equals **3.7** % effluent.

**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 subsection 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 Section 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 Section 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.

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 characterization determines that the effluent limit for acute toxicity applies. Testing must begin within 60 days after the final report is due from characterization. Quarterly means January through March, April through June, July through September, and October through December.
3. Submit a written report of all test results to Ecology within sixty (60) days after each sample date.

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

Acute Toxicity Tests	Species	Method
Topsmelt 96-hour static-renewal test	<i>Atherinops affinis</i>	EPA-821-R-02-012
Mysid shrimp 48-hour static test	<i>Mysidopsis bahia</i> / <i>Americamysis bahia</i>	EPA-821-R-02-012

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

If a toxicity test conducted under subsection D. determines a statistically significant difference in response between the ACEC and the control, using the statistical test described in subsection 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 Subsection C.
3. Return to the original monitoring frequency in Subsection D after completion of the additional compliance monitoring.

**Anomalous test results:** If a toxicity test conducted under subsection 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 should conduct one additional test then wait for notification from Ecology before completing the additional testing required above. 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 subsection. 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 subsection. 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 required by Section S7.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:

1. Operating records
2. Monitoring results
3. Inspection records
4. Spill reports
5. Weather records
6. Production records
7. Raw material purchases
8. 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 60 days after the sample date (WAC 173-205-100(2)).

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. Submit the results to Ecology by October 1, 2018 with the permit renewal application.
3. Conduct acute toxicity testing on a series of at least five concentrations of effluent, including 100% effluent, and a control.
4. Use each of the following species and protocols for each acute toxicity test:

Acute Toxicity Tests	Species	Method
Topsmelt 96-hour static-renewal test	<i>Atherinops affinis</i>	EPA-821-R-02-012
Mysid shrimp 48-hour static test	<i>Mysidopsis bahia</i> / <i>Americamysis bahia</i>	EPA-821-R-02-012

G. Sampling and Reporting Requirements

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology’s Publication # 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 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 lab 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



Department of Ecology Publication # 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 subsection C. and Department of Ecology Publication # 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 subsection 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 3.7 % 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.
9. Reports of individual characterization or compliance test results must be submitted to Ecology within 60 days of each sample date.

## **S8. Chronic Toxicity**

### **A. 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 Section S1.E. of this permit. The CCEC equals **1.1%** effluent.

B. Compliance with the Effluent Limit for Chronic Toxicity

Compliance with the effluent limit for chronic toxicity means the results of the testing specified in subsection C. shows 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 Section D, 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 Section D.

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 re-evaluate 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.

C. 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 by July 1, 2014 (within 90 days of the permit effective date). Quarterly mean January through March, April through June, July through September, and October through December.
3. Submit a written report of all test results to Ecology within 60 days after each sample date. This written report must include the results of hypothesis testing conducted as described in subsection B. using both the ACEC and CCEC versus the control.
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/600/R-95-136

Saltwater Chronic Test	Species	Method
Mysid shrimp survival and growth	<i>Mysidopsis bahia</i> / <i>Americamysis bahia</i>	EPA-821-R-02-014

D. Response to Noncompliance with the Effluent Limit for Chronic Toxicity

If a toxicity test conducted under subsection C. determines a statistically significant difference in response between the CCEC and the control using the statistical test described in subsection B., 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. Test 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 subsection B.
3. Return to the original monitoring frequency in subsection C. after completion of the additional compliance monitoring.

**Anomalous test results:** If a toxicity test conducted under subsection C. 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 should conduct one additional test then wait for notification from Ecology before completing the additional testing required above. 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 subsection. 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 subsection. 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 by S8.D.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:

1. Operating records
2. Monitoring results
3. Inspection records
4. Spill reports
5. Weather records
6. Production records
7. Raw material purchases
8. 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)).

E. Sampling and Reporting Requirements

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology's Publication # 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 24-hour composite effluent samples or 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 lab 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 Department of Ecology Publication # 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 subsection C. and Ecology's Publication # 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 subsection C. or pristine natural water of sufficient.
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 1.1% effluent. The ACEC equals 3.7% 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
9. Reports of individual characterization or compliance test results must be submitted to Ecology within 60 days of each sample date.

