

Fact Sheet for State Waste Discharge Permit ST0005375

Moses Lake Industries, Inc.

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 Moses Lake Industries that will allow discharge of process wastewater to the City of Moses Lake, Larson Treatment Plant and reverse osmosis (RO) reject water for landscape irrigation and to the Port of Moses Lake, Land Treatment System.

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.

Whenever there is a change in the characteristics of the discharge or the treatment system, or significant changes are made to the permit, Ecology makes the draft permit and fact sheet available for public review and comment at least thirty (30) days before issuing the final permit. There are no changes in the volume or characteristics of the effluent, nor were there changes since the current permit was issued, therefore Ecology will not public notice the draft permit.

Moses Lake Industries 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, or discharges prior to issuing the final version of this fact sheet.

Summary

Moses Lake Industries, located at the Port of Moses Lake, manufactures and repackages specialty chemicals for use in the semiconductor industry. The facility discharges process wastewater to the City of Moses Lake, Larson Treatment Plant and reverse osmosis (RO) reject water to both the Port of Moses Lake, Land Treatment System and onsite for landscape irrigation.

The proposed permit includes an increase in categorical (40 CFR Part 414 Subpart H, Specialty Organic Chemicals) mass limits for the discharge to the City of Moses Lake, Larson Treatment Plant, due to a change in the flow based calculation. The proposed permit also places new requirements on the onsite land treatment of RO reject water via landscape irrigation. These include narrative effluent limits, additional testing requirements, and the preparation of an engineering report for the landscape land treatment system.

The proposed permit also includes updated local limits for based on the City of Moses Lake local limits (addition of color) and Port of Moses Lake local limits (addition of barium, chloride, cyanide, mercury, silver, sodium, and sulfate). Finally, the permit specifies a calibration frequency for continuous pH and conductivity measurements at least once per month. Moses Lake Industries had demonstrated that a once per month frequency is sufficient based on past calibration records.

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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 or public 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 E**.

II. Background Information

Table 1: General Facility Information

Facility Information	
Applicant	Moses Lake Industries, Inc.
Facility Name and Address	Moses Lake Industries, Inc. 8248 Randolph Road NE Moses Lake, WA 98837
Contact at Facility	Name: Jon Erlenmeyer Telephone #: (509) 762-5336 ext. 236
Responsible Official	Name: Michael Tiffany Title: Director of Operations Address: 8248 Randolph Road NE, Moses Lake, WA 98837 Telephone #: (509) 762-5336 FAX #: (509) 762-5981
Industrial User Type	Significant Industrial User, Categorical Industry
Industry Type	Specialty Organic Chemicals
Categorical Industry:	40 CFR Part 414

Facility Information	
Type of Treatment by Industry	pH neutralization for process wastewaters; land treatment for RO reject waters
SIC Codes	Primary – 2869, Secondary – 2819
NAIC Codes	Primary – 325199, Secondary – 325180
Facility Location (NAD83/WGS84 reference datum)	Latitude: 47.2014824588433 N Longitude: -119.290406637095 W
Treatment Plant Receiving Discharge	Process wastewaters – City of Moses Lake, Larson Treatment Plant Reverse osmosis (RO) reject waters – Port of Moses Lake, Land Treatment System
Discharge Location (NAD83/WGS84 reference datum)	Latitude: 47.20192135 N Longitude: -119.294412346306 W
Permit Status	
Issuance Date of Previous Permit	August 7, 2006
Application for Permit Renewal Submittal Date	February 1, 2011
Date of Ecology Acceptance of Application	February 17, 2011
Inspection Status	
Date of Last Non-sampling Inspection Date	May 5, 2015

Figure 1: Facility Location Map



A. Facility description

Industrial process(s)

Moses Lake Industries, located at the Port of Moses Lake (see Figure 1), manufactures and repackages specialty chemicals for use in the semiconductor industry. The facility produces tetramethylammonium hydroxide (TMAH) solutions in water, tetramethylammonium carbonate (TMAC) solutions in water, organic polymer, copper sulfate, and deionized water; and formulates copper electroplating solutions, plating additive solutions, and laboratory reagents.

