CENTRAL
ENGINEERING SERVICES

Contaminated Media Management Plan

Galvanizers Company
Portland, Oregon
ECSI ID#: 1196

Central Project: GalvCo-1-01-03

Prepared For:

GalvCo Properties, LLC
12909 SW 68th Parkway, Suite 140
Tigard, Oregon

SBA
U.S. Small Business Administration
SERVICE-DISABLED VETERAN-OWNED CERTIFIED

Date: March 6, 2026

CENTRAL
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March 6, 2026

Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, Oregon

Attention: Jim Orr (Jim.ORR@deq.oregon.gov)

Subject: Contaminated Media Management Plan
Galvanizers Company
2406 NW 30th Avenue
Portland, Oregon
ECSI ID#: 1196
Central Project No. GalvCo-1-01

Central Engineering Services (Central) is pleased to submit this Contaminated Media Management Plan (CMMP) on behalf of GalvCo Properties, LLC (GalvCo Properties), for the Galvanizers Company now known as GalvCo Company (Galvanizers) site located primarily at 2406 NW 30th Avenue in Portland, Oregon. This CMMP addresses the management of potentially contaminated media that could be encountered during future site improvement activities involving subsurface work. This document is intended to provide guidance to site personnel or construction contractors on the proper management of potentially contaminated soil or groundwater. The 2025 Risk Evaluation Report prepared by Central is included as an appendix to the CMMP to provide additional detail regarding nature and extent of contamination at the Galvanizers facility.

Thank you for your continued support on this project. Please feel free to call with questions about this document.

Respectfully,

Central Engineering Services

Mike Coenen, PE
Principal Engineer

cc: Scott Jerger, Field Jerger, LLC
GalvCo Properties, LLC

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APPENDIX

1.0 INTRODUCTION

This CMMP has been prepared on behalf of GalvCo Properties, LLC. (GalvCo Properties) for the Galvanizers Company, now known as GalvCo Company (Galvanizers), site. The Oregon Department of Environmental Quality (DEQ) Environmental Cleanup Site Information (ECSI) database number for the Galvanizers site is 1196. The site consists of the subject properties owned by GalvCo Properties and described in Section 2.1 below (Subject Property). This document is intended to assist personnel and construction contractors in field identification and management of potentially contaminated media (soil and groundwater) as well as clean soil and debris that could be encountered at the Subject Property during future site improvement activities involving subsurface work. As of the date of this CMMP, specific site improvements are not planned; however, the Subject Property is an active industrial facility and it is reasonable to assume future site improvements that include subsurface work may occur. This CMMP includes field protocols for identification, response actions, communication, removal, segregation, temporary storage or stockpiling, transportation, treatment, and disposal of contaminated media, clean soil, and debris.

2.0 BACKGROUND AND HISTORY

2.1 SUBJECT PROPERTY DESCRIPTION

The Subject Property is comprised of the following addresses and lot numbers:

Address	Lot Number, Block Number	Description
2406 NW 30th Avenue	Lots 5, 6, and 7, Block 5	Main Plant
2406 NW 30th Avenue	Lots 8 and 9, Block 5	Storage Area North of Main Plant
2429 NW 29th Avenue	Lots 4 and 5, Block 4	Building 14 and Lot to the South
2455 NW 29th Avenue	Lot 7, Block 4	Russell Building
2523 NW 29th Avenue	Lots 8 and 9, Block 4; Lot 10, Block 5	Storage Area

The Subject Property is shown relative to surrounding physical features on Figure 1. The Subject Property layout and surrounding properties are shown on Figure 2. The Subject Property is located in Portland, Oregon, in the northwest quarter of the southwest quarter of Section 29, Township 1 North, Range 1 East (Willamette Meridian) and is bound by industrial and commercial properties to the north and south, NW 30th Avenue to the west, and NW 29th Avenue to the east. Galvanizers (now ZinkPower Portland, LLC) uses a maintenance building, office, and paved yard located west of NW 30th Avenue, across from the main plant building. However, industrial activity is not associated with these properties. Galvanizing and associated activities conducted by ZinkPower Portland, LLC occur on the lots described above that comprise the Subject Property

Metal parts are galvanized in the main plant building, which houses the process tanks in an L-shaped configuration. Steel staging and steel products storage yards are north and west of the main plant building. Prior to 2021, the Galvanizers office building was north of the steel products yard (on Lot 8 and 9, Block 4 and Lot 10, Block 5). In 2021, office personnel relocated to the Lindsey Building (2451 NW 30th Ave), which is on the west side of NW 30th Avenue (see Figure 2). The former office building was demolished, which allowed for expansion of the steel products yard (2523 NW 29th Avenue as shown on Figure 2). The Russell Building, between the main plant and NW 29th Avenue, is used for storage. Building 14, east of the main plant building

and south of the Russell Building, houses the acid recovery system and a parts shop. A gravel storage area is on the southeast corner of the Subject Property. The gravel rack yard and the Quonset hut are also south of the main plant building. The gravel rack yard and Quonset hut are not part of the Subject Property.

