

Fact Sheet for NPDES Permit WA0031721

Washington Bulb Company, Inc.

Public Notice of Draft date: August 5, 2019

Purpose of this fact sheet

This fact sheet explains and documents the decisions the Department of Ecology (Ecology) made in drafting the proposed National Pollutant Discharge Elimination System (NPDES) permit for Washington Bulb Company, Inc.

This fact sheet complies with Section 173-220-060 of the Washington Administrative Code (WAC), which requires Ecology to prepare a draft permit and accompanying fact sheet for public evaluation before issuing an NPDES 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. Copies of the fact sheet and draft permit for Washington Bulb Company, Inc., NPDES permit no. WA0031721, are available for public review and comment from August 5, 2019, until September 4, 2019. For more details on preparing and filing comments about these documents, please see **Appendix A - Public Involvement Information**.

Washington Bulb Company, Inc. (Washington Bulb) reviewed the draft permit and fact sheet for factual accuracy. Ecology corrected any errors or omissions regarding the facility's location, history, discharges, or receiving water prior to publishing this draft fact sheet for public notice.

After the public comment period closes, Ecology will summarize substantive comments and provide responses to them. Ecology will include the summary and responses to comments in this fact sheet as **Appendix D - Response to Comments**, and publish it when issuing the final NPDES 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

Washington Bulb is one of the largest tulip-bulb growers in the country, and processes daffodils as well. The facility is primarily engaged in the growing of fresh flowers and secondarily ornamental bulbs. Bulbs are harvested, transported to a warehouse, and washed. Removal of soil adhering to the bulbs by washing facilitates grading and handling. Detergents are not used. Flocculants are added to the wash water prior to discharge into settling ponds. Water from the final settling pond is reused for wash purposes, and is supplemented with well water. Overflow from the ponds is discharged into Jungquist Shields ditch (DIID 15), where it is used seasonally for irrigation water and maintaining local groundwater levels to supply capillary fringe field irrigation. The permit proposes to change the turbidity monitoring protocol from an upstream / downstream differential to an eventual 25 NTU point of discharge effluent limit, which is consistent with other permits issued to vegetable-washing operations in the area. The permit sets a compliance schedule for the facility to make treatment system improvements. One-time reporting for pesticides early in the permit cycle has been added.

Table of Contents

<i>I.</i>	<i>Introduction.....</i>	<i>4</i>
<i>II.</i>	<i>Background Information.....</i>	<i>5</i>
	A. Facility description.....	6
	History	6
	Industrial processes.....	6
	Wastewater treatment processes	7
	Discharge outfall.....	7
	B. Description of the receiving water.....	7
	C. Wastewater characterization	7
	D. Summary of compliance with previous permit issued June 30, 2003, and extended on June 20, 2008.....	7
	E. State environmental policy act (SEPA) compliance	8
<i>III.</i>	<i>Proposed Permit Limits.....</i>	<i>8</i>
	A. Technology-based effluent limits	8
	B. Surface water quality-based effluent limits.....	9
	Numerical criteria for the protection of aquatic life and recreation.....	9
	Numerical criteria for the protection of human health.....	10
	Narrative criteria	10
	Antidegradation	10
	C. Designated uses and surface water quality criteria	11
	D. Water quality impairments.....	12
	E. Evaluation of surface water quality-based effluent limits for numeric criteria.....	12
	F. Human health.....	12
	G. Sediment quality.....	13
	H. Groundwater quality limits.....	13
	I. Whole effluent toxicity.....	13
	J. Comparison of effluent limits with the previous permit issued June 30, 2003 and extended on June 20, 2008	13
<i>IV.</i>	<i>Monitoring Requirements.....</i>	<i>14</i>
<i>V.</i>	<i>Other Permit Conditions.....</i>	<i>14</i>
	A. Reporting and record keeping.....	14
	B. Best management practices.....	14
	C. Pesticide reporting.....	14
	D. Solid wastes.....	14

