PERMITTEE: City of Echo
PO Box 9
Echo, Oregon 97826
File Number: 26200

SOURCE LOCATION: 33245 Bowman Rd.

SOURCE CONTACT:
Diane Berry, City Administrator or
Darin Tuil, Operator
Telephone Number: 541-376-8411

PERMIT WRITERS:
Steve McMillan / Heidi Williams
Telephone Number: 541-278-4617 / 278-4608

PROPOSED ACTION: Renewal of a National Pollutant Discharge Elimination System (NPDES) wastewater discharge permit

SOURCE CATEGORY: Minor Domestic

TREATMENT SYSTEM CLASS: Level I

COLLECTION SYSTEM CLASS: Level I

PERMIT APPLICATION DATE: October 13, 2005

PERMIT APPLICATION NUMBER: 979776

BACKGROUND

Introduction

The City of Echo operates a wastewater treatment facility located in Echo, Oregon. Wastewater is treated and discharged to the Umatilla River in accordance with National Pollutant Discharge Elimination System (NPDES) Permit number 102054. The Permit for the facility was issued on December 27, 2000, and expired on November 30, 2005.

The Department of Environmental Quality (Department) received a renewal application on October 13, 2005. A renewal permit is necessary to discharge to state waters pursuant to provisions of Oregon Revised Statutes (ORS) 468B.050 and the Federal Clean Water Act. The Department proposes to renew the permit.

Facility Description

The wastewater treatment facility was originally placed into operation in 1976. The last major expansion occurred in 1985 to correct problems encountered during construction of the original facility. The expansion included
resealing the lagoons, installing a pumping and chlorination chamber, and adding an outfall pipe to the Umatilla River.

The treatment facility also consists of a three-cell lagoon with a total area of 6.9 acres. The treatment facility was designed to treat the domestic wastewater from a population of 1,200 people. The design average dry weather flow is 0.12 million gallons per day (MGD). The City is permitted to discharge treated and disinfected wastewater to the Umatilla River at river mile 25.0 from November 1 through April 30 of each year. From May 1 through October 31, no discharge to waters of the state is permitted.

The City irrigates wastewater on trees destined to be replanted throughout the town. The irrigation site is adjacent to the treatment facility on property owned by the City.

The current average monthly flow over the past two years to the lagoon is 61,000 gallons per day (gpd). This is much less than the 120,000 gallons per day design capacity. As of July 2004, approximately 650 people were served by the treatment facility.

**Mixing Zone**

A mixing zone study was performed by the Department for the permittee on November 30, 2005. The parameters of concern to the permittee include chlorine, turbidity, TSS, BOD₅, Lead, Total Recoverable Zinc and Copper. TSS, chlorine, turbidity, and BOD₅ are addressed later in this evaluation report. The permit currently includes BOD₅, TSS, percent removal, pH, and *E. coli*, limits.

The Permit Reasonable Potential Analysis (RPA) and Water Quality Based Effluent Limits (WQBEL) Workbook, version May 2006, ODEQ, was used to establish if lead, zinc and copper limits are required. Zinc and copper have reasonable potentials to exceed acute and chronic water quality criteria. Lead has a reasonable potential to exceed chronic criteria. Because the information in the RPA is based on one result, the permit will require monitoring of these parameters. After the data are acquired, another RPA will be performed to determine if permit limits are required.

**Biosolids Management and Utilization**

All waste sludge must be managed in accordance with a Department approved Biosolids Management Plan to ensure compliance with the federal biosolids regulations (40 CFR Part 503).

The City stores all biosolids produced in the treatment lagoon within the lagoon. Due to changes in biosolids regulations, a revised biosolids management plan must be submitted to the Department six months prior to removing any biosolids from the lagoon. Biosolids shall be land applied at beneficial use rates after approval of application sites and the biosolids management plan.

**Inflow and Infiltration (I/I) and collection system maintenance**

The Department recommends a long-term program that will completely replace the collection system based on life expectancy (usually 60 to 80 years). The replacement program should be directed at the oldest sub-basins or those in the worst condition.

