



Issuance Date: September 1, 2005
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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
WASTE DISCHARGE AND RECLAIMED WATER PERMIT No. WA0037061

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
OLYMPIA, WASHINGTON 98504-7600

In compliance with the provisions of the
State of Washington Reclaimed Water Act, Chapter 90.46 Revised Code of Washington
and the
Water Pollution Control Law Chapter 90.48 Revised Code of Washington, as amended
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1251 et seq.

and
STATE OF WASHINGTON
DEPARTMENT OF HEALTH
In compliance with the provisions of Chapter 90.46 and 43.70 Revised Code of Washington
Authorizes

LOTT Alliance
111 Market Street NE, Suite 250
Olympia, Washington 98501

and the
Contributing Jurisdictions^a

City of Lacey
P.O. Box 3400
Lacey, WA 98509

City of Olympia
P.O. Box 1967
900 Plum St SE
Olympia, WA 98507

City of Tumwater
555 Israel Rd SW
Tumwater, WA 98501

Thurston County
2000 Lakeridge Dr SW
Olympia, WA 98502

<u>Plant Location:</u> 500 Adams Street NE, Olympia, WA	<u>Receiving Water:</u> Budd Inlet, South Puget Sound
<u>Water Body I.D. No.:</u> Old: 390KRD New: 1224026474620	<u>Plant Discharge Locations:</u> 001 North Outfall Latitude: 47° 03' 34" N Longitude: 122° 54' 16" W
<u>Plant Type:</u> Activated Sludge/Advanced Treatment and Class A Reclaimed Water	<u>Reclaimed Water Location:</u> 005 Reclaimed Water 47° 02' 49" N 122° 53' 43" W
	002 Fiddlehead Outfall (Emergency use only) Latitude: 47° 03' 04" N Longitude: 122° 54' 14" W

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

Kelly Susewind, P.E., P.G.
Southwest Regional Manager
Water Quality Program
Washington State Department of Ecology

^aWhile the LOTT Alliance is the primary Permittee and has day-to-day responsibility for the treatment plant and all permit conditions, except as otherwise noted, the cities of Lacey, Olympia, and Tumwater and Thurston County as contributing jurisdictions collectively share responsibility for permit issues involving the treatment plant and discharge, as well as being responsible for their respective collection systems and lift stations, and the discharge of waste from their systems to the LOTT system.

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SUMMARY OF PERMIT REPORT SUBMITTALS

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

Permit Section	Submittal	Frequency	First Submittal Date
S3.A. R3.A.	Discharge Monitoring Report	Monthly	November 15, 2005
S3.E.	Noncompliance Notification	As necessary	
S3.F.	Shellfish Protection	As necessary	
S4.B.	Plans for Maintaining Adequate Capacity	Annually	
S4.D.	Notification of New or Altered Sources	As necessary	
S4.E.	Infiltration and Inflow Evaluation	Annually	May 15, 2006
S4.F.	Waste load Assessment	Annually	August 31, 2006
S5.G. R5.B.	Operations and Maintenance Manual Update	As necessary	Prior to start-up of reclaimed water system
S6.A.5.	Pretreatment Report	1/year	March 1, 2006
S8.	Spill Plan Update	1/permit cycle	March 1, 2010
S9.A.	Effluent Mixing Plan of Study	30 days prior to study	
S9.B.	Effluent Mixing Report	1/permit cycle	March 1, 2010
S10.C.	Receiving Water and Effluent Study Results	Annually	May 15, 2006
S11.A.	Acute Toxicity Testing Results	1/permit cycle	March 1, 2010
S12.A.	Chronic Toxicity Testing Results	1/permit cycle	March 1, 2010
S13.D.	Combined Sewer Overflow Report	Annually	May 15, 2006
S14.	Outfall Evaluation	1/permit cycle	March 1, 2010
R3.B.3	Monthly Summary of Operating Records	Monthly with DMR	November 15, 2005
R3.B.4	Cross Connection Control Report	Annually	
R4.A.	Water Reuse Summary Plan	Update Annually	Before distribution of reclaimed water
R4.H.	Service and Use Area Contract	As needed	Before distribution of reclaimed water
G1.	Notice of Change in Authorization	As necessary	
G4.	Permit Application for Substantive Changes to the Discharge	As necessary	
G5.	Engineering Report for Construction or Modification Activities	As necessary	

Permit Section	Submittal	Frequency	First Submittal Date
G7.	Application for Permit Renewal	1/permit cycle	March 1, 2010
G21	Notice of Planned Changes	As necessary	
G22	Reporting Anticipated Non-compliance	As necessary	

Submittals shall be sent to the following addresses:

1. Department of Ecology, Water Quality Program, Municipal Permit Coordinator, Southwest Regional Office, P.O. Box 47775, Olympia, Washington 98504-7775
2. Department of Health, Water Reclamation and Reuse Program, Division of Drinking Water, 1500 West 4th Avenue, Spokane, Washington 99204

SPECIAL CONDITIONS

S1. DISCHARGE LIMITATIONS

A. Interim Effluent Limitations

All discharges and activities authorized by this permit shall be consistent with the terms and conditions of this permit. The discharge of any of the following pollutants more frequently than, or at a level in excess of, that identified and authorized by this permit shall constitute a violation of the terms and conditions of this permit.

Beginning on the effective date of this permit and lasting until October 31, 2006, the Permittee is authorized to discharge municipal wastewater at the permitted location subject to complying with the following limitations:

	EFFLUENT LIMITATIONS^a: OUTFALLS # 001 & 002^b	
Parameter	Average Monthly	Average Weekly
Winter Season Biochemical Oxygen Demand ^c (5 day) (November – March)	30 mg/L, 5640 lbs/day 85% Removal	45 mg/L, 8460 lbs/day
Spring/Fall Season Biochemical Oxygen Demand ^c (5 day) (April, May, & October)	10 mg/L, 1251 lbs/day 85% Removal	15 mg/L, 1876 lbs/day
Summer Season Biochemical Oxygen Demand ^c (5 day) (June – September)	9 mg/L, 1050 lbs/day 85% Removal	13.5 mg/L, 1576 lbs/day
Total Suspended Solids ^c	30 mg/L, 5265 lbs/day 85% Removal	45 mg/L, 7898 lbs/day
Fecal Coliform Bacteria	200/100 mL	400/100 mL
pH ^d	Daily minimum is equal to or greater than 6 and the daily maximum is less than or equal to 9.	
Spring/Fall Season Total Inorganic Nitrogen (TIN) ^e (April, May, & October)	3 mg/L, 375 lbs/day	
Summer Season Total Inorganic Nitrogen (TIN) ^e (June – September)	3 mg/L, 350 lbs/day	
	EFFLUENT LIMITATIONS^a: OUTFALL # 001 ONLY	
Parameter	Average Monthly	Maximum Daily^f
Winter Season Total Ammonia (as N) ^g (November – March)	26 mg/L	36 mg/L

EFFLUENT LIMITATIONS^a: OUTFALL # 002^b ONLY		
Parameter	Average Monthly	Maximum Daily^f
Winter Season Total Ammonia (as N) ^g (November – March)	22 mg/L	31 mg/L
Total Recoverable Copper	6 µg/L	7.5 µg/L
EFFLUENT LIMITATIONS FOR CLASS A RECLAIMED WATER: SEE CONDITION R1		
^a The average monthly and weekly effluent limitations are based on the arithmetic mean of the samples taken with the exception of fecal coliform, which is based on the geometric mean.		
^b Outfall 002 (Fiddlehead) is to be used in emergency situations only, except as described in S13.E		
^c The average monthly effluent concentration for BOD ₅ and Total Suspended Solids shall not exceed 30 mg/L or 15 percent of the respective monthly average influent concentrations, whichever is more stringent. The 85 percent removal requirement applies to the overall treatment system, including the Budd Inlet Treatment Plant, the Satellite Reclamation Plants, and STEP tanks in the collection system.		
^d Indicates the range of permitted values. When pH is continuously monitored, excursions between 5.0 and 6.0, or 9.0 and 10.0 shall not be considered violations provided no single excursion exceeds 60 minutes in length and total excursions do not exceed 7 hours and 30 minutes per month. Any excursions below 5.0 and above 10.0 are violations. The instantaneous maximum and minimum pH shall be reported monthly.		
^e Total Inorganic Nitrogen (TIN) is the sum of the inorganic forms of Nitrogen (Nitrate, Nitrite, and Ammonia) each reported as Nitrogen. The TIN limit shall be a seasonal limit and shall apply from April 1, through October 31, of each year, with higher Spring and Fall loading limits.		
^f The maximum daily effluent limitation is defined as the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For other units of measurement, the daily discharge is the average measurement of the pollutant over the day.		
^g The Winter Season Total Ammonia limit is a seasonal limit and shall apply from November 1, through March 31, of each year.		

The method detection level (MDL) for copper is 1 µg/L using graphite furnace atomic absorption spectrometry and method number 220.2 from 40 Code of Federal Regulations (CFR) Part 136. The quantitation level (QL) for copper is 5 µg/L (5 x MDL).

This QL will be used for assessment of compliance with these effluent limits. If the Permittee is unable to attain the MDL and QL in its effluent due to matrix effects, the Permittee shall submit a matrix specific MDL and QL to the Department of Ecology (Department) by nine months after the permit effective date. The matrix specific MDL and QL shall be calculated as follows:

MDL = 3.14 x (standard deviation of 7 replicate spiked samples). This corresponds to the calculation of the method detection limit, as defined in 40 CFR Part 136, Appendix B, with the provision that the MDL be calculated for a specific effluent matrix.

The QL = 5 x MDL

For Copper, check standards at concentrations equal to the QL shall be analyzed alongside all compliance monitoring samples. Check standards shall be produced independently of calibration standards and maintained as a part of the Permittee's records. All check standard recovery data and duplicate measurements shall be submitted to the Department in the discharge monitoring report. The Department's precision goal is +/- 20 percent.

If the measured effluent concentration is below the QL as determined above, the Permittee shall report NQ for non-quantifiable. Average values shall be calculated as follows: measurements below the MDL = 0; measurements greater than the MDL = the measurement.

B. Final Effluent Limitations

Beginning on November 1, 2006 and lasting until the permit expiration or until the permit is modified per the results of the Budd Inlet/Capitol Lake/Deschutes River TMDL, the Permittee is authorized to discharge municipal wastewater at the permitted locations subject to complying with the following limitations:

	EFFLUENT LIMITATIONS^a: OUTFALLS # 001 & 002^b	
Parameter	Average Monthly	Average Weekly
Winter Season Biochemical Oxygen Demand ^c (5 day) (November – March)	30 mg/L, 5640 lbs/day 85% Removal	45 mg/L, 8460 lbs/day
Spring/Fall Season Biochemical Oxygen Demand ^c (5 day) (April, May, & October)	8 mg/L, 900 lbs/day 85% Removal	12 mg/L, 1350 lbs/day
Summer Season Biochemical Oxygen Demand ^c (5 day) (June – September)	7 mg/L, 671 lbs/day 85% Removal	10.5 mg/L, 1006 lbs/day
Total Suspended Solids ^c	30 mg/L, 5265 lbs/day 85% Removal	45 mg/L, 7898 lbs/day
Fecal Coliform Bacteria	200/100 mL	400/100 mL
pH ^d	Daily minimum is equal to or greater than 6 and the daily maximum is less than or equal to 9.	
Spring/Fall Season Total Inorganic Nitrogen (TIN) ^e (April, May, & October)	3 mg/L, 338 lbs/day	
Summer Season Total Inorganic Nitrogen (TIN) ^e (June – September)	3 mg/L, 288 lbs/day	
	EFFLUENT LIMITATIONS^a: OUTFALL # 001 ONLY	
Parameter	Average Monthly	Maximum Daily^f
Winter Season Total Ammonia (as N) ^g (November – March)	26 mg/L	36 mg/L

EFFLUENT LIMITATIONS^a: OUTFALL # 002^b ONLY		
Parameter	Average Monthly	Maximum Daily^f
Winter Season Total Ammonia (as N) ^g (November – March)	22 mg/L	31 mg/L
Total Recoverable Copper	6 µg/L	7.5 µg/L
EFFLUENT LIMITATIONS FOR CLASS A RECLAIMED WATER: SEE CONDITION R1		
^a The average monthly and weekly effluent limitations are based on the arithmetic mean of the samples taken with the exception of fecal coliform, which is based on the geometric mean.		
^b Outfall 002 (Fiddlehead) is to be used in emergency situations only, except as described in S13.E		
^c The average monthly effluent concentration for BOD ₅ and Total Suspended Solids shall not exceed 30 mg/L or 15 percent of the respective monthly average influent concentrations, whichever is more stringent. The 85 percent removal requirement applies to the overall treatment system, including the Budd Inlet Treatment Plant, the Satellite Reclamation Plants, and STEP tanks in the collection system.		
^d Indicates the range of permitted values. When pH is continuously monitored, excursions between 5.0 and 6.0, or 9.0 and 10.0 shall not be considered violations provided no single excursion exceeds 60 minutes in length and total excursions do not exceed 7 hours and 30 minutes per month. Any excursions below 5.0 and above 10.0 are violations. The instantaneous maximum and minimum pH shall be reported monthly.		
^e Total Inorganic Nitrogen (TIN) is the sum of the inorganic forms of Nitrogen (Nitrate, Nitrite, and Ammonia) each reported as Nitrogen. The TIN limit shall be a seasonal limit and shall apply from April 1, through October 31, of each year, with higher Spring and Fall loading limits.		
^f The maximum daily effluent limitation is defined as the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For other units of measurement, the daily discharge is the average measurement of the pollutant over the day.		
^g The Winter Season Total Ammonia limit is a seasonal limit and shall apply from November 1, through March 31, of each year.		

C. Mixing Zone Descriptions

The maximum boundaries of the mixing zones are defined as follows:

North Outfall (#001):

The chronic mixing zone extends 213.5 feet from the last discharge port at both ends of the diffuser section and 215 feet from the centerline of the diffuser section. The acute zone extends 21.4 feet from the ends of the diffuser and 21.5 feet from the centerline of the diffuser pipe.

Fiddlehead Outfall (#002):

The chronic mixing zone consists of that portion of a 201-foot circle centered over the discharge point that does not impinge upon the shoreline. The acute zone extends 20.1 feet in a circle centered over the discharge point.

S2. MONITORING REQUIREMENTS

A. Monitoring Schedule

Category	Parameter	Units	Sample Point	Minimum Sampling Frequency	Sample Type
Wastewater Influent	BOD ₅	mg/L lbs/day	Plant Influent	3 days/week	24-hour composite
Wastewater Influent	TSS	mg/L lbs/day	Plant Influent	3 days/week	24-hour composite
Wastewater Influent	Flow	MGD	Plant Influent	Continuous ¹	Recording meter
Wastewater Influent	pH	Standard Units	Plant Influent	Daily	Grab
Wastewater Influent	Ammonia as (N)	mg/L lbs/day	Plant Influent	5 days/week from April 1 through October 31, 1 day/week otherwise	24-hour composite
Wastewater Influent	Nitrate & Nitrite Total as (N)	mg/L	Plant Influent	5 days/week from April 1 through October 31, 1 day/week otherwise	24-hour composite
Wastewater Influent	TKN	mg/L	Plant Influent	1 day/week	24-hour composite
Wastewater Effluent	Flow	MGD	Plant Effluent	Continuous ¹	Recording meter
Wastewater Effluent	BOD ₅	mg/L lbs/day	Plant Effluent	3 days/week	24-hour composite
Wastewater Effluent	TSS	mg/L lbs/day	Plant Effluent	Daily	24-hour composite
Wastewater Effluent	pH	Standard Units	Plant Effluent	Daily	Grab
Wastewater Effluent	Fecal Coliform Bacteria	#/100 mL	Plant Effluent	Daily	Grab
Wastewater Effluent	Temperature	°C	Plant Effluent	Daily	Grab

Category	Parameter	Units	Sample Point	Minimum Sampling Frequency	Sample Type
Wastewater Effluent	Ammonia as (N)	mg/L	Plant Effluent	5 days/week from, April 1 through October 31, 1 day/week otherwise	24-hour composite
Wastewater Effluent	Nitrate & Nitrite Total as (N)	mg/L	Plant Effluent	5 days/week from April 1 through October 31, 1 day/week otherwise	24-hour composite
Wastewater Effluent	TKN	mg/L	Plant Effluent	1 day/week	24-hour composite
Wastewater Effluent	Total Recoverable Metals: Copper, Lead, Nickel, Silver, & Zinc	µg/L	Plant Effluent	Monthly	24-hour composite
Pretreatment	As specified in Permit Condition S6.				
Receiving Water and Effluent Study	As specified in Permit Condition S10.				
Acute Toxicity Testing	As specified in Permit Condition S11.				
Chronic Toxicity Testing	As specified in Permit Condition S12.				
Outfall 002 ² during bypass of Outfall 001	Flow	Gallons discharged and duration	Outfall 002	Continuous ¹	Recording meter

Category	Parameter	Units	Sample Point	Minimum Sampling Frequency	Sample Type
Outfall 002 ² during bypass of Outfall 001	Total Ammonia as (N)	mg/L	Outfall 002	At least once during any discharge lasting an hour or longer	Composite
Outfall 002 ² during bypass of Outfall 001	Total Recoverable Copper	µg/L	Outfall 002	At least once during any discharge lasting an hour or longer	Composite
CSOs	Flow	Gallons discharged and duration of flow	Outfalls 002, 003, & 004	Continuous ¹	Recording meter
CSOs	Fecal Coliform Bacteria	#/100 mL	Outfalls 002, 003, & 004	At least once during any discharge lasting an hour or longer	Grab
CSOs	BOD ₅	mg/L	Outfalls 002, 003, & 004	At least once during any discharge lasting an hour or longer	Composite over the duration of a CSO event
CSOs	TSS	mg/L	Outfalls 002, 003, & 004	At least once during any discharge lasting an hour or longer	Composite over the duration of a CSO event
Reclaimed Water	As specified in Permit Condition R2				

¹ Continuous means uninterrupted except for brief lengths of time for calibration, for power failure, or for unanticipated equipment repair or maintenance. Measurements shall be taken daily when continuous monitoring is not possible.

² These analyses are in addition to normal wastewater effluent sampling, and are to be taken anytime Outfall 002 (Fiddlehead) is used as a bypass of Outfall 001 for discharge of treated effluent for longer than an hour.

B. Sampling and Analytical Procedures

Samples and measurements taken to meet the requirements of this permit shall be representative of the volume and nature of the monitored parameters, including representative sampling of any unusual discharge or discharge condition, including bypasses, upsets and maintenance-related conditions affecting effluent quality.

Sampling and analytical methods used to meet the monitoring requirements specified in this permit shall conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136 or to the latest revision of *Standard Methods for the Examination of Water and Wastewater* (APHA), unless otherwise specified in this permit or approved in writing by the Department.

C. Flow Measurement

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the quantity of monitored flows. The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurements are consistent with the accepted industry standard for that type of device. Frequency of calibration shall be in conformance with manufacturer's recommendations and at a minimum frequency of at least one calibration per year. Calibration records shall be maintained for at least three years.

D. Laboratory Accreditation

All monitoring data required by the Department shall be prepared by a laboratory registered or accredited under the provisions of, *Accreditation of Environmental Laboratories*, Chapter 173-50 Washington Administrative Code (WAC). Flow, temperature, settleable solids, conductivity, pH, and internal process control parameters are exempt from this requirement. Conductivity and pH shall be accredited if the laboratory must otherwise be registered or accredited. The Department exempts crops, soils, and hazardous waste data from this requirement pending accreditation of laboratories for analysis of these media.

S3. REPORTING AND RECORDKEEPING REQUIREMENTS

The Permittee shall monitor and report in accordance with the following conditions. The falsification of information submitted to the Department shall constitute a violation of the terms and conditions of this permit.

A. Reporting

The first monitoring period begins on the effective date of the permit. Monitoring results shall be submitted monthly. Monitoring data obtained during each monitoring period shall be summarized, reported, and submitted on a Discharge Monitoring Report (DMR) form provided, or otherwise approved, by the Department. DMR forms shall be received by the Department no later than the 15th day of the month following the completed monitoring period, unless otherwise specified in this permit. Priority pollutant analysis data shall be submitted no later than 45 days following the monitoring period. Unless otherwise specified, all toxicity test data shall be submitted within 60 days after the

sample date. The report(s) shall be sent to the Department of Ecology, Southwest Regional Office, P.O. Box 47775, Olympia, Washington 98504-7775.

All laboratory reports providing data for organic and metal parameters shall include the following information: sampling date, sample location, date of analysis, parameter name, CAS number, analytical method/ number, method detection limit (MDL), laboratory practical quantitation limit (PQL), reporting units, and concentration detected.

DMR forms must be submitted monthly whether or not the facility was discharging. If there was no discharge during a given monitoring period, submit the form as required with the words "no discharge" entered in place of the monitoring results.

B. Records Retention

The Permittee shall retain records of all monitoring information for a minimum of three years. Such information shall include all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by the Department.

C. Recording of Results

For each measurement or sample taken, the Permittee shall record the following information: (1) the date, exact place, method, and time of sampling or measurement; (2) the individual who performed the sampling or measurement; (3) the dates the analyses were performed; (4) the individual who performed the analyses; (5) the analytical techniques or methods used; and (6) the results of all analyses.

D. Additional Monitoring by the Permittee

If the Permittee monitors any pollutant more frequently than required by this permit using test procedures specified by Condition S2 or R2 of this permit, then the results of such monitoring shall be included in the calculation and reporting of the data submitted in the Permittee's DMR.

E. Noncompliance Notification

In the event the Permittee is unable to comply with any of the terms and conditions of this permit due to any cause, the Permittee shall:

1. Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance, correct the problem and, if applicable, repeat sampling and analysis of any noncompliance immediately and submit the results to the Department within 30 days after becoming aware of the violation.
2. Immediately notify the Department of the failure to comply.

