

Fact Sheet for State Waste Discharge Permit ST0007423

Air Liquide Large Industries US LP

Revised February 8, 2018

Purpose of this Fact Sheet

This fact sheet explains and documents the decisions the Department of Ecology (Ecology) made in drafting the proposed State Waste Discharge permit for Air Liquide Large Industries US LP that will allow discharge of wastewater to Shell Oil Products US - Puget Sound Refinery.

State law requires any commercial or industrial facility to obtain a permit before discharging waste or chemicals to municipal sanitary sewer collection and treatment systems or private wastewater treatment systems (PWTS).

Ecology makes the draft permit and fact sheet available for public review and comment at least thirty (30) days before it issues the final permit to the facility operator. Copies of the fact sheet and draft permit for Air Liquide, State Waste Discharge permit ST0007423, are available for public review and comment from December 7, 2017 until the close of business January 12, 2018. For more details on preparing and filing comments about these documents, please see **Appendix A - Public Involvement Information**.

Air Liquide reviewed the draft permit and fact sheet for factual accuracy. Ecology corrected any errors or omissions about the facility's location, history, product type, production rate, discharges or other factual errors prior to publishing this draft fact sheet for public notice.

After the public comment period closes, Ecology will summarize substantive comments and our responses to them. Ecology will include our summary and responses to comments to this fact sheet as **Appendix D - Response to Comments**, and publish it when we issue the final State Waste Discharge permit. Ecology generally will not revise the rest of the fact sheet. The full document will become part of the legal history contained in the facility's permit file.

Summary

Air Liquide Large Industries US LP is an industrial gas facility located in Anacortes Washington. It discharges untreated wastewater to, and the wastewater is treated at, the Shell Puget Sound Refinery. Ecology issued the previous permit for this facility on September 8, 2006. The proposed permit includes requirements to monitor the wastewater flow, submit an updated spill plan, and submit discharge monitoring reports electronically.

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I. Introduction

The legislature defined Ecology's authority and obligations for the wastewater discharge permit program in the Water Pollution Control law, Chapter 90.48 RCW (Revised Code of Washington).

Ecology adopted rules describing how it exercises its authority:

- State waste discharge program (Chapter 173-216 WAC)
- Submission of plans and reports for construction of wastewater facilities (Chapter 173-240 WAC)

These rules require any industrial facility owner/operator to obtain a State Waste Discharge permit before discharging wastewater to state waters. This rule includes commercial or industrial discharges to sewerage systems operated by municipalities, other public entities, or private entities which discharge into public waters of the state. They also help define the basis for limits on each discharge and for other performance requirements imposed by the permit.

Under the State Waste Discharge permit program and in response to a complete and accepted permit application, Ecology generally prepares a draft permit and accompanying fact sheet, and makes it available for public review before final issuance. If the volume of the discharge has not changed or if the characteristics of the discharge have not changed Ecology may choose not to issue a public notice. When Ecology publishes an announcement (public notice); it tells people where they can read the draft permit, and where to send their comments, during a period of thirty days. (See **Appendix A-Public Involvement Information** for more detail about the public notice and comment procedures). After the public comment period ends, Ecology may make changes to the draft State Waste Discharge permit in response to comment(s). Ecology will summarize the responses to comments and any changes to the permit in **Appendix D**.

II. Background Information

Table 1 General Facility Information

Facility Information	
Applicant	Air Liquide Large Industries US LP
Facility Name and Address	Air Liquide Large Industries US LP 8581 South Texas Rd Anacortes, WA 98221
Contact at Facility	Margaret Ferenz 360-293-6171 ex. 11
Responsible Official	Margaret Ferenz 8581 South Texas Rd Anacortes, WA 98221 360-293-6171 ex. 11
Industrial User Type	Minor Industrial User
Industry Type	Industrial Gas Facility

Facility Information	
Facility Location (NAD83/WGS84 reference datum)	Latitude: 48.467518 Longitude: -122.553889
Treatment Plant Receiving Discharge	Shell Oil Products US – Puget Sound Refinery
Discharge Location (NAD83/WGS84 reference datum)	Latitude: 48.505915 Longitude: -122.575665
Permit Status	
Issuance Date of Previous Permit	September 8, 2006
Application for Permit Renewal Submittal Date	December 7, 2011
Date of Ecology Acceptance of Application	December 10, 2012
Inspection Status	
Date of Last Non-sampling Inspection Date	April 5, 2017

