# NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT

Permit Evaluation Review Report

Oregon Department of Environmental Quality  
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Portland, Oregon 97201  
503-229-5263 FAX 503-229-6945

**FINAL**

<table>
<thead>
<tr>
<th>Permittee: Intel Corporation</th>
<th>Facility Location: 3585 SW 198th Ave. Aloha OR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sources Covered:</strong> Groundwater remediation system</td>
<td><strong>Receiving Stream:</strong> Unnamed tributary to Beaverton Creek</td>
</tr>
<tr>
<td><strong>Source Category:</strong> Integrated Circuit Component Production Minor Industrial Source</td>
<td><strong>Proposed Action:</strong> Renew NPDES permit</td>
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</table>
| **File Information:**  
  WQ-Washington County  
  File No. 41940  
  EPA Reference No.: OR-003092-9  
  Application Date: 2 August 2005  
  Application No. 980579  
  Permit No. 101533 | **Source Contact:**  
  Mike Bernard  
  503/613-8047 |
| **Preparer:** Elliot Zais, PhD, PE  
  Water Quality Source Control Section  
  Northwest Region  
  503/229-5292 | **Date Prepared:**  
  27 April 2006  
  **Preparer Signature:** [Signature] |
INTRODUCTION

The Aloha Campus of the Intel Corporation manufactures semiconductor devices under SIC code 3674.

Intel’s NPDES permit expired on 31 December 2005.

FACILITY DESCRIPTION AND UPDATE

This permit is for wastewater from a groundwater remediation system. The permitted wastewater is extracted, treated, and discharged to an onsite storm drain which drains to an unnamed tributary to Beaverton Creek. The groundwater was historically contaminated with chlorinated solvents. Contaminated groundwater is pumped to an onsite VOC air stripping system and treated water within permit limits is discharged to the storm drain.

UNIQUE OPERATING CONDITIONS AND PROBLEMS

No unique operating conditions or problems are known.

STORM WATER

Storm water is regulated under a 1200-Z general industrial storm water permit.

GROUNDWATER

This permit regulates a groundwater remediation.

OUTFALL

The permittee has three outfalls: Outfall 001 which discharges into Beaverton Creek; Outfall 002 which discharges into Rock Creek; Outfall 003 which discharges into Beaverton Creek. A previous permit modification zeroed out the flowrates to Outfalls 001 and 002. The last renewal removed the outfalls from this permit. However, they are still used for storm water and are regulated under the facility’s 1200-Z general storm water permit.

THREATENED AND ENDANGERED SPECIES REVIEW

From the Tualatin Subbasin TMDL, 2001. The Tualatin River is home to Winter Steelhead, Coho Salmon, and resident Cutthroat Trout. Winter Steelhead are currently listed as threatened by the National Marine Fishery Service under the Endangered Species Act. These fish are generally in decline in the subbasin and have been lost from some tributaries due to a variety of factors that also include changes in habitat and water quality. In addition, the Tualatin River is receiving increasing use for water contact
recreation (e.g. canoeing, fishing, and swimming) as the nearby population increases and access to the river through parks and boat ramps has increased.

**POLLUTANTS DISCHARGED AND PROPOSED LIMITS**

**Pollutants of Concern**
The following pollutant parameters are of concern with regard to this source: total dissolved solids, trichloroethylene, 1,1-dichloroethane, vinyl chloride, total VOCs.

**Technology-Based Effluent Limits 40 CFR 122.44(a) and (e)**
These limits are based on effluent limitations and standards promulgated under section 301 of the CWA, or new source performance standards promulgated under section 306 of the CWA, on case-by-case effluent limitations determined under section 402(a)(1) of the CWA, or a combination of the three in accordance with 40 CFR 125.3.

**Water Quality-Based Effluent Limits 40 CFR 122.44(d)**
These limits are 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 CWA necessary to achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality.

The Department is required to set effluent limits for pollutants that may be discharged at levels that cause, or have the reasonable potential to cause, an excursion above any numeric or narrative state water quality standard [40 CFR 122.44(d)(1)(i)]. When determining whether a discharge causes or has the reasonable potential to cause an instream excursion above a narrative or numeric State water quality standard, the Department must account for existing controls on point sources, the variability of the pollutant, and the dilution of the effluent in the receiving water.

The wastewater discharged is from a groundwater remediation system.

**340-041-004 Antidegradation Review**
In order to issue a permit, the Department must perform a review per the requirements of Oregon Administrative Rules, OAR 340-041-0004. The Department must determine that the discharge will not cause or contribute to any water quality violations before allowing a new mass load discharge. This is a not a new or increased load, but the review is still useful. Below is a listing of the required findings and considerations, followed by the Department’s conclusions. Numbered paragraphs are taken from the Oregon Administrative Rules.