#### **S9. Wastewater Treatment Efficiency Study and Updated Engineering Report**

Ecology will require a wastewater treatment efficiency study if the Permittee proposes material and 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 treatment efficiency study, the Permittee must prepare and 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 treatment efficiency study and compare the new conditions to predicted design capacities. The Permittee must submit the update to Ecology for review and approval within 180 days after completion of the treatment efficiency study.

#### **S10. Sediment Monitoring**

The Permittee must submit a Sediment Sampling and Analysis Plan to recharacterize sediment toxicity in the vicinity of Outfall 001 to Ecology for review and approval. The purpose of the plan is to recharacterize sediment toxicity in the vicinity of the Permittee's discharge locations between the period of August 15<sup>th</sup> and September 15<sup>th</sup>.

The Permittee must prepare a Sediment Sampling and Analysis Plan following the guidance provided in the Sediment Source Control Standards User Manual, Appendix B: Sediment Sampling and Analysis Plan (Ecology, 2008) and current Puget Sound Estuary Program Protocols.

- A. The Permittee must submit the Sediment Sampling and Analysis Plan to Ecology by **October 1, 2014** (within 180 days of the permit effective date). The SAP must include *Microtox* as the chronic effects bioassay test for this sampling event.
- B. The Permittee must perform sediment sampling during the first stable period (mid-August through September) following Ecology approval of the plan.
- C. The Permittee must submit a Sediment Data Report containing the results of the sediment sampling and analysis no later than 180 days after completion of sampling. The Sediment Data Report must also include electronic copies of the sediment chemical and/or biological data formatted according to Ecology's Environmental Information Management (EIM) System templates.

#### **S11. Pollution Prevention Plan**

Pollution prevention at the facility includes the:

- 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.
- New pollution prevention projects identified for the upcoming permit cycle in the Pollution Prevention Plan update.

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 or 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 update required below.

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. 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.

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.

A. Pollution Prevention Plan

1. The Permittee must maintain and follow the Pollution Prevention Plan for the refinery.
2. The Pollution Prevention Plan must specify the Standard Operating Procedures (SOPs), Best Management Practices (BMPs), and work practices necessary to:
  - Provide all known, available, and reasonable methods of prevention, control, and treatment (AKART) of pollutants to the wastewater treatment system, stormwater, and/or waters of the state.
  - Ensure that discharges from the site 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) or provide an equivalent level of pollution prevention approved by Ecology. The Pollution Prevention Plan must document that BMPs selected are demonstrably equivalent to practices contained in stormwater technical manuals approved by Ecology, including the proper selection, implementation, and maintenance of all applicable and appropriate best management practices for on-site pollution control.

B. Pollution Prevention Plan Update and Implementation

1. The Permittee must update its Pollution Prevention Plan and submit it to Ecology for review and approval by **October 1, 2015** (within 18 months of the permit effective date). The Permittee must implement the approved pollution prevention plan update and any approved modifications to the plan and abide by the timeframes identified in the plan.
2. The updated Pollution Prevention Plan must:

- Identify any new sources of pollutants to the wastewater treatment system, stormwater, and/or waters of the state,
- Reevaluate previously identified pollution prevention opportunities,
- Identify any new pollution prevention opportunities, and
- Include a schedule for implementing those pollution prevention opportunities that are technically and economically achievable.

Previously identified opportunities include those identified by the facility in their current Pollution Prevention Plan and those identified in Ecology Publication 02-07-017, *Water Pollution Prevention Opportunities in Petroleum Refineries*. The update must also include an evaluation of the existing SOPs, BMPs, and work practices developed during previous pollution prevention planning.

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.

3. Specifically, the Permittee must evaluate the following pollution prevention opportunities:
  - a. Lining the wastewater and stormwater treatment ponds,
  - b. Increasing the removal efficiency of TSS in the wastewater and stormwater treatment trains, and
  - c. Evaluating the potential to remove mercury and copper from the process wastewater.
4. If a detailed analysis of technical and economical 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.
5. The Permittee must also 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.
6. 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.

7. 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 and 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.
8. 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.

C. Stormwater Inspections

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

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 **dry season inspection** 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.

