

## **Appendix B**

ECY Administrative Extension of NPDES Permit

NPDES – 2010 Permit (current)

NPDES – 2010 Permit Fact Sheet

NPDES – 2014 Renewal Application



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

1250 W Alder St • Union Gap, WA 98903-0009 • (509) 575-2490

August 3, 2015

Herb Amick  
City of Leavenworth  
PO Box 287  
Leavenworth, WA 98826

**RE: Administrative Extension for NPDES Permit No. WA0020974 for the City of  
Leavenworth POTW, Effective September 1, 2015**

Dear Mr. Amick:

Your National Pollutant Discharge Elimination System (NPDES) Permit No. WA0020974 is scheduled to expire August 31, 2015. Your application for renewal was received on August 28, 2014, and accepted on September 12, 2014. Because of workload and staffing issues, the Department of Ecology is unable to reissue your permit prior to expiration.

In accordance with Chapter 90.48 of the Revised Code of Washington (RCW), your existing permit and the terms and conditions thereof remain in effect until further notice. You are also required to comply with all water pollution laws and regulations.

If you have any questions or need assistance, please feel free to contact Richard Marcley, your permit manager at 509/454-7250.

Sincerely,

Charles McKinney  
Section Manager  
Water Quality Program

By Certified Mail 7010 0290 0000 7127 5205

c: Bev Poston, Ecology-Olympia





STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

15 W Yakima Ave, Ste 200 • Yakima, WA 98902-3452 • (509) 575-2490

September 16, 2014

Herb Amick  
City of Leavenworth  
PO Box 287  
Leavenworth, WA 98826

**RE: Application for Renewal of National Pollutant Discharge Elimination System (NPDES) Permit No. WA0020974 for City of Leavenworth POTW**

Dear Mr. Amick:

Thank you for your August 28, 2014 application. The application was reviewed and accepted as complete on September 12, 2014.

**WQWebDMR**

Your new permit will require you to submit regularly scheduled Discharge Monitoring Reports (DMRs) by using WQWebDMR which is the Department of Ecology's electronic data reporting system. Step-by-step registration instructions, with screen shots, are provided at the following website: <http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html>.

In accordance with Chapter 90.48 of the Revised Code of Washington (RCW), your existing permit and the terms and conditions thereof remain in effect until further notice. You are also required to comply with all water pollution laws and regulations.

If you have any questions regarding this letter, please contact me at 509/457-7105 or by email at [cynthia.huwe@ecy.wa.gov](mailto:cynthia.huwe@ecy.wa.gov).

Sincerely,

Cindy Huwe  
Permit Coordinator  
Water Quality Program

Enclosure: WQWebDMR Brochure



**Page 1 of 32**  
**Permit No.: WA-002097-4**  
**Issuance Date: July 28, 2010**  
**Effective Date: September 1, 2010**  
**Expiration Date: August 31, 2015**

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
WASTE DISCHARGE PERMIT NO. WA-002097-4**

State of Washington  
DEPARTMENT OF ECOLOGY  
Yakima, Washington 98902

In compliance with the provisions of  
The State of Washington Water Pollution Control Law  
Chapter 90.48 Revised Code of Washington  
and  
The Federal Water Pollution Control Act  
(The Clean Water Act)  
Title 33 United States Code, Section 1342 et seq.

**CITY OF LEAVENWORTH  
PUBLICLY-OWNED TREATMENT WORKS  
PO BOX 287  
LEAVENWORTH, WA 98826**

is authorized to discharge in accordance with the Special and General Conditions that follow.

<u>Plant Location:</u> 1402 Commercial Street Leavenworth, WA 98826	<u>Receiving Water:</u> Wenatchee River, River Mile 24.0  <u>Waterbody ID:</u> 1203156474560
<u>Discharge Location:</u> Latitude: 47.59744 N. Longitude: -120. 6518 W.	<u>Plant Type:</u> Class II, activated sludge oxidation ditch, secondary clarification and ultraviolet (UV) disinfection

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Charles McKinney  
Section Manager  
Water Quality Program  
Central Regional Office  
Washington State Department of Ecology

## TABLE OF CONTENTS

	<u>Page</u>
SUMMARY OF PERMIT REPORT SUBMITTALS.....	4
SPECIAL CONDITIONS.....	5
S1. DISCHARGE LIMITS .....	5
A. Effluent Limits .....	5
B. Mixing Zone Authorization .....	6
S2. MONITORING REQUIREMENTS .....	7
A. Monitoring Schedule.....	7
B. Sampling and Analytical Procedures .....	8
C. Flow Measurement, Field Measurement and Continuous Monitoring Devices .....	9
S3. REPORTING AND RECORDING REQUIREMENTS .....	10
A. Reporting.....	10
B. Records Retention.....	11
C. Recording of Results.....	11
D. Additional Monitoring by the Permittee .....	11
E. Reporting Permit Violations .....	11
1. Immediate Reporting .....	11
2. Twenty-four-hour Reporting.....	12
3. Report Within Five Days .....	12
4. Waiver of Written Reports.....	13
5. All Other Permit Violation Reporting.....	13
6. Report Submittal .....	13
F. Other Reporting .....	13
G. Maintaining a Copy of This Permit .....	14
S4. FACILITY LOADING .....	14
A. Design Criteria .....	14
B. Plans for Maintaining Adequate Capacity .....	14
C. Duty to Mitigate.....	15
D. Notification of New or Altered Sources .....	15
E. Infiltration and Inflow Evaluation .....	15
F. Wasteload Assessment.....	16
S5. OPERATION AND MAINTENANCE.....	17
A. Certified Operator .....	17
B. O & M Program .....	17
C. Short-term Reduction.....	17
D. Electrical Power Failure.....	18
E. Prevent Connection of Inflow .....	18
F. Bypass Procedures .....	18
G. Operations and Maintenance Manual .....	20
H. Collection System Exfiltration Prevention Plan and Testing .....	21
S6. PRETREATMENT .....	21

A.	General Requirements.....	21
B.	Duty to Enforce Discharge Prohibitions.....	22
C.	Wastewater Discharge Permit Required.....	23
D.	Identification and Reporting of Existing, New, and Proposed Industrial Users.....	23
S7.	SOLID WASTES.....	23
A.	Solid Waste Handling.....	23
B.	Leachate.....	24
S8.	APPLICATION FOR PERMIT RENEWAL.....	24
S9.	COMPLIANCE SCHEDULE.....	24
A.	Schedule of TMDL Compliance.....	24
B.	Progress Report.....	24
	GENERAL CONDITIONS.....	24
G1.	SIGNATORY REQUIREMENTS.....	24
G2.	RIGHT OF INSPECTION AND ENTRY.....	26
G3.	PERMIT ACTIONS.....	26
G4.	REPORTING PLANNED CHANGES.....	27
G5.	PLAN REVIEW REQUIRED.....	27
G6.	COMPLIANCE WITH OTHER LAWS AND STATUTES.....	28
G7.	TRANSFER OF THIS PERMIT.....	28
G8.	REDUCED PRODUCTION FOR COMPLIANCE.....	28
G9.	REMOVED SUBSTANCES.....	29
G10.	DUTY TO PROVIDE INFORMATION.....	29
G11.	OTHER REQUIREMENTS OF 40 CFR.....	29
G12.	ADDITIONAL MONITORING.....	29
G13.	PAYMENT OF FEES.....	29
G14.	PENALTIES FOR VIOLATING PERMIT CONDITIONS.....	29
G15.	UPSET.....	30
G16.	PROPERTY RIGHTS.....	30
G17.	DUTY TO COMPLY.....	30
G18.	TOXIC POLLUTANTS.....	30
G19.	PENALTIES FOR TAMPERING.....	31
G20.	COMPLIANCE SCHEDULES.....	31
G21.	CONTRACT REVIEW.....	31
	APPENDIX A.....	32

SUMMARY OF PERMIT REPORT SUBMITTALS

Refer to the Special and General Conditions of this permit for additional submittal requirements. The following table is for quick reference only. Enforceable submittal requirements are contained in the permit narrative.

<b>Permit Section</b>	<b>Submittal</b>	<b>Frequency</b>	<b>First Submittal Date</b>
S3.A.	Discharge Monitoring Report	Monthly	<b>October 15, 2010</b>
S3.E.	Reporting Permit Violations	As necessary	
S4.B.	Plans for Maintaining Adequate Capacity	As necessary	
S4.D.	Notification of New or Altered Sources	As necessary	
S4.E.3.	Infiltration and Inflow Evaluation	2/permit cycle	<b>December 31, 2012</b>
S4.F.1.	Wasteload Assessment	1/permit cycle	<b>August 31, 2014</b>
S5.G.1.	Operations and Maintenance Manual Review	Annually	
S5.G.2.	Operations and Maintenance Manual Update	As necessary	
S5.H.	Exfiltration Prevention Plan	1/permit cycle	<b>December 31, 2012</b>
S5.H.	Exfiltration Prevention Testing	1/permit cycle	<b>August 1, 2013</b>
S5.H.	Exfiltration Prevention Report	1/permit cycle	<b>October 31, 2013</b>
S8.	Application for Permit Renewal	1/permit cycle	<b>August 31, 2014</b>
S9.B.	Compliance Schedule: Progress Report	1/permit cycle	<b>December 31, 2014</b>
G1.	Signatory Requirements	As necessary	
G4.	Reporting Planned Changes	As necessary	
G7.	Notice of Permit Transfer	As necessary	
G10.	Duty to Provide Information	As necessary	
G20.	Reporting Anticipated Noncompliance	As necessary	
G21.	Reporting Other Information	As necessary	
G23.	Contract Submittal	As necessary	

SPECIAL CONDITIONS

In this permit, the word “must” denotes an action that is mandatory and is equivalent to the word “shall” used in previous permits.

S1. DISCHARGE LIMITS

A. Effluent Limits

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 **September 1, 2010** and lasting through **August 31, 2015** the Permittee is authorized to discharge treated municipal wastewater to the Wenatchee River at the permitted location subject to the following limitations:

<b>EFFLUENT LIMITATIONS: OUTFALL # 001</b>		
<b>Parameter</b>	<b>Average Monthly<sup>a</sup></b>	<b>Average Weekly<sup>b</sup></b>
Biochemical Oxygen Demand (5 day)	30 mg/L; 210 lbs/day and 85% minimum removal	45 mg/L; 315 lbs/day
Total Suspended Solids	30 mg/L; 210 lbs/day and 85% minimum removal	45 mg/L; 315 lbs/day
Fecal Coliform Bacteria <sup>c</sup>	200/100 mL	400/100 mL
Temperature	28.8° C maximum daily	
pH	shall not be outside the range of 6.0 to 9.0	
<sup>a</sup> Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month. To calculate the discharge value to compare to the limit, you add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured. See footnote c for fecal coliform calculations.		
<sup>b</sup> Average weekly discharge limitation means 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. See footnote c for fecal coliform calculations.		
<sup>c</sup> To calculate the average monthly and average weekly values for fecal coliforms you must use the geometric mean. Ecology gives directions to calculate this value in publication No. 04-10-020, Information Manual for Treatment Plant Operators available at: <a href="http://www.ecy.wa.gov/pubs/0410020.pdf">http://www.ecy.wa.gov/pubs/0410020.pdf</a>		

**B. Mixing Zone Authorization**

The mixing zone authorized under this permit shall be no larger than that allowed under Chapter 173-201A WAC.

Relative to the Permittee's outfall, the chronic mixing zone shall extend no more than 100 feet upstream, no more than **300 feet** downstream, and 30 feet to the nearest stream bank. The calculated chronic dilution ratio is **37.1:1**.

Relative to the Permittee's outfall, the acute mixing zone shall extend no more than 10 feet upstream and no more than **30.0** feet downstream. The calculated acute dilution ratio is **13:1**.

## S2. MONITORING REQUIREMENTS

### A. Monitoring Schedule

The Permittee must monitor in accordance with the following schedule and must use the laboratory method, detection level (DL), and quantitation level (QL) specified in Appendix A. The Permittee may use alternative methods included in 40 CFR Part 136 if the DL and QL are equivalent to those specified in Appendix A or if the alternative method's DL and QL are low enough to detect the parameter:

Parameter	Units	Minimum Sampling Frequency	Sample Type
<b>(1) Wastewater Influent</b>			
Wastewater Influent means the raw sewage flow. Sample the wastewater entering the headworks of the treatment plant excluding any side-stream returns from inside the plant.			
BOD <sub>5</sub>	mg/L	2/week <sup>a</sup>	24-hour composite <sup>b</sup>
BOD <sub>5</sub>	lbs/day	2/week	calculation <sup>c</sup>
TSS	mg/L	2/week	24-hour composite
TSS	lbs/day	2/week	calculation <sup>c</sup>
FOG	mg/L	1/month <sup>d</sup>	24-hour composite
Parameter	Units	Minimum Sampling Frequency	Sample Type
<b>(2) Final Wastewater Effluent</b>			
Final Wastewater Effluent means wastewater, which is exiting, or has exited, the last treatment process or operation. Typically, this is after or at the exit from the chlorine contact chamber or other disinfection process. The Permittee may take effluent samples for the BOD <sub>5</sub> analysis before or after the disinfection process. If taken after, dechlorinate and reseed the sample.			
Flow	gallons per day	Continuous <sup>e</sup>	measurement
BOD <sub>5</sub>	mg/L	2/week <sup>a</sup>	24-hour composite
BOD <sub>5</sub>	lbs/day	2/week	calculation <sup>c</sup>
BOD <sub>5</sub>	% removal	1/month	calculation <sup>f</sup>
TSS	mg/L	2/week	24-hour composite
TSS	lbs/day	2/week	calculation <sup>c</sup>
TSS	% removal	1/month	calculation <sup>f</sup>
Fecal Coliform	organisms /100 ml	2/week	grab <sup>g</sup>
pH	standard units	5/week <sup>h</sup>	grab
Temperature <sup>i</sup>	°C	5/week	grab
Dissolved Oxygen	mg/L	1/week	grab
Total Ammonia	lbs/day	1/month	24-hour composite
Total Ammonia	lbs/day	1/month	Calculation <sup>b</sup>
Total Phosphorus	mg/L	1/month	24-hour composite

Parameter	Units	Minimum Sampling Frequency	Sample Type
<b>(3) Permit Application Requirements – Final Wastewater Effluent</b>			
Total Kjeldahl Nitrogen	mg/L	Once per year <sup>j</sup>	24-hour composite
Nitrate plus Nitrite N	mg/L	Once per year	24-hour composite
Oil and Grease	mg/L	Once per year	24-hour composite
Total Dissolved Solids	mg/L	Once per year	24-hour composite
Total Hardness	mg/L	Once per year	24-hour composite
a	2/week means collected twice each calendar week, and may exclude weekends and holidays.		
b	24-hour composite means a series of individual samples collected over a 24-hour period into a single container, and analyzed as one sample.		
c	Calculate the loading concurrently with the respective sample, using the following formula: Concentration (in mg/L) X Flow (in MGD) X Conversion Factor (8.34) = lbs/day		
d	1/Month means once every calendar month.		
e	Continuous means uninterrupted except for brief lengths of time for calibration, for power failure, or for unanticipated equipment repair or maintenance. The Permittee must sample <b>Daily</b> when continuous monitoring is not possible.		
f	Calculate the Percent (%) removal of BOD and TSS using the following algorithm (concentrations in mg/L): (Average Monthly Influent Concentration - Average Monthly Effluent Concentration)/Average Monthly Influent Concentration.		
g	Grab means an individual sample collected over a fifteen (15) minute, or less, period.		
h	5/week means collected once each working day of the week. If an alternative 10-hour day, 40-hour workweek is in place, than no less than four samples per week.		
i	Temperature grab sampling must occur when the effluent is at or near its daily maximum temperature, which is usually in the late afternoon. If temperature is measured continuously, the Permittee must determine and report a daily maximum from half-hour measurements in a 24-hour period. To determine the daily average, use the temperature on the half-hour from the chart for the twenty-four (24) hour period and calculate the average of the values. Continuous monitoring instruments must achieve an accuracy of 0.2 degrees C and the Permittee must verify accuracy annually.		
j	Sampling must rotate on a quarterly basis through the permit term, e.g. spring summer, fall, and winter.		

#### B. Sampling and Analytical Procedures

Samples and measurements taken to meet the requirements of this permit must represent the volume and nature of the monitored parameters. The Permittee must conduct representative sampling of any unusual discharge or discharge condition, including bypasses, upsets, and maintenance-related conditions that may affect effluent quality.

Sampling and analytical methods used to meet the monitoring requirements specified in this permit must conform to the latest revision of the Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136.

C. Flow Measurement, Field Measurement and Continuous Monitoring Devices

The Permittee must:

Select and use appropriate flow measurement, field measurement, and continuous monitoring devices and methods consistent with accepted scientific practices.

1. Install, calibrate, and maintain these devices to ensure the accuracy of the measurements is consistent with the accepted industry standard and the manufacturer's recommendation for that type of device.
2. If the Permittee uses micro-recording temperature devices known as thermistors it must calibrate the devices using protocols from Ecology's Quality Assurance Project Plan Development Tool (Continuous Temperature Sampling Protocols for the Environmental Monitoring and Trends). This document is available online at <http://www.ecy.wa.gov/programs/eap/qa/docs/QAPPtool/Mod6%20Ecology%20SO Ps/Protocols/ContinuousTemperatureSampling.pdf>. Calibration as specified in this document is not required if the Permittee uses recording devices which are certified by the manufacturer.
3. Use field measurement devices as directed by the manufacturer and do not use reagents beyond their expiration dates.
4. Calibrate these devices at the frequency recommended by the manufacturer.
5. Calibrate flow monitoring devices at a minimum frequency of at least one calibration per year.
6. Maintain calibration records for at least three years.

D. Laboratory Accreditation

The Permittee must ensure that all monitoring data required by Ecology is prepared by a laboratory registered or accredited under the provisions of chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. Flow, temperature, settleable solids, conductivity, pH, and internal process control parameters are exempt from this requirement. The Permittee must obtain accreditation for conductivity and pH if it must receive accreditation or registration for other parameters. Crops and soils data are process control parameters, which do not require preparation by an accredited laboratory. However, the Permittee must obtain this data from a reputable agricultural test lab that is an active participant in a nationally recognized agricultural laboratory proficiency-testing program.

#### E. Request for Reduction in Monitoring

The Permittee may request a reduction of the sampling frequency after twelve (12) months of monitoring. Ecology will review each request and at its discretion grant the request through a permit modification or when it reissues the permit.

The Permittee must:

1. Provide a written request.
2. Clearly state the parameters for which it is requesting reduced monitoring.
3. Clearly state the justification for the reduction.

### S3. REPORTING AND RECORDING REQUIREMENTS

The Permittee must monitor and report in accordance with the following conditions. Falsification of information submitted to Ecology is a violation of the terms and conditions of this permit.

#### A. Reporting

The first monitoring period begins on **September 1, 2010** of the permit. The Permittee must:

1. Submit monitoring results each month.
2. Summarize, report, and submit monitoring data obtained during each monitoring period on a Discharge Monitoring Report (DMR) form provided, or otherwise approved, by Ecology.
3. Submit DMR forms monthly whether or not the facility was discharging. If the facility did not discharge during a given monitoring period, submit the form as required with the words "NO DISCHARGE" entered in place of the monitoring results.
4. Ensure that DMR forms **are postmarked or received by** Ecology no later than the 15th day of the month following the completed monitoring period, unless otherwise specified in this permit.
5. Submit priority pollutant analysis data no later than forty-five (45) days following the monitoring.
6. Send report(s) to Ecology at:

**Water Quality Permit Coordinator  
Department of Ecology  
15 West Yakima Avenue, Suite 200  
Yakima, WA 98902**

**B. Records Retention**

The Permittee must retain records of all monitoring information for a minimum of three (3) years. Such information must include all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit. The Permittee must extend this period of retention during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology.

**C. Recording of Results**

For each measurement or sample taken, the Permittee must record the following information:

1. The date, exact place, method, and time of sampling or measurement.
2. The individual who performed the sampling or measurement.
3. The dates the analyses were performed.
4. The individual who performed the analyses.
5. The analytical techniques or methods used.
6. The results of all analyses.

**D. Additional Monitoring by the Permittee**

If the Permittee monitors any pollutant more frequently than required by Condition S2 of this permit, then the Permittee must include the results of such monitoring in the calculation and reporting of the data submitted in the Permittee's DMR.

**E. Reporting Permit Violations**

The Permittee must take the following actions when it violates or is unable to comply with any permit condition:

- a. Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance and correct the problem.
- b. If applicable, immediately repeat sampling and analysis. Submit the results of any repeat sampling to Ecology within thirty (30) days of sampling.

**1. Immediate Reporting**

The Permittee must report any failure of the disinfection system immediately to the Department of Ecology's Regional Office 24-hr. number listed below:

Central Regional Office

509-575-2490

The Permittee must report any failure of the disinfection system, any collection system overflows, or any plant bypass discharging to a waterbody used as a source of drinking water immediately to the Department of Ecology and the Department of Health, Drinking Water Program at the numbers listed below:

Central Regional Office	509-575-2490
Department of Health,	1-800-521-0323 (business hours)
Drinking Water Program	1-877-481-4901 (after business hours)
Chelan Douglas Health	509-886-6400 (M-F, 8-5)
District	509-886-6499 (after business hours)

## **2. Twenty-four-hour Reporting**

The Permittee must report the following occurrences of noncompliance by telephone, to Ecology at the telephone numbers listed above, within 24 hours from the time the Permittee becomes aware of any of the following circumstances:

- a. Any noncompliance that may endanger health or the environment, unless previously reported under subpart 1, above.
- b. Any unanticipated **bypass** that exceeds any effluent limitation in the permit (See Part S4.B., “Bypass Procedures”).
- c. Any **upset** that exceeds any effluent limitation in the permit (See G.15, “Upset”).
- d. Any violation of a maximum daily or instantaneous maximum discharge limitation for any of the pollutants in Section S1.A of this permit.
- e. Any overflow prior to the treatment works, whether or not such overflow endangers health or the environment or exceeds any effluent limitation in the permit.

## **3. Report Within Five Days**

The Permittee must also provide a written submission within five days of the time that the Permittee becomes aware of any event required to be reported under subparts 1 or 2, above. The written submission must contain:

- a. A description of the noncompliance and its cause.
- b. The period of noncompliance, including exact dates and times.
- c. The estimated time noncompliance is expected to continue if it has not been corrected.

- d. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
- e. If the noncompliance involves an overflow prior to the treatment works, an estimate of the quantity (in gallons) of untreated overflow.

**4. Waiver of Written Reports**

Ecology may waive the written report required in subpart 3, above, on a case-by-case basis upon request if a timely oral report has been received.

**5. All Other Permit Violation Reporting**

The Permittee must report all permit violations, which do not require immediate or within 24 hours reporting, when it submits monitoring reports for S3.A ("Reporting"). The reports must contain the information listed in paragraph E.3, above. Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.