(1) **Purpose.** The purpose of the Antidegradation Policy is to guide decisions that affect water quality such that unnecessary further degradation from new or increased point and nonpoint sources of pollution is prevented, and to protect, maintain, and enhance existing surface water
quality to ensure the full protection of all existing beneficial uses. The standards and policies set forth in OAR 340-041-0007 through 340-041-0350 are intended to supplement the Antidegradation Policy.

**Conclusion.** The NPDES permit for Intel’s discharge is a permit renewal with no increase in discharged load. Permit renewals with the same discharged load as the previous permit are not considered to lower water quality from existing water quality. Thus, the Department finds that the discharge is not subject to an in-depth antidegradation review. *(Antidegradation Policy Implementation Internal Management Directive for NPDES Permits and Section 401 Water Quality Certifications, ODEQ March 2001).*

**(2) Growth Policy.** In order to maintain the quality of waters in the State of Oregon, it is the general policy of the Commission to require that growth and development be accommodated by increased efficiency and effectiveness of waste treatment and control such that measurable future discharged waste loads from existing sources do not exceed presently allowed discharged loads except as provided in section (3) through (9) of this rule.

**Conclusion.** Permit limits were lowered for the last renewal based on consistent performance during the last permit cycle.

**(9)(a)(C)** The new or increased discharged load will not unacceptably threaten or impair any recognized beneficial uses or adversely affect threatened or endangered species. In making this determination, the Commission or Department may rely upon the presumption that if the numeric criteria established to protect specific uses are met the beneficial uses they were designed to protect are protected. In making this determination the Commission or Department may also evaluate other State and federal agency data that would provide information on potential impacts to beneficial uses for which the numeric criteria have not been set.

**Conclusion.** The identified beneficial uses in the receiving stream are as follows:

1. Public domestic water supply;
2. Private domestic water supply;
3. Industrial water supply;
4. Irrigation;
5. Livestock watering;
6. Resident fish and aquatic life;
7. Fishing.

Based on the above review, the Department believes that the increased load will not unacceptably threaten or impair any recognized beneficial uses.
(9)(b) The activity, expansion or growth necessitating a new or increased discharge load is consistent with the acknowledged local land use plans as evidenced by a statement of land use compatibility from the appropriate local planning agency.

Conclusion. Intel has filed a land use compatibility statement with Washington County. It has been approved.

(9)(c) Oregon’s water quality management policies and programs recognize that Oregon’s water bodies have a finite capacity to assimilate waste. Unused assimilative capacity is an exceedingly valuable resource that enhances in-stream values and environmental quality in general. Allocation of any unused assimilative capacity should be based on explicit criteria. In addition to the conditions in subsection (a) of this section, the Commission or Department may consider the following:

(A) Environmental Effects Criteria:

(i) Adverse Out-of-Stream Effects. There may be instances where the discharge or limited discharge alternatives may cause greater adverse environmental effects than the increased discharge alternative.

Conclusion. Not applicable to this situation.

(ii) Instream Effects. Total stream loading may be reduced through elimination or reduction of other source discharges or through a reduction in seasonal discharge. A source that replaces other sources, accepts additional waste from less efficient treatment units or systems, or reduces discharge loadings during periods of low stream flow may be permitted an increased discharge load year-round or during seasons of high flow, so long as the loading has no adverse effect on threatened and endangered species;

Conclusion. Not applicable to this situation.

(iii) Beneficial Effects. Land application, upland wetlands application, or other non-discharge alternatives for appropriately treated wastewater may replenish groundwater levels and increase streamflow and assimilative capacity during otherwise low streamflow periods.

Conclusion. Not applicable.

(9)(c)(B) Economic Effects Criteria:
Value of Assimilative Capacity. The assimilative capacity of Oregon’s streams is finite, but the potential uses of this capacity are virtually unlimited. Thus it is important that priority be given to those beneficial uses that promise the greatest return (beneficial use) relative to the unused assimilative capacity that might be utilized. In-stream uses that benefit from reserve assimilative capacity, as well as potential future beneficial use, will be weighed against the economic benefit associated with increased loading.

Conclusion. The assimilative or loading capacity is defined as “the greatest amount of loading that a water body can receive without violating water quality standards.” The average discharge flowrate from the treatment system is about 33 m³/day (0.0135 cfs). USGS flow gages in Beaverton Creek upstream and downstream of Intel show summer low flowrates of about 5 cfs. The discharge will use less than 0.3 percent of the creek’s flowrate. This discharge is not expected to use a significant portion of the Beaverton Creek’s assimilative capacity.