D. Biennial Reporting

The Permittee must submit a biennial progress report by September 1<sup>st</sup> (within 2 years after submittal of the Pollution Prevention Plan) and every two years

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

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.

**S12. Groundwater Monitoring**

To determine the effects of any discharge through the bottoms of the wastewater ponds, the Permittee must:

- Sample the groundwater at monitoring wells MW-GWIS-2, MW-GWIS-3, MW-GWIS-5, MW-GWIS-6, MW-GWIS-7, MW-GWIS-8, MW-GWIS-9, MW-CIII-91-8, and MW-CIII-91-9 **semi-annually** (beginning in June 2017 and thereafter) during the permit term.
- If not already established, the Permittee must identify and report the well elevation to the nearest 0.01 feet relative to the NAVD88 standard and report the Ecology well tag ID. The Permittee must record the measured depth to groundwater (report to the nearest 0.01 feet) and the method of measurement.
- Analyze samples for iron, arsenic, manganese, sulfate, chloride, Total Dissolved Solids, and Total Petroleum Hydrocarbons-Diesel (TPH-Dx) in accordance with the requirements specified in Appendix B. Use the cleanup method (silica gel) detailed in Ecology Publication No. ECY 97-602 and EPA Method 300.0 for performing chloride analysis. The monitoring results must be submitted to Ecology within 60 days of each sample date.

**S13. 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. A summary of the off-

site dangerous wastes accepted and treated by the Permittee must be submitted by **October 1, 2018** (with the permit renewal application).

**S14. Outfall Evaluation**

The Permittee must inspect, **once per permit cycle (but no later than 180 days prior to permit expiration)**, the submerged portion of the outfall line and diffuser to document its integrity and continued function. If conditions allow for a photographic verification, it must be included in the report. Within 90 days of conducting the outfall evaluation, the Permittee must submit the inspection report to Ecology.

**S15. Certified Operator**

An operator certified for at least a **Class II** plant by the state of Washington must be in responsible charge of the day-to-day operation of the wastewater treatment plant. All operators in responsible charge of facilities that treat domestic wastes combined with commercial or industrial waste must be certified in accordance with the provisions of Chapter 70.95B RCW and Chapter 173-230 WAC.

**S16. Application for Permit Renewal**

The Permittee must submit an application for renewal of this permit by **October 1, 2018** (at least 180 days prior to permit expiration).

## GENERAL CONDITIONS

### G1. Signatory Requirements

- A. All applications, reports, or information submitted to Ecology must be signed and certified.
1. In the case of corporations, by a responsible corporate officer. For the purposes of this section, a responsible corporate officer means:
    - A. 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
    - B. 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.
  2. In the case of partnership, by a general partner.
  3. In the case of sole proprietorship, by the proprietor.
  4. In the case of a municipal, state, or public facility, by either the 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 must be submitted by the public entity.

- B. 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:
1. The authorization is made in writing by a person described above and submitted to Ecology.
  2. 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.)

- C. Changes to authorization. If an authorization under paragraph B.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 B.2 above must be submitted to the Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.
- D. 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:

- A. 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.
- B. 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.
- C. To inspect - at reasonable times - any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
- D. 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.

- A. The following are causes for terminating this permit during its term, or for denying a permit renewal application:
1. Violation of any permit term or condition.
  2. Obtaining a permit by misrepresentation or failure to disclose all relevant facts.
  3. A material change in quantity or type of waste disposal.
  4. 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 [40 CFR Part 122.64(3)].
  5. 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 [40 CFR Part 122.64(4)].
  6. Nonpayment of fees assessed pursuant to RCW 90.48.465.
  7. Failure or refusal of the permittee to allow entry as required in RCW 90.48.090.
- B. The following are causes for modification but not revocation and reissuance except when the permittee requests or agrees:
1. A material change in the condition of the waters of the state.
  2. New information not available at the time of permit issuance that would have justified the application of different permit conditions.
  3. Material and substantial alterations or additions to the permitted facility or activities which occurred after this permit issuance.
  4. Promulgation of new or amended standards or regulations having a direct bearing upon permit conditions, or requiring permit revision.

