Report

Permit Templates Evaluation Report

State of Oregon
Department of
Environmental
Quality

Class V UIC Municipal and Industrial/Commercial Stormwater Water Pollution Control Facilities Permits

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State of Oregon Department of Environmental Quality

Introduction

Any system designed to inject or distribute stormwater underground is an underground injection system. Oregon Underground Injection Control (UIC) rules require the owner or operator of Class V underground injection systems to register the systems and either 1) obtain Authorization by Rule, or an individual Water Pollution Control Facilities (WPCF) permit, or 2) close the underground injection system.

The Department of Environmental Quality (department) has received over 55 applications for individual permits to allow underground injection of stormwater. The department has developed two individual permit templates to facilitate permit issuance. The Municipal Permit Template addresses conditions pertinent to publically owned or operated underground injection systems. The Industrial/Commercial Permit Template address privately owned or operated injection systems.

Purpose

The goal of UIC WPCF permits for stormwater is to protect groundwater quality while allowing underground injection of stormwater. The purpose of the permit templates is to facilitate permit issuance by establishing common permit conditions for Class V stormwater underground injection systems. This fact sheet/evaluation report discusses how permit conditions were developed, provides clarity and intent of the permit conditions, and provides guidance on implementing permit conditions.

The permit template conditions are specifically designed to protect the highest beneficial use of groundwater while allowing underground injection of permitted fluids. Protecting the naturally high quality of groundwater during subsurface injection activities protects the public's health, safety and welfare, and the environment. The permit conditions require stormwater discharge management and stormwater quality monitoring before stormwater is discharged to the subsurface. The permit templates conditions are intended to:

- Protect groundwater quality by setting effluent discharge limits, while continuing to allow stormwater discharge through underground injection systems.
- Maintain aquifer recharge in urbanized areas to improve watershed health.
- To maximize, to the extent practicable, economies for permittees with other stormwater management programs such as the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) for municipal UIC WPCF permits.
- Encourage the use of effective best management practices (BMPs) that reduce or eliminate pollutants in stormwater before discharge into underground injection systems.
- Demonstrate through representative stormwater monitoring of the permittee's underground injection systems and reporting requirements that naturally high groundwater quality is maintained.
- Establish effective compliance and corrective action protocols.

Background

The federal Safe Drinking Water Act regulates underground injection of fluids. The U.S. Environmental Protection Agency (EPA) promulgated regulations for the UIC Program in 40 Code of Federal Regulations (CFR) parts 144, 145 and 146. EPA delegated the UIC program to the Oregon Department of Environmental Quality in 1983. The department promulgated Oregon

Administrative Rules (OAR) 340-044 (UIC rules) for underground injection activities in 1983. These rules were revised in 2001 to conform to federal UIC regulations made in 1999. Oregon's UIC rules are more restrictive than the federal UIC regulations. Oregon UIC rules require the owner or operator of a UIC to register the injection system and either obtain authorization by rule (OAR 340-044-0018) or a permit (OAR 340-044-0035) to operate the underground injection systems. Groundwater quality is further protected in Oregon through the state's groundwater quality protection rules (OAR 340-040). These groundwater protection rules are more restrictive than the federal regulations to protect underground sources of drinking water.

The department uses the state individual WPCF permit for owners and operators of Class V stormwater underground injection systems that require a permit. This WPCF permit for UICs must meet applicable federal UIC regulations for UIC permits.

The department developed two UIC stormwater permit templates to guide writing individual WPCF permits and establish conditions generally common to all UIC WPCF permits that cover underground injection of stormwater. The municipal template is designed for stormwater underground injection systems for large to moderate size municipalities, governmental agencies and other public entities that own or operate underground injection systems. It may be applied to small local government bodies. The industrial/commercial template is designed for industrial and commercial operations that discharge stormwater to underground injection systems. The department developed these two permit templates to recognize the different requirements and types of infrastructure between municipal and industrial and commercial industries' ability to control stormwater. The two templates have many similar conditions.

Overview

Stormwater underground injection systems include dry wells, soakage trenches, drill holes, infiltration gallery drains, or other systems or devices that inject or distribute fluids underground. French drains are underground injection systems when a French drain is used to discharge stormwater underground. BMPs that allow stormwater to infiltrate into the ground surface such as swales, ponds, porous pavers, and porous concrete are not considered underground injection systems, unless such BMPs use perforated pipe under the BMP to distribute stormwater underground.

Groundwater Protection

Oregon's policy is to protect groundwater to its highest beneficial use, which is usually drinking water [OAR 340-040-0020(3)]. The permit templates set conditions for horizontal setbacks from domestic and public waters wells to comply with this rule. Irrigation and industrial water wells are included with domestic and public water wells. Oregon Water Resources Department (WRD), which oversees water well construction, requires all water wells to be constructed to drinking water well standards. WRD does not require well conversion notification or have regulations to prevent irrigation or industrial water wells from becoming drinking water supply wells. Irrigation wells are often converted to public or private drinking water supply wells. Many industrial water wells also supply drinking water to the industrial facility. Therefore, the department treats all water wells the same as domestic and public water wells for setback purposes.

Municipalities have the ability to pass local enforceable ordinances to prevent connecting irrigation and industrial water wells for drinking water. The department may not apply the horizontal water well setback requirement to irrigation wells within these local jurisdictions that have connection ordinances in place.

The department applies the groundwater protection requirements where stormwater flows into the underground injection system. This is called the Point of Injection or POI. The department defines POI as the end-of-pipe (EOP) discharge point into an underground injection system after any pretreatment of the fluid.
Permit conditions in the templates specifically designed to protect groundwater quality include:

- Protecting the naturally existing groundwater quality.
- Discharging only stormwater and other approved fluids.
- Setting effluent discharge limits for pollutants found in stormwater.
- Monitoring and reporting of stormwater to demonstrate compliance with effluent discharge limits.
- Implementing compliance actions for underground injection systems that do not meet effluent discharge limits.
- Maintaining underground injection system construction and maintenance requirements.
- Employing BMPs and site controls that minimize the discharge of stormwater contaminants to groundwater.
- Identifying and correcting conditions not in compliance with the permit, including individual injection systems discharging directly to groundwater, or otherwise not meeting groundwater protection requirements.
- Closing prohibited underground injection systems.