Cost of Treatment Technology. The cost of improved treatment technology, nondischarge, and limited discharge alternatives may be evaluated.

Conclusion. The currently proposed technology consisting of an onsite air stripping system is appropriate.

As with all NPDES permits issued for facilities that propose to discharge wastewater to waters of the state, the proposed draft permit for the Intel facility was drafted to ensure that all state wide water quality standards contained in OAR 340-041-0007 through 340-041-0053 and all basin-specific water quality standards would be achieved.

Each of the parameters listed is discussed below followed by the conclusions reached during this review.

340-041-0007
Statewide Narrative Criteria

(1) Notwithstanding the water quality standards contained in this Division, the highest and best practicable treatment and/or control of wastes, activities, and flows must in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.

Conclusion. The proposed treatment is appropriate to meet this condition.
(2) Where a less stringent natural condition of a water of the State exceeds the numeric criteria set out in this Division, the natural condition supersedes the numeric criteria and becomes the standard for that water body. However, there are special restrictions, described in OAR 340-041-0004(9)(a)(C)(iii), that may apply to discharges that affect dissolved oxygen.

**Conclusion.** Not applicable in this situation. No less stringent natural condition has been identified. Therefore, the established numeric criteria will be used for this site.

(11) **Fungi.**

**Conclusion.** The Intel facility’s discharge is not expected to contain fungi or to promote their growth.

(12) **Tastes or odors.**

**Conclusion.** Based on the known pollutants in the facility’s groundwater treatment system, the treatment facility’s discharge is not expected to create tastes or odors or toxic or other conditions deleterious to aquatic life or to affect potability of drinking water or palatability of fish or shellfish.

(13) **Deposits.**

**Conclusion.** The Intel facility’s discharge is not expected to contain material which would cause appreciable deposition in the river.

(14) and (15) **Objectionable conditions and offensive aesthetic conditions.**

**Conclusion.** Based on previous operation, the Intel facility’s discharge is not expected to cause offensive aesthetic conditions.

(16) **Radioisotopes.**

**Conclusion.** No radioactive materials are used in the facility’s processes. The Intel facility’s discharge is not expected to contain radioisotopes.

**Bacteria**

**Conclusion.** There is no sewage connected with this discharge. The Intel facility’s discharge is not expected to contain bacteria.
Dissolved Oxygen

(1) Dissolved oxygen (DO): No wastes may be discharged and no activities must be conducted that either alone or in combination with other wastes or activities will cause violation of the following standards: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(a) For water bodies identified as active spawning areas in the places and times indicated on the following Tables and Figures set out in OAR 340-041-0101 to OAR 340-041-0340: Tables 101B, 121B, 180B, 201B and 260B, and Figures 130B, 151B, 160B, 170B, 220B, 230B, 271B, 286B, 300B, 310B, 320B, and 340B, (as well as any active spawning area used by resident trout species), the following criteria apply during the applicable spawning through fry emergence periods set forth in the tables and figures:
   (A) The dissolved oxygen may not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;
   (B) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels must not be less than 95 percent of saturation;
   (C) The spatial median intergravel dissolved oxygen concentration must not fall below 8.0 mg/l.

(b) For water bodies identified by the Department as providing cold-water aquatic life, the dissolved oxygen may not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen may not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen may not fall below 8.0 mg/l as a 30-day mean minimum, 6.5 mg/l as a seven-day minimum mean, and may not fall below 6.0 mg/l as an absolute minimum (Table 21);

(c) For water bodies identified by the Department as providing cool-water aquatic life, the dissolved oxygen may not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen may not fall below 6.5 mg/l as a 30-day mean minimum, 5.0 mg/l as a seven-day minimum mean, and may not fall below 4.0 mg/l as an absolute minimum (Table 21);

(d) For water bodies identified by the Department as providing warm-water aquatic life, the dissolved oxygen may not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen may not fall below 5.5 mg/l as a 30-day mean minimum, and may not fall below 4.0 mg/l as an absolute minimum (Table 21);

(e) For estuarine water, the dissolved oxygen concentrations may not be less than 6.5 mg/l (for coastal water bodies);

(f) For ocean waters, no measurable reduction in dissolved oxygen concentration may be allowed.
Conclusion. The wastewater being discharged is groundwater which has been treated to remove low concentrations of volatile organic compounds (VOC). Typically, the average load of discharged solvents has been about 0.001 kg/day. This low mass consumes very little dissolved oxygen. Based on the pollutants in the Intel facility’s wastewater and a review of previous monitoring data, this discharge will not have a substantive BOD load.