3. Submit a detailed written report to the Department within 30 days (five days for upsets and bypasses), unless requested earlier by the Department. The report shall contain a description of the noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.

F. Reporting - Shellfish Protection

Unauthorized discharges such as collection system overflows, plant bypasses, or failure of the disinfection system, shall be reported immediately to the Departments of Ecology and Health, Shellfish Program. The Department of Ecology's Southwest Regional Office 24-hour number is (360) 407-6300, and the Department of Health's Shellfish 24-hour number is (360) 236-3330.

S4. FACILITY LOADING

A. Design Criteria

Flows or waste loadings of the following design criteria for the permitted treatment facility shall not be exceeded:

FLOWS

Average flow for the maximum month:	28 MGD
Maximum Day:	55 MGD
Peak Hourly to Treatment Plant:	64 MGD

BIOCHEMICAL OXYGEN DEMAND (BOD₅)

Maximum Month Loading:	37,600 lbs/day
Annual Average Loading:	31,400 lbs/day
Peak Hourly Loading:	75,300 lbs/day

TOTAL SUSPENDED SOLIDS

Maximum Month Loading:	35,100 lbs/day
Annual Average Loading:	29,200 lbs/day
Peak Hourly Loading:	87,700 lbs/day

NITROGEN LOADING

Maximum Month Loading:	6,420 lbs/day
Annual Average Loading:	5,350 lbs/day
Peak Hourly Loading:	16,060 lbs/day

B. Plans for Maintaining Adequate Capacity

While pursuing the Highly Managed Plan as described in the 1998 LOTT Wastewater Resource Management Plan, the Permittee shall conduct annual capacity assessments. The Permittee shall submit to the Department the annual assessment, the Capitol Improvement Plan (CIP), in accordance with the requirements set forth in the 1998 LOTT Wastewater Resource Management Plan. The CIP shall include an annual capacity assessment, a plan and a schedule for continuing to maintain system capacity at the facilities sufficient to achieve the effluent limitations, reclaimed water standards, and other conditions of this permit. The CIP shall address any of items 1-5 below, and any other items necessary to meet this objective.

If the Permittee abandons the Highly Managed Plan, then when the actual flow or waste load reaches 85 percent of any one of the design criteria in S4.A for three consecutive months, or when the projected increase would reach design capacity within five years, whichever occurs first, the Permittee shall submit to the Department, a plan and schedule for continuing to maintain system capacity at the facilities sufficient to achieve the effluent limitations, water reclamation standards, and other conditions of this permit. This plan shall address any of the following actions or any others necessary to meet this objective.

1. Analysis of the present design including the introduction of any process modifications that would establish the ability of the existing facility to achieve the effluent limits and other requirements of this permit at specific levels in excess of the existing design criteria specified in paragraph A above.
2. Reduction or elimination of excessive infiltration and inflow of uncontaminated ground and surface water into the sewer system and feasible reductions of per capita residential flows.
3. Limitation on future sewer extensions or connections or additional waste loads.
4. Modification or expansion of facilities necessary to accommodate increased flow or waste load.
5. Reduction of industrial or commercial flows or waste loads to allow for increasing sanitary flow or waste load.

Engineering documents associated with the plan must meet the requirements of WAC 173-240-060, "Engineering Report," and be approved by the Department prior to any construction. The plan shall specify any contracts, ordinances, methods for financing, or other arrangements necessary to achieve this objective

C. Duty to Mitigate

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

D. Notification of New or Altered Sources

The Permittee shall submit written notice to the Department whenever any new discharge or a substantial change in volume or character of an existing discharge into the Publicly Owned Treatment Works (POTW) is proposed which: (1) would interfere with the operation of, or exceed the design capacity of, any portion of the POTW; (2) is not part of an approved general sewer plan or approved plans and specifications; or (3) would be subject to pretreatment standards under 40 CFR Part 403 and Section 307(b) of the Clean Water Act. This notice shall include an evaluation of the POTW's ability to adequately transport and treat the added flow and/or waste load, the quality and volume of effluent to be discharged to the POTW, and the anticipated impact on the Permittee's effluent [40 CFR 122.42(b)].

E. Infiltration and Inflow Evaluation

1. The Permittee shall annually conduct an infiltration and inflow evaluation for sub-basins of the system such that the entire system is evaluated once every 7 years. Plant monitoring and system flow meter records may be used to assess measurable infiltration and inflow. Refer to the U.S. EPA publication, *I/I Analysis and Project Certification*, available as Publication No. 97-03 at: Publications Office, Department of Ecology, P.O. Box 47600, Olympia, Washington 98504-7600.
2. A report shall be prepared which summarizes any measurable infiltration and inflow. If infiltration and inflow have increased by more than 15 percent from that found in the 1995 LOTT Inflow and Infiltration Report, the report shall contain a plan and a schedule for: (1) locating the sources of infiltration and inflow; and (2) correcting the problem.
3. The report shall be submitted by **May 15, 2006**, and **annually** thereafter.

F. Waste load Assessment

As part of the CIP identified in condition S4.B, the Permittee shall conduct an annual assessment of their flow and waste load and submit a report to the Department by **August 31, 2006**, and **annually** thereafter. The report shall contain the following: an indication of compliance or noncompliance with the permit effluent limitations; a comparison between the existing and design monthly average dry weather and wet weather flows, peak flows, BOD, and total suspended solids loadings; and (except for the first report) the percentage increase in these parameters since the last annual report. The report shall also state the present and design population or population equivalent, projected population growth rate, and the estimated date upon which the design capacity is projected to be reached, according to the most restrictive of the parameters above. The interval for review and reporting may be modified if the Department determines that a different frequency is sufficient.

S5. OPERATION AND MAINTENANCE

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

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

A. Certified Operator

An operator certified for at least a Class 4 plant by the state of Washington shall be in responsible charge of the day-to-day operation of the LOTT wastewater system of treatment and reclamation plants. An operator certified for at least a Class 3 plant shall be in charge during all regularly scheduled shifts when operational changes are made to the treatment process.

B. O & M Program

The Permittee shall institute an adequate operation and maintenance program for their entire sewage system. Maintenance records shall be maintained on all major electrical and mechanical components of the treatment plant, as well as the sewage system and pumping stations. Such records shall clearly specify the frequency and type of maintenance recommended by the manufacturer and shall show the frequency and type of maintenance performed. These maintenance records shall be available for inspection at all times.

C. Short-term Reduction

If a Permittee contemplates a reduction in the level of treatment that would cause a violation of permit discharge limitations on a short-term basis for any reason, and such reduction cannot be avoided, the Permittee shall give written notification to the Department, if possible, 30 days prior to such activities, detailing the reasons for, length of time of, and the potential effects of the reduced level of treatment. This notification does not relieve the Permittee of their obligations under this permit.

D. Electrical Power Failure

The Permittee is responsible for maintaining adequate safeguards to prevent the discharge of untreated wastes or wastes not treated in accordance with the requirements of this permit during electrical power failure at the treatment plant and/or sewage lift stations either by means of alternate power sources, standby generator, or retention of inadequately treated wastes. The Permittee shall maintain Reliability Class II (EPA 430-99-74-001) at the wastewater treatment plant, which requires primary sedimentation and disinfection.

E. Prevent Connection of Inflow

The Permittee and contributing jurisdictions shall strictly enforce their sewer ordinances and not allow the connection of inflow (roof drains, foundation drains, etc.) to the sanitary sewer system.

F. Bypass Procedures

Bypass, which is the intentional diversion of waste streams from any portion of a treatment facility, is prohibited, and the Department may take enforcement action against a Permittee for bypass unless one of the following circumstances (1, 2, or 3) is applicable.

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

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

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

This bypass is permitted only if:

- a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.
- b. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment downtime (but not if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance), or transport of untreated wastes to another treatment facility.
- c. The Department is properly notified of the bypass as required in Condition S3E of this permit.

3. Bypass which is anticipated and has the potential to result in noncompliance of this permit

The Permittee shall notify the Department at least 30 days before the planned date of bypass. The notice shall contain: (1) a description of the bypass and its cause; (2) an analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing; (3) a cost-effectiveness analysis of alternatives including comparative resource damage assessment; (4) the minimum and maximum duration of bypass under each alternative; (5) a recommendation as to the preferred alternative for conducting the bypass; (6) the projected date of bypass initiation; (7) a statement of compliance with State Environmental Policy Act (SEPA); (8) a request for modification of water quality standards as provided

for in WAC 173-201A-110, if an exceedance of any water quality standard is anticipated; and (9) steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

For probable construction bypasses, the need to bypass is to be identified as early in the planning process as possible. The analysis required above shall be considered during preparation of the engineering report or facilities plan and plans and specifications and shall be included to the extent practical. In cases where the probable need to bypass is determined early, continued analysis is necessary up to and including the construction period in an effort to minimize or eliminate the bypass.

The Department will consider the following prior to issuing an administrative order for this type bypass:

- a. If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
- b. If there are feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
- c. If the bypass is planned and scheduled to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, the Department will approve or deny the request. The public shall be notified and given an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Approval of a request to bypass will be by administrative order issued by the Department under Revised Code of Washington (RCW) 90.48.120.

G. Operations and Maintenance Manual

The approved Operations and Maintenance Manual shall be kept available at the treatment plant and all operators shall follow the instructions and procedures of this manual. An electronic equivalent of a paper manual is an acceptable alternative.

The Operations and Maintenance (O&M) Manual shall be updated by the Permittee in accordance with WAC 173-240-080 and be submitted to the Department for approval prior to start-up of any reclaimed water system. This update shall include the O&M procedures for the reclaimed water system at the Budd Inlet plant. Substantial changes or updates to the O&M Manual shall be submitted to the Department whenever they are incorporated into the manual.

The updated O&M Manual shall include:

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

2. Plant maintenance procedures.
3. The process control monitoring schedule.
4. Details on the reclaimed water system operation at the Budd Inlet plant.

S6. PRETREATMENT

A. General Requirements

1. The Permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the Permittee's approved pretreatment program submittal entitled "Pretreatment Program Manual" and dated November 1999; any approved revisions thereto; and the General Pretreatment Regulations (40 CFR Part 403). At a minimum, the following pretreatment implementation activities shall be undertaken by the Permittee:
 - a. Enforce categorical pretreatment standards promulgated pursuant to Section 307(b) and (c) of the Federal Clean Water Act (hereinafter, the Act), prohibited discharge standards as set forth in 40 CFR 403.5, local limitations specified in Section 5 (the LOTT Discharge and Industrial Pretreatment Regulations, and as codified in the following enabling ordinances: Lacey Ordinance 994, Olympia Ordinance 5462, Tumwater Ordinance 094-032, and Thurston County Ordinance 10750 as exist at the time of issuance of this permit), or state standards, which ever are most stringent or apply at the time of issuance or modification of a local industrial waste discharge permit. Locally derived limitations shall be defined as pretreatment standards under Section 307(d) of the Act and shall not be limited to categorical industrial facilities.
 - b. Issue industrial waste discharge permits to all significant industrial users [SIUs, as defined in 40 CFR 403.3(t)(i)(ii)] contributing to the treatment system, including those from other jurisdictions. Industrial waste discharge permits shall contain as a minimum, all the requirements of 40 CFR 403.8 (f)(1)(iii). The Permittee shall coordinate the permitting process with the Department regarding any industrial facility, which may possess a state waste discharge permit issued by the Department. Once issued, an industrial waste discharge permit will take precedence over a state-issued waste discharge permit.
 - c. Maintain and update, as necessary, records identifying the nature, character, and volume of pollutants contributed by industrial users to the POTW. Records shall be maintained for at least a three-year period.
 - d. Perform inspections, surveillance, and monitoring activities on industrial users to determine and/or confirm compliance with applicable pretreatment standards and requirements. A thorough inspection of SIUs shall be conducted annually. Frequency of regular local monitoring of SIU wastewaters shall normally be commensurate with the character and volume of the wastewater but shall not be less than once per year.

Sample collection and analysis shall be performed in accordance with 40 CFR Part 403.12(b)(5)(ii)-(v) and 40 CFR Part 136.

- e. Enforce and obtain remedies for noncompliance by any industrial users with applicable pretreatment standards and requirements. Once violations have been identified, the Permittee shall take timely and appropriate enforcement action to address the noncompliance. The Permittee's action shall follow its enforcement response procedures and any amendments, thereof.
 - f. Publish, at least annually in the largest daily newspaper in the Permittee's service area, a list of all nondomestic users which, at any time in the previous 12 months, were in significant noncompliance as defined in 40 CFR 403.8(f)(2)(vii).
 - g. If the Permittee elects to conduct sampling of a SIU's discharge in lieu of the user self-monitoring, it shall sample and analyze for all regulated pollutants in accordance with 40 CFR Part 403.12(b)(5)(ii)-(v), 40 CFR 403.12(g), and 40 CFR Part 136. The character and volume of the samples shall be representative of the discharge and shall provide adequate data to determine compliance, but in no case should sampling occur less than two times per year.
 - h. Develop and maintain a data management system designed to track the status of the Permittee's industrial user inventory, industrial user discharge characteristics, and compliance status.
 - i. Maintain adequate staff, funds, and equipment to implement its pretreatment program.
 - j. Establish, where necessary, contracts or legally binding agreements with contributing jurisdictions to ensure compliance with applicable pretreatment requirements by commercial or industrial users within these jurisdictions. These contracts or agreements shall identify the agency responsible for the various implementation and enforcement activities to be performed in the contributing jurisdiction. In addition, the Permittee shall be required to develop a Memorandum of Understanding (or Interlocal Agreement) that outlines the specific roles, responsibilities, and pretreatment activities of each jurisdiction.
2. The Permittee shall implement the Accidental Spill Prevention Program described in the approved Industrial Pretreatment Program dated November 1999, or any approved revisions thereto.
 3. The Permittee shall evaluate, at least once every two years, whether each Significant Industrial User needs a plan to control slug discharges. For purposes of this subsection, a slug discharge is any discharge of a nonroutine, episodic nature, including but not limited to an accidental spill or noncustomary batch discharge. The results of such activities shall be available to the Department upon request. If the Permittee decides that a slug control plan is needed, the plan shall contain, at a minimum, the following elements:

- a. Description of discharge practices, including nonroutine batch discharges.
 - b. Description of stored chemicals.
 - c. Procedures for immediately notifying the Permittee of slug discharges, including any discharge that would violate a prohibition under 40 CFR 403.5(b), with procedures for follow-up written notification within five days.
 - d. If necessary, procedures to prevent adverse impact from accidental spills, including inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site run-off, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants (including solvents), and/or measures and equipment necessary for emergency response.
4. Whenever it has been determined, on the basis of information provided to or obtained by the Department, that any waste source contributes pollutants to the Permittee's treatment works in violation of Subsection (b), (c), or (d) of Section 307 of the Act, and the Permittee has not taken adequate corrective action, the Department shall notify the Permittee of this determination. Failure by the Permittee to commence an appropriate enforcement action within 30 days of this notification may result in appropriate enforcement action by the Department against the source and/or the Permittee.
5. Pretreatment Report

The Permittee shall provide to the Department an annual report that briefly describes its program activities during the previous calendar year. This report shall be submitted no later than **March 1**, of each year to: Washington Department of Ecology, Southwest Regional Office, P.O. Box 47775, Olympia, Washington 98504.

The report shall include the following information:

- a. An updated nondomestic inventory.
- b. Results of wastewater sampling at the treatment plant as specified in S6.B. The Permittee shall calculate removal rates for each pollutant and evaluate the adequacy of the existing local limitations in Section 5 of the LOTT Discharge and Industrial Pretreatment Regulations in prevention of treatment plant interference, pass through of pollutants that could affect receiving water quality, and sludge contamination. Potential interference or pass through at planned satellite plants should also be addressed.
- c. Status of program implementation, including:

- (1) Any substantial modifications to the pretreatment program as originally approved by the Department, including staffing and funding levels.
 - (2) Any interference, upset, or permit violations experienced at the POTW that are directly attributable to wastes from industrial users.
 - (3) Listing of industrial users inspected and/or monitored, and a summary of the results.
 - (4) Listing of industrial users scheduled for inspection and/or monitoring for the next year, and expected frequencies.
 - (5) Listing of industrial users notified of promulgated pretreatment standards and/or local standards as required in 40 CFR 403.8(f)(2)(iii). Indicate which industrial users are on compliance schedules and the final date of compliance for each.
 - (6) Listing of industrial users issued industrial waste discharge permits.
 - (7) Planned changes in the pretreatment program implementation plan. (See subsection A.6. below.)
- d. Status of compliance activities, including:
- (1) Listing of industrial users that failed to submit baseline monitoring reports or any other reports required under 40 CFR 403.12 and in the most current approved version of the Permittee's pretreatment program.
 - (2) Listing of industrial users that were at any time during the reporting period not complying with federal, state, or local pretreatment standards or with applicable compliance schedules for achieving those standards, and the duration of such noncompliance.
 - (3) Summary of enforcement activities and other corrective actions taken or planned against noncomplying industrial users. The Permittee shall supply to the Department a copy of the public notice of facilities that were in significant noncompliance.
6. The Permittee shall request and obtain approval from the Department prior to implementing any significant changes to the local pretreatment program as approved. The procedure of 40 CFR 403.18 (b) & (c) shall be followed.

B. Monitoring Requirements

The Permittee shall monitor its influent, effluent, and sludge for the priority pollutants identified in Tables II and III of Appendix D of 40 CFR Part 122 as amended, any

compounds identified as a result of Condition S6.B.4, and any other pollutants expected from nondomestic sources using U.S. EPA-approved procedures for collection, preservation, storage, and analysis. Influent, effluent, and sludge samples shall be tested for the priority pollutant metals (Table III, 40 CFR 122, Appendix D) on a quarterly basis throughout the term of this permit. Influent, effluent, and sludge samples shall be tested for the organic priority pollutants (Table II, 40 CFR 122, Appendix D) on an annual basis.

1. The POTW influent and effluent shall be sampled on a day when industrial discharges are occurring at normal to maximum levels. Samples for the analysis of acid and base/neutral extractable compounds and metals shall be 24-hour composites. Samples for the analysis of volatile organic compounds shall be collected using grab sampling techniques at equal intervals for the total of four grab samples per day.

A single analysis for volatile pollutants (Method 624) may be run for each monitoring day by compositing equal volumes of each grab sample directly in the GC purge and trap apparatus in the laboratory, with no less than 1 ml of each grab included in the composite.

Unless otherwise indicated, all reported test data for metals shall represent the total amount of the constituent present in all phases, whether solid, suspended, or dissolved, elemental or combined including all oxidation states.

Wastewater samples must be handled, prepared, and analyzed by GC/MS in accordance with the U.S. EPA Methods 624 and 625 (October 26, 1984).

2. A sludge sample shall be collected concurrent with a wastewater sample and may be taken as a single grab of residual sludge. Sampling and analysis shall conform to U.S. EPA Methods 624 and 625 unless the Permittee requests an alternate method and it has been approved by the Department.
3. Cyanide, phenols, and oils shall be taken as grab samples. Oils shall be hexane soluble or equivalent, and should be measured in the influent and effluent only.
4. In addition to quantifying pH, oil and grease, and all priority pollutants, a reasonable attempt should be made to identify all other substances and quantify all pollutants shown to be present by gas chromatograph/mass spectrometer (GC/MS) analysis per 40 CFR 136, Appendix A, Methods 624 and 625. Determinations of pollutants should be attempted for each fraction, which produces identifiable spectra on total ion plots (reconstructed gas chromatograms). Determinations should be attempted from all peaks with responses 5 percent or greater than the nearest internal standard. The 5 percent value is based on internal standard concentrations of 30 µg/l, and must be adjusted downward if higher internal standard concentrations are used or adjusted upward if lower internal standard concentrations are used. Non-substituted aliphatic compounds may be expressed as total hydrocarbon content. Identification shall be attempted by a laboratory whose computer data processing programs are capable of comparing sample mass spectra to a computerized library of mass spectra, with visual confirmation by an experienced analyst. For all detected substances which are determined to be pollutants, additional

sampling and appropriate testing shall be conducted to determine concentration and variability, and to evaluate trends.

C. Reporting of Monitoring Results

The Permittee shall include a summary of monitoring results in the Annual Pretreatment Report.

D. Local Limit Development

As sufficient data becomes available, the Permittee shall, in consultation with the Department, reevaluate their local limits in order to prevent pass through or interference at the Budd Inlet plant and the satellite plants. Upon determination by the Department that any pollutant present causes pass through or interference, or exceeds established sludge standards, the Permittee shall establish new local limits or revise existing local limits as required by 40 CFR 403.5. In addition, the Department may require revision or establishment of local limits for any pollutant discharged from the POTW that has a reasonable potential to exceed the Water Quality Standards, Sediment Standards, or established effluent limits, or causes whole effluent toxicity. The determination by the Department shall be in the form of an Administrative Order.

The Department may modify this permit to incorporate additional requirements relating to the establishment and enforcement of local limits for pollutants of concern. Any permit modification is subject to formal due process procedures pursuant to state and federal law and regulation.

S7. RESIDUAL SOLIDS

Residual solids include screenings, grit, scum, primary sludge, waste activated sludge, and other solid waste. The Permittee shall store and handle all residual solids in such a manner so as to prevent their entry into state ground or surface waters. The Permittee shall not discharge leachate from residual solids to state surface or ground waters.

S8. SPILL PLAN

The Permittee shall submit to the Department an update to the existing Spill Control Plan by **March 1, 2010**.

S9. EFFLUENT MIXING STUDY

A. General Requirements

The Permittee shall determine the degree of effluent and receiving water mixing which occurs within the mixing zone (as defined in permit Condition S1.B). The degree of mixing shall be determined during critical conditions, as defined in WAC 173-201A-020 Definitions-“Critical Condition,” or as close to critical conditions as reasonably possible.