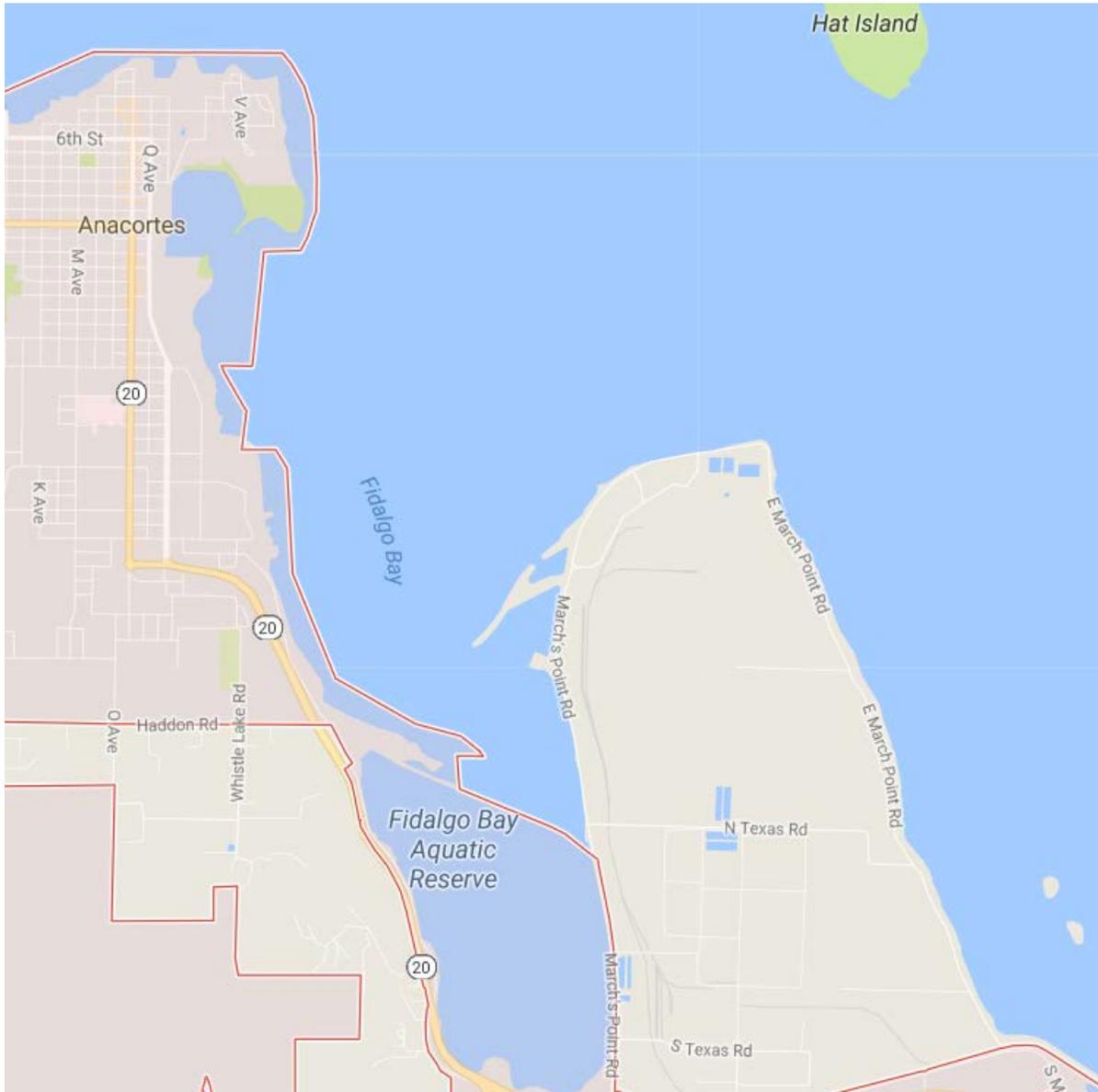


Figure 1A Air Liquide Location at March Point near Anacortes, WA



Figure 2B Air Liquide Location Detail, Next to Shell Refinery

A. Facility Description

History

This permit renewal is for an industrial gas facility owned by Air Liquide Large Industries US LP (Air Liquide). The discharge is received and treated in the Shell Puget Sound Refinery wastewater treatment system.