E.	AKART analysis and compliance schedule.....	14
F.	General conditions	14
VI.	<i>Permit Issuance Procedures</i>	15
A.	Permit modifications.....	15
B.	Proposed permit issuance.....	15
VII.	<i>References for Text and Appendices</i>	15
	<i>Appendix A--Public Involvement Information</i>	17
	<i>Appendix B--Your Right to Appeal</i>	18
	<i>Appendix C--Glossary</i>	19
	<i>Appendix D--Response to Comments</i>	27
Table 1.	General Facility Information	5
Table 2.	Wastewater Characterization.....	7
Table 3.	Technology-based Limits	9
Table 4.	Freshwater Aquatic Life Uses and Associated Criteria.....	11
Table 5.	Recreational Uses and Associated Criteria	12
Table 6.	Comparison of Previous and Proposed Effluent Limits.....	13
Figure 1.	Facility Location Map	6

I. Introduction

The Federal Clean Water Act (FCWA, 1972, and later amendments in 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One mechanism for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System (NPDES), administered by the federal Environmental Protection Agency (EPA). The EPA authorized the state of Washington to manage the NPDES permit program in our state. Our WA State Legislature accepted the delegation and assigned the power and duty for conducting NPDES permitting and enforcement to Ecology. The Legislature defined Ecology's authority and obligations for the wastewater discharge permit program in 90.48 RCW (Revised Code of Washington).

The following regulations apply to industrial NPDES permits:

- Procedures Ecology follows for issuing NPDES permits (chapter 173-220 WAC).
- Water quality criteria for surface waters (chapter 173-201A WAC).
- Water quality criteria for ground waters (chapter 173-200 WAC).
- Whole effluent toxicity testing and limits (chapter 173-205 WAC).
- Sediment management standards (chapter 173-204 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 an NPDES permit before discharging wastewater to state waters. They also help define the basis for limits on each discharge and for performance requirements imposed by the permit.

Under the NPDES permit program and in response to a complete and accepted permit application, Ecology must prepare a draft permit and accompanying fact sheet, and make them available for public review before final issuance. Ecology must also publish an announcement (public notice) telling people where they can read the draft permit, and where to send their comments, during a period of thirty days (WAC 173-220-050). (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 NPDES 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:	Washington Bulb Company, Inc.
Facility Name and Address	16031 Beaver Marsh Road Mt. Vernon, WA 98273
Responsible Official	Name: John Roozen Title: Vice President Address: same Telephone #: 360-424-5533 FAX #: 360-424-3113
Industry Type	Fresh flower production / bulb washing
Type of Treatment	Flocculation / Settling Ponds
SIC Codes	0181
NAIC Codes	111422
Facility Location (NAD83/WGS84 reference datum)	Latitude: 48.412811 Longitude: -122.39845
Discharge Waterbody Name and Location (NAD83/WGS84 reference datum)	Jungquist Shields ditch Skagit County Drainage and Irrigation Improvement District 15 Latitude: 48.413768 Longitude: -122.397987
Permit Status	
Issuance Date of Previous Permit	June 30, 2003
Application for Permit Renewal Submittal Date	January 15, 2008
Date of Ecology Acceptance of Application	January 17, 2008
Inspection Status	
Date of Last Non-sampling Inspection Date	June 18, 2018

Figure 1. Facility Location Map



A. Facility description

History

Washington Bulb is one of the largest tulip-bulb growers in the country and one of the largest employers in the Skagit Valley with more than 150 workers. For the past 30 years Washington Bulb has produced half the country's tulips and tulip bulbs. The operation to grow bulbs is about 1000 acres valley-wide, and the bulb washing and flower production site covers about 40 acres.