In various parts of the city, the Permittee experiences high groundwater, especially when the neighboring irrigation ditch is flowing. High groundwater infiltrates into the collection system, taking up needed storage space in the lagoon. The Permittee’s lagoon tends to be full regardless of the fact that the City’s population is only at half of the design population, thus indicating that infiltration may be a contributing factor.

On April 30, 2004 the City reported a leak of domestic sewage from their force main approximately \( \frac{1}{2} \) mile north of the City of Echo. It was reported that the leak was contained in between railroad tracks and an irrigation ditch. The City determined that the leak was due to blockage caused by an accumulation of grease within the main line. On December
29, 2004 the City contacted the Department and reported that a broken 8 inch pipe had been identified prior to the Parshall flume for the influent. The pipe was repaired and flow resumed on April 15, 2005.

**Pretreatment**

The treatment facilities receive primarily domestic wastewater from residential and commercial sources. There are no known categorical users that contribute to the wastewater flow to the facilities. Categorical users are industries and other non-domestic wastewater sources that discharge into municipal sewer systems and must reduce the amount of pollutants released into the environment from these sources. A pretreatment program is not necessary, because there are no categorical users.

**Pollutants Discharged**

The current permit allows the City of Echo to discharge treated effluent from the wastewater treatment plant from November 1 through April 30. The current permit sets limits on the following pollutants: Five-day Biochemical Oxygen Demand (BOD$_5$), Total Suspended Solids (TSS), and E. coli bacteria. The discharge is also regulated for pH and pollutant removal efficiency.

The proposed permit will regulate the same pollutants as the current permit and includes proposed limits for temperature and chlorine. Also, a notation in Schedule A of the current permit has been omitted in the proposed permit. The notation describes the current process that the City can use (after securing written Department approval) to discharge into the month of May if the City determines that the projected lagoon level would be higher than the minimum operating level on April 30. The notation has been removed from the proposed permit due to the lack of a May 1 through October 31 thermal waste load allocation for the facility.

**Outfalls**

Treated wastewater is discharged to the Umatilla River through a three-inch diameter PVC outfall pipe at RM 25.0. The mixing zone study identified the outfall as being located four feet above the surface water level at the time of sampling. Bank erosion could affect the stability of this discharge pipe. The pipe is located immediately above a salmon spawning area and where limited mixing occurs during low water levels due to a dirt bank forming downstream of the outfall. Relocation of this outfall is recommended.

**Receiving Streams/Impact**

The designated beneficial uses of the receiving stream are: public and private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, aesthetic quality, and hydro power.

**Threatened and Endangered Species (T&E)**

Threatened and Endangered fish species; including steelhead, salmon and bull trout, are believed to be spawning in the Umatilla River from October into May. Juvenile coho and fall chinook salmon rear in the lower river, where summertime rearing habitat is poor and survival is dependent upon finding cool water refuge. Coho and fall chinook salmon spawn downstream of the City of Echo.

**Temperature**

Stream temperatures are generally rising throughout the state and many streams violate applicable temperature criteria during the summer season. As a result, point source dischargers are required to address thermal discharges in addition to chemical and biological discharges. Many discharge permits, including the proposed permit, identify maximum allowable discharge temperatures. Because streams in the Umatilla River basin are among those that are water quality limited for temperature, the Department prepared the Umatilla River Basin Total Maximum Daily
Load (TMDL) document in 2001. In the process, the Department calculated Wasteload Allocations (WLAs) for the permittee and other point source dischargers in the basin.

While renewing the permit, it was necessary to evaluate the temperature criteria for the designated uses in the Umatilla River. The following designations have been applied to the creek in the vicinity of the City’s discharge:

- According to OAR 340-041-0310, Figure 310A, the Umatilla River’s fish use designation is salmon and trout rearing and migration, which means that human activity may not cause the stream temperature to increase when the seven-day-average maximum temperature of the creek exceeds 18° C (64° F).

- OAR 340-041-0310, Figure 310B, shows that the Umatilla River in the vicinity of the City is designated to have a spawning use period from October 15 through May 15, in which human activity may not cause the stream temperature to increase when the seven-day-average maximum temperature criterion for the creek exceeds 13° C (55° F).

