

Issuance Date: ?
 Effective Date: ?
 Expiration Date: ?

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
 WASTE DISCHARGE PERMIT No. WA0022900

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.

BP Cherry Point Refinery
 4519 Grandview Road
 Blaine, Washington 98230

<u>Facility Location:</u> 4519 Grandview Road Blaine, Washington 98230	<u>Receiving Water:</u> Strait of Georgia			
		Latitude	Longitude	
	Outfall 001	48.860833	122.757222	
	Outfall 006	48.866111	122.752222	
	<u>Receiving Water:</u> Terrell Creek			
		Latitude	Longitude	
	Outfall 002	48.859167	122.731944	
	Outfall 003	48.8925	122.743056	
	Outfall 004	48.8925	122.747778	
	Outfall 005	48.8825	122.747778	
	Outfall 007	48.891944	122.726389	
	<u>Industry Type:</u>	Petroleum Refinery		

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

Garin Schrieve, P.E.
 Industrial Section Manager
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 Washington State Department of Ecology

TABLE OF CONTENTS

SPECIAL CONDITIONS	8
S1. DISCHARGE LIMITS	8
A. Process Wastewater Discharges.....	8
B. Ballast and Stormwater Allocations (Outfall 001).....	10
C. Stormwater Benchmarks, Prohibitions and Monitoring Requirements Outfalls (002, 003, 004, 005 and 007)	11
D. Firewater Testing	15
E. Alternative Stormwater Discharge.....	15
F. Mixing Zone Authorization	15
G. Praxair Wastewater	16
H. Treatment of BP Cogeneration Wastewater	18
S2. MONITORING REQUIREMENTS	18
A. Monitoring Schedule.....	18
B. Sampling and Analytical Procedures	19
C. Flow Measurement, Field Measurement, and Continuous Monitoring Devices ...	19
D. Laboratory Accreditation	20
S3. REPORTING AND RECORDKEEPING REQUIREMENTS	20
A. Reporting.....	20
B. Records Retention.....	21
C. Recording of Results.....	21
D. Additional Monitoring by the Permittee	21
E. Reporting Permit Violations	21
F. Other Reporting	23
S4. OPERATION AND MAINTENANCE.....	24
A. Operations and Maintenance Manual	24
B. Bypass Procedures	25
C. Duty to Mitigate.....	27
S5. FACILITY LOADING	27
A. Design Criteria	27
B. Plans for Maintaining Adequate Capacity	27
S6. NON-ROUTINE AND UNANTICIPATED DISCHARGES	28
S7. ACUTE TOXICITY	29
A. Effluent Limit for Acute Toxicity.....	29
B. Compliance With the Effluent Limit for Acute Toxicity.....	29
C. Compliance Testing for Acute Toxicity	29
D. Response to Noncompliance with the Effluent Limit for Acute Toxicity	30
E. Sampling and Reporting Requirements	31
S8. CHRONIC TOXICITY.....	32

- A. Testing When There Is No Permit Limit for Chronic Toxicity32
- B. Sampling and Reporting Requirements33
- S9. HERRING TOXICITY TESTING34
 - A. Acute Testing Requirements.....34
 - B. Chronic Testing Requirements35
 - C. Sampling and Reporting Requirements36
- S10. WASTEWATER TREATMENT EFFICIENCY STUDY AND UPDATED ENGINEERING REPORT37
- S11. SEDIMENT MONITORING.....38
- S12. POLLUTION PREVENTION38
 - A. Pollution Prevention Plan Development and Implementation.....39
 - B. Specific Plan Update Requirements.....39
 - C. Stormwater Inspections.....40
 - D. Plan Evaluation and Biennial Reporting.....40
 - E. Continuous Improvement.....41
- S13. CONSTRUCTION STORMWATER POLLUTION PREVENTION.....41
- S14. DIOXIN STUDY46
 - A. Wastewater Sampling46
 - B. Dioxin Study Report47
- S15. GROUNDWATER MONITORING47
- S16. DANGEROUS WASTES – PERMIT BY RULE REQUIREMENTS47
- S17. OUTFALL EVALUATION48
- S18. APPLICATION FOR PERMIT RENEWAL48
- GENERAL CONDITIONS49
 - G1. SIGNATORY REQUIREMENTS.....49
 - G2. RIGHT OF INSPECTION AND ENTRY50
 - G3. PERMIT ACTIONS.....50
 - G4. REPORTING PLANNED CHANGES.....52
 - G5. PLAN REVIEW REQUIRED52
 - G6. COMPLIANCE WITH OTHER LAWS AND STATUTES.....52
 - G7. TRANSFER OF THIS PERMIT52
 - G8. REDUCED PRODUCTION FOR COMPLIANCE53
 - G9. REMOVED SUBSTANCES53
 - G10. DUTY TO PROVIDE INFORMATION.....53
 - G11. OTHER REQUIREMENTS OF 40 CFR.....54
 - G12. ADDITIONAL MONITORING54
 - G13. PAYMENT OF FEES.....54

G14. PENALTIES FOR VIOLATING PERMIT CONDITIONS54
G15. UPSET54
G16. PROPERTY RIGHTS.....55
G17. DUTY TO COMPLY55
G18. TOXIC POLLUTANTS.....55
G19. PENALTIES FOR TAMPERING55
G20. REPORTING REQUIREMENTS APPLICABLE TO EXISTING MANUFACTURING,
COMMERCIAL, MINING, AND SILVICULTURAL DISCHARGERS.....55
G21. COMPLIANCE SCHEDULES56
APPENDIX A – CALCULATING STORMWATER AND BALLAST WATER
ALLOCATIONS.....57

APPENDIX B – LIST OF POLLUTANTS WITH ANALYTICAL METHODS, DETECTION
LIMITS AND QUANTITATION LEVELS59
APPENDIX C - REFINERY NPDES POLLUTION PREVENTION PLANS – SPECIFIC
REQUIREMENTS.....68