Moses Lake Industries uses electrolysis to produce their main product, TMAH. The facility generates reverse osmosis (RO) reject water from supply water treatment and process wastewater from container rinsing in the TMAH packaging area. The facility does not discharge any process wastewaters from the production and formulation of organic polymer, copper sulfate, copper electroplating solutions, plating additive solutions, and laboratory reagents. They discharge process wastewater to the City of Moses Lake, Larson Treatment Plant; and RO reject water to both the Port of Moses Lake, Land Application System; and onsite as landscape irrigation.

The facility is subject to categorical pretreatment standards found in 40 CFR Part 414, Subpart H, Specialty Organic Chemicals and Subpart K, Indirect Discharge Point Sources. As such, the facility falls under the definition of a significant industrial user.

Wastewater pretreatment

The facility obtains supply water from the City of Moses Lake. Before use as process water, the facility treats City water by either reverse osmosis (RO) or ion exchange. The facility either discharges the RO reject water to the Port of Moses Lake, Land Application System (Outfall 004) or uses the RO reject water for onsite landscape irrigation (Outfall 003). Total RO reject water flow averages about 30,000 gpd with a maximum daily flow of 35,930 gpd. Of this total, the facility uses an average of about 10,500 gpd during the summer months for landscape irrigation. The Permittee sends all ion exchange resins offsite for regeneration.

The Permittee generates process contaminated wastewater from container cleaning in the TMAH repackaging area. Generally, customers return used TMAH containers to Moses Lake Industries for reuse. Any residual TMAH is pumped from the containers and handled as a dangerous waste due to high pH. They rinse the containers with deionized water prior to refilling. The facility pumps the rinse waters to a 1,600 gallon batch treatment tank. They adjust the pH with sulfuric acid then discharged to the City of Moses Lake, Larson treatment system (Outfall 001). Discharge flows average about 3,200 gpd, with a maximum daily flow of 8,300 gpd.

They handle all process wastewater from the formulation of copper electroplating solutions, plating additive solutions, aqueous sodium carbonate solutions, and formulation of laboratory reagents as dangerous waste.

B. Discharge locations

The facility pumps treated process wastewater (Outfall 001) to a lift station where it mixes with sanitary wastewater from the facility. The lift station transfers the combined wastewaters (Outfall 002) to the City of Moses Lake, Larson Treatment Plant.

The facility manages its RO reject water through a series of valves and magnetic flow meters, diverting RO reject water used for onsite irrigation to an irrigation storage tank (Outfall 003). The remainder of RO reject water flow is diverted to the Port of Moses Lake, Land Treatment System (Outfall 004).

C. Wastewater characterization

Moses Lake Industries reported the concentration of pollutants in the permit application and in discharge monitoring reports. The tabulated data represents the quality of the effluent discharged from January 2012 to February 2015. The effluents are characterized as follows:

Table 2: Wastewater Characterization**Outfall 001 – Discharge to City of Moses Lake POTW:**

Parameter	Units	Average Value	Maximum Value
Flow	gpd	3,220	8,290
Conductivity	µmhos/cm	62.9	1,006
Biochemical Oxygen Demand (BOD ₅)	mg/L	137	250
Total Dissolved Solids (TDS)	lbs/day	3.5	45.3
Total Kjeldahl Nitrogen (TKN)	mg/L	14.5	38.3
Total Suspended Solids (TSS)	mg/L	7.3	20
Nitrate + Nitrite	mg/L as N	0.86	5.12
Ammonia	mg/L as N	1.54	30.7
Chloride	mg/L	3.5	19.7
Sodium	mg/L	10.5	33.7
Sulfate	mg/L	26.9	93.7
Categorical Pretreatment Parameters ^a	µg/L	none detected	

Parameter	Units	Minimum Value	Maximum Value
pH	s.u.	6.1	10.9

^a

See Table 3, below, for the list of categorical pretreatment parameters.