The area is zoned heavy industrial (IH) with a prime industrial (k) overlay. The Subject Property is within the Guilds Lake Industrial Sanctuary plan district. This designation protects the area for industrial uses as stipulated by City of Portland (COP) zoning code, Chapter 33.531. Based on this designation, the area will likely remain zoned for heavy industrial use for the foreseeable future.

2.2 SUBJECT PROPERTY HISTORY

Galvanizers began operating at the Subject Property in the 1940s. Galvanizers ceased operations on October 31, 2019. In 2019, Galvanizers sold its assets and its right, title, and interest in and to its business to ZinkPower-Portland, LLC, which has continued galvanizing operations at the Subject Property. ZinkPower Portland LLC is still operating at the site and uses "Galvanizers Company" as an assumed business name. Before the 1940s, the Subject Property was undeveloped.

The galvanizing plant has remained fundamentally unchanged since operations began in 1941. The galvanizing process is performed in an L-shaped configuration within the main plant building (see Figure 2), beginning with the caustic bath and caustic rinse tanks, followed by the acid process tanks and acid rinse tanks, the flux tank, and the molten-zinc tanks.

Over its decades-long history, Galvanizers completed the following improvements to the facility:

- Converted the boiler used to make steam heat for the process tanks from heating oil to natural gas.
- Paved the storage yard and installed a drywell. The drywell was subsequently removed in 2001 as part of stormwater management improvements.
- Replaced the steam sparge system with a zirconium heat-exchanger system in 1974. The zirconium heat-exchanger prevented the acid tanks from spilling over on the occasions when excess condensate from the steam sparge system overfilled the tanks.
- Installed an asphalt berm containment around the process tanks, which was replaced with concrete containment in 1993.
- Installed a pretreatment system for stormwater in 2009 with upgrades added in 2011.
- Installed a Metaullics Zinkoff Recovery (MZR) system in July 2012. The MZR system recovers free zinc for reuse in the hot dip galvanizing kettles.

2.3 GEOLOGICAL AND HYDROGEOLOGICAL SETTING

Before the early 1900s, the area near the Subject Property was covered by the historical Guilds Lake. Starting in approximately 1905, Guilds Lake was filled using soil sluiced from the nearby hillside and dredged fill from the Willamette River.

Based on nearby explorations, subsurface conditions generally consist of sand to a depth of approximately 16 feet below ground surface (bgs) underlain by silt to a depth of approximately 20 feet bgs. Sand with silt underlies the silt to the total depths explored. The sand unit is interpreted as the sluiced fill or dredged fill that was reportedly used to fill Guilds Lake. The silt and sand with silt units are interpreted as the former bottom of Guilds Lake. A potentiometric surface and geologic cross-sections showing the subsurface lithology and groundwater elevations are shown on Figures 3 through 6.

Shallow groundwater at the Subject Property has been encountered at depths between approximately 9 and 14 feet bgs. Based on groundwater monitoring data, the groundwater flow direction is to the northeast, toward the Willamette River.

3.0 KNOWN ENVIRONMENTAL CONDITIONS

The Subject Property has an extensive history of environmental investigations dating back to the 1990s. During these investigations, soil and groundwater samples were collected from on-site and off-site locations. A detailed summary of those investigations including details regarding the nature and extent of contamination on the Subject Property is provided in the 2025 Risk Evaluation Report included in Appendix A of this CMMP.[1]

The 2025 Risk Evaluation Report concluded that diesel-range hydrocarbons in soil pose an unacceptable risk to construction worker receptors and lead in soil poses an unacceptable risk to occupational, construction worker, and excavation worker receptors. The risk is isolated to selected areas of the Subject Property and is considered a complete pathway under future scenarios where excavation may be needed for maintenance purposes or redevelopment. Additionally, the 2025 Risk Evaluation Report concluded no beneficial use of groundwater exists within 0.5 miles of the Subject Property and an ecological risk was not suspected based on the Level 1 Ecological Scoping. Based on the conclusions of the 2025 Risk Evaluation Report, DEQ indicated a conditional no further action (NFA) determination is possible and requested this CMMP as part of the conditional NFA.

3.1 AREAS REQUIRING MANAGEMENT DURING MAINTENANCE OR REDEVELOPMENT

As detailed in the 2025 Risk Evaluation Report (see Appendix A), lead and diesel-range hydrocarbons were detected in soil samples at concentrations exceeding DEQ's applicable risk-based concentrations (RBCs). The elevated concentrations of lead are generally situated near the former drywell location. The elevated concentrations of diesel-range hydrocarbons are beneath the Russell Building, in the alley on the east side of the plant, and near the former drywell. These locations are shown in Figure 2. Because the Subject Property is covered by asphalt concrete, buildings, and other hardscape material, the potential for routine exposure to subsurface soil by occupational and construction workers is considered low. However, future intrusive activity that exposes subsurface soil at the Subject Property may potentially encounter soil impacted with lead and/or diesel-range hydrocarbons at concentrations greater than appliable DEQ RBCs, creating a complete exposure pathway for the identified receptors.