SUMMARY OF PERMIT REPORT SUBMITTALS

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

Permit Section	Submittal	Frequency	Report Submittal/ Activity Date
S1.A.	Priority Pollutant Testing	Annually	Within 90 days of each sampling event
S1.A.	Installation of Flow Meter on the Effluent of the Secondary Clarifier	One	By August 31, 2012
S1.C.	Stormwater Monitoring Results (Outfalls 002 and 003)	Annually	Within 60 days of each sampling event
S1.C.	Stormwater Monitoring Results (Outfalls 004, 005, and 007)	Quarterly	Within 45 days after end of each quarter
S3.A.	Discharge Monitoring Report (DMR)	Monthly	The 15 th of each month
S3.D.	Additional Monitoring by Permittee	As necessary	With DMR
S3.E.	24-hr Noncompliance Notification	As necessary	Within 5 days and/or with DMR
S3.F.	Other Noncompliance Notification	As necessary	With DMR
S4.A.	Review Letter of Operations and Maintenance Manual	Annually	One year after the permit is issued
S4.A.	Updated Treatment System Operating Plan	1/permit cycle	With the permit renewal application
S4.B.	Reporting Bypasses	As necessary	With DMR
S7.C.	Acute Toxicity Tests	Quarterly	Within 60 days after each sampling event
S8.A.	Chronic Toxicity Tests	2/permit cycle	With the permit renewal application
S9.A.	Herring Acute Tests	2/annually	Within 60 days of the second sampling event each year
S9.B.	Herring Chronic Tests	Annually	Within 60 days of the sampling event
S10.	Wastewater Treatment System Study Plan	If material and substantial alterations to refinery	At Ecology request and within 90 days of material or substantial alterations to refinery coming on line

Permit Section	Submittal	Frequency	Report Submittal/ Activity Date
S10.	Wastewater Treatment Efficiency Study Report	If material and substantial alterations to refinery	Within 180 days of completion of study
S10.	Updated Engineering Report	If material and substantial alterations to refinery	180 days prior to permit expiration or another timeframe approved by Ecology
S11.A.	Sediment Sampling and Analysis Plan	1/permit cycle	By February 1, 2016
S11.C.	Sediment Data Report	1/permit cycle	Within 180 days of completion of sampling
S12.A.	Updated Pollution Prevention Plan	1/permit cycle	Within 18 months of the permit effective date
S12.C.	Stormwater Pollution Prevention Inspections	2/year, 1 wet and 1 dry season	With Pollution Prevention Progress Reports
S12.D.	Biennial Progress Report	3/permit cycle	By September 1 st within 2 years after submittal of Pollution Prevention Plan and every two years thereafter
S14.B	Dioxin Study Report	1/permit cycle	With the permit renewal application
S15.	Groundwater Monitoring	Annually	Within 60 days of receiving data validation report
S17.	Outfall Evaluation Report	1/permit cycle	Within 90 days of conducting the outfall evaluation but no later than 180 days prior to permit expiration
S19.	Application for Permit Renewal	1/permit cycle	180 days prior to permit expiration
G1.C.	Notice of Change in Authorization	As necessary	

Permit Section	Submittal	Frequency	Report Submittal/ Activity Date
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 LIMITS

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 Limits: Outfall #001		Monitoring Frequency	Sample Type
		Average Monthly ^a	Maximum Daily ^b		
Biochemical Oxygen Demand (5-day)	lbs/day	1240	2260	1/wk	24 hr comp ^c
Chemical Oxygen Demand	lbs/day	8540	16610	3/wk ^d	24 hr comp ^c
Total Suspended Solids (TSS)	lbs/day	990	1570	7/wk	24 hr comp ^c
Oil and Grease	lbs/day	360	680	7/wk	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	7.6	16.7	1/wk	24 hr comp ^c
Ammonia as N	lbs/day	870	1910	3/wk ^d	24 hr comp ^c
Sulfide	lbs/day	6.7	14.7	1/mo	Grab ^c
Hexavalent Chromium		0.050 mg/l and 2.1 lbs/day		Semi-annually	24 hr comp ^c
pH ^e		Daily minimum is equal to or greater than 6.0 and the daily maximum is less than or equal to 9.0		Continuous ^{c,f}	Continuous ^{c,f}
Temperature	°C	--	--	Continuous ^c	Continuous ^c

Parameter	Units	Effluent Limits: Outfall #001		Monitoring Frequency	Sample Type
		Average Monthly ^a	Maximum Daily ^b		
Feedstock Rate ^g	bbls/day	--	--	Daily	
Ballast Water Flow	gallons received	--	--	Daily	
Rainfall	inch/day	--	--	Daily	
BOD5 loading to Aeration Basin	Lbs/day	--	--	Annually	Composite
Flow from Secondary Clarifier ***	MGD	--	--	Continuous ^c	Continuous ^c
Final Effluent Flow	MGD	--	--	Continuous ^c	Continuous ^c
Priority Pollutants (PP) ^h	µg/L; ng/L for mercury			Once /year (results due within 60 days of sampling but no later than March 1 st 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.					
Herring Toxicity Testing – See Permit Condition S9.					
Wastewater Treatment Efficiency Study – See Permit Condition S10.					
Sediment Monitoring– See Permit Condition S11.					
Dioxin Monitoring – See Permit Condition S14.					
*** BP must install the flow meter on the effluent of the secondary clarifier by August 31, 2012.					

^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 frequencies for these parameters have been reduced as a result of consistent performance well below the permit limits. Should the treatment performance deteriorate Ecology may increase the monitoring frequencies to the levels required in the previous permit (COD 7/7 and Ammonia 5/7). Ecology will notify the Permittee by letter to increase monitoring upon determination of 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 hourly grab samples.
- 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 and other 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 must 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. Report the cumulative monthly ballast water volume with the DMR if the ballast allocation is not used. If the ballast water allocation is used then the Permittee must submit with the DMR a report showing the daily volume of ballast water released to the wastewater system for treatment.

The Permittee must determine the storm water 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 3.87 MGD.** The Permittee may only use the maximum daily storm water allocation on those storm water 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 storm water 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
Pounds/Million Gallons				
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

Storm water 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 storm water 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 storm water flows from qualifying storm water flow days sampled divided by the number of qualifying days times the average monthly allocation for that parameter. The **Total Average Monthly Limit (T)** is the sum of the base average monthly limit (B) (listed in S1A) plus the Average Monthly Stormwater Allocation. **$T = B + AMSWA$** (An example calculation is shown in **Appendix B.**)

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

1. Authorized Stormwater and Non-Stormwater Discharges

Beginning on the effective date of 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 S7.) from Outfalls 002, 003, 004, 005, and 007 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, and 007 for the parameters listed in the following tables. Additional monitoring requirements for Outfalls 003 and 006 are found in Condition S1.E.

Outfalls 002 and 003			
Parameter	Benchmark Value	Monitoring Frequency	Sample Type
COD	--	Once/year	Grab
TSS	25 mg/L	Once/year	Grab
Oil and Grease	15 mg/L	Once/year	Grab
Total Copper	14 µg/L	Once/year	Grab
Total Zinc	117 µg/L	Once/year	Grab
pH	6-9 SU	Once/year	Grab
Hardness	NA	Once/year	Grab
Visual Monitoring as described below.			