The site is primarily engaged in the growing for fresh flowers and secondarily ornamental tulip bulbs. Bulbs are harvested in the field, transported to a warehouse for washing and sorting. Removal of soil adhering to the bulbs by washing facilitates grading and handling. Detergents are not used. A separate hot water and formaldehyde treatment of bulbs to kill nematodes and spores is zero discharge. The formaldehyde dip tank and all pesticide and herbicide treatment occur after washing and are closed loop zero discharge. No discharge of these pollutants enter state waters. The washing is seasonal occurring from mid May to approximately mid July. Operation is five to six days per week, 8 to 10 hours per day.

Industrial processes

Tulip bulbs are either washed in the field to remove much of the soil clods, or brought from the fields dry with much soil attached. There are separate lines of processing machinery for each. The soil is separated and is conveyed on to trucks for hauling back to the fields. The bulbs are sorted according to size, with the largest bulbs mostly grown for flower production, and the smaller bulbs returned to the fields in the fall to grow larger.

Wastewater treatment processes

The treatment system for bulb wash water is flocculation and sedimentation. The wash wastewater is injected with a flocculant prior to discharge into one-of-two primary settling ponds. Treated washwater is recycled back to the washers from the final treatment pond at a rate of 1300 gallons per minute (gpm). The flocculant is Wesmar Polyfloc 800, which is added using a flow meter at a flow proportional rate. Overflow discharge to the ditch is estimated at 15,000 to 20,000 gallons per day. Collected solids dredged from the sedimentation ponds are returned to the fields.

Discharge outfall

The treated effluent flows into Jungquist Shields ditch in Skagit County Drainage and Irrigation Improvement District #15 through a 12” plastic pipe oriented perpendicular to the ditch.

B. Description of the receiving water

Washington Bulb discharges to Jungquist Shields ditch in Skagit County Drainage and Irrigation Improvement District #15. The ditch is not inhabited by fish (B. Brokes, WDFW, 2018). There are no known nearby point source outfalls; agricultural use predominates both upstream and downstream. During all summer months, the irrigation district uses check dams to stop all discharge to Swinomish Slough. Washington Bulb Company’s discharge water helps charge the water table and through sub-irrigation benefits crops in the District.

C. Wastewater characterization

Washington Bulb reported the concentration of pollutants in the discharge in the permit application and in discharge monitoring reports. The tabulated data represents the quality of the wastewater effluent discharged from June 2008 through July 2017. The wastewater effluent is characterized as follows:

Table 2. Wastewater Characterization

Parameter	Units	# of Samples	Average Value	Maximum Value
Upstream Turbidity	NTU	27	58	210
Downstream Turbidity	NTU	27	174	390
Increase over upstream turbidity	NTU	27	127	344

D. Summary of compliance with previous permit issued June 30, 2003, and extended on June 20, 2008

The previous permit placed effluent limits on turbidity.

Washington Bulb has not consistently complied with the effluent limits and permit conditions throughout the duration of the permit issued on June 30, 2003, and extended on June 20, 2008. Ecology assessed compliance based on its review of the facility’s discharge monitoring reports (DMRs) and on inspections.

The wastewater characterization data is not an accurate representation of the clarity of the discharge. The agricultural ditch which has been monitored typically has no flow during the bulb washing season. The upstream monitoring location is backwatered settled effluent that is not moving; the downstream monitoring location is monitoring the effluent after it has

turbulently entered the ditch and stirred up sediment in the ditch. The proposed permit will change the monitoring protocol to a 25 NTU effluent limit at point of discharge; this limit is consistent with local area vegetable washing discharge permits, and is achievable with the existing three cell pond system.

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

Federal and state regulations require that effluent limits in an NPDES permit must be either technology- or water quality-based.

- Technology-based limits are based upon the treatment methods available to treat specific pollutants. Technology-based limits are set by the EPA and published as a regulation, or Ecology develops the limit on a case-by-case basis (40 CFR 125.3, and chapter 173-220 WAC).
- Water quality-based limits are calculated so that the effluent will comply with the Surface Water Quality Standards (chapter 173-201A WAC), Ground Water Standards (chapter 173-200 WAC), Sediment Quality Standards (chapter 173-204 WAC), or the National Toxics Rule (40 CFR 131.36).
- Ecology must apply the most stringent of these limits to each parameter of concern. These limits are described below.