The critical condition scenarios shall be established in accordance with *Guidance for Conducting Mixing Zone Analyses* (Ecology, 1996). The dilution ratio shall be measured in the field with dye using study protocols specified in the *Guidance*, Section 5.0

“Conducting a Dye Study,” as well as other protocols listed in subpart C Protocols. The use of mixing models is an acceptable alternative or adjunct to a dye study if the critical ambient conditions necessary for model input are known or will be established with field studies; and if the diffuser is visually inspected for integrity or has been recently tested for performance by the use of tracers. The *Guidance* mentioned above shall be consulted when choosing the appropriate model. The use of models is also required if critical condition scenarios that need to be examined are quite different from the set of conditions present during the dye study.

Validation (and possibly calibration) of a model may be necessary and shall be done in accordance with the *Guidance* mentioned above - in particular subsection 5.2 “Quantify Dilution.” The resultant dilution ratios for acute and chronic boundaries shall be applied in accordance with directions found in the Department’s *Permit Writer’s Manual* (1994) - in particular Chapter VI.

To demonstrate far field or chronic effects, the Budd Inlet Model as approved by the Department, may be used for addressing the Critical Conditions.

A Plan of Study shall be submitted to the Department for review 30 days prior to initiation of the effluent mixing study.

B. Reporting Requirements

If the Permittee has information on the background physical conditions or background concentration of chemical substances (for which there are criteria in Chapter 173-201A WAC) in the receiving water, this information shall be submitted to the Department as part of the Effluent Mixing Report.

The results of the effluent mixing study shall be included in the Effluent Mixing Report, which shall be submitted to the Department for approval no later than **March 1, 2010**.

If the results of the mixing study, toxicity tests, and chemical analysis indicate that the concentration of any pollutant(s) exceeds or has a reasonable potential to exceed the State Water Quality Standards, Chapter 173-201A WAC, the Department may issue a regulatory order to require a reduction of pollutants or modify this permit to impose effluent limitations to meet the Water Quality Standards.

The Permittee shall use some method of fixing and reporting the location of the outfall and mixing zone boundaries [i.e., triangulation off the shore, microwave navigation system, or using Loran or Global Positioning System (GPS) coordinates]. The method of fixing station location and the actual station locations shall be identified in the report.

C. Protocols

The Permittee shall determine the dilution ratio using protocols outlined in the following references, approved modifications thereof, or by another method approved by the Department:

-Akar, P.J. and G.H. Jirka, *Cormix2: An Expert System for Hydrodynamic Mixing Zone Analysis of Conventional and Toxic Multiport Diffuser Discharges*, USEPA Environmental Research Laboratory, Athens, GA, Draft, July 1990.

-Baumgartner, D.J., W.E. Frick, P.J.W. Roberts, and C.A. Bodeen, *Dilution Models for Effluent Discharges*, USEPA, Pacific Ecosystems Branch, Newport, OR, 1993.

-Doneker, R.L. and G.H. Jirka, *Cormix1: An Expert System for Hydrodynamic Mixing Zone Analysis of Conventional and Toxic Submerged Single Port Discharges*, USEPA, Environmental Research Laboratory, Athens, GA, EPA/600-3-90/012, 1990.

-Ecology, *Permit Writer's Manual*, Water Quality Program, Department of Ecology, Olympia WA 98504, July, 1994, including most current addenda.

-Ecology, *Guidance for Conducting Mixing Zone Analyses*, Permit Writer's Manual, (Appendix 6.1), Water Quality Program, Department of Ecology, Olympia WA 98504, October 1996.

-Kilpatrick, F.A., and E.D. Cobb, Measurement of Discharge Using Tracers, Chapter A16, *Techniques of Water-Resources Investigations of the USGS, Book 3, Application of Hydraulics*, USGS, U.S. Department of the Interior, Reston, VA 1985.

-Wilson, J.F., E.D. Cobb, and F.A. Kilpatrick, Fluorometric Procedures for Dye Tracing, Chapter A12. *Techniques of Water-Resources Investigations of the USGS, Book 3, Application of Hydraulics*, USGS, U.S. Department of the Interior, Reston, VA 1986.

S10. RECEIVING WATER AND EFFLUENT STUDY

A. Water Column Sampling

The Permittee shall conduct the following monitoring program of Budd Inlet. Sampling shall occur monthly, with sampling periods separated by at least three weeks. Sampling locations shall include:

1. Capital Lake Outfall
2. Fiddlehead Marina
3. North Outfall
4. Budd Inlet Middle of channel
5. East Bay Marina

For those parameters indicated below with an X, sampling shall be taken at two depths: 1) Two feet from the surface, and 2) two feet off the bottom. The water depth, tide level, and information in accordance with Section S3.C. shall be recorded for each sample location. Sampling shall bracket the slack tide as often as reasonably possible. For consistency of data collection it is best to always sample at the high or always sample at the low slack.

Test	Sampling at Two Depths	Sample Type and Procedure
Fecal Coliforms		Surface Grab Sample ¹

Dissolved Oxygen	X ²	Field – Using meter with routine cross checks by Winkler method
Temperature	X ³	Field Reading – meter
Salinity	X ⁴	Field Reading – meter
pH	X	Field Reading - meter
Secchi Disc Visibility		30 centimeter disc
Nutrients ⁵	X	Grab Samples
Chlorophyll a	X ⁶	Grab Samples

¹ Triplicate samples shall be taken and analyzed for at one station.

² Multiple depths (2, 5, 10, 15 feet and 2 feet off bottom) oxygen concentrations shall be recorded along with the depths of any oxygen gradients (maximum or minimum).

³ In addition to the depths indicated above, the depth of the thermocline shall be recorded.

⁴ In addition to the depths indicated above, the depth of the halocline shall be recorded.

⁵ Nutrients shall include orthophosphate (quarterly sampling), ammonia, and combined nitrate and nitrite. Samples for nitrogen analysis shall be filtered with a 0.45 micron filter. Quarterly Orthophosphate samples are required. Nitrogen parameters analysis shall be conducted once per month.

⁶ Chlorophyll a sampling shall be conducted quarterly at the North Outfall station. In addition to the two depths required above, a sample shall be collected at the Secchi depth.

B. Sediment Sampling

Sediment samples of the upper 2 cm shall be taken at all five locations three times per year. These shall occur at the beginning of the growing season (March – April), near the end (September – October), and once in the winter (January). Samples shall be analyzed for ammonia, nitrate, total kjeldahl nitrogen, orthophosphate, and total phosphorous, percent total solids, and percent total volatile solids.

C. Reporting

Sample results shall be reported on an annual basis, starting **May 15, 2006**. A report shall be submitted summarizing the previous year's data.

S11. ACUTE TOXICITY

A. Testing Requirements

The Permittee shall test final effluent once in the last summer and once in the last winter prior to submission of the application for permit renewal (**March 1, 2010**). The two species listed below shall be used on each sample and the results submitted to the Department as a part of the permit renewal application process. The Permittee shall conduct acute toxicity testing on a series of five concentrations of effluent and a control

in order to be able to determine appropriate point estimates and an NOEC. The percent survival in 100 percent effluent shall also be reported.

Acute toxicity tests shall be conducted with the following species and protocols:

- 1) Fathead minnow, *Pimephales promelas* (96-hour static-renewal test, method: EPA/600/4-90/027F)
- 2) Daphnid, *Ceriodaphnia dubia*, *Daphnia pulex*, or *Daphnia magna* (48 hour static test, method: EPA/600/4-90/027F).

B. Sampling and Reporting Requirements

1. All reports for effluent characterization or compliance monitoring shall be submitted in accordance with the most recent version of Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* in regards to format and content. Reports shall contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data on floppy disk for electronic entry into the Department's database, then the Permittee shall send the disk to the Department along with the test report, bench sheets, and reference toxicant results.
2. Testing shall be conducted on 24-hour composite effluent samples. Samples taken for toxicity testing shall be cooled to 4 degrees Celsius while being collected and shall be sent to the lab immediately upon completion. The lab shall begin the toxicity testing as soon as possible but no later than 36 hours after sampling was ended.
3. All samples and test solutions for toxicity testing shall have water quality measurements as specified in Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* or most recent version thereof.
4. All toxicity tests shall meet quality assurance criteria and test conditions in the most recent versions of the EPA manual listed in subsection A. and the Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If test results are determined to be invalid or anomalous by the Department, testing shall be repeated with freshly collected effluent.
5. Control water and dilution water shall be laboratory water meeting the requirements of the EPA manual listed in subsection A or pristine natural water of sufficient quality for good control performance.
6. The whole effluent toxicity tests shall be run on an unmodified sample of final effluent.
7. The Permittee may choose to conduct a full dilution series test during compliance monitoring in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations must include the ACEC.

8. All whole effluent toxicity tests, effluent screening tests, and rapid screening tests that involve hypothesis testing and do not comply with the acute statistical power standard of 29 percent as defined in WAC 173-205-020 must be repeated on a fresh sample with an increased number of replicates to increase the power.

S12. CHRONIC TOXICITY

A. Testing Requirements

The Permittee shall test final effluent once in the last summer and once in the last winter prior to submission of the application for permit renewal. All of the chronic toxicity tests listed below shall be conducted on each sample. The results of this chronic toxicity testing shall be submitted to the Department as a part of the permit renewal application process (**March 1, 2010**).

The Permittee shall conduct chronic toxicity testing on a series of at least five concentrations of effluent and a control in order to be able to determine appropriate point estimates and an NOEC. This series of dilutions shall include the acute critical effluent concentration (ACEC). The ACEC equals 5.46 percent effluent. The Permittee shall compare the ACEC to the control using hypothesis testing at the 0.05 level of significance as described in Appendix H, EPA/600/4-89/001.

Chronic toxicity tests shall be conducted with the following species and the most recent version of the following protocols:

Saltwater Chronic Toxicity Test Species		Method
Topsmelt	<i>Atherinops affinis</i>	EPA/600/R-95/136
Mysid shrimp	<i>Holmesimysis costata</i> or <i>Mysidopsis bahia</i>	EPA/600/R-95/136 or EPA/600/4-91/003
Pacific oyster/ Mussel	<i>Crassostrea giga Mytilus sp.</i>	EPA/600/R-95/136

The Permittee shall use the West Coast mysid (*Holmesimysis costata*) for toxicity testing unless the lab cannot obtain a sufficient quantity of a West Coast species in good condition in which case the East Coast mysid (*Mysidopsis bahia*) may be substituted.

The Pacific oyster and mussel tests shall be run in accordance with EPA/600/R-95/136 and the bivalve development test conditions in the Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* or most recent version thereof. The lab shall use whichever one of the two species that will give a valid result in each particular test.

B. Sampling and Reporting Requirements

1. All reports for effluent characterization or compliance monitoring shall be submitted in accordance with the most recent version of Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* in regards to format and content. Reports shall contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data on floppy disk for electronic entry into the Department's database, then the Permittee shall send the disk to the Department along with the test report, bench sheets, and reference toxicant results.
2. Testing shall be conducted on 24-hour composite effluent samples. Samples taken for toxicity testing shall be cooled to 4 degrees Celsius while being collected and shall be sent to the lab immediately upon completion. The lab shall begin the toxicity testing as soon as possible but no later than 36 hours after sampling was ended.
3. All samples and test solutions for toxicity testing shall have water quality measurements as specified in Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* or most recent version thereof.
4. All toxicity tests shall meet quality assurance criteria and test conditions in the most recent versions of the EPA manual listed in subsection A. and the Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If test results are determined to be invalid or anomalous by the Department, testing shall be repeated with freshly collected effluent.
5. Control water and dilution water shall be laboratory water meeting the requirements of the EPA manual listed in subsection A or pristine natural water of sufficient quality for good control performance.
6. The whole effluent toxicity tests shall be run on an unmodified sample of final effluent.
7. The Permittee may choose to conduct a full dilution series test in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations must include the ACEC and the CCEC. The ACEC and CCEC may either substitute for the effluent concentration that is closest to it in the dilution series or be an extra effluent concentration.
8. All whole effluent toxicity tests that involve hypothesis testing and do not comply with the chronic statistical power standard of 39 percent as defined in WAC 173-205-020 must be repeated on a fresh sample with an increased number of replicates to increase the power.

S13. COMBINED SEWER OVERFLOWS

A. Discharge Locations

The following is a list of combined sewer overflows (CSOs), which are occasional point sources of pollutants as a result of precipitation events. Discharges from these sites are prohibited except as a result of and during precipitation events. No authorization is given by this permit for discharge from a CSO that causes adverse impacts that threaten characteristic uses of the receiving water as identified in the Water Quality Standards, Chapter 173-201A WAC.

DISCHARGE NO.	LOCATION	RECEIVING WATER
002	Fiddlehead Outfall	Budd Inlet
003 ^a	State and Chestnut Streets	Budd Inlet
004 ^a	Water Street Pump Station	Budd Inlet
^a Contained in the City of Olympia collection system (not operated by the Permittee).		

B. Technology-based Requirements for CSOs

The Permittee shall comply with the following technology-based requirements:

1. The Permittee shall implement proper operation and maintenance programs for the sewer system and all CSO outfalls to reduce the magnitude, frequency, and duration of CSOs. The program shall consider regular sewer inspections; sewer, catch basin, and regulator cleaning; equipment and sewer collection system repair or replacement, where necessary; and disconnection of illegal connections.
2. The Permittee shall implement procedures that will maximize use of the collection system for wastewater storage that can be accommodated by the storage capacity of the collection system in order to reduce the magnitude, frequency, and duration of CSOs.
3. The Permittee shall review and modify, as appropriate, its existing pretreatment program to minimize CSO impacts from the discharges from nondomestic users.
4. The Permittee shall operate the POTW treatment plant at maximum treatable flow during all wet weather flow conditions to reduce the magnitude, frequency, and duration of CSOs. The Permittee shall deliver all flows to the treatment plant within the constraints of the treatment capacity of the POTW.
5. Dry weather overflows from CSOs outfalls are prohibited. Each dry weather overflow must be reported to the permitting authority as soon as the Permittee becomes aware of the overflow. When the Permittee detects a dry weather overflow, the Permittee shall begin corrective action immediately. The Permittee shall inspect the dry weather overflow each subsequent day until the overflow has been eliminated.
6. The Permittee shall implement measures to control solid and floatable materials in CSOs.

7. The Permittee shall implement a pollution prevention program focused on reducing the impact of CSOs on receiving waters.
8. The Permittee shall implement a public notification process to inform citizens of when and where CSOs occur. The process must include (a) a mechanism to alert persons of the occurrence of CSOs and (b) a system to determine the nature and duration of conditions that are potentially harmful for users of receiving waters due to CSOs.
9. The Permittee shall monitor CSO outfalls to characterize CSO impacts and the efficacy of CSO controls. This shall include collection of data that will be used to evaluate the efficacy of the technology-based controls. These data shall include:
 - a. Total number of CSO events and frequency and duration of CSOs for a representative number of events
 - b. Locations and designated uses of receiving water bodies
 - c. Water quality impacts directly related to CSOs (e.g., beach closings, floatables wash-up episodes, fish kills).

C. Water Quality-based Requirements for CSOs

The Permittee shall not discharge any pollutant at a level that causes or contributes to a receiving water excursion above numeric or narrative criteria developed and adopted as part of state of Washington water quality standards.

D. Combined Sewer Overflow Report

By **May 15, 2006**, and **annually** thereafter, the Permittee shall submit a CSO Report to the Department for review and approval, which complies with the requirements of WAC 173-245-090(1). The Permittee shall submit in this report, documentation that demonstrates implementation of each of the nine minimum controls (as listed in S11.B.1 to 9).

E. Emergency Bypass Maintenance (Outfall 002)

The Permittee shall be allowed one four-hour period every six months to discharge fully treated and disinfected secondary effluent through Outfall 002 for the purpose of exercising the associated pumping equipment. The Permittee shall notify the Department at least ten days in advance of conducting this activity, as required by S5.F.1.

S14. OUTFALL EVALUATION

The Permittee shall inspect, once during the permit cycle, the submerged portion of the North outfall line and diffuser to document its integrity and continued function. If conditions allow for a photographic verification, it shall be included in the report. The inspection report shall be submitted to the Department with the application for permit renewal by **March 1, 2010**.

S15. CONTRIBUTING JURISDICTIONS

A. Pretreatment Requirements

1. Each contributing jurisdiction shall ensure that within their jurisdiction, non-domestic wastes shall not be discharged to the sewerage system except in accordance with the requirements of Special Condition S6 pretreatment, including the requirements for such sources to receive a discharge permit.
2. Contributing jurisdictions shall strictly enforce their sewer ordinances and not allow connection to the sanitary sewers of nonpolluted waters including, but not limited to: stormwater, ground water, rain water, condensate, deionized water, non-contact cooling water, and drainage from street, yards, and roofs, unless the Permittee can show that these wastes require and are provided treatment by the POTW.
3. Contributing jurisdictions shall submit to the LOTT Wastewater Facility, the necessary information from their collection system to comply with the pretreatment requirements of Special Condition S6 of this permit.

B. Reporting

1. Unauthorized discharges such as collection system overflows or treatment plant bypasses shall be reported to the LOTT Wastewater facility. LOTT is responsible for immediately notifying the Department and Thurston County Health per S3.E.
2. Unauthorized discharges to the collection system including discharges which are unpermitted or otherwise do not comply with pretreatment requirements shall be immediately reported to the LOTT wastewater facility. LOTT is responsible for notifying the Department. (See Condition S6. of this permit.)
3. If LOTT is unavailable then it is the responsibility of the contributing jurisdiction to notify the Department's Southwest Regional Office, Water Quality Inspector at the 24-hour Emergency Spill Response Number, (360) 407-6300.

C. Prevention of Facility Overloading

Contributing jurisdictions shall submit to the LOTT Wastewater Facility the necessary information from their collections system to comply with the reporting requirements of Special Condition S4.

D. Operation and Maintenance Program

1. Contributing jurisdictions shall institute an adequate operation and maintenance program for their entire sewerage system. This program shall, at a minimum, include:
 - a. An analysis of the collection system identifying and prioritizing problem areas.

- b. A systematic method and schedule for resolving priority problems including, but not limited to, pump station upgrades and repair, line surcharges, existing or potential overflows and bypasses, illegal sewer connections, and leaking service laterals.
 - c. A plan for preventative and routine maintenance.
2. Maintenance records shall be maintained on the collections system and pumping stations. Such records shall clearly show the frequency and type of maintenance performed. These maintenance records shall be available for inspection at all times.

E. Electrical Power Failure

Contributing jurisdictions are responsible to maintain adequate safeguards to prevent the discharge of untreated wastes or wastes not treated in accordance with the requirements of this permit during electrical power failure at the treatment plant and/or lift stations either by means of alternate power sources, standby generator, or retention of inadequately treated wastes.

RECLAIMED WATER CONDITIONS

Beginning on the effective date of this permit and lasting through its expiration date, all Class A reclaimed water produced at the Budd Inlet plant by the Permittee for reclamation under this permit shall comply with the Special Conditions (S) and General Conditions (G) as well as the Reclaimed Water Conditions (R) of this permit.

R1. RECLAIMED WATER LIMITATIONS

All discharges and activities authorized by this permit shall be consistent with the terms and conditions of this permit. The discharge of any of the following pollutants more frequently than, or at a concentration in excess of, that authorized by this permit shall constitute a violation of the terms and conditions of this permit.

The production and use of reclaimed water shall be in compliance with all specific conditions and requirements of the Washington State Water Reclamation and Reuse Standards, 1997, and is subject to the requirements listed below:

Beginning on the effective date and lasting through the expiration date of this permit, the Permittee is authorized to distribute Class A reclaimed water produced at the Budd Inlet plant to public and private entities for commercial and industrial uses and/or to apply reclaimed water to land for irrigation at agronomic rates at locations listed in Condition R4. The distribution and use of reclaimed water is subject to the following treatment and water quality limitations:

Reclaimed Water Limitations: Outfall #005		
<u>Parameter</u>	<u>Average Monthly^a</u>	
Flow	1.5 MGD	Budd Inlet Plant Class A Effluent
Oxidized Wastewater – Secondary Effluent^c		
<u>Parameter</u>	<u>Average Monthly^a</u>	<u>Average Weekly^b</u>
Dissolved Oxygen	Shall be measurably present in secondary effluent at all times	
Disinfected - Reclaimed Water		
<u>Turbidity</u>	<u>Average Monthly^a</u>	<u>Sample Maximum^c</u>
	2 NTU	5 NTU
<u>Total Nitrate (as N)^d</u>	<u>Average Monthly^a</u>	
	10 mg/L	
<u>Total Coliform</u>	<u>7-day Median^e</u>	<u>Sample Maximum^f</u>
	2.2 MPN/ 100 ml	23 MPN/100 ml
pH	Shall be between 6 and 9 standard units at all times	

Distribution System		
Chlorine Residual	<u>Minimum Daily</u>^g 0.5 mg/L	
<p>^a The average monthly effluent limitation is defined as the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.</p>		
<p>^b The average weekly effluent limitation is defined as the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.</p>		
<p>^c The sample maximum is defined as the value not to be exceeded by any single sample.</p>		
<p>^d The Total Nitrate limit only applies from April 1st through October 31st and any other time when the Reclaimed Water is used for irrigation or infiltration.</p>		
<p>^e The median number of total coliform organisms in the reclaimed water after disinfection does not exceed 2.2 per 100 milliliters, as determined from the bacteriological results of the last 7 days for which analyses have been completed.</p>		
<p>^f The number of total coliform organisms shall not exceed 23 per 100 milliliters in any single sample.</p>		
<p>^gA chlorine residual of at least 0.5 mg/L shall be maintained in the reclaimed water during conveyance to the use area, or the storage pond if reclaimed water is not directly piped to the use area.</p>		

R2. RECLAIMED WATER MONITORING REQUIREMENTS

A. Class A Reclaimed Water Monitoring

During the production of Class A reclaimed water, the Permittee shall monitor the reclaimed water according to the following schedule (This is in addition to sampling listed in S2):

Parameter	Units	Sample Point^a	Sampling Frequency	Sample Type
Flow	MGD	Reclaimed water from distribution pumps	Continuous	Recording meter
pH	Standard Units	Disinfected reclaimed water	Daily	Grab ^b
Dissolved Oxygen	mg/L	Secondary effluent	Daily	Grab ^b

Parameter	Units	Sample Point ^a	Sampling Frequency	Sample Type
		Disinfected reclaimed water	Daily	Grab ^b
Temperature	Celsius	Disinfected reclaimed water	Daily	Grab ^b
Turbidity	NTU	Secondary effluent ^a	Daily	Grab ^b
	NTU	Filter Effluent	Continuous	Recording meter ^c
Coagulant	Lbs.	Coagulant feed	Daily	Metered usage
Coagulant Aid	Lbs.	Coagulant feed	Daily	Metered usage
Total Nitrate (as N)	mg/L	Disinfected reclaimed water	Weekly ^e	24-hour composite
Total Coliform ^d	No. of org. per 100 ml	Disinfected reclaimed water	Daily	Grab ^b
Total Chlorine Residual	mg/L	Water Reuse Distribution Line	Daily (when in use)	Grab ^b
^a Secondary effluent shall be taken before coagulated and filtered. Disinfected reclaimed water samples shall be taken before distribution system.				
^b Grab samples shall be taken at the same time daily when wastewater characteristics are the most demanding on the treatment facilities and disinfection processes.				
^c Filter effluent turbidity analysis shall be performed by a continuous recording turbidimeter and shall also be read and recorded at least every four hours.				
^d As an alternate method, total coliform bacteria may be monitored using the ONPUG-MUG test (also called Autoanalysis Colilert System) per latest edition of standard methods.				
^e May be calculated from final effluent monitoring (Condition S2)				

B. Reuse Instrumentation Calibration

Monitoring devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurements are consistent with the accepted industry standard for that type of device. Frequency of calibration shall be in conformance with the manufacturer's recommendations. Calibration records shall be maintained for at least three years.