Outfalls 004, 005, and 007			
Parameter	Benchmark Value	Monitoring Frequency^{a, b}	Sample Type
COD	--	Quarterly	Grab
TSS	25 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.			

^a 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.

- b Quarters are defined as:
- First Quarter – January, February, March
 - Second Quarter – April, May, June
 - Third Quarter – July, August, September
 - Fourth Quarter – October, November, December

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 Permittees must sample the stormwater discharges from Outfalls 002, 003, 004, 005, 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 Permittees 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.

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.

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

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 submit the results of annual stormwater monitoring within 60 days of the sample event.

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

Reporting Period	Months	Quarterly Results
1st Quarter	January, February, March	May 15
2nd Quarter	April, May, June	August 14
3rd Quarter	July, August, September	November 14
4th Quarter	October, November, December	February 14

Visual monitoring must include observations made at the stormwater sampling locations at the time of sampling. The Permittee must report observations of the presence of floating materials, visible sheen, discoloration, turbidity, odor, etc. in the stormwater discharge and an evaluation of whether or not stormwater best management practices established by the Pollution Prevention Plan are in place and/or are being followed with the discharge monitoring report. Any non-stormwater discharges to the stormwater system that are observed must be reported to Ecology in accordance with Permit Condition S3.E. The Permittee must submit results of the visual monitoring in the pollution prevention plan biennial update reports as required in Permit Condition S12.C.

4. Response to Monitoring Results Above Benchmark Values

Each time that sampling results are above a 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. Evaluate whether any improvements or changes to source control, operational control, and stormwater best management practices (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.
- d. Implement additional source/operational control and best management

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

- e. 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. Alternative Stormwater Discharge

The Permittee is authorized to discharge water from the Stormwater Holding Pond via Outfall 003 **only** during a rainfall event when there is a risk of overflowing the Final Holding Pond which contains treated process water.

The Permittee is authorized to discharge stormwater at Outfall 006 to the Strait of Georgia during a rainfall event when there is a risk of overflowing the dock on-shore sump.

In the event of a discharge described in this subsection, the Permittee must collect daily grab samples, at the location of the alternative stormwater discharge, during each event and analyze them for COD, TSS, O&G, and pH. The Permittee must notify Ecology of any stormwater discharges under this subsection within 24 hours of such an event and submit the results of monitoring in the monthly discharge monitoring report.

F. 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 radius of 257 feet 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 26 feet (8 meters) measured from the center of each discharge ports. 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	28
Chronic Aquatic Life Criteria	114
Human Health Criteria - Carcinogen	156
Human Health Criteria - Non-carcinogen	156

Stormwater Outfalls 002, 003, 004, 005, and 007:

The maximum boundaries of the mixing zone for stormwater Outfalls 002, 003, 004, 005, and 007 are defined as follows:

Each mixing zone extends downstream from the discharge port no greater than 300 feet plus the depth of water at the discharge port and extends upstream for a distance no greater than 100 feet. It must not utilize greater than 25% of the flow, and must not occupy greater than 25% of the width of the water body.

Stormwater Outfall 006:

The maximum boundaries of the mixing zone for stormwater Outfall 006 are defined as follows:

The mixing zone extends from the discharge pipe in a horizontal direction of no greater than 200 feet plus the depth of water at the discharge pipe as measured during mean lower low water but must not occupy greater than 25% of the width of the water body as measured during mean lower low water.

G. Praxair Wastewater

Ecology will attribute any violations of water quality or sediment quality standards detected in the receiving water or receiving sediments within the zone of influence of the combined Permittee/Praxair discharge to the Permittee, which is responsible for initiating any necessary corrective action.

1. Discharge of Treated Wastewater From Praxair

The Permittee is authorized to receive **treated** discharge from the Praxair, Inc. Ferndale Facility for conveyance through the Permittee's outfall pipeline to the Strait of Georgia consisting solely of:

- Non-contact cooling tower blowdown

- Cooling water sand filter backwash

The Praxair discharge is subject to the terms and conditions of NPDES Permit, No. WA0030350. The permit does not authorize the discharge of sanitary wastewaters, treated stormwater, untreated condensate from knock-out pots, and other effluent streams into the Permittee's outfall line from Praxair.

In the event that Praxair ceases to discharge non-contact cooling water into the Permittee's outfall pipeline, the Permittee must certify that Praxair has abandoned the connecting pipeline. The Permittee must submit a written notification to Ecology prior to the line being placed back into service once it has been taken out of service.

2. Treatment of Praxair Wastewater

The Permittee is authorized to receive **untreated** wastewater from the Praxair, Inc. Ferndale facility for treatment in the Permittee's wastewater treatment system. The untreated wastewaters must consist only of:

- Cooling tower blowdown
- Condensate drain water
- Wash tower water
- Plant floor drain water

The table below summarizes the limits, monitoring frequencies, and sampling conditions that the Permittee may accept from Praxair, Inc.

Parameter	Units	Limit		Monitoring Frequency	Sample Type
		Average Monthly	Maximum Daily		
Chemical Oxygen Demand (COD)	mg/l	500	700	Weekly	Grab
Total Suspended Solids (TSS)	mg/l	100	--	Monthly	Grab
Ammonia	mg/l	400	--	Monthly	Grab
Methanol	mg/l	500	--	Monthly	Grab
pH		6 to 9	--	Continuous	Grab
Temperature	°F	90	--	2x/month	Grab
Flow	gpd	50,000	100,000	Continuous	N/A
Maximum Instantaneous	gpm	70	140	Continuous	N/A

Parameter	Units	Limit		Monitoring Frequency	Sample Type
		Average Monthly	Maximum Daily		
Flow					

Sanitary wastewater and other effluent streams are not authorized to be treated at the Permittee's wastewater treatment facility or to enter the Permittee's outfall line. The discharge from Praxair is subject to the terms and conditions of its NPDES Permit, No. WA0030350. The Permittee may accept this wastewater only after it has notified the **Industrial Section** in writing that it plans to begin accepting the wastewater.

H. Treatment of BP Cogeneration Wastewater

The Permittee is authorized to receive untreated wastewater from BP Cogeneration for treatment in the Permittee's wastewater treatment system and for conveyance through the Permittee's outfall pipe to the Strait of Georgia. The untreated wastewaters must consist only of:

- Filtered raw water backwash
- Cooling tower blowdown
- Other wastewater streams such as equipment leaks and wash down waters
- Water from the compressor wash system
- Process area stormwater
- Maintenance wastewater
- Water from containment areas

The Permittee may accept this wastewater only after they notify the **Industrial Section** in writing that they plan to begin accepting the wastewater.

