

MANAGEMENT APPROVAL FORM
Final Approval
Department of Environmental Quality
Western Region

REPORT/DOCUMENT TYPE:
(Attached)

Record of Decision X

Certification of Completion

Other (Describe)

Date: 1/21/15

Please review the attached document which describes a staff recommendation regarding an environmental cleanup activity. The approved preliminary recommendation has been advertised for public comment as required by ORS 465.320. The public comment period has expired. The attached document includes a discussion of public comments received (if any) and how those comments affected the final recommendation/decision.

FINAL APPROVAL:

Assistant Attorney General (DOJ)

Date

Michael E. Howard
Section Manager

1/21/2015
Date

Regional Administrator

Date

Other (Indicate)

Date

Return completed form to: Seth Sadofsky
Western Region Environmental Cleanup

RECORD OF DECISION

FOR

EUGENE MANUFACTURED GAS PLANT (FORMER)

CUL-DE-SAC PORTION

700 block of E 8th Avenue

T17S, R3W, Section 32, City Right-of-Way Adjacent to Tax Lot 1500, Lane County

EUGENE, OREGON

ECSI 1723

Date: January 21, 2015

Introduction

Soil and/or groundwater contamination associated with operation of the Former Manufactured Gas Plant (MGP) is present on property owned by EWEB, property owned by the University of Oregon, and the cul-de-sac property located southwest of the EWEB property (Figure 1 and 2). Most of the contamination is located in the vicinity of the historical MGP, which was located on the central portion of the site, within the existing EWEB fence line. The site is located on the south bank of the Willamette River, in a mixed use area neighborhood encompassing commercial, industrial, office, residential, and park land uses. This Record of Decision (ROD) is specific to the cul-de-sac portion of the site (Site). The cul-de-sac is a City of Eugene public right-of-way. The cul-de-sac portion consists of approximately 0.3-acres and consists of the extension of East 8th Avenue northeast of the railroad tracks that dead-ends in a cul-de-sac. This ROD prescribes the remedial action for the Site, which is necessary to meet the Site remedial action objectives and protect human health and the environment. The adjacent portions of the former MGP site on EWEB property and on University of Oregon property are being addressed in other documents.

Additional information on this Site, including the full Staff Report to which this document refers, can be found at the following web site.

<http://www.deq.state.or.us/Webdocs/Forms/Output/FPController.ashx?SourceId=1723&SourceIdType=11>

Public Process

A 30-day public comment period on DEQ's recommended remedy was held during September of 2014, as required by ORS 465.320. Notice was published as a legal ad in the Eugene Register-Guard, in the Secretary of State Bulletin, and on DEQ's web site. A link to this notice on DEQ's web site was published through DEQ's GovDelivery service to all who have registered interest in receiving Environmental Cleanup notices. A newspaper article about the MGP site and proposed cleanup was published in the Eugene Register-Guard early in the public comment period, and an additional article on a related subject mentioned the public comment period. No comments were received during this period.

Summary of Site Investigation Activities

Investigations at the MGP site have been conducted by environmental consultants working for EWEB, PacifiCorp, and Cascade Natural Gas Corporation. The initial investigation of the MGP site took place in 1995, which was followed by groundwater investigations through 1998 and a Remedial Investigation Report submitted to DEQ in 2000. A Human Health Risk Evaluation was submitted to DEQ in 2002 with a supplemental Technical Memo in 2003; and Ecological risk was assessed by a Level I Ecological Risk Assessment in 1999 and a Level II Ecological Risk Assessment in 2009. A Draft Feasibility Study proposing remedial action alternatives was submitted to DEQ in 2003; and a revised Feasibility Study was submitted in 2006 incorporating

comments by DEQ. A technical memorandum prepared in 2011 by AECOM highlights the specific RI/FS issues associated with the cul-de-sac portion of the MGP site.

Remedial Action Objectives

Based on the results of the Remedial Investigation and Risk Assessment, Remedial Action Objectives (RAOs) were developed by DEQ and the responsible parties to address the presence of polynuclear aromatic hydrocarbons (PAHs) and benzene in contaminated soil. These RAOs are:

- Prevent industrial and excavation worker exposure to soils containing contaminants of concern (COCs) above the soil numerical remedial action objectives (NRAOs).
- Prevent exposure to future Site visitors/workers from vapor intrusion of benzene into indoor spaces above the numerical NRAOs.
- Minimize or control infiltration of rainwater through contaminated soil to prevent mobilization of contaminants to the Willamette River.
- Treat (or excavate and dispose offsite) soil/waste material identified as hot spots (i.e., from the small relief holder), to the extent feasible considering the criterion in OAR 340-122-0085(7) and the balancing factors in OAR 340-122-0090(3).