Outfall 002 – Sanitary plus process wastewater discharge to City of Moses Lake, Larson Treatment Plant:

Parameter	Units	Average Value	Maximum Value
Flow	gpd	6,854	19,415
Conductivity	µmhos/cm	100	1,970
Biochemical Oxygen Demand (BOD ₅)	mg/L	187	492
Total Suspended Solids (TSS), mg/L	mg/L	122	820

Parameter	Units	Minimum Value	Maximum Value
pH	s.u.	4.6	9.6

Outfall 003 – Land treatment of reverse osmosis reject water via landscape irrigation:

Parameter	Units	Average Value	Maximum Value
Flow	gpd	10,580	23,130
Conductivity	µmhos/cm	1,106	1,440
Total Dissolved Solids (TDS)	mg/L	791	1,046
Total Kjeldahl Nitrogen (TKN)	mg/L	0.88	1.67

Parameter	Units	Minimum Value	Maximum Value
pH	s.u.	7.3	8.44

Outfall 004 – Reverse osmosis reject water discharged to Port of Moses Lake:

Parameter	Units	Average Value	Maximum Value
Flow	gpd	18,060	35930
Conductivity	µmhos/cm	1,138	1,140
Total Dissolved Solids (TDS)	mg/L	743	943
Total Kjeldahl Nitrogen (TKN)	mg/L	1.0	1.7
Nitrate	mg/L as N	2.6	3.0
Calcium	mg/L	107.9	177.0
Magnesium	mg/L	41.3	62.7
Sodium	mg/L	73.7	147.0
Potassium	mg/L	24.7	39.0
Chloride	mg/L	20.2	39.0
Sulfate	mg/L	69.5	96.7
Carbonate	mg/L	5.0	5.0

Parameter	Units	Average Value	Maximum Value
Alkalinity	mg/L	510.5	697.0
Total Phosphorus	mg/L as P	2.1	3.0

Parameter	Units	Minimum Value	Maximum Value
pH	s.u.	7.3	8.4

Parameter (Port of Moses Lake Local Limits)	Units	# of Samples	Minimum Value	Maximum Value
Aluminum	mg/L	3	<0.01	0.025
Arsenic	mg/L	3	0.00469	0.014
Beryllium	mg/L	3	<0.00001	<0.001
Biochemical Oxygen Demand (BOD ₅)	mg/L	3	<2	<2
Boron	mg/L	3	0.0242	0.064
Cadmium	mg/L	3	<0.00002	<0.001
Chromium	mg/L	3	<0.00012	<0.001
Cobalt	mg/L	3	<0.000002	<0.001
Copper	mg/L	3	<0.003	0.00842
Oil and Grease (HEM)	mg/L	3	<1	1.4
Fluoride	mg/L	3	0.589	2.08
Iron	mg/L	3	<0.004	0.0125
Lead	mg/L	3	<0.00004	<0.001
Lithium	mg/L	3	0.0125	0.0316
Manganese	mg/L	3	<0.001	<0.0012
Molybdenum	mg/L	3	0.0022	0.00711
Nickel	mg/L	3	<0.001	0.00194
Total Nitrogen	mg/L as N	3	1.07	2.87
Selenium	mg/L	3	<0.000097	<0.001
Sodium Adsorption Ratio	--	3	0.637	1.36
Vanadium	mg/L	3	0.0095	0.043
Zinc	mg/L	3	0.0029	0.015

D. Summary of compliance with previous permit issued

Begin Date	Parameter	Statistical Base	Units	Value	Max Limit	Violation
10/1/2011	Total Dissolved Solids (TDS)	Monthly Average	mg/L	1,023	1,000	Numeric effluent violation

The previous permit placed effluent limits as listed in Tables 3, 4 and 5 in Sections III.B and C, below.

Moses Lake Industries complied with the effluent limits for Outfalls 001, 003, and 004 and other permit conditions throughout the duration of the permit effective on August 8, 2011 with the exception of a Total Dissolved Solids exceedance that occurred in of August 2011.