Area Permit Coverage

The permit templates allow area coverage for all the injection systems covered under the individual permit. The area coverage provision meets the Safe Drinking Water Act federal regulation requirements stated in 40 CFR 144.33. Municipalities meet area permit criteria by nature of their infrastructure to manage stormwater within their jurisdiction. However, industrial or commercial facilities may have multiple facilities in several different areas of the state, or within different geologic and geographic areas. For an industrial or commercial facility to obtain area permit coverage, the permittee must group their facilities into areas of common geologic, hydrogeologic, geographic and climatic conditions. The industrial and commercial WPCF template specifies what the permittee must do to obtain area permit coverage. The department determined that a permittee who meets the conditions for area coverage specified in the templates meets the federal requirements for area coverage.

Under area permit coverage, the permittee is authorized to construct, operate, maintain, convert, or plug and abandon underground injection systems covered under the permit provided the conditions of the permit are met. If the department determines that the permittee is not in compliance with the permit, the department may modify or terminate the permit, or require the permittee to undertake corrective actions to protect groundwater quality. The department may also take enforcement action in accordance with OAR 340-012.

Development of Template Permit Conditions

The department used local, regional, and national stormwater and groundwater quality protection data to develop template permit conditions. The data and information used includes:

- Data from the development of the City of Portland UIC WPCF permit issued in 2005 and discussed in the permit Fact Sheet. The Fact Sheet is available at: http://www.deq.state.or.us/wq/wqpermit/docs/individual/wpcf/evalrpt.pdf;

- Stormwater data collected by the City of Portland as required by permit conditions, which applies Best Available Technologies to treat stormwater. Portland permit monitoring reports are available at DEQ Northwest Region office;
- UIC Monitoring reports submitted by owners of underground injection systems authorized by rule. Monitoring reports are available by contacting the DEQ Northwest Region Office, UIC Program;
- City of Portland Decision Making Framework for Groundwater Protectiveness Demonstrations – Underground Injection Control Systems Evaluation and Response (June 2008), which is a conservative vadose (unsaturated) zone model used to model the concentration levels of contaminants, in the City of Portland UIC WPCF permit, that do not pose a risk to groundwater quality. The report is available at DEQ Northwest Region Office;
- Compilation and Evaluation of Existing Stormwater Quality Data from Oregon, (Kennedy-Jenks, December 2009), which is a statistical analysis of statewide stormwater data prepared for the Oregon Association of Clean Water Agencies; and
- Groundwater data from the U.S. Geological Survey reviewed as part of the City of Portland UIC permit development. This data includes decades of monitoring of underground injection activity within the city of Portland. This information is summarized in the Portland UIC WPCF permit Fact Sheet which is available at: http://www.deq.state.or.us/wq/wqpermit/docs/individual/wpcf/evalrpt.pdf;

Public Process

The department held three draft template review public meetings with interested people. In addition, the department held a public workshop with the EPA, Representatives of the Oregon Association of Clean Water Agencies (ACWA), and representatives of the environmental group Northwest Environmental Defense Center (NEDC). The three public information meetings were held in January, March, and May 2010 with public information and opportunity to comment after each public meeting through an internet-based website. The department received numerous comments at the public information meetings and through the internet link. The workshop was held in March 2011 and addressed outstanding issues. The department revised the template as appropriate to reflect public comment in context of rule requirements for groundwater protection and underground injection systems.

The department considered federal and state laws, and regulations, and the public comments received during the public meetings and online in writing the final permit templates. Because these are templates for individual permits and not a general permit, conditions may differ from the template to address permittee-specific issues when the department issues the individual permit.

Permitted Activities

The UIC WPCF permit allows the permittee to install, operate, and maintain injection systems which might not otherwise qualify for authorization by rule and allows including in the permit existing systems authorized by rule. Injection systems that may not qualify for rule authorization include systems that do not have acceptable separation from groundwater, or are within 500 feet of a private water well, an irrigation well, a public water supply well without a 2-year TOT, or within the 2-year TOT for a public water supply well.

The permit allows continued operation and maintenance of the injection systems by the permittee provided the conditions and effluent discharge limits set in the permit are met. Permit conditions are met when the permittee implements all the conditions, including required stormwater

monitoring and meeting the effluent discharge limits, maintaining the systems according to the approved underground injection system management plan, implementing BMPs that reduce or eliminate pollutants, taking corrective actions where necessary, and providing to the department annual reports that summary these actions and monitoring results. It is the permittee's responsibility to demonstrate permit compliance.

The permit requires all injection activities to protect groundwater quality and conform to state groundwater protection rules under OAR 340-040 and OAR 340-044.

The permit complies with the federal conditions specified in 40 CFR 144.51 as applicable to Class V injection systems. The permit requires the permittee to comply with the requirements of OAR 340-045 with respect to WPCF permits, including but not limited to, permit renewal, permit transfer and permit modification.

Summary of Permit Conditions

The permit conditions provided in the municipal and industrial/commercial permit templates require the permittee to protect groundwater to its highest and best beneficial use while discharging stormwater below the ground surface. Each permit condition was evaluated in the context of meeting the state's groundwater protection policy. Permit specific effluent discharge limits are required to protect groundwater quality. The permit requires a full system-wide assessment of the injection systems owned or operated by the permittee that are covered under the permit. The permit conditions require stormwater quality monitoring to ensure the effluent discharge limits are not exceeded. The permit requires the permittee to update the department of changes in the injection systems, such as new or closed injection systems and modifications to existing injection systems. The permit requires annual reporting of both system monitoring and system maintenance. Corrective actions are also required, including providing corrective actions when effluent discharge limits or other permit conditions are not met.

The permit does not require the permittee to monitor groundwater. Under Oregon's groundwater protection rules [OAR 340-040-0030(3)(b)], permit-specific concentration limits must be set at background groundwater concentration. Background concentration of a pollutant can be higher than "natural" concentrations for that pollutant. In most cases, the background concentration is synonymous with natural background. The department sets effluent discharge limits in consideration of this background groundwater concentration limit requirement. The conditions established in the permit templates, when implemented, protect groundwater such that pollutant concentrations meet background requirements in the groundwater. The department considered stormwater quality based on data from the City of Portland UIC program, stormwater data from other Oregon municipal underground injection program monitoring, stormwater data from municipalities that have Municipal Separate Storm Sewer Systems (MS4), and the analysis of Oregon stormwater data by Kennedy-Jenks (2009). The department considered the effects of natural attenuation within the unsaturated natural earth materials between the bottom of the UIC and groundwater, which effectively provides some treatment of the infiltrating stormwater. After analyzing the decades of drywells used to manage stormwater within Portland Basin and groundwater quality data from U.S. Geological Survey groundwater monitoring wells within the basin, the department determined infiltrating stormwater generally meets the background groundwater concentrations at the water table. Therefore, the department determined the effluent discharge limits set in the permit templates are protective of background groundwater quality and ground water monitoring is not necessary. Other permit conditions that provide protection of groundwater include:

- A comprehensive system-wide assessment to identify underground injection systems the permittee owns or operates that receive drainage from areas where pollutants may be carried in stormwater;
- A system-wide assessment to identify underground injection systems that discharge directly to groundwater, or do not have minimum vertical separation from groundwater or horizontal setbacks from wells, and prohibited systems. These injections systems must be prioritized to be addressed as indicated in Schedule D. Attachment A shows how the systems can be categorized from highest to lower risk.
- A requirement to develop and implement robust source control and pollution prevention actions through a comprehensive underground injection system management plan;
- A requirement to implement protection controls for underground injection systems within 500 feet, or the 2-yr time of travel of drinking water or irrigation wells, or demonstrate the water wells are protected from pollutants entrained in stormwater discharged into the underground injection systems within these setback areas;
- Implement a monitoring program that represents the permittee's underground injection systems to determine the quality of stormwater discharged, and includes both regular monitoring of pollutants most commonly detected in stormwater, and occasional screening for pollutants less common in stormwater runoff;
- Maintain a minimum separation distance between the bottom of the injection system and groundwater to allow natural attenuation of pollutants; and
- Take timely and decisive actions when conditions not compliant with the permit are discovered.

Should stormwater monitoring data indicate consistent concentrations higher than the effluent discharge limits set in the permit; the permittee is required to take action to meet the effluent discharge limits. The department may also require groundwater monitoring when effluent discharge limits are consistently exceeded.

For municipalities, the permit covers all publically owned or operated injection systems, regardless of which department, bureau, or district within the municipality is responsible for the injection system. The department will recognize a lead department or bureau in the permit. For industrial/commercial facilities, the permit covers the permittees injection systems, except those systems prohibited under OAR 340-044-0017.

Legal Authority

Oregon Revised Statutes (ORS) 468B.025 prohibits any person from causing pollution of any waters of the state or placing wastes in a location where such wastes are likely to escape or be carried into the waters of the state. ORS 468B.005(9) defines wastes, which includes all liquids which will or may cause pollution of any waters of the state. ORS 468B.005(10) defines waters of the state, which includes groundwater. ORS 468B.050 requires a person to obtain a permit or obtain authorization by rule if the person discharges wastes to waters of the state. For underground injection, the department authorizes injection systems by rule provided the injection systems comply with rule-specific conditions of OAR 340-044-0018. If authorization by rule conditions cannot be met, the person must either obtain a permit or close the injection system. The department issues the state Water Pollution Control Facilities permit for permitted underground injection activities.

Permit Duration

The UIC WPCF permit is effective for ten (10) years from the date of issuance, unless the department modifies, terminates, revokes or reissues the permit, or the permittee requests permit termination and the department grants the termination. The permittee must maintain permit coverage and renew the permit as long as the permittee operates underground injection systems that do not meet authorization by rule conditions. OAR 340-045 establishes conditions for permit renewal, transfer, modification, or termination.

Discussion

Schedule A – Control and Limitation Conditions

Groundwater Protection

This condition applies to both the municipal and industrial/commercial permit templates as Schedule A.1.

All groundwater of the state shall be protected from pollution that could impair existing or potential beneficial uses for which the natural water quality of the groundwater is adequate. [OAR 340-040-0020(3)]. Any underground injection activity that by either direct or indirect discharge of pollutants in stormwater into groundwater is prohibited if that injection activity may cause a violation of any federal Safe Drinking Water Act Maximum Contaminant Level (MCL), or adversely affects the health of persons (federal requirement under 40 CFR 144.12), or adversely affects the naturally existing background groundwater quality (state requirement under OAR 340-040-0030(3)(b)).

Permit Compliance with State Rules, Federal Regulations and Permit Conditions

This condition applies to both the municipal and industrial/commercial WPCF permit templates as Schedule A.2.

While operating underground injection systems, the permittee must comply with applicable state and federal laws and permit conditions. State applicable laws include the state's groundwater protection rules (OAR 340-040) and underground injection control rules (OAR 340-044), whether or not these rules are expressly cited or made by reference. Both the groundwater protection rules and underground injection control rules apply to underground injection systems. In addition, the permittee must comply with all applicable federal regulations including:

- Regulations as cited in 40 CFR 136 and 141 as these federal regulations apply to sample collection and analytical methodology;
- Regulations cited in 40 CFR 144.4 requiring considerations under federal law, including but not limited to :
    - Wild and Scenic Rivers Act,
    - The National Historic Preservation Act of 1966,
    - The Endangered Species Act,
    - The Coastal Zone Management Act, and
    - The Fish and Wildlife Coordination Act;
- Regulations as cited in 40 CFR 144.51 as it applies to permit conditions; and
- Regulations as cited in 40 CFR 144.53 as it applies to corrective actions for underground injection systems within the horizontal water well setbacks established in OAR 340-044-0018(3)(a) that discharge directly into groundwater.

Authorized Discharges

This permit condition applies to both the municipal and industrial/commercial WPCF permit templates as Schedule A.3. This condition identifies authorized fluid discharges into underground injection systems covered under the permit. Under this condition, the department aligned authorized discharges into an underground injection system with authorized discharges to a municipal separate storm sewer system (MS4) to the extent that meets both federal Clean Water Act and Safe Drinking Water Act requirements. For the municipal template, most authorized discharges are consistent with authorized discharges allowed by the NPDES Municipal Separate Storm Sewer System. Other similar temporary discharges may be approved provided the following conditions are met: the permittee must demonstrate in writing that the discharge is *de minimis* and complies with OAR 340-040-0020(3), and the permittee obtains written approval from the department prior to discharge.

Prohibited Discharges

This condition applies to both the municipal and industrial/commercial WPCF permit templates as Schedule A.4. Unless the discharge is specifically identified in Schedule A.3, Authorized Discharges, the discharge is prohibited.

Area Permit Coverage

Municipalities and other local governmental units effectively meet the federal criteria specified in 40 CFR 144.33 for area permit coverage.

Schedule A.5 applies to industrial and commercial permittees that may have underground injection systems at multiple facilities throughout Oregon. Federal regulations (40 CFR 144. 33) allow an area permit for the industrial and commercial facilities to cover multiple locations. In order to meet the federal criteria for area permit coverage permittees must meet the specific criteria in Schedule A.5 in the industrial/commercial template.