The limits in this permit reflect information received in the application and from supporting reports (engineering, hydrogeology, 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, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation.

Ecology does not usually develop limits for pollutants not reported in the permit application but may be present in the discharge. The permit does not authorize 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 [40 CFR 122.42(a)]. Until Ecology modifies the permit to reflect additional discharge of pollutants, a permitted facility could be violating its permit.

A. Technology-based effluent limits

Ecology must ensure that facilities provide all known, available, and reasonable methods of prevention, control, and treatment (AKART) when it issues a permit. Ecology must consider technology-based limitations (water quality-based effluent limitations may be more stringent) in all NPDES permits. When EPA has not promulgated effluent limitation guidelines for an industry, permit limits may be based on the best professional judgment (BPJ) of the permit writer. For this proposed permit, the technology-based limits are based on BPJ decision-making.

Turbidity

The proposed permit contains interim turbidity limitations, which are performance-based limitations calculated from the previous permit's upstream / downstream monitoring data. The permit requires monthly monitoring of turbidity and flow, and requires an AKART analysis by August 2019 for improvements. Within five years of the permit effective date, the final technology-based effluent limits will be 25 NTU, identical to similar local permitted vegetable washing facilities in the area.

Ecology established the goal of 25 NTU for the facility's turbidity for the following reasons:

- (1) Suspended sediment (typically expressed as turbidity or total suspended solids) is the primary pollutant in the bulb wash water.
- (2) Ecology has used turbidity limits in permits for similar facilities.
- (3) The turbidity level of 25 NTU is equivalent to the turbidity benchmark in the Industrial Stormwater General Permit and in the Construction Stormwater General Permit. This establishes a single value limit as opposed to a limit that could vary based on background turbidity levels.
- (4) Turbidity is relatively inexpensive to sample.
- (5) Turbidity does not require analysis at an accredited laboratory.

Table 3. Technology-based Limits

Parameter	Average Monthly Limit	Maximum Daily Limit
Turbidity	N/A	25 NTU

B. Surface water quality-based effluent limits

The Washington State surface water quality standards (chapter 173-201A WAC) are designed to protect existing water quality and preserve the beneficial uses of Washington's surface waters. Waste discharge permits must include conditions that ensure the discharge will meet the surface water quality standards (WAC 173-201A-510). Water quality-based effluent limits may be based on an individual waste load allocation or on a waste load allocation developed during a basin wide total maximum daily load study (TMDL).

Numerical criteria for the protection of aquatic life and recreation

Numerical water quality criteria are listed in the water quality standards for surface waters (chapter 173-201A WAC). They specify the maximum levels of pollutants allowed in receiving water to protect aquatic life and recreation in and on the water. Ecology uses numerical criteria along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limits, the discharge must meet the water quality-based limits.

Numerical criteria for the protection of human health

In 1992, U.S. EPA published 91 numeric water quality criteria for the protection of human health that are applicable to dischargers in Washington State in its National Toxics Rule 40 CFR (EPA, 1992). Ecology submitted a standards revision for 192 new human health criteria for 97 pollutants to EPA on August 1, 2016. In accordance with requirements of CWA section 303(c)(2)(B), EPA finalized 144 new and revised Washington specific human health criteria for priority pollutants, to apply to waters under Washington's jurisdiction. EPA approved 45 human health criteria as submitted by Washington. The EPA took no action on Ecology submitted criteria for arsenic, dioxin, and thallium. The existing criteria for these three pollutants as adopted in the National Toxics Rule (40 CFR 131.36) remain in effect.

These newly adopted criteria, located in WAC 173-201A-240, are designed to protect humans from exposure to pollutants linked to cancer and other diseases, based on consuming fish and shellfish and drinking contaminated surface waters. The water quality standards also include radionuclide criteria to protect humans from the effects of radioactive substances.