The facility exceeded the monthly average TDS limit for their RO reject water (1,023 mg/L versus 1,000 mg/L limit). The company plans to collect additional effluent samples next monitoring period, as well as testing the City water supply to determine the cause of the exceedance.

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 on 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 in a State Waste Discharge Permit on the:

1. 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).
2. 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.
3. Operations and best management practices necessary to meet applicable water quality standards to preserve or protect existing and future beneficial uses of the groundwaters.
4. Ground water quality standards (Ecology, 1996).
5. 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.

The limits in this permit reflect information received in the application and from supporting reports (engineering, hydrogeology, monitoring, etc.). Ecology evaluated the permit application and determined the limits 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. Technology-based effluent limits

Outfall 001 - process wastewater discharged to the City of Moses Lake, Larson Treatment System

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).

Federal categorical limits for this facility's discharge to the City of Moses Lake, Larson Treatment System are found in the "Effluent Guidelines and Standards" in the Code of Federal Regulations (CFR) as follows:

Subcategory	Standards
Specialty Organic Chemicals (40 CFR 414, Subpart H)	Pretreatment Standards for Existing Sources (PSES) - 40 CFR 414.85
Indirect Discharge Point Sources (40 CFR 414, Subpart K)	Toxic pollutant standards for indirect discharge point sources - 40 CFR 414.111

The PSES in Subpart H states that any existing source subject to this subpart must comply with 40 CFR Part 403 (Pretreatment Regulations) and achieve discharges in accordance with Subpart K (Table 3). Effluent limits must not exceed the quantity (mass) determined by multiplying the process wastewater flow times the concentrations listed in Table 3. For the calculations, Ecology used a monthly average flow of 13,000 gpd taken from the permit application.

The state waste discharge permit regulations also 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:

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

Federal regulations (40 CFR 403.5b) also prohibits the discharge of pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, unless the collection and treatment system is designed to accommodate such discharges.

The following permit limits are necessary to satisfy the requirement for AKART for Outfall 001, the process wastewater discharged to the City of Moses Lake, Larson Treatment System:

Table 3: Technology Based Effluent Limits

Parameter	Subpart K - 40 CFR Part 414.111 Effluent Standards, µg/L		Effluent Limits, g/day	
	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly
Acenaphthene	47	19	2.3	0.9
Anthracene	47	19	2.3	0.9
Benzene	134	57	6.6	2.8
Bis(2-ethylhexyl)phthalate	258	95	12.7	4.7
Carbon Tetrachloride	380	142	18.7	7.0
Chlorobenzene	380	142	18.7	7.0
Chloroethane	295	110	14.5	5.4
Chloroform	325	111	16.0	5.5
Di-n-butyl phthalate	43	20	2.1	1.0
1,2-Dichlorobenzene	794	196	39.0	9.6
1,3-Dichlorobenzene	380	142	18.7	7.0
1,4-Dichlorobenzene	380	142	18.7	7.0
1,1-Dichloroethane	59	22	2.9	1.1
1,2-Dichloroethane	574	180	28.2	8.9
1,1-Dichloroethylene	60	22	3.0	1.1
1,2-trans-Dichloroethylene	66	25	3.2	1.2
1,2-Dichloropropane	794	196	39.0	9.6
1,3-Dichloropropylene	794	196	39.0	9.6
Diethyl phthalate	113	46	5.6	2.3
Dimethyl phthalate	47	19	2.3	0.9
4,6-Dinitro-o-cresol	277	78	13.6	3.8
Ethylbenzene	380	142	18.7	7.0
Fluoranthene	54	22	2.7	1.1
Fluorene	47	19	2.3	0.9
Hexachlorobenzene	794	196	39.0	9.6
Hexachlorobutadiene	380	142	18.7	7.0
Hexachloroethane	794	196	39.0	9.6