Industrial Process(s)

Air Liquide operates two industrial gas facilities at its Anacortes site:

- The Air Separation Unit (ASU) produces oxygen and nitrogen from atmospheric air by cryogenic distillation. Air Liquide delivers the resulting gaseous oxygen and nitrogen products to the adjacent Shell refinery.

- The Steam Methane Reformer (SMR) produces high purity hydrogen and steam from natural gas. These products are also sent to the refinery.

The ASU was constructed in the late 1990s and the SMR was constructed in the early 2000s.

Primary heat exchange at the Air Separation Unit is performed by cooling ambient air at the cooling tower, yielding condensate (non-contact wastewater) at the main air compressors. The wastewater from the ASU includes compressor drain water, boiler blowdown, and condensate water. The combined condensate and blow down produce an average of 26,900 gallons of wastewater daily.

The Steam Methane Reformer (SMR) process units include a Feed Pretreat, Steam Methane Reformer, Shift Converter, Process Cooler, and Pressure Swing Adsorption. Process wastewater comes from the Steam Methane Reformer, Feed Pretreat, and Process Cooling units. The wastewater from the SMR includes power blowdown and condensate water. The SMR produces on average about 18,720 gallons of wastewater per day. The combined total effluent discharged to the Shell WWT plant averages 45,620 gallons per day.

Wastewater Pretreatment

Air Liquide has no wastewater treatment facility on-site. All wastewater is discharged to and treated at the Shell refinery waste water treatment (WWT) facility.

Solid Wastes

No solid wastes are generated at the Air Liquide Anacortes site.

B. Discharge Location to the Shell Oil Products WWT Plant

All process wastewater generated at the Air Liquide site is sent to Shell's WWT plant. Shell has a NPDES wastewater discharge permit that requires extensive monitoring of their discharge. After providing primary, secondary, and tertiary wastewater treatment, Shell typically discharges 3 million gallons per day into the north end of Fidalgo Bay. Flow is measured and recorded by a meter.

C. Wastewater Characterization

The company occupies a small portion of the Shell refinery complex. All of its water supply comes from the refinery and all of the wastewater produced from Air Liquide's processes is sent back to the refinery for treatment. Air Liquide has two main sources of discharge, the ASU and SMR. The ASU and SMR discharges are commingled and sent to the Shell WWT plant.

Air Liquide reported the concentration of pollutants in an amendment to the latest permit application. The tabulated data represents the quality of the effluent discharged in September of 2017. The effluent is characterized as follows:

Table 2a ASU Discharge

Parameter	Units	# of Samples	Value
Oil and Grease	mg/L	1	0.9J
Total Suspended Solids	mg/L	1	8
Mercury	mg/L	1	ND
Molybdenum	mg/L	1	ND
Arsenic	mg/L	1	0.002
Barium	mg/L	1	0.045
Cadmium	mg/L	1	0.0001
Chromium	mg/L	1	0.0002
Cobalt	mg/L	1	0.0002
Lead	mg/L	1	0.001
Nickel	mg/L	1	0.003
Selenium	mg/L	1	0.007
Silver	mg/L	1	ND
Zinc	mg/L	1	0.063
pH	standard	1	8.31

Table 3b SMR Discharge

Parameter	Units	# of Samples	Value
Oil and Grease	mg/L	1	1.1J
Total Suspended Solids	mg/L	1	ND
Mercury	mg/L	1	ND
Molybdenum	mg/L	1	ND

Parameter	Units	# of Samples	Value
Arsenic	mg/L	1	0.024
Barium	mg/L	1	0.048
Cadmium	mg/L	1	0.0002J
Chromium	mg/L	1	0.007
Cobalt	mg/L	1	0.0002J
Lead	mg/L	1	0.0003J
Nickel	mg/L	1	0.003
Selenium	mg/L	1	0.002
Silver	mg/L	1	ND
Zinc	mg/L	1	0.025
pH	standard	1	7.85

J = Estimate

ND = Not Detected

D. Summary of Compliance with Previous Permit Issued

The previous permit did not include effluent limitations for the wastewater Air Liquide sends to the Shell Puget Sound Refinery.