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 represent the volume and nature of the monitored parameters, including representative sampling of any unusual discharge or discharge condition, including bypasses, upsets, and maintenance-related conditions affecting effluent quality.

After a portion of the daily sample is removed for the Permittee's analysis, the remainder, 2-3 gallons (minimum) must be retained until 3:00 pm of the following day. The composite sample must be kept refrigerated at or below 6 °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.
2. Summarize, report, and submit monitoring data obtained during each monitoring period on a Discharge Monitoring Report (DMR) form provided, or otherwise approved, by Ecology.
3. Submit a summary sheet, listing daily results for the parameters tabulated in Special Condition S1, including MDLs and QLs (when applicable).
4. Submit DMR forms monthly whether or not the facility was discharging. If the facility did not discharge during a given monitoring period, submit the form as required with the words "NO DISCHARGE" entered in place of the monitoring results.
5. Ensure that DMR forms are postmarked or received by Ecology no later than the 15th day of the month following the completed monitoring period, unless otherwise specified in this permit.
6. Submit priority pollutant analysis data no later than ninety (90) days following the monitoring. Unless otherwise specified, all whole effluent toxicity (WET) test data must be submitted within 60 days after the sampling date.
7. Send report(s) to Ecology at:

Water Quality Permit Coordinator
Department of Ecology
Industrial Section
PO Box 47706
Olympia, WA 98504-7706

All laboratory reports providing data for organic and metal parameters must include the following information: sampling date, sample location, date of analysis, parameter name, CAS number, analytical method/ number, method detection limit (MDL), laboratory practical quantitation limit (QL or ML), reporting units, and concentration detected. Analytical results from samples sent to a contract laboratory must have information on the chain of custody, the analytical method, QA/QC results, and documentation of accreditation for the parameter.

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.

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.

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

Department of Ecology,	
Northwest Regional Office	425-649-7000 (24 hours)
Department of Health,	360-236-3330 (business hours)
Shellfish Program	360-786-4183 (24 hours)

The Permittee must also notify the Ecology 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 overflow prior to the treatment works, 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 Condition 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 in the following, 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.

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

S4. OPERATION AND MAINTENANCE

The Permittee must, at all times, properly operate and maintain all facilities or systems of treatment and control (and related appurtenances) which are installed to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes 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 only when the operation is necessary to achieve compliance with the conditions of this permit.

The Permittee must schedule any facility maintenance, which might require interruption of wastewater treatment and degrade effluent quality, during non-critical water quality periods and carry this maintenance out in a manner approved by Ecology.

A. Operations and Maintenance Manual

The Permittee must:

1. Review and update the Operations and Maintenance (O&M) Manual at least annually accordance with 173-240-150 WAC.
2. Confirm this review by letter to Ecology.
3. Keep the approved O&M Manual at the permitted facility.
4. Follow the instructions and procedures of this manual.

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. Wastewater system maintenance procedures that contribute to the generation of process wastewater.
3. Any directions to maintenance staff when cleaning, or maintaining other equipment or performing other tasks which are necessary to protect the operation of the wastewater system (for example, defining maximum allowable discharge rate for draining a tank, blocking all floor drains before beginning the overhaul of a stationary engine.)

The Permittee must summarize the following information in the initial chapter of the O&M Manual entitled the "Treatment System Operating Plan." 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. In the event of production rates, which are below the baseline levels used to establish these limits, the plan must describe the operating procedures and conditions needed to maintain design treatment efficiency. The monitoring and reporting must be described in the plan.
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. The monitoring and reporting must be described in the plan.
4. A description of any regularly scheduled maintenance or repair activities at the facility which would affect the volume or character of the wastes discharged to the wastewater treatment system and a plan for monitoring and 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 (with the application for renewal) _____. This plan must be updated and submitted, to Ecology, as necessary during the remainder of 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.

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:

Parameter	Design Quantity
Daily Maximum Flow from the Secondary Clarifier	13 MGD
Daily Maximum BOD ₅ Influent Loading to Aeration Tank	25,160 lbs/day

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 173-240-060, "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 from Outfalls 002, 003, and 007 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 normally monitored 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 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.G of this permit. The ACEC equals 3.6 % effluent.

B. 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, the test does not comply with the effluent limit for acute toxicity. The Permittee must then immediately conduct the additional testing described in subsection E. The Permittee will comply with the requirements of this section by meeting the requirements of subsection 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.

C. Compliance Testing for Acute Toxicity

The Permittee must:

1. Begin compliance testing by _____(within sixty (60) days of the permit effective date). Perform the acute toxicity tests with 100% effluent, the ACEC, and a control, or with a full dilution series.
2. 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
Fathead minnow 96-hour static-renewal test	<i>Pimephales promelas</i>	EPA-821-R-02-012
Daphnid 48-hour static test	<i>Ceriodaphnia dubia</i> , <i>Daphnia pulex</i> , or <i>Daphnia magna</i>	EPA-821-R-02-012

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

If a toxicity test conducted under subsection C. determines a statistically significant difference in response between the ACEC 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 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 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 they believe the compliance test result is 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 test 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.

If all of the additional testing 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 be based upon a review 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 shows 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)).

E. Sampling and Reporting Requirements

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. Reports must contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data in electronic format for entry into Ecology's database, then the Permittee must send the data to Ecology along with the test report, bench sheets, and reference toxicant results.
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 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 C.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 3.6 % 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 after each sample date.

S8. CHRONIC TOXICITY

A. Testing When There Is No Permit Limit for Chronic Toxicity

The Permittee must:

1. Conduct chronic toxicity testing on final effluent **once** in the last summer and **once** in the last winter prior to submission of the permit renewal application.
2. Submit the results to Ecology with the permit renewal application.
3. Conduct chronic toxicity testing on a series of at least five concentrations of effluent and a control. This series of dilutions must include the acute critical effluent concentration (ACEC). The ACEC equals 3.6% effluent.
4. Compare the ACEC to the control using hypothesis testing at the 0.05 level of significance as described in Appendix H, EPA/600/4-89/001.

