



# Oregon

John A. Kitzhaber, Governor, MD

## Department of Environmental Quality

Northwest Region Portland Office

2020 SW 4<sup>th</sup> Avenue, Suite 400

Portland, OR 97201-4987

(503) 229-5263

FAX (503) 229-6945

TTY (503) 229-5471

November 12, 2014

Jackie Wetzsteon  
PacifiCorp Environmental Remediation Co.  
Lloyd Center Tower  
825 NE Multnomah, Suite 906  
Portland, OR 97232

Mehagan Hopkins  
Chevron Environmental Mgm. Co.  
6001 Bollinger Canyon Road  
San Ramon, CA 94583

Re: LNAPL Pilot Scale Study and Recovery Report  
Former Unocal/PacifiCorp Site  
Former Petroleum Terminal No. 0022 and Manufactured Gas Plant  
256 Marine Drive, Astoria, Oregon  
DEQ ECSI Number 1646

Dear Ms. Wetzsteon and Ms. Hopkins:

The Oregon Department of Environmental Quality (DEQ) has reviewed the *Light Nonaqueous Phase Liquid (LNAPL) Pilot Scale Study and Recovery Report* dated October 24, 2014. The report summarizes LNAPL recovery, pre-design pilot test activities, pilot test results, evaluation of LNAPL removal data, and the recommended LNAPL recovery approach for the final cleanup remedy in accordance with the 2012 *Record of Decision* (ROD). The report was the subject of the October 30, 2014 meeting attended by DEQ, the Responsible Parties (RPs) (Unocal Oil Company of California and PacifiCorp), and ARCADIS, your environmental consultant.

DEQ approves the proposed LNAPL recovery approach based on the pilot scale study and recovery report. DEQ appreciates the quality of the report and no revisions are necessary. The approved LNAPL recovery approach includes the following:

1. A long-term monitoring program consisting of monthly water-level and LNAPL gauging at existing monitoring wells MW-7, MW-11, MW-12, and MW-13 and at proposed well MW-12R.
2. Enhanced LNAPL recovery at existing monitoring well MW-12 using a manual LNAPL removal program of sorbent socks.
3. Installation of MW-12R and LNAPL recovery using the pilot scale study procedures.
4. Removal of LNAPL using sorbent socks if measureable LNAPL enters any other site monitoring well.

At the October meeting we agreed that installation of MW-12R will take place under the voluntary cleanup agreement (WMCVC-NWR-97-06) as part of the remedial design activities. Installation of MW-12R will provide useful design information, including more information regarding the extent of the upland LNAPL hot spot.

According to the proposal, MW-12R will be located toward the river from MW-12. Depending on access, MW-12R may be located in the Columbia House Condominium building planter or directly east of the planter on property owned by Union Oil.

There are some differences in the enhanced LNAPL recovery as defined in the 2012 ROD and the proposed LNAPL recovery approach based on the pilot test results. In the ROD the enhanced LNAPL recovery also includes installation of one recovery well with a skimmer, oil/water separator, and tank system. Information gathered during the pilot test shows that use of the skimmer is infeasible due to the proximity of the utilities and rail tracks. Use of the oil/water separator and tank system are unnecessary with use of the absorbent socks. Although the remedial design changes are not considered substantive changes to the remedial approach described in the ROD, DEQ will document the changes in a memorandum for the project file following installation and sampling of MW-12R.

In the October meeting, we discussed the pros and cons of various locations for MW-12R. The report shows MW-12R located in Columbia House Condominium-owned planter near the southern property line of the condominium, which may make access difficult. DEQ reviewed the former tar well and wells in the vicinity of the concrete pad as possible sources of LNAPL, with the thought that MW-12R might be located west of MW-12 to intercept any related residual LNAPL. The tar well, a subsurface tank or vessel used to accumulate or store tar, was formerly located beneath the historic coal wharf, between MW-11 and MW-12. Wells in the vicinity of the concrete pad include MW-2 (decommissioned), MW-7, MW-8 (decommissioned), MW-9 (decommissioned), MW-9R, and MW-10. MW-7 currently contains LNAPL. Records show MW-8 historically contained significant volumes of LNAPL. Based on this review DEQ recommends considering locating MW-12R outside the 25-foot radius of MW-12 and to the west along the Astoria Riverwalk if feasible based on access restrictions and the proximity of utilities.

During the October meeting ARCADIS mentioned their compilation of LNAPL observations and data from boring logs, test pit logs, field sampling data sheets, laboratory reports and other sources. Please send DEQ a copy of the data tables.

The last paragraph of the report, Section 6, *Proposed LNAPL Recovery Approach*, discusses the conditions under which remediation of the LNAPL hot spot will cease. In addition to the conditions described, please plan to contact DEQ for approval before discontinuing LNAPL removal efforts.

#### NEXT STEPS AND SCHEDULE

DEQ understands that ARCADIS personnel will be taking photographs of potential locations for installation of MW-12R in combination with their upcoming field work in Astoria. Based on a review of the photographs and the results of discussions with property owners regarding access send DEQ:

1. Recommendations for locating MW-12R; and
2. A proposed schedule for well drilling, monitoring well construction, and sampling.

Depending on the date, DEQ hopes to visit the site during drilling of the boring for MW-12R.

Feel free to call me at (503) 229-5213 if have questions about this letter or want to discuss the project.

Unocal/PacifiCorp  
LNAPL Pilot Study Rpt.  
Page 3 of 3

Sincerely,



Anna Coates, R.G.  
Project Manager/Hydrogeologist  
DEQ NWR  
Cleanup and Site Assessment

Cc: Jesse Hemmen, ARCADIS  
Dave Lipson, ARCADIS  
Anna St. John, Bridgewater Group  
Keith Johnson, DEQ  
Erin McDonnell, DEQ  
Jennifer Sutter, DEQ  
Project File

