Department of Community Services

Transportation Division

December 8, 2015

Matt Kohlbecker
Oregon Department of Environmental Quality
Northwest Regional Office
2020 SW Fourth Ave, Suite 150
Portland, OR 97201

SUBJECT: UIC Permit Annual Report 2015

Dear Mr. Kohlbecker:

I am pleased to submit the enclosed memorandum to serve as Multnomah County's 2015 Underground Injection Control System Annual Report. This memorandum fulfills the reporting requirement for the County's UIC permit # 103076.

This report demonstrates the County's implementation actions related to UICs and stormwater management in areas served by UICs within the County's jurisdiction. The County continues to maintain a comprehensive management program for UICs into the next permit year.

Electronic downloads of the Annual Report can be found at multco.us/roads/water-quality. If you have any questions concerning this report, please contact Roy Iwai, Water Resources Specialist at (503) 988-0195, or at roy.iwai@multco.us.

Sincerely,

Ian B. Cannon, P.E.
Transportation Division Director

2015 Underground Injection Control Permit Annual Report

Water Pollution Control Facilities Permit – Underground Injection Control Systems Permit #103076

Multnomah County

Water Quality Program
Transportation Division
Department of Community Services

Facilities and Property Management
Department of County Management

December 2015

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Table of Contents

Introduction

Multnomah County operates a system of underground injection controls (UICs) to infiltrate stormwater from roadways and facilities. Most of the UICs are "dry wells" lined with perforated concrete cylinders approximately 20 feet deep from the ground surface and 4 feet in diameter. The UICs exist in the parking lots of various County facilities in the cities of Portland and Gresham, and within the right-of-way in County-owned arterial and collector roadways in the cities of Troutdale and Fairview. The County currently has 141 UICs that collect stormwater from public rights-of-way and facilities and discharge it to the subsurface.

UICs are regulated under the federal Safe Drinking Water Act, and administered by the U.S. Environmental Protection Agency (EPA) under Title 40 of the Code of Federal Regulations, Parts 144-148. In Oregon, EPA has delegated the regulation of UICs to the Oregon Department of Environmental Quality (DEQ). Multnomah County UICs are regulated under a Water Pollution Control Facilities Permit (WPCF) for Class V UICs – Stormwater injection devices.

Under the WPCF UIC permit, the County must demonstrate that UICs do not endanger existing and future underground sources of drinking water, and do not allow movement of fluid containing contaminants into underground sources of drinking water. The WPCF permit requires the County to submit an annual report of its monitoring and management activities to meet these objectives.

The Annual UIC System Report must contain the following elements:

1. Stormwater monitoring results
    a. Include any action level exceedances and actions taken to address exceedances
2. Implementation actions of the UIC Management Plan
    a. Completed actions
    b. Proposed modifications to the UIC Management Plan
    c. Additional management actions not included in the UIC Management Plan
    d. UIC Management Plan implementation actions not completed and rationale
3. Changes to UIC inventory
    a. UICs closed, retrofitted or installed during permit year
    b. UICs planned to be installed, modified, covered or closed in the next permit year
    c. Newly discovered UICs in the permit area
4. Changes to key personnel or areas of responsibility for the permit

Stormwater Monitoring Results

Stormwater monitoring at County UICs is conducted twice during the wet season at five UICs. Sites were selected based on the general location (facility parking lots and roadways) and potential risks of pollutant sources: traffic volume and adjacent land use. The table below describes the UIC sample sites during the 2014-2015 permit year.

Table 1. Stormwater sampling sites at County UICs during 2014-2015 permit year.

Site	*Sample ID*	*Land use*	*Traffic volume*
SW Cherry Park Road (west)	1100243	Arterial roadway	9,240
SW 257th Avenue	1100198	Arterial roadway	18,400
Midland Library	611L01	Facility parking	1,458
Hansen Complex	313J01	Facility parking	3,428
Juvenile Justice Center	311J06	Facility parking	15,310

Storms samples were predicted and evaluated against the criteria listed below to assess whether the predicted storm should be targeted as a potential sampling event.

