

HAHN AND ASSOCIATES, INC.

ENVIRONMENTAL CONSULTANTS

May 15, 2015

Mr. Dana Bayuk
Oregon Department of Environmental Quality
Northwest Region, Portland Office
Portland Harbor Section
2020 SW Fourth Avenue, Suite 400
Portland Oregon 97201-4987

HAI Project No. 2708
DEQ ECSI File No. 84

**SUBJECT: Progress Report, NW Natural Site, 7900 NW St. Helens Avenue and
7200 NW Front Avenue, Portland, Oregon**

Dear Mr. Bayuk:

Hahn and Associates, Inc. (HAI) has prepared this monthly Progress Report summarizing Remedial Investigation/Feasibility Study (RI/FS) and source control-related work activities conducted by NW Natural relating to historic manufactured gas plant (MGP) activities at the NW Natural Site during the month of April 2015. NW Natural is completing upland investigatory activities at the NW Natural Site under the Voluntary Agreement No. ECV-C-WMCVC-NWR-94-13 (Voluntary Agreement) between NW Natural and the Oregon Department of Environmental Quality (DEQ).

1.0 Communications and Document Submittals

In correspondence to DEQ dated April 1, 2015 (Rob Ede to Dana Bayuk) HAI, on behalf of NW Natural, provided a summary of agreements reached regarding the analyte list and the scope of work for the proposed Doane Creek area investigation, to be conducted as part of RI activities associated with the Siltronic property.

Program management implementation calls were conducted with DEQ on April 2, 2015 and April 16, 2015 to discuss NW Natural program management and project schedules.

In correspondence dated April 8, 2015 (John Verduin to Dana Bayuk), Anchor QEA, on behalf of NW Natural, provided DEQ with an FTP download link for the *Fill Water-Bearing Zone Trench Design Evaluation Report*. Hard copies and CDs were transmitted to DEQ on April 9, 2015 (John Renda to Dana Bayuk).

In correspondence dated April 14, 2015 (Dana Bayuk to Rob Ede), DEQ approved NW Natural's proposed protocols for characterization and management of RCRA F002-listed DNAPL recovered from wells within the TCE CMMA.

A project manager call was conducted with DEQ on April 14, 2015 to discuss NW Natural program management and project schedules.

In correspondence dated April 16, 2015 (Dana Bayuk to Rob Ede), DEQ provided approval of NW Natural's approach to drilling and sealing a proposed geotechnical boring as described in an April 9, 2015 e-mail (Rob Ede to Dana Bayuk).

In correspondence dated April 17, 2015 (Pradeep Mugunthan to Dana Bayuk) Anchor QEA provided information to DEQ related to the groundwater flow model sensitivity analysis.

In correspondence dated April 19, 2015 (John Renda to Dana Bayuk), Anchor QEA transmitted a proposed schedule for HC&C system testing, operation, and monitoring.

A technical meeting with representatives of DEQ, EPA, NW Natural, and Siltronic was conducted via teleconference on April 20, 2015 to discuss items related to the groundwater flow model.

In correspondence dated April 20, 2015 (John Verduin to Dana Bayuk), Anchor QEA transmitted the *Fill Water-Bearing Zone Trench Design Evaluation Report*, updated at DEQ's request to include a professional engineer and registered geologist stamp.

In correspondence dated April 21, 2015 (Terry Driscoll to Rob Burkhardt), Driscoll Aponowich & Associates, on behalf of NW Natural, provided notification to DEQ of a pending oxidant testing program for cyanide removal as required by NW Natural's National Pollutant Discharge Elimination System (NPDES) permit.

In correspondence dated April 22, 2015 (Ben Hung to Dana Bayuk), Anchor QEA, on behalf of NW Natural, transmitted the *Gasco Source Control Treatment Plant Residual Data Package for the First Quarter 2015*.