	Subpart K - 40 CFR Part 414.111 Effluent Standards, µg/L		Effluent Limits, g/day	
Parameter	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly
Methyl Chloride	295	110	14.5	5.4
Methylene Chloride	170	36	8.4	1.8
Naphthalene	47	19	2.3	0.9
Nitrobenzene	6,402	2,237	314.8	110.0
2-Nitrophenol	231	65	11.4	3.2
4-Nitrophenol	576	162	28.3	8.0
Phenanthrene	47	19	2.3	0.9
Pyrene	48	20	2.4	1.0
Tetrachloroethylene	164	52	8.1	2.6
Toluene	74	28	3.6	1.4
Total Cyanide	1,200	420	59.0	20.7
Total Lead	690	320	33.9	15.7
Total Zinc	2,610	1,050	128.4	51.6
1,2,4-Trichlorobenzene	794	196	39.0	9.6
1,1,1-Trichloroethane	59	22	2.9	1.1
1,1,2-Trichloroethane	127	32	6.2	1.6
Trichloroethylene	69	26	3.4	1.3
Vinyl Chloride	172	97	8.5	4.8

Parameter	Daily Minimum	Daily Maximum
pH	5.0 standard units	11.0 standard units

Outfall 003 – Onsite land treatment of RO reject water via landscape irrigation

Moses Lake Industries must meet the following permit limits to satisfy the requirement for AKART for the RO reject water used for landscape irrigation:

1. Apply of wastewater via spray irrigation must not exceed agronomic rates (as defined in Ecology's groundwater implementation guidance) for total nitrogen and water. Wastewater application rates for other wastewater constituents must protect the background groundwater quality.
2. Apply total nitrogen and water to the sprayfields as determined by an Ecology approved and current irrigation and crop plan.
3. Operate the system to protect the existing and future beneficial uses of the groundwater and not cause a violation of the groundwater standards.

Outfall 004 – RO reject water discharged to the Port of Moses Lake, Land Treatment System

There are no federal categorical limits for the RO reject water discharged from this facility to the Port of Moses Lake, Land Treatment System.

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:

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

Federal regulations (40 CFR 403.5b) also prohibits the discharge of pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, unless the collection and treatment system is designed to accommodate such discharges.

The following permit limits are necessary to satisfy the requirement for AKART for Outfall 004, the RO reject water discharged to the Port of Moses Lake, Land Treatment System:

Parameter	Daily Minimum	Daily Maximum
pH	5.0 standard units	11.0 standard units

B. Effluent limits based on local limits

To protect the City of Moses Lake, Larson Treatment System and the Port of Moses Lake, Land Treatment System from pass-through, interference, concentrations of toxic chemicals that would impair beneficial or designated uses of sludge, or potentially hazardous exposure levels, Ecology believes it necessary to impose limits for certain parameters. Ecology based these limits on local limits established by the POTWs and codified in ordinance. Ecology's pretreatment program delegation agreement with EPA includes language in which Ecology agreed to enforce limits adopted by non-delegated programs (local limits).

Ecology and the City of Moses Lake have agreed to apply local limits to Outfall 001 (process wastewater discharged to the City of Moses Lake, Larson Treatment Plant) and Outfall 002 (the combined sanitary and process wastestreams discharged to City of Moses Lake, Larson Treatment Plant) as listed in Tables 4 and 5 below. The City of Moses Lake will set effluent limits at Outfall 002 in a separately issued permit.

Applicable effluent limits for these discharges include the following:

Table 4: Limits Based on Local Limits for Outfall 001 – City of Moses Lake, Larson Treatment System

Effluent Limits		
Parameter	Average Monthly	Maximum Daily
Biochemical Oxygen Demand (BOD ₅), mg/L	300	--
Color, color units	--	15

Parameter	Daily minimum	Daily Maximum
pH	6.0 standard units	11.0 standard units

Table 5: Limits Based on Local Limits for Outfall 002 – City of Moses Lake, Larson Treatment Plant

Effluent Limits		
Parameter	Average Monthly	Maximum Daily
Temperature, °F	--	104
Oil and grease (HEM), mg/L	--	100
Biochemical Oxygen Demand (BOD ₅), mg/L	--	300
Total Suspended Solids (TSS), mg/L	--	350