- The TMDL (page 76) states that the City was not assigned a WLA for temperature because they do not discharge during the critical season (May 1 through October 31).

When aquatic species listed under the Endangered Species Act are present and if a temperature increase would impair the biological integrity of the Threatened and Endangered population, then the target is no greater than 0.3 °C (0.5 °F) increase from anthropogenic sources. In accordance with 340-041-0028(12)(b)(B), waste load and load allocations will restrict all NPDES point sources and nonpoint sources to a cumulative increase of no greater than 0.3° C (0.5° F) above the applicable criteria after mixing in the water body and at the point of maximum impact.

**TSS**

A TSS concentration of 80 mg/L is the basin average associated with 30 NTU, and the discharge concentration limit is set at 80 mg/L TSS monthly average. Due to excessive algae growth in the lagoons, the Permittee does not expect to meet the permit’s Total Suspended Solids (TSS) limit. Excessive algae has been problematic for many years, with the Permittee attempting to periodically address it. During the mixing zone study, the permittee sampled the effluent and found the TSS to be 160 mg/L. The Mutual Agreement and Order (MAO) No. WQ/M-ER-04-212 contains interim effluent limitations for TSS and a compliance schedule for the wastewater facility upgrades.

**pH**

The parameter pH measures the hydrogen ion activity in water. Acidity increases as the pH falls from 7 to 0, alkalinity increases as pH rises from 7 to 14, and pH 7 is neutral. pH can be altered by industrial or municipal wastes, ammonia production when organic matter decomposes, agricultural runoff, or excessive algal growth.

The proposed permit limits pH to the range 6.0 to 9.0. Within the Permittee's mixing zone, the water quality standard for pH does not have to be met. It is the Department's belief that mixing with ambient water within the mixing zone will ensure that the pH at the edge of the mixing zone meets the standard, and the Department considers the proposed permit limits to be protective of the water quality standard.
**Toxicity**

Effluent from the City’s wastewater treatment facility contains chlorine and ammonia. Chlorine is used as a disinfectant and ammonia naturally occurs in domestic wastewater. Both of these parameters are known to have toxic impact to aquatic life at specific levels.

OAR 340-041-0033 states that:

1. Toxic substances may not be introduced above natural background levels in the waters of the State in amounts, concentrations, or combinations that may be harmful, may chemically change to harmful forms in the environment, or may accumulate in sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety or welfare, aquatic life, wildlife, or other designated beneficial uses.

2. Levels of toxic substances shall not exceed the criteria listed in Table 20 which was based on criteria established by EPA and published in *Quality Criteria for Water (1986)*, unless otherwise noted.

However, OAR 340-041-0053(1) states that the Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone. The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:

1. The water within the mixing zone shall be free of materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution, if appropriate, for other parameters.

2. The water outside the boundary of the mixing zone shall be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on the test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits.

Furthermore, 40 CFR § 122.44(d) states that, in addition to the conditions established under § 122.43(a), each NPDES permit shall include any requirements in addition to or more stringent than promulgated effluent limitations guidelines or standards under sections 301, 304, 306, 307, 318 and 405 of the Clean Water Act (CWA) necessary to achieve water quality standards established under section 303 of the CWA, including state narrative criteria for water quality. Section (d) of § 122.44 also states that limitations must control all pollutants or pollutant parameters (either conventional, non-conventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality. Section (d) also states that when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the allowable ambient concentration of a state numeric criteria within a state water quality standard for an individual pollutant, the permit must contain effluent limits for that pollutant.
Chlorine and Ammonia

The fresh water criteria for toxic compounds were used to calculate permit limitations. According to EPA's 1986 Quality Criteria for Water (commonly known as the Gold Book) and OAR 340-041, Table 20, chlorine concentrations of 11 μg/l and 19 μg/l can result in chronic and acute chlorine toxicity, respectively, in fresh waters.