**6. Report Submittal**

The Permittee must submit reports to the address listed in S3.

**F. Other Reporting**

The Permittee must report a spill of oil or hazardous materials in accordance with the requirements of RCW 90.56.280 and chapter 173-303-145. You can obtain further instructions at the following website:

<http://www.ecy.wa.gov/programs/spills/other/reportaspill.htm>

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

The Permittee must submit a new application or supplement at least one hundred eighty (180) days prior to commencement of discharges, resulting from the activities listed below, which may result in permit violations. These activities include: any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility.

G. Maintaining a Copy of This Permit

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

S4. FACILITY LOADING

A. Design Criteria

The flows or waste loads for the permitted facility must not exceed the following design criteria:

Average flow for the maximum month	0.84 MGD
Influent BOD <sub>5</sub> loading for maximum month	1,390 lbs/day
Influent TSS loading for maximum month	2,120 lbs/day
Population Equivalent	3,849 persons

B. Plans for Maintaining Adequate Capacity

The Permittee must submit a plan and a schedule for continuing to maintain capacity to Ecology when:

1. The actual flow or waste load reaches 85 percent of any one of the design criteria in S4.A for three consecutive months.
2. The projected increase would reach design capacity within five years.  
The plan and schedule for continuing to maintain capacity must be sufficient to achieve the effluent limits and other conditions of this permit. This plan must identify any of the following actions or any other actions necessary to meet the objective of maintaining capacity.
  - a. 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.
  - b. Reduction or elimination of excessive infiltration and inflow of uncontaminated ground and surface water into the sewer system.
  - c. Limitation on future sewer extensions or connections or additional waste loads.
  - d. Modification or expansion of facilities necessary to accommodate increased flow or waste load.
  - e. 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 Ecology prior to any construction.

If the Permittee intends to apply for state or federal funding for the design or construction of a facility project, the plan may also need to meet the environmental review requirements as described in 40 CFR 35.3040 and 40 CFR 35.3045 and it may also need to demonstrate cost effectiveness as required by WAC 173-95-730. The plan must specify any contracts, ordinances, methods for financing, or other arrangements necessary to achieve this objective.

**C. Duty to Mitigate**

The Permittee must 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**

1. The Permittee must submit written notice to Ecology whenever any new discharge or a substantial change in volume or character of an existing discharge into the POTW is proposed which:
  - a. Would interfere with the operation of, or exceed the design capacity of, any portion of the POTW;
  - b. Is not part of an approved general sewer plan or approved plans and specifications; or
  - c. Would be subject to pretreatment standards under 40 CFR Part 403 and Section 307(b) of the Clean Water Act.
2. This notice must 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 must conduct two infiltration and inflow evaluations. 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, WA, 98504-7600  
or at

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

The Permittee may use plant monitoring records to assess measurable infiltration and inflow.

2. The Permittee must prepare a report which summarizes any measurable infiltration and inflow. If infiltration and inflow have increased by more than 15 percent from that found in the previous report based on equivalent rainfall, the report must contain a plan and a schedule for:
  - a. Locating the sources of infiltration and inflow; and
  - b. Correcting the problem.
3. The Permittee must submit a report summarizing the results of the evaluation and any recommendations for corrective actions by **December 31, 2012 and a second report is due by August 31, 2014.**

F. Wasteload Assessment

1. The Permittee must conduct an assessment of its influent flow and waste load and submit the report to Ecology by **August 31, 2014.**
2. The report must contain the following: an indication of compliance or noncompliance with the permit effluent limits; 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 change in these parameters since the previous report.
3. The report must 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.
4. Ecology may modify the interval for review and reporting if it determines that a different frequency is sufficient.

## S5. OPERATION AND MAINTENANCE

The Permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes keeping a daily operation logbook (paper or electronic), adequate laboratory controls, and appropriate quality assurance procedures. This provision of the permit requires the Permittee to operate backup or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of this permit.

### A. Certified Operator

An operator certified by the state of Washington for at least a Class II plant must operate this permitted facility. This operator must be in responsible charge of the day-to-day operation of the wastewater treatment plant. An operator certified for at least a Class I plant must be in charge during all regularly scheduled shifts.

### B. O & M Program

The Permittee must:

1. Institute an adequate operation and maintenance program for the entire sewage system.
2. Keep maintenance records on all major electrical and mechanical components of the treatment plant, as well as the sewage system and pumping stations. Such records must clearly specify the frequency and type of maintenance recommended by the manufacturer and must show the frequency and type of maintenance performed.
3. Make maintenance records available for inspection at all times.

### C. Short-term Reduction

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

If a Permittee contemplates a reduction in the level of treatment that would cause a violation of permit discharge limits on a short-term basis for any reason, and such reduction cannot be avoided, the Permittee must:

1. Give written notification to Ecology, if possible, thirty (30) days prior to such activities.

2. Detail 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 its obligations under this permit.

**D. Electrical Power Failure**

The Permittee must ensure that adequate safeguards 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. Adequate safeguards include, but are not limited to: alternate power sources, standby generator(s), or retention of inadequately treated wastes.

The Permittee must maintain Reliability Class II (EPA 430/9-74-001) at the wastewater treatment plant. Reliability Class II requires a backup power source sufficient to operate all vital components and critical lighting and ventilation during peak wastewater flow conditions. Vital components used to support the secondary processes (i.e., mechanical aerators or aeration basin air compressors) need not be operable to full levels of treatment, but must be sufficient to maintain the biota.

**E. Prevent Connection of Inflow**

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

**F. Bypass Procedures**

This permit prohibits a bypass which is the intentional diversion of waste streams from any portion of a treatment facility. Ecology may take enforcement action against a Permittee for a bypass unless one of the following circumstances (1, 2, or 3) applies.

1. Bypass for Essential Maintenance without the Potential to Cause Violation of Permit Limits or Conditions.

Bypass is authorized if it is for essential maintenance and does not have the potential to cause violations of limits or other conditions of this permit, or adversely impact public health as determined by Ecology prior to the bypass. The Permittee must submit prior notice, if possible, at least ten (10) days before the date of the bypass.

2. Bypass which is Unavoidable, Unanticipated, and Results in Noncompliance of this Permit.

This bypass is permitted only if:

- a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.
  - b. No feasible alternatives to the bypass exist, such as:
    - The use of auxiliary treatment facilities.
    - Retention of untreated wastes.
    - Stopping production.
    - Maintenance during normal periods of equipment downtime, but not if the Permittee should have installed adequate backup equipment in the exercise of reasonable engineering judgment to prevent a bypass.
    - Transport of untreated wastes to another treatment facility or preventative maintenance), or transport of untreated wastes to another treatment facility.
  - c. Ecology is properly notified of the bypass as required in condition S3E of this permit.
3. If bypass is anticipated and has the potential to result in noncompliance of this permit.
- a. The Permittee must notify Ecology at least thirty (30) days before the planned date of bypass. The notice must contain:
    - A description of the bypass and its cause.
    - An analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.
    - A cost-effectiveness analysis of alternatives including comparative resource damage assessment.
    - The minimum and maximum duration of bypass under each alternative.
    - A recommendation as to the preferred alternative for conducting the bypass.
    - The projected date of bypass initiation.
    - A statement of compliance with SEPA.
    - A request for modification of water quality standards as provided for in WAC 173-201A-410, if an exceedance of any water quality standard is anticipated.

- Details of the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.
- b. For probable construction bypasses, the Permittee must notify Ecology of the need to bypass as early in the planning process as possible. The Permittee must consider the analysis required above during preparation of the engineering report or facilities plan and plans and specifications and must include these to the extent practical. In cases where the Permittee determines the probable need to bypass early, the Permittee must continue to analyze conditions up to and including the construction period in an effort to minimize or eliminate the bypass.
- c. Ecology will consider the following prior to issuing an administrative order for this type of bypass:
- If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
  - If feasible alternatives to bypass exist, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
  - If the Permittee planned and scheduled the bypass to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, Ecology will approve or deny the request. Ecology will give the public an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Ecology will approve a request to bypass by issuing an administrative order under RCW 90.48.120.

#### G. Operations and Maintenance Manual

The Permittee must:

1. Review the O&M Manual at least annually.
2. Submit to Ecology for review and approval substantial changes or updates to the O&M Manual whenever it incorporates them into the manual.
3. Keep the approved O&M Manual at the permitted facility.
4. Follow the instructions and procedures of this manual.

In addition to the requirements of WAC 173-240-080 (1) through (5), the O&M Manual must include:

1. Emergency procedures for cleanup in the event of wastewater system upset or failure.
2. Wastewater system maintenance procedures that contribute to the generation of process wastewater.
3. Any directions to maintenance staff when cleaning or maintaining other equipment or performing other tasks which are necessary to protect the operation of the wastewater system (for example, defining maximum allowable discharge rate for draining a tank, blocking all floor drains before beginning the overhaul of a stationary engine).
4. The treatment plant process control monitoring schedule.
5. Minimum staffing adequate to operate and maintain the treatment processes and carry out compliance monitoring required by the permit.
6. Specify other items on case-by-case basis such as O&M for collection system pump stations, lagoon liners, etc.

#### H. Collection System Exfiltration Prevention Plan and Testing

The Permittee must prepare a plan to prevent exfiltration of wastewater from collection system sewers into critical areas, such as surface waters, ground water, or wellhead protection areas. The plan must address potential exfiltration from sewer pipes:

1. Identified in segments of the collection system which are routed under surface water.
2. Adjacent to (within 100 yards) surface water.
3. Placed over wellhead protection areas.
4. That operate at greater than atmospheric pressure.
5. Within **50** feet above the ground water table.

The Permittee must present this plan to Ecology for approval no later than **December 31, 2012.**

The Permittee must test the portions of the collection system at risk for exfiltration no later than August 1, 2013 and submit results of any exfiltration leak testing October 31, 2013.

## S6. PRETREATMENT

### A. General Requirements

The Permittee must work with Ecology to ensure that all commercial and industrial users of the publicly owned treatment works (POTW) comply with the pretreatment regulations in 40 CFR Part 403 and any additional regulations that the Environmental

Protection Agency (U.S. EPA) may promulgate under Section 307(b) (pretreatment) and 308 (reporting) of the Federal Clean Water Act.

**B. Duty to Enforce Discharge Prohibitions**

1. Under 40 CFR 403.5(a), the Permittee must not authorize or knowingly allow the discharge of any pollutants into its POTW which may be reasonably expected to cause pass through or interference, or which otherwise violate general or specific discharge prohibitions contained in 40 CFR Part 403.5 or WAC-173-216-060.
2. The Permittee must not authorize or knowingly allow the introduction of any of the following into their treatment works:
  - a. Pollutants which create a fire or explosion hazard in the POTW (including, but not limited to waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21).
  - b. Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, or greater than 11.0 standard units, unless the works are specifically designed to accommodate such discharges.
  - c. Solid or viscous pollutants in amounts that could cause obstruction to the flow in sewers or otherwise interfere with the operation of the POTW.
  - d. Any pollutant, including oxygen demanding pollutants, (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the POTW.
  - e. Petroleum oil, non-biodegradable cutting oil, or products of mineral origin in amounts that will cause interference or pass through.
  - f. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity which may cause acute worker health and safety problems.
  - g. Heat in amounts that will inhibit biological activity in the POTW resulting in interference but in no case heat in such quantities such that the temperature at the POTW headworks exceeds 40 degrees Centigrade (104 degrees Fahrenheit) unless Ecology, upon request of the Permittee, approves, in writing, alternate temperature limits.
  - h. Any trucked or hauled pollutants, except at discharge points designated by the Permittee.
  - i. Wastewaters prohibited to be discharged to the POTW by the Dangerous Waste Regulations (chapter 173-303 WAC), unless authorized under the Domestic Sewage Exclusion (WAC 173-303-071).

3. The Permittee must also not allow the following discharges to the POTW unless approved in writing by Ecology:
  - a. Noncontact cooling water in significant volumes.
  - b. Stormwater and other direct inflow sources.
  - c. Wastewaters significantly affecting system hydraulic loading, which do not require treatment, or would not be afforded a significant degree of treatment by the system.
4. The Permittee must notify Ecology if any industrial user violates the prohibitions listed in this section (S6.B), and initiate enforcement action to promptly curtail any such discharge.

**C. Wastewater Discharge Permit Required**

The Permittee must require all non-domestic discharges to apply for a permit, and may not allow any significant industrial users (SIUs) to discharge wastewater to the Permittee's sewer system until such user has received a wastewater discharge permit from Ecology in accordance with chapter 90.48 RCW and chapter 173-216 WAC.

**D. Identification and Reporting of Existing, New, and Proposed Industrial Users**

1. The Permittee must take continuous, routine measures to identify all existing, new, and proposed SIUs and potential significant industrial users (PSIUs) discharging or proposing to discharge to the Permittee's sewer system (see Appendix B of the Fact Sheet for definitions).
2. Within 30 days of becoming aware of an unpermitted existing, new, or proposed industrial user who may be an SIU, the Permittee must notify such user by registered mail that, if classified as an SIU, they must apply to Ecology and obtain a State Waste Discharge Permit. The Permittee must send a copy of this notification letter to Ecology within this same 30-day period.
3. The Permittee must also notify all Potential SIUs (PSIUs), as they are identified, that if their classification should change to an SIU, they must apply to Ecology for a State Waste Discharge Permit within 30 days of such change.

**S7. SOLID WASTES**

**A. Solid Waste Handling**

The Permittee must handle and dispose of all solid waste material in such a manner as to prevent its entry into state ground or surface water.

The final use and disposal of biosolids shall be done in accordance with Chapter 173-308 WAC ("Biosolids Management"), 40 CFR Part 503, and under coverage of the State general permit for biosolids management, as applicable.

B. Leachate

The Permittee must not allow leachate from its solid waste material to enter state waters without providing all known, available and reasonable methods of treatment, nor allow such leachate to cause violations of the State Surface Water Quality Standards, Chapter 173-201A WAC, or the State Ground Water Quality Standards, Chapter 173-200 WAC. The Permittee must apply for a permit or permit modification as may be required for such discharges to state ground or surface waters.

S8. APPLICATION FOR PERMIT RENEWAL

The Permittee must submit an application for renewal of this permit by **August 31, 2014**.

S9. COMPLIANCE SCHEDULE

The Permittee must meet the schedule requirements listed below in order to comply with a total phosphorous wasteload allocation contained in The Wenatchee River Watershed Dissolved Oxygen and pH Total Maximum Daily Load Water Quality Improvement Report. The waste load expressed as a concentration is 90 µg/L or at full flow design criteria a maximum load of 0.286 kg/Day total phosphorous.

A. Schedule of TMDL Compliance

The Permittee must comply with the TMDL assigned phosphorus wasteload allocation no later than **the permit cycle ending of in 2020**.

B. Progress Report

The Permittee must submit a report to Ecology, by **December 31, 2014**, describing the measures taken to achieve compliance with the assigned wasteload allocations.

GENERAL CONDITIONS

G1. SIGNATORY REQUIREMENTS

A. All applications, reports, or information submitted to Ecology must be signed and certified.

1. In the case of corporations, by a responsible corporate officer.

For the purpose of this section, a responsible corporate officer means:

- (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or
  - (ii) The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
2. In the case of a partnership, by a general partner.
  3. In the case of sole proprietorship, by the proprietor.
  4. In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.

Applications for permits for domestic wastewater facilities that are either owned or operated by, or under contract to, a public entity shall be submitted by the public entity.

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

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

## G2. RIGHT OF INSPECTION AND ENTRY

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

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

## G3. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated either at the request of any interested person (including the Permittee) or upon Ecology’s initiative. However, the permit may only be modified, revoked and reissued, or terminated for the reasons specified in 40 CFR 122.62, 40 CFR 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.
  - 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.

6. Nonpayment of fees assessed pursuant to RCW 90.48.465.
  7. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.
- B. The following are causes for modification but not revocation and reissuance except when the Permittee requests or agrees:
1. A material change in the condition of the waters of the state.
  2. New information not available at the time of permit issuance that would have justified the application of different permit conditions.
  3. Material and substantial alterations or additions to the permitted facility or activities which occurred after this permit issuance.
  4. Promulgation of new or amended standards or regulations having a direct bearing upon permit conditions, or requiring permit revision.
  5. The Permittee has requested a modification based on other rationale meeting the criteria of 40 CFR Part 122.62.
  6. Ecology has determined that good cause exists for modification of a compliance schedule, and the modification will not violate statutory deadlines.
  7. Incorporation of an approved local pretreatment program into a municipality's permit.
- C. The following are causes for modification or alternatively revocation and reissuance:
1. When cause exists for termination for reasons listed in A1 through A7 of this section, and Ecology determines that modification or revocation and reissuance is appropriate.
  2. When Ecology has received notification of a proposed transfer of the permit. A permit may also be modified to reflect a transfer after the effective date of an automatic transfer (General Condition G8) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new Permittee.

#### **G4. REPORTING PLANNED CHANGES**

The Permittee must, as soon as possible, but no later than sixty (60) days prior to the proposed changes, give notice to Ecology of planned physical alterations or additions to the permitted facility, production increases, or process modification which will result in:

1) the permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b); 2) a significant change in the nature or an increase in quantity of pollutants discharged; or 3) a significant change in the Permittee's sludge use or disposal practices. Following such notice, and the submittal of a new application or supplement to the existing application, along with required engineering plans and reports, this permit may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

#### **G5. PLAN REVIEW REQUIRED**

Prior to constructing or modifying any wastewater control facilities, an engineering report and detailed plans and specifications must be submitted to Ecology for approval in accordance with

chapter 173-240 WAC. Engineering reports, plans, and specifications must be submitted at least one hundred eighty (180) days prior to the planned start of construction unless a shorter time is approved by Ecology. Facilities must be constructed and operated in accordance with the approved plans.

#### G6. COMPLIANCE WITH OTHER LAWS AND STATUTES

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

#### G7. TRANSFER OF THIS PERMIT

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

##### A. Transfers by Modification

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

##### B. Automatic Transfers

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

1. The Permittee notifies Ecology at least thirty (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. Ecology does not notify the existing Permittee and the proposed new Permittee of its intent to modify or revoke and reissue this permit. A modification under 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.

#### G8. REDUCED PRODUCTION FOR COMPLIANCE

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

**G9. REMOVED SUBSTANCES**

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

**G10. DUTY TO PROVIDE INFORMATION**

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

**G11. OTHER REQUIREMENTS OF 40 CFR**

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

**G12. ADDITIONAL MONITORING**

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

**G13. PAYMENT OF FEES**

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

**G14. PENALTIES FOR VIOLATING PERMIT CONDITIONS**

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

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

G15. UPSET

Definition – “Upset” means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, 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 limits if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- 1) an upset occurred and that the Permittee can identify the cause(s) of the upset;
- 2) the permitted facility was being properly operated at the time of the upset;
- 3) the Permittee submitted notice of the upset as required in Condition S3.E; and
- 4) the Permittee complied with any remedial measures required under S4.C of this permit.

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

G16. PROPERTY RIGHTS

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

G17. DUTY TO COMPLY

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

G18. TOXIC POLLUTANTS

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

G19. PENALTIES FOR TAMPERING

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit must, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two (2) years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment must be a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or by both.

G20. COMPLIANCE SCHEDULES

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

G21. CONTRACT REVIEW

The Permittee must submit to Ecology any proposed contract for the operation of any wastewater treatment facility covered by this permit. The review is to ensure consistency with chapters 90.46 and 90.48 RCW. In the event that Ecology does not comment within a thirty (30)-day period, the Permittee may assume consistency and proceed with the contract.

APPENDIX A  
**EFFLUENT CHARACTERIZATION FOR POLLUTANTS**  
**THIS LIST INCLUDES EPA REQUIRED POLLUTANTS (PRIORITY POLLUTANTS)**  
**AND SOME ECOLOGY PRIORITY TOXIC CHEMICALS (PBTs)**

The following table specifies analytical methods and levels to be used for effluent characterization in NPDES and State waste discharge permits. This appendix specifies effluent characterization requirements of the Department of Ecology unless other methods are specified in the body of this permit.

This permit specifies the compounds and groups of compounds to be analyzed. Ecology may require additional pollutants to be analyzed within a group. The objective of this appendix is to reduce the number of analytical “non-detects” in permit-required monitoring and to measure effluent concentrations near or below criteria values where possible at a reasonable cost. If a Permittee knows that an alternate, less sensitive method (higher DL and QL) from 40 CFR Part 136 is sufficient to produce measurable results in their effluent, that method may be used for analysis.

<b>Pollutant &amp; CAS No. (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b>
<b>CONVENTIONALS</b>			
Biochemical Oxygen Demand	SM5210-B		2 mg/L
Total Suspended Solids	SM2540-D		5 mg/L
Total Ammonia (as N)	SM4500-NH3- GH		0.3 mg/L
Flow	Calibrated device		
Dissolved oxygen	4500-OC/OG		0.2 mg/L
pH	SM4500-H <sup>+</sup> B	N/A	N/A
<b>NONCONVENTIONALS</b>			
Chlorine, Total Residual	4500 Cl G		50.0
Fecal Coliform	SM 9221D/E,9222	N/A	N/A
Nitrate-Nitrite (as N)	4500-NO3- E/F/H		100
Nitrogen, Total Kjeldahl (as N)	4500-NH3-C/E/FG		300
Phosphorus, Total (as P)	4500-PE/PF	3	10
Oil and Grease (HEM)	1664A	1,400	5,000
Total dissolved solids	SM2540 C		20 mg/L
Total Hardness	2340B		200 as CaCO <sub>3</sub>

1. Detection level (DL) or detection limit means the minimum concentration of an analyte (substance) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero as determined by the procedure given in 40 CFR part 136, Appendix B.
2. Quantitation Level (QL) is equivalent to EPA’s Minimum Level (ML) which is defined in 40 CFR Part 136 as the minimum level at which the entire GC/MS system must give recognizable mass spectra (background corrected) and acceptable calibration points. These levels were published as proposed in the Federal Register on March 28, 1997.

**FACT SHEET FOR NPDES PERMIT  
NO. WA-002097-4**

**CITY OF LEAVENWORTH POTW  
April 16, 2010**

**PURPOSE OF THIS FACT SHEET**

This fact sheet explains and documents the decisions Ecology made in drafting the proposed National Pollutant Discharge Elimination System (NPDES) permit for City of Leavenworth Publically-Owned Treatment Works (POTW).

This fact sheet complies with Section 173-220-060 of the Washington Administrative Code (WAC), which requires Ecology to prepare a draft permit *and accompanying fact sheet* for public evaluation before issuing an NPDES permit.

Ecology makes the draft permit and fact sheet available for public review and comment at least thirty (30) days before issuing the final permit. Copies of the fact sheet and draft permit for City of Leavenworth, NPDES Permit Number WA-002097-4, are available for public review and comment from **June 9, 2010** until **July 9, 2010**. For more details on preparing and filing comments about these documents, please see **Appendix A - Public Involvement**.