Parameter	Daily minimum	Daily Maximum
pH	6.0 standard units	11.0 standard units

Table 6: Limits Based on Local Limits for Outfall 004 – Reverse osmosis reject water discharged to Port of Moses Lake

Effluent Limits			
Parameter	Six Month Average	Average Monthly	Maximum Daily
Flow, gpd	--	50,000	--
Conductivity, µmhos/cm	1,600	--	3,200
Total Suspended Solids (TSS), mg/L		--	30
Total Dissolved Solids (TDS), mg/L	1,000	--	2,000
Aluminum, mg/L	5.0	--	20

Effluent Limits			
Parameter	Six Month Average	Average Monthly	Maximum Daily
Boron, mg/L	1.0	--	2.0
Chloride, mg/L	175	--	350
Manganese, mg/L	0.2	--	10
Sodium, mg/L	115	--	230
Sulfate, mg/L	250	--	500
Sodium Adsorption Ratio, unitless	6.0	--	9.0
BOD ₅ , mg/L	20	--	40
Total Nitrogen, mg/L	40	--	80
TKN, mg/L	4.0	--	9.0
Fats, Oils and Grease, mg/L, mg/L	20	--	40
Arsenic, mg/L	0.036	--	2.0
Barium, mg/L	1.0	--	2.0
Beryllium, mg/L	0.01	--	0.5
Cadmium, mg/L	0.01	--	0.05
Chromium, mg/L	0.1	--	1.0
Cobalt, mg/L	0.05	--	5.0
Copper, mg/L	0.03	--	5.0
Total Cyanide, mg/L	0.2	--	0.5
Fluoride, mg/L	1.0	--	15
Iron, mg/L	5	--	20
Lead, mg/L	0.2	--	5.0
Lithium, mg/L	1.0	--	2.5
Mercury, mg/L	0.002	--	0.05
Molybdenum, mg/L	0.02	--	0.05
Nickel, mg/L	0.09	--	2.0
Selenium, mg/L	0.008	--	0.02
Silver, mg/L	0.05	--	0.1
Vanadium, mg/L	0.1	--	1.0
Zinc, mg/L	0.9	--	10

Parameter	Daily Minimum	Daily Maximum
pH	5.0 standard units	9.0 standard units

C. Comparison of effluent limits with the previous permit issued on August 7, 2006

The table below compares existing permit limits with proposed permit limits for Outfall 001, the process wastewater discharged to the City of Moses Lake, Larson Treatment System. The previous permit used a flow of 10,000 gpd to calculate the categorical pretreatment limits. The proposed permit used a flow of 13,000 gpd, the average monthly value limited by the permit. This resulted in an increase in the categorical pretreatment permit limits.

The proposed permit places new requirements on the onsite land treatment of RO reject water via landscape irrigation (Outfall 003). Narrative effluent limits will require the agronomic application of water, nitrogen and other parameters; and the protection of the existing and future beneficial uses of the groundwater (see Permit Condition S1.B)

The proposed permit includes updated local limits for the discharge of RO reject water to the Port of Moses Lake, Land Treatment System. The previous permit omitted the local limits for barium, chloride, cyanide, mercury, silver, sodium, and sulfate.

Table 7: Comparison of Effluent Limits

Parameter	Basis of Limit	Previous Effluent Limits: Outfall # 001		Proposed Effluent Limits: Outfall # 001	
		Maximum Daily	Average Monthly	Maximum Daily	Average Monthly
Biochemical Oxygen Demand (5-day), mg/L	Local	--	300	--	300
Total Dissolved Solids (TDS), lbs/day	"	--	63	--	63
Color, color units	"	--	--	--	15
Acenaphthene, g/day	Categorical	1.8	0.7	2.3	0.9
Anthracene, g/day	"	1.8	0.7	2.3	0.9
Benzene, g/day	"	5.1	2.2	6.6	2.8
Bis(2-ethylhexyl)phthalate, g/day	"	9.8	3.6	12.7	4.7
Carbon Tetrachloride, g/day	"	14.4	5.4	18.7	7.0
Chlorobenzene, g/day	"	14.4	5.4	18.7	7.0
Chloroethane, g/day	"	11.2	4.2	14.5	5.4
Chloroform, g/day	"	12.3	4.2	16.0	5.5
Di-n-butyl phthalate, g/day	"	1.6	0.8	2.1	1.0
1,2-Dichlorobenzene, g/day	"	30.1	7.4	39.0	9.6
1,3-Dichlorobenzene, g/day	"	14.4	5.4	18.7	7.0
1,4-Dichlorobenzene, g/day	"	14.4	5.4	18.7	7.0
1,1-Dichloroethane, g/day	"	2.2	0.8	2.9	1.1