Ammonia is present in two states in natural waters: ammonium ion (NH$_4^+$) and un-ionized ammonia (NH$_3$). Un-ionized ammonia is much more toxic to aquatic life than the ionic species. Since the fraction of ammonia that is un-ionized increases as pH increases, the ammonia water quality standard is pH dependent. And systems with relatively high pH, such as the Umatilla River, are highly susceptible to ammonia toxicity.

Compliance with acute standards is required at the edge of the Zone of Immediate Dilution (ZID) and compliance with chronic standards is required at the edge of the mixing zone. The current permit contains a mixing zone in the Umatilla River extending 200 feet downstream beginning at the point of discharge.

An RPA was used to establish if chlorine and ammonia limits are required and what those limits would be. Using an effluent flow of 0.12 mgd (0.19 cfs) a 7Q10 river flow of 63.6 cfs, and results from the mixing zone study, there appears to be a reasonable potential to reach acute and chronic criteria for chlorine, but not for ammonia.

Turbidity

The current turbidity rules are being revised. The impact to the permittee is not known at this time due to lack of information about the turbidity of the effluent. The recent mixing zone study report indicated that the river exceeded the water quality standard, which allows no greater than 10% cumulative increase between the upstream and downstream locations in relation to the discharge pipe. Therefore, the permittee will be required to monitor the effluent and background turbidity of the creek during this permit cycle. A limit will be placed in the permit at the next renewal to reflect the upcoming rule change.

Groundwater

Schedule A of the proposed permit includes a condition prohibiting adverse impacts to groundwater. Schedule D of the proposed permit includes a condition stating that no groundwater evaluations will be required during this permit cycle.

Permit History

This section summarizes the Department’s permit actions that have occurred to date.

- October 13, 2005 Permit renewal application received.

An Antidegradation Review was completed with a recommendation to proceed with this permit action. A copy of the review sheet is in the file.

Compliance History

This facility was last inspected on April 27, 2005, and no violations were noted at the facility.

The monitoring reports for this facility were reviewed for the period since the current permit was issued (January 2001 to April, 2005), including any actions taken relating to effluent violations. The permit compliance conditions were reviewed and all inspection reports for the same period were reviewed. A discrepancy noted was that the BOD$_5$ and TSS had been monitored twice per month two weeks apart, rather than every two weeks. The City will
correct this and schedule monitoring every two weeks for these two parameters. This facility is considered to have operated in compliance with the current permit.

PERMIT DISCUSSION

Face Page

The permittee is authorized to construct, install, modify, or operate a wastewater collection, treatment, control and disposal system. The Permittee is allowed to discharge treated effluent to the Umatilla River within limits set by Schedule A and the following schedules. All other discharges are prohibited.

Schedule A - Waste Discharge limitations

BOD and TSS concentration and mass limits

Based on the Umatilla Basin minimum design criteria, wastewater treatment resulting in a monthly average effluent concentration of 20 mg/L for BOD₅ and TSS must be provided from May 1 - October 31. From November 1 - April 30, a minimum of secondary treatment or equivalent control is required. Secondary treatment for this facility is defined as monthly average concentration limit of 30 mg/L for BOD₅ (or 25 mg/L for CBOD₅) and 85 mg/L for TSS. The federal secondary treatment standards (40 CFR 133.103(c)) allow states to give lagoons special consideration in setting concentration limit for TSS. However, the Umatilla TMDL requires a daily maximum of 80 mg/L TSS.

The Department is proposing concentration limits at least as stringent as the basin minimum design criteria. The proposed monthly average BOD₅ concentration limit is 30 mg/L with a weekly average limit of 45 mg/L. The proposed daily TSS concentration limit is 80 mg/L.

The winter mass load limits for the facility are based on twice the design ADWF of 0.12 MGD and the monthly average BOD₅ or TSS concentration limits of 30 mg/L and 80 mg/L, respectively. The limits are in accordance with OAR 340-041-0061. All mass load limitations are rounded to two significant figures.