The City of Leavenworth reviewed the draft permit and fact sheet for factual accuracy. Ecology corrected any errors or omissions regarding the facility's location, history, discharges, or receiving water.

After the public comment period closes, Ecology will summarize substantive comments and provide responses to them. Ecology will include the summary and responses to comments in this Fact Sheet as **Appendix D - Response to Comments**, and publish it when issuing the final NPDES permit. Ecology will not revise the rest of the fact sheet, but the full document will become part of the legal history contained in the facility's permit file.

Richard Marcley prepared the permit and this fact sheet.

**SUMMARY**

The City of Leavenworth applied for reissuance of its NPDES permit for its publicly-owned treatment works (POTW). The POTW serves residential and commercial dischargers; there are no industrial dischargers to the system. In 1996, in response to actual and probable future violations of discharge effluent limits and occasional exceedances of design criteria, the City submitted a *Wastewater Facilities Plan* to Ecology. The *Facilities Plan* contained a comprehensive assessment of the treatment plant and collection system, and concluded with a similarly comprehensive list of recommended corrective actions. The recommendations included a dramatically upgraded treatment plant and implementation of a comprehensive corrective and preventative maintenance program for the collection system.

Completed improvements to the treatment plant include:

- An array of new equipment at the headworks to perform primary-level treatment of influent
- Expansion of activated sludge biological treatment processes, including a new aeration basin and anoxic selector tanks
- A third secondary clarifier
- An enhanced sludge handling system
- Ultraviolet (UV) disinfection
- Expanded onsite wastewater laboratory
- A new outfall
- Doubled design population from 2,020 to 3,849
- Provisions for phosphorus removal

Following an inspection conducted in September 2007, the City of Leavenworth corrected all the deficiencies found at the wastewater treatment plant. Of primary concern to Ecology is an issue the City had experienced for some time, excessive fats, oils and grease (FOG). The City has demonstrated a 70% decrease in FOG since the allocation of a part-time position dedicated to FOG abatement in 2008.

The proposed permit requires the City to:

- Comply with the established effluent limits.
- Routinely submit monitoring data of influent and effluent characteristics.
- Submit assessments of treatment plant loadings.
- Evaluate infiltration and inflow.

**TABLE OF CONTENTS**

	<u>Page</u>
PURPOSE OF THIS FACT SHEET .....	1
SUMMARY .....	1
INTRODUCTION .....	5
BACKGROUND INFORMATION .....	6
TABLE 1 - GENERAL FACILITY INFORMATION .....	6
FACILITY DESCRIPTION .....	6
History.....	7
Collection System Status .....	7
Treatment Processes.....	8
Headworks .....	9
Selector/Sludge Storage Tanks .....	9
Aeration Basin .....	9
Secondary Clarifiers.....	10
Disinfection.....	10
Discharge Outfall .....	10
Solid Wastes.....	11
PERMIT STATUS.....	11
SUMMARY OF COMPLIANCE WITH PREVIOUS PERMIT ISSUED .....	12
WASTEWATER CHARACTERIZATION .....	12
Influent.....	12
Fats, Oil, and Grease (FOG) .....	12
Effluent .....	13
DESCRIPTION OF THE RECEIVING WATER.....	14
SEPA COMPLIANCE.....	14
PROPOSED PERMIT LIMITS .....	14
DESIGN CRITERIA .....	15
TECHNOLOGY-BASED EFFLUENT LIMITS .....	15
SURFACE WATER QUALITY-BASED EFFLUENT LIMITS.....	16
Numerical Criteria for the Protection of Aquatic Life and Recreation.....	17
Numerical Criteria for the Protection of Human Health.....	17
Narrative Criteria .....	17
Antidegradation.....	17
Mixing Zones .....	19
DESIGNATED USES AND SURFACE WATER QUALITY CRITERIA .....	24
EVALUATION OF SURFACE WATER QUALITY-BASED EFFLUENT LIMITS FOR NUMERIC CRITERIA.....	25
TEMPERATURE TMDL .....	28

DISSOLVED OXYGEN AND pH TMDL CONSIDERATIONS .....	30
WHOLE EFFLUENT TOXICITY .....	30
HUMAN HEALTH .....	30
SEDIMENT QUALITY .....	31
GROUND WATER QUALITY LIMITS .....	31
COMPARISON OF EFFLUENT LIMITS WITH THE PREVIOUS PERMIT ISSUED ON MARCH 23, 2005 .....	31
MONITORING REQUIREMENTS .....	31
LAB ACCREDITATION .....	32
OTHER PERMIT CONDITIONS .....	32
REPORTING AND RECORD KEEPING .....	32
PREVENTION OF FACILITY OVERLOADING .....	32
OPERATION AND MAINTENANCE (O&M).....	33
PRETREATMENT .....	33
Duty to Enforce Discharge Prohibitions .....	33
Federal and State Pretreatment Program Requirements .....	34
Routine Identification and Reporting of Industrial Users.....	34
Support by Ecology for Developing Partial Pretreatment Program by POTW .....	34
SOLID WASTE CONTROL .....	35
GENERAL CONDITIONS .....	35
COMPLIANCE SCHEDULE.....	35
PERMIT ISSUANCE PROCEDURES .....	35
PERMIT MODIFICATIONS .....	35
PROPOSED PERMIT ISSUANCE.....	35
REFERENCES FOR TEXT AND APPENDICES .....	36
APPENDIX A--PUBLIC INVOLVEMENT INFORMATION.....	37
APPENDIX B--GLOSSARY .....	39
APPENDIX C--TECHNICAL CALCULATIONS .....	44
APPENDIX D--RESPONSE TO COMMENTS .....	49

## INTRODUCTION

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

The following regulations apply to municipal NPDES permits:

- Procedures Ecology follows for issuing NPDES permits (chapter 173-220 WAC)
- Technical criteria for discharges from municipal wastewater treatment facilities (chapter 173-221 WAC)
- Water quality criteria for surface waters (chapter 173-201A WAC) and for ground waters (chapter 173-200 WAC)
- Sediment management standards (chapter 173-204 WAC)
- Submission of Plans and Reports for Construction of Wastewater Facilities (Chapter 173-240 WAC)

These rules require any treatment facility operator to obtain an NPDES permit before discharging wastewater to state waters. They also help define the basis for limits on each discharge and for requirements imposed by the permit.

Under the NPDES permit program and in response to a complete and accepted permit application, Ecology must prepare a draft permit and accompanying fact sheet, and make them available for public review before final issuance. Ecology must also publish an announcement (public notice) telling people where they can read the draft permit, and where to send their comments, during a period of thirty days (WAC 173-220-050). (See **Appendix A—Public Involvement** for more detail about the public notice and comment procedures). After the public comment period ends, Ecology may make changes to the draft NPDES permit. Ecology will summarize the responses to comments and any changes to the permit in **Appendix D**.

**BACKGROUND INFORMATION**

**TABLE 1 - GENERAL FACILITY INFORMATION**

Applicant	City of Leavenworth
Facility Name and Address	City of Leavenworth Publicly-Owned Treatment Works near Commercial and 14 <sup>th</sup> Street Leavenworth, WA 98826
Type of Treatment	Activated sludge, oxidation/aeration, secondary clarification, ultraviolet (UV) disinfection
Discharge Location	Wenatchee River approximate river mile 35  Latitude: 47.59744 N. Longitude: -120.6518 W.

**Figure 1: Facility Location Map**



**FACILITY DESCRIPTION**

The City of Leavenworth owns and operates a wastewater collection system and an activated sludge, oxidation/aeration wastewater treatment plant. The plant uses secondary clarification

with ultraviolet (UV) disinfection treatment facilities. The wastewater treatment plant serves residential and commercial customers within City limits of Leavenworth.

## History

Prior to 1994 the treatment plant reached, and on occasion exceeded, its design capacity. The City determined that the treatment plant did not have the capability to meet receiving water standards for toxic constituents. In addition, projected significant population growth over the next 20 years for the City, placed further demand on the aging wastewater services. Furthermore, the collection system had several major deficiencies, with portions over 50 years old and reaching the end of their service life.

In response to the situation, the City contracted with Varela & Associates, Inc. in September 1994 to prepare a *Wastewater Facilities Plan*, completed in April 1996. The plan recommended a comprehensive program of collection system rehabilitation and maintenance, including separation of storm sewers from the sanitary sewer system, expansion and upgrade of the treatment plant, including an improved sludge management program, ultraviolet (UV) disinfection and enhanced treatment capacities. The City based improvements in the *Facilities Plan* on a 20 year planning horizon (1995 to 2015), when the plan predicts the service population to increase from 2020 to 4483.

The final *Wastewater Facilities Plan, April 1996*, and the *Summary of Design, December 1997* contain 26 technical memoranda detailing improvements, which is the primary source of information Ecology used for this fact sheet. Ecology detailed only the main points of the plan in this fact sheet; you may obtain further information by referring to the plan document itself. The fact sheet references specific sections, in Roman numerals, and pages, in Arabic numerals, of the plan as appropriate.

## Collection System Status

The City has completed some of the recommendations to rehabilitate and upgrade the collection system, but will complete other elements of the program as time and money allow. The collection system is described in relatively detailed terms in the following section.

The City constructed the first sewer system in 1934 in the area between Front Street and the Wenatchee River. In 1947, it completed the original combined storm and sanitary sewer system for the rest of the community. Between 1971 and 1973, Leavenworth undertook a major project to separate the storm water flows from the sanitary flows by constructing a separate storm sewer system. The storm water separation project included replacement of many sanitary sewer mains where the new storm sewers were placed below them which resulted in a number of shared access manholes with separate flow channels for storm and sanitary sewage.

The original storm water separation project did not completely eliminate storm water inflow, nor provide all the separate storm sewers needed. The project also had problems with the new storm and sanitary lines due to faulty construction. As a result, the City completed additional work on both systems, with additional projects correcting the worst problems and continued separation of the storm sewer system.

The sanitary sewer system consists of approximately 46,000 feet of gravity lines ranging in size from 6 to 18 inches. Most of the system consists of the original concrete pipe plus a large amount of asbestos cement pipe used to replace the concrete pipe during the storm water separation project. More recent sewer installations and extensions used PVC pipe. The sanitary sewer system has essentially two main interceptor/trunk systems: one serving the north side of the City, and the other serving the south and west sides of the City.

The collection system is a gravity system except for lift stations at Bayern Village, Water Front Park, and Enchantment Park. All three stations are reportedly in satisfactory working order and appear to have sufficient pumping capacity.

Deficiencies identified in the Facilities Plan included: sags in mains, suspected broken side sewers, sedimentation in mains, grease from restaurants, and tree root intrusions. Although the problems are of concern, they have apparently not resulted in serious problems or extended interruptions in service within the collection system in recent years. There have been several manhole overflows due to blockage, which were quickly cleared. The City has signed a contract to implement a program of TV inspection of the system to identify areas of needed repair or replacement (*Facilities Plan, III-1, 2*). Inspections are conducted as time and circumstances allow.

#### Treatment Processes

Treatment of wastewater begins at the headworks, which consists of a mechanical grinder (Muffin Monster), grit removal and a rotating screen. Biological treatment begins with an anoxic process. The City partially converted an old oxidation ditch into an anoxic conditioning tank, or selector, to improve sludge settling characteristics and converted the remainder of the ditch to into an aerated sludge storage tank. After anoxic treatment, wastewater flows to a newly-constructed oxidation ditch aeration basin. After aeration, wastewater undergoes secondary clarification, followed by ultraviolet disinfection and discharge to the receiving water.

Improvements to each of the treatment plant's major components, and some major operating parameters and design issues are briefly described below:

## Headworks

The City constructed a new headworks building and installed, improved, or replaced the following components during the 2000-2005 permit term:

- Mechanically-cleaned bar rack
- Comminutor
- Fine screening
- Grit removal
- Flow metering
- Flow distribution
- Automatic compositing sampler

## Selector/Sludge Storage Tanks

Leavenworth demolished oxidation ditch number 1 and converted oxidation ditch number two to use a portion of its volume as an anoxic conditioning tank, or selector, to improve sludge settling characteristics. The selector works by subjecting activated sludge to conditions that are detrimental to undesirable microorganisms (those that do not settle well or impede settling), and encourage the growth of well-settling microorganisms. The lack of free oxygen in the selector tank is the anoxic condition that selects for the desired microorganisms. The anoxic selector also promotes the conditions necessary for denitrification of the wastewater.

The City converted the remainder of the tank into an aerated sludge storage tank. Installation of coarse-bubble diffusers assures adequate mixing of tank contents and helps prevent odor problems. Sludge is removed from the tank by pumping directly to the belt filter press.

It also constructed a new oxidation ditch basin. The biological treatment system is designed to achieve complete nitrification throughout the year with relatively minor modifications.

## Aeration Basin

Biological treatment of wastewater occurs in the aeration basin. The new aeration basin with a volume of approximately 750,000 gallons is equipped with two variable-speed 50 hp aerators. The activated sludge system operates at a relatively low rate by design, with a solids retention time (SRT) of approximately 30 days in cold weather. The basin has a relatively long SRT because minimum temperatures in Leavenworth's wastewater typically drop to 9° C, and at cold temperatures biological activity is slow. The SRT of the basin results in at least partial nitrification of incoming ammonia.

The nitrification process consumes alkalinity, which is already low in Leavenworth's wastewater. The operator controls alkalinity in the aeration basin either by changing the speed of the aerators

to control dissolved oxygen concentration in the basin (and thus the nitrification rate), or by adjusting alkalinity in the basin by the addition of soda ash (or other chemical).

### Secondary Clarifiers

The new plant utilizes two existing peripheral-fed, center weir, 32-foot diameter clarifiers. Due to age and wear, the City refurbished their component parts and the associated sludge piping. Each clarifier contains a mechanism to plow settled sludge to the center of the tank, where it is removed for recycle to the aeration basin, or wasted to the sludge storage and dewatering facilities. The City included a third clarifier as part of the upgrade because the existing units would not provide adequate capacity for design loads. The operator can take each clarifier on or off line individually.

The new unit, Clarifier #3, operates in parallel with the other clarifiers. The new clarifier is a 40-foot diameter center feed, with a peripheral effluent weir and center sludge withdrawal. The design of the new unit allows for chemical addition for phosphorus removal, if necessary.

### Disinfection

During the 2000-2005 permit term, the City removed the chlorination disinfection system and installed an ultraviolet (UV) system. The system consists of 160 low pressure, low intensity, mercury vapor lamps, which provide radiation output of a wavelength that is most harmful to pathogens. Lamps are arrayed in four "banks" operated in series. Water surface level is controlled by an automatic level control gate that maintains a nearly constant water level for all anticipated flows.

### Discharge Outfall

As part of the upgrade, the City completely replaced its outfall pipe and diffuser. The fact sheet associated with the 2000-2005 permit term cited the outfall as deficient because it was not submerged during critical (low flow) receiving water conditions. The *Facilities Plan* recommended extending the old outfall pipe, but subsequent investigation revealed this pipe and the outfall structure had limited hydraulic capacity.

During design, the City also evaluated the ability of the treatment plant to discharge the design peak flow during river flood conditions. The UV disinfection building floor elevation was the controlling upstream element in evaluating required outfall pipe design. The main concern was that during a 100-year flood event the effluent would not surcharge or back up into the UV disinfection system, resulting in ineffective disinfection of the discharge. The new outfall is designed so that surcharging "will only occur when peak sewage flow and river flood crest coincide . . . when the river has significant dilution capability" (*Summary of Design*, Tech. Memo. TM16, p. 5).

The outfall consists of 16-inch ductile iron pipe culminating in a single-port diffuser. The end of the pipe is placed upstream of a large submerged boulder "for protection and to enhance conditions for fish habitat" (*Summary of Design*, Tech. Memo. TM16, p. 3). According to the permit application the discharge point into the Wenatchee River is approximately 69 feet from the shore and 15.24 feet below the stream surface during critical conditions. However, Ecology used the 7Q10 depth of the river (3 feet) in the dilution model.

### Solid Wastes

The City has historically, and plans to continue to dispose of its untreated sewage sludge at the Chelan and Douglas County Landfill when necessary. It plans to continue to haul its biosolids to the Chelan County Composting Site during the months the facility operates. The City contracted with Varela & Associates, Inc and Esvelt Environmental Engineering to conduct a biosolids utilization study as part of the *Facilities Plan*. Phase 1 of the study examined a broad spectrum of alternatives to land filling the City's sludge. Alternatives were explored to treat sludge to either Class A or Class B biosolids.

The findings of the study and resulting recommendations are contained in *Biosolids Utilization*, Addendum No. 1 to the *Facilities Plan*, dated March 1999. The study concludes that the most cost-effective methods for utilization of treated biosolids were: Class A-containerized composting, and; Class B-air drying (*Biosolids Utilization*, p. 6). However, conclusion #3 states: "Both of the least cost alternatives . . . require significant capital and operating cost commitment on the part of the City." Ecology will continue to work with the City and Chelan County to help them achieve more beneficial use of the biosolids through composting and less landfill disposal.

Class A biosolids are suitable for unrestricted use by the public, due to pathogen reduction and other pollutant-reducing measures taken during processing. Class B biosolids may contain detectable levels of pathogens and other pollutants, but do not pose a health threat. The use of Class B biosolids is subject to more stringent site restrictions pertaining to harvesting, crop type, grazing, and public access.

### PERMIT STATUS

Ecology issued the previous permit for this facility on March 23, 2005. The previous permit placed effluent limits on BOD, TSS, fecal coliform bacteria and pH.

The City of Leavenworth submitted an application for permit renewal on June 22, 2009. Ecology accepted it as complete on August 17, 2009.

**SUMMARY OF COMPLIANCE WITH PREVIOUS PERMIT ISSUED**

Ecology staff last conducted a non-sampling compliance inspection on February 26, 2009.

The Leavenworth POTW has complied substantially with the effluent limits and permit conditions throughout the duration of the permit issued on March 23, 2005. Ecology assessed compliance based on its review of the facility’s discharge monitoring reports (DMRs) and on inspections conducted by Ecology.

**WASTEWATER CHARACTERIZATION**

**Influent**

The concentration of pollutants entering the POTW was reported in the discharge monitoring reports. The tabulated data represents the quality of the influent received at the POTW from May 2005 through November 2009. The effluent is characterized as follows:

**Table 2: Influent Wastewater Characterization**

Parameter	May 2005 to November 2009 Characterization		% Design Criteria
	Average	Highest Monthly Average	Monthly Average for the Maximum Month
Flow in MGD	0.362	0.452	53.8
BOD <sub>5</sub> , in lbs/day	507.6	789.0	56.8
BOD <sub>5</sub> , in mg/L	186.1	270.6	
TSS, in lbs/day	453.5	740.7	34.9
TSS, in mg/L	163.0	272.0	
Fats, Oil, and Grease, in mg/L	65.6	814 (July 2007)	

**Fats, Oil, and Grease (FOG)**

The City of Leavenworth has a long history of problems associated with FOG. Over the years, many raw sewage spills are attributable to FOG caused blockages in the collection system. In addition, the presence of FOG adds considerably to the work load at the wastewater treatment plant.

Ecology issued Consent Order # DE 03WQCR-5581 on June 17, 2003 requiring Leavenworth to develop a FOG elimination plan by August 1, 2003 and submit annual reports through 2006. Ecology issued the 2003 consent order following numerous incidents of missed samplings, inadequate staffing at the wastewater treatment plant and four discharges of untreated wastewater.

On July 28, 2006 Ecology issued Administrative Order #3448 requiring Leavenworth to take action regarding untreated sewer overflows at Barn Beach. Ecology expressed concern regarding a need for the City to upgrade and more actively implement its FOG abatement program.

On October 10, 2007 the City wrote to Ecology that it had made improvements to its samplers, installed a new effluent sampler, and made improvements to the Bayern and Enchantment Park Lift Stations. The City also added a halftime position at the wastewater treatment plant and funded another halftime position to manage its FOG abatement program beginning in January 2008.

Recent FOG data demonstrates the effectiveness of the FOG abatement program. From January 2008 to the present, the average monthly influent FOG concentration has declined by 32 % over the May 2005 to December 2007 time period. FOG monitoring will continue in the proposed permit to monitor the program’s effectiveness.

**Effluent**

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

**Table 3: Effluent Characterization**

Parameter	May 2005 to November 2009 Characterization			% of Existing Permit Limits	
	Average	Max Monthly Average	Highest Weekly Average	Monthly Average <sup>1</sup>	Weekly Average <sup>1</sup>
Flow	0.349	0.453	0.810 (max day)	54	96
Temperature in Celsius <sup>2</sup>	20.9	23.7	25.4 (max day)	--	--
BOD <sub>5</sub> , in mg/L	4.0	10.0	11.2	33.3	25.0
BOD <sub>5</sub> , in lbs/Day	10.4	22.0	29.2	10.5	9.3
TSS, in mg/L	6.5	11.8	19.9	39.3	44.2
TSS, in lbs/Day	17.0	36.6	70.1	17.4	22.3
Ammonia, in mg/L	0.29	1.83	2.8	--	--
Ammonia, in lbs/Day	0.7	4.0	6.6	--	--
Total Phosphorus	3.3	7.0	--	--	--
pH, in standard units su	--	6 low to 8.5 high		Between 6 to 9 at all times	
Dissolved Oxygen, in mg/L	6.3	3.9 (lowest)	2.1 (lowest)	--	--
Alkalinity, in mg/L	26.9	70.0	--	--	--
Hardness, in mg/L	50.5	75	--	--	--
Fecal Coliform Bacteria, in Geomean #colonies/100 mL	3.0	11.9	21	6.0	3.0

<sup>1</sup> Value is based on the highest monthly average or maximum day.

<sup>2</sup> The summer season is defined as June 1<sup>st</sup> to September 30<sup>th</sup>.

**DESCRIPTION OF THE RECEIVING WATER**

The Leavenworth POTW discharges to the Wenatchee River at approximately river mile 21. Other nearby point source outfalls include the Community of Peshastin, located approximately 5 miles downstream. Significant other nearby non-point sources of pollutants include domestic septic system drainfields, agricultural runoff, and stormwater runoff from highway U.S. 2.

The ambient background data used for this permit includes the following data taken from October 2000 through September 2008 by Ecology’s Environmental Assessment Program.

**Table 4: Ambient Background Data**

Parameter	Value used
Temperature (highest annual 1-DADMax)	20.3 ° C
Temperature criterion as assigned in Table 602 WIRA 45	16° C
pH (Maximum / Minimum)	8.6 @95 <sup>th</sup> %tile/6.8 @5 <sup>th</sup> %tile
Dissolved Oxygen	8.5 mg/L Minimum
Total Ammonia-N	0.011 mg/L Maximum
Fecal Coliform	24
Alkalinity or Salinity	14 mg/L as CaCO3 Average

**SEPA COMPLIANCE**

Regulation exempts reissuance or modification of any wastewater discharge permit from the SEPA process as long as the permit conditions are no less stringent than state rules and regulations. The exemption applies only to existing discharges, not to new discharges.