		Previous Effluent Limits: Outfall # 001		Proposed Effluent Limits: Outfall # 001	
Parameter	Basis of Limit	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly
1,2-Dichloroethane, g/day	"	21.7	6.8	28.2	8.9
1,1-Dichloroethylene, g/day	"	2.2	0.8	3.0	1.1
1,2-trans-Dichloroethylene, g/day	"	2.5	0.9	3.2	1.2
1,2-Dichloropropane, g/day	"	30.1	7.4	39.0	9.6
1,3-Dichloropropylene, g/day	"	30.1	7.4	39.0	9.6
Diethyl phthalate, g/day	"	4.3	1.7	5.6	2.3
Dimethyl phthalate, g/day	"	1.8	0.7	2.3	0.9
4,6-Dinitro-o-cresol, g/day	"	10.5	3	13.6	3.8
Ethylbenzene, g/day	"	14.4	5.4	18.7	7.0
Fluoranthene, g/day	"	2	0.8	2.7	1.1
Fluorene, g/day	"	1.8	0.7	2.3	0.9
Hexachlorobenzene, g/day	"	30.1	7.4	39.0	9.6
Hexachlorobutadiene, g/day	"	14.4	5.4	18.7	7.0
Hexachloroethane, g/day	"	30.1	7.4	39.0	9.6
Methyl Chloride, g/day	"	11.2	4.2	14.5	5.4
Methylene Chloride, g/day	"	6.4	1.4	8.4	1.8
Naphthalene, g/day	"	1.8	0.7	2.3	0.9
Nitrobenzene, g/day	"	242.3	84.7	314.8	110.0
2-Nitrophenol, g/day	"	8.7	2.5	11.4	3.2
4-Nitrophenol, g/day	"	21.8	6.1	28.3	8.0
Phenanthrene, g/day	"	1.8	0.7	2.3	0.9
Pyrene, g/day	"	1.8	0.8	2.4	1.0
Tetrachloroethylene, g/day	"	6.2	2	8.1	2.6
Toluene, g/day	"	2.8	1.1	3.6	1.4
Total Cyanide, g/day	"	45.4	15.9	59.0	20.7
Total Lead, g/day	"	26.1	12.1	33.9	15.7
Total Zinc, g/day	"	98.8	39.7	128.4	51.6
1,2,4-Trichlorobenzene, g/day	"	30.1	7.4	39.0	9.6
1,1,1-Trichloroethane, g/day	"	2.2	0.8	2.9	1.1
1,1,2-Trichloroethane, g/day	"	4.8	1.2	6.2	1.6
Trichloroethylene, g/day	"	2.6	1	3.4	1.3

		Previous Effluent Limits: Outfall # 001		Proposed Effluent Limits: Outfall # 001	
Parameter	Basis of Limit	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly
Vinyl Chloride, g/day	"	6.5	3.7	8.5	4.8

Parameter	Basis of Limit	Daily Minimum	Daily Maximum
pH, s.u.	Local	within the range 6.0 to 11.0	within the range 6.0 to 11.0

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. Lab accreditation

Ecology requires that facilities must use a laboratory registered or accredited under the provisions of chapter 173-50 WAC, Accreditation of Environmental Laboratories, to prepare all monitoring data (with the exception of certain parameters). The Permittee uses outside accredited laboratories for their monitoring parameters specified by the permit.