The remedial actions for soil will be guided by NRAOs based on risk-based screening levels rather than Site-specific cleanup levels. Remedial actions based on these NRAOs are protective for the potential exposure pathways listed. Should alternative or contingent remedial actions be considered in the future, Site-specific cleanup levels may be developed in cooperation with DEQ and applied in lieu of the NRAOs. The following numerical remedial action objectives were developed to protect industrial Site workers and excavation workers. Remedial action objectives for carcinogenic chemicals are based on a 1×10^{-6} cancer risk, while non-carcinogenic chemicals are based on a Hazard Index (HI) of 1. Soils that contain chemicals in excess of remedial action objectives will require action to prevent unacceptable human exposure.

NUMERICAL SOIL REMEDIAL ACTION OBJECTIVES Eugene Former Manufactured Gas Plant Site			
HAZARDOUS SUBSTANCE	INDUSTRIAL CONCENTRATION	DEQ EXCAVATION WORKER CONCENTRATION	BASIS AND PRIMARY EXPOSURE PATHWAY
Cyanide	610	5,100	HI=1 Direct contact
2-Methylnaphthalene	23*	16,000*>Csat	HI=1 Direct contact

**NUMERICAL SOIL REMEDIAL ACTION OBJECTIVES
Eugene Former Manufactured Gas Plant Site**

HAZARDOUS SUBSTANCE	INDUSTRIAL CONCENTRATION	DEQ EXCAVATION WORKER CONCENTRATION	BASIS AND PRIMARY EXPOSURE PATHWAY
Acenaphthylene	23*	16,000*>Csat	HI=1 Direct contact
Benz[a]anthracene	2.7	590>Csat	1x10 ⁻⁶ Risk, Direct Contact
Benzo[a]pyrene	0.27	59>Csat	1x10 ⁻⁶ Risk, Direct Contact
Benzo[b]fluoranthene	2.7	590>Csat	1x10 ⁻⁶ Risk, Direct Contact
Benzo[g,h,i]perylene	23*	16,000*>Csat	HI=1 Direct contact
Benzo[k]fluoranthene	27	5,900>Csat	1x10 ⁻⁶ Risk, Direct Contact
Chrysene	270	59,000>Csat	1x10 ⁻⁶ Risk, Direct Contact
Indeno[1,2,3-cd]pyrene	2.7	590>Csat	1x10 ⁻⁶ Risk, Direct Contact
Naphthalene	23	16,000>Csat	HI=1 Direct contact
Phenanthrene	23*	16,000*>Csat	HI=1 Direct contact
Benzene	34	9,500>Csat	1x10 ⁻⁶ Risk, Direct Contact

NOTES:

The numerical remedial action objective values for soil are risk-based concentrations (RBCs) from DEQ's 2003 RBDM, as updated 2012. Cyanide numerical remedial action objective is from USEPA's Region Screening Level (RSL) Summary Table, May 2011. Direct contact includes soil ingestion, dermal contact, and inhalation.

1) Soil units shown are in mg/kg, or ppm. 2) Cumulative excess cancer risk for all carcinogens shall not exceed 1x10⁻⁵

3) The soil numerical remedial action objective for benzene in indoor air (vapor intrusion into buildings) is 1.2 mg/kg (DEQ 2003 RBDM, as updated 2012).

* Surrogate value based on toxicity data for naphthalene.

Evaluation of Remedial Alternatives

Four potential remedies were evaluated in the Staff Report for the Site, they are:

- 1 No Action
- 2 Engineering and Institutional Controls
- 3 High Concentration Residuals/Waste Removal at Small Relief Holder and Engineering and Institutional Controls
- 4 Deep Soil Removal, and Engineering and Institutional Controls

These potential remedies were evaluated on the basis of protectiveness, long-term reliability, implementability, implementation risk, and reasonableness of cost, as well as the degree to which they address identified hot spots according to OAR 340-122-090.