**PROPOSED PERMIT LIMITS**

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

- Technology-based limits are based upon the treatment methods available to treat specific pollutants. Technology-based limits are set by the EPA and published as a regulation, or Ecology develops the limit on a case-by-case basis (40 CFR 125.3, and chapter 173-220 WAC).
- Water quality-based limits are calculated so that the effluent will comply with the Surface Water Quality Standards (chapter 173-201A WAC), Ground Water Standards (chapter 173-

200 WAC), Sediment Quality Standards (chapter 173-204 WAC) or the National Toxics Rule (40 CFR 131.36).

- Ecology must apply the most stringent of these limits to each parameter of concern. These limits are described below.

The limits in this permit reflect information received in the application and from supporting reports (engineering, hydrogeology, etc.). Ecology evaluated the permit application and determined the limits needed to comply with the rules adopted by the state of Washington. Ecology does not develop effluent limits for all reported pollutants. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation.

Nor does Ecology usually develop limits for pollutants that were not reported in the permit application but that may be present in the discharge. The permit does not authorize discharge of the non-reported pollutants. If significant changes occur in any constituent of the effluent discharge, the Leavenworth POTW is required to notify Ecology (40 CFR 122.42(a)). The Leavenworth POTW may be in violation of the permit until Ecology modifies the permit to reflect additional discharge of pollutants.

## DESIGN CRITERIA

Under WAC 173-220-150 (1)(g), flows and waste loadings must not exceed approved design criteria. Ecology-approved design criteria for this facility's treatment plant were obtained from the City's approved 1996 *Wastewater Facilities Plan* engineering report prepared by Varela & Associates and are as follows:

**Table 5: Design Standards for Leavenworth WWTP.**

Parameter	Design Quantity
Monthly average flow (max. month)	0.84 MGD
BOD <sub>5</sub> influent loading	1390 lbs/day
TSS influent loading	2120 lbs/day
Design population equivalent	3,849

## TECHNOLOGY-BASED EFFLUENT LIMITS

Federal and state regulations define technology-based effluent limits for municipal wastewater treatment plants. These effluent limits are given in 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 (AKART) for municipal wastewater.

Chapter 173-221 WAC lists the following technology-based limits for pH, fecal coliform, BOD<sub>5</sub>, and TSS:

**Table 6: Technology-based Limits**

Parameter	Limit
pH	The pH must measure within the range of 6.0 to 9.0 standard units.
Fecal Coliform Bacteria	Monthly Geometric Mean = 200 organisms/100 mL Weekly Geometric Mean = 400 organisms/100 mL
BOD <sub>5</sub> (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

The following technology-based limits for pH, Fecal Coliform Bacteria, BOD<sub>5</sub>, and TSS were the most appropriate limits determined from: (1) WAC 173-220-130(3)(b); (2) WAC 173-221-030(11)(b); (3) WAC 173-221-040(1); (4) the recent *Facilities Plan* prepared by Varela & Associates, Inc., and (5) the Department's *Permit Writer's Manual*:

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

Monthly BOD<sub>5</sub> and TSS effluent mass loading (lbs/day)  
 Maximum monthly design flow (0.84 MGD) X 30 mg/L X 8.34 = 210 lbs/day.

Weekly BOD<sub>5</sub> and TSS effluent mass loading (lbs/day)  
 1.5 X Monthly BOD<sub>5</sub> effluent mass loading = 315 lbs/day.

### **SURFACE WATER QUALITY-BASED EFFLUENT LIMITS**

The Washington State Surface Water Quality Standards (chapter 173-201A WAC) are designed to protect existing water quality and preserve the beneficial uses of Washington's surface waters.

Waste discharge permits must include conditions that ensure the discharge will meet the surface water quality standards (WAC 173-201A-510). Water quality-based effluent limits may be based on an individual waste load allocation or on a waste load allocation developed during a basin wide total maximum daily load study (TMDL).

#### Numerical Criteria for the Protection of Aquatic Life and Recreation

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

#### Numerical Criteria for the Protection of Human Health

The U.S. EPA has published 91 numeric water quality criteria for the protection of human health that are applicable to dischargers in Washington State (EPA 1992). These criteria are designed to protect humans from exposure to pollutants linked to cancer and other disease, based on consuming fish and shellfish and drinking contaminated surface waters. The water quality standards also include radionuclide criteria to protect humans from the effects of radioactive substances.

#### Narrative Criteria

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

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

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

#### Antidegradation

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

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

Tier I ensures existing and designated uses are maintained and protected and applies to all waters and all sources of pollutions. Tier II ensures that waters of a higher quality than the criteria assigned are not degraded unless such lowering of water quality is necessary and in the overriding public interest. Tier II applies only to a specific list of polluting activities. Tier III prevents the degradation of waters formally listed as "outstanding resource waters," and applies to all sources of pollution.

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

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

This facility must meet Tier I requirements.

- Dischargers must maintain and protect existing and designated uses. Ecology must not allow any degradation that will interfere with, or become injurious to, existing or designated uses, except as provided for in chapter 173-201A WAC.
- For waters that do not meet assigned criteria, or protect existing or designated uses, Ecology will take appropriate and definitive steps to bring the water quality back into compliance with the water quality standards.

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

## Mixing Zones

A mixing zone is the defined area in the receiving water surrounding the discharge port(s), where wastewater mixes with receiving water. Within mixing zones the pollutant concentrations may exceed water quality numeric standards, so long as the discharge doesn't interfere with designated uses of the receiving water body (for example, recreation, water supply, and aquatic life and wildlife habitat, etc.) The pollutant concentrations outside of the mixing zones must meet water quality numeric standards.

State and federal rules allow mixing zones because the concentrations and effects of most pollutants diminish rapidly after discharge, due to dilution. Ecology defines mixing zone sizes to limit the amount of time any exposure to the end-of-pipe discharge could harm water quality, plants, or fish.

The state's water quality standards allow Ecology to authorize mixing zones for the facility's permitted wastewater discharges only if those discharges already receive all known, available, and reasonable methods of prevention, control, and treatment (AKART). Mixing zones typically require compliance with water quality criteria within a specified distance from the point of discharge and use no more than 25% of the available width of the water body for dilution. Ecology uses modeling to estimate the amount of mixing within the mixing zone. Through modeling Ecology determines the potential for violating the water quality standards at the edge of the mixing zone and derive any necessary effluent limits. Steady-state models are the most frequently used tools for conducting mixing zone analyses. Ecology chooses values for each effluent and for receiving water variables that correspond to the time period when the most critical condition is likely to occur (see Ecology's *Permit Writer's Manual*). Each critical condition parameter, by itself, has a low probability of occurrence and the resulting dilution factor is conservative. The term "reasonable worst-case" applies to these values.

The mixing zone analysis produces a numerical value called a dilution factor (DF). A dilution factor represents the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. For example, a dilution factor of 10 means the effluent is 10% and the receiving water is 90% of the total volume of water at the boundary of the mixing zone. Ecology uses dilution factors with the water quality criteria to calculate reasonable potentials and effluent limits. Water quality standards include both aquatic life-based criteria and human health-based criteria. The former are applied at both the acute and chronic mixing zone boundaries; the latter are applied only at the chronic boundary. The concentration of pollutants at the boundaries of any of these mixing zones may not exceed the numerical criteria for that zone.

Each aquatic life **acute** criterion is based on the assumption that organisms are not exposed to that concentration for more than one hour and more often than one exposure in three years. Each aquatic life **chronic** criterion is based on the assumption that organisms are not exposed to that concentration for more than four consecutive days and more often than once in three years.

The two types of human health-based water quality criteria distinguish between those pollutants linked to non-cancer effects (non-carcinogenic) and those linked to cancer effects (carcinogenic). The human health-based water quality criteria incorporate several exposure and risk assumptions. These assumptions include:

- A 70-year lifetime of daily exposures.
- An ingestion rate for fish or shellfish measured in kg/day.
- An ingestion rate of two liters/day for drinking water
- A one-in-one-million cancer risk for carcinogenic chemicals.

This permit authorizes a small acute mixing zone, surrounded by a chronic mixing zone around the point of discharge (WAC 173-201A-400). The water quality standards impose certain conditions before allowing the discharger a mixing zone:

**1. Ecology must specify both the allowed size and location in a permit.**

The proposed permit specifies the size and location of the allowed mixing zone.

For this discharge, the percent volume restrictions of the water quality standards resulted in a lower dilution factor than the distance and width restrictions. Therefore, the dilution factor calculated at a 10-year low flow was used to determine reasonable potential to exceed water quality standards.

**2. The facility must fully apply “all known, available, and reasonable methods of prevention, control and treatment” (AKART) to its discharge.**

Ecology has determined that the treatment provided at the City of Leavenworth POTW meets the requirements of AKART (see “Technology based Limits”).

**3. Ecology must consider critical discharge conditions.**

Surface water quality-based limits are derived for the waterbody’s critical condition (the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or designated waterbody uses). The critical discharge condition is often pollutant-specific or waterbody-specific.

Critical discharge conditions are those conditions that result in reduced dilution or increased effect of the pollutant. Factors affecting dilution include the depth of water, the density stratification in the water column, the currents, and the rate of discharge. Density stratification is determined by the salinity and temperature of the receiving water. Temperatures are warmer in the surface waters in summer. Therefore, density stratification is generally greatest during the summer months. Density stratification affects how far up in

the water column a freshwater plume may rise. The rate of mixing is greatest when an effluent is rising. The effluent stops rising when the mixed effluent is the same density as the surrounding water. After the effluent stops rising, the rate of mixing is much more gradual. Water depth can affect dilution when a plume might rise to the surface when there is little or no stratification. Ecology's *Permit Writer's Manual* describes additional guidance on criteria/design conditions for determining dilution factors. The manual can be obtained from Ecology's website at: <http://www.ecy.wa.gov/biblio/92109.html>.

Ecology modeled the dilution zones in preparation for the current permit there is no reason to conduct another analysis at this time.

Ecology used the following critical conditions to model the discharge:

- The seven-day-average low river flow with a recurrence interval of ten years (7Q10) 379 cfs.
- River depth of 3 feet at the 7Q10 period.
- River velocity of 1.3 ft per second.
- Manning roughness coefficient .045.
- Channel width of 150 feet.
- Maximum design criteria monthly effluent flow of 0.84 MGD for chronic mixing zone calculation.
- Maximum daily flow of 1.27 million gallons per day (MGD) for acute mixing zone.

Ecology obtained ambient data at critical conditions in the vicinity of the outfall from the City of Leavenworth's permit application, the US Geological Survey data (1930 to 1979) for the Wenatchee River near Leavenworth station and the Ecology Environmental Assessment Program.

**4. Supporting information must clearly indicate the mixing zone would not:**

- **Have a reasonable potential to cause the loss of sensitive or important habitat.**
- **Substantially interfere with the existing or characteristic uses.**
- **Result in damage to the ecosystem.**
- **Adversely affect public health.**

Ecology established Washington State water quality criteria for toxic chemicals using EPA criteria. EPA developed the criteria using toxicity tests with numerous organisms and set the criteria to generally protect the species tested and to fully protect all commercially and recreationally important species.

EPA sets acute criteria for toxic chemicals assuming organisms are exposed to the pollutant at the criteria concentration for one hour. They set chronic standards assuming organisms are exposed to the pollutant at the criteria concentration for four days. Dilution modeling under

critical conditions generally shows that both acute and chronic criteria concentrations are reached within minutes of being discharged.

The discharge plume does not impact drifting and non-strong swimming organisms because they cannot stay in the plume close to the outfall long enough to be affected. Strong swimming fish could maintain a position within the plume, but they can also avoid the discharge by swimming away. Mixing zones generally do not affect benthic organisms (bottom dwellers) because the buoyant plume rises in the water column. Ecology has additionally determined that the effluent will not exceed 33 degrees C for more than two seconds after discharge; and that the temperature of the water will not create lethal conditions or blockages to fish migration.

Ecology evaluates the cumulative toxicity of an effluent by testing the discharge with whole effluent toxicity (WET) testing.

Ecology reviewed the above information, the specific information on the characteristics of the discharge, the receiving water characteristics and the discharge location. Based on this review, Ecology concluded that the discharge does not have a reasonable potential to cause the loss of sensitive or important habitat, substantially interfere with existing or characteristics uses, result in damage to the ecosystem, or adversely affect public health if the permit limits are met.

**5. The discharge/receiving water mixture must not exceed water quality criteria outside the boundary of a mixing zone.**

Ecology conducted a reasonable potential analysis, using procedures established by the EPA and by Ecology, for each pollutant and concluded the discharge/receiving water mixture will not violate water quality criteria outside the boundary of the mixing zone if permit limits are met.

**6. The size of the mixing zone and the concentrations of the pollutants must be minimized.**

At any given time, the effluent plume uses only a portion of the acute and chronic mixing zone, which minimizes the volume of water involved in mixing. The plume rises through the water column as it mixes, therefore much of the receiving water volume at lower depths in the mixing zone is not mixed with discharge. Similarly, because the discharge may stop rising at some depth due to density stratification, waters above that depth will not mix with the discharge. Ecology determined it is impractical to specify in the permit the actual, much more limited volume in which the dilution occurs as the plume rises and moves with the current.

Ecology minimizes the size of mixing zones by requiring dischargers to install diffusers when they are appropriate to the discharge and the specific receiving waterbody. When a diffuser is installed, the discharge is more completely mixed with the receiving water in a shorter time. Ecology also minimizes the size of the mixing zone (in the form of the dilution factor) using design criteria with a low probability of occurrence. For example, Ecology uses the expected 95<sup>th</sup> percentile pollutant concentration, the 90<sup>th</sup> percentile background concentration, the centerline dilution factor, and the lowest flow occurring once in every ten years to perform the reasonable potential analysis.

Because of the above reasons, Ecology has effectively minimized the size of the mixing zone authorized in the proposed permit.

**7. Maximum size of mixing zone.**

The authorized mixing zone does not exceed the maximum size restriction.

**8. Acute Mixing Zone.**

- **The discharge/receiving water mixture must comply with acute criteria as near to the point of discharge as practicably attainable.**

Ecology determined the acute criteria will be met at 10% of the distance of the chronic mixing zone at the seven day ten year low flow.

- **The pollutant concentration, duration, and frequency of exposure to the discharge will not create a barrier to migration or translocation of indigenous organisms to a degree that has the potential to cause damage to the ecosystem.**

As described above, the toxicity of any pollutant depends upon the exposure, the pollutant concentration, and the time the organism is exposed to that concentration. Authorizing a limited acute mixing zone for this discharge assures that it will not create a barrier to migration. The effluent from this discharge will rise as it enters the receiving water, assuring that the rising effluent will not cause translocation of indigenous organisms near the point of discharge (below the rising effluent).

- **Comply with size restrictions.**

The mixing zone authorized for this discharge complies with the size restrictions published in chapter 173-201A WAC.

**9. Overlap of Mixing Zones.**

This mixing zone does not overlap another mixing zone.

**DESIGNATED USES AND SURFACE WATER QUALITY CRITERIA**

Applicable designated uses and surface water quality criteria are defined in chapter 173-201A WAC. In addition, the U.S. EPA set human health criteria for toxic pollutants (EPA 1992). Criteria applicable to this facility’s discharge are summarized below in Table 6.

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

**Table 7: Aquatic Life Uses & Associated Criteria**

<b>Core Summer Habitat</b>	
Temperature Criteria – Highest 7DAD MAX	16°C (60.8°F)
Dissolved Oxygen Criteria	9.5 mg/L
Turbidity Criteria	<ul style="list-style-type: none"> <li>• 5 NTU over background when the background is 50 NTU or less; or</li> <li>• A 10 percent increase in turbidity when the background turbidity is more than 50 NTU</li> </ul>
Total Dissolved Gas Criteria	Total dissolved gas shall not exceed 110 percent of saturation at any point of sample collection
pH Criteria	pH shall be within the range of 6.5 to 8.5, with a human-caused variation within the above range of less than 0.2 units
Total Dissolved Gas Criteria	Total dissolved gas shall not exceed 110 percent of saturation at any point of sample collection
pH Criteria	pH shall be within the range of 6.5 to 8.5 with a human-caused variation within the above range of less than 0.5 units

- The recreational uses are extraordinary primary contact recreation, primary contact recreation, and secondary contact recreation. The recreational uses for this receiving water are identified below.

**Table 8: Recreational Uses and Associated Criteria**

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

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

**EVALUATION OF SURFACE WATER QUALITY-BASED EFFLUENT LIMITS FOR NUMERIC CRITERIA**

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 biological oxygen demand (BOD) is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating surface water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

With technology-based controls (AKART), predicted pollutant concentrations in the discharge exceed water quality criteria. Ecology therefore authorizes a mixing zone in accordance with the geometric configuration, flow restriction, and other restrictions imposed on mixing zones by chapter 173-201A WAC.

The dilution factors of effluent to receiving water that occur within these zones have been determined at the critical condition by the use of Ecology’s RIVPLUM.xls spreadsheet and were compared with analysis by CORMIX for a single port diffuser. While RIVPLUM determines a slightly more restrictive acute dilution factor than CORMIX at 10:1 vs. 12.5:1 respectively, the CORMIX chronic dilution factor is more restrictive than RIVPLUM at 37:1 vs. 47:1 respectively. The RIVPLUM model does not allow for outfalls other than sidebank and submerged discharges. The CORMIX model models on the actual spatial design of the outfall and in the writer’s opinion is more representative of actual conditions. The CORMIX dilution factors determined to be (from Appendix C) are contained in Table 9.

**Table 9: Dilution Factors (DF)**

Criteria	Acute	Chronic
Aquatic Life	13	37

Ecology determined the impacts of BOD<sub>5</sub>, pH, ammonia, and temperature as described below, using the dilution factors in the above table. The derivation of surface water quality-based limits also takes into account the variability of pollutant concentrations in both the effluent and the receiving water.

**BOD<sub>5</sub>**--With technology-based limits, this discharge results in a small amount of BOD loading relative to the large amount of dilution in the receiving water at critical conditions. Technology-based limits will ensure that dissolved oxygen criteria are met in the receiving water.

**Fecal Coliform Bacteria** -- Ecology modeled the fecal coliform bacteria counts at the chronic mixing dilution factor. Discharge at the technological limit does not violate the criteria for primary contact recreation. Therefore, Ecology included the technological limits for fecal coliform colonies per ml in the proposed permit.

**Temperature**--The state temperature standards (WAC 173-201A-200-210 and 600-612) include multiple elements:

- Annual summer maximum threshold criteria (June 15 to September 15)
- Supplemental spawning and rearing season criteria (September 15 to June 15)
- Incremental warming restrictions
- Protections against acute effects

Ecology evaluates each criterion independently to determine reasonable potential and derive permit limits.

- Annual summer maximum and supplementary spawning/rearing criteria  
Each water body has an annual maximum temperature criterion [WAC 173-201A-200(1)(c), 210(1)(c), and Table 602]. These threshold criteria (e.g., 12, 16, 17.5, 20°C) protect specific categories of aquatic life by controlling the effect of human actions on summer temperatures.

Some waters have an additional threshold criterion to protect the spawning and incubation of salmonids (9°C for char and 13°C for salmon and trout) [WAC 173-201A-602, Table 602]. These criteria apply during specific date-windows.

The threshold criteria apply at the edge of the chronic mixing zone. Criteria for most fresh waters are expressed as the highest 7-Day average of daily maximum temperature (7-DADMax). The 7-DADMax temperature is the arithmetic average of seven consecutive measures of daily maximum temperatures. Criteria for marine waters and some fresh waters are expressed as the highest 1-Day annual maximum

temperature (1-DMax).

- Incremental warming criteria

The water quality standards limit the amount of warming human sources can cause under specific situations [WAC 173-201A-200(1)(c)(i)-(ii), 210(1)(c)(i)-(ii)]. The incremental warming criteria apply at the edge of the chronic mixing zone.

At locations and times when background temperatures are cooler than the assigned threshold criterion, point sources are permitted to warm the water by only a defined increment. These increments are permitted only to the extent doing so does not cause temperatures to exceed either the annual maximum or supplemental spawning criteria.

At locations and times when a threshold criterion is being exceeded due to natural conditions, all human sources, considered cumulatively, must not warm the water more than 0.3°C above the naturally warm condition.

When Ecology has not yet completed a TMDL, our policy allows each point source to warm water at the edge of the chronic mixing zone by 0.3°C. This is true regardless of the background temperature and even if doing so would cause the temperature at the edge of a standard mixing zone to exceed the numeric threshold criteria. Allowing a 0.3°C warming for each point source is reasonable and protective where the dilution factor is based on 25% or less of the critical flow. This is because the fully mixed effect on temperature will only be a fraction of the 0.3°C cumulative allowance (0.075°C or less) for all human sources combined.

- Temperature Acute Effects

**Instantaneous lethality to passing fish:** The upper 99th percentile daily maximum effluent temperature must not exceed 33°C; unless a dilution analysis indicates ambient temperatures will not exceed 33°C 2-seconds after discharge.

**General lethality and migration blockage:** Measurable (0.3°C) increases in temperature at the edge of a chronic mixing zone are not allowed when the receiving water temperature exceeds either a 1DMax of 23°C or a 7DADMax of 22°C.

**Lethality to incubating fish:** Human actions must not cause a measurable (0.3°C) warming above 17.5°C at locations where eggs are incubating.

## **TEMPERATURE TMDL**

Summer water temperatures of the Wenatchee River and some of its tributaries (Chiwaukum Creek, Icicle Creek, Little Wenatchee River, Nason Creek, Mission Creek, and Peshastin Creek) are warmer than Washington State (the state) water quality standards that are set to protect fish. As a result, Ecology included these waters on the state's list of water-quality-impaired waters called the 303(d) list. Ecology published the completed and EPA approved a total maximum daily load (TMDL) for temperature in the Wenatchee River in August 2005. You can find more information at: <http://www.ecy.wa.gov/biblio/0503011.html>

The goal of the TMDL is to ensure that water bodies in the Wenatchee River watershed on the 2004 303(d) list for temperature will reach water quality standards within a reasonable period of time. This TMDL is implemented in coordination with the Wenatchee Watershed Management Plan (WWMP).

Ecology has coordinated and will continue to coordinate the development and implementation of the Wenatchee River Watershed Temperature TMDL with the WWMP and its participating entities. Ecology started development of the WWMP in 1999, and the Wenatchee Watershed Planning Unit (WWPU) unanimously approved it on April 26, 2006. You can download the plan from the following website:

[http://www.co.chelan.wa.us/nr/nr\\_watershed\\_plan.htm](http://www.co.chelan.wa.us/nr/nr_watershed_plan.htm)

Ecology evaluated wasteload allocations for the National Pollution Discharge Elimination System (NPDES) discharges for the Wenatchee River basin. It calculated maximum temperatures for NPDES effluent discharges (TNPDES) using the following equation for system potential upstream temperatures greater than or equal to 16°C (all point sources in this TMDL study discharge to waters that are designated as Class AA) or 18°C (all point sources discharge to waters that are designated as Class A).

$$\text{Class AA: TNPDES} = [16^{\circ}\text{C} - 0.3^{\circ}\text{C}] + [\text{chronic dilution factor}] * 0.3^{\circ}\text{C}$$

Maximum effluent temperatures should also be no greater than 33°C to avoid creating areas in the mixing zone that would cause instantaneous lethality.