- Predicted rainfall amount of ≥ 0.2 inches per storm
- Predicted rainfall duration ≥ 6 hours
- Antecedent dry period ≥ 6 hours (as defined by < 0.1 inches of precipitation over the previous 6 hours). When possible, samples will be collected after an antecedent dry period of 24 hours

The County's UIC permit establishes action levels for five analytes shown below in Table 2. Action levels are guideline concentrations that trigger corrective action when exceeded.

Table 2. Analytical method, reporting limit and action level for UIC monitoring analytes.

Parameter	Analytical Method	Method Reporting Limit (µg/L)	Action Level (µg/L)
Benzo(a)pyrene	EPA Method 8270D (SIM)	0.01	2
Di(2-ethylhexyl)phthalate	EPA Method 8270D (SIM)	0.5	300
Pentachlorophenol	EPA Method 8270D PCP	0.08	10
Total Copper	EPA Method 200 Series	0.2	1,300
Total Lead	EPA Method 200 Series	0.1	500
Total Zinc	EPA Method 200 Series	0.5	50,000

Comparison of Action Levels to Monitoring Results

Pollutant concentrations for samples taken from five UICs during the 2014-2015 permit year did not exceed action levels established in the County's UIC permit. Sampling data is given in Appendix A.

Benzo(a)pyrene and Di-(2-ethly-hexyl) phthalate were detected typically two orders of magnitude less than the action level concentration. Pentachlorophenol was not detected in any sample from any site. Copper, lead and zinc were detected at two and three orders of magnitude below the action levels. Given that no action level exceedances were found during sampling, no corrective actions were needed.

Additional Pesticide Monitoring

Pesticide data was collected through the County's Underground Injection Control (UIC) Program to also fulfill NPDES MS4 Phase I permit requirements. Details of the pesticide selection process are found in the County's UIC Monitoring Plan (2014), which can be downloaded from the County's Water Quality Program website (https://multco.us/water-quality-program/reports-and-plans). The pesticide data serves to inform both programs.

The objective of this pesticide sampling is to fill data gaps about pesticides that may be commonly used along County's urban roadways and at County facilities. 179 different pesticides were screened using two methods to provide a baseline of pesticide information: Pacific Agricultural Laboratory Multi-residue Pesticide Screen and the Chlorinated Acid Herbicide Profile. Data were collected from two UICs and three facilities.

Five pesticides were detected from the two UICs on roadways: MCPP, Pentachlorophenol, Triclopyr, 2,4-D, and Carbaryl. Two pesticides were detected at two County facilities: 2,4-D and Pentachlorophenol. Pesticide detection typically hovered slightly above detection limits, and only one roadway UIC had two pesticide concentrations an order of magnitude above quantitation limits.

Pesticide detections are given in Appendix A. Refer to the County's NPDES Annual Report from November 2015, for a list of all detections and non-detect results from the pesticide monitoring.

Implementation Actions of the UIC Management Plan

A summary of management actions are provided in the table below. No modifications to the UIC Management Plan are proposed for this permit year.

Operations and Maintenance The objective of the UIC operations and maintenance activities is to reduce sedimentation of the UIC system and to ensure the continued infiltration function of the UIC system. These activities include street sweeping, catch basin cleaning, sediment manhole cleaning and sediment removal from the UIC drywell itself.	
1. Street sweeping	Streets were swept monthly in UIC areas.
2. Catch basin cleaning	Catch basins on County roadways were cleaned in November 2014 and March 2015. Catch basins at County facilities were cleaned based on an annual work schedule.
3. Stormwater facility cleaning	Stormwater treatment facilities are cleaned based on an annual work schedule at the three facilities with pretreatment devices.
4. UIC cleaning	UICs are cleaned once during the 10 year permit term. UICs were not cleaned during this permit year.

Spill Protection The objective of the spill protection BMP is to prevent spilled chemicals from vehicle accidents and other sources from physically entering a UIC. The goals of this BMP are to promptly respond to accidental non-stormwater discharges to reduce the frequency and overall impact of spills to the stormwater system.	
1. Spill response program	The County's Spill Response Plan is current.
2. Erosion control for public projects	No construction occurred in UIC areas during the permit year.
3. Spill detection	No spills or dumping were detected during catch basin cleaning.