Description of Selected Remedy

DEQ has selected the remedial action recommended in its Staff Report as the final remedy for the Site in accordance with Oregon Revised Statutes (ORS) 465.200 et. seq. and Oregon Administrative Rules (OAR) Chapter 340, Division 122, Sections 010 through 115. The recommended remedial action includes several measures to meet the above RAOs, including:

- Excavation and off-site disposal of high-concentration residuals/waste at the small relief holder (which will be completed as in conjunction with the remedial action for the portion of the MGP site owned by EWEB);
- Engineering controls consisting of a cap to the areas of the cul-de-sac not already paved;
- Institutional controls consisting of an Easement & Equitable Servitude restricting property use, and development of a site management plan (SMP);
- Inspection and maintenance of the Site conditions and features according to the SMP.

The selected remedy is described in more detail below.

Excavation and off-site disposal of high-concentration residuals/waste

High-concentration residuals/waste will be removed at the small relief holder foundation by excavation. This excavation will be completed as part of the remedial action on the adjacent portion of the MGP site owned by EWEB. This material will be disposed of properly after characterization.

Engineering Controls

Engineering controls will consist of capping the small area of the cul-de-sac that is not already paved.

Institutional Controls – Easement and Equitable Servitude

A DEQ-approved Easement and Equitable Servitude (E&ES) will be recorded in the county property records with the following general requirements for the Management Area:

1. **Groundwater Use Restrictions:** No one may extract through wells or by other means or use the groundwater at the Site for consumption or other beneficial use. This prohibition does not apply to extraction of groundwater associated with groundwater treatment or monitoring activities approved by DEQ or to temporary dewatering activities related to construction, development, or the installation of sewer or utilities at the Site. Any generator of waste water must conduct a waste determination on any groundwater that is extracted during such monitoring, treatment, or dewatering activities and handle, store and manage waste water according to applicable laws.
2. **Soil Cap Engineering Control.** Except in accordance with a SMP approved in writing by DEQ, no one may conduct or allow operations or conditions on the Site or use of the Site in any way that will or likely will penetrate the cap at the Site or jeopardize the cap's protective function as an engineering control that prevents exposure to contaminated soil, including without limitation any excavation, drilling, scraping, or uncontrolled erosion. The Site owner will maintain the cap, if applicable, in accordance with an SMP approved in writing by DEQ.
3. No buildings for human occupancy shall be constructed at the Site (e.g., offices, shops, retail development, or residential development) unless additional Site-specific analyses are conducted to demonstrate that RAOs will be met, which analyses must be approved by DEQ, and unless aspects of the building construction to meet RAOs, if any, are approved by DEQ.

Institutional Controls – Site Management Plan

A DEQ-approved SMP will be prepared for the Site, which will cover the following general topics:

1. **Excavation worker health and safety.** The SMP will describe how work shall be conducted at the Site, who can complete the work, what notifications will need to occur prior to work commencing, measures for personal protective equipment and training required to work on the Site, and general protocols for excavating, storing, characterizing, and disposing of any excavated materials from the Site.

2. Cap Maintenance. The SMP will detail how and at what interval the cap will be inspected and outline any regularly scheduled cap maintenance that may be required. The SMP will also include responsibility for this task and an appropriate reporting schedule.

Residual Risk

Under the recommended remedial action alternative, Site risks will meet the protectiveness standard required by OAR 340-122-0040 by applying the following measures.

- **Excavation and Construction Worker Scenario.** Risk from this exposure type is reduced to acceptable levels through a SMP that will be prepared to direct all future excavation activities.
- **Occupational Worker Scenario.** To address this risk, an asphalt cap will be placed over the Site, and cap inspections and maintenance will be included in the SMP.
- **Potential Future Exposure to Vapor Intrusion to Buildings.** No buildings currently exist at the Site. However, to address the potential for future unacceptable risk regarding commercial building structures, an institutional control will be included in the property Easement and Equitable Servitude. Specifically, no buildings for continuous human occupancy will be allowed on the Site unless additional site-specific analyses are conducted in the future to demonstrate that RAOs would be met and the analyses are coordinated with DEQ, and aspects of the building construction to meet RAOs are approved by DEQ.