Narrative criteria

Narrative water quality criteria [e.g., WAC 173-201A-240(1); 2006] limit the toxic, radioactive, or other deleterious material concentrations that the facility may discharge to levels below those which have the potential to:

- Adversely affect designated water uses.
- Cause acute or chronic toxicity to biota.
- Impair aesthetic values.
- Adversely affect human health.

Narrative criteria protect the specific designated uses of all fresh waters (WAC 173-201A-200, 2006) and of all marine waters (WAC 173-201A-210, 2006) in the state of Washington.

Antidegradation

Description--The purpose of Washington's Antidegradation Policy (WAC 173-201A-300-330; 2006) is to:

- Restore and maintain the highest possible quality of the surface waters of Washington.
- Describe situations under which water quality may be lowered from its current condition.
- Apply to human activities that are likely to have an impact on the water quality of surface water.
- Ensure that all human activities likely to contribute to a lowering of water quality, at a minimum, apply all known, available, and reasonable methods of prevention, control, and treatment (AKART).
- Apply three tiers of protection (described below) for surface waters of the state.

Tier I ensures existing and designated uses are maintained and protected and applies to all waters and all sources of pollutions. Tier II ensures that waters of a higher quality than the criteria assigned are not degraded unless such lowering of water quality is necessary and in

the overriding public interest. Tier II applies only to a specific list of polluting activities. Tier III prevents the degradation of waters formally listed as "outstanding resource waters," and applies to all sources of pollution.

A facility must prepare a Tier II analysis when all three of the following conditions are met:

- The facility is planning a new or expanded action.
- Ecology regulates or authorizes the action.
- The action has the potential to cause measurable degradation to existing water quality at the edge of a chronic mixing zone.

Facility Specific Requirements--This facility must meet Tier I requirements.

- Dischargers must maintain and protect existing and designated uses. Ecology must not allow any degradation that will interfere with, or become injurious to, existing or designated uses, except as provided for in chapter 173-201A WAC.

Ecology’s analysis described in this section of the fact sheet demonstrates that the proposed permit conditions will protect existing and designated uses of the receiving water.

C. Designated uses and surface water quality criteria

Applicable designated uses and surface water quality criteria are defined in chapter 173-201A WAC. In addition, the U.S. EPA set human health criteria for toxic pollutants (EPA 1992). The table included below summarizes the criteria applicable to this facility’s discharge.

- Aquatic Life Uses are designated based on the presence of, or the intent to provide protection for the key uses. All indigenous fish and non-fish aquatic species must be protected in waters of the state in addition to the key species. The Aquatic Life Uses for this receiving water are identified below.

Table 4. Freshwater Aquatic Life Uses and Associated Criteria

Salmonid Spawning, Rearing, and Migration	
Temperature Criteria – Highest 7-DAD MAX	17.5°C (63.5°F)
Dissolved Oxygen Criteria – Lowest 1-Day Minimum	8.0 mg/L
Turbidity Criteria	<ul style="list-style-type: none"> • 5 NTU over background when the background is 50 NTU or less; or • A 10 percent increase in turbidity when the background turbidity is more than 50 NTU.
Total Dissolved Gas Criteria	Total dissolved gas must not exceed 110 percent of saturation at any point of sample collection.
pH Criteria	The pH must measure within the range of 6.5 to 8.5 with a human-caused variation within the above range of less than 0.5 units.

- The *recreational uses* for this receiving water are identified below.

Table 5. Recreational Uses and Associated Criteria

Recreational Use	Criteria
Primary Contact Recreation	Fecal coliform organism levels must not exceed a geometric mean value of 100 colonies /100 mL, with not more than 10 percent of all samples (or any single sample when less than ten sample points exist) obtained for calculating the geometric mean value exceeding 200 colonies /100 mL.

- The *water supply uses* are domestic, agricultural, industrial, and stock watering.
- The *miscellaneous freshwater uses* are wildlife habitat, harvesting, commerce and navigation, boating, and aesthetics.