B. 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.

The proposed permit requires 24-hour composite sampling at Outfall 002 within six month after the permit effective date. Ecology is requiring this composite sampling to better characterize the combined process and sanitary wastestreams discharged to the City of Moses Lake, Larson Treatment Plant.

C. Effluent limits which are near detection or quantitation levels

The method detection level (MDL) also known as detection level (DL) is the minimum concentration of a pollutant that a laboratory can measure and report with a 99 percent confidence that its concentration is greater than zero (as determined by a specific laboratory method). The quantitation level (QL) is the level at which a laboratory can reliably report concentrations with a specified level of error.

Estimated concentrations are the values between the DL and the QL. Ecology requires permitted facilities to report estimated concentrations. When reporting maximum daily effluent concentrations, Ecology requires the facility to report “less than X” where X is the required detection level if the measured effluent concentration falls below the detection level.

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 wastewater treatment system in accordance with state regulations (WAC 173-240-080 and WAC 173-216-110). The facility must prepare and submit an updated of an operation and maintenance (O&M) manual as required by state regulation for the construction of wastewater treatment facilities (WAC 173-240-150).

Implementation of the procedures in the operation and maintenance manual ensures the facility's compliance with the terms and limits in the permit.

C. Prohibited discharges

Ecology prohibits certain pollutants from being discharged to the POTW. These include substances which cause pass-through or interference, pollutants which may cause damage to the POTW or harm to the POTW 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:

1. Authorize the facility to discharge the water.
2. Require the facility to treat the wastewater.
3. 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 POTW 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].

Moses Lake Industries developed a 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. Slug discharge plan

Ecology determined that Moses Lake Industries has the potential for a batch discharge or a spill that could adversely affect the treatment plant, therefore the proposed permit requires a slug discharge control plan [(40 CFR 403.8 (f)(1) (iii)(B)(6) and (f) (2)(vi)].

H. Engineering report for onsite land treatment of reverse osmosis (RO) reject water

The proposed permit requires Moses Lake Industries to prepare an engineering report for the land treatment of reverse osmosis (RO) reject water via landscape irrigation. This report must:

1. include a consideration of wastewater application at agronomic rates as required by Special Condition S1.B;
2. should describe and evaluate various irrigation controls; and
3. contain the applicable information as given in Ecology's guidance, *Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems*. (1993).

I. Irrigation and crop management plans

Ecology requires the irrigation and crop management plan to support the engineering report(s) and operations and maintenance manual. This plan must include a consideration of wastewater application at agronomic rates as required by Special Condition S1.B and should describe and evaluate various irrigation controls.

Plans must comply with the requirements for an irrigation and crop management plan given in Ecology's guidance, *Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems*. (1993).

J. 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. Accordingly, this permit Special Condition informs the Facility that noncompliance with this permit may result in publication of the noncompliance.

VII. Permit Issuance Procedures

A. Permit modifications

Ecology may modify this permit to impose or change the numerical 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.

Laws and Regulations

<http://www.ecy.wa.gov/laws-rules/index.html>

Permit and Wastewater Related Information

<http://www.ecy.wa.gov/programs/wq/permits/guidance.html>

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.

<http://www.ecy.wa.gov/pubs/0710024.pdf>

Appendix A - Public Involvement Information

Ecology proposes to reissue a permit to Moses Lake Industries. The permit includes wastewater discharge limits and other conditions. This fact sheet describes the facility and Ecology's reasons for requiring permit conditions.

Ecology placed a Public Notice of Application on March 4, 2011 and March 11, 2011 in the Columbia Basin Herald to inform the public about the submitted application and to invite comment on the reissuance of this permit.

There is no change in the quality or quantity of Moses Lake Industries wastewater discharge, therefore Ecology is not required to place a Public Notice of Draft in the local newspaper to inform the public and to invite comment on the proposed draft State Waste Discharge Permit and Fact Sheet; WAC 173-216-090.

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

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 months 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.