Air Liquide has complied with the permit conditions throughout the duration of the permit issued on September 8, 2006. Ecology assessed compliance based on its review of the facility's information in the Ecology Permitting and Reporting Information System (PARIS), discharge monitoring reports (DMRs) and during inspections conducted by Ecology.

E. State Environmental Policy Act (SEPA) Compliance

State law exempts the issuance, reissuance or modification of any wastewater discharge permit from the SEPA process as long as the permit contains conditions that are no less stringent than federal and state rules and regulations (RCW 43.21C.0383). The exemption applies only to existing discharges, not to new discharges.

III. Proposed Permit Limits

State regulations require that Ecology base limits, if applicable, in a State Waste Discharge permit on the:

- Technology and treatment methods available to treat specific pollutants (technology-based). Technology-based limits are set by the EPA and published as a regulation (40 CFR 400 - 471), or Ecology develops limits on a case-by-case basis (40 CFR 125.3, and RCW 90.48). Dischargers must treat wastewater using all known, available, reasonable methods of prevention, control, and treatment (AKART).
- Effects of the pollutants on the publicly-owned treatment works (POTW). Wastewater must not interfere with the operation of the POTW. Ecology considers local limits in developing permit limits.
- Applicable requirements of other local, state and federal laws.

Ecology applies the most stringent of these limits to each parameter of concern and further describes the proposed limits below.

Ecology evaluated the permit application and determined the limits were not needed to comply with the rules adopted by the state of Washington. Ecology does not develop effluent limits for all reported pollutants. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, and are not listed in regulation.

Ecology does not usually develop permit limits for pollutants not reported in the permit application but may be present in the discharge. The permit does not authorize the discharge of the non-reported pollutants. During the five-year permit term, the facility's effluent discharge conditions may change from those conditions reported in the permit application. The facility must notify Ecology if significant changes occur in any constituent. Until Ecology modifies the permit to reflect additional discharge of pollutants, a permitted facility could be violating its permit.

A. Design Criteria

According to WAC 173-216-110 (4), neither flows nor waste loadings may exceed approved design criteria. The Shell refinery receives the Air Liquide effluent. Shell has a wastewater treatment system adequately sized and configured to treat Air Liquide's wastewater.

B. Technology-Based Effluent Limits

Waste discharge permits issued by Ecology specify conditions requiring all available and reasonable methods of prevention, control, and treatment (AKART) of discharges to waters of the state (RCW 90.48).

The state waste discharge permit regulations include restrictions and prohibitions to protect publicly-owned sewerage systems. A facility may not discharge any wastewater having a pH less than 5.0 or greater than 11.0 or having any other corrosive property capable of causing damage or hazard to structures, equipment, or personnel unless the:

- System is specifically designed to accommodate such discharge.
- Discharge is authorized by a permit (WAC 173-216-060).

Federal regulations (40 CFR 403.5b) also prohibit the discharge of pollutants which will cause corrosive structural damage to the POTW. The federal regulations also prohibit discharges with pH lower than 5.0, unless the collection and treatment system is designed to accommodate such discharges.

These rules do not apply to privately owned sewerage systems. Air Liquide discharges to a privately owned wastewater treatment system operated by the Shell Puget Sound Refinery.

Ecology exercised best professional judgement in deciding not to include effluent limits for Air Liquide's wastewater prior to discharging to the Shell refinery. Effluent limits are included in state waste discharge permits to protect the receiving wastewater treatment facility from pass-through, interference, concentrations of toxic chemicals, or potentially hazardous exposure levels. Air Liquide has been operating in the same manner since 2000 and has not caused any problems or concerns to the receiving wastewater treatment system operated by Shell.

C. Comparison of Effluent Limits with the Previous Permit Issued on September 8, 2006

The previous permit contained only monitoring requirements. No limits were set for any parameter. This is because the effluent is discharged into Shell's treatment system which is permitted under the NPDES program. The previous monitoring parameters are carried forward into this permit renewal cycle.

IV. Monitoring Requirements

Ecology requires monitoring, recording, and reporting (WAC 173-216-110) to verify that the treatment process functions correctly and that the discharge complies with the permit's effluent limits.