Statutory Determination

The selected remedial action for MGP-related contamination at the cul-de-sac portion of the former Eugene Manufactured Gas Plant is considered to be protective, effective, reliable, and cost-effective. The selected remedy also treats or removes the identified hot spots of contamination to the extent feasible in accordance with OAR 340-122-090. The selected remedy is consistent with the current and future anticipated use of the Site and is protective of current and future anticipated beneficial water use within the Site Locality of the Facility (LOF). Residual risks associated with the selected remedy are below DEQ's acceptable risk levels.

Attached

Figure 1

Figure 2

Administrative Record

Administrative Record

AECOM. Memorandum on Subsurface Conditions at Intersection of Hilyard Street and East 8th Avenue. September 30, 2011.

Axelrod and Windward. 2010a. Focused Soil/Fill Management Plan, Electric Transmission Line Construction Project – Eugene Former MGP Site, prepared for Eugene Water & Electric Board, August 31, 2010 (Draft).

Axelrod and Windward. 2010b. Removal Action at Gas Holder Foundation, Eugene Former MGP Site, Technical Memorandum, DEQ Review Draft, December 8, 2010.

Axelrod and Windward. 2011. Field Activity Summary - Focused Soil/Fill Management Plan, Eugene Former MGP Site, prepared for Eugene Water & Electric Board, April 2011.

Axelrod, Otak, and Windward. 2011. Focused feasibility study addendum – Eugene Former MGP Site, prepared for Eugene Water & Electric Board, by Axelrod LLC with support from Otak Inc. and Windward Environmental LLC, July 2011.

DEQ. 1996a. File Review Summary, Eugene Former Manufactured Gas Plant Site. DEQ, Western Region Cleanup Program, Eugene, OR.

DEQ. 1998a. Memorandum dated March 31, 1998, from B. Mason, DEQ, to D. Unfried, EWEB, approving field sampling plan for focused groundwater investigation with limited comments, Eugene former manufactured gas plant site. DEQ, Western Region Cleanup Program, Eugene, OR.

DEQ. 1999b. Letter dated January 27, 1999, from M. McCann, DEQ, to D. Unfried, EWEB, regarding approval of project documents (ISI Work Plan [PTI 1995], ISI Report [PTI 1996], FGI FSP [Exponent 1998], FGI Results [Exponent 1998]), Eugene manufactured gas plant site. DEQ, Western Region Cleanup Program, Eugene, OR.

DEQ. 1999c. Letter dated January 27, 1999, from M. McCann, DEQ, to D. Unfried, EWEB, regarding approval of Phase I remedial investigation work plan with direction to address limited DEQ comments in later report or in future project meeting, Former Eugene manufactured gas plant site. DEQ, Western Region Cleanup Program, Eugene, OR.

DEQ. 1999f. Letter dated December 3, 1999, from M. McCann, DEQ, to D. Lawder, EWEB, regarding approval of Level 1 ecological risk assessment, former Eugene manufactured gas plant site. DEQ, Western Region Cleanup Program, Eugene, OR.

DEQ. 2001a. Letter dated January 4, 2001, from M. McCann, DEQ, to D. Lawder, EWEB, regarding approval of final Phase I Remedial Investigation completed at former Eugene manufactured gas plant site. DEQ, Western Region Cleanup Program, Eugene, OR.

DEQ. 2001b. Letter dated January 4, 2001, from M. McCann, DEQ, to D. Lawder, EWEB, regarding approval of final Land and Beneficial Water Use Survey completed at former Eugene manufactured gas plant site. DEQ, Western Region Cleanup Program, Eugene, OR.

DEQ. 2002. Letter dated December 20, 2002 from G. Brown, DEQ, to D. Lawder, EWEB, regarding approval of Human Health Risk Evaluation and Focused Feasibility Study – Annotated Outline, Eugene former manufactured gas plant site, Eugene, Oregon. DEQ, Western Region Cleanup Program, Eugene, OR.

DEQ. 2003. Letter dated November 26, 2003 from G. Brown, DEQ, to D. Lawder, EWEB, regarding focused feasibility study, Eugene former manufactured gas plant site, Eugene, Oregon. DEQ, Western Region Cleanup Program, Eugene, OR.

DEQ. 2006. Email dated April 5, 2006, from G. Brown, DEQ, to R. Axelrod, Swanson Hydrology & Geomorphology, regarding approval of final revisions to revised draft focused feasibility study, Eugene manufactured gas plant site. DEQ, Western Region Cleanup Program, Eugene, OR.