5. The Permittee has requested a modification based on other rationale meeting the criteria of 40 CFR Part 122.62.
  6. The Department has determined that good cause exists for modification of a compliance schedule, and the modification will not violate statutory deadlines.
  7. Incorporation of an approved local pretreatment program into a municipality's permit.
- C. The following are causes for modification or alternatively revocation and reissuance:
1. Cause exists for termination for reasons listed in A1 through A7, of this section, and the Department determines that modification or revocation and reissuance is appropriate.
  2. 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 G8) 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 thirty (30) 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; or
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 thirty (30) 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 must be construed as excusing 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.

A. Transfers by Modification

Except as provided in paragraph B 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.

B. Automatic Transfers

This permit may be automatically transferred to a new Permittee if:

1. The Permittee notifies Ecology at least 30 days in advance of the proposed transfer date.
2. The notice includes a written agreement between the existing and new Permittee's containing a specific date transfer of permit responsibility, coverage, and liability between them.
3. 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 the 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, sludge's, 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 limitations 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 limitations 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 condition S3.E; and
4. The Permittee complied with any remedial measures required under S4.C of this permit.

In any enforcement proceeding, 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 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:

- A. 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:”
  - 1. One hundred micrograms per liter (100 µg/L).
  - 2. 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.
  - 3. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
  - 4. The level established by the Director in accordance with 40 CFR 122.44(f).
  
- B. 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:”
  - 1. Five hundred micrograms per liter (500µg/L).
  - 2. One milligram per liter (1 mg/L) for antimony.
  - 3. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
  - 4. 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 and Ballast Water Allocations

### Calculating Stormwater and Ballast Water Allocations

S1.A effluent limitations in the Phillips 66 NPDES permit are **base permit limits** that apply to process water flow – these values are fixed.

S1.C. effluent limitations in the Phillips 66 NPDES permit are used to calculate incremental limits that apply to storm water and ballast water – the S1.C. limitations are actually multipliers. The incremental limit calculated using one of the multipliers is added to the base permit limit for commingled discharges.

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

Ballast water flow is measured by gauging the tanks at the refinery dock. The ballast and stormwater allocations in the Phillips 66 NPDES permit are based on guidelines in 40 CFR 419.12(c) and 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 and ballast water allocations must 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 NPDES permit. The Phillips 66 NPDES permit states that during specified summer months, the Permittee will only be allowed to claim the storm water 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, look at the days where total effluent flow exceeds the established dry weather flow. The difference is flow due to storm water. If the stormwater allocation can be claimed per the conditions of the previous paragraph, multiply the additional flow (in million gallons per day, MGD) by the appropriate allocation provided in the NPDES permit. This is an incremental permit limit in lbs per day.

Evaluating compliance with the **maximum daily permit limitation** - on a day by day basis compare the maximum discharge for a parameter to the base permit limitation plus the stormwater allocation and/or ballast water allocation calculated for that parameter.

#### Example Calculation 1.

Dry weather flow: 1 MGD

Date: March 15, 1997

Parameter: Oil and Grease (O&G)

O&G maximum daily base permit limitation: 100 lbs/day

Maximum daily O& G discharge: 177 lbs/day  
Total effluent flow: 2.2 MGD  
Flow rate due to rainfall:  $2.2 - 1 = 1.2$  MGD  
O&G maximum daily stormwater allocation: 130 lbs/million gallons  
O&G incremental limit due to stormwater:  $1.2 \times 130 = 156$  lbs/day

O&G maximum daily permit limitation for 3/15/97:  $100 + 156 = 256$  lbs/day

Note: Since 177 is less than 256, the Permittee is in compliance with the oil and grease maximum daily permit limitation on the day evaluated. If ballast water had also been a factor on 3/15/97, an additional oil and grease allocation due to ballast water could have been calculated and added into the maximum daily permit limitation.

Evaluating compliance with the **monthly average permit limitation** - determine the days where effluent flow exceeds dry weather flow and sampling occurred. Add up the excess flow for these days and divide the result by this number of days. Multiply by the monthly average stormwater 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 and/or ballast water allocation calculated for that parameter.