5. Perform chronic toxicity tests with all of the following species and the most recent version of the following protocols:

Saltwater Chronic Test	Species	Method
Topsmelt survival and growth	<i>Atherinops affinis</i>	EPA/600/R-95/136
Mysid shrimp survival and growth	<i>Mysidopsis bahia</i> / <i>Americamysis bahia</i>	EPA-821-R-02-014

B. Sampling and Reporting Requirements

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. Reports must contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data in electronic format for entry into Ecology's database, then the Permittee must send the data to Ecology along with the test report, bench sheets, and reference toxicant results.
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 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 A. and 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 Chronic Critical Effluent Concentration (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 means the maximum concentration of effluent during critical conditions at the boundary of the mixing zone, defined in Section S1.G. of this permit. The CCEC equals 0.8% effluent. The ACEC equals 3.6% 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 after each sample date.

S9. HERRING TOXICITY TESTING

A. Acute Testing Requirements

1. The Permittee must conduct herring prolarval acute toxicity testing on the final effluent from Outfall 001 **twice** a year beginning the first January following permit issuance. The Permittee must collect each year’s samples at least 2 weeks apart and conduct both tests between January 1st and June 15th.
2. The Permittee must develop and implement a Toxicity Identification/Reduction Evaluation (TI/RE) Plan according to the instructions in WAC 173-205-100(2), if during the herring acute testing the Lowest Observable Effects Concentration (LOEC) is equal to or lower than the Acute Critical Effluent Concentration (ACEC). If the Permittee is unable to properly address the toxicity issue through the TI/RE process, Ecology may require additional testing and/or investigation into the toxicity.
3. With prior approval from Ecology, the Permittee may use the substitute test species, if herring larvae are unavailable during the test window.

Acute Test Species	Method	Substitute Test Species	Method
Pacific herring, <i>Clupea pallasii</i>	96-hour prolarval acute survival test, Dinnel (2008)	topsmelt, <i>Atherinops affinis</i>	96-hour acute survival test, EPA-821-R-02-012

B. Chronic Testing Requirements

1. The Permittee must conduct herring embryo and echinoderm (sea urchin) embryo chronic toxicity testing on the final effluent from Outfall 001 **once** a year beginning the first January following permit issuance. The Permittee must split each year's samples so that the embryo and sea urchin tests are performed concurrently on the same sample and conduct testing between January 1st and June 15th.
2. The Permittee must conduct herring larval chronic toxicity testing **twice** a year beginning the first January following final validation of the Dinnel/Middaugh larval chronic protocol. The Permittee must collect each year's samples at least 2 weeks apart and conduct both tests between January 1st and June 15th.
3. With prior approval from **Ecology**, the Permittee may use the substitute species if herring larvae are unavailable during the test window.

Saltwater Chronic Test Species	Method	Substitute Test Species	Method
Pacific herring, <i>Clupea pallasii</i>	Embryo Normal Survival Test, Dinnel (2008) - see C.5. below	sea urchin (<i>Strongylocentrotus Purpuratus</i>) or sand dollar (<i>Dendraster excentricus</i>)	Embryo-larval development test, EPA/600/R-95/136
sea urchin (<i>Strongylocentrotus Purpuratus</i>) or sand dollar (<i>Dendraster excentricus</i>)	Embryo-larval development test, EPA/600/R-95/136	---	---
Pacific herring, <i>Clupea pallasii</i>	Larval Survival and Growth Test, Dinnel (2008) – see C.5. below	topsmelt, <i>Atherinops affinis</i>	Survival and growth test, EPA/600/R-95/136

The laboratory must conduct the sea urchin and sand dollar tests in accordance with EPA/600/R-95/136 and the echinoderm test conditions in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. The laboratory may choose whichever of the two echinoderm species that they predict will work best at the time.

4. Permittee must develop and implement a Toxicity Identification/ Reduction Evaluation (TI/RE) Plan according to the instructions in WAC 173-205-100(2), if any herring embryo test shows a significant difference between the control and the CCEC at the 0.05 level of significance using hypothesis testing (Appendix H, EPA/600/4-89/001) **and** the echinoderm embryo test also shows significant effects. Because echinoderms are much easier to obtain for embryo testing, the Permittee may rely upon them for TI/RE work if the echinoderms respond sufficiently to the same effluent toxicity which affected herring embryos. If the Permittee is unable to properly address the toxicity issue through the TI/RE process, **Ecology** may require additional testing and/or investigation into the toxicity.
5. The Permittee must develop and implement a Toxicity Identification/ Reduction Evaluation (TI/RE) Plan according to the instructions in WAC 173-205-100(2), if any herring larval test shows a significant difference between the control and the CCEC at the 0.05 level of significance using hypothesis testing (Appendix H, EPA/600/4-89/001). If the Permittee is unable to properly address the toxicity issue through the TI/RE process, **Ecology** may require additional testing and/or investigation into the toxicity.

C. Sampling and Reporting Requirements

1. The Permittee must submit all reports for herring toxicity testing or substitute species testing in accordance with the most recent version of Ecology Publication #WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. Reports must contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data in electronic format for entry into the Ecology database, then the Permittee must send the data to Ecology along with the test report, bench sheets, and reference toxicant results.
2. The Permittee must collect 24-hour composite effluent samples or grab samples for toxicity testing. The Permittee may use grab samples only if short notice about herring availability makes 24-hour composite sampling risky for successful test completion. The Permittee must cool the samples to 0-6° C 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 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 in the most recent versions of the EPA methods listed in subsections A. and B. and 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. Herring toxicity tests must meet quality assurance criteria and test conditions in:
 - Dinnel, Paul. October 2008. Pacific Herring, *Clupea pallasii*, Embryo and Larval Bioassay Protocols. Shannon Point Marine Center, Western Washington University
 - Dinnel, P.A. *et al.* Methods for Conducting Bioassays Using Embryos and Larvae of Pacific Herring, *Clupea pallasii*. Arch Environ Contam Toxicol published online October 5, 2010.
6. The Permittee must conduct whole effluent toxicity tests on an unmodified sample of final effluent.
7. The Permittee must conduct a full dilution series during herring toxicity testing in order to determine concentration response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations used in acute testing must include the ACEC. The series of concentrations used in chronic testing must include the CCEC and the ACEC. The ACEC equals 3.6% effluent and the CCEC equals 0.8% effluent.
8. All statistical comparisons between test organism response in the control versus response at the ACEC or CCEC must comply with the statistical power standards defined in WAC 173-205-020 and with the process described in section II.E.2. of Ecology Publication WQ-R-95-80.
9. The Permittee must submit the reports of individual test results to Ecology within 60 days after each sample date.

S10. WASTEWATER TREATMENT EFFICIENCY STUDY AND UPDATED ENGINEERING REPORT

Ecology may 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 by _____ (180 days prior to permit expiration or another timeframe approved by Ecology).