DEQ. 2010a. DEQ letter from Geoff Brown/DEQ to Debbie Spresser/EWEB approving the *August 9, 2010 (Draft) Focused Soil/Fill Management Plan, Electric Transmission Line Construction Project, Eugene Former MGP Site*, letter dated August 11, 2010.

DEQ. 2010b. DEQ letter from Geoff Brown/DEQ to Debbie Spresser/EWEB regarding *MGP Waste discovered during the Electric Transmission Line Construction Project – Eugene, October 1, 2010, Eugene Former MGP Site, ECSI 1723*, letter dated October 1, 2010.

DEQ. 2011. DEQ letter from Geoff Brown/DEQ to Jared Rubin/EWEB regarding approval of *Focused Feasibility Study Addendum, May 2010, Eugene Former MGP Site, ECSI 1723*, letter dated June 20, 2011.

Exponent. 1998a. Focused Groundwater Investigation Field Sampling Plan. Prepared for Eugene Water & Electric Board, Eugene, Oregon, March 18, 1998. Exponent, Lake Oswego, OR.

Exponent. 1998b. Results from focused groundwater investigation, Eugene former MGP site, August 12, 1998. Prepared for Eugene Water & Electric Board, Eugene, Oregon. Exponent, Lake Oswego, OR.

Exponent. 1998c. Phase I remedial investigation work plan, Eugene former MGP site. Prepared for Eugene Water & Electric Board, Eugene, Oregon. Exponent, Lake Oswego, OR.

Exponent. 1999a. Letter dated July 29, 1999 from R. Axelrod, Exponent to M. McCann, DEQ, regarding continued groundwater monitoring schedule – change to semiannual basis, Eugene former manufactured gas plant site, Eugene, Oregon.

Exponent. 1999b. Level I (scoping) ecological risk assessment, technical memorandum, November 1999. Prepared for Eugene Water & Electric Board, Eugene, Oregon. Exponent, Lake Oswego, OR.

Exponent. 1999c. Level I (Scoping) Ecological Risk Assessment report, prepared for Eugene Water & Electric Board by Exponent Inc., Lake Oswego, Oregon, January 1999.

Exponent. 2000a. Land and beneficial water use survey, former Eugene MGP site, December 2000. Prepared for Eugene Water & Electric Board, Eugene, Oregon. Exponent, Lake Oswego, OR.

Exponent. 2000b. Phase I remedial investigation report, former manufactured gas plant site, Eugene, Oregon, December 2000. Prepared for Eugene Water & Electric Board, Eugene, Oregon. Exponent, Lake Oswego, OR.

Exponent, 2001a. Email dated July 3, 2001, from R. Axelrod, Exponent, to M. McCann, DEQ, confirming agreement to modify field monitoring for July 2001.

Exponent. 2002a. Human health risk evaluation, former manufactured gas plant site, Eugene, OR, August 2002. Exponent, Lake Oswego, OR.

Exponent. 2002b. Letter dated October 22, 2002 from R. Axelrod, Exponent, to A. Spencer, DEQ, regarding discontinuation of site monitoring, former manufactured gas plant site, Eugene, Oregon. Exponent, Lake Oswego, OR.

Exponent. 2002c. Focused feasibility study outline, Eugene former manufactured gas plant site, Eugene, Oregon, November 6, 2002. Prepared for Eugene Water & Electric Board, Eugene, OR. Exponent, Lake Oswego, OR.

Exponent. 2003. Technical memorandum: supplemental discussion of cumulative and inhalation risks, former manufactured gas plant site, February 10, 2003. Prepared for Eugene Water & Electric Board, Eugene, OR. Exponent, Lake Oswego, OR.

PERCo. Letter to Geoffrey Brown, Department of Environmental Quality. Cul-de-Sac Property at Hilyard Street and 8th Avenue. October 27, 2011

Progress Reports. Project Quarterly Progress Reports for period 1998 through September 2011.

PTI. 1995. Initial site investigation work plan, former manufactured gas plant site, Eugene, Oregon. Prepared for Eugene Water & Electric Board, Eugene, Oregon. PTI Environmental Services, Lake Oswego, OR.

PTI. 1996. Initial site investigation report, former manufactured gas plant site, Eugene, Oregon. Prepared for Eugene Water & Electric Board, Eugene, Oregon. PTI Environmental Services, Lake Oswego, OR.