Pollution Prevention and Good Housekeeping The objective of the pollution prevention and good housekeeping BMP is to reduce, avoid and minimize pollutants from County operations.	
1. Road Maintenance and Operations Manual review	Road Maintenance and Operations Manual is current.
2. Stormwater retrofit	No major roadwork occurred in UIC areas requiring stormwater retrofits.
3. Conduct vegetation management activities	Vegetation at facilities is managed according to the Facilities Pesticide, Herbicide and Fertilizer Management Policy. No vegetation management occurs on roadways.

Employee Education The objective of the employee education BMP is to ensure that County personnel are familiar with procedures and operations of regular maintenance activities and emergency situations to avoid and minimize pollutant risk to the groundwater.	
1. Staff training	Annual spill training was conducted as part of the First Responder training provided by Risk Management. Road Maintenance staff inspects and stocks spill kits in the spill response vehicle routinely after spill events.

Public Outreach The objective of public outreach is to make the public aware of the ways in which they can reduce the use of chemical products that may impact water quality and human health.	
1. Regional public education efforts	The County participates in the Regional Coalition of Clean Rivers and Streams.
2. Storm drain markers	Catch basin markers are inspected once every five years, most recently in 2012.
3. Public reporting of spills	No spills were reported during the permit year.

Changes to UIC Inventory

During the permit from July 1, 2014 – June 30, 2015, the County made no changes to the roadway UIC inventory. The County Transportation Division has no plans to install, retrofit or close any roadway UICs during the next permit year.

For Facilities UICs, the County sold the Wikman Building in 2014, which had one roof UIC, thus this UIC is no longer in the County UIC inventory.

Changes to Key Personnel

County UICs are managed primarily by two separate work groups based on the location of the UIC. Road Services maintains UICs within the road right-of-way (Figure 1). Facilities Management owns and operates UICs on the property of County-owned facilities (Figure 2).

The County organization of management and staff with UIC responsibilities has changed since the permit issuance in March 2014. The former Road Services Division Director now oversees the Transportation Division as the Board-appointed County Engineer. A new management position now oversees the Road Engineering Services section and capital projects. Key contact information and their area of responsibility are described in Table 3.

Figure 1. Organizational chart for UIC related programs of Road Services Division of the Department of Community Services.

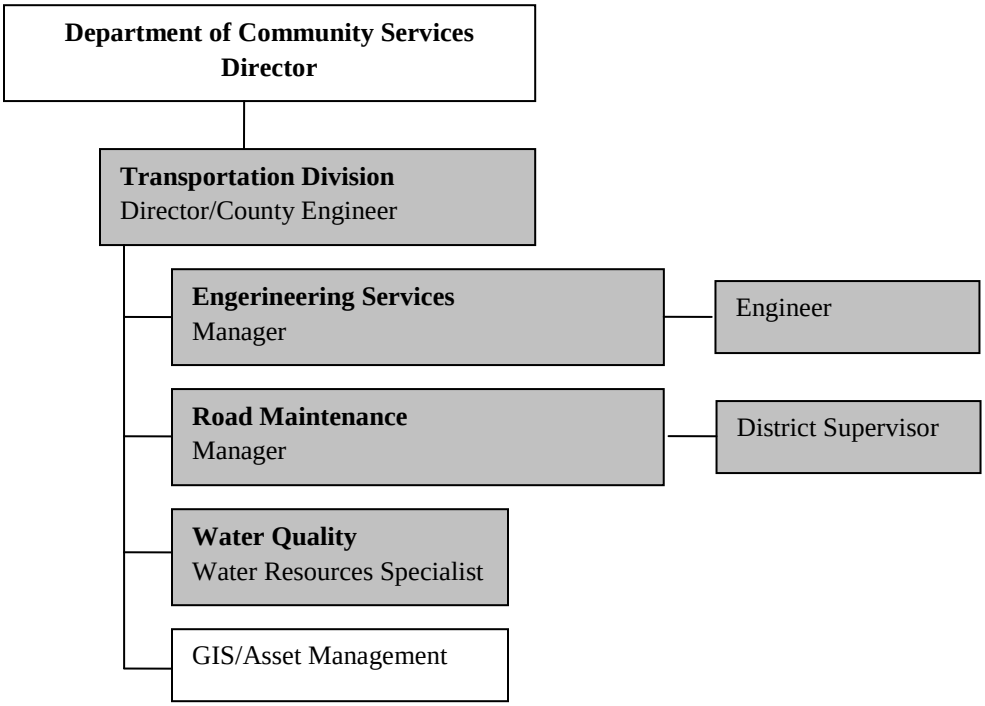

Figure 2. Organization chart for UIC related programs of Facilities Services of the Department of County Assets.