#### Example Calculation 2.

Dry weather flow: 1 MGD  
Month: November 1997  
Parameter: Total Suspended Solids (TSS)  
TSS average monthly base permit limitation: 120 lbs/day  
Average monthly TSS discharge: 216 lbs/day  
During the 5 sampling days the total stormwater flow excess was: 2.5 million gallons  
TSS average monthly stormwater allocation: 180 lbs/million gallons  
TSS incremental limit due to stormwater:  $2.5 / 5 \times 180 = 90$  lbs/day  
TSS average monthly permit limitation for November 1997:  $120 + 90 = 210$  lbs/day

Note: Since 216 is greater than 210, the TSS average monthly permit limit is exceeded.

If ballast water had also been a factor in Example Calculation 2, the average monthly permit limit would not have been exceeded.

Ballast water flow for November 1997 (1 day): 50,000 gallons or 0.05 million gallons  
TSS average monthly ballast water allocation: 170 lbs/million gallons  
TSS incremental limit due to ballast water:  $0.05 / 1 \times 170 = 8.5$  lbs/day  
TSS average monthly permit limitation for November 1997:  $120 + 90 + 8.5 = 218.5$  lbs/day

**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.

**CONVENTIONAL PARAMETERS**

<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b>
Biochemical Oxygen Demand	SM5210-B		2 mg/L
Soluble Biochemical Oxygen Demand	SM5210-B <sup>3</sup>		2 mg/L
Chemical Oxygen Demand	SM5220-D		10 mg/L
Total Organic Carbon	SM5310-B/C/D		1 mg/L
Total Suspended Solids	SM2540-D		5 mg/L

<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b>
Total Ammonia (as N)	SM4500-NH3-B and C/D/E/G/H		20
Flow	Calibrated device		
Dissolved oxygen	SM4500-OC/OG		0.2 mg/L
Temperature (max. 7-day avg.)	Analog recorder or Use micro-recording devices known as thermistors		0.2° C
pH	SM4500-H <sup>+</sup> B	N/A	N/A

### ***NONCONVENTIONAL PARAMETERS***

<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b>
Total Alkalinity	SM2320-B		5 mg/L as CaCO <sub>3</sub>
Chlorine, Total Residual	SM4500 Cl G		50.0
Color	SM2120 B/C/E		10 color units
Fecal Coliform	SM 9221E,9222	N/A	Specified in method - sample aliquot dependent
Fluoride (16984-48-8)	SM4500-F E	25	100
Nitrate + Nitrite Nitrogen (as N)	SM4500-NO <sub>3</sub> -E/F/H		100
Nitrogen, Total Kjeldahl (as N)	SM4500-N <sub>org</sub> B/C and SM4500NH <sub>3</sub> -B/C/D/EF/G/H		300
Soluble Reactive Phosphorus (as P)	SM4500- PE/PF	3	10
Phosphorus, Total (as P)	SM 4500 PB followed by SM4500-PE/PF	3	10
Oil and Grease (HEM) (Hexane Extractable Material)	1664 A or B	1,400	5,000



<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b>
Salinity	SM2520-B		3 practical salinity units or scale (PSU or PSS)
Settleable Solids	SM2540 -F		500 (or 0.1 mL/L)
Sulfate (as mg/L SO <sub>4</sub> )	SM4110-B		0.2 mg/L
Sulfide (as mg/L S)	SM4500-S <sup>2</sup> F/D/E/G		0.2 mg/L
Sulfite (as mg/L SO <sub>3</sub> )	SM4500-SO3B		2 mg/L
Total Coliform	SM 9221B, 9222B, 9223B	N/A	Specified in method - sample aliquot dependent
Total dissolved solids	SM2540 C		20 mg/L
Total Hardness	SM2340B		200 as CaCO <sub>3</sub>
Aluminum, Total (7429-90-5)	200.8	2.0	10
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
Boron Total (7440-42-8)	200.8	2.0	10.0
Cobalt, Total (7440-48-4)	200.8	0.05	0.25
Iron, Total (7439-89-6)	200.7	12.5	50
Magnesium, Total (7439-95-4)	200.7	10	50
Molybdenum, Total (7439-98-7)	200.8	0.1	0.5
Manganese, Total (7439-96-5)	200.8	0.1	0.5
NWTPH Dx <sup>4</sup>	Ecology NWTPH Dx	250	250
NWTPH Gx <sup>5</sup>	Ecology NWTPH Gx	250	250
Tin, Total (7440-31-5)	200.8	0.3	1.5
Titanium, Total (7440-32-6)	200.8	0.5	2.5