Swanson and Windward. 2006. Final Focused Feasibility Study, Former Manufactured Gas Plant Site, Eugene, Oregon, April 2006. Prepared for Eugene Water & Electric Board, Eugene, OR. Swanson Hydrology & Geomorphology, Santa Cruz, CA.

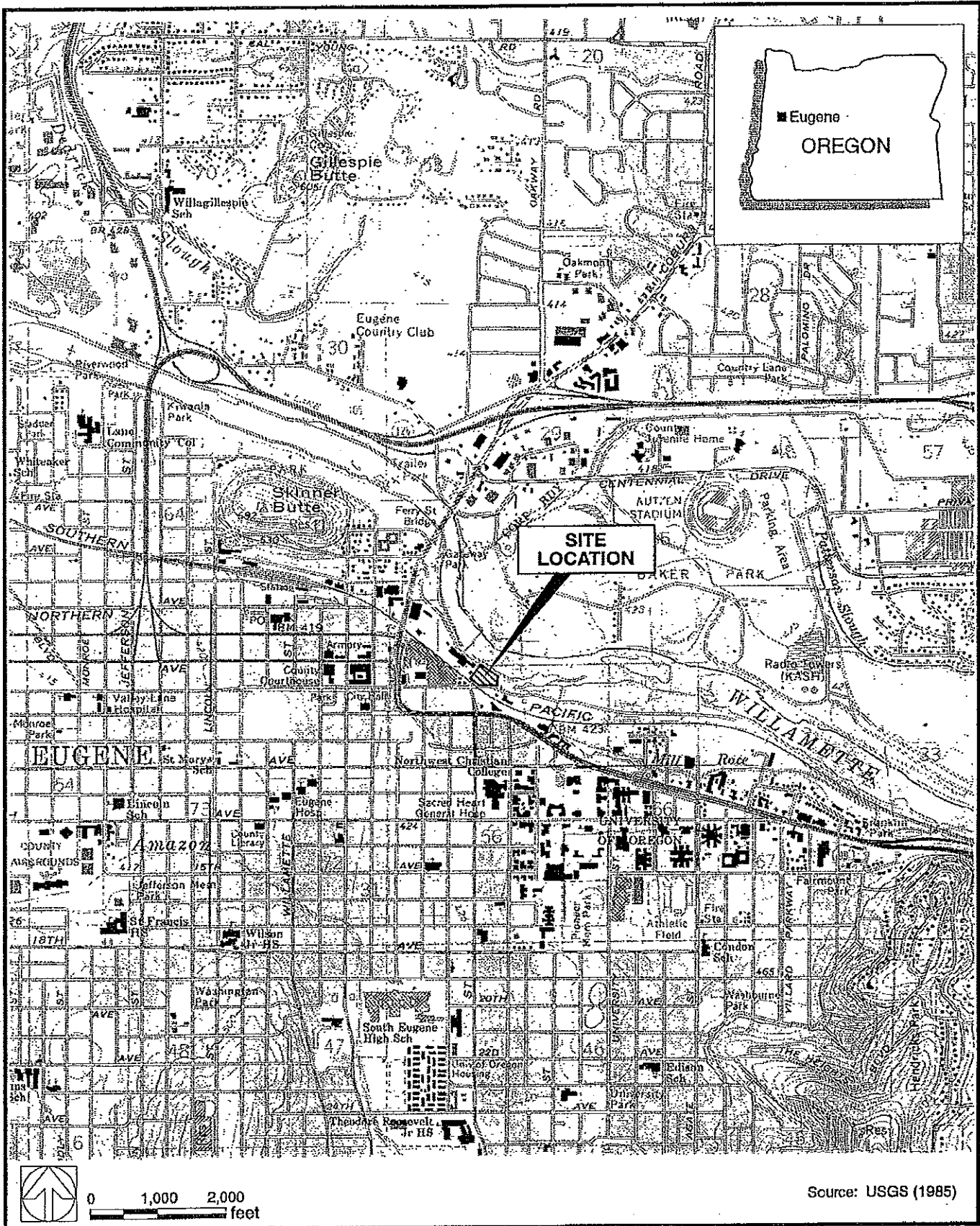
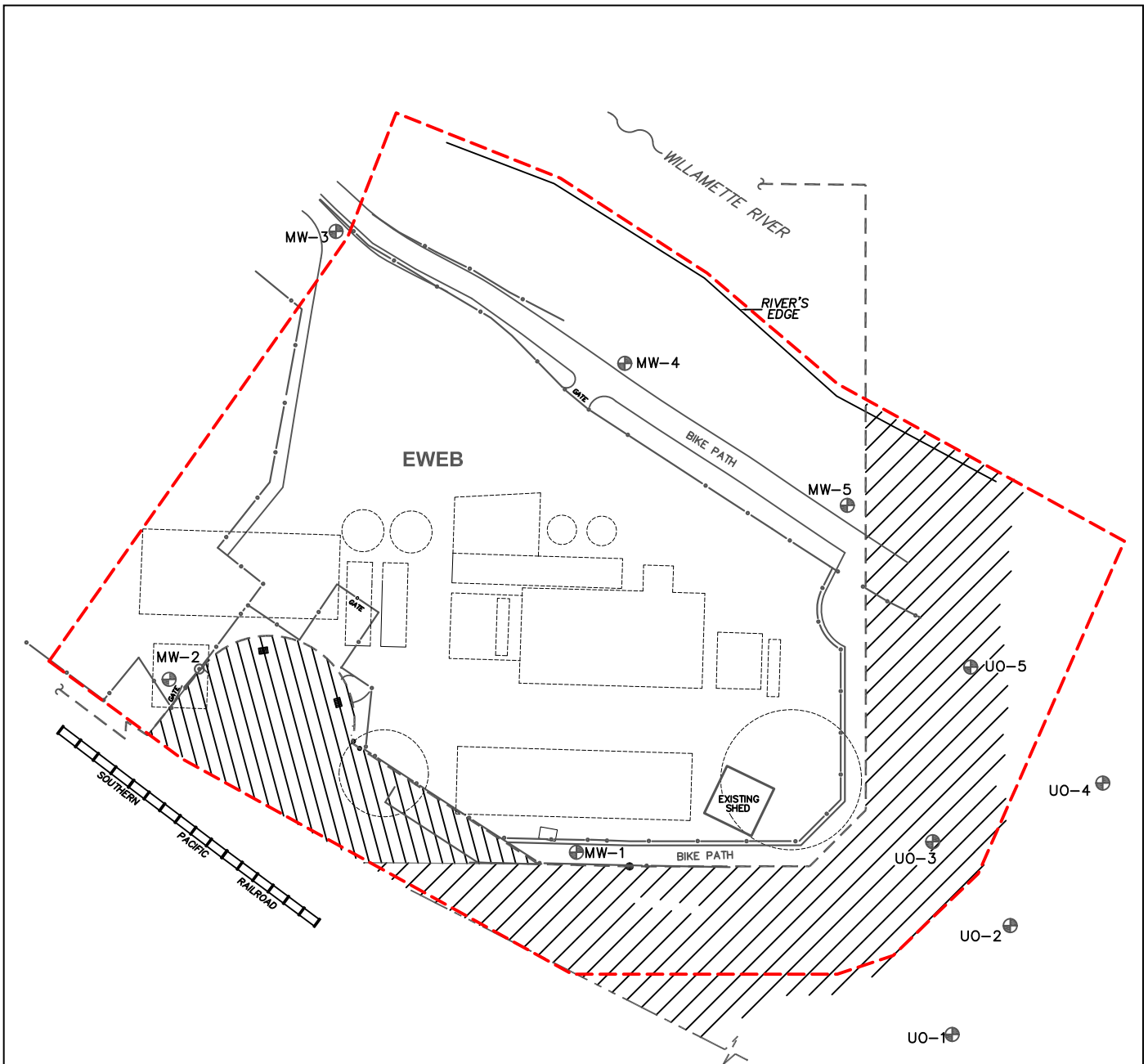









Figure 1. Site Location Map



LEGEND

-  Monitoring well
-  EWEB property line
-  Approximate location of revised locality of facility (LOF)
-  Fence line
-  Railroad
-  University of Oregon Property
-  Cul-de-Sac Property



NOTE: Property boundary between City of Eugene and University of Oregon approximately located.

Source: W&H Pacific. Figure base by Exponent, Inc.



Figure 3.
DEQ Revised Locality of Facility for Contamination
(Base Drawing is Figure 6 from the FFS)