S11. 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 Permittee must recharacterize sediment toxicity at the North Pier if spills have occurred since the 2006 baseline sediment characterization. A decision will be made by Ecology as to whether a reported spill or accumulation of spills is significant enough to warrant additional sediment sampling at the North Pier. The purpose of the plan is to recharacterize sediment toxicity in the Permittee's discharge location between August 15th and September 15th.

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 February 1, 2016.
- B. The Permittee must perform sediment sampling during the first stable period (mid-August through mid-September) following Ecology's 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.

S12. POLLUTION PREVENTION

Pollution prevention planning and activities at the facility include the:

- New pollution prevention projects identified for the upcoming permit cycle in the plan update.
- Standard Operating Procedures (SOPs), Best Management Practices (BMPs), and work practices developed and updated from previous permit pollution plans, stormwater pollution prevention plans (SWPPPs), solid waste control plans, and spill plans.

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

Solid Waste

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.

Storage Tank Wastewater

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

A. Pollution Prevention Plan Development and Implementation

The Permittee must prepare an update to its Pollution Prevention Plan and submit it to Ecology for review and approval by _____ (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 throughout the term of the permit.

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

B. Specific Plan Update Requirements

The Permittee must update the following plan elements as necessary: the policy statement and signature, employee involvement, training and awareness, descriptions of current pollution prevention activities, and the description of potential pollutants and sources. Appendix C includes references to guidance documents, specific items to be included in the plan, and procedures for

identifying, evaluating and prioritizing pollution prevention opportunities. Other information available to the Permittee may also be used in preparing the plan.

The updated plan must include a schedule for implementation of each newly selected opportunity. If a detailed analysis of technical and 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.

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. Plan Evaluation and Biennial Reporting

The Permittee must periodically evaluate and modify, as necessary, the pollution prevention plan and existing SOPs, BMPs, and work practices to ensure that it has been updated or otherwise modified to reflect current conditions, that measures to reduce or eliminate pollutant loadings selected in the plan are adequate and are being properly implemented in accordance with the terms of the permit, and whether any additional controls are needed. The Permittee must modify the pollution prevention plan whenever there is a change in design, construction, operation, or maintenance of the facility which significantly increases the generation or potential generation of water pollutants 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.

The Permittee must submit a biennial progress report by September 1st (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 is encouraged to employ continuous improvement principles, including the systematic and ongoing identification, evaluation, and implementation of pollution prevention opportunities in all decisions having environmental consequences.

S13. CONSTRUCTION STORMWATER POLLUTION PREVENTION

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

Beginning on the effective date of this permit and lasting through the expiration date, the Permittee is authorized to discharge construction stormwater at Outfalls 001, 002, 003, 004, 005, and 007 subject to the following requirements and limitations:

1. Discharges must not cause or contribute to a violation of Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Quality Standards (Chapter 173-200 WAC), Sediment Management Standards (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (40 CFR Part 131.36). Discharges that are not in compliance with these standards are not authorized.
2. Prior to the discharge of stormwater and non-stormwater to *waters of the state*, the Permittee must apply all known, available, and reasonable methods of prevention, control, and treatment (*AKART*). *AKART* includes the preparation and implementation of an adequate Stormwater Pollution Prevention Plan (SWPPP), compliance with all appropriate *best management practices* (BMPs) installed and maintained in accordance with the SWPPP and compliance of the terms and conditions of this permit.
3. Ecology presumes that the Permittee complies with water quality standards, unless discharge monitoring data or other site specific information demonstrates that a discharge causes or contributes to a violation of water quality standards, when the Permittee complies with the following conditions. The Permittee must fully:
 - Comply with all permit conditions, including planning, sampling, monitoring, reporting, and recordkeeping conditions.

- Implement stormwater BMPs contained in *stormwater management manuals* published or approved by Ecology, or BMPs that are *demonstrably equivalent* to BMPs contained in stormwater technical manuals published or approved by Ecology, including the proper selection, implementation, and maintenance of all applicable and appropriate BMPs for on-site *pollution* control.

4. Stormwater Pollution Prevention Plans

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

Each plan must be prepared in accordance with the objectives and requirements identified in Condition S9. of the Construction Stormwater General Permit issued by Ecology on January 1, 2011, or as revised.

5. Monitoring Requirements

The Permittee must sample all discharge locations from the construction site at least once every calendar week. Samples must be *representative* of the flow and characteristics of the discharge. Sampling is not required when there is no discharge during a calendar week. Sampling is not required outside of normal working hours or during unsafe conditions. If the Permittee is unable to sample during a monitoring period, the Permittee must include a brief explanation in the monthly Discharge Monitoring Report (DMR). Sampling is not required before construction activity begins.

Sampling is required at all discharge points where stormwater associated with construction activity (or authorized non-stormwater) is discharged *off-site*. The Permittee may discontinue sampling at discharge points that drain areas of the project that are fully stabilized to prevent erosion. All sampling point(s) must be identified on the SWPPP site map and be clearly marked in the field with a flag, tape, stake or other visible marker. Sampling is not required for a discharge that is sent directly to sanitary or combined sewer systems.

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

The primary monitoring requirements are summarized below:

Summary of Monitoring Requirements			
Soil Disturbance Area	Weekly Site Inspections	Weekly Turbidity Sampling	Weekly pH Sampling
Sites that disturb less than 1 acre but are part of a larger Common Plan of Development	Required	Not required unless construction activity involves significant concrete work or the use of engineered soils	
Sites that disturb 1 acre or more	Required	Required	Required

6. Site Log Book

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

7. Site Inspections

Site inspections must include all areas disturbed by construction activities, all BMPs, and all stormwater discharge points. Stormwater must be visually examined for the presence of suspended sediment, turbidity, discoloration, and oil sheen. Inspectors must evaluate the effectiveness of BMPs and determine if it is necessary to install, maintain, or repair BMPs to improve the quality of stormwater discharges.

Based on the results of the inspection, the Permittee must correct the problems identified as follows; the Permittee must:

- Review the SWPPP for compliance with Condition S9. of the Construction Stormwater General Permit issued by Ecology on January 1, 2011 and make appropriate revisions within 7 days of the inspection.
- Fully implement and maintain appropriate *source control* and/or *treatment BMPs* as soon as possible, but no later than 10 days of the inspection. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a Permittee within the initial 10-day response period
- Document BMP implementation and maintenance in the site log book.

The site inspections must be conducted at least once every *calendar week* and within 24 hours of any discharge from the site. The inspection frequency for temporarily stabilized, inactive sites may be reduced to once every calendar month.