Under area permit coverage, the permittee is authorized to construct, operate, maintain, convert or plug and abandon underground injection systems covered under the permit provided the conditions of the permit are met. If the department determines that the permittee is not in compliance with the area permit requirements, permit conditions, or the potential for cumulative effects of the underground injection systems on groundwater quality are unacceptable, the department may modify the permit, terminate the permit, or require the permittee to undertake corrective actions to protect groundwater quality. The department may also take enforcement action.

Effluent Discharge Limits

Effluent discharge limits (EDLs) are provided in Schedule A.5 of the municipal template and Schedules A.6 and A.7 of the industrial/commercial template.
Oregon's groundwater protection rules [OAR 340-040-0020(3)] require groundwater be protected to its highest beneficial use, which is usually drinking water. For new permits where there is a discharge to groundwater, the groundwater protection rules [OAR 340-040-0030(2)] require groundwater characterization. For new permitted facilities having the potential to impact groundwater quality, the groundwater protection rules require groundwater monitoring and setting permit-specific concentration limits in the permit at the background groundwater quality for all pollutants. The department determined that setting EDLs for common stormwater pollutants at the point of injection into an underground injection system is protective of

groundwater quality. Because the pollutants in stormwater have an affinity to bind with soil, the EDL concentration levels assume additional treatment through natural attenuation of contaminants in the unsaturated zone prior to discharge into the groundwater. By establishing EDLs in the permit templates at concentrations intended to meet background groundwater quality at the water table, the requirement of the groundwater protection rules to protect the beneficial use of groundwater [OAR 340-040-0020(3)] will be met at the water table.

The department has determined that the groundwater protection rule conditions of OAR 340-040-0030(2) and (3) will be met if the permittee:

- Implements best available technologies in accordance with OAR 340-040-0020(11), combined with implementing BMPs to treat the stormwater prior to discharge into an underground injections system;

- Demonstrates, through monitoring at the point of injection, that EDLS are not being exceeded; and

- Maintains the minimum vertical separation established in the permit template between the bottom of injection system and the seasonally high water table, which provides additional treatment of the injected stormwater; or demonstrates, through valid scientific analysis, that groundwater remains protected, if the vertical separation distance is less than the minimum separation distance established in the permit.

The department separated pollutants of concern in the stormwater into 2 categories:

(1) Common Pollutants, which are monitored multiple times throughout a monitoring season, and

(2) Screening Pollutants, which are monitored at a lower frequency than common pollutants.

The department considers the EDLs protective of groundwater quality for the following reasons:

- The EDLs for both Common and Screening Pollutants are set at the federal primary drinking water Maximum Contaminant Level (MCL) which is protective of human health, and

- The EDLs levels assume additional treatment through natural attenuation of contaminants in the unsaturated zone prior to discharge into groundwater.

EDL Common Pollutants - Common pollutant parameters conditions are set in Schedule A.5 of the municipal template and Schedule A.6 of the industrial/commercial template.

For the municipal permit template the department sets common pollutants effluent discharge limits in Table A.5.1 of Schedule A. The permittee must monitor the effluent discharge limits at the frequency established in the stormwater monitoring plan required by the permit. The common pollutants for municipal facilities are based on local, regional, and national data related to stormwater and groundwater quality. This included data from the development of the City of Portland UIC WPCF permit, stormwater data collected by the City of Portland as required by permit, monitoring results from UIC reports submitted by owners of underground injections systems, City of Portland Decision Making Framework for Groundwater Protectiveness Demonstrations – Underground Injection Control Systems Evaluation and Response (June 2008), and the Kennedy-Jenks Report (2009).

For the industrial/commercial permit template the department sets common pollutants EDLs in Table A.6 of Schedule A. The permittee must monitor the effluent discharge limits at the

frequency established in the stormwater monitoring plan required by the permit. The common pollutants set in the industrial/commercial templates are based on the results of monitoring reports from owners and operators of underground injection systems authorized by rule, Kennedy-Jenks Report (2009), and heavy metals attenuation studies in unsaturated soils (Griffin, 1976; Dowdy, et al., 1987; Chaney, et al; 1999; Brown, et al, 2003; and Cao et al, 2003). The department also considered the types of activities related to municipal injection systems versus industrial injection systems (e.g. road systems vs. large parking lots at commercial facilities) and BMP effectiveness (City of Portland annual monitoring reports). The department determined that a greater likelihood of petroleum hydrocarbon and heavy metals pollutants would be present in parking lots of industrial/commercial facilities than at municipal facilities. Also, the department determined from the data that there is a greater likelihood of pollutants in roads with higher traffic volumes (industrial and commercial areas, arterial and feeder roads) than in residential areas.

EDL Screening Pollutants - Screening pollutant EDLs are established in Schedule A.5, Table A.5.2 for the municipal template and Schedule A.7, Table A.7 for the industrial/commercial template. The department requires the permittee to monitor at least once each five years of the permit for the screening pollutants. Screening pollutants are those contaminants which have been detected in stormwater less frequently or in lesser concentrations than the common pollutants. The intent of the requirement to monitor screening pollutants is to ensure these pollutants are either below detection limits or at levels that would not adversely affect groundwater quality as a drinking water source.

For the municipal template, the department identified those pollutants that were previously detected or may occur in urban stormwater. In addition to reviewing the reports and information listed for common pollutants, the department considered screening for pesticides and herbicides commonly used in urban areas. However, the department currently requires MS4 communities to undertake a pesticide and herbicide study to determine those urban pesticides likely to be detected in Oregon urban stormwater. This study should be completed within 5 years. The department intends to use the results of this study to set pesticide and herbicide screening pollutants as part of the 5-year review of the UIC municipal permit. In the interim, the department requires municipal permittees to monitor for the pesticides and herbicides that MS4 permittees are currently required to monitor, which include glyphosate, diazinon, 2,4-D, Bis(2-chloroethyl) ether, and dinoseb. Additionally, several pollutants, including trace metals and Benzene, Ethyl benzene, toluene, and xylenes (BETX), which were included as common pollutants in the Portland UIC WPCF permit, are now part of the screening pollutants in the municipal template. This is because of the low frequency of detection or low levels of concentration as seen in the City of Portland's monitoring results for these pollutants in stormwater.

The industrial/commercial permit template does not identify screening pollutants. Each industrial and commercial facility issued a UIC WPCF permit likely will have different conditions resulting in different screening pollutants. The department recognizes that types of activities may vary among individual industrial and commercial facilities. Therefore, the permittee will be required to provide site-specific information for determining screening pollutants. Unless the permittee provides information to the department prior to permit issuance, the permit requires the permittee to submit a written report with the system-wide assessment issuance that identifies potential contaminants at their site. The permittee is expected to review the site activities and uses and propose appropriate screening pollutants for the permit. Based on the written report, the department will determine the screening pollutants and associated effluent discharge limits. The department will modify the permit to incorporate screening pollutants, which will become Schedule A, Table A.7.