If a facility uses a contract laboratory to monitor wastewater, it must ensure that the laboratory uses the methods and meets or exceeds the method detection levels required by the permit. The permit describes when facilities may use alternative methods. It also describes what to do in certain situations when the laboratory encounters matrix effects. When a facility uses an alternative method as allowed by the permit, it must report the test method, detection level (DL), and quantitation level (QL) on the discharge monitoring report or in the required report.

A. Wastewater Monitoring

Ecology details the proposed monitoring schedule under Special Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

V. Other Permit Conditions

A. Reporting and Recordkeeping

Ecology based Special Condition S3 on its authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges [WAC 173-216-110 and CFR 403.12 (e),(g), and (h)].

B. Operations and Maintenance

Ecology requires dischargers to take all reasonable steps to properly operate and maintain their facilities or systems of control which are installed to achieve compliance with the terms and conditions of the permit and state regulations (WAC 173-216-110). Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures. This may require the operation of back-up or auxiliary facilities or similar systems, which are installed by a Permittee when the operation is necessary to achieve compliance with the conditions of this permit.

C. Prohibited Discharges

Ecology prohibits certain pollutants from being discharged to the Private Wastewater Treatment System (PWTS). These include substances which cause pass-through or interference, pollutants which may cause damage to the PWTS or harm to the PWTS workers (Chapter 173-216 WAC) and the discharge of designated dangerous wastes not authorized by this permit (Chapter 173-303 WAC).

D. Dilution Prohibited

Ecology prohibits the facility from diluting its effluent as a partial or complete substitute for adequate treatment to achieve compliance with permit limits.

E. Non Routine and Unanticipated Wastewater

Occasionally, this facility may generate wastewater not characterized in the permit application because it is not a routine discharge and the facility did not anticipate it at the time of application. These wastes typically consist of waters used to pressure-test storage tanks or fire water systems or of leaks from drinking water systems.

The permit authorizes the discharge of non-routine and unanticipated wastewater under certain conditions. The facility must characterize these waste waters for pollutants and examine the opportunities for reuse. Depending on the nature and extent of pollutants in this wastewater and on any opportunities for reuse, Ecology may:

- Authorize the facility to discharge the water.
- Require the facility to treat the wastewater.
- Require the facility to reuse the wastewater.

F. Spill Plan

This facility stores a quantity of chemicals on-site that have the potential to cause water pollution and/or interference or pass through at the receiving PWTs if accidentally released. Ecology can require a facility to develop best management plans to prevent this accidental release [Section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080].

Air Liquide developed a spill plan for preventing the accidental release of pollutants to state waters, to the receiving treatment plant, and for minimizing damages if such a spill occurs. The proposed permit requires the facility to update this plan and submit it to Ecology.

G. General Conditions

Ecology bases the standardized general conditions on state law and regulations. They are included in all state waste discharge permits issued by Ecology.

VI. Public Notification of Noncompliance

Ecology may annually publish a list of all industrial users in significant noncompliance with Pretreatment Standards or Requirements during any of the previous four quarters in a local newspaper.

VII. Permit Issuance Procedures

A. Permit Modifications

Ecology may modify this permit to impose or change effluent limits, if necessary to comply with changes in the pretreatment requirements, conditions in local sewer ordinances, or based on new information from sources such as inspections and effluent monitoring. It may also modify this permit to comply with new or amended state or federal regulations.

B. Proposed Permit Issuance

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limits and conditions believed necessary to control toxics. Ecology proposes that the permit be issued for 5 years.

VIII. **References for Text and Appendices**

Washington State Department of Ecology.

Permit and Wastewater Related Information (ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance/)

December 2011. *Permit Writer's Manual*, Publication Number 92-109
(<https://fortress.wa.gov/ecy/publications/SummaryPages/92109.html>)

February 2007. *Focus Sheet on Solid Waste Control Plan, Developing a Solid Waste Control Plan for Industrial Wastewater Discharge Permittees*, Publication Number 07-10-024.
(<https://fortress.wa.gov/ecy/publications/publications/0710024.pdf>)

Appendix A--Public Involvement Information

Ecology proposes to reissue a permit to Air Liquide Large Industries US LP. The permit includes wastewater discharge monitoring and other conditions. This fact sheet describes the facility and Ecology's reasons for requiring permit conditions.