Implementation of this CMMP is intended to manage and control potential exposure to contaminated media encountered during future excavation activities at the Subject Property. Given the long history of industrial use, this CMMP applies to excavated soil from the entire Subject Property, not just those areas identified with RBC exceedances.

4.0 WORKER SAFETY

Prior to beginning earthwork activities, the property owner, the operator, or the contractor will prepare and implement a Hazard Communication Program (HCP). The HCP fulfills "workers right to know" requirements (29 CFR 1926.59). If completed by the contractor, a copy of the HCP must be submitted to the property owner prior to the start of work on the project. During work on the project, the HCP must be posted at the Subject Project. The contractor is responsible for notifying subcontractors of pertinent environmental conditions. Subcontractors may either adopt the contractor's HCP or must prepare their own HCP. The subcontractor's HCP should be used in conjunction with, not in place of, the contractor's HCP, and the project specifications. Each contractor and their subcontractors are responsible for the safety of its employees, including compliance with applicable Occupational Safety and Health Administration (OSHA) regulations. In addition, all personnel

[1] Central Engineering Services. 2025. *Risk Evaluation Report, Galvanizers Company, Portland, OR*. Prepared for GalvCo Company. October 31, 2025.

working on the Subject Property that might come in contact with contaminated media should have received 24 or 40 hours of OSHA training on safe work practices for hazardous waste sites. In addition to the HCP, a site-specific health and safety plan (HASP) should be prepared prior to beginning earthwork activities. The property owner, operator, or the contractor should prepare and implement the HASP in accordance with OSHA requirements to ensure adequate protection for their workers while on site.

5.0 CONTAMINATED MEDIA MANAGEMENT PLAN

The goals of this CMMP are to (1) provide site personnel and contractors with information on the character and known distribution of contamination at the Subject Property, (2) establish a decision structure to assist site personnel and contractors in the detection and management of contaminated soil or groundwater during intrusive activities, and (3) help prevent the exacerbation of environmental conditions. This CMMP should be provided to site personnel and contractors prior to all intrusive subsurface activities at the Subject Property.

5.1 SOIL MANAGEMENT

Diesel-range hydrocarbons and metals (lead) are the primary contaminants of concern at the Subject Property. As noted earlier, the majority of known impacted soil is near the former drywell and near the Russell Building (see Figure 2). However, considering its long history of industrial use, it is possible that impacted soil could be encountered throughout the Subject Property. Therefore, potentially impacted soil encountered during subsurface intrusive activities should be either pre-screened prior to excavation or screened and separated during excavation for further characterization as needed upon removal to evaluate final disposition options for the material. All soil to be excavated should be analyzed for Resource Conservation and Recovery Act (RCRA) 8 metals either prior to excavation or from stockpiles.

Based on historical use and the results of soil sampling completed to date, any area of subsurface excavation should be evaluated for proper handling and disposal. Due to the potentially separate and isolated nature of contaminants at the Subject Property and the different management strategies for each type of contaminant, all soil that screens positive for possible contamination should be separated and stockpiled for chemical characterization prior to on-site re-use and/or off-site disposal.

5.1.1 Identification and Management of Contaminated Soil

5.1.1.1 Petroleum-Contaminated Soil

The four primary physical indicators of petroleum-related contamination in soil include staining, sheens, elevated photoionization detector (PID) readings, and petroleum-like odor. During excavation activities, soil should be continuously observed for evidence of staining, elevated PID readings, and sheen. Odor can be subjective, and inhalation of vapors from impacted soil is harmful to human health. Therefore, odor is considered an inadvertent field indicator and will not be used for continuous screening of soil.

Staining: Generally, soil that is contaminated with petroleum hydrocarbons exhibits gray or black staining, although other contaminants and natural conditions may also cause staining.

Sheen: Sheen is another indication of petroleum contamination. Soil with a sheen may appear shiny and reflective. Sheens from heavily impacted soil may appear iridescent with rainbow-like colors. Sheens may also be observed in contaminated groundwater.

PID Readings: PID readings involve the measurement of headspace vapors originating from a soil sample. PID screening is performed by placing a soil sample in a plastic bag. Air is captured in the bag, and the bag is shaken to expose the soil to the air trapped in the bag. The probe of a PID is inserted into the bag, and measures petroleum constituent and volatile organic compound (VOC) vapor concentrations in units of parts per million (ppm). A PID is designed to quantify VOC vapor concentrations in the range between 1 and 2,000 ppm.

Odor: Petroleum products, solvents, and other types of contaminated soil may release vapors when exposed to the atmosphere. If concentrated enough, these vapors will be interpreted as an odor. Odors may also be present in contaminated groundwater.

If soil exhibiting evidence of contamination or other debris associated with chemical contamination (e.g., transformers, drums, other containers, and underground storage tanks [USTs]) is encountered during excavation work, special soil handling procedures must be initiated and a qualified environmental professional should be retained to assist with implementation of this CMMP and proper waste characterization and disposal.