D. Water quality impairments

Ecology has not documented any water quality impairments in the receiving water in the vicinity of the outfall.

E. Evaluation of surface water quality-based effluent limits for numeric criteria

Ecology determined the impacts of turbidity and toxic pollutants as described below.

Turbidity--Ecology set the turbidity limit using similar reasoning as in the industrial stormwater and construction stormwater general permits. In these general permits, Ecology determined that the benchmark turbidity level adequately protects aquatic life and other beneficial uses. The 25 NTU limit is consistent with NPDES permits issued to vegetable washing facilities in the local area. Sampling “upstream” and “downstream” in order to make a direct comparison of turbidity levels with the water quality criteria is not representative of the actual discharge.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require Ecology to place limits in NPDES permits on toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. Ecology does not exempt facilities with technology-based effluent limits from meeting the surface water quality standards.

Ecology determined that no toxic chemicals in the discharge pose reasonable potential to exceed the water quality criteria. One time reporting for pesticides early in the permit cycle has been included in the permit requirements. Ecology’s determination assumes that this facility meets the other effluent limits of this permit.

F. Human health

Washington’s water quality standards include numeric human health-based criteria for 97 priority pollutants that Ecology must consider when writing NPDES permits.

Ecology determined the applicant's discharge is unlikely to contain chemicals regulated to protect human health, Ecology will reevaluate this discharge for impacts to human health at the next permit reissuance.

G. Sediment quality

The aquatic sediment standards (chapter 173-204 WAC) protect aquatic biota and human health. Under these standards Ecology may require a facility to evaluate the potential for its discharge to cause a violation of sediment standards (WAC 173-204-400). You can obtain additional information about sediments at the Aquatic Lands Cleanup Unit website.

<https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Sediment-cleanups>

Through a review of the discharger characteristics and of the effluent characteristics, Ecology determined that this discharge has no reasonable potential to violate the sediment management standards.

H. Groundwater quality limits

The groundwater quality standards (chapter 173-200 WAC) protect beneficial uses of groundwater. Permits issued by Ecology must not allow violations of those standards (WAC 173-200-100).

Washington Bulb does not discharge wastewater to the ground. No permit limits are required to protect groundwater.

I. Whole effluent toxicity

The water quality standards for surface waters forbid discharge of effluent that has the potential to cause toxic effects in the receiving waters. Many toxic pollutants cannot be measured by commonly available detection methods. However, laboratory tests can measure toxicity directly by exposing living organisms to the wastewater and measuring their responses. These tests measure the aggregate toxicity of the whole effluent, so this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

Using the screening criteria in chapter 173-205-040 WAC, Ecology determined that toxic effects caused by unidentified pollutants in the effluent are unlikely. Therefore, this permit does not require WET testing. Ecology may require WET testing in the future if it receives information indicating that toxicity may be present in this effluent.

J. Comparison of effluent limits with the previous permit issued June 30, 2003, and extended on June 20, 2008

Table 6. Comparison of Previous and Proposed Effluent Limits

Parameter	Basis of Limit	Previous Effluent Limits: Outfall #001	Proposed Effluent Limits: Outfall #001
		Maximum Daily	Maximum Daily
Turbidity	Technology	Downstream turbidity not to exceed 5 NTU above background	25 NTU
pH	Water Quality	N/A	In the range of 6 – 9

IV. Monitoring Requirements

Ecology requires monitoring, recording, and reporting (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning 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.

The monitoring schedule is detailed in the proposed permit under Special Condition S.2. 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 record keeping

Ecology based Special Condition S3 on its authority to specify any appropriate reporting and record keeping requirements to prevent and control waste discharges (WAC 173-220-210).

B. Best management practices

Best management practices (BMPs) are the actions identified to manage, prevent contamination of, and treat stormwater. BMPs include 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 also include treatment systems, operating procedures, and practices used to control plant site runoff, spillage or leaks, sludge or waste disposal, and drainage from raw material storage.