Table 9 contains the point source WLAs for point source dischargers in the Wenatchee River watershed, WIRA 45.

**Table 10: Wasteload Allocation (WLA)**

NPDES Facility	Chronic Dilution Factor	Water Quality Standard for Temperature in Degrees C	Maximum Allowable Effluent Temperature Wasteload Allocation in Degrees C
Lake Wenatchee POTW	214	16	33.0
Stevens Pass POTW	1	16	16.0
Leavenworth POTW	37.1	16	28.8
Cashmere POTW	100	16	33.0
Peshastin POTW	331.7	16	33.0
Leavenworth National Fish Hatchery	1	16	18.0

The proposed permit includes a temperature limit based on the WLA allotment.

**pH**--Ecology modeled the impact of the effluent pH on the receiving water using the calculations from EPA, 1988, and the acute dilution factor of 37 :1. The receiving water input variables used are listed in Table 4 (page 14). The effluent input variables used are included in Table 3.

Ecology predicts no violation of the pH criteria under critical conditions. Therefore, the proposed permit includes technology-based effluent limits for pH.

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

The following toxic pollutant is present in the discharge: ammonia. Ecology conducted a reasonable potential analysis (See Appendix C) on ammonia to determine whether it would require effluent limits in this permit.

Ammonia's toxicity depends on that portion which is available in the unionized form. The amount of unionized ammonia depends on the temperature and pH in the receiving freshwater. To evaluate ammonia toxicity, Ecology used the available receiving water information for ambient station, 45A-110 Wenatchee River-Near Leavenworth, and Ecology spreadsheet tools.

No reasonable potential to violate the water quality criteria for ammonia was found. There, the proposed permit does not contain a limit for ammonia.

## **DISSOLVED OXYGEN AND pH TMDL CONSIDERATIONS**

The Wenatchee River watershed is under 4 TMDLs which address dissolved oxygen deficiencies and high pH in the Wenatchee River watershed. Ecology revised “The Wenatchee River Watershed Dissolved Oxygen and pH Total Maximum Daily Load Report, Publication No. 08-10-062,” in August 2009. You can view the published report at:

<http://www.ecy.wa.gov/biblio/0810062.html>

The TMDL requires this point source discharger to achieve a target reduction in phosphorus loading to the river by 2020 at the end of the next permit cycle. The TMDL calls for a substantial reduction in phosphorus loads from the current loads. The proposed permit includes a compliance schedule requiring Leavenworth to meet the wasteload allocations included in the TMDL. The waste load expressed as concentration is 90 µg/L or at full flow design criteria a maximum load of 0.286 kg/Day total phosphorous.

## **WHOLE EFFLUENT TOXICITY**

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

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

## **HUMAN HEALTH**

Washington’s water quality standards include 91 numeric human health-based criteria that Ecology must consider when writing NPDES permits. These criteria were established in 1992 by the U.S. EPA in its National Toxics Rule (40 CFR 131.36). The National Toxics Rule allows states to use mixing zones to evaluate whether discharges comply with human health criteria.

Ecology determined the applicant's discharge is unlikely to contain chemicals regulated to protect human health, on existing effluent data or knowledge of discharges to their system. Ecology will reevaluate this discharge for impacts to human health at the next permit reissuance.

**SEDIMENT QUALITY**

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

<http://www.ecy.wa.gov/programs/tcp/smu/sediment.html>

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

**GROUND WATER QUALITY LIMITS**

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

The City of Leavenworth POTW does not discharge wastewater to the ground. No permit limits are required to protect ground water.

**COMPARISON OF EFFLUENT LIMITS WITH THE PREVIOUS PERMIT ISSUED ON MARCH 23, 2005**

The proposed permit limits are unchanged from the current permit with the exception of a temperature limit based on the Temperature TMDL wasteload allocation.

**Table 11: Proposed Permit Limits**

<b>EFFLUENT LIMITS <sup>a</sup>: OUTFALL # 001</b>		
<b>Parameter</b>	<b>Average Monthly</b>	<b>Average Weekly</b>
Biochemical Oxygen Demand (5 day)	30 mg/L; 210 lbs/day and 85% minimum removal	45 mg/L; 315 lbs/day
Total Suspended Solids	30 mg/L; 210 lbs/day and 85% minimum removal	45 mg/L; 315 lbs/day
Fecal Coliform Bacteria	200/100 mL	400/100 mL
Temperature	28.8° C maximum daily	
pH	shall not be outside the range of 6.0 to 9.0	
<sup>a</sup> 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.		

**MONITORING REQUIREMENTS**

Ecology requires monitoring, recording, and reporting (WAC 173-220-210 and 40 CFR 122.41)

to verify that the treatment process is functioning correctly and that the discharge complies with the permit's effluent limits.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. The required monitoring frequency is consistent with agency guidance given in the current version of Ecology's *Permit Writer's Manual* (Publication Number 92-09) for an activated sludge treatment facility.

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

The proposed permit requires the City of Leavenworth POTW to monitor on a regular basis for BOD<sub>5</sub>, TSS, fats, oil and grease (FOG), dissolved oxygen, fecal coliform bacteria, temperature, and total ammonia to further characterize the effluent. These pollutants could have a significant impact on the quality of the surface water. Monitoring for alkalinity, total hardness and total phosphorus have been eliminated or reduced as Ecology believes sufficient data have been collected to characterize the effluent at this time or low variability allows a monitoring frequency reduction. Temperature monitoring is increased to 5 times a week to provide the Temperature TMDL effort with more point-source data.

The POTW is required to monitor, on a limited basis, nitrite and nitrate, total phosphorus, total dissolved solids, hardness, and total kjeldahl nitrogen to support the next permit application.

## **LAB ACCREDITATION**

Ecology requires that facilities must use a laboratory registered or accredited under the provisions of chapter 173-50 WAC, *Accreditation of Environmental Laboratories* to prepare all monitoring data (with the exception of certain parameters). Ecology accredited the laboratory at this facility for: BOD<sub>5</sub>, TSS, dissolved oxygen, fecal coliform bacteria, ammonia, and pH.

## **OTHER PERMIT CONDITIONS**

### **REPORTING AND RECORD KEEPING**

Ecology based permit condition S3 on our authority to specify any appropriate reporting and record keeping 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 Leavenworth

POTW to take the actions detailed in proposed permit requirement S4 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 S4 restricts the amount of flow.

### **OPERATION AND MAINTENANCE (O&M)**

The proposed permit contains Condition S5 as authorized under RCW 90.48.110, WAC 173-220-150, chapter 173-230 WAC, and WAC 173-240-080. Ecology included it to ensure proper operation and regular maintenance of equipment, and to ensure The City of Leavenworth POTW takes adequate safeguards so that it uses constructed facilities to their optimum potential in terms of pollutant capture and treatment.

### **PRETREATMENT**

#### Duty to Enforce Discharge Prohibitions

This provision prohibits the publicly owned treatment works (POTW) from authorizing or permitting an industrial discharger to discharge certain types of waste into the sanitary sewer.

- The first section of the pretreatment requirements prohibits the POTW from accepting pollutants which causes “Pass-through” or “Interference”. This general prohibition is from 40 CFR §403.5(a). Appendix B of this fact sheet defines these terms.
- The second section reinforces a number of specific State and Federal pretreatment prohibitions found in WAC 173-216-060 and 40 CFR §403.5(b). These reinforce that the POTW may not accept certain wastes, which:
  - Are prohibited due to dangerous waste rules.
  - Are explosive or flammable.
  - Have too high or low of a pH (too corrosive, acidic or basic).
  - May cause a blockage such as grease, sand, rocks, or viscous materials.
  - Are hot enough to cause a problem.
  - Are of sufficient strength or volume to interfere with treatment.
  - Contain too much petroleum-based oils, mineral oil, or cutting fluid.
  - Create noxious or toxic gases at any point.

40 CFR Part 403 contains the regulatory basis for these prohibitions , with the exception of the pH provisions which are based on WAC 173-216-060.

- The third section of pretreatment conditions reflects state prohibitions on the POTW accepting certain types of discharges unless the discharge has received prior written authorization from Ecology. These discharges include:

- Cooling water in significant volumes.
- Stormwater and other direct inflow sources.
- Wastewaters significantly affecting system hydraulic loading, which do not require treatment.

#### Federal and State Pretreatment Program Requirements

Ecology administers the Pretreatment Program under the terms of the addendum to the “Memorandum of Understanding between Washington Department of Ecology and the United States Environmental Protection Agency, Region 10” (1986) and 40 CFR, part 403. Under this delegation of authority, Ecology issues wastewater discharge permits for significant industrial users (SIUs) discharging to POTWs which have not been delegated authority to issue wastewater discharge permits. Ecology must approve, condition, or deny new discharges or a significant increase in the discharge for existing significant industrial users (SIUs) (40 CFR 403.8 (f)(1)(i) and(iii)).

Industrial dischargers must obtain a permit from Ecology before discharging waste to the City of Leavenworth POTW (WAC 173-216-110(5)). Industries discharging wastewater that is similar in character to domestic wastewater do not require a permit.

#### Routine Identification and Reporting of Industrial Users

The permit requires non-delegated POTWs to take “continuous, routine measures to identify all existing, new, and proposed significant industrial users (SIUs) and potential significant industrial users (PSIUs)” discharging to their sewer system. Examples of such routine measures include regular review of water and sewer billing records, business license and building permit applications, advertisements, and personal reconnaissance. System maintenance personnel should be trained on what to look for so they can identify and report new industrial dischargers in the course of performing their jobs. The POTW may not allow SIUs to discharge prior to receiving a permit, and must notify all industrial dischargers (significant or not) in writing of their responsibility to apply for a State Waste Discharge Permit. The POTW must send a copy of this notification to Ecology.

#### Support by Ecology for Developing Partial Pretreatment Program by POTW

As sufficient data becomes available, the City of Leavenworth must, in consultation with Ecology, reevaluate its local limits in order to prevent pass-through or interference. If any pollutant causes pass-through or interference, or exceeds established sludge standards, the City of Leavenworth must establish new local limits or revise existing local limits as required by 40 CFR 403.5. In addition, Ecology may require revision or establishment of local limits for any pollutant that causes a violation of water quality standards or established effluent limits, or that causes whole effluent toxicity.

Ecology may modify this permit to incorporate additional requirements relating to the establishment and enforcement of local limits for pollutants of concern.

### **SOLID WASTE CONTROL**

To prevent water quality problems the facility is required in permit Condition S7 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, and by Ecology under chapter 70.95J RCW, chapter 173-308 WAC "Biosolids Management," and chapter 173-350 WAC "Solid Waste Handling Standards." The disposal of other solid waste is under the jurisdiction of the Chelan County Health Department.

### **GENERAL CONDITIONS**

Ecology bases the standardized General Conditions on state and federal law and regulations. They are included in all individual municipal NPDES permits issued by Ecology.

### **COMPLIANCE SCHEDULE**

The Permittee must meet compliance schedule requirements under Special Condition S9 of the proposed permit. In order to comply with a total phosphorous wasteload allocation contained in The Wenatchee River Watershed Dissolved Oxygen and pH Total Maximum Daily Load Water Quality Improvement Report. The waste load expressed as a concentration is 90 µg/L or at full flow design criteria a maximum load of 0.286 kg/Day total phosphorous.

## **PERMIT ISSUANCE PROCEDURES**

### **PERMIT MODIFICATIONS**

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

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

### **PROPOSED PERMIT ISSUANCE**

This proposed permit meets all statutory requirements for Ecology to authorize a wastewater discharge. The permit includes limits and conditions to protect human health and aquatic life,

and the beneficial uses of waters of the state of Washington. Ecology proposes to issue this permit for a term of 5 years.

#### REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

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

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

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

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

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

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

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

Washington State Department of Ecology.

2006. *Permit Writer's Manual*. Publication Number 92-109  
(<http://www.ecy.wa.gov/biblio/92109.html>)

Laws and Regulations (<http://www.ecy.wa.gov/laws-rules/index.html>)

Permit and Wastewater Related Information  
(<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)

Water Pollution Control Federation.

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**

Ecology proposes to reissue a permit to the City of Leavenworth POTW. The permit includes wastewater discharge limits and other conditions. This fact sheet describes the facility and Ecology's reasons for requiring permit conditions.

Ecology will place a Public Notice of Draft on June 9, 2010 in the Wenatchee World to inform the public and to invite comment on the proposed draft National Pollutant Discharge Elimination System permit and fact sheet.

The notice –

- Tells where copies of the draft permit and fact sheet are available for public evaluation (a local public library, the closest regional or field office, posted on our website).
- Offers to provide the documents in an alternate format to accommodate special needs.
- Asks people to tell us how well the proposed permit would protect the receiving water.
- Invites people to suggest fairer conditions, limits, and requirements for the permit.
- Invites comments on Ecology's determination of compliance with antidegradation rules.
- Urges people to submit their comments, in writing, before the end of the comment period.
- Tells how to request a public hearing about the proposed NPDES permit.

### **NOTICE: ANNOUNCEMENT OF AVAILABILITY OF DRAFT PERMITS**

Draft Permits have been completed for the following permittees for a National Pollutant Discharge Elimination System (NPDES) Permit in accordance with the provisions of Chapter 90.48 Revised Code of Washington (RCW), Chapter 173-220 Washington Administrative Code (WAC), and the Federal Clean Water Act.

Following evaluation of the applications and other available information, draft permits have been developed for:

**Permittee:** City of Leavenworth, Permit No. WA-002097-4 which would allow the discharge of treated municipal wastewater up to a maximum of 840,000 gallons per day to the Wenatchee River at River Mile 24 from its facility located at 1402 Commercial Street, Leavenworth.

**Permittee:** City of Wenatchee, Permit No. WA-002394-9 which would allow the discharge of municipal wastewater to a maximum of 5.5 million gallons per day to the Columbia River at River Mile 466.6 from its facility located at 201 North Worthen Street, Wenatchee.

All discharges to be in compliance with the Department of Ecology's Water Quality Standards for a permit to be issued.

**FACT SHEET FOR NPDES PERMIT NO. WA-002097-4**  
**CITY OF LEAVENWORTH POTW**  
**EXPIRATION DATE: AUGUST 31, 2015**  
Page 38 of 49

A tentative determination has been made to issue these permits based on the effluent limitations and special permit conditions that will prevent and control pollution. A final determination will not be made until all timely comments received in response to this notice have been evaluated.

**PUBLIC COMMENT AND INFORMATION**

The draft permits and fact sheets may be viewed at the Department of Ecology (Department) website: [http://www.ecy.wa.gov/programs/wq/permits/central\\_permits.html](http://www.ecy.wa.gov/programs/wq/permits/central_permits.html). The applications, fact sheets, proposed permits, and other related documents are also available at the Department's Central Regional Office for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m., weekdays. To obtain a copy or to arrange to view copies at the Central Regional Office, please call Cindy Huwe at 509/457-7105, e-mail [cynthia.huwe@ecy.wa.gov](mailto:cynthia.huwe@ecy.wa.gov), or write to the address below.

Interested persons are invited to submit written comments regarding the proposed permits. All comments must be submitted by July 9, 2010 (within 30 days of the final date of publication of this notice) to be considered for the final determination. Comments should be sent to: Department of Ecology, Central Regional Office, 15 West Yakima Avenue, Suite 200, Yakima, WA 98902, Attention: Cindy Huwe. E-mail comments should be sent to Cindy Huwe at [cynthia.huwe@ecy.wa.gov](mailto:cynthia.huwe@ecy.wa.gov).

Any interested party may request a public hearing on the proposed permits within 30 days of the publication date of this notice. The request for a hearing shall state the interest of the party and the reasons why a hearing is necessary. The request should be sent to the above address. The Department will hold a hearing if it determines that there is significant public interest. If a hearing is to be held, public notice will be published at least 30 days in advance of the hearing date. Any party responding to this notice with comments will be mailed a copy of a hearing public notice. Please bring this public notice to the attention of persons who you know would be interested in this matter. The Department is an equal opportunity agency. If you have a special accommodation needs, please contact Cindy Huwe at 509/457-7105 or TTY (for the speech and hearing impaired) at 1-800-833-6388.

Publication date of this Notice is June 9, 2010.

Ecology has published a document entitled *Frequently Asked Questions about Effective Public Commenting* which is available on our website at <http://www.ecy.wa.gov/biblio/0307023.html>. You may obtain further information from Ecology by telephone, 509 457 7105, or by writing to the address listed below.

Water Quality Permit Coordinator  
Department of Ecology  
Central Regional Office  
15 West Yakima Avenue, Suite 200  
Yakima, WA 98902

The primary author of this permit and fact sheet is Richard Marcley.

## APPENDIX B--GLOSSARY

- 1-DMax** or **1-day maximum temperature** - The highest water temperature reached on any given day. This measure can be obtained using calibrated maximum/minimum thermometers or continuous monitoring probes having sampling intervals of thirty minutes or less.
- 7-DADMax** or **7-day average of the daily maximum temperatures** - The arithmetic average of seven consecutive measures of daily maximum temperatures. The 7-DADMax for any individual day is calculated by averaging that day's daily maximum temperature with the daily maximum temperatures of the three days prior and the three days after that date.
- Acute Toxicity**—The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.
- AKART** – The acronym for “all known, available, and reasonable methods of prevention, control and treatment.” AKART is a technology-based approach to limiting pollutants from wastewater discharges which requires an engineering judgment and an economic judgment. AKART must be applied to all wastes and contaminants prior to entry into waters of the state in accordance with RCW 90.48.010 and 520, WAC 173-200-030(2)(c)(ii), and WAC 173-216-110(1)(a).
- Ambient Water Quality**—The existing environmental condition of the water in a receiving water body.
- Ammonia**—Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.
- Annual Average Design Flow (AADF)**—The average of the daily flow volumes anticipated to occur over a calendar year.
- Average Monthly Discharge Limit**—The average of the measured values obtained over a calendar month's time.
- 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.
- BOD<sub>5</sub>**—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 BOD<sub>5</sub> is used in modeling to measure the reduction of dissolved oxygen in receiving waters after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although 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.

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

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

**Compliance Inspection - Without Sampling**—A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

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

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

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

**Continuous Monitoring**—Uninterrupted, unless otherwise noted in the permit.

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

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

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

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

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

**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.

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

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

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

**Maximum Month Design Flow (MMDF)**— The largest volume of flow anticipated to occur during a continuous 30-day period, expressed as a daily average.

**Maximum Week Design Flow (MWDF)**— The largest volume of flow anticipated to occur during a continuous 7-day period, expressed as a daily average.

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

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

**Mixing Zone**—An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The 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.

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

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

**Peak Instantaneous Design Flow (PIDF)**—The maximum anticipated instantaneous flow.

**Quantitation Level (QL)**— The smallest detectable concentration of analyte greater than the Method Detection Limit (MDL) where the accuracy (precision & bias) achieves the objectives of the intended purpose.

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

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

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

**Total Suspended Solids (TSS)**—Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to receiving waters 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.

**Solid waste** -- All putrescible and non-putrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, contaminated soils and contaminated dredged material, and recyclable materials.

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

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

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

**Water Quality-based Effluent Limit**—A limit on the concentration 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 receiving waters.

**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 Ecology's homepage at <http://www.ecy.wa.gov/programs/eap/pwspread/pwspread.html>.

Calculation of pH of a mixture of two flows. Based on the procedure in EPA's DESCONE program (EPA, 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington D.C.)

Based on Lotus File PHMIX2.WK1 Revised 19-Oct-93

INPUT				
1. DILUTION FACTOR AT CHRONIC MIXING ZONE BOUNDARY	37.00	37.00	37.00	37.00
1. UPSTREAM/BACKGROUND CHARACTERISTICS	Ambient at Max pH		Ambient at Min pH	
Temperature (deg C):	20.30	20.30	20.30	20.30
pH: MAX Based on the 95th percentile	8.20	8.20	6.80	6.80
Alkalinity (mg CaCO3/L):	28.00	28.00	28.00	28.00
	Efluent @	Efluent @	Efluent @	Efluent @
	Max pH	Min pH	Max pH	Min pH
2. EFFLUENT CHARACTERISTICS				
Temperature (deg C): Maximum report temperature	23.70	25.00	25.00	25.00
pH:	8.50	6.50	8.50	6.50
Alkalinity (mg CaCO3/L): Average	26.90	208.00	208.00	208.00
OUTPUT				
1. IONIZATION CONSTANTS				
Upstream/Background pKa:	6.38	6.38	6.38	6.38
Efluent pKa:	6.36	6.35	6.35	6.35
2. IONIZATION FRACTIONS				
Upstream/Background Ionization Fraction:	0.99	0.99	0.72	0.72
Efluent Ionization Fraction:	0.99	0.59	0.99	0.59
3. TOTAL INORGANIC CARBON				
Upstream/Background Total Inorganic Carbon (mg CaCO3/L):	28.42	28.42	38.64	38.64
Efluent Total Inorganic Carbon (mg CaCO3/L):	27.09	355.25	209.47	355.25
4. CONDITIONS AT MIXING ZONE BOUNDARY				
Temperature (deg C):	20.39	20.43	20.43	20.43
Alkalinity (mg CaCO3/L):	27.97	32.86	32.86	32.86
Total Inorganic Carbon (mg CaCO3/L):	28.39	37.26	43.26	47.20
pKa:	6.38	6.38	6.38	6.38
pH at Mixing Zone Boundary:	8.21	7.25	6.88	6.74

Bacteriological Mass Balance Model				
Leavenworth POTW to the Wenatchee River				
CHRONIC DILUTION 278 :1				
Dilution Calculator	Efluent colonies per ml	Dilution Calculator	Final colony count	Dilution factor
36.1	400	1300	205	37
36.1	200	1300	13	37



**FACT SHEET FOR NPDES PERMIT NO. WA-002097-4**  
**CITY OF LEAVENWORTH POTW**  
**EXPIRATION DATE: AUGUST 31, 2015**  
 Page 46 of 49

Parameter	REASONABLE POTENTIAL			State Water Quality Standard		Max concentration at edge of...		LIMIT REQ'D?	Effluent percentile value	Pn	Max effluent conc. measured (metals as total recoverable)	Coeff Variation	s	# of samp n	Multiplier	Acute Df'n Factor	Chronic Df'n Factor
	Metal Criteria Translator as decimal	Metal Criteria Translator as decimal	Ambient Conc (metals as dissolved)	Acute	Chronic	Acute Mixing Zone	Chronic Mixing Zone										
AMMONIA Max Day	0.95	0.95	11.00	3500.00	570.00	226.33	83.55	NO	0.95	0.95	2800.00	0.60	0.55	55.00	1.02	12.50	37.10

Calculation Of Ammonia Concentration and Criteria for fresh water. Based on EPA Quality Criteria for Water (EPA 400/5-86-001) and WAC 173-201A. Revised 1-5-94 (corrected total ammonia criterion). Revised 3/10/95 to calculate chronic criteria in accordance with EPA Memorandum from Heber to WQ Stds Coordinators dated July 30, 1992.