Although heavily impacted soil or groundwater may have obvious indicators of contamination, some types of contamination are only detectable with the aid of specific environmental field screening equipment and laboratory testing. Therefore, soil that may appear to be clean based on the lack of staining, sheen, or odor may need to be handled as contaminated soil based on removal area and/or chemical analytical testing. Soil that has indicators of contamination should be characterized prior to re-use and/or off-site disposal.

During excavation or grading, contractors will visually observe excavated materials for signs of contamination such as staining, discoloration, odors, or debris inconsistent with native soil. If suspect material is encountered, work will be temporarily halted in the affected area until a qualified environmental professional provides direction.

Impacted soil may only be reused in approved engineered locations where exposure pathways are controlled, and such reuse must be consistent with DEQ solid waste rules and guidance (e.g., Clean Fill Determinations, 2019) and local facility acceptance criteria.[2]

5.1.1.2 Metals-Contaminated Soil

Metals-impacted soil does not generally present visual indicators of contamination. Based on the results of environmental explorations completed to date, metals contamination was identified in the vicinity of the former drywell (see Figure 2). Chemical analytical testing is needed on soil to evaluate for the presence of metals and to determine proper handling and disposal methods.

5.1.2 Soil Handling

If contaminated soil is encountered during excavation activities, site personnel and/or contractors shall be responsible for immediately segregating the material, notifying a qualified environmental professional, and barricading or otherwise isolating the segregation area and avoiding covering the excavation area until site conditions can be properly evaluated for potential environmental impacts. The property owner or the contractor should consult a qualified environmental professional for recommended chemical analytical testing of contaminated soil to evaluate disposal options. Site personnel and/or contractors shall not replace any known or suspected contaminated soil in any excavation area without prior approval from an authorized site representative or qualified environmental professional.

5.1.3 Soil Field Screening Protocol

Soil exhibiting sheen, appearing stained or discolored, or generating headspace PID measurements exceeding 20 ppm shall be separately stockpiled and sampled to evaluate options for reuse and/or off-site disposal. Conversely, if excavated soil does not exhibit any sheen or staining, and does not generate PID measurements above 20 ppm, then the material can be managed as clean fill, unless soil was generated from areas where the presence of metals or other contaminants that do not exhibit field indicators is readily known.

[2] DEQ, 2019. *Clean Fill Determinations*. February 21, 2019.

Soil field screening will include observation of any disturbed Subject Property soil. Soil field screening frequency will be conducted in general accordance with the stockpile sampling frequency presented in Section 5.1.4. Field screening will focus on soil that appears to have indications of petroleum-hydrocarbon-related impact. If evidence of contamination is not observed in excavation area(s), a random sample will be collected for field screening. The field screening process includes the following:

- Observe the sidewalls and base of the excavation (or trench) for evidence of possible contamination.
- Collect grab samples by hand or trowel (approximately one hand full) that are representative of the material being stockpiled. If used, the trowel will be decontaminated before and between sampling intervals.
- Retain a portion of the samples (approximately the size of half a sugar cube) for sheen testing, which involves dropping the soil into a black pan with water to observe the degree of soil sheen (no sheen, slight sheen, moderate sheen, or heavy sheen).
- Place the majority of the grab sample into a plastic bag with trapped air. Allow the bagged sample to sit for approximately one minute and then test for headspace vapors using a hand-held PID. Based on the routine field screening process and the use of standard bag size, we can assume that the amount of trapped air in each bag is approximately equivalent for all field-screened samples. Calibrate the PID on a daily basis and document results in a calibration log that will document the PID model calibration standard used and background level after calibration.
- Record field screening documentation (i.e., staining, sheen, headspace vapor measurements, and odors) and a brief description of the soil type in soil field screening logs. The field logs will indicate areas and associated volumes of excavated material requiring stockpiling for further evaluation.

Field management of excavated soil will be supported using the field-screening criteria and decision matrix summarized below.

Field-Screening Criteria and Decision Matrix

<table>
<tr><th>Sheen Results</th><th>PID Results (ppm)</th><th>Visual</th><th>Action</th></tr>
<tr><td>No Sheen</td><td><20.0</td><td>No Staining or odor</td><td>No action needed. Material can be managed as clean fill with supporting analytical data confirming metals concentrations are less than clean fill screening levels (CFSLs).[2]</td></tr>
<tr><td colspan="3">If any one of the three field screening indicators below is exceeded, follow the appropriate action.</td><td rowspan="2">Soil should be separately stockpiled until further sampling and analysis is conducted and analytical results are available for appropriate disposal location decision making.</td></tr>
<tr><td>Slight sheen, moderate sheen, or heavy sheen.</td><td>>20.0</td><td>Staining or odor</td></tr>
</table>