C. Pesticide reporting

The facility washes flower bulbs grown in fields where pesticides are applied. Some pesticide residue from the soil could wash off the bulbs and enter the wash water and not be removed during the treatment process. One-time reporting of the discharge for pesticides is required in the permit.

D. Solid wastes

The facility removes and washes soil from flower bulbs, and settles out the washed sediment in settling ponds. The separated soil and organic matter is returned to the growing fields by truck. The facility must not allow this material to enter state waters.

E. AKART analysis and compliance schedule

The facility has been washing flower bulbs for over thirty years at this site. There is a well-designed series of ponds intended to remove sediment from the wash water, which is largely recycled. Some modifications to the pond hydraulics to improve settling and regular maintenance will be required to meet the stricter effluent limits. The permit

requires an AKART analysis to determine required improvements and maintenance procedures, and gives the facility a compliance schedule to follow for implementing these improvements.

F. General conditions

Ecology bases the standardized general conditions on state and federal law and regulations. They are included in all individual industrial NPDES permits issued by Ecology.

VI. Permit Issuance Procedures

A. Permit modifications

Ecology may modify this permit to impose numerical limits, if necessary, to comply with water quality standards for surface waters, with sediment quality standards, or with water quality standards for groundwaters, after obtaining new information from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

Ecology may also modify this permit to comply with new or amended state or federal regulations.

B. Proposed permit issuance

This proposed permit includes all statutory requirements for Ecology to authorize a wastewater discharge. The permit includes limits and conditions to protect human health and aquatic life, and the beneficial uses of waters of the state of Washington. Ecology proposes to issue this permit for a term of 5 years.

VII. References for Text and Appendices

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. *Technical Support Document for Water Quality-based Toxics Control*. EPA/505/2-90-001.

1988. *Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling*. USEPA Office of Water, Washington, D.C.

1985. *Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water*. EPA/600/6-85/002a.

1983. *Water Quality Standards Handbook*. USEPA Office of Water, Washington, D.C.

Tsivoglou, E.C., and J.R. Wallace.

1972. *Characterization of Stream Reaeration Capacity*. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

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January 2015. *Permit Writer's Manual*. Publication Number 92-109

(<https://fortress.wa.gov/ecy/publications/documents/92109.pdf>)

September 2011. *Water Quality Program Guidance Manual – Supplemental Guidance on Implementing Tier II Antidegradation*. Publication Number 11-10-073
(<https://fortress.wa.gov/ecy/publications/summarypages/1110073.html>)

October 2010 (revised). *Water Quality Program Guidance Manual – Procedures to Implement the State’s Temperature Standards through NPDES Permits*. Publication Number 06-10-100 (<https://fortress.wa.gov/ecy/publications/summarypages/0610100.html>)

Laws and Regulations (<http://leg.wa.gov/LawsAndAgencyRules/Pages/default.aspx>)

Permit and Wastewater Related Information <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance>

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/documents/0710024.pdf>

Wright, R.M., and A.J. McDonnell.

1979. *In-stream Deoxygenation Rate Prediction*. Journal Environmental Engineering Division, ASCE. 105(E2). (Cited in EPA 1985 op.cit.)

Appendix A--Public Involvement Information

Ecology proposes to reissue a permit to Washington Bulb Company, Inc. The permit includes wastewater discharge limits 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 August 5, 2019, in the *Skagit Valley Herald* to inform the public and to invite comment on the proposed draft National Pollutant Discharge Elimination System 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 NPDES permit.
- Explains the next step(s) in the permitting process.

Ecology has published a document entitled *Frequently Asked Questions about Effective Public Commenting* which is available on our website at

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

You may obtain further information from Ecology by telephone, 425-649-7201, or by writing to the address listed below.

Water Quality Permit Coordinator
Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452

The primary author of this permit and fact sheet is Robert Nolan.

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) -- The 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 the maximum discharge of a pollutant measured during a calendar 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 year(s), 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

[Ecology will complete this section after the public notice of draft period.]