BOD₅ and TSS

The limits are:

1. May 1 - October 31:
   No discharge to state waters is permitted.

2. November 1 - April 30:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Average Effluent Concentrations</th>
<th>Monthly Average</th>
<th>Weekly Average</th>
<th>Daily Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOD₅</td>
<td>30 mg/L</td>
<td>30 lb/day</td>
<td>45 lb/day</td>
<td>60 lbs</td>
</tr>
<tr>
<td>TSS</td>
<td>80 mg/L</td>
<td></td>
<td></td>
<td>80 lbs</td>
</tr>
</tbody>
</table>

Calculations:

1. BOD₅

   (a) 0.12 MGD x 8.34 #/gal x 30 mg/L monthly avg. = 30 lbs/day
   (b) 30 lbs/day monthly avg. x 1.5 = 45 lbs/day weekly avg.
   (c) 30 lbs/day monthly avg. x 2.0 = 60 lbs/day daily max.
TSS – Discharge concentration limits are set at 30mg/l monthly average for BOD and TSS. The daily TSS concentration was set at 80 mg/L daily based on TMDL requirements for turbidity for the Umatilla River basin. This daily concentration relates to a 30 NTU turbidity rating.

BOD and TSS Percent Removal Efficiency

A minimum level of percent removal for BOD and TSS for municipal dischargers is required by the Code of Federal Regulations (CFR) secondary treatment standards (40 CFR, Part 133). In accordance with the federally approved standards for Oregon under 40 CFR 133.105, certain types of treatment facilities (including trickling filters and facultative lagoons) are eligible for consideration of lower percent removal limits. The proposed permit requires a minimum monthly average BOD and TSS removal efficiency of 85 and 65 percent respectively.

Bacteria

The proposed permit limits are based on an E. coli standard approved in January 1996. The proposed limits are a monthly log mean of 126 E. coli per 100 mL, with no single sample exceeding 406 E. coli per 100 mL. The new bacteria standard allows that if a single sample exceeds 406 E. coli per 100 mL, then the permittee may take five consecutive re-samples. If the geometric mean of the five re-samples is less than or equal to 126, a violation is not triggered. The new rule states that the re-samples should be taken at four hour intervals beginning as soon as practicable (preferably within 28 hours) after the original sample was taken. The rule also allows for changing the resampling timeframe if it would pose an undue hardship on the treatment facility. The Department is proposing that the five re-samples be taken beginning no later than 58 hours after the original sample was taken.

pH

The proposed permit limits pH to the range 6.0 to 9.0 remains unchanged from the current permit. The limit is established in accordance with federal secondary treatment standards in 40 CFR 133.102 (c). The basin water quality standard for pH as established in OAR 340-041-0315 (1) is 6.5 to 9.0. The facility is required to meet this standard at the edge of the mixing zone.

Total Chlorine Residual

The City disinfects the effluent with chlorine to achieve the waste discharge limitations for bacteria. Chlorine limits were also established using the RPA and WQBEL Workbook. An effluent flow of 0.12 mgd (0.19 cfs) and a 7Q10 river flow of 63.6 cfs were used. The permit concentration limit for chlorine residual was found to be maximums of 0.2 mg/L monthly and 0.6 mg/L daily. The Department recognizes that the City will not be able to meet this limit until the plant is upgraded. Therefore, this limit will become effective upon completion of the treatment plant upgrades as defined in the MAO.

Temperature

The proposed permit will include effluent temperature limits, depending on the conditions of the river and the time of year. The City will not be allowed to discharge from May 1 through October 31.

The biological criterion that applies to the discharge season is: the seven-day-average maximum temperature of a stream identified as having salmon and steelhead spawning use may not exceed 13°C (55.4°F). Based on this criterion, the Permittee may not discharge wastewater that exceeds 13°C (55.4°F).