In correspondence dated April 27, 2015 (Rob Ede to Dana Bayuk), HAI summarized agreements reached during an April 21, 2015 teleconference with DEQ regarding future submittals of NW Natural groundwater quality data for the Gasco and Siltronic properties.

In correspondence dated April 27, 2015 (Pradeep Mugunthan to Dana Bayuk), Anchor QEA transmitted slides from the April 20, 2015 meeting related to the groundwater flow model.

In correspondence dated April 28, 2015 (Dana Bayuk to Bob Wyatt), DEQ provided a letter with feedback from DEQ's review of the January 30, 2015 *Groundwater Source Control Phase 1 Testing Data Summary Report*, as well as specific comments provided by EPA.

In correspondence dated April 29, 2015 (Terry Driscoll to Rob Burkhardt), Driscoll Aponowich & Associates, on behalf of NW Natural, transmitted notice of a proposed expansion to the existing air stripper at the HC&C System Siltronic pre-treatment plant on the NW Natural property.

In correspondence dated April 30, 2015 (William Byrd to Dana Bayuk), Severson Environmental Services, Inc. transmitted lab reports for the data previously provided in the April 22, 2015 Gasco Source Control Groundwater Treatment Plant Residual Package.

In correspondence dated April 30, 2015 (John Renda to Dana Bayuk), Anchor QEA, on behalf of NW Natural, provided DEQ with an FTP download link for groundwater quality data collected from monitoring wells, extraction wells, observation wells, and piezometers on the Gasco and Siltronic properties through the October 2014 integrated groundwater monitoring event.

2.0 Field Work

HAI field activities related to monitoring and maintenance of the dense non-aqueous phase liquid (DNAPL) extraction system at surficial fill well locations MW-6-32 and MW-13-30 occurred during March 2015. The system recovered approximately 48 gallons of fluids in March, primarily DNAPL.

Tasks related to optimization and maintenance of the HC&C system and the groundwater treatment system were conducted in April 2015.

Maintenance was performed on 15 select HC&C pumping wells using Aqua Gard carbon dioxide injections on April 27-29, 2015.

Baseline DNAPL removal as needed to maintain at levels below the top of the well sumps was conducted by Anchor QEA during April 2015 in the following wells near the river shoreline.

- MW-26U
- MW-27U
- MW-34U
- MW-38U
- MW-PW-2L
- PW-2L

On March 31, 2014 NW Natural discontinued discharges of treated groundwater to the sanitary sewer (Industrial Wastewater Discharge Permit 500.022). All water is now directed to NW Natural's on-site groundwater treatment plant and discharged to the Willamette River consistent with NPDES Permit No. 103061 (expires August 31, 2018). Results from NW Natural's NPDES effluent sampling are provided to DEQ in Discharge Monitoring Reports that are submitted on a monthly basis in accordance with the permit. As of April 30, 2015 a total of 100,038,968 gallons of treated water were discharged under the NPDES permit.

3.0 Anticipated Activities May and June 2015

NW Natural and DEQ technical working group communications and meetings are anticipated to occur as needed during May and June 2015 to discuss ongoing project tasks.

The *HC&C Model Calibration and Validation Report* is in preparation for submittal to DEQ after agreements with the agency are reached related to model calibration.

An interim 60-day Phase 2 HC&C test began during May with the shutdown of the system to establish background ambient conditions on May 11, 2015 and startup initiated on May 14, 2015 and is scheduled to continue into July 2015.

HC&C and Groundwater Treatment System Operation and Maintenance and Performance Monitoring documents are in preparation with submittal to DEQ scheduled to occur during May 2015 (The HC&C Operation and Maintenance and Performance Monitoring documents were submitted May 1, 2015. The Groundwater Treatment System Operation and Maintenance document was submitted on May 6, 2015).

Initiation of supplemental Doane Creek investigation activities is contingent upon receipt of DEQ confirmation of recent agreements with the analyte list and screening levels. Legal access agreements with the off-site property owners will also be necessary prior to initiation of field activities.

