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|---|---|
| **From:** | BAYUK Dana |
| **To:** | John Renda (jrenda@anchorqea.com) |
| **Cc:** | Ben Hung (ben@coalitionenv.com); HAFLEY Dan; Dehlia McCobb; Grace Weatherford; Heidi Nelson (Heidi.NELSON@state.or.us); LARSEN Henning; Halah Voges; John Edwards; PETERSON Jenn L; "Jen Mott"; Kelly Beniga; Mike Gefell; POULSEN Mike; Miao Zhang; Patty Dost; Ryan Barth; Wyatt, Robert; Rob Ede; Sarah Riddle |
| **Subject:** | RE: NW Natural: LNG Basin and Former Koppers Basin Groundwater Evaluation – First Quarter 2020 |
| **Date:** | Friday, November 6, 2020 10:05:01 AM |

Good morning.

DEQ reviewed the "LNG Basin and Former Koppers Basin Groundwater Evaluation – First Quarter 2020" technical memorandum dated August 14, 2020 (Q1 2020 Memorandum). The Q1 2020 Memorandum summarizes the results of field work completed in the vicinity of the LNG Basin and former Koppers Tank Farm Basin (Koppers Basin) during the 1st quarter of 2020, including collecting groundwater-level measurements with transducers or by hand; collecting groundwater samples from monitoring wells for analysis; evaluating the magnitude and direction of the hydraulic gradient of the Fill water-bearing zone (WBZ) between the LNG Basin and Willamette River; and compiling the results of analyzing the groundwater samples with previous sampling data. Anchor QEA, LLC (Anchor) prepared the Q1 2020 Memorandum for NW Natural.

Based on our review, DEQ agrees with NW Natural's conclusion that the gradient evaluation and groundwater monitoring results reported in the Q1 2020 Memorandum are generally consistent with the previous three quarters (i.e., 2nd through 4th quarters of 2019). Groundwater elevation and chemistry data collected between June 2019 and March 2020 confirm that subsequent to lining the LNG Basin:

- The direction of the Fill WBZ hydraulic gradient has, depending on season, rotated between 10 and 20-degrees north of the gradient direction prior to basin lining; and
- Higher concentrations of many MGP constituents, notably benzene; have increased downgradient of the LNG Basin and near the Willamette River.

Based on this information NW Natural proposes going to a semi-annual reporting schedule for the LNG Basin and Koppers Basin groundwater evaluation with the next report covering the 2nd and 3rd quarters of 2020. Groundwater elevation and chemistry data collection will continue unchanged. DEQ approves NW Natural's proposal.

DEQ also approves NW Natural's proposal to replace the current LNG Basin and Koppers Basin groundwater evaluations with the LNG Basin trench performance monitoring program, the scope of which is to be determined. By e-mail dated October 7, 2020, DEQ approved implementation of the "Fill Water-Bearing Zone Trench Design," dated September 28, 2020 (LNG Basin Trench Design) with supplemental information provided in an October 29th e-mail. Anchor prepared the LNG Basin Trench Design and October 29th e-mail on behalf of NW Natural.

The design is for a groundwater removal action consisting of two trenches that together will operate to hydraulically capture groundwater in the Fill WBZ downgradient of the LNG Basin. NW Natural is beginning construction of the trenches early this month. Sections 5.5.3 and 6.1.1 of the LNG Basin

Trench Design, and NW Natural's October 29th e-mail response to Comment #1 and Comment #3, describe the approach to startup and testing of the LNG Basin removal action trenches and pre-treatment facility expansion. Section 6.2 identifies the new monitoring wells and piezometers that will be installed to monitor groundwater elevations and chemistry in the vicinity of the trenches and near the northwestern edge of the LNG Basin.

DEQ anticipates that the scope of the LNG Basin removal action performance monitoring program will be developed during the 1st quarter of 2021.

Please feel free to contact me with questions regarding this e-mail and hope your day goes well.

Dana

Mr. Dana Bayuk
Cleanup Program Project Manager/Hydrogeologist
Oregon Department of Environmental Quality
Northwest Region
700 NE Multnomah Street, Suite 600
Portland, OR 97232-4100

E-mail: bayuk.dana@deq.state.or.us

Phone: 503-229-5543
FAX: 503-229-6945

Please visit our website at www.Oregon.gov/deq

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**From:** Jen Mott <jmott@anchorqea.com>
**Sent:** Friday, August 14, 2020 1:50 PM
**To:** BAYUK Dana <Dana.BAYUK@state.or.us>
**Cc:** John Renda <jrenda@anchorqea.com>; Bob Wyatt <rjw@nwnatural.com>; Patricia Dost <pdost@pearllegalgroup.com>; Halah Voges <hvoges@anchorqea.com>; Ryan Barth <rbarth@anchorqea.com>; John Edwards <jedwards@anchorqea.com>; Miao Zhang <mzhang@anchorqea.com>; HAFLEY Dan <Dan.HAFLEY@state.or.us>; LARSEN Henning <Henning.LARSEN@state.or.us>; PETERSON Jenn L <Jenn.L.PETERSON@deq.state.or.us>; POULSEN Mike <Mike.POULSEN@deq.state.or.us>; Rob Ede <robe@hahnenv.com>; Sarah Riddle <sriddle@pearllegalgroup.com>; Kelly Beniga <kbeniga@pearllegalgroup.com>; Ben Hung (ben@coalitionenv.com) <ben@coalitionenv.com>; Mike Gefell <mgefell@anchorqea.com>; Grace Weatherford <gweatherford@anchorqea.com>; Dehlia McCobb <dmccobb@anchorqea.com>; Heidi Nelson (Heidi.NELSON@state.or.us) <Heidi.NELSON@state.or.us>
**Subject:** NW Natural: LNG Basin and Former Koppers Basin Groundwater Evaluation – First Quarter 2020

Dana,

The *LNG Basin and Former Koppers Basin Groundwater Evaluation - First Quarter 2020* has been uploaded to the FTP site. The memorandum documents the implementation of the groundwater monitoring program designed to assess the effects of construction activities at the NW Natural LNG Basin and Former Koppers Facility. This memorandum includes data collected through First Quarter 2020.

Please contact John Renda with any questions.

Instructions to access the FTP site:

To access the FTP site automatically using Windows Explorer please follow the steps below for your version of Windows:

- **Windows 7**: Click Start -> and click in the search box; **Windows 8.1/10**: Right-Click Start -> Run
- Copy/Paste the following line into the "Open" box for XP/8.1/10 or the "Search" box for Windows 7 and hit "enter"
  %systemroot%/explorer ftp://Agency%40000029-02.63-14:**GA$CO2020!**@ftp.anchorqea.com
- You should now be logged into the site using Windows Explorer. You can use copy/paste to move files to or from the site

To access the FTP site manually using a FTP browser like CoreFTP or Windows Explorer please use the info below.

- Site URL: ftp://ftp.anchorqea.com
- Username: Agency@000029-02.63-14
- Password: **GA$CO2020!**

To access the FTP site via web browser please follow the steps below.

- Click on the following link: https://ftp.anchorqea.com/aq
- Input the username and password that are listed in the above section
- Use the tools available directly to the site to download or upload

Jen Mott
Project Coordinator
Anchor QEA, LLC
jmott@anchorqea.com
6720 S Macadam Ave, Suite 125, Portland, OR 97219 (formerly SW Macadam)
(503) 972-5014