The Permittee shall also verify the accuracy of on-line turbidimeters at a minimum frequency of at least once every two weeks.

R3. REPORTING AND RECORDKEEPING REQUIREMENTS

The Permittee shall maintain records and report to the Departments of Ecology and Health in accordance with Special Condition S3, and the following conditions. All records shall be retained for a minimum of three years. The falsification of information submitted to the Departments shall constitute a violation of the terms of this permit.

A. Submittal Reporting

Monitoring results shall be submitted monthly. Monitoring data obtained during the previous month shall be summarized and reported on a form provided, or otherwise approved, by the Departments of Health and Ecology, and be received no later than the 15th day of the month following the completed reporting period, unless otherwise specified in this permit.

Monitoring Report forms must be submitted monthly whether or not the facility is reclaiming and distributing reclaimed water. If the reclamation facility was not operating during a given monitoring period, submit the form as required with the words "no reclamation or reuse" entered in place of the reclaimed water monitoring results.

Reclaimed water monitoring reports shall be submitted to the following addresses:

1. Department of Ecology, Municipal Permit Coordinator, Southwest Regional Office, P.O. Box 47775, Olympia, Washington 98504-7775
2. Department of Health, Water Reclamation and Reuse Program, Division of Drinking Water, 1500 West 4th Avenue, Spokane, Washington 99204

B. Reclaimed Water Operational Records

1. Operating records for the reclamation facility shall be maintained at the treatment plant or within a central depository within the Permittee's operating agency. These records shall include: records of all analyses performed, records of operational problems, unit process and equipment breakdowns, and diversions to emergency storage or disposal; and all corrective or preventative action taken
2. Process or equipment failures triggering an alarm that is key to maintaining reliability of reclaimed water quality shall be recorded and maintained as a separate record file. The recorded information shall include the time and cause of failure and corrective action taken.
3. A monthly summary of operating records as specified above shall be submitted with the Discharge Monitoring Report form to the Departments of Ecology and Health at that address listed under R3.A. above.
4. Cross Connection Control Report. An annual cross-connection control report shall be submitted to the Departments of Health by a certified Cross-Control Specialist identifying all devices tested and any cross-connection incidents which occurred in the reuse system. Where end users of the reclaimed water are the utilities or their customers, cross-connection requirements under this permit shall be consistent with or integrated into, existing cross-connection control programs

implemented by the utilities as required by the Department of Health under WAC 246-290.

R4. RECLAIMED WATER DISTRIBUTION AND USE

The Permittee shall monitor the reclamation facility loading and the following conditions.

A. Water Reuse Summary Plan

The Permittee shall prepare a water reuse summary plan, which contains a summary description of the proposed water reuse system from the approved Engineering Report (11/2000), as amended. The plan shall be submitted to the Departments of Health and Ecology before distribution of reclaimed water and updated annually. The annual updates shall be due **January 31** each year, and cover the previous calendar year. A copy of the revised plan shall be submitted to the Departments of Ecology and Health. The plan shall contain, but not be limited to, the following:

1. Description of the reuse distribution system;
2. Identification and current list of all water purveyors, uses, users, and location of reuse sites.
3. Evaluation of reuse sites, estimated volume of reclaimed water use at reuse sites, means of application, and for irrigation or surface percolation uses, the application rates, water balance, expected agronomic uptake, potential to impact ground water or surface water at the site, background water quality and hydrogeological information necessary to evaluate potential water quality impacts.
4. Description of any additional treatment provided to the reclaimed water and any additional distribution system.

B. Authorized Uses and Locations

Beginning on the effective date of this permit and lasting through the expiration date of this permit, the Permittee is authorized to distribute reclaimed water in accordance with the terms and conditions of this permit for authorized uses.

The distribution by the Permittee of reclaimed water that does not meet the treatment, water quality and monitoring requirements established in this permit shall constitute a violation of the terms and conditions of this permit. The use of reclaimed water other than for authorized uses and locations that are listed or will be listed in the next update of a Department of Health and Ecology approved Water Reuse Summary Plan shall constitute a violation of the terms and conditions of this permit. No reclaimed water shall be used or discharged in a drainage basin such that the reclaimed water would cause or contribute to groundwater flooding in the basin.

The Permittee may produce and distribute Class A reclaimed water for the uses listed in the approved engineering report (11/2000), as amended at the locations listed in the approved Water Reuse Summary Plan, and for new locations as described in R4.C.

C. Authorization for New Direct Non-potable Uses of Reclaimed Water

The Permittee may provide reclaimed water for direct beneficial uses at locations not listed in the Water Reuse Summary Plan required by this permit in accordance with the terms and conditions of this permit provided the following conditions are met:

1. Direct beneficial uses and requirements for use are as listed in the Washington State Water Reclamation and Reuse Standards. The class of reclaimed water provided meets or exceeds the minimum requirements for the proposed use. Irrigation uses do not exceed agronomic rates of application.
2. The use area is located within Thurston County or other nearby counties. The water reclamation facility and use areas shall comply with local permitting and land use requirements.
3. The reclaimed water meets all applicable requirements of this permit for the approved class of reclaimed water including source control, treatment, water quality limitations, monitoring, recordkeeping, operation and maintenance, distribution and use.
4. The Permittee lists the new uses in the next annual Water Reuse Summary Plan and a copy of the revised plan is submitted to the Departments of Ecology and Health. The plan is described in R4.A.

D. Revocation of Authorization

The Department may revoke authorization to provide service if the Permittee fails to comply with any requirement in this permit. Determination to revoke authorization shall be based on the risk to public health and safety or threat to waters of the state. The Department may revoke the authorization for any or all reclamation facilities and use areas located within a specific geographic area if, due to a geologic or hydrologic condition, the cumulative effect of the reclamation facilities and use areas causes the violation of state water quality standards. Before revoking the authorization, the Department shall notify the Permittee in writing and provide a reasonable opportunity and time frame to correct the noncompliance.

E. Bypass Prohibited

There shall be no bypassing of untreated or partially treated wastewater from the reclamation plant or any intermediate unit processes to the distribution system or point of use at any time. Diverting flows from the reclaimed water system to the North Outfall does not constitute a bypass provided such diversion does not cause an exceedance of the effluent limitations of Special Condition S1. All reclaimed water being distributed for beneficial use must meet Class A requirements at all times. Water not meeting Class A must be retained for additional treatment by diversion to a bypass storage lagoon or discharged to an authorized wastewater outfall.

The Departments of Ecology and Health shall be notified by telephone within 24 hours of any diversion to a bypass storage lagoon or authorized outfall due to failure of the reclaimed water system.

F. Reliability

The Permittee shall maintain the highest reliability class as described in the Water Reclamation and Reuse Standards which require one of the following features for each of the critical reclamation treatment unit processes of oxidation, coagulation, filtration, and disinfection:

1. Alarms and standby power source
2. Alarms and automatically actuated short-term (24-hour) storage or disposal provisions.
3. Automatically actuated long-term storage or disposal provisions for treated wastewater.

G. Use Area Responsibilities

1. A standard notification sign shall be developed by the Permittee using colors and verbiage approved by the state Department of Health. The signs shall be used in all reclaimed water use areas, consistent with the Water Reclamation and Reuse Standards.
2. Reclaimed water use, including runoff and spray shall be confined to the designated and approved use area.
3. The Permittee shall control industrial and toxic discharges to the sanitary sewer that may affect reclaimed water quality through the approved pretreatment program as listed in Special Condition S6.
4. Where the reclaimed water production, distribution and use areas are under direct control of the Permittee, the Permittee shall maintain control and be responsible for all facilities and activities inherent to the production, distribution and use of the reclaimed water. The Permittee shall ensure that the reuse system operates as approved by the Departments of Health and Ecology.

H. Service and Use Area Contract

Where the reclaimed water additional treatment, distribution system or use area is not under direct control of the Permittee:

1. No reclaimed water shall be distributed by the Permittee or water purveyor without a binding Service and Use Area Contract in place. The contract shall ensure that construction, operation, maintenance, use area responsibilities, and monitoring meet all requirements of the Departments of Health and Ecology. This Service and Use Area contract must be consistent with the requirements of the Water Reclamation and Reuse Standards, 1997.
2. If a standard contract has been approved by the Departments, the Permittee or the water purveyor may certify that the individual contract copies submitted comply with the terms and conditions of the approved standard contract. If no standard contract has been approved, a copy of each Service and Use Area contract must

be submitted to and approved by the Departments of Health and Ecology prior to implementation.

3. The Permittee or the water purveyor shall maintain all contracts for reclaimed water use for the duration of the permit. The Permittee shall inform the Departments of Health and Ecology in writing in the annual update to the Water Reuse Summary Plan of any proposed changes to existing agreements.
4. Unless expressly stated otherwise in an approved contract, the Permittee is responsible for all reuse facilities and activities inherent to the production, distribution and use of the reclaimed water.
5. Each individual Service and Use Area contract shall provide the Permittee and the water purveyor with the authority to regulate distribution, enter and inspect the site and to terminate service of reclaimed water to any customer violating the Washington State Water Reclamation and Reuse Standards. In lieu of specific language in each contract, the Permittee working in conjunction with the contributing jurisdictions, may complete and adopt local ordinances, to include policies and procedures, regulating the distribution and delivery of reclaimed water.

I. Reclaimed Water Ordinance

The Permittee shall complete interlocal agreements with the four contributing jurisdictions, and the contributing jurisdictions shall complete local ordinances to include policies and procedures for the distribution and delivery of reclaimed water. The interlocal agreements and ordinances shall provide the Permittee and jurisdictions with the authority to terminate service of reclaimed water from any jurisdiction or customer violating the Washington State Water Reclamation and Reuse Standards and restrictions outlined in the service and use agreement.

J. Irrigation Use

1. For any irrigation use of reclaimed water, the hydraulic loading rate of reclaimed water shall be determined.
2. Irrigation uses shall conform to all requirements of the Washington State Water Reclamation and Reuse Standards. The Permittee in coordination with contributing jurisdictions shall assure that all customers or authorized personnel using reclaimed water have completed training in the requirements for appropriate use of the water. Users of reclaimed water must ensure that their irrigation systems are in good working order, maintained regularly and kept free of leaks. They must further ensure that their irrigation controllers are set so that reclaimed water is applied appropriately to the landscape, to avoid excessive puddling or runoff of water. Sprinkler heads should be adjusted regularly to avoid application of water to impervious surfaces.

The Permittee or the water purveyor shall maintain all irrigation agreements for lands not owned for the duration of the permit. The Permittee shall inform the Departments of Health and Ecology in writing in the annual update to the Water Reuse Summary Plan of any proposed changes to existing agreements.

K. Wetlands Use

The Permittee or the water purveyor may use reclaimed water for natural wetland enhancement, as long as the following conditions are met and the Department has granted written approval for the specific wetland to be enhanced:

1. Augmentation of wetland hydrologic regime is not to exceed an additional (above background) average annual hydraulic loading rate of 2 cm/day to Category II wetlands and 3 cm/day to Category III and IV wetlands, unless monitoring can demonstrate that a net ecological benefit can be maintained at a higher rate.
2. Average monthly water level elevations shall not increase by more than 10 cm above the pre-augmentation water level.
3. In Accordance with the Water Reclamation and Reuse Standards, the Permittee shall monitor the vegetation cover, plant diversity, macroinvertebrate biomass, amphibian species, fish biomass and species, bird density and species, threatened/endangered density and species once per year during the 1st, 2nd, 4th, 6th, 8th, and 10th growing season. There shall be no more the 25 percent reduction in parameter measurements over the wetland or 50 percent reduction at any one location in the wetland. The Permittee shall submit a report to the Department on the results of the biological monitoring.

L. Other Uses of Reclaimed Water

Effluent used for sewage treatment plant purposes within the bounds of the wastewater treatment facility is not required to meet these standards, except in areas where there is potential public exposure as determined by the Departments of Health and Ecology.

The following uses require modification and public notice of this permit.

1. Groundwater recharge via surface percolation or direct injection.
2. Discharge of reclaimed water to surface waters, unless the discharge is covered by the Special Conditions of this permit.
3. The use of reclaimed water subsequent to its discharge to waters of the state.
4. Any reclamation facilities or uses that are not specifically authorized by this permit.
5. Any facilities or uses if determined necessary by the Department of Ecology or Health for public health or environmental protection.

R5. OPERATION AND MAINTENANCE

The Permittee shall operate and maintain the Budd Inlet treatment facility in accordance with Special Condition S5 and the following conditions.

A. Reclaimed Water System Maintenance

The Permittee and the water purveyors shall institute an adequate operation and maintenance (O&M) program for the entire reclamation system including all facilities and appurtenances owed and controlled by the Permittee, utilities or end users. Maintenance records shall be maintained by the Permittee, utilities or end user on all major electrical and mechanical components of the reclaimed water system, distribution system, and use areas. Such records shall clearly specify the frequency and type of maintenance recommended by the manufacturer and shall show the frequency and type of maintenance performed. These maintenance records shall be available for inspection at all times.

1. At all times, the reclamation system, distribution and use areas shall be maintained to ensure that all equipment is kept in a reliable operating condition.
2. A chlorine residual of at least 0.5 mg/L shall be maintained in the reclaimed water during conveyance from the reclamation system to the use area unless waived by the Departments of Health and Ecology.
3. Maintenance of a chlorine residual is not required in reclaimed water impoundments and storage ponds. At the discretion of the Departments of Health and Ecology, chlorine residual may not be required in reclaimed water distributed from storage ponds.

B. Operation and Maintenance Manual

Besides the items listed in S5.G., the Operation and Maintenance Manual for the Budd Inlet treatment facility shall include the following reclaimed water information:

1. An alarm condition response plan to ensure that no untreated or inadequately treated wastewater will be delivered to the use areas.
2. A discussion of the cross-connection control and inspection program, including who will be responsible for compliance and testing of cross connection control devices.
3. Operational strategies for the reclaimed water use areas that are under direct control of the Permittee.

C. Electrical Power Failure

The Permittee is responsible for maintaining adequate safeguards to prevent the discharge of untreated wastes or wastes not treated in accordance with the requirements of this permit during electrical power failure at the water reclamation plant and/or sewage lift stations either by means of alternate power sources, standby generator, or retention of inadequately treated wastes. The power supply shall be provided with one of the following reliability features to assure that inadequately treated wastewater is not discharged to distribution or use areas:

1. An alarm and a standby power source

2. An alarm and automatically actuated short-term storage or alternative disposal provisions. All equipment other than pump-back equipment shall be either independent of the normal power supply or provided with a standby power supply.
3. Automatically actuated long-term storage or disposal provisions. All equipment other than pump-back equipment shall be either independent of the normal power supply or provided with a standby power supply.

GENERAL CONDITIONS

G1. SIGNATORY REQUIREMENTS

All applications, reports, or information submitted to the Department shall be signed and certified.

- A. All permit applications shall be signed by either a principal executive officer or a ranking elected official.
- B. All reports required by this permit and other information requested by the Department shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - 1. The authorization is made in writing by a person described above and submitted to the Department.
 - 2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
- C. Changes to authorization. If an authorization under paragraph B.2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph B.2 above must be submitted to the Department prior to or together with any reports, information, or applications to be signed by an authorized representative.
- D. Certification. Any person signing a document under this section shall make the following certification:

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

G2. RIGHT OF INSPECTION AND ENTRY

The Permittee shall allow an authorized representative of the Department, upon the presentation of credentials and such other documents as may be required by law:

- A. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit.
- B. To have access to and copy - at reasonable times and at reasonable cost - any records required to be kept under the terms and conditions of this permit.
- C. To inspect - at reasonable times - any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
- D. To sample or monitor - at reasonable times - any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

G3. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon the Department's initiative. However, the permit may only be modified, revoked and reissued, or terminated for the reasons specified in 40 CFR 122.62, 122.64 or WAC 173-220-150 according to the procedures of 40 CFR 124.5.

- A. The following are causes for terminating this permit during its term, or for denying a permit renewal application:
 - 1. Violation of any permit term or condition.
 - 2. Obtaining a permit by misrepresentation or failure to disclose all relevant facts.
 - 3. A material change in quantity or type of waste disposal.
 - 4. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations and can only be regulated to acceptable levels by permit modification or termination [40 CFR Part 122.64(3)].
 - 5. A change in any condition that requires either a temporary or permanent reduction, or elimination of any discharge or sludge use or disposal practice controlled by the permit [40 CFR Part 122.64(4)].
 - 6. Nonpayment of fees assessed pursuant to RCW 90.48.465.
 - 7. Failure or refusal of the permittee to allow entry as required in RCW 90.48.090.
- B. The following are causes for modification but not revocation and reissuance except when the permittee requests or agrees:
 - 1. A material change in the condition of the waters of the state.
 - 2. New information not available at the time of permit issuance that would have justified the application of different permit conditions.

3. Material and substantial alterations or additions to the permitted facility or activities which occurred after this permit issuance.
 4. Promulgation of new or amended standards or regulations having a direct bearing upon permit conditions, or requiring permit revision.
 5. The Permittee has requested a modification based on other rationale meeting the criteria of 40 CFR Part 122.62.
 6. The Department has determined that good cause exists for modification of a compliance schedule, and the modification will not violate statutory deadlines.
 7. Incorporation of an approved local pretreatment program into a municipality's permit.
- C. The following are causes for modification or alternatively revocation and reissuance:
1. Cause exists for termination for reasons listed in A1 through A7 of this section, and the Department determines that modification or revocation and reissuance is appropriate.
 2. The Department has received notification of a proposed transfer of the permit. A permit may also be modified to reflect a transfer after the effective date of an automatic transfer (General Condition G8) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new permittee.

G4. REPORTING A CAUSE FOR MODIFICATION

The Permittee shall submit a new application, or a supplement to the previous application, along with required engineering plans and reports whenever a material change to the facility or in the quantity or type of discharge is anticipated which is not specifically authorized by this permit. This application shall be submitted at least 60 days prior to any proposed changes. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not relieve the Permittee of the duty to comply with the existing permit until it is modified or reissued.

G5. PLAN REVIEW REQUIRED

Prior to constructing or modifying any wastewater control facilities, an engineering report and detailed plans and specifications shall be submitted to the Department for approval in accordance with Chapter 173-240 WAC. Engineering reports, plans, and specifications shall be submitted at least 180 days prior to the planned start of construction unless a shorter time is approved by the Department. Facilities shall be constructed and operated in accordance with the approved plans.

G6. COMPLIANCE WITH OTHER LAWS AND STATUTES

Nothing in this permit shall be construed as excusing the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G7. DUTY TO REAPPLY

The Permittee shall apply for permit renewal by **March 1, 2010**.

G8. TRANSFER OF THIS PERMIT

In the event of any change in control or ownership of facilities from which the authorized discharge emanate, the Permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Department.

A. Transfers by Modification

Except as provided in paragraph (B) below, this permit may be transferred by the Permittee to a new owner or operator only if this permit has been modified or revoked and reissued under 40 CFR 122.62(b)(2), or a minor modification made under 40 CFR 122.63(d), to identify the new Permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

B. Automatic Transfers

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

1. The Permittee notifies the Department at least 30 days in advance of the proposed transfer date.
2. The notice includes a written agreement between the existing and new Permittees containing a specific date transfer of permit responsibility, coverage, and liability between them.
3. The Department does not notify the existing Permittee and the proposed new Permittee of its intent to modify or revoke and reissue this permit. A modification under this subparagraph may also be minor modification under 40 CFR 122.63. If this notice is not received, the transfer is effective on the date specified in the written agreement.