Site inspections must be conducted by a person who is knowledgeable in the principles and practices of erosion and sediment control. The inspector must have the skills to:

- Assess the site conditions and construction activities that could impact the quality of stormwater, and
- Assess the effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges.

Construction sites one acre or larger that discharge stormwater to surface waters of the state, must have site inspections conducted by a *Certified Erosion and Sediment Control Lead (CESCL)*. The CESCL must be identified in the SWPPP and must be present on-site or on-call at all times. Certification must be obtained through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology (see BMP C160 in the Manual).

The inspector must summarize the results of each inspection in an inspection report or checklist and be entered into, or attached to, the site log book. At a minimum, each inspection report or checklist must include:

- Inspection date and time.
- Weather information; general conditions during inspection and approximate amount of precipitation since the last inspection, and within the last 24 hours.
- A summary or list of all BMPs which have been implemented, including observations of all erosion/sediment control structures or practices.
- The following must be noted: locations of BMPs inspected, locations of BMPs that need maintenance, the reason maintenance is needed, locations of BMPs that failed to operate as designed or intended, and locations where additional or different BMPs are needed, and the reason(s) why.
- A description of stormwater discharged from the site. The inspector must note the presence of suspended sediment, turbid water, discoloration, and/or oil sheen, as applicable.
- Any water quality monitoring performed during inspection.
- General comments and notes, including a brief description of any BMP repairs, maintenance or installations made as a result of the inspection.
- A statement that, in the judgment of the person conducting the site inspection, the site is either in compliance or out of compliance with the terms and conditions of the SWPPP and the permit. If the site inspection indicates that the site is out of compliance, the inspection report must

include a summary of the remedial actions required to bring the site back into compliance, as well as a schedule of implementation.

- Name, title, and signature of the person conducting site inspection; and the following statement: “I certify that this report is true, accurate, and complete, to the best of my knowledge and belief”.

8. Turbidity Monitoring

The Permittee must perform turbidity analysis with a calibrated turbidity meter (turbidimeter), either on-site or at an accredited lab. The results must be recorded in the site log book in Nephelometric Turbidity Units (NTU).

Parameter	Units	Analytical Method	Sampling Frequency
Turbidity	NTU	SM2130 or EPA180.1	Weekly, if discharging

The **Benchmark Value** for turbidity is **25 NTU**.

If the discharge turbidity is greater than 25 NTU, the CESCL must:

- Review the SWPPP for compliance with requirements identified in Special Condition S9. Construction Stormwater General Permit issued by Ecology on January 1, 2011, or as revised and make appropriate revisions within 7 days of the discharge that exceeded the benchmark.
- Fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, but within 10 days of the discharge that exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a Permittee within the initial 10-day response period.
- Document BMP implementation and maintenance in the site log book.

If the discharge turbidity is greater than or equal to 250 NTU; the CESCL must also:

- Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance and correct the problem.
- Notify Ecology by phone in accordance with Condition S3.E.2.
- Continue to sample discharges daily until: turbidity is 25 NTU (or lower); or the CESCL has demonstrated compliance with the water quality standard for turbidity: no more than 5 NTU over background turbidity, if background is less than 50 NTU, or no more than 10% over background

turbidity, if background is 50 NTU or greater; or the discharge stops or is eliminated.

9. pH Monitoring

The Permittee must obtain a representative sample of stormwater and conduct pH analysis at least once per week for sites greater than one acre. For sites less than one acre pH analysis is required once per week when there is active concrete work in progress or when engineered soils are in use. The Permittee must perform pH analysis on-site with a calibrated pH meter, pH test kit, or wide range pH indicator paper. The Permittee must record pH monitoring results in the site log book

The **benchmark value for pH is 8.5 standard units**. Any time sampling indicates that pH is 8.5 or greater, the Permittee must prevent the high pH water (8.5 or above) from entering storm sewer systems or surface waters; or if necessary, adjust or neutralize the high pH water using an appropriate treatment BMP. The Permittee must obtain written approval from Ecology prior to using any form of chemical treatment other than CO₂ sparging or dry ice.

S14. DIOXIN STUDY

A. Wastewater Sampling

The Permittee must:

1. Sample the final effluent (Outfall 001) and the upstream wastewater stream from the catalytic reformer units for chlorinated dioxin and furan (2,3,7,8-Cl substituted tetra- through octa- congeners) concentrations twice during the permit cycle.
2. Sample the wastewater stream from the catalytic reformer units during two different catalyst regeneration events.
3. Collect a grab sample from each monitored caustic wash during the regeneration of each reformer unit.
4. Conduct the analysis including sample containers and QA/QC in accordance with Method 1613: Tetra- through Octa- Chlorinated Dioxins and Furans by Isotopic Dilution HRGC/HRMS, USEPA Office of Water, Engineering and Analysis Division, Revision A. The Minimum Level (ML) of detection for 2,3,7,8- TCDD/TCDF must be 10 parts per quadrillion or less.
5. Report the lowest detected concentrations of all 2,3,7,8-Cl substituted dioxins and furans that meet the quality assurance specifications of Method 1613, including all detected concentrations below the calibration limits of Method 1613

B. Dioxin Study Report

The Permittee must submit to Ecology a Dioxin Study Report including the results of the sampling and analysis by _____ (with the permit renewal application 180 days prior to the permit expiration).

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

S15. GROUNDWATER MONITORING

To determine the effects of any discharge through the unlined native clay bottom of the wastewater ponds, the Permittee must:

1. Install an additional downgradient well to assess the attenuation within the refinery property boundary by _____ (during the first dry season following the permit effective date).
2. Sample the new and existing wells (MW-109, 110, and 111) **once** per year 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), the method of measurement and analyze samples for iron, arsenic, manganese, sulfate, chloride, Total Dissolved Solids, and Total Petroleum Hydrocarbons (TPH-Dx). The monitoring results must be submitted to Ecology within 60 days of receiving the data validation report and no later than (insert a date here) of each year.

S16. 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 wastestreams identified on the permit application and application amendments as approved by Ecology. The Permittee must maintain records of the off-site wastestreams 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 _____ (with the permit renewal application).

S17. 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.

S18. APPLICATION FOR PERMIT RENEWAL

The Permittee must submit an application for renewal of this permit by Insert date (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 the Department'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. Ecology 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 Ecology 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, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must not be resuspended or reintroduced to the final effluent stream for discharge to state waters.