Ecology will place a Public Notice of Draft on December 6, 2017 in the Skagit Valley Herald's Anacortes American to inform the public and to invite comment on the proposed draft State Waste Discharge permit and fact sheet.

The notice:

- Tells where copies of the draft Permit and Fact Sheet are available for public evaluation (a local public library, the closest Regional or Field Office, posted on our website).
- Offers to provide the documents in an alternate format to accommodate special needs.
- Urges people to submit their comments, in writing, before the end of the Comment Period
- Tells how to request a public hearing of comments about the proposed state waste discharge permit.
- Explains the next step(s) in the permitting process.

For more information, read *Frequently Asked Questions about Effective Public Commenting* available on our website at

<https://fortress.wa.gov/ecy/publications/SummaryPages/0307023.html>.

You may obtain further information from Ecology by telephone, 360-407-6937 or by writing to the address listed below.

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

The primary author of this permit and fact sheet is J. Mark Dirkx.

Appendix B --Your Right to Appeal

You have a right to appeal this permit to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of the final permit. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2) (see glossary).

To appeal you must do the following within 30 days of the date of receipt of this permit:

- File your appeal and a copy of this permit with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this permit on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in chapter 43.21B RCW and chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
<p>Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503</p>	<p>Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608</p>
<p>Pollution Control Hearings Board 1111 Israel RD SW STE 301 Tumwater, WA 98501</p>	<p>Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903</p>

Appendix C--Glossary

1-DMax or 1-day maximum temperature -- The highest water temperature reached on any given day. This measure can be obtained using calibrated maximum/minimum thermometers or continuous monitoring probes having sampling intervals of thirty minutes or less.

7-DADMax or 7-day average of the daily maximum temperatures -- The arithmetic average of seven consecutive measures of daily maximum temperatures. The 7-DADMax for any individual day is calculated by averaging that day's daily maximum temperature with the daily maximum temperatures of the three days prior and the three days after that date.

Acute toxicity --The lethal effect of a compound on an organism that occurs in a short time period, usually 48 to 96 hours.

AKART -- The acronym for "all known, available, and reasonable methods of prevention, control and treatment." AKART is a technology-based approach to limiting pollutants from wastewater discharges, which requires an engineering judgment and an economic judgment. AKART must be applied to all wastes and contaminants prior to entry into waters of the state in accordance with RCW 90.48.010 and 520, WAC 173-200-030(2)(c)(ii), and WAC 173-216-110(1)(a).

Alternate point of compliance -- An alternative location in the groundwater from the point of compliance where compliance with the groundwater standards is measured. It may be established in the groundwater at locations some distance from the discharge source, up to, but not exceeding the property boundary and is determined on a site specific basis following an AKART analysis. An "early warning value" must be used when an alternate point is established. An alternate point of compliance must be determined and approved in accordance with WAC 173-200-060(2).

Ambient water quality -- The existing environmental condition of the water in a receiving water body.

Ammonia -- Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Annual average design flow (AADF) -- average of the daily flow volumes anticipated to occur over a calendar year.

Average monthly (intermittent) discharge limit-- The average of the measured values obtained over a calendar month's time taking into account zero discharge days.

Average monthly discharge limit -- The average of the measured values obtained over a calendar month's time.

Background water quality -- The concentrations of chemical, physical, biological or radiological constituents or other characteristics in or of groundwater at a particular point in time upgradient of an activity that has not been affected by that activity, [WAC 173-200-020(3)]. Background water quality for any parameter is statistically defined as the 95% upper tolerance interval with a 95% confidence based on at least eight hydraulically upgradient water quality samples. The eight samples are collected over a period of at least one year, with no more than one sample collected during any month in a single calendar year.

Best management practices (BMPs) -- Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD5 -- Determining the five-day Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD5 is used in modeling to measure the reduction of dissolved oxygen in receiving waters after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD₅ is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass -- The intentional diversion of waste streams from any portion of a treatment facility.

Categorical pretreatment standards -- National pretreatment standards specifying quantities or concentrations of pollutants or pollutant properties, which may be discharged to a POTW by existing or new industrial users in specific industrial subcategories.

Chlorine -- A chemical used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic toxicity -- The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean water act (CWA) -- The federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance inspection-without sampling -- A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance inspection-with sampling -- A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations. In addition it includes as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Ecology may conduct additional sampling.