INPUT	pH @ambient
1. Ambient Temperature (deg C; 0<T<30)	20.3
2. Ambient pH (6.5<pH<9.0) at edge	8.20
3. Acute TCAP (Salmonids present- 20; absent- 25)	20
4. Chronic TCAP (Salmonids present- 15; absent- 20)	15
OUTPUT	
1. Intermediate Calculations:	
Acute FT	1.00
Chronic FT	1.41
FPH	1.00
RATIO	14
pKa	9.39
Fraction Of Total Ammonia Present As Un-ionized	6.0461%
2. Un-ionized Ammonia Criteria	
Acute (1-hour) Un-ionized Ammonia Criterion (ug NH3/L)	260.0
Chronic (4-day) Un-ionized Ammonia Criterion (ug NH3/L)	42.0
3. Total Ammonia Criteria:	
Acute Total Ammonia Criterion (mg NH3+ NH4/L)	4.3
Chronic Total Ammonia Criterion (mg NH3+ NH4/L)	0.7
4. Total Ammonia Criteria expressed as Nitrogen:	
Acute Ammonia Criterion as mg N	3.5
Chronic Ammonia Criterion as N	0.57

**FACT SHEET FOR NPDES PERMIT NO. WA-002097-4**  
**CITY OF LEAVENWORTH POTW**  
**EXPIRATION DATE: AUGUST 31, 2015**  
 Page 47 of 49

**EFFLUENT DMR DATA**

	ALKA	BOD	BOD	BOD	BOD	BOD	FECAL	FECAL	FLOW	FLOW	WARD	AMMON	AMMON	AMMON	AMMON	(DO)	(DO)	PH	PH	T-P	TSS	TSS	TSS	TSS	TSS	TEMP	TEMP	TEMP	TEMP		
	AVG	AVG	AVG	AVG	AVW	AVW	GEM	GM7	AVG	MAX	AVG	AVG	AVG	MAX	MAX	AVG	MIN	MAX	MIN	AVG	AVG	AVG	AVG	AVW	AVW	AVG	AVG	MAX	MAX		
	MG/L	LBS/DAY	MG/L	PERCENT	LBS/DAY	MG/L	#/100 ML	#/100 ML	MGD	MGD	MG/L	LBS/DAY	MG/L	LBS/DAY	MG/L	MG/L	S.U.	S.U.	MG/L	LBS/DAY	MG/L	PERCENT	LBS/DAY	MG/L	LBS/DAY	MG/L	°C	°C	°C	°C	
	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Summer	
FAVFNWORTH POTW																															
WA00209740																															
DMR (MONTHLY)																															
EFFLUENT																															
1.825																															
1.2																															
1-Nov-06	20	10.04	4.2	97	21.12	7.6	2	6	0.37	0.717	50	0.5219	0.245	0.5705	0.25	6.41	2.12	6.78	6.39	3.9	13.53	5.72	96	26.04	10	12.9			14.4		
1-Dec-06	23.33	8.65	3	99	14.56	4.3	1.1	2	0.35	0.441	70	0.6785	0.24	0.7126	0.24	6.6	5.71	6.62	6.17	4.2	14.17	4.95	97	21.25	7	11.4			12.5		
1-Jan-07	27.5	10	3.7	98	17.94	7.6	1.5	3	0.364	0.465	55	0.5572	0.21	0.6257	0.22	6.64	5.22	6.51	6.12	2.2	15.3	5.8	95	25.02	10.6	9.9			11.9		
1-Feb-07	22.5	13	4.4	97	16.4	5.7	1.5	2.5	0.394	0.585	60	0.6743	0.245	0.7606	0.25	7.32	6.49	6.64	6.19	5	24.4	8.6	94	29.82	13	9.9			11		
1-Mar-07	22.5	19	6	95	25.26	7.7	1.4	5	0.372	0.554	75	0.766	0.2	0.924	0.2	8.48	7.25	8.48	6.15	3.4	36.6	11.78	85	42.22	13.6	10.6			12		
1-Apr-07	25	13.17	5.7	97	18.76	8.3	1.8	4	0.369	0.462	60	0.782	0.33	0.785	0.34	7.99	5.63	6.97	6.01	3.7	29	11.3	91	32.26	12.6	13.2			14.6		
1-May-07	20	13	5.2	97	16.99	7.1	2.2	6.5	0.51	0.481	60	0.67	0.22	0.609	0.29	6.02	5.46	6.58	5.99	2.9	20	1.84	95	21.22	9.6	16			18		
1-Jun-07	17.5	13.29	5.5	97	23.44	9	7	12	0.353	0.436	45	0.638	0.27	0.696	0.28	5.99	5.17	6.4	6.02	6.3	21.52	9.18	96	33.4	12.4	18.6	18.6	20.4	20.4		
1-Jul-07	15	14	4.9	98	21.9	7.7	6	16	0.378	0.434	45	0.574	0.21	0.616	0.22	5.31	4.6	6.33	6.03	4.3	27	9.3	96	54.1	19.9	21.6	21.6	22.5	22.5		
1-Aug-07	17.5	9	3.1	99	11.11	3.7	6.3	20	0.377	0.439	40	0.791	0.285	0.796	0.3	5.13	4.25	6.47	6.01	6.1	17.7	6.1	97	31.77	7.9	21.7	21.7	22	22		
1-Sep-07	20	7	2.5	99	7.71	2.8	3.8	11	0.349	0.434	50	0.615	0.22	0.615	0.22	5.38	4.6	6.48	6.11	1.3	14.2	5.4	97	18.71	6.8	19.9	19.9	21.8	21.8		
1-Oct-07	22.5	9	3.7	99	12.11	4.7	2.6	20	0.325	0.441	50	0.291	0.145	0.314	0.15	5.34	4.7	6.88	6.05	3.8	14.8	6.6	97	23.71	9.2	16.9			18		
1-Nov-07	20	9	4.1	98	11.85	5.9	1.9	5.5	0.279	0.377	50	0.566	0.23	0.644	0.24	6.36	5.6	6.7	6.25	4.1	11.2	5.31	97	23.33	12.6	13.5			15		
1-Dec-07	20	17	5.8	97	25.83	8.8	1.1	1.5	0.373	0.567	50	0.552	0.24	0.653	0.26	6.27	5.01	6.73	6.03	2.8	26	8.9	95	44.04	15	11.3			12.6		
1-Jan-08	25	14	5.0	97	19.66	7.1	1.6	5.5	0.308	0.41	50	0.508	0.23	0.556	0.23	6.45	5.5	6.69	6.17	1.0	16.7	7.2	95	25.2	10.2	9.5			11.8		
1-Feb-08	20	17	6.4	96	21.29	7.4	1.5	2	0.348	0.45	55	0.79	0.33	0.891	0.38	6.76	6.07	6.67	6.18	1.8	28.3	10.8	95	38.56	13.4	9.7			10.8		
1-Mar-08	20	20	6.3	96	24.14	7.5	1.5	2.5	0.415	0.484	60	0.699	0.225	0.876	0.25	7.22	6.46	6.8	6.4	2.1	31.4	10	94	41.18	12.5	10.2			10.8		
1-Apr-08	20	12	4.8	98	16.86	6.9	1	1	0.33	0.386	60	0.543	0.265	0.558	0.265	6.64	5.81	6.54	6.03	1.1	20.2	8.3	95	24.44	10	12.3			14.1		
1-May-08	15	17	7	97	20.06	8.1	1.5	5	0.337	0.444	60	0.721	0.305	0.839	0.33	5.27	4.03	6.42	6.03	4.4	24.7	10.13	94	33.19	13.4	16.2			18.3		
1-Jun-08	15	12	4.8	98	18	6.9	5.5	7.5	0.341	0.443	60	0.68	0.285	0.687	0.3	5.88	4.3	6.5	6.04	4.2	19.4	7.85	95	23.83	10.7	18.1	18.1	21	21		
1-Jul-08	20	17	4.7	98	21.46	6.4	4.3	11.5	0.387	0.46	50	0.781	0.29	0.8325	0.31	5.98	5.38	6.76	6.15	4.4	24.6	8.4	95	33.85	10.3	20.9	20.9	21.5	21.5		
1-Aug-08	25	11	3.5	98	13.54	4	5.9	8	0.405	0.489	40	0.729	0.24	0.734	0.25	6.52	5.03	6.57	6.1	1.8	25.5	8.26	95	36.86	10.6	21.2	21.2	23.2	23.2		
1-Sep-08	25	8	2.9	99	10.44	3.4	3.5	8	0.318	0.446	40	0.544	0.24	0.594	0.27	6.26	5.44	6.62	6.17	0.7	15.3	5.73	95	22.71	7.4	19.1	19.1	19.9	19.9		
1-Oct-08	40	7	3	99	13.47	5.4	5.1	8	0.28	0.411	50	0.434	0.21	0.493	0.23	6.91	6.1	6.77	6.55	4.9	9.7	4.02	98	16.03	6.3	16.6			18.8		
1-Nov-08	30	6	2.6	99	7.78	3.4	1.9	3	0.301	0.81	45	0.43	0.16	0.536	0.16	7.27	6.36	6.97	6.51	2.8	8.7	3.6	97	12.87	4.9	13.5			15.7		
1-Dec-08	25	12.20	4.5	90	21.20	5.8	1.2	1.5	0.376	0.518	40	1	0.2	1	0.2	6.87	5.72	6.69	6.1	2.3	26.2	9.09	95	36.78	10.8	11.5			11.7		
1-Jan-09	30	13	4.1	97	20.38	5.2	1.4	6	0.384	0.52	50	1	0.467	0.56	0.2	8.73	6.28	6.7	6.18	3.2	3.1	0.97	99	38.16	9	9.8			11.9		
1-Feb-09	27.5	22	9.97	98	10.72	5.1	1.1	2	0.265	0.356	45	0.501	0.23	0.594	0.25	7.62	6.83	6.75	6.38	4.1	23.5	10.64	92	14.86	7.1	10.8			11.9		
1-Mar-09	30	15	4.9	97	27.78	7.8	4	4	0.395	0.59	60	0.75	0.24	0.807	0.25	7.73	6.22	6.77	6.4	3.5	2.9	0.97	99	44.16	12.4	10.7			12.4		
1-Apr-09	32.5	8.06	3.6	98	11.9	5.8	1.2	1.5	0.323	0.407	50	0.511	0.255	0.616	0.32	6.91	6.12	6.82	6.4	2.9	2.3	0.99	99	13.31	6.2	13.9			15.7		
1-May-09	40	8	3.2	99	9.84	4.2	1.6	4.5	0.33	0.453	50	0.499	0.23	0.531	0.26	6.55	6.01	6.4	6.2	4	2.4	0.99	100	15.23	6.5	16.9			19.1		
1-Jun-09	25	10	3.8	98	12.09	4.3	5	9	0.321	0.377	40	0.717	0.255	0.734	0.27	6.94	5.76	6.79	6.3	3	2.7	0.99	1	21.08	7.7	20.3	20.3	20.8	20.8		
1-Jul-09	20	11.67	4.3	98	18.59	7.1	9.9	5	0.381	0.442	40	0.714	0.25	0.738	0.25	7.42	4.78	6.61	6.35	4.8	18.32	0.98	1	24.24	9	22.4	22.4	24.5	24.5		
1-Aug-09	20	10.04	3.6	99	16.73	5.1	11.9	21	0.38	0.437	40	0.753	0.26	0.785	0.27	5.71	5.27	6.77	6.43	3.7	2.9	0.99	100	23.67	8	22.6	22.6	24	24		
1-Sep-09	24	6.23	2.7	99	15.47	7	6.2	10.5	0.339	0.43	40	0.574	0.25	0.628	0.25	5.97	5.27	6.6	6.38	3.6	2.5	0.99	100	33.3	13.4	21.5	21.5	23.2	23.2		
1-Oct-09	27.5	4.73	2.3	99	9.28	4.9	4.3	10	0.328	0.507	40	0.496	0.205	0.563	0.22	6.36	5.43	6.66	6.27	2.8	4.44	0.99	99	6.35	3.2	17.6			19		
1-Nov-09	30	5.27	2.9	99	7	3.6	2.9	5.5	0.294	0.434	40	0.528	0.235	0.612	0.24	6.59	5.52	6.65	6.3	4	2	0.99	99	10.88	5.8	14.7			16.2		
AVG	23.8	11.56	4.4	95.1	16.6	6.0	3.4	7.0	0.349	0.473	50.4	0.6	0.25	0.68	0.3	6.6	5.4				3.4	16.30	6.0	88.2	27.4	10.0	15.3	20.6	16.9	22.1	
MAX	40.0	22.00	10.0	99.0	27.8	9.0	11.9	21.0	0.415	0.810	75.0	1.0	0.47	1.00	0.4	8.7</															

**FACT SHEET FOR NPDES PERMIT NO. WA-002097-4**  
**CITY OF LEAVENWORTH POTW**  
**EXPIRATION DATE: AUGUST 31, 2015**  
 Page 48 of 49

**INFLUENT DMR DATA**

LEAVENWORTH POTW												
INFLUENT	FLOW	BOD	BOD	BOD	BOD	O&G	TSS	TSS	TSS	TSS		
	AVG	AVG	AVG	MAX	MAX	AVG	AVG	AVG	MAX	MAX		
	MGD	LBS/DAY	MG/L	LBS/DAY	MG/L	MG/L	LBS/DAY	MG/L	LBS/DAY	MG/L		
		Value	Value	Value	Value	Value	Value	Value	Value	Value		
1-May-05	0.338	110	135.5	740	195	44.38	88.49	108	702.02	185		
1-Jun-05	0.380	477	178.89	687	255	49.1	306	114.78	502	176		
1-Jul-05	0.437	512	170.11	683	234	39.9	334.28	110.56	444.36	148		
1-Aug-05	0.437	525	148	742	206	38.5	353.81	99.63	461.05	131		
1-Sep-05	0.406	409	127.9	730	220	163.39	406.53	125.67	566.4	163		
1-Oct-05	0.385	397	135	498	160	57.8	358.79	122.13	442.46	148		
1-Nov-05	0.340	270	104.89	369	151	71.8	241.19	92.22	364.22	119		
1-Dec-05	0.405	312	104.11	516	161	45.9	449.92	141.67	719.68	210		
1-Jan-06	0.431	260	74.5	429	109	45.2	394.94	118.75	622.06	161		
1-Feb-06	0.453	277	76.63	727	184	66.1	467.87	129.13	830.16	210		
1-Mar-06	0.410	227	69.7	448	148	71.9	527.42	117.2	375.91	186		
1-Apr-06	0.356	330	116.63	527	183	32.1	531.68	189.38	772.08	263		
1-May-06	0.345	359	136.78	493	199	42.8	602.77	228.44	832.67	312		
1-Jun-06	0.364	528	198.78	850	368	45	476.2	176.71	712.82	269		
1-Jul-06	0.410	420	131.13	555	185	2.4	455.76	142.75	601.61	179		
1-Aug-06	0.396	486	158	754	238	2.4	472.01	153.1	786.89	2561		
1-Sep-06	0.367	314	110.75	494	179	173.34	471.09	166.88	925.59	349		
1-Oct-06	0.343	476	183.63	559	207	36.4	344.1	131.88	526.13	185		
1-Nov-06	0.370	443	165.23	870	299	21.5	421.67	154.9	1022	351		
1-Dec-06	0.402	710	218.88	987	288	51.2	482.04	148.5	762.96	237		
1-Jan-07	0.364	464	160.67	653	196	23.3	368	126.22	611.53	175		
1-Feb-07	0.394	455	155.38	619	196	53.6	395.01	135.63	519.82	163		
1-Mar-07	0.418	389	118.67	505	141	24.9	260.3	78.67	364.02	108		
1-Apr-07	0.369	541	192.63	743	274	29.4	512.98	182.25	818.57	302		
1-May-07	0.370	570	194.7	737	263	36	494.94	167.6	711.24	232		
1-Jun-07	0.353	534	196.63	787	293	53.1	551.81	204	1262	470		
1-Jul-07	0.378	647	220	977	320	814	681.32	229.25	1600	539		
1-Aug-07	0.377	679	230.6	884	301	104	589.97	200.4	992.26	338		
1-Sep-07	0.343	600	226.5	740	273	50.4	551.93	209	814	306		
1-Oct-07	0.325	626	255.78	752	305	51.3	491.74	199	748.68	235		
1-Nov-07	0.279	536	264.22	639	307	60.8	377.2	186.22	480.87	254		
1-Dec-07	0.373	671	231.25	880	278	28.2	463.4	164.5	683.1	265		
1-Jan-08	0.308	509	210.9	957	302	54.9	351.87	145.5	697.22	220		
1-Feb-08	0.348	479	178.13	642	229	60	395.34	148.75	583.57	213		
1-Mar-08		488	147.88	840	250	28.6	537.92	163.13	1197	356		
1-Apr-08	0.330	570	218.44	735	315	41.9	426.6	165.44	744.93	319		
1-May-08	0.337	573	220	779	270	45.8	460.4	176.33	657.93	228		
1-Jun-08	0.341	603	237.13	704	274	23.1	410.55	162.13	517.41	220		
1-Jul-08	0.387	694	227.9	771	265	46.1	507.84	166.4	758.71	252		
1-Aug-08	0.405	663	210	753	246	48.8	531.85	168.25	569.21	182		
1-Sep-08	0.318	576	232.13	629	258	169.59	481.86	194	592.32	267		
1-Oct-08	0.280	472	227.9	675	329	55.3	343.65	164.9	570.36	278		
1-Nov-08	0.301	457	201.38	589	279	48	344.14	142.25	478.97	227		
1-Dec-08	0.376	633	218.67	849	248	45.1	525.19	181.56	822.06	243		
1-Jan-09	0.418	477	145.78	894	235	20.3	356.23	97.89	765.95	136		
1-Feb-09	0.294	465	208.75	594	273	30.2	310.89	138.5	405.11	180		
1-Mar-09	0.395	570	183.63	741	242	33.3	487.83	155	648.89	212		
1-Apr-09	0.323	548	215.5	690	274	22.5	463.94	183	678.88	296		
1-May-09	0.330	674	270.63	1066	407	171	682.6	272	1597	610		
1-Jun-09	0.360	658	240.13	750	264	51.1	635.65	233.63	784.27	310		
1-Jul-09	0.381	751	253.8	986	353	21	675.24	228.7	1031	369		
1-Aug-09	0.380	789	269.13	1081	374	31.9	740.7	253.25	1135	376		
1-Sep-09	0.339	613	238.44	713	283	23.5	517.46	200.44	704.56	240		
1-Oct-09	0.328	596	249.78	770	287	56.1	452.84	189.78	589.18	237		
1-Nov-09		507	239.38	582	278	50.3	378.57	176.88	604.43	282		
	0.366	507.6	186.1	715.7	251.8	51.2	453.5	163.0	722.1	294.2		
	0.453	789	270.63	1081	407	171	740.7	272	1600	2561		
	0.279	110	69.7	369	109	20.3	88.49	78.67	364.02	108		
			O&G cumulative	BOLD = Data from Jan 2008 to Nov 2009								
			AVG	65.6			pre 2008 Data	AVG	75.94094			
			MAX	814				MAX	814			
			MIN	2.4								

*FACT SHEET FOR NPDES PERMIT NO. WA-002097-4*  
*CITY OF LEAVENWORTH POTW*  
***EXPIRATION DATE: AUGUST 31, 2015***  
Page 49 of 49

**APPENDIX D--RESPONSE TO COMMENTS**

No comments were received by the Department of Ecology.



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

15 W Yakima Ave, Ste 200 • Yakima, WA 98902-3452 • (509) 575-2490

July 9, 2014

Terry Gildersleeve  
City of Leavenworth  
PO Box 287  
Leavenworth, WA 98826

**RE: Application for Renewal of NPDES Municipal Wastewater Discharge Permit  
No. WA0020974 for the City of Leavenworth POTW**

Dear Terry Gildersleeve:

Permit No. WA0020974 for the City of Leavenworth Publicly-Owned Treatment Works is due to expire on **August 31, 2015**. Federal law and regulation require an application for renewal of this permit. You must send the application to our office on or before **August 31, 2014**. The Department of Ecology (Ecology) has been issuing all recent National Pollution Discharge Elimination System (NPDES) permits with a one year advance requirement for application submittal, based on the lead time required to prepare modern permits.

### **Completing the Application**

Permit application form 2A is enclosed. I am also enclosing a copy of your expiring permit and June 22, 2009 application. Application forms are available from the Ecology website at <http://www.ecy.wa.gov/programs/wq/permits/forms.html>.

**Please complete all sections of Form 2A. Please read carefully the instructions on the application form.** Submit any information you feel may help Ecology determine the impact of your discharge upon surface waters.

Your permit also requires you to submit, with the permit renewal application, the following document(s):

- Infiltration and Inflow Evaluation (S4.E.3 - pages 15 & 16)
- Wasteload Assessment (S4.F1. - page 16))

Pay careful attention to Part D. Expanded Effluent Testing Data in Supplemental Application Information starting on page 10. *If the treatment works has a design flow greater than or equal to 1.0 mgd it is required by the permitting authority to provide effluent testing data for the pollutants listed in Attachment A - Effluent Characterization for Pollutants, pages 24 to 28 of Application Form 2A.* Attachment A of the application specifies analytical methods for effluent testing.



Terry Gildersleeve  
City of Leavenworth  
July 9, 2014  
Page 2

You may need to submit information and other applications about:

- ***Discharge Upon Surface Waters:*** If your wastewater facility has received flows in excess of design flow, or if you have accepted wastewater from certain industrial dischargers or hazardous waste dischargers.
- ***Receiving Water Analysis:*** Effluent limits for some pollutants are dependent upon the concentration already present in the receiving water. Submit any available information on the background concentrations of pollutants at the point of discharge.
- ***Biosolids:*** You may also be responsible for compliance with Chapter 173-308 WAC, *Biosolids Management*, and the statewide *General Permit for Biosolids Management*. Please contact Peter Severtson at 509/662-0508 to obtain specific information about your obligations to apply for coverage or visit the biosolids web page at [www.ecy.wa.gov/programs/swfa/biosolids](http://www.ecy.wa.gov/programs/swfa/biosolids).
- ***Solid Waste Handling:*** You may also be responsible for compliance with Chapter 173-350 WAC, *Solid Waste Handling Standards*, for the management of solid wastes. Please contact your local health jurisdiction with any specific questions.