**PRIORITY POLLUTANTS**

<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b>
<b>METALS, CYANIDE &amp; TOTAL PHENOLS</b>			
Antimony, Total (7440-36-0)	200.8	0.3	1.0
Arsenic, Total (7440-38-2)	200.8	0.1	0.5
Beryllium, Total (7440-41-7)	200.8	0.1	0.5
Cadmium, Total (7440-43-9)	200.8	0.05	0.25
Chromium (hex) dissolved (18540-29-9)	SM3500-Cr EC	0.3	1.2
Chromium, Total (7440-47-3)	200.8	0.2	1.0
Copper, Total (7440-50-8)	200.8	0.4	2.0
Lead, Total (7439-92-1)	200.8	0.1	0.5
Mercury, Total (7439-97-6)	1631E	0.0002	0.0005
Nickel, Total (7440-02-0)	200.8	0.1	0.5
Selenium, Total (7782-49-2)	200.8	1.0	1.0
Silver, Total (7440-22-4)	200.8	0.04	0.2
Thallium, Total (7440-28-0)	200.8	0.09	0.36
Zinc, Total (7440-66-6)	200.8	0.5	2.5
Cyanide, Total (57-12-5)	335.4	5	10
Cyanide, Weak Acid Dissociable	SM4500-CN I	5	10
Cyanide, Free Amenable to Chlorination (Available Cyanide)	SM4500-CN G	5	10
Phenols, Total	EPA 420.1		50

<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b>
<b>ACID COMPOUNDS</b>			
2-Chlorophenol (95-57-8)	625	1.0	2.0

<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b>
<b>ACID COMPOUNDS</b>			
2,4-Dichlorophenol (120-83-2)	625	0.5	1.0
2,4-Dimethylphenol (105-67-9)	625	0.5	1.0
4,6-dinitro-o-cresol (534-52-1) (2-methyl-4,6-dinitrophenol)	625/1625B	1.0	2.0
2,4 dinitrophenol (51-28-5)	625	1.0	2.0
2-Nitrophenol (88-75-5)	625	0.5	1.0
4-nitrophenol (100-02-7)	625	0.5	1.0
Parachlorometa cresol (59-50-7) (4-chloro-3-methylphenol)	625	1.0	2.0
Pentachlorophenol (87-86-5)	625	0.5	1.0
Phenol (108-95-2)	625	2.0	4.0
2,4,6-Trichlorophenol (88-06-2)	625	2.0	4.0

***PRIORITY POLLUTANTS (continued)***

<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b>
<b>VOLATILE COMPOUNDS</b>			
Acrolein (107-02-8)	624	5	10
Acrylonitrile (107-13-1)	624	1.0	2.0
Benzene (71-43-2)	624	1.0	2.0
Bromoform (75-25-2)	624	1.0	2.0
Carbon tetrachloride (56-23-5)	624/601 or SM6230B	1.0	2.0
Chlorobenzene (108-90-7)	624	1.0	2.0
Chloroethane (75-00-3)	624/601	1.0	2.0
2-Chloroethylvinyl Ether (110-75-8)	624	1.0	2.0
Chloroform (67-66-3)	624 or SM6210B	1.0	2.0

<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b>
<b>VOLATILE COMPOUNDS</b>			
Dibromochloromethane (124-48-1)	624	1.0	2.0
1,2-Dichlorobenzene (95-50-1)	624	1.9	7.6
1,3-Dichlorobenzene (541-73-1)	624	1.9	7.6
1,4-Dichlorobenzene (106-46-7)	624	4.4	17.6
Dichlorobromomethane (75-27-4)	624	1.0	2.0
1,1-Dichloroethane (75-34-3)	624	1.0	2.0
1,2-Dichloroethane (107-06-2)	624	1.0	2.0
1,1-Dichloroethylene (75-35-4)	624	1.0	2.0
1,2-Dichloropropane (78-87-5)	624	1.0	2.0
1,3-dichloropropene (mixed isomers) (1,2-dichloropropylene) (542-75-6) <sup>6</sup>	624	1.0	2.0
Ethylbenzene (100-41-4)	624	1.0	2.0
Methyl bromide (74-83-9) (Bromomethane)	624/601	5.0	10.0
Methyl chloride (74-87-3) (Chloromethane)	624	1.0	2.0
Methylene chloride (75-09-2)	624	5.0	10.0
1,1,2,2-Tetrachloroethane (79-34-5)	624	1.9	2.0
Tetrachloroethylene (127-18-4)	624	1.0	2.0
Toluene (108-88-3)	624	1.0	2.0
1,2-Trans-Dichloroethylene (156-60-5) (Ethylene dichloride)	624	1.0	2.0
1,1,1-Trichloroethane (71-55-6)	624	1.0	2.0