Composite sample -- A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots).

Construction activity -- Clearing, grading, excavation, and any other activity, which disturbs the surface of the land. Such activities may include road building; construction of residential houses, office buildings, or industrial buildings; and demolition activity.

Continuous monitoring -- Uninterrupted, unless otherwise noted in the permit.

Critical condition -- The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Date of receipt -- This is defined in RCW 43.21B.001(2) as five business days after the date of mailing; or the date of actual receipt, when the actual receipt date can be proven by a preponderance of the evidence. The recipient's sworn affidavit or declaration indicating the date of receipt, which is unchallenged by the agency, constitutes sufficient evidence of actual receipt. The date of actual receipt, however, may not exceed forty-five days from the date of mailing.

Detection limit -- The minimum concentration of a substance that can be measured and reported with 99 percent confidence that the pollutant concentration is above zero and is determined from analysis of a sample in a given matrix containing the pollutant.

Dilution factor (DF) -- A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction, for example, a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Distribution uniformity -- The uniformity of infiltration (or application in the case of sprinkle or trickle irrigation) throughout the field expressed as a percent relating to the average depth infiltrated in the lowest one-quarter of the area to the average depth of water infiltrated.

Early warning value -- The concentration of a pollutant set in accordance with WAC 173-200-070 that is a percentage of an enforcement limit. It may be established in the effluent, groundwater, surface water, the vadose zone or within the treatment process. This value acts as a trigger to detect and respond to increasing contaminant concentrations prior to the degradation of a beneficial use.

Enforcement limit -- The concentration assigned to a contaminant in the groundwater at the point of compliance for the purpose of regulation, [WAC 173-200-020(11)]. This limit assures that a groundwater criterion will not be exceeded and that background water quality will be protected.

Engineering report -- A document that thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report must contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal coliform bacteria -- Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab sample -- A single sample or measurement taken at a specific time or over as short a period of time as is feasible.

Groundwater -- Water in a saturated zone or stratum beneath the surface of land or below a surface water body.

Industrial user -- A discharger of wastewater to the sanitary sewer that is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial wastewater -- Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business; from the development of any natural resource; or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated stormwater and, also, leachate from solid waste facilities.

Interference -- A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

- Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Local limits -- Specific prohibitions or limits on pollutants or pollutant parameters developed by a POTW.

Major facility -- A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum daily discharge limit -- The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Maximum day design flow (MDDF) -- The largest volume of flow anticipated to occur during a one-day period, expressed as a daily average.

Maximum month design flow (MMDF) -- The largest volume of flow anticipated to occur during a continuous 30-day period, expressed as a daily average.

Maximum week design flow (MWDF) -- The largest volume of flow anticipated to occur during a continuous 7-day period, expressed as a daily average.

Method detection level (MDL) -- See Detection Limit.

Minor facility -- A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing zone -- An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The permit specifies the area of the authorized mixing zone that Ecology defines following procedures outlined in state regulations (chapter 173-201A WAC).

National pollutant discharge elimination system (NPDES) -- The NPDES (Section 402 of the Clean Water Act) is the federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the state of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both state and federal laws.

pH -- The pH of a liquid measures its acidity or alkalinity. It is the negative logarithm of the hydrogen ion concentration. A pH of 7 is defined as neutral and large variations above or below this value are considered harmful to most aquatic life.

Pass-through -- A discharge which exits the POTW into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

Peak hour design flow (PHDF) -- The largest volume of flow anticipated to occur during a one-hour period, expressed as a daily or hourly average.

Peak instantaneous design flow (PIDF) -- The maximum anticipated instantaneous flow.

Point of compliance -- The location in the groundwater where the enforcement limit must not be exceeded and a facility must comply with the Ground Water Quality Standards. Ecology determines this limit on a site-specific basis. Ecology locates the point of compliance in the groundwater as near and directly downgradient from the pollutant source as technically, hydrogeologically, and geographically feasible, unless it approves an alternative point of compliance.

Potential significant industrial user (PSIU) -- A potential significant industrial user is defined as an Industrial User that does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

- a. Exceeds 0.5 % of treatment plant design capacity criteria and discharges <25,000 gallons per day or;
- b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).
Ecology may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

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 $(1,2, \text{ or } 5) \times 10^n$, 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).