### **Signature Delegation**

***Federal and state regulations (WAC 173-216-070) require applications to be signed as follows:***

- For a municipality, State, Federal, or other public facility, by either a principal executive officer or ranking elected official.

A principal executive officer or ranking elected official (typically the mayor) must sign the application (Chapter 173-220-040 WAC). The principal executive officer or ranking elected official may delegate signature authority for submittals required by the permit, such as monthly discharge monitoring reports, to a specific individual or to a position which Ecology expects is filled by a qualified individual. If you wish to delegate authority, please submit a letter delegating signature authority along with the application for our files.

### **Submitting the Application**

Please mail the **original, signed application** by **August 31, 2014** to: Cindy Huwe, Permit Coordinator, Department of Ecology, Central Regional Office, 15 West Yakima Avenue, Suite 200, Yakima, WA 98902.

**AND**

Please email a **completed electronic application** in a **MS-Word (.doc)** format to the permit coordinator, Cindy Huwe, at [cynthia.huwe@ecy.wa.gov](mailto:cynthia.huwe@ecy.wa.gov). This copy does not need to be signed. Please scan any attachments to the application and submit in .PDF format.

Terry Gildersleeve  
City of Leavenworth  
July 9, 2014  
Page 3

**Permit Fees**

The wastewater permit program must be supported by fees paid by permit (RCW 90.48.465). Ecology regulation (Chapter 173-224 WAC) establishes annual permit fees to recover costs associated with issuing and managing wastewater discharge permits. We will continue to assess and bill annual permit fees to you unless the permit is formally cancelled. Please direct any questions you may have about the permit fees to Bev Poston at (360) 407-6425.

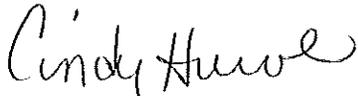
Information on laws, regulations and guidance on wastewater discharge permits can be found at:

<http://www.ecy.wa.gov/laws-rules/ecywac.html#wq> and  
<http://www.ecy.wa.gov/programs/wq/permits/guidance.html>

Your permit application is a matter of public record. When Ecology decides to proceed with re-issuance of your permit, a public notice will be issued to a newspaper of local circulation. This will allow the public to comment on Ecology's decision regarding your permit.

If you have any questions, please telephone me at 509/457-7105 or by e-mail at [cynthia.huwe@ecy.wa.gov](mailto:cynthia.huwe@ecy.wa.gov).

Sincerely,



Cindy Huwe  
Permit Coordinator  
Water Quality Program

Enclosures: Form 2A NPDES Application and Instructions  
Copy of Expiring Permit  
Copy of June 22, 2009 Application

c: Peter Severtson, Ecology-Wenatchee Field Office

Use Tab key to navigate through fields.

This form is equivalent to EPA NPDES Form 3510-2A

FACILITY NAME AND PERMIT NUMBER:

City of Leavenworth WWTP

Permit # WA-002097-4

FORM  
2A  
NPDES



# NPDES FORM 2A APPLICATION OVERVIEW

## APPLICATION OVERVIEW

Form 2A has been developed in a modular format and consists of a "Basic Application Information" packet and a "Supplemental Application Information" packet. The Basic Application Information packet is divided into two parts. All applicants must complete Parts A and C. Applicants with a design flow greater than or equal to 0.1 mgd must also complete Part B. Some applicants must also complete the Supplemental Application Information packet. The following items explain which parts of Form 2A you must complete.

### BASIC APPLICATION INFORMATION:

- A. **Basic Application Information for all Applicants.** All applicants must complete questions A.1 through A.8. A treatment works that discharges effluent to surface waters of the United States must also answer questions A.9 through A.12.
- B. **Additional Application Information for Applicants with a Design Flow  $\geq$  0.1 mgd.** All treatment works that have design flows greater than or equal to 0.1 million gallons per day must complete questions B.1 through B.6.
- C. **Certification.** All applicants must complete Part C (Certification).

### SUPPLEMENTAL APPLICATION INFORMATION:

- D. **Expanded Effluent Testing Data.** A treatment works that discharges effluent to surface waters of the United States and meets one or more of the following criteria must complete Part D (Expanded Effluent Testing Data):
  1. Has a design flow rate greater than or equal to 1mgd,
  2. Is required to have a pretreatment program (or has one in place), or
  3. Is otherwise required by the permitting authority to provide the information.
- E. **Toxicity Testing Data.** A treatment works that meets one or more of the following criteria must complete Part E (Toxicity Testing Data):
  1. Has a design flow rate greater than or equal to 1 mgd,
  2. Is required to have a pretreatment program (or has one in place), or
  3. Is otherwise required by the permitting authority to submit results of toxicity testing.
- F. **Industrial User Discharges and RCRA/CERCLA Wastes.** A treatment works that accepts process wastewater from any significant industrial users (SIUs) or receives RCRA or CERCLA wastes must complete Part F (Industrial User Discharges and RCRA/CERCLA Wastes). SIUs are defined as:
  1. All industrial users subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations (CFR) 403.6 and 40 CFR Chapter I, Subchapter N (see instructions); and
  2. Any other industrial user that:
    - a. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions); or
    - b. Contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant; or
    - c. Is designated as an SIU by the control authority.
- G. **Combined Sewer Systems.** A treatment works that has a combined sewer system must complete Part G (Combined Sewer Systems).

**ALL APPLICANTS MUST COMPLETE PART C (CERTIFICATION)**

POSTMARKED

8/28/14



FACILITY NAME AND PERMIT NUMBER:

City of Leavenworth WWTP  
Permit # WA-002097-4

**BASIC APPLICATION INFORMATION**

**PART A. BASIC APPLICATION INFORMATION FOR ALL APPLICANTS:**

All treatment works must complete questions A.1 through A.8 of this Basic Application Information Packet.

**A.1. Facility Information.**

Facility Name City of Leavenworth Waste Water Treatment Plant

Mailing Address P.O. Box 287, Leavenworth, WA 98826

Facility Address (not P.O. Box) 1402 Commercial Street, Leavenworth, WA 98826

Location 47.598116 120.65364  
(Latitude/Longitude as decimal degrees (NAD83/WGS84))

Telephone Number (509) 548-5275

E-mail address herba@cityofleavenworth.com

Contact Person Herb Amick

Title Public Works Director

UBI Number \_\_\_\_\_

**A.2. Applicant Information.** If the applicant is different from the above, provide the following:

Applicant Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

Telephone Number ( ) \_\_\_\_\_

E-mail address \_\_\_\_\_

Contact Person \_\_\_\_\_

Title \_\_\_\_\_

Is the applicant the owner or operator (or both) of the treatment works?  owner  operator

Indicate whether correspondence regarding this permit should be directed to the facility or the applicant.

facility  applicant

Can the facility obtain broadband internet access for WQWebDMR (<http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html>)?

yes  no

**A.3. Existing Environmental Permits.** Provide the permit number of any existing environmental permits that have been issued to the treatment works (include state-issued permits).

NPDES WA - 002097-4 PSD \_\_\_\_\_

UIC \_\_\_\_\_ Other \_\_\_\_\_

RCRA \_\_\_\_\_ Other \_\_\_\_\_

**A.4. Collection System Information.** Provide information on municipalities and areas served by the facility. Provide the name and population of each entity and, if known, provide information on the type of collection system (combined vs. separate) and its ownership (municipal, private, etc.).

Name	Population Served	Type of Collection System	Ownership
<u>Leavenworth</u>	<u>2300</u>	<u>Sanitary Sewer System</u>	<u>City of Leavenworth</u>
_____	_____	_____	_____
_____	_____	_____	_____

Total population served \_\_\_\_\_

FACILITY NAME AND PERMIT NUMBER:

**City of Leavenworth WWTP**

**Permit # WA-002097-4**

**A.5. Indian Country.**

- a. Is the treatment works located in Indian Country?  
 Yes  No
- b. Does the treatment works discharge to a receiving water that is either in Indian Country or that is upstream from (and eventually flows through) Indian Country?  
 Yes  No

**A.6. Flow.** Indicate the design flow rate of the treatment plant (i.e., the wastewater flow rate that the plant was built to handle). Also provide the average daily flow rate and maximum daily flow rate for each of the last three years. Each year's data must be based on a 12-month time period with the 12<sup>th</sup> month of "this year" occurring no more than three months prior to this application submittal.

a. Design flow rate \_\_\_\_\_ mgd

	<u>Two Years Ago</u>	<u>Last Year</u>	<u>This Year</u>
b. Annual average daily flow rate	<u>0.32</u>	<u>0.36</u>	<u>0.39</u>
c. Maximum daily flow rate	<u>0.47</u>	<u>0.43</u>	<u>0.52</u>

**A.7. Collection System.** Indicate the type(s) of collection system(s) used by the treatment plant. Check all that apply. Also estimate the percent contribution (by miles) of each.

- Separate sanitary sewer 100 %
- Combined storm and sanitary sewer 0 %

**A.8. Discharges and Other Disposal Methods.**

- a. Does the treatment works discharge effluent to waters of the U.S.?  Yes  No
- If yes, list how many of each of the following types of discharge points the treatment works uses:
- i. Discharges of treated effluent x
  - ii. Discharges of untreated or partially treated effluent \_\_\_\_\_
  - iii. Combined sewer overflow points \_\_\_\_\_
  - iv. Constructed emergency overflows (prior to the headworks) \_\_\_\_\_
  - v. Other \_\_\_\_\_
- b. Does the treatment works discharge effluent to basins, ponds, or other surface impoundments that do not have outlets for discharge to waters of the U.S.?  Yes  No
- If yes, provide the following for each surface impoundment:
- Location : \_\_\_\_\_  
 (Latitude/Longitude as decimal degrees (NAD83/WGS84))
- Annual average daily volume discharge to surface impoundment(s) \_\_\_\_\_ mgd
- Is discharge  continuous or  intermittent?
- c. Does the treatment works land-apply treated wastewater?  Yes  No
- If yes, provide the following for each land application site:
- Location : \_\_\_\_\_  
 (Latitude/Longitude as decimal degrees (NAD83/WGS84))
- Number of acres: \_\_\_\_\_
- Annual average daily volume applied to site: \_\_\_\_\_ mgd
- Is land application  continuous or  intermittent?
- d. Does the treatment works discharge or transport treated or untreated wastewater to another treatment works?  Yes  No

FACILITY NAME AND PERMIT NUMBER:

**City of Leavenworth WWTP**

**Permit # WA-002097-4**

If yes, describe the mean(s) by which the wastewater from the treatment works is discharged or transported to the other treatment works (e.g., tank truck, pipe).

If transport is by a party other than the applicant, provide:

Transporter Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

Contact Person \_\_\_\_\_

Title \_\_\_\_\_

Telephone Number ( \_\_\_\_\_ ) \_\_\_\_\_

For each treatment works that receives this discharge, provide the following:

Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

Contact Person \_\_\_\_\_

Title \_\_\_\_\_

Telephone Number ( \_\_\_\_\_ ) \_\_\_\_\_

If known, provide the NPDES permit number of the treatment works that receives this discharge \_\_\_\_\_

Provide the average daily flow rate from the treatment works into the receiving facility. \_\_\_\_\_ mgd

- e. Does the treatment works discharge or dispose of its wastewater in a manner not included in A.8. through A.8.d above (e.g., underground percolation, well injection):  Yes  No

If yes, provide the following for each disposal method:

Description of method (including location and size of site(s) if applicable):

\_\_\_\_\_

Annual daily volume disposed by this method: \_\_\_\_\_

Is disposal through this method  continuous or  intermittent?



(509) 662-1888  
Fax: (509) 662-8183  
3019 G. S. Center Road  
Wenatchee, WA 98801

(509) 452-7707  
Fax: (509) 452-7773  
1008 W. Ahtanum Road  
Union Gap, WA 98903

Batch: 497358  
Client: CITY OF LEAVENWORTH  
Account: 227  
Sampler: Darnell Gray  
PO Number:

--- Water Analytical Report ---

CITY OF LEAVENWORTH  
Darnell Gray  
P.O. BOX 287  
LEAVENWORTH, WA 98826

Report Date: 7/11/14

JUL 14 2014

Laboratory Number: 14-E015609  
Sample Identification: Annual

Date Received: 7/ 2/14  
Date Sampled: 7/ 2/14

Test Requested	Results	Units	RL	Method	Date Analyzed	Flags
Nitrate-N/Nitrite-N	20.3	mg/l	0.07	SM 4500N03-F	7/ 3/14	
Total Dissolved Solids	252.	mg/l	7	SM 2540-C	7/ 3/14	
Total Phosphorus	0.54	mg/L	0.07	SM4500-P E	7/ 8/14	
Kjeldahl Total Nitrogen	1.7	mg/L	0.30	SM 4500N-C	7/ 7/14	
Hexane Extract. Material	32.9	mg/L	1.4	EPA 1664B	7/11/14	
Hardness Titration	40.0	mg/L	5.00	SM 2340C	7/ 7/14	

Approved By Name: *Laura Meachek* Signature: *Laura Meachek*  
Function: *Pres.*

Cascade Analytical uses procedures established by EPA, AOAC, APHA, ASTM, and FDA/BAM. Cascade Analytical makes no warranty of any kind the client assumes all risk and liability from the use of these results. Cascade Analytical, Inc.'s liability to the client as a result of use of Cascade's test results shall be limited to a sum equal to the fees paid by the client to Cascade Analytical, Inc. for analysis. PLEASE REVIEW YOUR DATA IN A TIMELY MANNER. DATA GAPS OR ERRORS AFTER THREE MONTHS WILL NOT BE OUR RESPONSIBILITY. THOUGH WE DO KEEP ALL ANALYTICAL DATA FOR SEVERAL YEARS, SAMPLES ARE DISPOSED OF AFTER SIX WEEKS.

FACILITY NAME AND PERMIT NUMBER:

City of Leavenworth WWTP

Permit # WA-002097-4

WASTEWATER DISCHARGES:

If you answered "yes" to question A.8.a, complete questions A.9 through A.12 once for each outfall (including bypass points) through which effluent is discharged. Do not include information on combined sewer overflows in this section. If you answered "no" to question A.8.a, go to Part B, "Additional Application Information for Applicants with a Design Flow Greater than or Equal to 0.1 mgd."

A.9. Description of Outfall.

- a. Outfall number #001
- b. Location Leavenworth 98826  
(City or town, if applicable) (Zip Code)  
Chelan WA  
(County) (State) 120.65134  
47° 12' 57" N 47,59774613 120° 30' 21" N  
(Latitude) Provide these as decimal degrees (NAD83/WGS84) (Longitude)
- c. Distance from shore (if applicable) 80 ft @ ordinary hight water ft.
- d. Depth below surface (if applicable) 5 ft @ low water ft.
- e. Average daily flow rate 0.39 mgd
- f. Does this outfall have either an intermittent or a periodic discharge?  
 Yes  No (go to A.9.g.)  
If yes, provide the following information:  
Number f times per year discharge occurs: \_\_\_\_\_  
Average duration of each discharge: \_\_\_\_\_  
Average flow per discharge: \_\_\_\_\_ mgd  
Months in which discharge occurs: \_\_\_\_\_
- g. Is outfall equipped with a diffuser?  Yes  No

A.10. Description of Receiving Waters.

- a. Name of receiving water Wenatchee River
- b. Name of watershed (if known) Wenatchee River Watershed  
United States Soil Conservation Service 14-digit watershed code (if known): \_\_\_\_\_
- c. Name of State Management/River Basin (if known): WIRA 45  
United States Geological Survey 8-digit hydrologic cataloging unit code (if known): \_\_\_\_\_
- d. Critical low flow of receiving stream (if applicable)  
acute \_\_\_\_\_ cfs chronic 7Q10 = 317 cfs cfs
- e. Total hardness of receiving stream at critical low flow (if applicable): \_\_\_\_\_ mg/l of CaCO<sub>3</sub>

FACILITY NAME AND PERMIT NUMBER:

**City of Leavenworth WWTP**

**Permit # WA-002097-4**

**A.11. Description of Treatment**

a. What level(s) of treatment are provided? Check all that apply.

Primary  Secondary

Advanced  Other. Describe: \_\_\_\_\_

b. Indicate the following removal rates (as applicable):

Design BOD5 removal or Design CBOD5 removal \_\_\_\_\_ %

Design SS removal \_\_\_\_\_ %

Design P removal \_\_\_\_\_ %

Design N removal \_\_\_\_\_ %

Other \_\_\_\_\_ %

c. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe:

UV - ultraviolet disinfection

If disinfection is by chlorination is dechlorination used for this outfall?

Yes

No

d. Does the treatment plant have post aeration?

Yes

No

NA

**A.12. Effluent Testing Information.** All Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three samples and must be no more than one and one-half years apart.

Outfall number: #001

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	6.4	s.u.			
pH (Maximum)	6.9	s.u.			
Flow Rate	0.52	MGD	0.39	MGD	210
Temperature (Winter)	10.2	° C	11.1	° C	(Jan) 23
Temperature (Summer)	22.9	° C	21.07	° C	(July) 23 sample

\* For pH please report a minimum and a maximum daily value

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Conc.	Units	Number of Samples		

**CONVENTIONAL AND NON CONVENTIONAL COMPOUNDS**

BIOCHEMICAL OXYGEN DEMAND (Report one)	BOD5	8.5	mg/1	3.5	mg/1	July / 5	405.1 std method 5210	
	CBOD5	-	-	-	-	-	-	-
FECAL COLIFORM		9.3	#/100 ml	6.9	#/100 ml	July / 10	std method 9222D	
TOTAL SUSPENDED SOLIDS (TSS)		21.4	#/day	8.9	#/day	July / 5	160.2	

**END OF PART A.  
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM  
2A YOU MUST COMPLETE**

FACILITY NAME AND PERMIT NUMBER:

**City of Leavenworth WWTP**

**Permit # WA-002097-4**

**BASIC APPLICATION INFORMATION**

**PART B. ADDITIONAL APPLICATION INFORMATION FOR APPLICANTS WITH A DESIGN FLOW GREATER THAN OR EQUAL TO 0.1 MGD (100,000 gallons per day).**

All applicants with a design flow rate  $\geq 0.1$  mgd must answer questions B.1 through B.6. All others go to Part C (Certification).

**B.1. Inflow and Infiltration.** Estimate the average number of gallons per day that flow into the treatment works from inflow and/or infiltration.

2330 gpd

Briefly explain any steps underway or planned to minimize inflow and infiltration.

Disconnect old buildings from sewer system

**B.2. Topographic Map.** Attach to this application a topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information. (You may submit more than one map if one map does not show the entire area.)

- a. The area surrounding the treatment plant, including all unit processes.
- b. The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.
- c. Each well where wastewater from the treatment plant is injected underground.
- d. Wells, springs, other surface water bodies, and drinking water wells that are: 1) within ¼ mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.
- e. Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.
- f. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where the hazardous waste enters the treatment works and where it is treated, stored, and/or disposed.

**B.3. Process Flow Diagram or Schematic.** Provide a diagram showing the processes of the treatment plant, including all bypass piping and all backup power sources or redundancy in the system. Also provide a water balance showing all treatment units, including disinfection (e.g., chlorination and dechlorination). The water balance must show daily average flow rates at influent and discharge points and approximate daily flow rates between treatment units. Include a brief narrative description of the diagram.

**B.4. Operation/Maintenance Performed by Contractor(s).**

Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of a contractor?  Yes  No

If yes, list the name, address, telephone number, and status of each contractor and describe the contractor's responsibilities (attach additional pages if necessary).

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Telephone Number: (      ) \_\_\_\_\_

Responsibilities of Contractor: \_\_\_\_\_

**B.5. Scheduled improvements and Schedules of Implementation.** Provide information on any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses to question B.5 for each. (If none, go to question B.6.)

- a. List the outfall number (assigned in question A.9) for each outfall that is covered by this implementation schedule.

# 001

- b. Indicate whether the planned improvements or implementation schedule are required by local, State, or Federal agencies.

Yes  No

FACILITY NAME AND PERMIT NUMBER:

**City of Leavenworth WWTP**

**Permit # WA-002097-4**

c. If the answer to B.5.b is "Yes," briefly describe, including new maximum daily inflow rate (if applicable).

d. Provide dates imposed by any compliance schedule or any actual dates of completion for the implementation steps listed below, as applicable. For improvements planned independently of local, State, or Federal agencies, indicate planned or actual completion dates, as applicable. Indicate dates as accurately as possible.

Implementation Stage	Schedule		Actual Completion	
	MM/DD/YYYY	MM/DD/YYYY	MM/DD/YYYY	MM/DD/YYYY
- Begin Construction	/ /	/ /	/ /	/ /
- End Construction	/ /	/ /	/ /	/ /
- Begin Discharge	/ /	/ /	/ /	/ /
- Attain Operational Level	/ /	/ /	/ /	/ /

e. Have appropriate permits/clearances concerning other Federal/State requirements been obtained?  Yes  No

Describe briefly: \_\_\_\_\_

**B.6. EFFLUENT TESTING DATA (GREATER THAN 0.1 MGD ONLY).**

Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods (See attachment A). In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum effluent testing data must be based on at least three pollutant scans and must be no more than four and on-half years old.

Outfall Number: # 001

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Conc.	Units	Number of Samples		
<b>CONVENTIONAL AND NON CONVENTIONAL COMPOUNDS</b>							
AMMONIA (as N)	0.41	mg/l	0.30	mg/l	24	4500-NH3C	
CHLORINE (TOTAL RESIDUAL, TRC)							
DISSOLVED OXYGEN	7.4	mg/l	7.3	mg/l	365	4500-OG	
TOTAL KJELDAHL NITROGEN (TKN)	1.7	mg/l	1.7	mg/l	1	sm 4500N-C	
NITRATE PLUS NITRITE NITROGEN	20.3	mg/l	20.3	mg/l	1	4500 NO3-F	
OIL and GREASE	40.9	mg/l	30.3	mg/l	12	1664-B	
PHOSPHORUS (Total)	5.95	mg/l	3.1	mg/l	12	sm 4500-PE	
TOTAL DISSOLVED SOLIDS (TDS)	252.	mg/l	252.	mg/l	1	sm 2540-C	
OTHER							

**END OF PART B.**

**REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE**

FACILITY NAME AND PERMIT NUMBER:

City of Leavenworth WWTP

Permit # WA-002097-4

**BASIC APPLICATION INFORMATION**

**PART C. CERTIFICATION**

All applicants must complete the Certification Section. Refer to instructions to determine who is an officer for the purposes of this certification. All applicants must complete all applicable sections of Form 2A, as explained in the Application Overview. Indicate below which parts of Form 2A you have completed and are submitting. By signing this certification statement, applicants confirm that they have reviewed Form 2A and have completed all sections that apply to the facility for which this application is submitted.