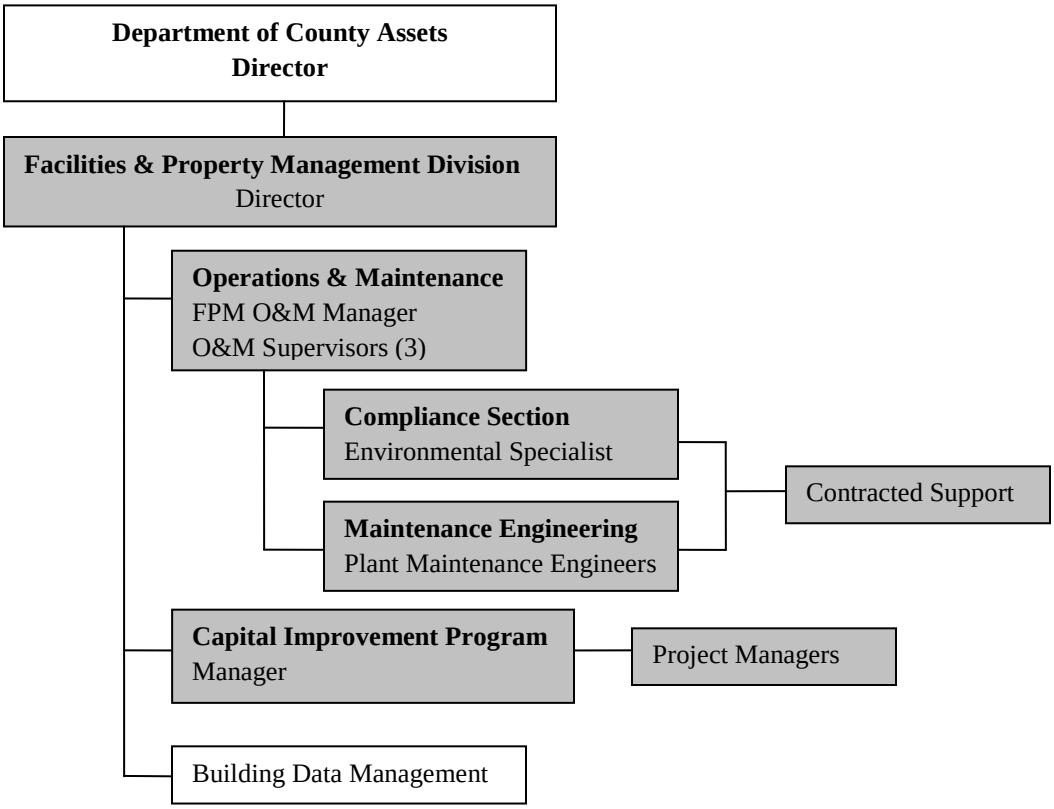

Table 3. Key personnel and areas of UIC responsibility.