Modifying EDLs - The templates specify conditions for modifying effluent discharge limits and pollutants for both common and screening pollutants for municipal facilities under Schedule A.5.b, and for common parameters for industrial/commercial permits under Schedule A.6.b. The EDLs and pollutants set in the tables are based on general state-wide stormwater monitoring data for underground injection systems and municipal separate storm sewer systems (MS4). The department allows the permittee to propose alternative pollutants and EDLs based on site specific data and the system-wide assessment required in Schedule B.1 of the permit. It is the permittee's responsibility to provide the department with factual scientific data to support any proposed alternative effluent discharge limits. It is also the permittee's responsibility to demonstrate that groundwater is protected and that Schedule A.1 conditions are met with the proposed alternative effluent discharge limits. Any modification of an EDL after the permit has been issued requires a permit modification.

Site Control Measures and Best Management Practices

Site controls and best management practices (BMPs) conforming to OAR 340-040-0020(11) are provided in the municipal and industrial/commercial templates as Schedule A.6 and Schedule A.8, respectively. This condition requires the permittee to implement the general requirements listed in the permit condition, and the BMPs and site control measures included in the facility's underground injection system management plan required in Schedule D. of the permit.

For municipal permits, the department has evaluated the BMP requirements for MS4 communities and has determined that most of the MS4 required BMP's also apply to underground injection system permit requirements. These BMPs conform to OAR 340-040-0020(11) requirements. For those communities that have both MS4 discharges and underground injection discharges, the department considers combining overlap areas between the two permits as part of a stormwater system management approach. Reporting requirements may also be combined into a single report to address both NPDES MS4 and underground injection WPCF permit requirements. If the permittee chooses to combine MS4 and underground injection requirements into a single report with reporting date tied to the NPDES MS4 permit reporting dates, it is the permittee responsibility to notify the department of the reporting dates during applicant review for the UIC WPCF permit.

For industrial/commercial permits, the department recognizes that BMPs may be site specific based on differences between types of facilities. In addition to the specific actions required in this condition, Schedule D requires the permittee to submit an underground injection system management plan that identifies site specific BMPs and site controls that will be used to minimize the discharge of pollutants to groundwater.

Direct Discharge to Groundwater Prohibited

Direct discharge to groundwater is prohibited. This prohibition is addressed in the municipal and industrial/commercial templates as Schedule A.7 and Schedule A.9, respectively.

The department has determined that injection systems **within** horizontal water well setbacks that discharge directly into groundwater, including the seasonally high groundwater, pose a health risk to persons under the provision of OAR 340-044-0014(1). This condition applies to injection systems the permittee knows of, or should have known of at the time of permit issuance and injection systems discovered during or after the Schedule B system-wide assessment, that discharge directly into groundwater within a setback area. The department further determined that such injection systems qualify for the federal corrective actions requirement specified in 40

CFR 144.53 because of the risk to human health. The federal corrective action requires the direct discharge condition be eliminated as soon as possible and no later than 3 years from the permit issuance date. The corrective action conditions are provided in Schedule D.5 for the municipal template and Schedule D.4 for the industrial/commercial template. The department **will not** consider any time extension from this permit condition requirement.

Any injection system that discharges directly to groundwater or the seasonally high groundwater and is located **outside** the horizontal setback for any water well, poses a risk to groundwater quality under the provision of OAR 340-044-0014(1). These injections systems likely would not meet the groundwater protection requirements of OAR 340-040-0030(3)(b) that require meeting background groundwater quality in the groundwater. The department determined that the direct discharge condition must be eliminated as soon as possible and no later than 4 years after the date of permit issuance. The corrective action conditions are provided in Schedule D.5 for the municipal template and Schedule D.4 for the industrial/commercial template. A permittee may request an extension to the 4-year limit to correct an injection system by providing supporting documentation to justify the request. At a minimum, the justification must include a corrective action schedule with enforceable benchmarks, annual progress report requirements, the reason for the extension request, and the reason why the corrective action cannot be completed within the 4-year period. The department may require additional information. All time extensions will require a permit modification.

Underground Injection Systems – Vertical Separation and Horizontal Setbacks

Vertical separation and horizontal setback conditions are included in the municipal and industrial/commercial templates as Schedule A.8 and Schedule A.10, respectively. Vertical separation distances apply to the distance from the bottom of the underground injection system to the seasonally high water table. Horizontal separation distances apply from any water well in a straight line distance to the underground injection system. The setbacks and separation distances listed in conditions a. and b. are considered protective of groundwater quality. The department expects the permittee to estimate vertical and horizontal separation distances as part of the system-wide assessment investigation. The permittee may estimate the depth to groundwater by using published reports, water well log data, and monitoring well log data. These data can be obtained by contacting the U.S. Geological Survey (USGS), the Oregon Water Resources Department (WRD), or the Oregon Department of Geology and Mineral Industries (DOGAMI). The department considers site specific data, if available, to have a higher value than local or regional groundwater studies or data. However, the department does not expect a permit applicant or a permittee to install monitoring wells to obtain site specific information as part of a permit application.

The department may allow the operation of an existing injection system or the installation of a new injection system that does not meet the horizontal setback and vertical separation distance under certain conditions. The permittee must demonstrate through valid scientific methods (such as transport modeling) that operating the injection system meets the permit's Schedule A.1 groundwater protection requirement.

Vertical Separation Distances other than Direct Discharge to Groundwater

Vertical separation distance measurements between the bottom of the underground injection system and groundwater are based on the principal of how an on-site wastewater system drainfield works. Native soils tend to have aerobic or oxygen rich characteristics in the upper 10 feet of the soil profile where naturally existing bacteria colonies remove fecal and e. coli bacteria from stormwater. Below a depth of 10 feet, however, natural bacteria colonies do not appear to

survive the soil profile which tends to be anaerobic or oxygen starved. . Below 10 feet, mechanical filtration (the removal of pollutants as they pass through the pore spaces in the soil) becomes the primary means of fecal and e. coli removal. Therefore, the department has established minimum vertical separation distance recognizing the natural attenuation or removal of bacteria entrained in stormwater. Natural attenuation of other pollutants does occur, however, a larger separation distance may be needed to achieve natural attenuation through adsorption or absorption in the unsaturated soil below the injection system.