Reasonable potential -- A reasonable potential to cause a water quality violation, or loss of sensitive and/or important habitat.

Responsible corporate officer -- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Sample Maximum -- No sample may exceed this value.

Significant industrial user (SIU) --

- 1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N and;
- 2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement [in accordance with 40 CFR 403.8(f)(6)].

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

Slug discharge -- Any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge to the POTW. This may include any pollutant released at a flow rate that may cause interference or pass through with the POTW or in any way violate the permit conditions or the POTW's regulations and local limits.

Soil scientist -- An individual who is registered as a Certified or Registered Professional Soil Scientist or as a Certified Professional Soil Specialist by the American Registry of Certified Professionals in Agronomy, Crops, and Soils or by the National Society of Consulting Scientists or who has the credentials for membership. Minimum requirements for eligibility are: possession of a baccalaureate, masters, or doctorate degree from a U.S. or Canadian institution with a minimum of 30 semester hours or 45 quarter hours professional core courses in agronomy, crops or soils, and have 5,3, or 1 years, respectively, of professional experience working in the area of agronomy, crops, or soils.

Solid waste -- All putrescible and non-putrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and

construction wastes, abandoned vehicles or parts thereof, contaminated soils and contaminated dredged material, and recyclable materials.

Soluble BOD₅ -- Determining the soluble fraction of Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of soluble organic material present in an effluent that is utilized by bacteria. Although the soluble BOD₅ test is not specifically described in Standard Methods, filtering the raw sample through at least a 1.2 um filter prior to running the standard BOD₅ test is sufficient to remove the particulate organic fraction.

State waters -- Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a stormwater drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based effluent limit -- A permit limit based on the ability of a treatment method to reduce the pollutant.

Total coliform bacteria--A microbiological test, which detects and enumerates the total coliform group of bacteria in water samples.

Total dissolved solids--That portion of total solids in water or wastewater that passes through a specific filter.

Total maximum daily load (TMDL) --A determination of the amount of pollutant that a water body can receive and still meet water quality standards.

Total suspended solids (TSS) -- Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

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

Water quality-based effluent limit -- A limit imposed on the concentration of an effluent parameter to prevent the concentration of that parameter from exceeding its water quality criterion after discharge into receiving waters.

Appendix D--Response to Comments

The public comment period for the renewal of this permit took place December 7, 2017 – January 12, 2018. Comments were received from Air Liquide, and are presented below with Ecology's response in italics.

Comment 1.

Please change all Air Liquide America L.P. verbiage to Air Liquide Large Industries US LP.

Response 1.

The facility name was changed in the permit and fact sheet.

Comment 2.

On page 4 of 24 of the fact sheet, please update the permit status dates. I believe the previous permit was issued much later than 2006.

Response 2.

Air Liquide is operating under the current State Waste Discharge Permit ST-7423. It was issued September 8, 2006, became effective October 1, 2006, and expired October 1, 2011. The expired permit was administratively extended until a new permit could be issued.

Comment 3.

On page 7 of 24 of the fact sheet, please change the history to include the following verbiage: "the ASU was constructed in late 1990s and the SMR was constructed in early 2000s".

Response 3.

The above verbiage was included in the fact sheet.

Comment 4.

On page 7 of 24 of the fact sheet, Figure 2B only shows the Air Liquide location for the SMR. Please include the ASU as seen below (located inside of the NE corner of the Shell Puget Sound Refinery):



Response 4.

The location diagram provided in the fact sheet is for informational purposes only and is not meant to exclude any portion of Air Liquide's operations. It shows the location of Air Liquide's main operations/control center in relationship to the Shell refinery. This figure was not changed.

Comment 5.

On page 9 of 24 of the fact sheet, please change Table 2b to read SMR Discharge.

Response 5.

Table 2b was changed to read SMR Discharge.

Comment 6.

On page 10 of 24 of the fact sheet, please change the permit issuance date in section D.

Response 6.

September 8, 2006 is the correct permit issuance date and was not changed.

Comment 7.

On page 12 of 24 of the fact sheet, please change the permit issuance date in section C.

Response 7.

September 8, 2006 is the correct permit issuance date and was not changed.