5.1.4 Stockpiling and Sampling

Soil that does not meet field-screening criteria must be stockpiled for further evaluation. Soil that is placed in temporary stockpiles must be well maintained at all times. All stockpiled soil must be placed on impermeable plastic sheeting (minimum 6-mil thick) with a berm around the perimeter of the stockpile and a plastic sheeting cover. The plastic sheeting and berm prevent the runoff of stockpiled soil contaminants to surrounding areas. The berm may be constructed with hay bales or other equivalent methods that will contain the stockpiled soil. The bottom plastic sheeting should be lapped over the berm materials, and the soil stockpile within the berm should also be covered with plastic sheeting to prevent erosion or leaching of contaminants from the soil stockpile impacting the underlying soil. The upper plastic sheeting covering the soil stockpile should be secured using sand bags or equivalent. The upper plastic sheeting prevents the stockpiled soil from being exposed to precipitation and wind.

Soil will be field screened following the protocol above. Soil not meeting field-screening criteria for clean fill will require additional sampling to support final disposition. Stockpiled soil will be sampled using a composite sampling scheme at the frequency specified below.

Stockpile Sampling Frequency

Stockpile Volume (cubic yards)	Number of Composite Samples to Collect
0-10	2
11-50	3
51-100	4
101-500	5
501-1,000	7
Greater than 1,000	10

Note: Each composite sample will be comprised of five sub-samples collected from a particular area of the stockpile. Stockpiles greater than 1,000 cubic yards will be sampled at a rate of 10 composites for the first 1,000 cubic yards, plus one composite for each additional 500 cubic yards.

Samples will be collected using a decontaminated trowel. Each discrete portion of the sample will be placed into a plastic bag or stainless-steel bowl and homogenized. A portion of the sample volume will be retained for field screening using the methods described in Section 5.1.3. The composite samples will be transferred directly into laboratory-prepared containers and submitted under chain-of-custody procedures to an analytical laboratory. The analytical results of composite soil sampling will be used to evaluate suitability for on-site reuse or to identify appropriate off-site disposal facilities. At a minimum, each composite soil sample will be submitted for analysis of the following:

- RCRA 8 total metals by U.S. Environmental Protection Agency (EPA) 6000/7000 Series Methods;
- Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270 SIM; and

- Total petroleum hydrocarbons identification by TPH-HCID.

Based on field screening, observations, and TPH-HCID results, additional analyses may be warranted to adequately characterize the soil for proper management. These additional analyses may include the following:

- Volatile organic compounds (VOCs) by EPA Method 8260B;
- Diesel-range hydrocarbons by NWTPH-Dx if identified by the TPH-HCID results;
- Gasoline-range organics by NWTPH-Gx if identified by the TPH-HCID results;
- Toxicity Characteristic Leaching Procedure (TCLP) RCRA 8 metals by EPA 1311/6000/7000 Series Methods (depending on RCRA 8 total metals results); and
- Polychlorinated biphenyls (PCBs) by EPA Method 8082.

A qualified environmental professional should be retained to assist with soil characterization.

The contractor is responsible for removing all stockpiled soil and debris and restoring stockpile areas to the pre-existing condition. Stockpiled plastic debris is not to remain on the Subject Property or any adjacent sites following stockpile soil removal.

5.1.5 Soil Reuse

Soil that exhibits field screening indications of contamination will be stockpiled at the Subject Property for chemical characterization. The decision for off-site or on-site reuse will be based on analytical results with respect to DEQ RBCs and/or DEQ CFSLs applicable at the time site work is conducted. If on-site reuse of soil is desired and is supported by the results of laboratory analytical testing, the material will remain in a stockpiled state until final placement. Soil that does not exhibit evidence of contamination and with analytical results less than DEQ CFSLs can be reused on- or off-site without restrictions. Any on-site reuse of soil with concentrations above DEQ RBCs and/or DEQ CFSLs must be approved by DEQ prior to re-use. For any off-site or on-site reuse, the soil analytical results, specific areas of placement and cover, and other details related to the final disposition of reused material shall be documented and provided to the property owner.

5.1.6 Load and Haul

Potentially contaminated soil will be stockpiled at the Subject Property for chemical characterization. If the laboratory analytical results indicate that off-site disposal is appropriate, the stockpiled material can be loaded into trucks for transport. The contractor must exercise care during loading of the potentially contaminated soil to minimize spillage of the soil onto the ground surface. All trucks leaving the Subject Property will be free of loose soil on the exterior of the trucks. Contaminated soil loaded into trucks must be covered during transport to the disposal facility. The contractor must use care not to track soil onto city roads and must routinely remove soil from the roads if soil is being tracked onto them. Trucks will not be allowed to leave the site if liquids are draining from the load. Transport tracking tickets may be required to document delivery to the approved disposal facility for each individual truck leaving the Subject Property.

Depending on chemical characterization results, disposal options may include:

- Subtitle D Landfill: for non-hazardous contaminated soil;
- Subtitle C Hazardous Waste Facility: for material exceeding regulatory hazardous waste thresholds; or
- Approved recycling or treatment facility, as determined with the assistance of a qualified environmental professional.