G10. DUTY TO PROVIDE INFORMATION

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

G11. OTHER REQUIREMENTS OF 40 CFR

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

G12. ADDITIONAL MONITORING

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

G13. PAYMENT OF FEES

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

G14. PENALTIES FOR VIOLATING PERMIT CONDITIONS

Any person who is found guilty of willfully violating the terms and conditions of this permit must be deemed guilty of a crime, and upon conviction thereof must 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 must 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 must be a separate and distinct offense, and in case of a continuing violation, every day's continuance must be 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 must, 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 must 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 BP NPDES permit are **base permit limits** that apply to process water flow – these values are fixed.

S1.C. effluent limitations in the BP NPDES permits 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.

Storm water 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 storm water allocations in the BP NPDES permit are based on guidelines in 40 CFR 419.12(c) and 419.22(e). The allocations for storm water are intended to apply to runoff from areas associated with industrial activity, not outlying areas such as parking lots and surrounding acreage.

Daily maximum storm water 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 BP 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 storm water 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 storm water 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 storm water 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 storm water allocation: 130 lbs/million gallons

O&G incremental limit due to storm water: $1.2 \times 130 = 156$ 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 storm water allocation. -- this is the incremental storm water 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 storm water 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 storm water flow excess was: 2.5 million gallons
TSS average monthly storm water allocation: 180 lbs/million gallons
TSS incremental limit due to storm water: $2.5 / 5 \times 180 = 90$ 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 required monitoring unless:

- Another permit condition specifies other methods.
- 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.

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 A 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.

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
CONVENTIONALS			
Biochemical Oxygen Demand	SM5210-B		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
Total Ammonia (as N)	SM4500-NH3-GH		0.3 mg/L
Flow	Calibrated device		
Dissolved oxygen	4500-OC/OG		0.2 mg/L
Temperature (max. 7-day avg.)	Analog recorder or Use micro-recording devices known as thermistors		0.2° C

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
pH	SM4500-H ⁺ B	N/A	N/A

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
NONCONVENTIONALS			
Total Alkalinity	SM2320-B		5 mg/L as CaCo3
Chlorine, Total Residual	4500 Cl G		50.0
Color	SM2120 B/C/E		10 color unit
Fecal Coliform	SM 9221D/E,9222	N/A	N/A
Fluoride (16984-48-8)	SM4500-F E	25	100
Nitrate-Nitrite (as N)	4500-NO3-E/F/H		100
Nitrogen, Total Kjeldahl (as N)	4500-NH3-C/E/FG		300
Ortho-Phosphate (PO ₄ as P)	4500- PE/PF	3	10
Phosphorus, Total (as P)	4500-PE/PF	3	10
Oil and Grease (HEM)	1664A	1,400	5,000
Salinity	SM2520-B		3 PSS
Settleable Solids	SM2540 -F		100
Sulfate (as mg/L SO ₄)	SM4110-B		200
Sulfide (as mg/L S)	4500-S ² F/D/E/G		200
Sulfite (as mg/L SO ₃)	SM4500-SO3B		2000
Total dissolved solids	SM2540 C		20 mg/L
Total Hardness	2340B		200 as CaCO3
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
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-	200.8	0.1	0.5

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
5)			
NWTPH Dx	Ecology NWTPH Dx		100
NWTPH Gx	Ecology NWTPH Gx		140
Tin, Total (7440-31-5)	200.8	0.3	1.5

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
METALS, CYANIDE & TOTAL PHENOLS			
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	2	10
Cyanide, Weak Acid Dissociable	SM4500-CN I	2	10
Phenols, Total	EPA 420.1		50
DIOXIN			
2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (176-40-16)	1613B	1.3 pg/L	5 pg/L

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

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
(4-chloro-3-methylphenol)			
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

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
VOLATILE COMPOUNDS			
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
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-	624	1.0	2.0

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
VOLATILE COMPOUNDS			
5)			
1,3-dichloropropylene (mixed isomers) (542-75-6)	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
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

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
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(j)fluoranthene (205-82-3)	625	0.5	1.0
Benzo(r,s,t)pentaphene (189-55-9)	625	0.5	1.0

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Benzo(a)pyrene (50-32-8)	610/625	0.5	1.0
3,4-benzofluoranthene (Benzo(b)fluoranthene) (205-99-2)	610/625	0.8	1.6
11,12-benzofluoranthene (Benzo(k)fluoranthene) (207-08-9)	610/625	0.8	1.6
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
Dibenzo (a,j)acridine (224-42-0)	610M/625M	2.5	10.0
Dibenzo (a,h)acridine (226-36-8)	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

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
1,2-Diphenylhydrazine (as Azobenzene) (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
3-Methyl cholanthrene (56-49-5)	625	2.0	8.0
Naphthalene (91-20-3)	625	0.3	0.6
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
Perylene (198-55-0)	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

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
PESTICIDES/PCBs			
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)	608	0.025	0.05
4,4'-DDT (50-29-3)	608	0.025	0.05

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
PESTICIDES/PCBs			
4,4'-DDE (72-55-9)	608	0.025	0.05 ¹⁰
4,4' DDD (72-54-8)	608	0.025	0.05
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)	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)	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 10ⁿ, where n is an integer. (64 FR 30417).

ALSO GIVEN AS:

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

APPENDIX C - REFINERY NPDES POLLUTION PREVENTION PLANS – SPECIFIC REQUIREMENTS

GUIDANCE DOCUMENTS

Guidance available to develop a pollution prevention plan include the *Guidance Manual for Preparing/Updating a Stormwater Pollution Prevention Plan for Industrial Facilities*, April 2004 (Ecology Publication No. 04-10-030), the *2005 Storm water Management Manual for Western Washington* April 2005 (Ecology Publication No. 05-10-029), the ‘Pollution Prevention and Best Management Practices’ section of the *Water Quality Program Permit Writer’s Manual* -Chapter XII, revised November 2010 (Ecology Publication No. 92-109), *An Organizational Guide to Pollution Prevention*, July 2001 (EPA-625-R-01-003) , 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. The Permittee is expected to apply the methodologies from the existing guidance to cover other sources, pathways, or measures not covered within the strict scope of the WAC 173-307 guidance.

PLAN & PLAN IMPLEMENTATION REQUIREMENTS

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.

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.

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.

Incorporating Other Pollution Prevention Plans

The Permittee may incorporate applicable portions of plans prepared for other purposes. Plans or portions of plans incorporated into the pollution prevention plan become enforceable requirements of this permit.

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, storm water, 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 and the

catalytic wash water spent caustic and wash water waste streams. Minor incidental waste streams to storm water, 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.

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, diethanolamine (DEA), 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. Storm water 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 storm water 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.

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.