Horizontal Separation Distances from Water Wells

The horizontal separation distances between the underground injection system and any water well is part of wellhead protection. Any water well includes domestic, public, municipal, irrigation and industrial water wells. The department includes irrigation and industrial water wells for minimum separation distance because Oregon Water Resources Department (WRD) rules allow these wells to be used as drinking water wells without notification to WRD of the conversion to a drinking water well.

The minimum horizontal setback distances that require no further action are:

- 500 feet from any domestic water well, any irrigation water well, and any public water well that does not have an Oregon Department of Human Services approved 2-year time of travel, and
- Outside the Department of Human Services approved 2-year time of travel for a public water supply well.

Schedule B – Monitoring and Reporting Conditions

System-Wide Assessment

This condition applies to Schedule B.1 in the municipal and industrial/commercial templates. At the time of permit issuance, the department presumes the permittees underground injection systems comply with permit conditions. The purpose of the system-wide assessment is to verify that all the injection systems do comply with permit conditions. The permittee must identify those systems that do not meet permit conditions and develop an action plan to bring the systems into compliance.

The department requires a comprehensive inventory assessment of the permittee's underground injection systems. The assessment must be completed and submitted to the department by the date specified in the permit. The permittee must provide information on each injection system owned or operated by the permittee. This information must meet the requirements of OAR 340-044-0018(1) and (2) and OAR 340-044-0020. The assessment must identify underground injection systems that discharge directly to groundwater, do not meet setbacks from wells or separation from groundwater, or are prohibited. The department requires a map or maps of suitable scale that shows the location of each injection system. This may include an index map showing the general locations of the underground injection systems along with additional maps that show more specific locations of each injection system. The specific maps should show streets and catch basins for municipal injection systems and buildings, catch basins and parking areas for industrial/commercial injection systems. Maps showing location of the UICs should be provided in both a reproducible electronic format (pdf preferred) and readable hard copy. The department also requires information on the type of materials used, handled and stored at each permitted facility which may be exposed to stormwater, including but not limited to RCRA SARA Title III hazardous and toxic materials reporting. The system-wide assessment must identify the drainage area (in total acres) that discharges to each injection system. For municipalities, this requirement applies to facilities other than road rights-of-ways.

During the 5th year of the permit, the permittee must reassess its underground injection systems and submit an updated system-wide assessment at the end of that year, including all injections systems added or closed during the first five years of the permit. The intent of this assessment is to make any adjustments to the monitoring and reporting based on site specific information collected during the first five years of the permit. If there are no changes to the permittee's underground injection systems, the permittee may report that the system is unchanged in the required annual report for the 5th year.

The department requires latitude and longitude, preferably to the 5th decimal, for each injection system. The department requests this information, in addition to other information required under OAR 340-044-0020, be provided in a Microsoft EXCEL spreadsheet in a format approved by the department as well as providing a hard copy report. The department intends to upload the EXCEL spreadsheet information into the department's UIC database.

Stormwater Monitoring

This condition applies to Schedule B.2 for the municipal and industrial/commercial permit templates. Compliance monitoring is required. The permittee must develop and submit to the

department a stormwater monitoring plan that represents the permittee's underground injection systems identified by the system-wide assessment.

Schedule B.2 details the monitoring requirements to meet permit conditions and verify the injection activities meet the groundwater protection condition of Schedule A.1. Because the monitoring plans are not provided at the time of permit issuance, the department will make the plans available for public review and comment following the procedures for Category III or Category IV public review in OAR 340-045-0027. The department will review and respond to public comments and require the permittee to amend the stormwater monitoring plan, if necessary, before the department approves the plan.

For industrial/commercial and municipal templates, the permittee must include a quality assurance project plan and a sample analysis plan in the stormwater monitoring plan. These two documents discuss the procedures for sampling, quality control and sample data integrity. All sampling must be in accordance with EPA approved methods or other methods as specified in the document. If the sampling protocol or analytical method is different from the EPA method, the permittee must describe the proposed sampling method and provide the quality assurance data and method details to ensure quality data is being collected. For any method other than EPA approved methods, the department will ask its laboratory staff to review the proposed method before accepting the method.

The department does not specify monitoring frequency in the industrial/commercial and municipal permit templates. Therefore, monitoring frequency must be established by the permittee in the stormwater monitoring plan and becomes an enforceable part of the permit when approved by the department. The permit templates do specify criteria the permittee must apply to determine monitoring frequency, such as a sufficient number of sampling events to provide a reliable, statistically-based geometric mean concentration. The permittee must also provide information and documentation to support the proposed sampling frequency. This information will be made available as part of the public review and comment of the monitoring plan.

Industrial/Commercial Representative Monitoring - For industrial/commercial permits, the monitoring plan must be representative of the systems being monitored. The permit specifies the date the monitoring plan must be submitted to the department. When an industrial/commercial permittee has multiple facilities throughout the state, the permittee must demonstrate the monitoring meets the requirements for an area permit specified in 40 CFR 144.33. The department expects the permittee with multiple facilities to group the facilities based on the criteria established in Schedule A.5 for the industrial/commercial template. Schedule A.5 incorporates 40 CFR 144.33 requirements. The department also expects monitoring to represent injection systems for each identified area under area permit coverage as follows:

- Represent each individual facility within the designated area;
- Represent each injection system at each facility within the designated area.

Municipality Monitoring - For municipalities, the department recognizes the unique nature of municipal stormwater systems and the variability in traffic volumes and land uses. Therefore, the department provides in the permit template three alternatives for monitoring. These alternatives are self-explanatory in the permit template. All three alternatives must represent the permittee's underground injection systems. The permittee must select one of these alternatives to represent their underground injection system:

- **Compliance Approach 1.**
  This approach is a statistically derived representative approach, usually developed through a GRTS statistical approach to selecting sample locations. This approach requires both long-term fixed locations for trend analysis and different locations selected randomly for monitoring each year using rotating panels. An example of this approach is the City of Portland's current underground injection system monitoring program . Portland's monitoring plan is available for review at the department's Northwest Region Office.

- **Compliance Approach 2.**
  Under this approach, the permittee identifies the areas that may have the highest potential to pollute groundwater and monitors those injection systems in the identified area. Under Compliance Approach 2, the presumption is if injection systems in the potentially high pollutant areas meet permit condition and the permittee applies the same BMPs across the entire underground injection system, the injection systems in areas of potentially low pollution should also meet permit conditions. The net benefit is that this approach meets representative monitoring while minimizing monitoring costs. The department expects the permittee to randomly select locations in areas of low pollution potential as verification locations.