Changes to the Department’s rules governing thermal mixing zones have caused the following constraints to be imposed on allowable mixing zones:
OAR 340-041-0053(2)(d) Temperature Thermal Plume Limitations. Temperature mixing zones and effluent limits authorized under 340-041-0028(12)(b) will be established to prevent or minimize the following adverse effects to salmonids inside the mixing zone:

- Impairment of an active salmonid spawning area where spawning redds are located or likely to be located. This adverse effect is prevented or minimized by limiting potential fish exposure to temperatures of 13 degrees Celsius (55.4 Fahrenheit) or less for salmon and steelhead, and 9 degrees Celsius (48 degrees Fahrenheit) for bull trout;

- Acute impairment or instantaneous lethality is prevented or minimized by limiting potential fish exposure to temperatures of 32.0 degrees Celsius (89.6 degrees Fahrenheit) or more to less than 2 seconds);

- Thermal shock caused by a sudden increase in water temperature is prevented or minimized by limiting potential fish exposure to temperatures of 25.0 degrees Celsius (77.0 degrees Fahrenheit) or more to less than 5 percent of the cross section of 100 percent of the 7Q10 low flow of the water body; The Department may develop additional exposure timing restrictions to prevent thermal shock; and

- Unless the ambient temperature is 21.0 degrees or greater, migration blockage is prevented or minimized by limiting potential fish exposure to temperatures of 21.0 degrees Celsius (69.8 degrees Fahrenheit) or more to less than 25 percent of the cross section of 100 percent of the 7Q10 low flow of the water body.

The effluent temperature cannot exceed 13°C (55°F), therefore the thermal plume limitations are met.

This value is further evaluated against the protection of cold water requirements in OAR 340-041. The current temperature standard set-forth in OAR 340-041-0028 (11(b)) requires that a point source that discharges into or above salmon & steelhead spawning waters that are colder than the spawning criterion, may not cause the water temperature in the spawning reach where the physical habitat for spawning exists during the time spawning through emergence use occurs, to increase more than the following amounts after complete mixing of the effluent with the river.

Because spawning redds are located within the mixing zone, this criteria does not apply because the temperature allowance only is granted after complete mixing with the river. The spawning area is located well within the mixing zone boundary, therefore, this temperature allowance does not apply. Also, the summer cold water protection requirement does not apply to this proposed permit because there is no permitted discharge during the summer period.

Based on these evaluations, the temperature limit in the permit will be: Discharge is permitted if the effluent temperature does not exceed the upstream river temperature at the end of pipe.

An evaluation of the 7-day running averages of river temperatures from a gauging station near Rieth shows that the river remains below 13°C (55°F) during the discharge season except near the very end of April. Thus, allowing the Permittee to discharge at an effluent temperature not to exceed the river temperature will be protective of the above criteria. The Department recognizes that the City will not be able to meet these limits until the plant is upgraded, at which time the temperature limits will become effective.
Mixing Zone and Zone of Immediate Dilution

The allowable mixing zone is that portion of the Umatilla River beginning at the point of discharge and extending two hundred (200) feet downstream from the outfall. The Zone of Immediate Dilution (ZID) shall not exceed ten (10) percent of the defined mixing zone in any one direction from the point of discharge.

In November, 2005, the Department conducted a mixing zone study for the City to determine if adequate dilution is occurring (refer to MAO WQ/M-ER-04-212). The results from this study indicate that chlorine, TSS, BOD₅, and turbidity violate the permit limits and/or water quality standards; total recoverable zinc and copper from the effluent sample exceeded the calculated WQ criteria; spawning salmon were observed immediately downstream of the mixing zone; and visible redds were in the habitat inside the mixing zone. The discharge pipe was observed to be in a poor location for mixing of the wastewater with the river and high enough out of the water to possibly become unstable due to bank erosion.

In addition to evaluating the City’s ability to meet the permit limits/water quality standards, the City should also address changing the location of the outfall pipe.

Reclaimed Water

The City applies effluent at the treatment plant site for the irrigation of trees to be used for future replanting around the City. In accordance with OAR 340-055-0013, the City is exempt from the reclaimed water use rules as long as the reclaimed water that is used is disinfected, oxidized wastewater; and the reclaimed water that is used for landscape irrigation shall be confined to the treatment plant site. No spray or drift is allowed off the treatment plant site.

The City submitted a Reclaimed Water Use Plan in February, 1999. This plan is adequate and does not need to be updated.

Schedule B - Minimum Monitoring and Reporting Requirements

In 1988, the Department developed a monitoring matrix for commonly monitored parameters. Proposed monitoring frequencies for all parameters are based on this matrix and, in some cases, may have changed from the current permit. The proposed monitoring frequencies for all parameters correspond to those of facilities of similar size and complexity in the state.