Key Personnel	*Area of Responsibility*
Michael McBride, Compliance Section Lead (503) 988-4474 michael.c.mcbride@multco.us	**Facilities Management** Manages the maintenance of UICs and associated stormwater infrastructure on County-owned facilities
Royal Forbes, Plant Maintenance Engineering Supervisor (503) 209-2858 royal.forbes@multco.us	**Facilities Management** Oversees the construction of new UICs on County-owned facilities
Elizabeth Rodriguez, FPM O&M Manager (503) 988-4106 Elizabeth.rodriguez@multco.us	**Facilities Management** Manages all O&M staff who are responsible for day to day operations of Compliance, Dispatchers & Trades (Engineering/Electrical/Mechanical) workers.
Henry Alaman, FPM Division Director (503) 988-6294 Henry.alaman@multco.us	**Facilities Management** Provides direction, oversight and support to the Division
John Lindenthal, Capital Improvement Program Manager (503) 988-4213 John.a.lindenthal@multco.us	**Facilities Management** Manages staff responsible for new construction or large renovation projects which may include storm water related infrastructure
Roy Iwai, Water Resources Specialist (503) 988-0195 roy.iwai@multco.us	**Water Quality Program – Transportation** Manages the UIC program plan development, water quality monitoring, data analysis, and annual compliance reporting
John Niiyama, Road Maintenance Manager (503) 988-0210 john.niiyama@multco.us	**Road Maintenance – Transportation** Oversees the maintenance budget and maintenance policies for UICs in the road right-of-way
Tim Burke, District 4 Supervisor (503) 988-0211 tim.burke@multco.us	**Road Maintenance – Transportation** Manages the maintenance of UICs on the County road right-of-way
Ian B. Cannon, P.E., Director/County Engineer (503) 988-3595 Ian.b.cannon@multco.us	**Transportation Division** Oversees the Transportation budget, policies and strategic direction of the division
Riad Alharithi,P.E., Engineering Services Manager (503) 988-0181 Riad.alharithi@multco.us	**Road Engineering – Transportation** Oversees the engineering budget and standards for UIC construction in the road right-of-way
Carrie Warren, **P.E.**, Engineer 3 (503) 988-0169 Carrie.warren@multco.us	**Road Engineering - Transportation** Manages the design and construction of UICs in the road right-of-way

Appendix A: Stormwater Data

Table A. Stormwater data of analytes with permit actions levels and minimum reporting limits for the laboratory method used in sample analysis. Refer to the UIC Monitoring Plan for details on analytical methods.

			Benzo(a)pyrene (ug/l)	*DEHP (ug/l)*	*Pentachlorophenol (ug/l)*	*Total Copper (ug/l)*	*Total Lead (ug/l)*	*Total Zinc (ug/l)*
		Minimum Reporting Limit	0.010	1.0	1.0	0.200	0.100	0.500
		Permit Action Level	2	300	10	1300	500	50000
Site	*Sample ID*	*Date*						
SW Cherry Park	1100243	10/22/2014	0.019	3.6	ND	13.8	2.86	99.8
SW 257th Ave	1100198	10/22/2014	0.03	6.1	ND	19.8	4.21	78.7
Midland Library	611L01	10/22/2014	0.053	2.2	ND	5.07	2.53	41.4
Hanson	313J01	10/22/2014	0.042	2.1	ND	8.64	3.43	40.9
Juvenile Justice	311J06	10/22/2014	ND	2.3	ND	3.06	5.81	15.6
SW Cherry Park	1100243-N	5/12/2015	0.027	7.4	ND	28.5	4.46	159
SW 257th Ave	1100198	5/5/2015	0.035	4.4	ND	37.1	5.72	190
Midland Library	611L01	5/11/2015	ND	1.4	ND	8.63	1.5	41.6
Hanson	313J01	5/11/2015	0.015	2.8	ND	15.4	3.24	60.9
Juvenile Justice	311J06	5/11/2015	ND	ND	ND	12.5	0.575	44.5

Table B. Pesticide detections from UIC stormwater monitoring and the quantitation limit. Refer to the UIC Monitoring Plan for details on analytical methods.

Location of Sample	*Sample Date*	*Analyte*	*Unit*	*Result*	*Quantitation Limit*
Hansen Complex	5/11/2015	2,4-D	µg/L	0.08	0.08
Hansen Complex	5/11/2015	Pentachlorophenol	µg/L	0.27	0.16
Hansen Complex	10/22/2014	Pentachlorophenol	µg/L	0.39	0.16
Juvenile Justice Center	5/11/2015	2,4-D	µg/L	0.1	0.08
SW 257th Ave	5/5/2015	MCPP	µg/L	0.15	0.08
SW 257th Ave	5/5/2015	Pentachlorophenol	µg/L	0.16	0.16
SW 257th Ave	5/5/2015	Triclopyr	µg/L	0.16	0.08
SW 257th Ave	10/22/2014	Pentachlorophenol	µg/L	0.23	0.16
SW 257th Ave	5/5/2015	2,4-D	µg/L	1.2	0.08
SW Cherry Park Road (west)	5/11/2015	Carbaryl	µg/L	0.14	0.06
SW Cherry Park Road (west)	5/11/2015	Triclopyr	µg/L	3.8	0.08
SW Cherry Park Road (west)	5/11/2015	2,4-D	µg/L	5.2	0.8