<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> <i>µg/L unless specified</i></b>	<b>Quantitation Level (QL)<sup>2</sup> <i>µg/L unless specified</i></b>
<b>VOLATILE COMPOUNDS</b>			
1,1,2-Trichloroethane (79-00-5)	624	1.0	2.0
Trichloroethylene (79-01-6)	624	1.0	2.0
Vinyl chloride (75-01-4)	624/SM6200B	1.0	2.0

**PRIORITY POLLUTANTS (continued)**

<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b>
<b>BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)</b>			
Acenaphthene (83-32-9)	625	0.2	0.4
Acenaphthylene (208-96-8)	625	0.3	0.6
Anthracene (120-12-7)	625	0.3	0.6
Benzidine (92-87-5)	625	12	24
Benzyl butyl phthalate (85-68-7)	625	0.3	0.6
Benzo(a)anthracene (56-55-3)	625	0.3	0.6
Benzo(b)fluoranthene (3,4-benzofluoranthene) (205-99-2) <sup>7</sup>	610/625	0.8	1.6
<b>Benzo(j)fluoranthene (205-82-3) <sup>7</sup></b>	625	0.5	1.0
Benzo(k)fluoranthene (11,12-benzofluoranthene) (207-08-9) <sup>7</sup>	610/625	0.8	1.6
<b>Benzo(r,s,t)pentaphene (189-55-9)</b>	625	0.5	1.0
Benzo(a)pyrene (50-32-8)	610/625	0.5	1.0
Benzo(ghi)Perylene (191-24-2)	610/625	0.5	1.0
Bis(2-chloroethoxy)methane (111-91-1)	625	5.3	21.2
Bis(2-chloroethyl)ether (111-44-4)	611/625	0.3	1.0
Bis(2-chloroisopropyl)ether (39638-32-9)	625	0.3	0.6
Bis(2-ethylhexyl)phthalate (117-81-7)	625	0.1	0.5
4-Bromophenyl phenyl ether (101-55-3)	625	0.2	0.4
2-Chloronaphthalene (91-58-7)	625	0.3	0.6
4-Chlorophenyl phenyl ether (7005-72-3)	625	0.3	0.5
Chrysene (218-01-9)	610/625	0.3	0.6
<b>Dibenzo (a,h)acridine (226-36-8)</b>	610M/625M	2.5	10.0

<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> μg/L unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> μg/L unless specified</b>
<b>BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)</b>			
<b>Dibenzo (a,j)acridine (224-42-0)</b>	610M/625M	2.5	10.0
Dibenzo(a-h)anthracene (53-70-3)(1,2,5,6-dibenzanthracene)	625	0.8	1.6
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 (91-94-1)	605/625	0.5	1.0
Diethyl phthalate (84-66-2)	625	1.9	7.6
Dimethyl phthalate (131-11-3)	625	1.6	6.4
Di-n-butyl phthalate (84-74-2)	625	0.5	1.0
2,4-dinitrotoluene (121-14-2)	609/625	0.2	0.4
2,6-dinitrotoluene (606-20-2)	609/625	0.2	0.4
Di-n-octyl phthalate (117-84-0)	625	0.3	0.6
1,2-Diphenylhydrazine ( <i>as Azobenzene</i> ) (122-66-7)	1625B	5.0	20
Fluoranthene (206-44-0)	625	0.3	0.6
Fluorene (86-73-7)	625	0.3	0.6
Hexachlorobenzene (118-74-1)	612/625	0.3	0.6
Hexachlorobutadiene (87-68-3)	625	0.5	1.0
Hexachlorocyclopentadiene (77-47-4)	1625B/625	0.5	1.0
Hexachloroethane (67-72-1)	625	0.5	1.0
Indeno(1,2,3-cd)Pyrene (193-39-5)	610/625	0.5	1.0
Isophorone (78-59-1)	625	0.5	1.0
<b>3-Methyl cholanthrene (56-49-5)</b>	625	2.0	8.0
Naphthalene (91-20-3)	625	0.3	0.6