G9. REDUCED PRODUCTION FOR COMPLIANCE

The Permittee, in order to maintain compliance with its permit, shall control production and/or all discharges upon reduction, loss, failure, or bypass of the treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost, or fails.

G10. REMOVED SUBSTANCES

Collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall not be resuspended or reintroduced to the final effluent stream for discharge to state waters.

G11. DUTY TO PROVIDE INFORMATION

The Permittee shall submit to the Department, within a reasonable time, all information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee shall also submit to the Department upon request, copies of records required to be kept by this permit [40 CFR 122.41(h)].

G12. OTHER REQUIREMENTS OF 40 CFR

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

G13. ADDITIONAL MONITORING

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

G14. PAYMENT OF FEES

The Permittee shall submit payment of fees associated with this permit as assessed by the Department.

G15. PENALTIES FOR VIOLATING PERMIT CONDITIONS

Any person who is found guilty of willfully violating the terms and conditions of this permit shall be deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to \$10,000 and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit shall incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to \$10,000 for every such violation. Each and every such violation shall be a separate and distinct offense, and in case of a continuing violation, every day's continuance shall be deemed to be a separate and distinct violation.

G16. UPSET

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

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that: 1) an upset occurred and that the Permittee can identify the cause(s) of the upset; 2) the permitted facility was being properly operated at the time of the upset; 3) the Permittee submitted notice of the upset as

required in Condition S3.E; and 4) the Permittee complied with any remedial measures required under S5 of this permit.

In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

G17. PROPERTY RIGHTS

This permit does not convey any property rights of any sort, or any exclusive privilege.

G18. DUTY TO COMPLY

The Permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

G19. TOXIC POLLUTANTS

The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

G20. PENALTIES FOR TAMPERING

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this Condition, punishment shall be a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or by both.

G21. REPORTING PLANNED CHANGES

The Permittee shall, as soon as possible, give notice to the Department of planned physical alterations or additions to the permitted facility, production increases, or process modification which will result in: 1) the permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b); 2) a significant change in the nature or an increase in quantity of pollutants discharged; or 3) a significant change in the Permittee's sludge use or disposal practices. Following such notice, this permit may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation of the terms and conditions of this permit.

G22. REPORTING ANTICIPATED NON-COMPLIANCE

The Permittee shall give advance notice to the Department by submission of a new application or supplement thereto at least 180 days prior to commencement of such discharges, of any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility or activity which may result in noncompliance with permit limits or conditions.

Any maintenance of facilities, which might necessitate unavoidable interruption of operation and degradation of effluent quality, shall be scheduled during noncritical water quality periods and carried out in a manner approved by the Department.

G23. REPORTING OTHER INFORMATION

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to the Department, it shall promptly submit such facts or information.

G24. REPORTING REQUIREMENTS APPLICABLE TO EXISTING MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL DISCHARGERS

The Permittee belonging to the categories of existing manufacturing, commercial, mining, or silviculture must notify the Department as soon as they know or have reason to believe:

- A. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following “notification levels:”
 - 1. One hundred micrograms per liter (100 µg/l).
 - 2. Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony.
 - 3. Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
 - 4. The level established by the Director in accordance with 40 CFR 122.44(f).
- B. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following “notification levels:”
 - 1. Five hundred micrograms per liter (500µg/L).
 - 2. One milligram per liter (1 mg/L).
 - 3. Ten times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
 - 4. The level established by the Director in accordance with 40 CFR 122.44(f).

G25. COMPLIANCE SCHEDULES

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

FACT SHEET FOR NPDES PERMIT WA0037061
LOTT ALLIANCE
BUDD INLET WASTEWATER TREATMENT PLANT

SUMMARY

This National Pollutant Discharge Elimination System (NPDES) and reclaimed water permit and fact sheet covers the LOTT Alliance Budd Inlet Wastewater Treatment Plant. The discharge to Budd Inlet and the use of reclaimed water that is produced at the Budd Inlet plant is covered by this permit. The reclaimed water section of this permit replaces State Waste Discharge Permit ST 6159. Other reclaimed water permits will be issued to the LOTT Alliance to cover the planned satellite facilities. The first Class A reuse satellite facility, the Hawks Prairie Reclamation plant, which started construction in 2004, will be permitted under a separate reclaimed water permit. Some aspects of the permitted LOTT system, such as pretreatment, will only be covered by this permit, and referenced in the reclaimed water permits.

The LOTT Alliance has requested that the Department of Ecology (Department) increase the limit for winter time (November through March) discharge to Budd Inlet from 22 MGD to 28 MGD. The Department has determined that LOTT has shown that an increase in discharge during the winter time non-critical season would not negatively impact the 303(d) listed Budd Inlet during the impaired season. This evidence to show that water quality would not get worse was developed in the Budd Inlet Scientific Study and demonstrated with the Budd Inlet model. The Department is allowing the modeled increased non-critical season discharge in this permit.

The Department is also imposing a decrease in the summer critical season pollutant discharges in this permit. The pollutants will be limited by new loading limits. The summer time (April through October) discharges of Biochemical Oxygen Demand (BOD) will be decreased from the present 3670 pounds/day to the interim loading level of 1050 pounds/day for June through September. After 2006, when the 2 MGD Hawks Prairie Reclaimed Water Satellite Plant should be on line, the loading limits for the Budd Inlet Plant will decrease to 900 pounds/day in the Spring and Fall, and 671 pounds/day in the Summer. These final limits are performance based limits that were determined per Ecology guidance on setting limits on impaired waterbodies where a Total Maximum Daily Load (TMDL) process has started.

A TMDL is underway for the Deschutes River/Capital Lake/Budd Inlet system. Depending on the outcome of the TMDL, the waste load allowed to be discharged into Budd Inlet from LOTT will change in this permit. The final water quality based limits determined by the TMDL will likely differ from the estimated final limits in this permit. These water quality based final limits cannot be determined until the TMDL is completed. Once the TMDL is complete, this permit will be modified or reissued to incorporate the new waste load limits. The Department is committed to a timely update to this permit once the TMDL is complete.

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*FACT SHEET FOR NPDES PERMIT WA0037061
 LOTT ALLIANCE BUDD INLET WASTEWATER TREATMENT PLANT*

INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the NPDES permits, which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the state of Washington on the basis of Chapter 90.48 Revised Code of Washington (RCW) which defines the Department of Ecology's (Department) authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the state include procedures for issuing permits [Chapter 173-220 Washington Administrative Code (WAC)], technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least 30 days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

GENERAL INFORMATION					
Applicant	LOTT Alliance 111 Market Street NE, Suite 250 Olympia, WA 98501				
Contributing Jurisdictions	<table border="0"> <tr> <td>City of Lacy P.O. Box 3400 Lacey, WA 98509-3400</td> <td>City of Olympia P.O. Box 1967 900 Plum Street SE Olympia, WA 98507-1967</td> </tr> <tr> <td>City of Tumwater 555 Israel Road SW Tumwater, WA 98501</td> <td>Thurston County 2000 Lakeridge Drive SW Olympia, WA 98502-6045</td> </tr> </table>	City of Lacy P.O. Box 3400 Lacey, WA 98509-3400	City of Olympia P.O. Box 1967 900 Plum Street SE Olympia, WA 98507-1967	City of Tumwater 555 Israel Road SW Tumwater, WA 98501	Thurston County 2000 Lakeridge Drive SW Olympia, WA 98502-6045
City of Lacy P.O. Box 3400 Lacey, WA 98509-3400	City of Olympia P.O. Box 1967 900 Plum Street SE Olympia, WA 98507-1967				
City of Tumwater 555 Israel Road SW Tumwater, WA 98501	Thurston County 2000 Lakeridge Drive SW Olympia, WA 98502-6045				
Facility Name and Address	LOTT Alliance Budd Inlet Treatment Plant 500 Adams Street NE Olympia, WA 98501				
Type of Treatment:	Activated Sludge/Advanced Treatment				
Discharge Location	North Outfall to Budd Inlet Latitude: 47° 03' 34" N Longitude: 122° 54' 16" W.				
Water Body ID Number	1224026474620 (390KRD) – Lower Budd Inlet				

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

The LOTT Alliance's Budd Inlet Treatment Plant is a regional facility serving portions of the cities of Lacey, Olympia, Tumwater, and Thurston County. The Budd Inlet secondary treatment facility was largely completed and on-line in August of 1982. Prior to that time a primary treatment facility served the area. The Budd Inlet facility currently provides advanced treatment, more specifically nitrogen removal. Starting in 2006, satellite reuse treatment plants will be added to the system.

The existing permit was issued in December 1993. LOTT has maintained good compliance with this permit. The previous permit was issued in September 1987. That permit included a compliance schedule for construction of advanced treatment (nitrogen removal) facilities and the elimination of the Fiddlehead discharge point. An engineering report addressing hydraulic improvements was approved October 12, 1990. The engineering report addressing nitrogen removal processes was approved February 13, 1990.

Under LOTT's 1987 NPDES Permit, LOTT was required to develop and submit to the Department an interlocal agreement and industrial waste survey. These were preliminary actions to enable the Department to determine whether LOTT would need to establish a pretreatment program. The Department made the determination that LOTT was required to develop a pretreatment program in February 1993. LOTT now maintains an approved pretreatment program in accordance with 40 Code of Federal Regulations (CFR) Section 403.8(b).

LOTT began a comprehensive long-range planning process in September 1995. In November 1998, LOTT completed the *LOTT Wastewater Resource Management Plan*. This plan evaluates alternatives for LOTT to handle future growth. The highly managed alternative was chosen as the preferred option. This option includes building reclaimed water satellite plants. The first satellite plant, the Hawks Prairie plant started construction in 2004. It will start as a 2 MGD Class A reuse plant with potential to be enlarged to 5 MGD. A ground water recharge site is also being built. The Plan calls for later satellite plants to be built in Chambers Prairie and the Tumwater area, following the same pattern as the first plant. Separate reclaimed water permits will be issued for these plants as they are built.

The *Wastewater Resource Management Plan* was approved as a facility plan by the Department in 2004. One reason the Department delayed to approve the plan was that the preferred option included increasing discharges to Budd Inlet during the winter from the Budd Inlet plant. LOTT determined the August 1998 *Budd Inlet Scientific Study Final Report* and subsequent information submitted with the NPDES permit application justified the increase in discharge. The Department evaluation of the information provided has just recently concurred with the LOTT position. The Department is therefore issuing the NPDES permit with an allowance for increase discharges to Budd Inlet during the winter. The Department was also able to approve the whole Management Plan.

The approval of the increase in winter time discharge was a long process that required a lot of scientific study on the part of the Permittee and lengthy review by the Department. The Permittee completed the Budd Inlet Study and developed a sophisticated model in order to show that increasing the winter time flows would not impact the critical season. The dissolved oxygen (DO) levels in Budd Inlet remain rather high during the winter, and then fall off during the summer. The DO levels can drop below the 5.0 mg/l

*FACT SHEET FOR NPDES PERMIT WA0037061
LOTT ALLIANCE BUDD INLET WASTEWATER TREATMENT PLANT*

water quality standard at times, mostly in September of each year. The Permittee used their model to show the DO response in Budd Inlet to increased winter time discharges by the Permittee. The Department has carefully reviewed the results of this effort.

The Department first reviewed the model and the model calibration to confirm they were appropriate. This task was complicated as the Permittee changed the calibration due to model code errors without keeping the Department up to date on the calibration changes. After much information exchange between the parties, the Department approved of the model and calibration at a meeting on May 8, 2003. The Permittee was then requested to run a new model run that would show just the impact of the winter time discharges, while holding all other factors constant. Review of the previous model runs had been complicated by conflicting model run descriptions provided by the Permittee. The Department had trouble confirming what data was actually run through the model and also questioned the reporting of the model results. The Permittee finally clarified what the model runs included and ran the new run requested. The Permittee also supplied more raw data from the runs, which did not include as much averaging as the previous data. The initial reports included too many average results that did not represent the spatial and temporal distribution of DO drops.

After receiving all the information requested, the Department was able to determine that based on the model, increasing the winter time discharge will not have an impact on the critical season. The department therefore was able to approve of the increase and include it in this draft permit.

COLLECTION SYSTEM STATUS

Each jurisdiction is responsible for their respective collection systems. Several major interceptors are identified as LOTT facilities and are owned and maintained by LOTT. As a part of the LOTT planning process, each jurisdiction has produced general sewer plans. At present, the jurisdictions are updating their plans. The following is a list of previously submitted documents.

- LOTT Comprehensive Report: Proposed General Sewer Plan and Treatment Plant Hydraulic Improvements Engineering Report, August 1990 Revision, Approved October 12, 1990.
- City of Olympia - Sanitary Sewer Comprehensive Plan, April 1989, Conditionally Approved October 12, 1990, Conditions completed and verified April 14, 1992.
- City of Lacey - Comprehensive Sanitary Sewer Plan, June 1989, Approved October 12, 1990.
- City of Tumwater - Comprehensive Sanitary Sewer Plan Part B, September 1989, Approved October 12, 1990.
- Thurston County - Sewerage General Plan, April 17, 1990, Approved March 5, 1992.
- City of Tumwater – Sewer Plan Update, June 1996.
- City of Olympia – Sewer Master Plan, September 1997
- City of Lacey – Wastewater Comprehensive Plan, October 1998

Thurston County currently has no collection lines that discharge into the LOTT sewer system. The City of Lacey is served primarily by a conventional collection system including 15 pump stations, over 309,500 linear feet of gravity flow sewer lines serving approximately 12 square miles. Portions of the

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Lacey sewer system have been designated to be served by Septic Tank Effluent Pumping (STEP) systems. The City of Tumwater is served by a conventional sewer system including over 223,894 feet of gravity sewer lines serving approximately 8 square miles. It also includes 15 wastewater pumping stations. The City of Olympia is served primarily by a conventional sewer system serving approximately 18 square miles. The system consists of over 698,212 feet of sewer pipe. The system has 51 lift stations. The system is primarily a separate sewer system; however, approximately 600 acres of the downtown area is served by a combined sewer system.

Since the downtown area within the City of Olympia is served by a combined sewer system, during major storm events the potential exists for a raw sewage overflow. The number of overflow events at CSO locations has remained under one per year, however overflows from manholes and pump stations, have been a continual problem for Olympia during periods of heavy rain.

A combined sewer overflow event occurs at the treatment plant when the equalization basins are full and influent pumps are at capacity. Wastewater is directly discharged to the Fiddlehead outfall. The Department Administrative Order DE 87-S213 required submittal of a Combined Sewer Overflow Reduction Plan. A plan, entitled LOTT Combined Sewer Overflow Reduction Plan "CSO Plan to Plan," was submitted September 29, 1988. The Department comments were dated December 22, 1988. This process was never finalized.

The 1987 permit required submittal of a CSO monitoring plan. This plan was submitted December 15, 1987. During overflow events the operator conducts hourly sampling and estimates the volume. Monitoring and testing has been limited to discharge volumes, frequency, BOD, TSS, and fecal coliforms.

There are two remaining potential combined sewer overflow points within the collection system. Chestnut Street designated as (003) and Water Street (004). The Chestnut Street overflow point consists of a flapper gate and a high level alarm switch located in a manhole above the 42-inch sanitary trunk line descending State Street. At high flows the alarm is triggered and if flow increases it will spill into the flapper gate and drop into the 72-inch Moxlie Creek stormwater discharge pipe. The Water Street pump station overflow consists of two flapper gates located upstream of the pump station bar screens. Discharges would occur into Budd Inlet at Percival Landing. A high level alarm sounds when flow reaches a preset limit. When total plant pumping capacity is exceeded both become combined sewer overflows. Chestnut Street overflowed once in a major storm event in 1990. No evidence exists that an overflow has occurred at the Water Street location.

On September 16, 1991, the LOTT partners entered into an interlocal agreement to study the Infiltration and Inflow (I/I) within the LOTT system. The agreement required the LOTT partners to adopt standards for determining acceptable levels of I/I into the LOTT system which would apply to most areas within the system. These standards were adopted. Procedures were established to measure compliance with those standards, with those measurements to be repeated every 10 years. Each partner's sewer system must conform to those standards by January 1, 2010, or by the time the LOTT facility reaches 85 percent of full capacity. If the systems do not conform the partner must compensate the LOTT partnership for the estimated flows in excess of adopted standards.

The partners contracted for an engineering study to determine and describe the combined sewer area served which would result in no process upsets, no plant bypasses or combined sewer overflows at the LOTT treatment plant. In addition, the engineering study evaluated existing and new information, as necessary, in order to recommend a program of collection system improvements to remove I/I from facilities which exceed the adopted standards. This study estimated that approximately 53 percent of all

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the I/I in the LOTT system from the combined sewer area. Cost effectiveness criteria was developed for I/I removal and monitors were placed.

LOTT has a variety of commercial and small industrial dischargers into the system and a few potential dischargers currently outside the LOTT service area.

TREATMENT PROCESSES

The headworks of the Budd Inlet facility consists of four mechanically cleaned bar screens, two aerated grit removal channels, and five equalization basins (2.25 million gallons) used for storage during storm events. The plant has seven rectangular primary sedimentation tanks and an air scrubber for odor control. Covered activated sludge basins provide secondary treatment. The biological nutrient removal system uses the four-stage Bardenpho process operated to target nitrogen removal. To help the process work, methanol is fed into the system as a readily biodegradable carbon source. The four-stage Bardenpho process includes alternating anoxic and aerobic basins in series which allows the aerobic and anoxic microbiological processes to occur. Ammonia and nitrate/nitrite forms of nitrogen are converted to nitrogen gas. The process requires a very high internal recycle ratio (approximately 4:1) for the process to work. The process consists of the first anoxic basin, the first aeration basin, the second anoxic basin and the second aeration basin. When the biological nitrogen removal process is not in operation (November 1, through March 31), the first and second anoxic basins and the second aeration basin are bypassed. Clarification is provided by four secondary clarifiers. Secondary effluent is disinfected with an ultraviolet (UV) system.

Some of the secondary effluent is directed to the reclaimed water system to produce class A reuse water. The reclaimed water facility at the Budd Inlet treatment plant is designed to have a firm capacity of 700 gallons per minute (about 1 MGD) with a peak capacity of approximately 1000 gpm (1.5 MGD). The reclaimed water facility is within the footprint of the Budd Inlet plant. The facility completed construction was brought on-line in 2004. The facility is described in the approved engineering report *Budd Inlet Reclaimed Water Production Facilities Engineering Report* (November 2000).

The reclaimed water facility will start with final effluent from the Budd Inlet treatment plant. This effluent will have undergone UV disinfection prior to transfer to the reclaimed water filters. Three filter feed pumps will transfer the treated Budd Inlet effluent to the new continuous back wash counter current up flow filters. Polymer will be added to the water prior to filtration. Sodium hypochlorite solution will be used for supplementary disinfection and residual control after the filtration. After the disinfection contact basins, the reclaimed water will be stored in a 140,000 gallon tank before reuse. Filter backwash is returned to the plant influent for treatment. The reclaimed water system will be operated as needed to supply reclaimed water to users. At first, most uses will either be in plant uses or irrigations uses.

Plans and Specifications for the Hawks Prairie reclaimed water satellite plant have been approved. It is planned to be a membrane filtration plant. The flow will be taken from the Martin Way pump station. Screening of the wastewater will be completed at the pump station. Then at the satellite plant, treatment will consist of grit tanks, RAS anoxic channel, RAS mixing box, Aeration basin, membrane tanks, and disinfection. The effluent will then be pumped to wetland ponds and recharge basins. The system will be controlled from the Budd Inlet plant. The reclaimed water produced will be covered under a separate reclaimed water permit.

DISCHARGE OUTFALL

Treated and disinfected effluent is discharged from the Budd Inlet facility into Budd Inlet. Effluent is discharged via the north outfall line (Outfall 001), except in emergencies when the Fiddlehead outfall

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(Outfall 002) is used. Outfall 001 (North) is a 48-inch line that extends 953 feet off of the shoreline with a 250-foot diffuser section with 55 ports. The 4.625-inch diameter ports are spaced 4.5 feet apart on center. Outfall 002 (Fiddlehead) is a 48-inch open-ended pipe located at the Fiddlehead Marina. Improvements to the North outfall were completed in March of 1992. The North line is capable of handling 65 MGD at mean higher high water. Any excess flows are discharged via the 48-inch Fiddlehead line. The Fiddlehead discharge events will generally not occur, or if they do they would be restricted to the months of November through February when Olympia experiences its heaviest rainfall events. Events outside of those months should not occur, and events during those months will only occur during extreme rainfall events.

The Fiddlehead outfall line, in addition to handling CSO events, serves one stormwater line within the Olympia system. Water quality data obtained by the Thurston County Health Department and by LOTT treatment plant staff have shown high fecal coliform counts associated with this discharge on occasion. Plant records indicate adequate disinfection was occurring during those high fecal events and samples taken at the North outfall did not have high fecal counts. This information indicates that the source of the high fecal counts is likely due to an illegal connection into the Olympia stormwater system. Recent investigation has discovered buildings in Olympia that have their sanitary sewers connected into the stormwater system. Corrective action is planned to disconnect these buildings from the storm sewer.

The Port of Olympia operates a groundwater extraction and treatment facility on the Cascade Pole Company site. This facility discharges treated effluent into the LOTT North outfall line. A sample port was installed in the line prior to final tie-in to the LOTT outfall line. A NPDES permit for this facility was issued. The expected flow rate for this facility is approximately 30 gpm or .04 mgd. Effluent limits for the pollutants of concern were based upon meeting water quality criteria at the point of discharge into the LOTT outfall line. The estimated treatment system effluent concentrations presented in the permit application are below acute marine criteria.