340-041-0021

**pH**

(1) Unless otherwise specified in OAR 340-041-0101 through 340-041-0350, pH values (Hydrogen ion concentrations) may not fall outside the following ranges:

(a) Marine waters: 7.0 – 8.5;

(b) Estuarine and fresh waters: 6.5 – 8.5.

(2) Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria are not in violation of the standard, if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria.

**Willamette Basin**

(1) pH (hydrogen ion concentration). pH values may not fall outside the following ranges:

(a) All basin waters (except main stem Columbia River and Cascade lakes): 6.5 to 8.5;

Conclusion. The previous limit was 6 to 9, a long-standing technology-based effluent limit. Recent reported pH data show average pH of about 7.6 with no values below 6.6 and very few above 8.5. The permit limit is being made more stringent (6.5 to 8.5) to reflect the basin standard. Intel is adding a pH adjustment system to its groundwater treatment system. Intel monitors pH continuously, so the continuous monitoring excursion limits have been added. No excursion can last longer than one hour and the cumulative can not exceed 7 hours, 26 minutes in any month. The 7 hours, 26 minutes limitation is one percent of a 31 day month. These limitations are authorized in 40 CFR 401.17. The pH is normally within the 6.5 to 8.5 limits, but there are occasional excursions outside this range.

340-041-0028

**Temperature**

(4) Biologically Based Numeric Criteria. Unless superseded by the natural conditions criteria described in section (8) of this rule, or by subsequently adopted site-specific criteria approved by EPA, the temperature criteria for State waters supporting salmonid fishes are as follows:
(c) The seven-day average maximum temperature of a stream identified as having salmon and trout rearing and migration use on subbasin maps set out at OAR 340-041-0101 to 340-041-0340; Figures 130A, 151A, 160A, 170A, 220A, 230A, 271A, 286A, 300A, 310A, 320A, and 340A may not exceed 18.0 degrees Celsius (64.4 degrees Fahrenheit);

**Conclusion.** The discharge averages 0.0134 cfs compared to a summer low flowrate in Beaverton Creek of 5 cfs. This gives a dilution ratio of 373. If we do a mass balance using a river temperature of 18 °C and an effluent temperature of 30 °C which is very high, we calculate the increase in river temperature as

\[
T_{\text{mix}} = \frac{(18 \, ^\circ \text{C} \times 373 + 30 \, ^\circ \text{C} \times 1)}{374} = 18.03 \, ^\circ \text{C}
\]

or an increase of 0.03 °C.

There is no reasonable potential for Intel’s discharge to cause or contribute to temperature exceedances in Beaverton Creek.

**340-041-0031**

**Total Dissolved Gas.**

(1) Waters will be free from dissolved gases, such as carbon dioxide hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such water

**Conclusion.** Water cascading over dams commonly entrains air to a supersaturated level. Elevated TDG can cause gas bubble disease in aquatic organisms. There is no gas used or generated at this facility. The Intel facility’s discharge is not expected to cause increases of dissolved gases in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of the receiving water.

**340-041-0032**

**Total Dissolved Solids**

The concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary: All Fresh Water Streams and Tributaries - 100 mg/L.

Willamette Basin. 340-041-0345 (2) Total Dissolved Solids. Guide concentrations listed may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0340: Willamette River and Tributaries — 100.0 mg/l.

**Conclusion.** The TDS guidance limit in the Willamette River is 100 mg/L per OAR 340-041-0445(2)(o)(B). The Intel facility’s effluent contains significant amounts of dissolved
solids. The permit has mass loading limits on TDS and Intel’s discharge has consistently been well below the limits. The Department will lower the mass loading limits from 45 and 68 kilograms/day for monthly average and daily maximum to a single daily maximum limit of 50 kg/d.

An analysis of Intel’s monthly data from January 1999 through March 2003 shows an average TDS concentration of 301 mg/L and a maximum of 686 mg/L. The high value occurred only once and the next highest value was 383 mg/L.

For the purposes of this permit renewal DEQ reviewed data for TDS in both Rock Creek and Beaverton Creek. Limited data were available both upstream and downstream of Intel's outfalls to these creeks. The latest data for Rock Creek show an average TDS concentration of 105 mg/L in 1987 at RM 8.4. The average TDS concentration was 128 mg/L in 1989-91 at RM 1.2. The latest STORET data for Beaverton Creek show that the average TDS concentration was 192 mg/L in 1994 at RM 0.3. Intel's discharge is at RM 2.0. The average TDS concentration was 137 mg/L in 1984 at RM 4.8. Intel's 1992 sampling showed average TDS concentrations of 177 mg/L upstream of Outfall 001 and 187 mg/L downstream of Outfall 001.