Indicate which parts of Form 2A you have completed and are submitting:

Basic Application Information packet

Supplemental Application Information packet:

Part D (Expanded Effluent Testing Data)

Part E (Toxicity Testing: Biomonitoring Data)

Part F (Industrial User Discharges and RCRA/CERCLA Wastes)

Part G (Combined Sewer Systems)

**ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.**

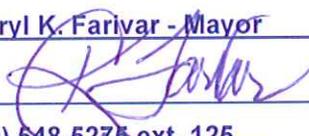
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information 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.

**Permittee**

Name and Title of Responsible Official

Cheryl K. Farivar - Mayor

Signature



Telephone number

(509) 548-5275 ext. 125

E-mail address

mayor@cityofleavenworth.com

Date signed

August 27, 2014

**Co-Permittee (if applicable)**

Name and official title

Herbert R. Amick - Public Works Director

Signature



Telephone number

(509) 548-5275 ext. 136

E-mail address

herba@cityofleavenworth.com

Date signed

August 27, 2014

Upon request of the permitting authority, you must submit any other information necessary to assure wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

**SEND COMPLETED FORMS TO<sup>1</sup>:**

<sup>1</sup>If unknown, contact an Ecology regional wastewater permit coordinator at: [http://www.ecy.wa.gov/programs/wq/permits/permit\\_coord.html](http://www.ecy.wa.gov/programs/wq/permits/permit_coord.html)

FACILITY NAME AND PERMIT NUMBER:

**City of Leavenworth WWTP**  
**Permit # WA-002097-4**

**SUPPLEMENTAL APPLICATION INFORMATION**

**PART D. EXPANDED EFFLUENT TESTING DATA**

Refer to the directions on the cover page to determine whether this section applies to the treatment works.

**Effluent Testing: 1.0 mgd and Pretreatment Works.** If the treatment works has a design flow greater than or equal to 1.0 mgd or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information and any other information required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analyses conducted using 40 CFR Part 136 methods. In addition, these data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. Indicate in the blank rows provided below any data you may have on pollutants not specifically listed in this form. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old. The applicant should also review Attachment A.

Outfall number: \_\_\_\_\_ (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL	
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples			
<b>METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS, AND HARDNESS.</b>												
ANTIMONY												
ARSENIC												
BERYLLIUM												
CADMIUM												
CHROMIUM												
COPPER												
LEAD												
MERCURY												
NICKEL												
SELENIUM												
SILVER												
THALLIUM												
ZINC												
CYANIDE												
TOTAL PHENOLIC COMPOUNDS												
HARDNESS (AS CaCO3)												
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer												

FACILITY NAME AND PERMIT NUMBER:

**City of Leavenworth WWTP**

**Permit # WA-002097-4**

Outfall number: \_\_\_\_\_ (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL	
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples			
<b>VOLATILE ORGANIC COMPOUNDS</b>												
ACROLEIN												
ACRYLONITRILE												
BENZENE												
BROMOFORM												
CARBON TETRACHLORIDE												
CHLOROBENZENE												
CHLOROBIDBROMO-METHANE												
CHLOROETHANE												
2-CHLORO-ETHYLVINYL ETHER												
CHOLOROFORM												
DICHLOROBROMO-METHANE												
1,1-DICHLOROETHANE												
1,2-DICHLOROETHANE												
1,2-DICHLOROETHYLENE												
TRANS-1,2-DICHLOROETHYLENE												
1,1-DICHLOROETHYLENE												
1,2-DICHLOROPROPANE												
1,3-DICHLOROPROPYLENE												
ETHYLBENZENE												
METHYL BROMIDE												
METHYL CHLORIDE												
METHYLENE CHLORIDE												
1,1,2,2-TETRACHLORO-												

FACILITY NAME AND PERMIT NUMBER:

**City of Leavenworth WWTP**

**Permit # WA-002097-4**

Outfall number: \_\_\_\_\_ (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
ETHANE											
TETRACHLORO-ETHYLENE											
TOLUENE											
1,1,1-TRICHLOROETHANE											
1,1,2-TRICHLOROETHANE											
TRICHLOROETHYLENE											
VINYL CHLORIDE											

Use this space (or a separate sheet) to provide information on other metals requested by the permit writer

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**ACID-EXTRACTABLE COMPOUNDS**

P-CHLORO-M-CRESOL											
2-CHLOROPHENOL											
2,4-DICHLOROPHENOL											
2,4-DIMETHYLPHENOL											
4,6-DINITRO-O-CRESOL											
2,4-DINITROPHENOL											
2-NITROPHENOL											
4-NITROPHENOL											
PENTA CHLOROPHENOL											
PHENOL											
2,4,6-TRICHLORO PHENOL											

Use this space (or a separate sheet) to provide information on other metals requested by the permit writer

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**BASE-NEUTRAL COMPOUNDS**

ACENAPHTHENE											
ACENAPHTYLENE											
ANTHRACENE											

FACILITY NAME AND PERMIT NUMBER:

**City of Leavenworth WWTP**

**Permit # WA-002097-4**

Outfall number: \_\_\_\_\_ (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
BENZIDINE											
BENZO(A) ANTHRACENE											
BENZO(J)FLUORANTHENE											
BENZO(r,s,t)PENTAPHENE											
BENZO(A)PYRENE											
3,4 BENZO-FLUORANTHENE											
BENZO(GHI)PERYLENE											
BENZO(K)FLUORANTHENE											
BIS (2-CHLOROETHOXY) METHANE											
BIS (2-CHLOROETHYL)-ETHER											
BIS (2-CHLOROISOPROPYL) ETHER											
BIS (2-ETHYLHEXYL) PHTHALATE											
4-BROMOPHENYL PHENYL ETHER											
BUTYL BENZYL PHTHALATE											
2-CHLORO NAPHTHALENE											
4-CHLOROPHENYL PHENYL ETHER											
CHRYSENE											
DIBENZO(a,j)ACRIDINE											
DIBENZO(a,h)ACRIDINE											
DI-N-BUTYL PHTHALATE											
DI-N-OCTYL PHTHALATE											
DIBENZO(A,H) ANTHRACENE											
1,2-DICHLORO BENZENE											

FACILITY NAME AND PERMIT NUMBER:

City of Leavenworth WWTP

Permit # WA-002097-4

Outfall number: \_\_\_\_\_ (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
1,3-DICHLORO BENZENE											
1,4-DICHLORO BENZENE											
3,3-DICHLORO BENZIDINE											
DIETHYL PHTHALATE											
DIMETHYL PHTHALATE											
2,4-DINITROTOLUENE											
2,6-DINITROTOLUENE											
1,2-DIPHENYLHYDRAZINE											
FLUORANTHENE											
FLUORENE											
HEXACHLORO BENZENE											
HEXACHLOROBUT ADIENE											
HEXACHLOROCYCLO-PENTADIENE											
HEXA CHLOROETHANE											
INDENO(1,2,3-CD) PYRENE											
ISOPHORONE											
3-METHYL CHOLANTHRENE											
NAPHTHALENE											
NITROBENZENE											
N-NITROSODI-N-PROPYLAMINE											
N-NITROSODI-METHYLAMINE											
N-NITROSODI-PHENYLAMINE											
PERYLENE											
PHENANTHRENE											
PYRENE											

FACILITY NAME AND PERMIT NUMBER:

**City of Leavenworth WWTP**

**Permit # WA-002097-4**

Outfall number: \_\_\_\_\_ (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL	
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples			
1,2,4-TRICHLOROBENZENE												

Use this space (or a separate sheet) to provide information on other metals requested by the permit writer

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Use this space (or a separate sheet) to provide information on other metals requested by the permit writer

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**END OF PART D.**

**REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE**

FACILITY NAME AND PERMIT NUMBER:

City of Leavenworth WWTP

Permit # WA-002097-4

**SUPPLEMENTAL APPLICATION INFORMATION**

**PART E. TOXICITY TESTING DATA**

POTWs meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points: 1) POTWs with a design flow rate greater than or equal to 1.0 mgd; 2) POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403); or 3) POTWs required by the permitting authority to submit data for these parameters.

- At a minimum, these results must include quarterly testing for a 12-month period within the past 1 year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute and/or chronic toxicity, depending on the range of receiving water dilution. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
- In addition, submit the results of any other whole effluent toxicity tests from the past four and one-half years. If a whole effluent toxicity test conducted during the past four and one-half years revealed toxicity, provide any information on the cause of the toxicity or any results of a toxicity reduction evaluation, if one was conducted.
- If you have already submitted any of the information requested in Part E, you need not submit it again. Rather, provide the information requested in question E.4 for previously submitted information. If EPA methods were not used, report the reasons for using alternate methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E.

If no biomonitoring data is required, do not complete Part E. Refer to the Application Overview for directions on which other sections of the form to complete.

**E.1. Required Tests.**

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years.

chronic       acute

**E.2. Individual Test Data.** Complete the following chart for each whole effluent toxicity test conducted in the last four and one-half years. Allow one column per test (where each species constitutes a test). Copy this page if more than three tests are being reported.

Test number: \_\_\_\_\_      Test number: \_\_\_\_\_      Test number: \_\_\_\_\_

**a. Test information.**

Test Species & test method number			
Age at initiation of test			
Outfall number			
Dates sample collected			
Date test started			
Duration			

**b. Give toxicity test methods followed.**

Manual title			
Edition number and year of publication			
Page number(s)			

**c. Give the sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used.**

24-Hour composite			
Grab			

**d. Indicate where the sample was taken in relation to disinfection. (Check all that apply for each.)**

Before disinfection			
After disinfection			
After dechlorination			

FACILITY NAME AND PERMIT NUMBER:

**City of Leavenworth WWTP**

**Permit # WA-002097-4**

Test number: \_\_\_\_\_

Test number: \_\_\_\_\_

Test number: \_\_\_\_\_

e. Describe the point in the treatment process at which the sample was collected.

Sample was collected:

f. For each test, include whether the test was intended to assess chronic toxicity, acute toxicity, or both

Chronic toxicity

Acute toxicity

g. Provide the type of test performed.

Static

Static-renewal

Flow-through

h. Source of dilution water. If laboratory water, specify type; if receiving water, specify source.

Laboratory water

Receiving water

i. Type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.

Fresh water

Salt water

j. Give the percentage effluent used for all concentrations in the test series.

k. Parameters measured during the test. (State whether parameter meets test method specifications)

pH

Salinity

Temperature

Ammonia

Dissolved oxygen

l. Test Results.

Acute:

Percent survival in 100% effluent

%

%

%

LC<sub>50</sub>

95% C.I.

%

%

%

Control percent survival

%

%

%

Other (describe)

FACILITY NAME AND PERMIT NUMBER:  
**City of Leavenworth WWTP**  
**Permit # WA-002097-4**

Chronic:			
NOEC	%	%	%
IC <sub>25</sub>	%	%	%
Control percent survival	%	%	%
Other (describe)			
m. Quality Control/Quality Assurance.			
Is reference toxicant data available?			
Was reference toxicant test within acceptable bounds?			
What date was reference toxicant test run (MM/DD/YYYY)?	/ /	/ /	/ /
Other (describe)			

**E.3. Toxicity Reduction Evaluation.** Is the treatment works involved in a Toxicity Reduction Evaluation?  
 Yes  No      If yes, describe: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**E.4. Summary of Submitted Biomonitoring Test Information.** If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.  
 Date submitted: \_\_\_\_ / \_\_\_\_ / \_\_\_\_ (MM/DD/YYYY)  
 Summary of results: (see instructions)  
 \_\_\_\_\_  
 \_\_\_\_\_

**END OF PART E.**  
**REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.**

FACILITY NAME AND PERMIT NUMBER:

City of Leavenworth WWTP

Permit # WA-002097-4

**SUPPLEMENTAL APPLICATION INFORMATION**

**PART F. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES**

All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete part F.

**GENERAL INFORMATION:**

**F.1. Pretreatment Program.** Does the treatment works have, or is subject of, an approved pretreatment program?

Yes  No

**F.2. Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs).** Provide the number of each of the following types of industrial users that discharge to the treatment works.

a. Number of non-categorical SIUs. \_\_\_\_\_

b. Number of CIUs. \_\_\_\_\_

**SIGNIFICANT INDUSTRIAL USER INFORMATION::**

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, copy questions F.3 through F.8 and provide the information requested for each SIU.

**F.3. Significant Industrial User Information.** Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

**F.4. Industrial Processes.** Describe all the industrial processes that affect or contribute to the SIU's discharge.

\_\_\_\_\_

**F.5. Principal Product(s) and Raw Material(s).** Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s): \_\_\_\_\_

Raw material(s): \_\_\_\_\_

**F.6. Flow Rate.**

a. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharge into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

\_\_\_\_\_ gpd ( \_\_\_\_\_ continuous or \_\_\_\_\_ intermittent)

b. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

\_\_\_\_\_ gpd ( \_\_\_\_\_ continuous or \_\_\_\_\_ intermittent)

**F.7. Pretreatment Standards.** Indicate whether the SIU is subject to the following:

a. Local limits  Yes  No

b. Categorical pretreatment standards  Yes  No

If subject to categorical pretreatment standards, which category and subcategory?

\_\_\_\_\_

FACILITY NAME AND PERMIT NUMBER:

City of Leavenworth WWTP

Permit # WA-002097-4

F.8. **Problems at the Treatment Works Attributed to Waste Discharge by the SIU.** Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

Yes  No If yes, describe each episode.

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**RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE:**

F.9. **RCRA Waste.** Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail or dedicated pipe?

Yes  No (go to F.12)

F.10. **Waste Transport.** Method by which RCRA waste is received (check all that apply):

Truck  Rail  Dedicated Pipe

F.11. **Waste Description.** Give EPA hazardous waste number and amount (volume or mass, specify units).

<u>EPA Hazardous Waste Number</u>	<u>Amount</u>	<u>Units</u>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>

**CERCLA (SUPERFUND) WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER, AND OTHER REMEDIAL ACTIVITY WASTEWATER:**

F.12. **Remediation Waste.** Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities?

Yes (complete F.13 through F.15.)  No

F.13. **Waste Origin.** Describe the site and type of facility at which the CERCLA/RCRA/ or other remedial waste originates (or is expected to originate in the next five years).

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F.14. **Pollutants.** List the hazardous constituents that are received (or are expected to be received). Include data on volume and concentration, if known. (Attach additional sheets if necessary.)

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F.15. **Waste Treatment.**

a. Is this waste treated (or will be treated) prior to entering the treatment works?

Yes  No

If yes, describe the treatment (provide information about the removal efficiency):

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b. Is the discharge (or will the discharge be) continuous or intermittent?

Continuous  Intermittent If intermittent, describe discharge schedule.

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**END OF PART F.  
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM  
2A YOU MUST COMPLETE**

FACILITY NAME AND PERMIT NUMBER:

City of Leavenworth WWTP

Permit # WA-002097-4

SUPPLEMENTAL APPLICATION INFORMATION

PART G. COMBINED SEWER SYSTEMS

If the treatment works has a combined sewer system, complete Part G.

G.1. System Map. Provide a map indicating the following: (may be included with Basic Application Information)

- a. All CSO discharge points.
- b. Sensitive use areas potentially affected by CSOs (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems, and outstanding natural resource waters).
- c. Waters that support threatened and endangered species potentially affected by CSOs.

G.2. System Diagram. Provide a diagram, either in the map provided in G.1 or on a separate drawing, of the combined sewer collection system that includes the following information.

- a. Location of major sewer trunk lines, both combined and separate sanitary.
- b. Locations of points where separate sanitary sewers feed into the combined sewer system.
- c. Locations of in-line and off-line storage structures.
- d. Locations of flow-regulating devices.
- e. Locations of pump stations.

CSO OUTFALLS:

Complete questions G.3 through G.6 once for each CSO discharge point.

G.3. Description of Outfall.

- a. Outfall number #001
- b. Location Leavenworth 98826  
(city or town, if applicable) (Zip Code)  
Chelan WA  
(County) (State)  
47° 12' 57" N 120° 30' 21" N  
(Latitude) (Longitude)
- c. Distance from shore (if applicable) 80 ft.
- d. Depth below surface (if applicable) 5 ft.
- e. Which of the following were monitored during the last year for this CSO?  
 Rainfall  CSO pollutant concentrations  CSO frequency  
 CSO flow volume  Receiving water quality
- f. How many storm events were monitored during the last year? \_\_\_\_\_

G.4. CSO Events.

- a. Give the number of CSO events in the last year.  
\_\_\_\_\_ events ( actual or  approx.)
- b. Give the average duration per CSO event.  
\_\_\_\_\_ hours ( actual or  approx.)

FACILITY NAME AND PERMIT NUMBER:

**City of Leavenworth WWTP**

**Permit # WA-002097-4**

- c. Give the average volume per CSO event.  
\_\_\_\_\_ million gallons ( actual or  approx.)
- d. Give the minimum rainfall that caused a CSO event in the last year  
\_\_\_\_\_ Inches of rainfall

**G.5. Description of Receiving Waters.**

- a. Name of receiving water: Wenatchee River
- b. Name of watershed/river/stream system: \_\_\_\_\_  
United State Soil Conservation Service 14-digit watershed code (if known): \_\_\_\_\_
- c. Name of State Management/River Basin: WIRA 4  
United States Geological Survey 8-digit hydrologic cataloging unit code (if known): \_\_\_\_\_

**G.6. CSO Operations.**

Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shell fish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable State water quality standard).

\_\_\_\_\_  
\_\_\_\_\_

**END OF PART G.**

**REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.**

Additional information, if provided, will appear on the following pages.

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# ATTACHMENT A

## EFFLUENT CHARACTERIZATION FOR PERMIT APPLICATION

This attachment is used in conjunction with Section V, Parts A, B, and C of EPA Application Form 2C, and Parts A.12, B.6, and D of EPA application Form 2A. It specifies effluent characterization requirements of the Department of Ecology and analytical procedure and detection and quantitation levels for some parameters. For new permit applications, analyze your wastewater for all parameters required by the application and any additional pollutants or groups of pollutants with an X in the left column. Existing Permittees should compile the data from the last year's data for parameters routinely measured. If you are a primary industry category with effluent guidelines you may have some mandatory testing requirements (see Table 2C-2 Form 2C). If you are a municipal POTW, EPA has identified mandatory testing requirements, which depend upon the design flow (see EPA Form 2A).

Ecology added this attachment to the application in order to reduce the number of analytical "non-detects" in required monitoring and to measure effluent concentrations near or below criteria values where possible at a reasonable cost. The applicant must use the specified analytical methods, detection limits (DLs) and quantitation levels (QLs) in the following table for application required monitoring unless:

- Another permit condition specifies other methods, detection levels, or quantitation levels.
- The method used produces measurable results in the sample and EPA has listed it as an EPA-approved method in 40 CFR Part 136.

If the applicant uses an alternative method, as allowed above, it must report the test method, DL, and QL in the application. If the applicant is unable to obtain the required DL and QL in its effluent due to matrix effects, the applicant must submit a matrix-specific detection limit (MDL) and a quantitation limit (QL) to Ecology with appropriate laboratory documentation.

	Form 2C Ref. #	Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
		<b>Conventional (Part A)</b>			
10					
X	a.	Biochemical Oxygen Demand	SM5210-B		2 mg/L
		Soluble Biochemical Oxygen Demand	SM5210-B <sup>3</sup>		2 mg/L
	b.	Chemical Oxygen Demand	SM5220-D		10 mg/L
	c.	Total Organic Carbon	SM5310-B/C/D		1 mg/L
X	d.	Total Suspended Solids	SM2540-D		5 mg/L
X	e.	Total Ammonia (as N)	SM4500-NH3-B and C/D/E/G/H		20
	f.	Flow	Calibrated device		
		Dissolved oxygen	SM4500-OC/OG		0.2 mg/L
		Temperature (max. 7-day avg.)	Analog recorder or Use micro-recording devices known as thermistors		0.2° C
X	i.	pH	SM4500-H <sup>+</sup> B	N/A	N/A
10		<b>Nonconventional (Part B)</b>			
		Total Alkalinity	SM2320-B		5 mg/L as CaCO3
	b.	Chlorine, Total Residual	SM4500 Cl G		50.0
	c.	Color	SM2120 B/C/E		10 color units
X	d.	Fecal Coliform	SM 9221E,9222	N/A	Specified in method - sample aliquot

Form 2C Ref. #	Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
				dependent
	e. Fluoride (16984-48-8)	SM4500-F E	25	100
X	f. Nitrate + Nitrite Nitrogen (as N)	SM4500-NO3-E/F/H		100
X	g. Nitrogen, Total Kjeldahl (as N)	SM4500-N <sub>org</sub> B/C and SM4500NH <sub>3</sub> -B/C/D/EF/G/H		300
	Soluble Reactive Phosphorus (as P)	SM4500- PE/PF	3	10
X	i. Phosphorus, Total (as P)	SM 4500 PB followed by SM4500-PE/PF	3	10
X	h. Oil and Grease (HEM) (Hexane Extractable Material)	1664 A or B	1,400	5,000
	Salinity	SM2520-B		3 practical salinity units or scale (PSU or PSS)
	Settleable Solids	SM2540 -F		500 (or 1.0 mL/L)
	k. Sulfate (as mg/L SO <sub>4</sub> )	SM4110-B		0.2 mg/L
	l. Sulfide (as mg/L S)	SM4500-S <sup>2</sup> F/D/E/G		0.2 mg/L
	m. Sulfite (as mg/L SO <sub>3</sub> )	SM4500-SO3B		2 mg/L
	Total Coliform	SM 9221B, 9222B, 9223B	N/A	Specified in method - sample aliquot dependent
X	Total dissolved solids	SM2540 C		20 mg/L
X	Total Hardness	SM2340B		200 as CaCO <sub>3</sub>
	o. Aluminum, Total (7429-90-5)	200.8	2.0	10
	p. Barium Total (7440-39-3)	200.8	0.5	2.0
	BTEX (benzene +toluene + ethylbenzene + m,o,p xylenes)	EPA SW 846 8021/8260	1	2
	q. Boron Total (7440-42-8)	200.8	2.0	10.0
	r. Cobalt, Total (7440-48-4)	200.8	0.05	0.25
	s. Iron, Total (7439-89-6)	200.7	12.5	50
	t. Magnesium, Total (7439-95-4)	200.7	10	50
	u. Molybdenum, Total (7439-98-7)	200.8	0.1	0.5
	v. Manganese, Total (7439-96-5)	200.8	0.1	0.5
	NWTPH Dx <sup>4</sup>	Ecology NWTPH Dx	250	250
	NWTPH Gx <sup>5</sup>	Ecology NWTPH Gx	250	250
	w. Tin, Total (7440-31-5)	200.8	0.3	1.5
	x. Titanium, Total (7440-32-6)	200.8	0.5	2.5
10	<b>Metals, Cyanide and Total Phenols (Part C)</b>			
	1M. Antimony, Total (7440-36-0)	200.8	0.3	1.0

## **Appendix C**

SEPA/NEPA

To be added upon completion