- **Alternative Discharge Monitoring Approach.**
  The permittee may propose an alternative approach to monitoring, provided the approach represents the permittee's underground injection systems and demonstrates compliance with Schedule A.1. For example, the permittee may propose a probabilistic approach to monitoring injection systems.

The department recognizes that some municipalities may desire to combine resources for monitoring underground injection systems. The department would consider a combined resource monitoring approach, provided it meets one of the three alternatives for monitoring, the permittees describe how they will apply the results to their individual underground injection systems, and how the approach meets the condition of Schedule A.1. Combined resources monitoring plans must be available for public review and comment following the procedures of OAR 340-045-0027 for Category III or Category IV prior to department approval.

Visual Monitoring

This condition applies to Schedule B.3 of the industrial/commercial permit template.

Visual monitoring is required under Authorization by Rule for underground injection systems and is a requirement in other department stormwater permits such as the Clean Water Act NPDES general industrial stormwater permit (NPDES 1200-Z). The department adapted visual monitoring language from the NPDES general industrial stormwater permit (NPDES 1200-Z). For industrial and commercial facilities, the department expects the permittee to conduct and record monthly visual observations of discharges into the catch basins that discharge to underground injection systems. Visual monitor should occur during storm events when there is runoff into the catch basin. If there is not runoff or discharge or there is no storm event sufficient to generate runoff, the permittee is required to document these conditions and file a sampling waiver no later than the due date of the annual monitoring report.

Because of the broad and expansive nature of municipal stormwater systems within the public infrastructure (rights-of-ways), the department considers visual monitoring of all catch basins as impractical. However, the department does expect the municipal permittee, when taking samples,

to make visual observations of discharges into catch basin that discharge to injection systems. The department expects the municipality to record the observations and report such observations in the annual monitoring report.

Stormwater Monitoring Waiver

This condition applies to Schedule B.3 of the municipal template and Schedule B.4 of the industrial/commercial template.

The department recognizes the variability in storm events during a monitoring year, and the variability in natural weather conditions from year to year. The department establishes stormwater monitoring waiver conditions in the permit because of this variability of storm events. These waiver conditions were adapted from the department's NPDES general stormwater permit for industrial facilities.

The permittee must submit a written discharge monitoring waiver request no later than the due date of the annual monitoring report for the monitoring year being reported.

The department considers monitoring to occur during normal business hours, usually but not always 8 am to 5 pm. The waiver would apply to monitoring during normal business hours.

Groundwater Monitoring

This condition applies to Schedule B.4 and Schedule B.5 for the municipal and industrial/commercial templates, respectively.

The department considers meeting the effluent discharge limits set in Schedule A.5 and Schedules A.6 and A.7 of the municipal and industrial/commercial templates, respectively, complies with the groundwater protection condition of Schedule A.1 [OAR 340-040-0020, and OAR 340-040-0030(3)(b)]. If the department determines groundwater quality may be at risk, or the permittee is not meeting the groundwater quality protection conditions of the permit, the department may require a permit modification, or may terminate the permit (OAR 340-045-0060) and reissue the permit with a requirement for groundwater monitoring. The permittee may elect to undertake groundwater monitoring to demonstrate groundwater quality is protected. Any groundwater monitoring must comply with the conditions of OAR 340-040-0030(b). The groundwater compliance concentration limits for all pollutant parameters are the background groundwater quality level, unless the permittee has a concentration limit variance issued in accordance with OAR 340-040-0030(4).

Annual Reporting Conditions

This condition applies to Schedule B.5 and Schedule B.6 for the municipal and industrial/commercial templates, respectively. The condition is self-explanatory and provides the annual reporting requirements.

Because a municipality's UIC and NPDES MS4 permit requirements overlap in many areas, the permittee may combine the annual reporting requirements of these permits. However, the permittee must notify the department of their desire to combine these requirements during the applicant review period. A permit modification is needed for changes to reporting requirements after the permit is issued (OAR 340-045-0055). The permittee may also combine the annual stormwater monitoring reporting with the annual underground injection system management report.

The permittee must provide a hard copy of the original report signed and certified by an authorized person as specified in Schedule F.4, and an electronic copy of the report in either a Microsoft Word or PDF format. If the stormwater monitoring report is incorporated into the annual report, the monitoring results must be submitted in a Microsoft EXCEL spreadsheet in a format approved by the department.

Quarterly Underground Injection System Registration and Reporting

This condition applies to Schedule B.6 and Schedule B.7 for the municipal and industrial/commercial templates, respectively. The condition is self-explanatory and provides the quarterly reporting requirements. Quarterly monitoring is a requirement by U.S. EPA for delegated agencies.

Schedule C – Safe Drinking Water Act Compliance Schedule

The permit may, when appropriate, specify a compliance schedule leading to compliance with the Safe Drinking Water Act as expressed in 40 CFR 144.53. The department identifies underground injection systems that discharge directly into groundwater and are located within any horizontal setback for any water well poses a risk to human health. Therefore these underground injection systems qualify as meeting the federal corrective action requirements of 40 CFR 144.53. Other conditions that would meet a federal compliance schedule condition under the Safe Drinking Water Act are permit-specific and will be evaluated on a case-by-case basis as the department issues permits.

For permit applicants that have injection systems which directly discharge to groundwater and are located within any water well setback, the conditions of 40 CFR 144.53 will be provided in Schedule C in its entirety.

Schedule D

Special Conditions

Legal Authority

This Schedule D.1 of the municipal permit template condition applies only to local governments that have the authority to develop and implement local laws. Municipalities maintain the legal authority to implement and enforce permit conditions and provisions. Specifically, the permittee must have the legal authority to meet conditions a through f of Schedule D.1.

Permitee Personnel Responsible for Permit

This condition applies to Schedule D.2 and Schedule D.1 of the municipal and industrial/commercial templates, respectively.

The permittee must identify key positions and the names, mailing addresses, work locations, responsibilities, authority to act or make general or financial decisions, of persons in those positions. The permittee must submit, in writing, timely updates to key personnel or personnel responsibility.

Exceedance of a Table A.5.1 Effluent Discharge Limit

This condition applies to Schedule D.3 and Schedule D.2 of the municipal and industrial/commercial permit templates, respectively.

This condition provides the response procedures which the permittee must take when the permittee discovers that a sample result exceeds an effluent discharge limit set in Schedule A, Table A.5.1, for the municipal template and Schedule A, Table A.6 for the industrial/commercial permit template. Verbal notification includes e-mail.

Detection of a Table A.5.2 (Municipal) or Table A.7 (Industrial/Commercial) Screening Pollutant

This condition applies to Schedule B.4 and Schedule B.3 of the municipal and industrial/commercial permit templates, respectively. Self-explanatory.