Transportation of waste materials will comply with all federal, state, and local regulations including manifesting and waste tracking as required under Oregon Administrative Rules (OAR) 340-100 through OAR 340-108. Copies of waste profiles and manifests will be maintained in the project file and provided to agencies upon request.

5.1.7 Erosion and Dust Control

Exposed soil is susceptible to erosion by wind and water; therefore, erosion control measures should be planned carefully and in place before site-disturbing activities begin. Silt fences, hay bales, and/or granular haul roads will be used as required to reduce sediment transport during construction to acceptable levels. Measures to reduce erosion should be implemented in accordance with OAR 340-41-006, OAR 340-41-455, and the City of Portland and Multnomah County regulations regarding erosion control. In general, erosion control measures must limit sediment transport, particularly off-site.

Depending on the extent of the excavation activities, erosion and dust control measures will typically be presented in an Erosion and Sediment Control Plan (ESCP) for on- and off-site portions of the Subject Property. An ESCP is a necessary part of the General Permit National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Discharge Permit (1200-C permit). The anticipated erosion and dust control measures to be outlined in the ESCP include the use of silt fences, wattles, stormwater inlet protection, gravel construction entrances, and biofilter bags.

5.1.8 Cultural Resources

The Subject Property is not expected to contain cultural or archaeological artifacts. However, if cultural or archaeological resources are discovered during excavation, work in the area must stop and the Legislative Commission on Indian Services shall be notified by calling (503) 986-1067. The Oregon State Historic Preservation Office should be contacted at (503) 480-9164 regarding discovery or potential damage to archaeological sites.

5.2 GROUNDWATER MANAGEMENT

Depth to groundwater at the Subject Property is anticipated to be approximately 9 to 14 feet bgs. Prior investigations identified total petroleum hydrocarbons and dissolved zinc impacts to groundwater beneath the Subject Property. If excavations require dewatering, groundwater testing will be required to confirm constituent concentrations are within the limits of the COP's batch discharge authorization for discharge to the nearby sewer system. Depending on contaminants in the groundwater and volumes, the on-site stormwater treatment system may be utilized to reduce contaminants to acceptable levels prior to discharge. Contractors should obtain proper authorization from the COP and ZinkPower prior to dewatering activities.

5.3 STORMWATER MANAGEMENT

Runoff of sediment in stormwater will be minimized by implementing applicable stormwater pollution controls. Site personnel and/or contractor(s) are required to obtain all necessary stormwater permits and implement best management practices during construction activities conducted at the Subject Property. Depending on the proposed construction activities, stormwater management practices will be further specified in a 1200-C permit and ESCP, where applicable.

5.4 CMMP RECORDKEEPING AND REPORTING REQUIREMENTS

The Contractor shall be responsible for providing final quantities and locations of soil to the property owner or their qualified environmental professional. Documentation should include soil origin, disposal location, and associated volume. For off-site disposal (if applicable), the Contractor shall provide disposal manifests. For unanticipated conditions, associated earthwork will be documented and reported to the property owner. All activities involving removal of contaminated soil will be performed under the oversight of a qualified

environmental professional. Records will be retained by the property owner and provided to DEQ upon request.

If groundwater discharge to the COP's sanitary, combined, or stormwater conveyance systems becomes necessary, water will be tested for Subject Property contaminants (primarily petroleum hydrocarbons and metals) and the parameters required by the COP's batch discharge authorization. Within 30 days of final discharge, the contractor shall prepare and submit a completed Batch Discharge Report to the COP. A copy of the report will be provided to the property owner. The report will document the total volume discharged and analytical testing results confirming compliance with the discharge limits of the batch discharge authorization.

6.0 UNFORESEEN CONDITIONS

In the event that potentially hazardous conditions are encountered that are not addressed in this CMMP, the contractor shall cease work and notify the property owner. The contractor will then barricade or otherwise isolate the area and avoid filling the area until authorized to do so by the property owner. A qualified environmental professional should be consulted to determine the appropriate course of action to assess potential unknown conditions encountered during excavation. The contractor shall not replace any known or suspected contaminated soil in any excavation area without prior approval by the property owner or the environmental professional.

7.0 MODIFICATIONS TO THE CMMP

This CMMP has been developed based on currently known environmental conditions at the Subject Property and current applicable regulations. If upon completion of excavation activities unanticipated conditions are not encountered, or unanticipated conditions encountered are addressed to unrestricted land use standards consistent with applicable state and local regulations, environmental restrictions will not apply to the Subject Property and this CMMP will no longer be applicable to the Subject Property, pending DEQ approval. If conditions are encountered during redevelopment that result in residual impact remaining in place, this CMMP will be revised to address specific conditions encountered.

8.0 SCOPE, REPRESENTATIONS, AND LIMITATIONS

This CMMP was developed to address known or suspected contaminants associated with industrial activities at the Subject Property. Other chemicals or media that may be encountered or generated during future construction activities are not addressed in this CMMP. In the event that hazardous construction materials are encountered or generated, it is the responsibility of the Contractor to properly handle and dispose of such materials.