RESIDUAL SOLIDS

The Budd Inlet treatment facilities remove solids during the treatment of the wastewater at the headworks (grit and screenings), and at the primary and secondary clarifiers, in addition to incidental solids (rags, scum, and other debris) removed as part of the routine maintenance of the equipment. Grit, rags, scum and screenings are drained and disposed of as solid waste at the local solid waste transfer station. Solids removed from the clarifiers are treated by dissolved air floatation for thickening, anaerobic digestion for stabilization, and centrifuge dewatering for final moisture reduction. Process biosolids are hauled from the plant and land applied.

Solids from the satellite plants will be returned to the sewer system for removal by the Budd Inlet plant. While the satellite plants are planned to produce high quality reuse water, they will not process or stabilize separated solids. A reduced percent of the solids influent to the satellite facilities will be directed to the Budd Inlet Plant. The present influent loading limits of the Budd Inlet plant would eventually be exceeded as satellite plants are built. Because of this, a re-rate of the capacity of the Budd Inlet Plant or new solid handling capacity elsewhere in the system will eventually be required. The *LOTT Wastewater Resource Management Plan* (November 1998) does not cover the future solids processing and stabilization facilities in detail since the additional capacity needed is thought to be outside the 20 year planning window. The outcome of the planned TMDL for Budd Inlet may impact the allowable loading for the Budd Inlet Plant and therefore require reconsideration of solids processing and stabilization facilities within the next 20 years.

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PERMIT STATUS

The previous permit for this facility was issued on December 17, 1993. The previous permit placed effluent limitations on 5-day Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), pH, Fecal Coliform bacteria, Total Inorganic Nitrogen (TIN), and Total Ammonia.

Applications for permit renewal were submitted to the Department on December 19, 1996, September 7, 2001, and on April 30, 2002, and accepted by the Department on August 20, 2002.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility received its last inspection on May 2, 2002.

During the history of the previous permit, the Permittee has remained in compliance, based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department. The Permittee exceeded the maximum monthly permitted discharge of 22 MGD (23.2 MGD) in February 1999, along with some other exceedances in 1999, but the Permittee has been in compliance since.

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the NPDES application and in discharge monitoring reports. From the application the effluent is characterized as follows:

Wastewater Characterization

<u>Parameter</u>	<u>Average Concentration (1998)</u>	<u>Average Concentration (1999)</u>	<u>Average Concentration (2000)</u>
pH	6.5-7.3	6.3-7.6	6.8-7.5
Flow	12.1 MGD	13.4 MGD	10.8 MGD
Temperature (Winter)	14 °C	14 °C	16 °C
Temperature (Summer)	17 °C	19 °C	20 °C
Biochemical Oxygen Demand (BOD ₅)	5.9 mg/L	8.1 mg/L	5.9 mg/L
Fecal Coliform	10 organisms/100 ml	13 organisms/100 ml	6 organisms/100 ml
Total Suspended Solids (TSS)	8.5 mg/L	9.1 mg/L	6.5 mg/L
Ammonia (as N)	0.211 mg/L	0.952 mg/L	0.987 mg/L
Dissolved Oxygen	7.0 mg/L	7.7 mg/L	7.4 mg/L
Total Kjeldahl Nitrogen (TKN)	1.89 mg/L	3.91 mg/L	3.86 mg/L
Nitrate Plus Nitrite Nitrogen	3.07 mg/L	1.75 mg/L	2.04 mg/L
Oil and Grease	5.5 mg/L	5.9 mg/L	6 mg/L
Phosphorus	3.24 mg/L	2.36 mg/L	2.46 mg/L
Cadmium	0.128 µg/L	0.06 µg/L	0.20 µg/L
Chromium	1.28 µg/L	0.62 µg/L	<6.8 µg/L
Copper	19.9 µg/L	17.2µg/L	12.5 µg/L
Lead	1.40 µg/L	1.72 µg/L	7.34µg/L
Nickel	1.60 µg/L	1.59 µg/L	1.56 µg/L
Silver	0.300 µg/L	0.17 µg/L	0.51 µg/L
Zinc	67.2 µg/L	70.3 µg/L	61.0 µg/L
Cyanide	<5 µg/L	<5 µg/L	<0.05 µg/L
Total Phenolic Compounds	<5 µg/L	<5 µg/L	<0.07 µg/L

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Besides the above parameters, organic compound data was submitted with the permit application. All the data is at acceptable levels. Toxic pollutants do not appear in toxic amounts. Toxicity testing and pretreatment data also do not indicate any problems.

The concentration of pollutants in the reclaimed water is expected to meet Class A standards.

SEPA COMPLIANCE

The LOTT Alliance is in compliance with State Environmental Policy Act (SEPA) in their planning. An EIS was completed and included with the *LOTT Wastewater Resource Management Plan* (November 1998).

PROPOSED PERMIT LIMITATIONS

Federal and state regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations for municipal discharges are set by regulation (40 CFR 133, and Chapters 173-220 and 173-221 WAC). Water quality-based limitations are based upon compliance 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 (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992.) The most stringent of these types of limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the state of Washington were determined and included in this permit. The permit includes both interim and final limits. The Department does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. 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. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

The Reclaimed Water Act, Chapter 90.46 RCW requires that reclaimed water be adequately and reliably treated prior to distribution and beneficial use. State regulations require that limitations set forth in a permit issued under Chapter 90.48 RCW must be either technology- or water quality-based. Municipal wastewater must also be treated using all known, available, and reasonable treatment (AKART) and not pollute the waters of the state. The minimum criteria to demonstrate compliance with these requirements are derived from the *Water Reclamation and Reuse Standards* and Chapter 173-221 Washington Administrative Code (WAC).

The permit also includes limitations on the quantity and quality of the reclaimed water that have been determined to protect the quality of the ground water. The approved engineering report includes specific design criteria for this facility. Water quality-based limitations are based upon compliance with the Ground Water Recharge Criteria (RCW 90.46.080) which are the drinking water standards for the parameters noted and the Ground Water Quality Standards (Chapter 173-200 WAC) for other parameters that require regulation.

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DESIGN CRITERIA

In accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria.

The design criteria for this treatment facility are taken from the previous NPDES permit and *LOTT Wastewater Resource Management Plan* (November 1998) prepared by Brown and Caldwell and Associated Firms and are as follows:

Design Standards for LOTT Budd Inlet WWTP.

Parameter	Design Quantity
Monthly average flow (max. month)	28 MGD
Maximum day	55 MGD
Peak hourly flow	64 MGD
BOD ₅ influent loading (max. month)	37,600 lb./day
TSS influent loading (max. month)	35,100 lb./day
Nitrogen influent loading (max. month)	6,420 lb./day

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Municipal wastewater treatment plants are a category of discharger for which technology-based effluent limits have been promulgated by federal and state regulations. These effluent limitations are given in the Code of Federal Regulations (CFR) 40 CFR Part 133 (federal) and in Chapter 173-221 WAC (state). These regulations are performance standards that constitute all known available and reasonable methods of prevention, control, and treatment for municipal wastewater.

The following technology-based limits for pH, fecal coliform, BOD₅, and TSS are taken from Chapter 173-221 WAC are:

Technology-based Limits.

Parameter	Limit
pH:	shall be within the range of 6 to 9 standard units.
Fecal Coliform Bacteria	Monthly Geometric Mean = 200 organisms/100 mL Weekly Geometric Mean = 400 organisms/100 mL
BOD ₅ (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L
TSS (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L

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The following technology-based mass limits are based on WAC 173-220-130(3)(b) and 173-221-030(11)(b).

Winter Season (November – March) BOD₅ monthly effluent mass loadings (lbs/day) were calculated as the maximum monthly influent design loadings (37600 lbs/day) x 0.15 = mass limit 5640 lbs/ day.

The Winter Season BOD₅ weekly average effluent mass loading is calculated as 1.5 x monthly loading = 8460 lbs/day.

TSS Monthly effluent mass loadings (lbs/day) were calculated as the maximum monthly influent design loading (35100 lbs/day) x 0.15 = 5265 lbs/day.

The TSS weekly average effluent mass loading is calculated as 1.5 x monthly loading = 7898 lbs/day.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin-wide total maximum daily loading study (TMDL). When the TMDL is complete, this permit will include water quality-based limitations.

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the state of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used 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 limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The state was issued 91 numeric water quality criteria for the protection of human health by the U.S. EPA (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the state of Washington.

ANTIDEGRADATION

The state of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the

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water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and was able to determine that ambient water quality is lower than the designated classification criteria given in Chapter 173-201A WAC. Inner Budd Inlet in the area of the outfall is listed on the 303(d) list of impaired water bodies. Inner Budd Inlet is a class B water body that is listed as impaired for low dissolved oxygen, pH, some metals, some organics, and PCBs. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to Budd Inlet which is designated as a Class B marine receiving water in the vicinity of the outfall. North of latitude 47° 04'N, (just south of Priest Point Park) Budd Inlet is a Class A water body. Other nearby point source outfalls include the Tamoshan, Seashore Villa, and Boston Harbor wastewater treatment plants on outer Budd Inlet. Significant nearby non-point sources of pollutants include Capitol Lake and Moxlie Creek on inner Budd Inlet. Characteristic uses include the following:

Class B (Good); water supply (industrial, agricultural); stock watering; fish migration; fish and shellfish rearing, spawning and harvesting; wildlife habitat; secondary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

Water quality of this class shall meet or exceed the requirements for most uses.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Fecal Coliforms	100 colonies/100 mL maximum geometric mean and not more than 10 percent of all samples exceeding 200 colonies/100 mL
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Dissolved Oxygen	5.0 mg/L minimum (When natural conditions cause levels near or below 5.0, then the natural levels may be degraded by up to 0.2 mg/L by human-caused activities.)
Temperature	19.0 degrees Celsius maximum or incremental increases above background
pH	7.0 to 8.5 standard units
Turbidity	less than 10 NTUs above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

The receiving water in the vicinity of the outfall has been studied extensively. LOTT completed the *Budd Inlet Scientific Study Final Report* in August 1998. This study has extensive data on the quality of the receiving water. Information on critical conditions, ambient monitoring, bioassays, and sediments are all available. Budd Inlet has had low dissolved oxygen, often reaching the lowest reading in September. Algae blooms, the extent of which are limited by the availability of nutrients in the critical period, often cause the low dissolved oxygen. Since Budd Inlet appears to have no capacity to accept additional nutrients during the critical period, LOTT has a restrictive seasonal limit on nutrient discharges (nitrogen).

Most of Budd Inlet is closed to shellfish harvest. The receiving water is also listed on the 303(d) list of impaired water bodies. The following listings are in the 1998 303(d) list for inner Budd Inlet: 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Benz(a)anthracene, Benzo(a)pyrene, Benzo(b)fluorine, Benzo(b,k)fluoranthenes, Benzo(ghi)perylene, Benzo(k)fluorine, Bis(2-ethylhexyl) phthalate, Butylbenzyl phthalate, Chromium, Chrysene, Copper, Dibenz(a,h)anthracene, Dibenzofuran, Dissolved Oxygen, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Mercury, Naphthalene, PAHs, pH, Phenanthrene, Pyrene, Sediment Bioassay, Total PCBs, and Zinc. The following listings are in the 1998 list for outer Budd Inlet: Dissolved Oxygen, and pH. The cause of many of the organic and metal listings is the Cascade Pole site. The dissolved oxygen listing is about the only one that LOTT may impact, and the permit therefore has limits that protect the dissolved oxygen in the Inlet.

A TMDL has started for this waterbody. The TMDL will cover the Deschutes River, Capitol Lake, and Budd Inlet. It will cover listings for fecal coliform bacteria, temperature, dissolved oxygen, nutrients, pH, and fine sediment. In 2003 the TMDL effort verified some listings, updated datasets, did recon field studies, and scoped further studies. In 2004 the primary field studies were being done. In 2005 analyses and modeling will be done. Reports will follow. Following completion and approval of the TMDL, the waste load allocations developed by the TMDL will be incorporated into the permit. These final water quality based limits may decrease the allowed summer time flows and loadings. These decreases may lower the permitted discharge levels during the critical season, but the actual extent of the decrease cannot be determined until the TMDL is complete.

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

Pollutant concentrations in the proposed discharge exceed water quality criteria with technology-based controls which the Department has determined to be AKART. A mixing zone is authorized in accordance with the geometric configuration, flow restriction, and other restrictions for mixing zones in Chapter 173-201A WAC and are defined as follows for the North Outfall:

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The chronic mixing zone extends 213.5 feet from the last discharge port at both ends of the diffuser section and 215 feet from the centerline of the diffuser section. The acute zone extends 21.4 feet from the ends of the diffuser and 21.5 feet from the centerline of the diffuser pipe.

The dilution factors of effluent to receiving water that occur within these zones have been determined to be 22:1. The permit requires that a mixing study be completed based on present conditions (including the new flow rates) to determine these factors at the critical condition by the use of models and/or dye studies.

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

The ambient background data used for this permit includes the following from 2002 Budd Inlet sample study, for a sample point north of the outfall (Site 3):

Parameter	Value used
Depth	19 feet MLLW
Temperature	8.2 – 18.4° C
Thermocline Depth	2.1 – 11.3 feet
pH (high)	8.2
Dissolved Oxygen	2.8 – 14.6 mg/L
Total Ammonia-N	0.000 – 0.294 mg/L
Fecal Coliform	<1 - 45/100 mL
Conductivity	19.9 – 61.4 mS/cm
Salinity	17.6 – 41.1
Halocline Depth	2.1 – 12 feet
Secchi Depth	4.5 – 16.0 feet
Ortho-Phosphate	0.032 – 0.074 mg/L
NO ₃	0.012 – 0.419 mg/L - N
NO ₂	0.001 – 0.017 mg/L - N
Chlorophyll	<DL – 27.7 mg/m ³
Pheophytin a	<DL – 4.24 mg/m ³

The impacts of dissolved oxygen deficiency, temperature, pH, fecal coliform, ammonia, metals, and other toxics were determined as shown below.

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BOD₅--Under critical conditions there was a prediction of a violation of the dissolved oxygen criterion for the receiving water. As discussed elsewhere in this Fact Sheet, a TMDL for dissolved oxygen in Budd Inlet is underway. In cases like this, it is the Department's practice not to permit any increases in loading to an impaired waterbody that may exacerbate the impairment. Under this guidance, found in the Water Quality Program Permit Writer's Manual (92-109, revised July 2002) Chapter VI, Section 3.3.11, past discharge data from the plant is used to derive a "performance limit" which represents the existing loadings.

In the case of Budd Inlet, the dissolved oxygen impairment is seasonal and therefore the performance limits will be imposed only during the periods where the Department believes it is necessary to prevent a worsening of the existing impairment for dissolved oxygen. During the non-critical (winter) season the technology-based limit for BOD will be imposed.

The process of setting performance limits requires the permit writer to examine historical discharge data for the facility. The specific limit derived depends on the historical data ranges that are used and how the data is sorted by season. In selecting the appropriate ranges of data for use in deriving the performance limits, several factors were considered, including: LOTT's on-going work to reduce dry weather flows through water conservation, and the changes in the characteristics of LOTT's influent due to shutdown of the Miller Brewery. A summary of data used is in Appendix C.

In addition, LOTT is in the process of constructing the Hawks Prairie Reclaimed Water Plant. It is anticipated that that plant will be on-line by April 1, 2006. Once on-line, this facility will be able to remove up to 2 MGD from the collection system for treatment and reuse, therefore reducing the loading to Budd Inlet.

In imposing performance-based limits for BOD for this facility, the Department has taken a phased approach to allow time for LOTT to better understand process control impacts from loss of the brewery influent and time to complete construction of the Hawks Prairie plant. The performance-based limits will be imposed as interim and final limits. The final limits will be modified to water quality based limits when the TMDL is completed. Details on the derivation of the performance limits are given below:

Interim Spring/Fall Season (April, May, & October) BOD₅ monthly effluent mass loadings (lbs/day) are based on the historically achievable pollutant concentrations 10 mg/L and were calculated as the old dry season maximum monthly design flow (15 MGD) x Concentration limit (10 mg/L) x 8.34 (conversion factor) = mass limit 1251 lbs/day.

Interim Spring/Fall Season (April, May, & October) BOD₅ weekly average effluent mass loading is calculated as 1.5 x monthly loading = 1876 lbs/day.

Interim Summer Season (June – September) BOD₅ monthly effluent mass loadings (lbs/day) are based on historically achievable pollutant concentrations of 9 mg/l and a flow of 14 MGD. The loadings were calculated as (14 MGD) x Concentration limit (9 mg/L) x 8.34 (conversion factor) = mass limit 1050 lbs/day.

Interim Summer Season (June – September) BOD₅ weekly average effluent mass loading is calculated as 1.5 x monthly loading = 1576 lbs/day.

Final Spring/Fall Season (April, May, & October) BOD₅ monthly effluent mass loadings (lbs/day) are based on historically achievable pollutant concentrations of 8 mg/l and a flow of 13.5 MGD. The loadings were calculated as the monthly flow (13.5 MGD) x Concentration limit (8 mg/L) x 8.34 (conversion factor) = mass limit 900 lbs/day. This is a 28% decrease from the interim limits and a 75% decrease from the previous permit limits (3670 lbs/day).

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Final Spring/Fall Season (April, May, & October) BOD₅ weekly average effluent mass loading is calculated as 1.5 x monthly loading = 1350 lbs/day.

Final Summer Season (June – September) BOD₅ monthly effluent mass loadings (lbs/day) are based on historically achievable pollutant concentrations of 7 mg/l and a flow of 11.5 MGD. The loadings were calculated as (11.5 MGD) x Concentration limit (7 mg/L) x 8.34 (conversion factor) = mass limit 671 lbs/day. This is a 36% decrease from the interim limits and an 82% decrease from the previous permit limits (3670 lbs/day).

Final Summer Season (June – September) BOD₅ weekly average effluent mass loading is calculated as 1.5 x monthly loading = 1006 lbs/day.

More precise final water quality-based limits for BOD will be identified through the waste load allocation process as part of the TMDL. Once waste load allocations are available, the Department will in a timely manner modify this permit to incorporate those limits.

Nitrogen--The impact of nitrogen in the discharge on the receiving water is being reduced. The previous permit had a critical season concentration limit of 3 mg/L for Total Inorganic Nitrogen (TIN) that applied from April – October. TIN is the sum of the inorganic forms of nitrogen (nitrate, nitrite, and ammonia).

Interim Spring/Fall Season (April, May, & October) TIN monthly effluent mass loadings (lbs/day) are based on the previous permit's critical season concentration limit (3 mg/L) and were calculated as the old dry season maximum monthly design flow (15 MGD) x Concentration limit (3 mg/L) x 8.34 (conversion factor) = mass limit 375 lbs/day.

Interim Summer Season (June – September) TIN monthly effluent mass loadings (lbs/day) are based on the previous permit's critical season concentration limit (3 mg/L) and a flow of 14 MGD. The loadings were calculated as (14 MGD) x Concentration limit (3 mg/L) x 8.34 (conversion factor) = mass limit 350 lbs/day.

Final Spring/Fall Season (April, May, & October) TIN monthly effluent mass loadings (lbs/day) are based on the previous permit's critical season concentration limit (3 mg/L) and a flow of 13.5 MGD and were calculated as the monthly flow (13.5 MGD) x Concentration limit (3 mg/L) x 8.34 (conversion factor) = mass limit 338 lbs/day.

Final Summer Season (June – September) TIN monthly effluent mass loadings (lbs/day) are based on the previous permit's critical season concentration limit (3 mg/L) and a flow of 11.5 MGD. The loadings were calculated as (11.5 MGD) x Concentration limit (3 mg/L) x 8.34 (conversion factor) = mass limit 288 lbs/day.

Temperature--The impact of the discharge on the temperature of the receiving water was modeled by simple mixing analysis at critical condition. The receiving water temperature at the critical condition is 18°C and the effluent temperature is 22°C. The predicted resultant temperature at the boundary of the chronic mixing zone is 18°C and the incremental rise is 0.018°C.

Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, no effluent limitation for temperature was placed in the proposed permit.

pH--Because of the high buffering capacity of marine water, compliance with the technology-based limits of 6 to 9 will assure compliance with the Water Quality Standards for Surface Waters.

Fecal coliform--The numbers of fecal coliform were modeled by simple mixing analysis using the technology-based limit of 400 organisms per 100 ml and a dilution factor of 216.

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Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters with the technology-based limit. Therefore, the technology-based effluent limitation for fecal coliform bacteria was placed in the proposed permit.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The following toxics were determined to be present in the discharge: ammonia, and heavy metals. A reasonable potential analysis (See Appendix C) was conducted on these parameters to determine whether or not effluent limitations would be required in this permit.

The determination of the reasonable potential for ammonia and heavy metals to exceed the water quality criteria was evaluated with procedures given in EPA, 1991 (Appendix C) at the critical condition. The critical condition in this case occurs during summer.

No valid ambient background data was available for heavy metals. A determination of reasonable potential using zero for background resulted in no reasonable potential. Water quality criteria for metals in Chapter 173-201A WAC are based on the dissolved fraction of the metal.

Valid ambient background data was available for ammonia. Calculations using all applicable data resulted in a determination that there is no reasonable potential for this discharge to cause a violation of water quality standards. This determination assumes that the Permittee meets the other effluent limits of this permit.

WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

Acute toxicity tests measure mortality as the significant response to the toxicity of the effluent. Dischargers who monitor their wastewater with acute toxicity tests are providing an indication of the potential lethal effect of the effluent to organisms in the receiving environment.

Chronic toxicity tests measure various sublethal toxic responses such as retarded growth or reduced reproduction. Chronic toxicity tests often involve either a complete life cycle test of an organism with an extremely short life cycle or a partial life cycle test on a critical stage of one of a test organism's life cycles. Organism survival is also measured in some chronic toxicity tests.