Underground Injection Systems that Discharge Directly Into Groundwater

This condition applies to Schedule D.5 for municipal permits and Schedule D.6 for industrial/commercial permits. See explanation for Schedule A.7.

Underground Injection System Setbacks from Wells and Separation Distance to Groundwater

This condition applies to Schedule D.6 for municipal permits and Schedule D.7 for industrial/commercial permits. See explanation for Schedule A.8 and Schedule A.9 explanation for the municipal and industrial permit templates, respectively. Note: Upgrade may include removing a well inside a setback.

Reporting and Corrective Actions for Underground Injection Systems Prohibited by OAR 340-044-0015

This condition applies to Schedule D.7 for municipal permits and Schedule D.6 for industrial/commercial permits.

Prohibited underground injection systems other than those which directly discharge to groundwater are identified in OAR 340-044-0015. Under no circumstance are discharges allowed into prohibited injection systems. The most common prohibited underground injection system is the injection system that receives wastes from vehicle repair or maintenance activities. This includes vehicle wash water discharge to the injection system if the engine or undercarriage is washed.

Federal law (40 CFR 144.85) required prohibited underground injection systems to have been closed by April 2005. The department recognizes some prohibited underground injection systems still remain in operation. This condition specifies the reporting and corrective actions the permittee must take if a prohibited injection system is discovered. Operating a prohibited injection system is a Class I violation subject to enforcement action under OAR 340-012-0055(1)(p) and ORS 468.B.025(a). Although the department does not intend to take enforcement action if the permittee complies with the requirements of this condition, the permittee must report prohibited injection systems within 10 days of discovery during the system-wide assessment, and immediately implement the condition requirements. . The department also expects the permittee to report any prohibited underground injection system discovered after the system-wide assessment no later than 10 days after discovery.

Underground Injection Systems Discovered During or After the System-Wide Assessment

This condition applies to Schedule D.8 and Schedule D.7 of the municipal and industrial/commercial permit templates, respectively.

At a minimum, the department expects the system-wide assessment to include the information for each injection system identified in OAR 340-044-0020. At the time of permit issuance, the department presumes the department's underground injection control system database accurately reflects the permittee's injection systems. For any injection system discovered during the system-wide assessment or post-assessment, the permittee must provide information regarding the injection systems in accordance with OAR 3490-044-0020.

Underground Injection System Management Plan

This condition applies to Schedule D.9 of the municipal template and Schedule D.8 of the industrial/commercial template.

This condition requires the permittee to develop and submit an underground injection system management plan and it specifies the minimum requirements for the plan. For municipalities or other governmental agencies that have an MS4 permit, the permittee may incorporate the underground injection system management plan as part of the MS4 stormwater management plan. The department recognizes many requirements for both plans are the same.

Because the underground injection system management plan was not available at the time of permit issuance, the plan will be posted for public for review and comment in accordance with OAR 340-045-0027 for Category III or Category IV public notice and participation requirements. The department will consider information received during the public comment period before approving the underground injection system management plan.

Incorporation of Rule Authorized Underground Injection Systems

This condition applies to Schedule D.10 and Schedule D.9 of the municipal and industrial/commercial permit templates, respectively. The condition is self-explanatory.

Underground Injection Systems Closure and Decommissioning Fees

This condition applies to Schedule D.11 and Schedule D.10 of the municipal and industrial/commercial permit templates, respectively.

The permittee must submit a pre-closure application and include a pre-closure application fee (ORS 468B.196(1)(e)) and must comply with the closure conditions of OAR 340-044-0040 when an injection system is closed, decommissioned, or abandoned.

The department's injection system closure fact sheet is posted on the department's web page:

http://www.deq.state.or.us/wq/pubs/factsheets/uic/09-WQ-24Closure.pdf

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Attachment A

Risk criteria for ranking underground injection systems from highest to lowest risk as provided.

1. Injection systems that intersect the seasonal high water table or any aquifer and are located inside either the 2-year time-of-travel for public water wells as determined by the Oregon Department of Human Services (DHS), or inside a 500-foot radius of any water well that does not have a DHS determined 2-year time of travel.
2. Injection systems that intersect the seasonal high water table or any aquifer and are located outside either the 2-year time-of-travel to a public water well as determined by the DHS, or outside a 500-foot radius of any water well that does not have a DHS determined 2-year time of travel.
3. Injection systems that have insufficient separation distance from the seasonal high water table or aquifer, and are located inside either the 2-year time-of-travel to a public water well as determined by the DHS, or inside a 500-foot radius of any water well that does not have a DHS determined 2-year time of travel, and have a traffic volume of 1,000 or more vehicle trips per day.
4. Injection systems that have insufficient separation distance from the seasonal high water table or aquifer, and are located inside either the 2-year time-of-travel to a public water well as determined by the DHS, or inside a 500-foot radius of any water well that does not have a DHS determined 2-year time of travel, and have a traffic volume of less than 1,000 vehicle trips per day.
5. Injection systems that have insufficient separation distance from the seasonal high water table or aquifer, and are located outside either the 2-year time-of-travel to a public water well as determined by the Oregon Department of Human Services (DHS), or outside a 500-foot radius of any water well that does not have a DHS determined 2-year time of travel, and have a traffic volume of 1,000 or more vehicle trips per day.
6. Injection systems that have insufficient separation distance from the seasonal high water table or aquifer, and are located outside either the 2-year time-of-travel to a public water well as determined by the DHS, or outside a 500-foot radius of any water well that does not have a DHS determined 2-year time of travel, and have a traffic volume of less than 1,000 vehicle trips per day.
7. Injection system that have inadequate pretreatment prior to discharge into any injection system located inside either the 2-year time-of-travel to a public water well as determined by the DHS, or a 500-foot radius of any water well that does not have a DHS determined 2-year time of travel, and have a traffic volume of 1,000 or more vehicle trips per day.
8. Injection system that have inadequate or no pretreatment prior to discharge into any injection system located inside either the 2-year time-of-travel to a public water well as determined by the DHS, or inside a 500-foot radius of any water well that does not have a DHS determined 2-year time of travel, and have a traffic volume of 1,000 or more vehicle trips per day.
9. Injection system that have inadequate or no pretreatment prior to discharge into any injection system located outside either the 2-year time-of-travel to a public water well as determined by the DHS, or outside a 500-foot radius of any water well that does not have a DHS determined 2-year time of travel, and have a traffic volume of 1,000 or more vehicle trips per day.
10. Injection systems that have inadequate or no pretreatment in areas of less than 1,000 vehicle trips per day.