Central prepared this CMMP in accordance with generally accepted professional practices related to the nature of the work specified in the CMMP, in the same or similar localities, at the time this plan was prepared. Current Subject Property conditions, laws, policies, and regulations were used to develop this CMMP. Future users of this plan shall consider changes that may have occurred in environmental practices, regulations, and guidance, including risk-based and Clean Fill criteria since plan preparation. No representation is made to any present or future developer or owner of the Subject Property or portions of the Subject Property with respect to future Subject Property conditions, other than those specifically identified in this report.

Any use or interpretation of or reliance on this CMMP is at the sole risk of the user, for which Central will bear no liability to any party, including any present or future developer, owner, Contractor, agent, occupant, consultant, environmental professional, or any other party owning or visiting the Subject Property or portions of the Subject Property based on or arising out of implementation of this CMMP. It is expressly understood that although this CMMP is intended to provide guidance and establish a framework for management of residual chemicals beneath the Subject Property to protect human health and the environment, it in no way

creates any warranties or obligations by Central as to the implementation, adequacy, or success of protective measures under this CMMP.

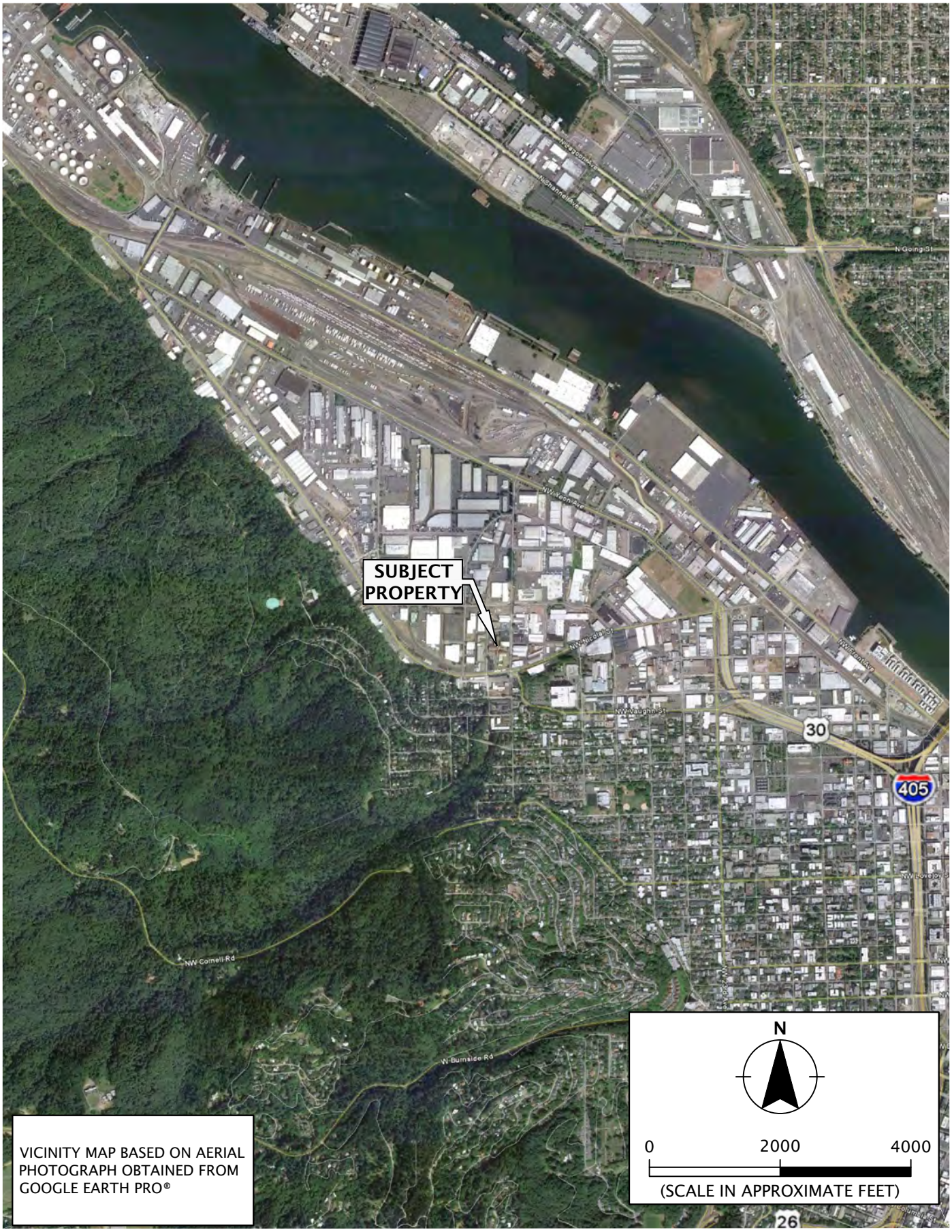
9.0 SIGNATURES

Thank you very much for the opportunity to work with you. Please contact us with questions or comments on this CMMP.