<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b>
<b>BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)</b>			
Nitrobenzene (98-95-3)	625	0.5	1.0
N-Nitrosodimethylamine (62-75-9)	607/625	2.0	4.0
N-Nitrosodi-n-propylamine (621-64-7)	607/625	0.5	1.0
N-Nitrosodiphenylamine (86-30-6)	625	0.5	1.0
<b>Perylene (198-55-0)</b>	625	1.9	7.6
Phenanthrene (85-01-8)	625	0.3	0.6
Pyrene (129-00-0)	625	0.3	0.6
1,2,4-Trichlorobenzene (120-82-1)	625	0.3	0.6

<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b>
<b>DIOXIN</b>			
2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (176-40-16) (2,3,7,8 TCDD)	1613B	1.3 pg/L	5 pg/L

***PRIORITY POLLUTANTS (continued)***

<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b>
<b>PESTICIDES/PCBs</b>			
Aldrin (309-00-2)	608	0.025	0.05
alpha-BHC (319-84-6)	608	0.025	0.05
beta-BHC (319-85-7)	608	0.025	0.05
gamma-BHC (58-89-9)	608	0.025	0.05
delta-BHC (319-86-8)	608	0.025	0.05
Chlordane (57-74-9) <sup>8</sup>	608	0.025	0.05
4,4'-DDT (50-29-3)	608	0.025	0.05
4,4'-DDE (72-55-9)	608	0.025	0.05 <sup>10</sup>
4,4' DDD (72-54-8)	608	0.025	0.05



<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b>
<b>PESTICIDES/PCBs</b>			
Dieldrin (60-57-1)	608	0.025	0.05
alpha-Endosulfan (959-98-8)	608	0.025	0.05
beta-Endosulfan (33213-65-9)	608	0.025	0.05
Endosulfan Sulfate (1031-07-8)	608	0.025	0.05
Endrin (72-20-8)	608	0.025	0.05
Endrin Aldehyde (7421-93-4)	608	0.025	0.05
Heptachlor (76-44-8)	608	0.025	0.05
Heptachlor Epoxide (1024-57-3)	608	0.025	0.05
PCB-1242 (53469-21-9) <sup>9</sup>	608	0.25	0.5
PCB-1254 (11097-69-1)	608	0.25	0.5
PCB-1221 (11104-28-2)	608	0.25	0.5
PCB-1232 (11141-16-5)	608	0.25	0.5
PCB-1248 (12672-29-6)	608	0.25	0.5
PCB-1260 (11096-82-5)	608	0.13	0.5
PCB-1016 (12674-11-2) <sup>9</sup>	608	0.13	0.5
Toxaphene (8001-35-2)	608	0.24	0.5

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 lab 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 10<sup>n</sup>, 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 um (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 <http://www.ecy.wa.gov/biblio/97602.html>
5. NWTPH Gx - Northwest Total Petroleum Hydrocarbons Gasoline Extended Range – see <http://www.ecy.wa.gov/biblio/97602.html>
6. 1, 3-dichloroproylene (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 0.025/0.050.
9. PCB 1016 & PCB 1242 – You may report these two PCB compounds as one parameter called PCB 1016/1242.

## **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 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 Organizational Guide to Pollution Prevention*, 2001 available at <http://www.p2ric.org/CachedPages/printguid.pdf>, the methodologies of pollution prevention planning references available at <http://www.ecy.wa.gov/programs/hwtr/p2/p3.html>, 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 Permit 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 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/pr 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. 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 Condition S12.
  - b) Contain a visual inspection report or checklist that includes all items required by Condition S12.
  - 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 gpm 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 economical 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.