Accredited WET testing laboratories have the proper WET testing protocols, data requirements, and reporting format. Accredited laboratories are knowledgeable about WET testing and capable of calculating an NOEC, LC₅₀, EC₅₀, IC₂₅, etc. All accredited labs have been provided the most recent version of the Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* which is referenced in the permit. Any Permittee interested in receiving a copy of this publication may call the Ecology Publications Distribution Center 360-407-7472

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for a copy. The Department recommends that Permittees send a copy of the acute or chronic toxicity sections(s) of their permits to their laboratory of choice.

The WET tests during effluent characterization indicate that no reasonable potential exists to cause receiving water acute toxicity, and the Permittee will not be given an acute WET limit and will only be required to retest the effluent prior to application for permit renewal in order to demonstrate that acute toxicity has not increased in the effluent.

If the Permittee makes process or material changes which, in the Department's opinion, results in an increased potential for effluent toxicity, then the Department may require additional effluent characterization in a regulatory order, by permit modification, or in the permit renewal. Toxicity is assumed to have increased if WET testing conducted for submission with a permit application fails to meet the performance standards in WAC 173-205-020, "whole effluent toxicity performance standard." The Permittee may demonstrate to the Department that changes have not increased effluent toxicity by performing additional WET testing after the time the process or material changes have been made.

The WET tests during effluent characterization indicate that no reasonable potential exists to cause receiving water chronic toxicity, and the Permittee will not be given a chronic WET limit and will only be required to retest the effluent prior to application for permit renewal in order to demonstrate that chronic toxicity has not increased in the effluent.

If the Permittee makes process or material changes which, in the Department's opinion, results in an increased potential for effluent toxicity, then the Department may require additional effluent characterization in a regulatory order, by permit modification, or in the permit renewal. Toxicity is assumed to have increased if WET testing conducted for submission with a permit application fails to meet the performance standards in WAC 173-205-020, "whole effluent toxicity performance standard." The Permittee may demonstrate to the Department that changes have not increased effluent toxicity by performing additional WET testing after the time the process or material changes have been made.

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the effluent is likely to have chemicals of concern for human health. The discharger's high priority status is based on the discharger's status as a major discharger, and the applicant discharges to a waterbody that is 303(d) listed for a regulated chemical.

A determination of the discharge's potential to cause an exceedance of the water quality standards was conducted as required by 40 CFR 122.44(d). The reasonable potential determination was evaluated with procedures given in the Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) and the Department's Permit Writer's Manual (Ecology Publication 92-109, July, 1994). The determination indicated that the discharge has no reasonable potential to cause a violation of water quality standards, thus an effluent limit is not warranted.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

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The Department has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

This Permittee has not had a discharge to ground and therefore no limitations have been required based on potential effects to ground water. The class A reclaimed water produced at the Budd Inlet plant will be used for irrigation at appropriate hydraulic loading rates only. The Department believes the Permittee's irrigation use of this water has no potential to cause a violation of the Ground Water Quality Standards.

COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED DECEMBER 17, 1993

Parameter	Existing Limits	Proposed Limits
Flow	22 mgd winter (November through March); 15 mgd summer (April through October)	28 mgd maximum month average flow
BOD ₅ (November through March)	30 mg/L, 5504 lbs/day monthly average; 45 mg/L, 8256 lbs/day weekly average	30 mg/L, 5640 lbs/day monthly average; 45 mg/L, 8460 lbs/day weekly average
Seasonal BOD ₅ (April through October)	20 mg/L, 3670 lbs/day monthly average; 30 mg/L, 5504 lbs/day weekly average	N/A
Spring/Fall Season BOD ₅ (April, May, & October)	N/A	Interim: 10 mg/L, 1251 lbs/day monthly average; 15 mg/L, 1876 lbs/day weekly average Final: 8 mg/L, 900 lbs/day monthly average; 12 mg/L, 1350 lbs/day weekly average
Summer Season BOD ₅ (June – September)	N/A	Interim: 9 mg/L, 1050 lbs/day monthly average; 13.5 mg/L, 1576 lbs/day weekly average Final: 7 mg/L, 671 lbs/day monthly average; 10.5 mg/L, 1006 lbs/day weekly average
TSS	30 mg/L, 5265 lbs/day monthly average; 45 mg/L, 7898 lbs/day weekly average	30 mg/L, 5265 lbs/day monthly average; 45 mg/L, 7898 lbs/day weekly average
Fecal Coliform Bacteria	200/100 ml monthly average; 400/100 ml weekly average	200/100 ml monthly average; 400/100 ml weekly average

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Parameter	Existing Limits	Proposed Limits
pH	Shall not be outside the range of 6.0 to 9.0	Shall not be outside the range of 6.0 to 9.0
Total Ammonia (as NH ₃ -N) at North Outfall	26 mg/L monthly average; 36 mg/L daily maximum, applies November through March	26 mg/L monthly average; 36 mg/L daily maximum, applies November through March
Total Inorganic Nitrogen (TIN)	3 mg/L monthly average, applies April through October	3 mg/L monthly average, applies April through October Interim: Spring/Fall loading 375 lbs/day, Summer loading 350 lbs/day Final: Spring/Fall loading 338 lbs/day, Summer loading 288 lbs/day
Total Ammonia (as NH ₃ -N) at Fiddlehead	22 mg/L monthly average; 31 mg/L daily maximum, applies November through March	22 mg/L monthly average; 31 mg/L daily maximum, applies November through March
Total Recoverable Copper at Fiddlehead	6 µg/L monthly average; 7.5 daily maximum	6 µg/L monthly average; 7.5 daily maximum
Flow of Reclaimed Water	N/A	1.5 mgd monthly average
D. O. of Reclaimed Water	N/A	Shall be measurably present
Turbidity of Reclaimed Water	N/A	2 NTU monthly average, 5 NTU sample maximum
Total Nitrate of Reclaimed Water	N/A	10 mg/L monthly average, applies April 1 st through October 31st
Total Coliform in Reclaimed Water	N/A	2.2 MPN/100 ml 7-day median; 23 MPN/100 ml sample maximum
pH of Reclaimed Water	N/A	Shall be between 6 and 9 at all times
Chlorine Residual in Reclaimed Water Distribution System	N/A	0.5 mg/L minimum daily

The changes in the limits are mainly due to the addition of reclaimed water limits, the increase in wintertime flows, and the decrease in summer time flows. Final water quality-based permit limits will be determined when the Budd Inlet TMDL is completed.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved. Monitoring is also required to demonstrate that the discharge is not affecting the biota or sediments.

Monitoring of sludge quantity and quality is necessary to determine the appropriate uses of the sludge. Sludge monitoring is required by the current state and local solid waste management program and also by EPA under 40 CFR 503.

The monitoring schedule is detailed in the proposed permit under Condition S.2 and R.2. Specified monitoring frequencies take into account the quantity and variability of discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. The required monitoring frequency is consistent with agency guidance given in the current version of the Department's *Permit Writer's Manual* (July 1994) for activated sludge plants of greater than 5.0 MGD average design flow that discharge to surface water.

The permit also requires monitoring of the Class A reclaimed water that matches the requirements for Class A reclaimed water in the Washington State Water Reclamation and Reuse Standards. Continued monitoring of the receiving water is required, though at a reduced frequency as compared to the existing permit. Receiving water monitoring is continued partly because of the approval for increasing wintertime discharges. This requirement may someday be removed from the permit once information is gathered on the impact of increasing the discharge and after a TMDL is completed for the waterbody.

As a pretreatment POTW, LOTT is required to have influent, final effluent, and sludge sampled for toxic pollutants in order to characterize the industrial input. Sampling is also done to determine if pollutants interfere with the treatment process or pass through the plant to the sludge or the receiving water. The monitoring data can be used by LOTT to develop updated local limits which commercial and industrial users must meet.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. The laboratory at this facility is accredited for:

CHEM I (GENERAL CHEM)		
parameter name	method	reference
Ammonia	4500-NH3 H	SM
Biochemical Oxygen Demand, BOD/CBOD	5210 B	SM
Chemical Oxygen Demand (COD)	5220 D	SM
Chlorophyll	10200 H(2)	SM

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Dissolved Oxygen	4500-O G	SM	
Nitrate	4500-NO3 F	SM	
Nitrate + Nitrite	4500-NO3 F	SM	
Nitrite	4500-NO2 B	SM	
Nitrogen, Total Kjeldahl	A002047	Alpke	
Orthophosphate	4500-P F	SM	
pH	4500-H	SM	
Phosphorus, Total Persulfate	4500-P F	SM	
Solids, Total	2540 B	SM	
Solids, Total Suspended	2540 D	SM	
Solids, Total Volatile	2540 E	SM	
Specific Conductance	2510 B	SM	
Turbidity	2130 B	SM	
MICROBIOLOGY			
parameter name	method	reference	
Fecal Coliforms (m-FC)	9222 D	SM 18	
Heterotrophic Plate Count	9215 B	SM	
Total Coliforms/E. coli (Colilert)	9223 B(2)	SM 20	
Total Coliforms/E. coli (Colisure)	9223 B(2)	SM 20	

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

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The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

PREVENTION OF FACILITY OVERLOADING

Overloading of the treatment plant is a violation of the terms and conditions of the permit. To prevent this from occurring, RCW 90.48.110 and WAC 173-220-150 require the Permittee to take the actions detailed in proposed permit requirement S.4 to plan expansions or modifications before existing capacity is reached and to report and correct conditions that could result in new or increased discharges of pollutants. Condition S.4 restricts the amount of flow.

OPERATION AND MAINTENANCE (O&M)

The proposed permit contains Condition S.5 as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment. The proposed permit requires submission of an updated O&M Manual due to the addition of reclaimed water capability to the plant.

RESIDUAL SOLIDS HANDLING

To prevent water quality problems the Permittee is required in permit Condition S.7 to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and State Water Quality Standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503. The disposal of other solid waste is under the jurisdiction of the Thurston County Health Department.

Requirements for monitoring sewage sludge and recordkeeping are included in this permit. This information will be used to update local limits and is also required under 40 CFR 503.

PRETREATMENT

To provide more direct and effective control of pollutants discharged, LOTT has been delegated permitting, monitoring and enforcement authority for industrial users discharging to their treatment system. The Department oversees the delegated Industrial Pretreatment Program to assure compliance with federal pretreatment regulations (40 CFR Part 403) and categorical standards and state regulations (Chapter 90.48 RCW and Chapter 173-216 WAC).

An industrial user survey may be required to determine the extent of compliance of all industrial users of the sanitary sewer and wastewater treatment facility with federal pretreatment regulations (40 CFR Part 403 and Sections 307(b) and 308 of the Clean Water Act), with state regulations (Chapter 90.48 RCW and Chapter 173-216 WAC), and with local ordinances.

As sufficient data becomes available, the Permittee shall, in consultation with the Department, reevaluate its local limits in order to prevent pass through or interference. Upon determination by the Department that any pollutant present causes pass through or interference, or exceeds established sludge standards, the Permittee shall establish new local limits or revise existing local limits as required by 40 CFR 403.5. In addition, the Department may require revision or establishment of local limits for any pollutant that causes an exceedance of the Water Quality Standards or established effluent limits, or that causes whole effluent toxicity. The determination by the Department shall be in the form of an Administrative Order.

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In order to develop these local limits, the Department will provide environmental criteria or limits for the various pollutants of concern.

The Department may modify this permit to incorporate additional requirements relating to the establishment and enforcement of local limits for pollutants of concern. Any permit modification is subject to formal due process procedures pursuant to state and federal law and regulation.

Annual Submittal of List of Industrial Users

This provision requires the POTW to submit annually a list of existing and proposed SIUs and PSIUs. This requirement is intended to update the Department on an annual basis of the status of industrial users in the POTW's service area, without requiring the POTW to go through the process of performing a formal Industrial User Survey. Although this permit does not require performance of an Industrial User Survey, the Permittee is nevertheless required under the previous section, to take adequate continuous routine measures to identify existing and new industrial discharges.

Duty to Enforce Discharge Prohibitions

The POTW is prohibited from authorizing or permitting an industrial discharger to discharge certain types of waste into the sanitary sewer. Prohibited is acceptance of pollutants which cause pass through or interference. The definitions of pass through and interference are in Appendix B of the fact sheet.

The POTW is prohibited from accepting certain specific types of wastes, namely those which are explosive, flammable, excessively acidic, basic, otherwise corrosive, or obstructive to the system. In addition wastes with excessive BOD, petroleum based oils, or which result in toxic gases are prohibited to be discharged. The regulatory basis for these prohibitions is 40 CFR Part 403, with the exception of the pH provisions which are based on WAC 173-216-060.

Also prohibited are certain types of discharges unless the POTW receives prior authorization from the Department. The discharges include cooling water in significant volumes, stormwater and other direct inflow sources, and wastewaters significantly affecting system hydraulic loading, which do not require treatment.

SPILL PLAN

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The Permittee has developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update this plan and submit it to the Department.

EFFLUENT MIXING STUDY

The Department has estimated the amount of mixing of the discharge within the authorized mixing zone to determine the potential for violations of the Water Quality Standards for Surface Waters (Chapter 173-201A WAC). Condition S.9 of this permit requires the Permittee to more accurately determine the mixing characteristics of the discharge. Mixing will be measured or modeled under conditions specified in the permit to assess whether assumptions made about dilution will protect the receiving water quality outside the allotted dilution zone boundary.

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COMBINED SEWER OVERFLOWS

In accordance with RCW 90.48.480 and Chapter 173-245 WAC, proposed permit Condition S.13 requires the Permittee to submit an annual Combined Sewer Overflow (CSO) report. The Permittee has not had a CSO discharge since 1991 and should not have any in the future.

OUTFALL EVALUATION

Proposed permit condition S.14 requires the Permittee to conduct an outfall inspection and submit a report detailing the findings of that inspection. The purpose of the inspection is to determine the condition of the discharge pipe and diffusers and to determine if sediment is accumulating in the vicinity of the outfall.

CONTRIBUTING JURISDICTIONS

Proposed permit Condition S.15 applies to the contributing jurisdictions of LOTT, namely Lacey, Olympia, Tumwater, and Thurston County. The contributing jurisdictions have pretreatment, reporting, loading, and operation and maintenance requirements in the permit. Each jurisdiction must properly operate and maintain their respective collection systems, and responsibly respond to and report spills.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual municipal NPDES permits issued by the Department.

RECLAIMED WATER (R) CONDITIONS

The Reclaimed Water Act, Chapter 90.46 RCW, authorized the development of Water Reclamation and Reuse Standards for the beneficial use of reclaimed water. These standards were completed in 1997. All reclaimed water permits issued by the Department must specify conditions demonstrating that the wastewater has been adequately and reliably treated to meet the requirements in the Water Reclamation and Reuse Standards, 1997, appropriate for the use. In addition to meeting the water quality limitations, the standards require specific treatment and disinfection requirements beyond those of most conventional wastewater treatment facilities. The standards also require automated alarms, redundancy of treatment units, emergency storage, stringent operator training requirements and public notification of reclaimed water use.

Under RCW 90.46.040, a permit is required for land application of reclaimed water. The permit is issued to the generator of the reclaimed water who may then distribute the water subject to the permitted provisions governing the location, rate, water quality and purposes of use. The permit is issued by the Department under the authority of Chapter 90.48 RCW which requires that a permit be issued before any discharge of pollutants to waters of the state is allowed (RCW 90.48.080 and 90.48.162). RCW 90.46.030 states that the Department of Health may issue a permit for industrial and commercial uses of reclaimed water and that the permits will govern the location, rate, water quality and purposes of use. Per memorandum of agreement between the Department of Ecology and the Department of Health, DOH requirements are included in a single permit issued by the Department.

In addition to the Water Reclamation and Reuse Standards, regulations adopted by the state include procedures for issuing permits (Chapter 173-216 WAC), technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC) and water quality criteria for ground waters (Chapter 173-200 WAC). The Reclaimed Water Act, the Water Reclamation and Reuse Standards and these regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit.

DESCRIPTION OF THE RECLAMATION TREATMENT AND DISTRIBUTION SYSTEM

Treatment Processes

The reclaimed water facility at the Budd Inlet treatment plant is designed to have a firm capacity of 700 gallons per minute (about 1 MGD) with a peak capacity of approximately 1000 gpm (1.5 MGD). The reclaimed water facility is within the footprint of the Budd Inlet plant. The facility has completed construction and came on line in 2004. The facility is described in the approved engineering report *Budd Inlet Reclaimed Water Production Facilities Engineering Report* (November 2000).

The reclaimed water facility starts with final effluent from the Budd Inlet treatment plant. Three filter feed pumps transfer the treated Budd Inlet effluent to the new continuous back wash counter current up flow filters. Polymer is added to the water prior to filtration. Sodium hypochlorite is used for disinfection after the filtration. After the disinfection contact basins, the reclaimed water is stored in a 140,000 gallon tank before reuse. The reclaimed water system will be operated as needed to supply reclaimed water to users. At first, most uses will either be in plant uses or irrigations uses.

The Water Reclamation and Reuse Standards require the generator of the reclaimed water to either have a Department delegated industrial wastewater treatment program or all industries discharging into the generator's wastewater collection system shall have current waste discharge permits issued by the Department. LOTT has a delegated pretreatment program.

The LOTT Budd Inlet treatment plant is a class 4 plant, so adding the reclaimed water facility does not change the overall classification of the plant.

Distribution System and Use Area

The reclaimed water distribution pipeline is a 12-inch ductile iron pipe that was installed during the construction of the Southern Connection Pipeline Project. The distribution pipe goes through downtown Olympia to Heritage Park and Marathon Park. Most of the identified uses of reclaimed water are either in plant uses, for irrigation, or for limited commercial applications. Some of the potential uses of the class A reuse water listed in the engineering report include: LOTT wastewater treatment plant (peak day 131,443 gpd), Heritage Park/Deschutes Parkway irrigation (peak day 42,700 gpd), Marathon Park irrigation (peak day 8,145 gpd), Capitol Lake pump station (peak day 2,880 gpd), Capitol Campus irrigation (peak day 91,893 gpd), Capitol Campus steam plant (peak day 10,000 gpd), and Port of Olympia uses (peak day 48,610 gpd).

For all these uses, appropriate rates, setbacks, signs, and other controls will be in place for the use of class A reclaimed water per the *Washington State Water Reclamation and Reuse Standards* (September 1997).

GROUND WATER

The reuse sites are mostly in areas of shallow ground water. The Budd Inlet plant, Heritage Park, Marathon Park, the pump station and the steam plant are all in areas with ground water approximately 2 to 5 feet below the ground surface. Vertical hydraulic conductivity is estimated at some of the sites to be 0.6 to 2 inches/hour. The soil types include Hoogdal and Xerothents. The Capitol Campus has Indianola and Skipopa soils and a vertical hydraulic conductivity of 6 to 20 inches/hour. All irrigation will be done at agronomic rates to prevent impacts to groundwater and to nearby surface water.

WATER RIGHTS STATUS

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The Permittee is considered the generator of the reclaimed water and RCW 90.46.120 gives the Permittee exclusive right to any water generated by the wastewater treatment facility. Use and distribution of reclaimed water is exempted from the water right permit requirements of RCW 90.03.250 and 90.44.060.

PROPOSED PERMIT LIMITATIONS (R1)

The Reclaimed Water Act, Chapter 90.46 RCW requires that reclaimed water be adequately and reliably treated prior to distribution and beneficial use. State regulations require that limitations set forth in a permit issued under Chapter 90.48 RCW must be either technology- or water quality-based. Municipal wastewater must also be treated using all known, available, and reasonable treatment (AKART) and not pollute the waters of the state. The minimum criteria to demonstrate compliance with these requirements are derived from the *Water Reclamation and Reuse Standards* and Chapter 173-221 WAC.

The permit also includes limitations on the quantity and quality of the reclaimed water that have been determined to protect the quality of the ground water. The approved engineering report includes specific design criteria for this facility. Water quality-based limitations are based upon compliance with the Ground Water Recharge Criteria (RCW 90.46.080) which are the drinking water standards for the parameters noted and the Ground Water Quality Standards (Chapter 173-200 WAC) for other parameters that require regulation.

The more stringent of the water quality-based or technology-based limits are applied to each of the parameters of concern. Each of these types of limits is described in more detail below.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

All waste discharge permits issued by the Department must specify conditions requiring all known available and reasonable methods of prevention, control, and treatment of discharges to waters of the state (WAC 173-216-110). All reclaimed water permits must assure that the effluent has been adequately and reliably treated so that as a result of that treatment, it is suitable for a beneficial use or controlled use that would not otherwise occur and is no longer considered a wastewater (RCW 90.46.010(40)).

The authority and duties for reclaimed water use are in addition to those already provided in law with regard to sewage and wastewater collection, treatment and disposal for the protection of public health and the safety of the state's waters. All waste discharge permits issued by the Department must specify conditions requiring all known available and reasonable methods of prevention, control, and treatment of discharges to waters of the state (WAC 173-216-110). For land application, the permit requires the reclaimed water to be applied at agronomic rates.

The Water Reclamation and Reuse Standards, 1997, outline the requirements for the additional level of treatment technology as well as water quality limits necessary for public health protection during the use of reclaimed water. The standards provide four classes of reclaimed water, Classes A, B, C, and D.

This facility produces Class A reclaimed water. Class A is the highest quality of reclaimed water and therefore provides the broadest range of reuse opportunities. Conversely, Class A reclaimed water requires the most stringent treatment and water quality limitations. The technology and water quality requirements for the production of Class A reclaimed water are as follows:

“Class A Reclaimed Water” is reclaimed water that had been adequately and reliably treated and, at a minimum is, at all times, an oxidized, coagulated, filtered and disinfected wastewater.