The permittee is required to have a laboratory Quality Assurance/Quality Control program. The Department recognizes that some tests do not accurately reflect the performance of a treatment facility due to quality assurance/quality control problems. These tests should not be considered when evaluating the compliance of the facility with the permit limitations. Thus, the Department is also proposing to include in the opening paragraph of Schedule B a statement recognizing that some test results may be inaccurate, invalid, do not adequately represent the facility's performance and should not be used in calculations required by the permit.

BOD₅, TSS, E. coli, temperature, turbidity and pH

The monitoring frequency for BOD₅ and TSS is every two weeks. The monitoring frequency for E. coli and turbidity is weekly. Monitoring frequency for temperature is daily. Monitoring frequency for pH is two per week.

Total Chlorine Residual

The proposed permit requires the City to continue to daily measure total chlorine residual. The monitoring point is prior to discharge from the outfall.
Ammonia

The proposed permit will continue to require ammonia monitoring of the effluent to obtain more data to determine if this parameter has a potential to exceed water quality standards.

Total Flow

The proposed permit will require the City to monitor influent flow daily and to calibrate the influent and effluent flow meters on an annual basis.

Average Percent Removal Efficiency (BOD$_5$ and TSS)

The City will be required to meet a minimum of 85 percent BOD$_5$ and 65 percent TSS removal efficiency on a monthly average basis. Calculation of the monthly average removal efficiency for these parameters is in the proposed permit.

Lead, Total Recoverable Zinc and Copper

The City will be required to test semi-annually for these items for four years. After four years of data collection, an RPA will be performed to determine if limits must be added to the permit when it is renewed.

Reclaimed Water

The flow and chlorine residual are required to be monitored daily. *E. coli* is to be tested weekly and selected nutrient monitoring is to be conducted annually.

Lagoon Site

The monitoring of the depth of water in each cell is proposed to be weekly. Additionally, daily perimeter inspection of each lagoon is proposed in the permit. The purpose of these measurements is to help ensure the integrity of the lagoon system and to help in the determination of potential lagoon leakage.

Umatilla River Data

The permittee is required to monitor the Umatilla River near Echo during the discharge season for flow daily, upstream temperature daily, and turbidity weekly.

Discharge Monitoring Reports

Discharge monitoring reports must be submitted to the Department monthly by the 15th day of the following month. The monitoring reports need to identify the principal operators designated by the Permittee to supervise the treatment and collection systems. The reports must also include records concerning application of biosolids and all applicable equipment breakdowns and bypassing.

Inflow and Infiltration Report

The permittee shall have in place a program to identify and reduce inflow and infiltration (I&I) into the wastewater collection system. An annual report shall be submitted to the Department by February 1 of each year which details sewer collection activities that reduce inflow and infiltration.
Annual Biosolids Report

The permittee is required to submit an annual report by April 1 of each year documenting its biosolids handling activities for the previous year.

Schedule D - Special Conditions

The proposed permit includes eight special conditions. The requirements include:

The permittee is required to maintain on file an operation and maintenance manual.

Schedule D includes a condition requiring the permittee to comply with the rules concerning the use of reclaimed water and the Reclaimed Water Use Plan approved by the Department.

The permittee must manage its biosolids in accordance with an approved biosolids management plan upon the Department's approval of the plan.

This condition requires the permittee to have an adequate contingency plan for prevention and handling of spills and unplanned discharges in force at all times.

The permittee must have the facilities supervised by personnel certified by the Department in the operation of treatment and/or collection systems.

The permittee must notify the DEQ, Eastern Region, Pendleton office (541 276-4063), in accordance with the response times noted in the General Conditions of the permit, of any malfunction so corrective action can be coordinated between the permittee and the Department.

The permittee shall not be required to perform a hydrogeologic characterization or groundwater monitoring as long as the facility is operated in accordance with the permit and there are no adverse groundwater quality impacts.

This condition authorizes the Department to reopen the permit to include new or revised discharge limitations, monitoring or reporting requirements, compliance conditions and schedules, and special conditions.