The TDS data at RM 1.2 on Rock Creek downstream of the Intel facility were analyzed. For the years 1986-1995, the November-April mean TDS concentration was 149.3 mg/L while the May-October mean TDS concentration was 197.2 mg/L. The extreme values for November-April were 262.4 and 94.4 mg/L and for October-May were 214.3 and 87.8 mg/L.

Beneficial uses for Rock Creek and Beaverton Creek are listed in Table 6 of Oregon Administrative Rules, Chapter 340, Division 41. The uses include

1. Public domestic water supply;
2. Private domestic water supply;
3. Industrial water supply;
4. Irrigation;
5. Livestock watering;
6. Resident fish and aquatic life;
7. Fishing.

There is no water quality standard for TDS. However, there is a guidance value of 100 mg/L for the Willamette Basin. The Department has modeled the mass load for TDS and determined that the guidance value will continue to be exceeded even if a mixing zone is allowed. However, DEQ does not expect significant adverse effects. Quality Criteria for Water 1986 (EPA, 1986) states that according to the National Technical Advisory
Committee to the Secretary of the Interior (1968) 500 mg/L TDS is acceptable as drinking water for humans and livestock and for irrigation purposes.

Aquatic life can withstand a range of TDS concentrations, but thresholds for reproductive effects are unknown. According to Quality Criteria for Water, studies indicate that several common freshwater species survived 10,000 mg/L dissolved solids, with the stickleback surviving 20,000 mg/L. Rawson and Moore, 1944, concluded that lakes with dissolved solids in excess of 15,000 mg/L were unsuitable for most freshwater fishes. However, it appears that adverse biological effects are generally caused by increased osmotic pressure rather than toxicity or other processes.

Water Quality staff have discussed with DEQ biologists the effects on TDS on aquatic communities. A TDS concentration of 686 mg/L (the maximum reported value in the discharge) is not considered to be a very high concentration and is not expected to have a significant impact on existing macroinvertebrate communities and fish. This assumes some dilution which is a reasonable assumption. Oregon’s criterion for agricultural use is 500 mg/L. According to Water Quality for Agriculture (R. S. Ayres and D. W. Westcot, FAO Irrigation and Drainage Paper 29 revised, 1985), a TDS concentration of 2000 mg/L is still “very satisfactory” for watering all classes of livestock and poultry.

340-041-0033
Toxic Substances

(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 may not exceed the criteria listed in Table 20 which were based on criteria established by EPA and published in Quality Criteria for Water (1986), unless otherwise noted

Many toxic substances have limits set in OAR 340-041-Table 20. When appropriate, these limits are explicitly stated in NPDES permits. Some toxics are explicitly dealt with in promulgated TMDLs. See discussion below.

Conclusion. The discharge is not expected to contain toxic substances exceeding applicable water quality standards. The toxic substances regulated under this permit are trichloroethylene, vinyl chloride, 1,1-dichloroethane, and total volatile organic compounds (VOCs). The permit limits were set using best professional judgment after conferring with Department
toxicologists. The limits were lowered significantly at the last renewal based on a review of monthly discharge monitoring reports.

340-041-0036
Turbidity
Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity.

Conclusion. Based on a review of the discharge monitoring report data collected during the previous permit term the proposed discharge from the Intel facility is not expected to affect instream turbidity.

340-041-0046
Water Quality Limited Waters
(5) For water bodies designated as water quality limited under OAR 340-041-0002(62)(b), requests for load increases may be considered using the process set out in OAR 340-041-0004(9)(a)

Conclusion: Beaverton Creek is listed as water quality limited for the following parameters not requiring a Total Maximum Daily Load (TMDL):

Biological criteria and habitat modification

340-041-340
Approved TMDLs in the Basin:

TMDLs have been promulgated in the Tualatin Subbasin for the following parameters:

<table>
<thead>
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<th>Season</th>
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<td>Phosphorus</td>
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<tr>
<td>Temperature</td>
<td>summer</td>
</tr>
<tr>
<td>Dissolved oxygen</td>
<td>spring/summer/fall</td>
</tr>
<tr>
<td>e. coli</td>
<td>year around</td>
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340-041-0053
Mixing Zones

(1) 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;
Conclusion. The remediation system can normally treat groundwater so that all effluent limits are easily met at the end of the discharge pipe. Therefore, there has been no need for a mixing zone in this permit.

**COMPLIANCE HISTORY**

There has been no non-compliance during the latest permit period.

**PROPOSED PERMIT**

The permit will be identical to the current permit, except for the more stringent pH limit.