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1. Oxidized is defined as wastewater in which the organic matter has been stabilized such that the biochemical oxygen demand (BOD₅) does not exceed 30 mg/L and total suspended solids (TSS) does not exceed 30 mg/L, is nonputrescible and contains dissolved oxygen.
2. Coagulated wastewater is defined as an oxidized wastewater in which colloidal and finely divided suspended matter have been destabilized and agglomerated prior to filtration by the addition of chemicals or by an equally effective method.
3. Filtered wastewater is defined as an oxidized, coagulated wastewater which has been passed through natural undisturbed soils or filter media, such as sand or anthracite, so that the turbidity as determined by an approved laboratory method does not exceed an average operating turbidity of 2 nephelometric turbidity units (NTU), determined monthly, and does not exceed 5 NTU at any time.
4. Adequate disinfection is defined as the median number of total coliform organisms in the wastewater after disinfection does not exceed 2.2 per 100 milliliters, as determined from the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform organisms does not exceed 23 per 100 milliliters in any sample.
5. A 0.5 mg/L chlorine residual shall be maintained in the reclaimed water during conveyance from the reclamation facility to the use areas.

MONITORING REQUIREMENTS (R2)

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, that ground water criteria are not violated, and that reclaimed water limitations are being achieved

RECLAIMED WATER MONITORING

The monitoring and testing schedule is detailed in the proposed permit under Condition R2. Specified monitoring frequencies take into account the quantity and variability of the reclaimed water, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

Monitoring for total nitrogen is being required to further characterize the reclaimed water. This pollutant could have a significant impact on the quality of the ground water.

REPORTING AND RECORDKEEPING (R3)

The conditions of R3 are based on the authority to specify appropriate reporting and recordkeeping requirements to prevent and control the distribution or use of inadequately treated wastewater.

RECLAIMED WATER DISTRIBUTION AND USE (R4)

These permit requirements are based on the Water Reclamation and Reuse Standards authorized in Chapter 90.46 RCW. The standards contain requirements to assure that distribution and use of reclaimed water are protective of public health and the environment at all times. These include prohibitions on bypass, alarms and storage or alternative disposal of substandard water, maintenance of operational records, cross connection control, use area restrictions and enforceable contracts and a local reclaimed water use ordinance.

OPERATIONS AND MAINTENANCE (R5)

The proposed permit contains Condition R.5 as authorized under the Water Reclamation and Reuse Standards and RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture, treatment and protection of public health and the environment.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards, Sediment Quality Standards, or Ground Water Standards, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to protect human health, aquatic life, and the beneficial uses of waters of the state of Washington. The Department proposes that this permit be issued for up to five years, with the clear intention that the effluent limits will be adjusted by permit modification once the Budd Inlet TMDL process is complete. If the TMDL drives significant changes to the permit, the permit may be revoked and a new permit issued instead.

REFERENCES FOR TEXT AND APPENDICES

Brown and Caldwell

- 1998. LOTT Wastewater Resource Management Plan
- 2000. LOTT Wastewater Alliance Budd Inlet Reclaimed Water Production Facilities Engineering Report
- 2002. NPDES Permit Number 003706 Renewal Application LOTT Wastewater Alliance – Budd Inlet Plant Further Response to November 21, 2001 Letter
- 2003. NPDES Permit Number 003706 Renewal Application LOTT Wastewater Alliance – Budd Inlet Plant Additional Information Regarding Basis for Model Runs

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.

LOTT Alliance

- 2001. Renewal Request National Pollutant Discharge Elimination System Permit No. WA-003706-1
- 2002. LOTT Budd Inlet Treatment Plant NPDES Permit WA003706-1
- 1998. Budd Inlet Scientific Study Final Report
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- 1991. Wastewater Engineering, Treatment, Disposal, and Reuse. Third Edition.

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

Washington State Department of Ecology.

- 1994. Permit Writer's Manual. Publication Number 92-109
- 1993. Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems, Ecology Publication # 93-36. 20 pp.
- 1997. Water Reclamation and Reuse Standards, Ecology Publication # 97-23. 73 pp.

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1996. Implementation Guidance for the Ground Water Quality Standards, Ecology Publication # 96-02.

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1976. Chlorination of Wastewater.

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

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on October 8, 2000, October 15, 2000, July 15, 2002, July 21, 2002, July 13, 2003, July 20, 2003, July 18, 2004, and July 25, 2004, in *The Olympian* to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on July 15, 2005, in *The Olympian* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Administrator
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the 30-day comment period to the address above. The request for a hearing shall indicate the interest of the party and the reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least 30 days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within 30 days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6278, or by writing to the address listed above.

This permit and fact sheet were written by Dave Dougherty

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a pollutant on an organism that occurs within a short period of time, usually 48 to 96 hours.

AKART-- An acronym for “all known, available, and reasonable methods of prevention, control, and treatment”.

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.

Average Monthly Discharge Limitation --The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month (except in the case of fecal coliform). The daily discharge is calculated as the average measurement of the pollutant over the day.

Average Weekly Discharge Limitation -- The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. The daily discharge is calculated as the average measurement of the pollutant over the day.

Beneficial Use – The use of reclaimed water, that has been transported from the point of production to the point of use without an intervening discharge to the waters of the state, for a beneficial purpose.

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 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 a receiving water 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 BOD 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.

CBOD₅ – The quantity of oxygen utilized by a mixed population of microorganisms acting on the nutrients in the sample in an aerobic oxidation for five days at a controlled temperature of 20 degrees Celsius, with an inhibitory agent added to prevent the oxidation of nitrogen compounds. The method for determining CBOD₅ is given in 40 CFR Part 136.

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

Chronic Toxicity--The effect of a pollutant 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.

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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.

Combined Sewer Overflow (CSO)--The event during which excess combined sewage flow caused by inflow is discharged from a combined sewer, rather than conveyed to the sewage treatment plant because either the capacity of the treatment plant or the combined sewer is exceeded.

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 to accomplish the purpose of a Compliance Inspection - Without Sampling and 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 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of four 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.

Dilution Factor--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 effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in the Water Reclamation and Reuse Standards, 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 period of time as is feasible.

Groundwater Recharge Criteria -- The contaminant criteria found in the drinking water quality standards adopted by the state board of health pursuant to chapter 43.20 RCW and the department of health pursuant to chapter 70.119A RCW.

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

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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 storm water and, also, leachate from solid waste facilities.

Infiltration and Inflow (I/I)--"Infiltration" means the addition of ground water into a sewer through joints, the sewer pipe material, cracks, and other defects. "Inflow" means the addition of precipitation-caused drainage from roof drains, yard drains, basement drains, street catch basins, etc., into a sewer.

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.

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 Limitation--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.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

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--A volume that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows 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.

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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.

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

Potential Significant Industrial User--A potential significant industrial user is defined as an Industrial User which 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).

The Department may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Reclaimed Water – Effluent derived in any part from sewage from a wastewater treatment system that has been adequately and reliably treated, so that as a result of that treatment, it is suitable for a beneficial use or a controlled use that would not otherwise occur and is no longer considered wastewater.

Reclamation Facility – means an arrangement of devices, structures, equipment, processes, and controls which produce reclaimed water suitable for the intended reuse.

Sample Maximum -- No sample shall 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.

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State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, wetlands, 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 storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Surface Percolation – The controlled application of water to the ground surface for the purpose of replenishing ground water.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Coliform Bacteria—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. A microbiological test is used to detect and enumerate the total coliform group of bacteria in water samples.

Total Suspended Solids (TSS)--Total suspended solids are the particulate materials 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 limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration or mass of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C--TECHNICAL CALCULATIONS

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at <http://www.ecy.wa.gov>.

Performance limits were calculated with the PERFORMLIM spreadsheet using the below data:

Data Summary - Critical Season Months
 S/S/F=Spring/Summer/Fall (April – October)
 S/F=Spring/Fall (April, May, & October)
 S=Summer (June-September)

Date of Data	Flow (MGD)	BOD (mg/l)	BOD (lbs/day)	TIN (mg/l)
2004 S/S/F	9.7	3.9	323	2.5
2004 S/F	9.8	4.7	383	2.6
2004 S	9.6	3.4	278	2.4
2003 S/S/F	9.7	4.9	418	2.2
2003 S/F	11.1	5.7	545	2.0
2003 S	8.7	4.4	323	2.3
2002 S/S/F	9.5	4.2	344	1.4
2002 S/F	10.2	4.0	351	1.6
2002 S	9.1	4.4	339	1.2
2001 S/S/F	9.3	3.8	297	2.2
2001 S/F	9.6	4.1	329	2.3
2001 S	9.0	3.6	273	2.2
2000 S/S/F	10	3.4	284	1.5
2000 S/F	10.4	3.7	320	1.5
2000 S	9.7	3.1	257	1.5
1999 S/S/F	10.4	5.9	511	1.6
1999 S/F	11.3	6.1	567	1.8
1999 S	9.7	5.7	469	1.5
1998 S/S/F	9.7	4.7	395	1.9
1998 S/F	10.3	4.8	427	2.0
1998 S	9.3	4.7	371	1.8
1997 S/S/F	11.7	3.9	379	2.2
1997 S/F	12.5	4.5	468	2.5
1997 S	11.1	3.4	311	2.0
1996 S/S/F	11	4.6	564	2.2
1996 S/F	12.3	5.5	867	1.7
1996 S	10.0	4.0	337	2.5
1995 S/S/F	9.7	2.9	244	2.1
1995 S/F	10.2	3.0	257	1.9
1995 S	9.4	2.7	235	2.3

APPENDIX D--RESPONSE TO COMMENTS

The following comments were received during the Public Notice of Draft Permit held for NPDES permit WA0037061. The public notice lasted from July 15, 2005, through August 14, 2005. A Public Hearing was not held.

Below is a listing of the comments received during the comment period. Two entities submitted comments, LOTT Alliance (the Permittee) and People for Puget Sound. The comments by People for Puget Sound were submitted a day after the comment period closed. Each comment is followed by the corresponding response, permit change (or lack of change), and the Department's justification of the change (or lack of change).

Comments by LOTT Alliance

Permit Comment #1:

Page 7, Section S1.A., second paragraph – The draft Permit defines discharge limitations in two stages:

- Interim Effluent Limitations, effective immediately upon issuance of the Permit through October 31, 2006; and
- Final Effluent Limitations, effective November 1, 2006.

We request the effective date for the Final Effluent Limitations be extended one year, to October 31, 2007, to allow us sufficient experience adjusting to two significant changes to our operating conditions – the new Interim Effluent Limitations, which are based on loadings rather than flows; and the planned start-up of the Hawks Prairie Reclaimed Water Satellite early in 2006.

The new discharge limitations will be very different for us operationally. Getting used to this new structure, and the operational and process control adjustments that will be required to implement it, will take a full year. Our Operations and Process Control staff need to gain experience meeting the new limits, and the seasonal transitions, across all four seasons of the year.

Simultaneous with this new mode of operation will be initial start-up of our very first Reclaimed Water Satellite, scheduled to take place early in 2006. We expect it will be necessary to have several months of testing and fine-tuning before we'll be fully operational and ready to distribute and use Class A Reclaimed Water from that satellite plant. Because the solids from the new Martin Way Reclaimed Water Plant will be sent to the Budd Inlet Treatment Plant, our Operations and Process Control staff will be facing another significant operational adjustment with which we'll need to gain experience across the seasons while we're still getting used to the new discharge limitations. It would be ideal to have at least one year of operation with this new facility, after an initial start-up period, prior to imposing the more restrictive Final Effluent Limitations.

Permit Response #1:

The permit as written allows the interim limits for the 2006 critical season (April-October) and then the final limits become effective for the 2007 critical season. This time schedule should give the Permittee the full year they desire to get used to the new limits and to bring the new satellite plant fully on-line. While the Department realizes that this schedule may be challenging to the Permittee, given the water quality concerns in the 303(d) listed Budd Inlet we expect the Permittee to maintain a high level of performance and adjust to the new limits in a timely manner. With the TMDL for Budd Inlet nearing completion, the Permittee may have even more challenging limits and waste load restrictions in the permit in the next couple of years. No change was made to the permit based on this comment.

Permit Comment #2:

Page 18, Section S4.F. – The May 15th annual due date for LOTT’s flow and loading assessment is consistent with planning dates outlined in LOTT’s Wastewater Resource Management Plan. In actual practice, since the Plan was published, we’ve found it difficult to actually achieve that schedule. We would appreciate having that annual due date changed to August 31.

Permit Response #2:

Moving the due date for the annual flow and loading assessment to August 31st is reasonable. The permit was changed as requested.

Permit Comment #3:

Page 38, Section R1. – The Total Nitrogen limit of 10 mg/L for reclaimed water produced at the Budd Inlet Treatment Plant poses some significant operational challenges during the cold and wet weather months. For the reasons discussed below, we propose changing that limit to a seasonal approach, consistent with other NPDES Permit limitations, with a 10 mg/L Total Inorganic Nitrogen (TIN) limit imposed only from April through October when the reclaimed water is most likely to be used for irrigation.

To attain a Total Nitrogen limit of 10 mg/L for the reclaimed water, the entire Budd Inlet Treatment Plant must remain in Biological Nutrient Removal (BNR) mode all year long, although the nutrient removal process is only required from April through October and only a small percentage of our effluent is being treated to Class A Reclaimed Water standards. Keeping the BNR system operational in the winter is problematic for three reasons – filament growth that affects sludge settleability, flow restriction, and increased energy consumption and chemical use.

- Sludge Settleability – The Budd Inlet Treatment Plant will need to operate at a much longer solids retention time in the winter season to achieve this level of nutrient removal because of the colder temperatures. This will encourage propagation of filamentous bacteria (Microthrix), which has a growth advantage in these environmental conditions. Those bacteria compromise our sludge settleability and increase the risk of suspended solids loss over the effluent weirs of the secondary clarifiers. This then restricts the amount of flow that the Treatment Plant can pump to the secondary clarifiers, particularly during peak flow events. The one useable method in place at this time for control of Microthrix has been a reduction of the mixed liquor suspended solids, which in turn lowers the aeration basin sludge age and allows the system to limit the population of the

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relatively slow-growing *Microthrix*. This control becomes unattainable when complete nitrification/de-nitrification must be maintained.

- The Budd Inlet Treatment Plant is subject to flow spikes during high rainfall periods due to the combined sewer system in Downtown Olympia. With the sludge settleability issue described above, the Total Nitrogen limit of 10 mg/L for reclaimed water during winter months also potentially reduces the amount of influent flow that the Treatment Plant can effectively handle during these times when we need to manage and treat the greatest volumes.
- Continued BNR operation during the wettest months of the year causes a flow bottleneck at the head of the First Anoxic Basins due to the need for maintaining recycle flow rate of four times the influent flow rate to achieve de-nitrification during the winter months. To maintain this recycle rate, and thus the de-nitrification process, the Treatment Plant must run four 200-horsepower pumps at 75-90 percent speed. In addition, it substantially increases the aeration demand. This results in significant increased energy consumption, and associated costs, during some of the peak energy demand periods.

We recognize and appreciate that the Total Nitrogen limit in the Reclaimed Water Permit is intended for protection of groundwater, and that an appropriate limit is needed to avoid potential degradation of groundwater from groundwater recharge or irrigation. Since none of the reclaimed water currently produced at the Budd Inlet Treatment Plant is being used for groundwater recharge, and since irrigation during the winter months is unnecessary, we propose that Ecology consider applying the same kind of seasonal basis to this limit that it applies to our BNR operation. Specifically, we propose a TIN limit of 10 mg/L imposed on LOTT's Class A Reclaimed Water from April through October, and no specified limits during the November through March period. We recognize this would need to be accompanied by appropriate no-irrigation/no-infiltration restrictions on reclaimed water usage from November through March.

If the nitrogen limit for LOTT's reclaimed water could be based on TIN or Nitrate, rather than Total Nitrogen, the water quality criteria for groundwater/drinking water -- which is 10 mg/L Nitrate (NO₃) as identified in WAC 173-200 Table 1) -- could easily be met during the April through October season.

Permit Response #3:

The Total Nitrogen limit was placed in the reclaimed water section of the permit for the protection of groundwater when the reclaimed water is used for a beneficial use that ends up going to ground. The beneficial uses of concern would be infiltration and irrigation. Since none of the reclaimed water is used for infiltration and since irrigation is not needed in the winter, the Nitrogen limit is not needed during the winter months. The permit was changed to a Total Nitrate limit of 10 mg/L and the limit was footnoted as only applying from April through October and any other time when the reclaimed water is used for irrigation or infiltration. With this change, the limit is only effective during the irrigation season. It also gives the Permittee the flexibility to use the water for irrigation in the winter season, if they can still meet the Nitrate limit.

Permit Comment #4:

Page 42, Section R4.B., second paragraph, last sentence – We propose deleting the phrase “or adjacent basin” from that sentence. This places an undue burden on LOTT to define

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characteristics and impacts far from an application site depending upon definition of “drainage basin.”

The term “significantly contribute” in the same sentence is subject to interpretation. Is there a basis for determining what that might mean?

Permit Response #4:

The phrase “or adjacent basin” was deleted as requested. It would not only be a burden to the Permittee to define characteristics and impacts far from an application site, it would be next to impossible for the Department to define a distant impact and enforce this requirement. The Department expects the Permittee to use their reclaimed water in a beneficial manner that will not cause groundwater flooding issues. The Department also removed the word “significantly”, so the requirement is more straightforward. Beneficial use of reclaimed water should not cause or contribute to a problem.

Permit Comment #5:

Page 46, Section R4.K., first paragraph – This provision should not apply for constructed wetlands and should apply only to natural wetlands. We suggest the following rewording “...purveyor may use reclaimed water for *natural* wetland enhancement, as long as...”

Permit Response #5:

The permit was changed as requested, since the requirement is meant for natural wetlands.

Fact Sheet Comments:

Although we realize it is not your intent to make revisions to the Fact Sheet at this stage, there are two items we wish to mention – one of which would be affected by the Total Nitrogen limit modification and the other which we inadvertently left out when providing previous factual comments.

Fact Sheet Comment #1:

Page 19 table – If the Total Nitrogen limit is revised, in accordance with above permit discussion, it will need to be changed in this table as well.

Fact Sheet Response #1:

The limit was revised in the permit, so the fact sheet was changed too.

Fact Sheet Comment #2:

Pages 20-23 tables, Lab Accreditation – LOTT has reorganized some of its Laboratory functions, and we discontinued some services. Accordingly, the accreditation for those functions is no longer being maintained. The items that should be deleted from the tables include:

- BIOASSAY (Toxicity) section – entire section
- CHEM I (General Chemistry) section – delete the following items:

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- Alkalinity, Total (both listings)
 - Chloride
 - Hardness, Total (both listings)
 - Solids, Total Dissolved
 - Total Organic Carbon
- CHEM II (TRACE METALS) – Delete entire metals section

Fact Sheet Response #2:

The list in the fact sheet is a couple years old and was updated as requested.

Comments by People for Puget Sound

Permit Comment #1:

Mixing Zones. People For Puget Sound opposes mixing zones for toxic chemicals, especially persistent bioaccumulative toxic (PBT) chemicals, at all LOTT outfalls. The effluent from LOTT outfalls (as well as from the associated CSO facilities) includes loads of these chemicals. Recent studies by Sandra O’Neal, Peter Ross, and others have proven the adverse effects of PBTs in fish and marine mammals in Puget Sound. The toxic effect of bioaccumulative chemical does not “diminish” within the ecosystem as it might for conventional pollutants such as pH and BOD. It is not protective of the environment for these pollutants to be discharged at elevated concentrations due to the bioaccumulative nature of these chemicals in the sound’s wildlife.

Permit Response #1:

The Department shares your concern with persistent bioaccumulative toxic chemicals and efforts are underway to limit their use. For now, both the Clean Water Act and state regulation allows for mixing zones. No changes were made to the permit based on this comment.

Permit Comment #2:

Sediment Sampling/Receiving Water and Effluent Study. The sediment sampling should include more specific toxic contaminant analysis, including phthalates. The receiving waterbody is listed for a large number of toxic contaminants and some of the toxic load may be from the LOTT discharge.

Permit Response #2:

The permit requires significant receiving water and sediment sampling based on typical contaminants from sewage treatment plants and indicators of problems. Using the Department’s standard screening method from Chapter IX of the *Water Quality Program Permit Writer’s Manual* to determine if sediment sampling is needed, it was determined that no further sampling was required. As you are most likely aware, much of Budd Inlet’s toxic contaminants are due to past practices at the Cascade Pole site. Having the Permittee do additional sampling based on their proximity to a clean-up site is not warranted. No changes were made to the permit based on this comment.

Permit Comment #3:

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Endangered Species. This permit and fact sheets do not address the threatened Chinook salmon and other species that may be adversely impacted by the discharges. What are the results of Section 7 consultations for this permit?

Permit Response #3:

Section 7 consultations are required when a Federal Agency takes an action that may impact endangered species. Since the renewal of this permit is not an action of a Federal Agency, Section 7 consultations are not required. Since this permit renewal imposes more restrictive limits on an existing discharge, there should be no adverse impacts to any species. Compliance with Water Quality standards provides appropriate protection for the water body. No changes were made to the permit based on this comment.

Fact Sheet Comment #1:

Fact Sheet omissions. It is unclear in the Fact Sheet (on page 7) if the wastewater characterization is from effluent at the end of the pipe or from water quality at the edge of the mixing zone. In addition, the pretreatment program should be better described in the Fact Sheet (when the permit is renewed) including a table showing the number and nature of industrial users and volume of pollutants of their effluents.

Fact Sheet Response #1:

The wastewater characterization in the fact sheet is described as data from the application and discharge monitoring reports. Since data from these sources is from the end of the pipe, it should be clear that the data in the table is end of pipe data. The pretreatment program is described in sufficient detail. If additional information is required on the industrial users, the best place for up-to-date information is the annual pretreatment report. Repeating that information in the fact sheet would likely give outdated information by the time the permit is issued. No changes were made to the permit based on this comment.