Stored oil-water mixture materials originating from the TCE CMMA and bearing the F002 Resource Conservation and Recovery Act (RCRA) Hazardous Waste Code will be

scheduled for transport to a permitted Treatment, Storage, and Disposal (TSD) Facility during May (transport initiated on May 13, 2015).

NW Natural is currently developing a Contaminated Materials Management Plan for the Site. Submittal of this plan was previously scheduled to occur in May. However, due to outstanding questions related to management of some materials, (e.g. the management of the oil-water mixture originating from the TCE CMMA), a submittal date for this Contaminated Materials Management Plan has yet to be determined. In the meantime, materials will be managed according to protocols already in place at the Site.

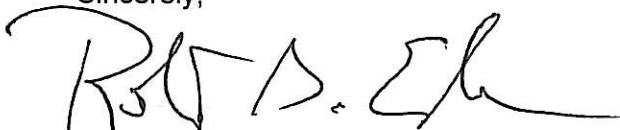
NW Natural anticipates completion of test pitting activities at selected locations during May in order to determine if the location of the former MGP-era bedrock water supply well can be determined. The test pitting work will be initiated after discussion with DEQ regarding the geophysical investigation results, which occurred during a site meeting on May 11, 2015.

The following reports and work plans for the Site have been submitted to DEQ through the date of this progress report. Unless otherwise noted, NW Natural has not received DEQ comments on these documents.

- *Human Health and Ecological Risk Assessment Report, NW Natural Gasco Site*, Prepared for Oregon DEQ by Anchor QEA, dated December 2014.
- *Isoconcentration contour maps for chemicals in soil and groundwater at the Gasco Site*, transmitted to DEQ in correspondence dated February 16, 2015 and February 27, 2015 (Halah Voges to Dana Bayuk).
- NW Natural's April 1, 2015 (Rob Ede to Dana Bayuk) *Summary of Agreements: Doane Creek Area Sampling*. NW Natural will initiate actions necessary to conduct this work once DEQ concurrence regarding the content of the Summary of Agreements is received.
- *Fill WBZ Trench Design Evaluation Report, Gasco/Siltronic*, prepared by Anchor QEA, dated April 8, 2015.
- *Hydraulic Control and Containment (HC&C) System Operation and Maintenance (O&M) Manual*, prepared by Anchor QEA, dated May 1, 2015
- *HC&C Capture Performance and Monitoring Plan (PMP)*, prepared by Anchor QEA, dated May 1, 2015.
- *NW Natural Groundwater Treatment System Operations and Maintenance Manual*, prepared by Severson Environmental Services, Inc., dated May 2015 (provided May 6, 2015).

Should you have any questions, please contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read 'Rob Ede, R.G.', with a stylized flourish at the end.

Rob Ede, R.G.
Principal

robe@hahnenv.com

c: Mr. Bob Wyatt, NW Natural (electronic only)
Ms. Patty Dost, Pearl Legal Group PC (electronic only)
Ms. Sarah Riddle, Pearl Legal Group PC (electronic only)
Mr. Carl Stivers, Anchor QEA, L.L.C. (electronic only)
Mr. John Edwards, Anchor QEA, L.L.C. (electronic only)
Mr. Ben Hung, Anchor QEA, L.L.C. (electronic only)
Mr. Ryan Barth, Anchor QEA, L.L.C. (electronic only)
Ms. Halah Voges, Anchor QEA, L.L.C., (electronic only)
Mr. Henning Larsen, DEQ NW Region (electronic only)
Mr. Keith Johnson, DEQ NW Region (electronic only)
Mr. Myron Burr, Siltronic Corporation (electronic only)
Ms. Kristine Koch, Region 10 EPA (electronic only)
Mr. Sean Sheldrake, Region 10 EPA (electronic only)
Mr. Rene Fuentes, Region 10 EPA (electronic only)
Mr. Lance Peterson, CDM, Inc. (electronic only)