Central Engineering Services

Taylor Lee, EI
Staff Engineer

Mike Coenen, PE
Principal Engineer



VICINITY MAP BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO®

CENTRAL ENGINEERING SERVICES	VICINITY MAP	GalvCo-1-01
	Galvanizers Company Portland, OR	Figure 1

LEGEND:

- MONITORING WELL
- ON-SITE CATCH BASIN
- ON-SITE STORMLINE
- GALVANIZERS COMPANY
- TAX LOT BOUNDARY

N

0 120 240

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH DATED JUNE 14, 2022, OBTAINED FROM GOOGLE EARTH PRO.

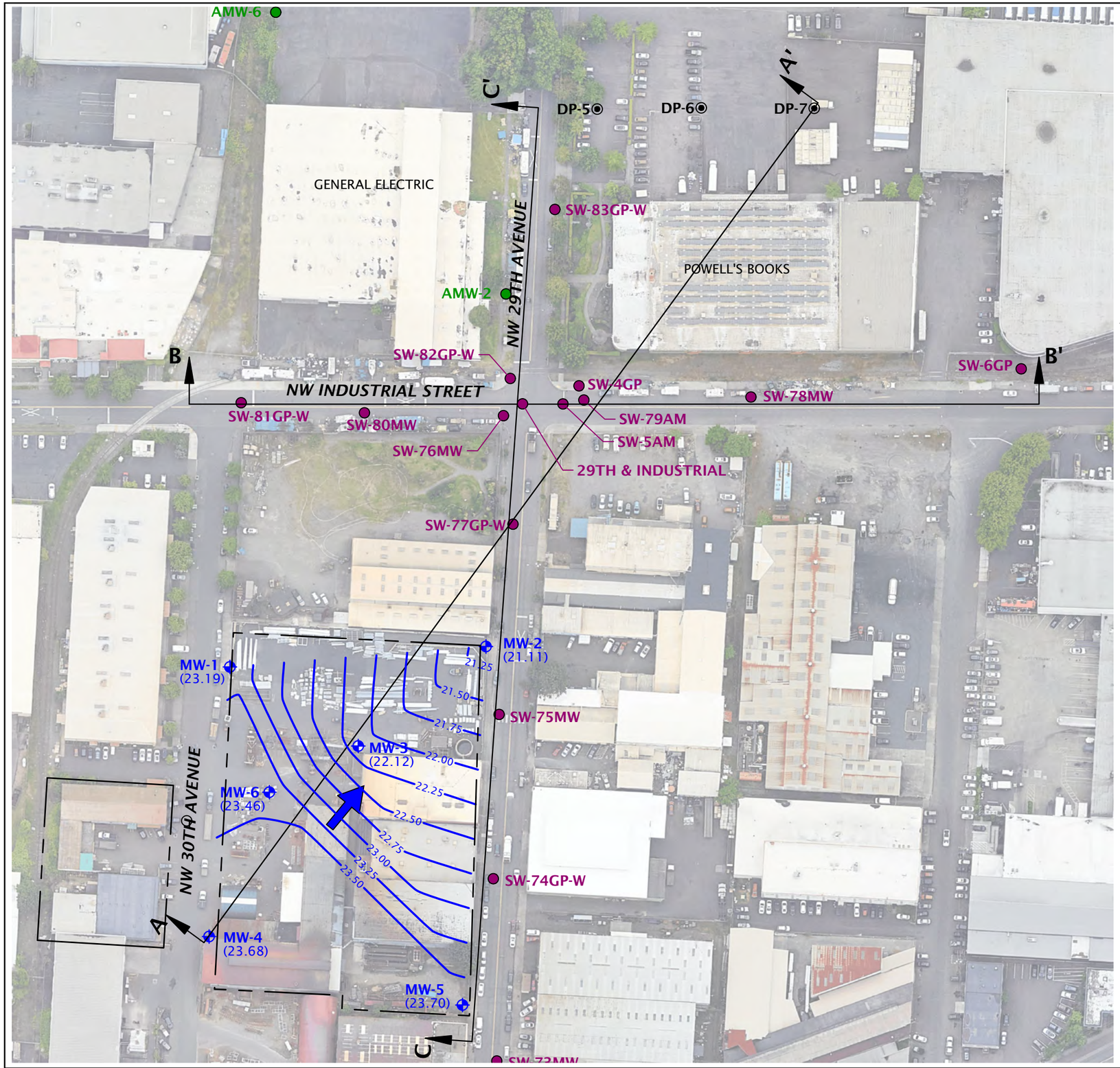
SITE PLAN

Galvanizers Company
Portland, OR

GalvCo-1-01

Figure 2

CENTRAL
ENGINEERING SERVICES



LEGEND:

- MW-1 (23.19) — GROUNDWATER MONITORING WELL WITH GROUNDWATER ELEVATION (FEET, COP DATUM)
- SW-5AM — 2007, 2008, AND 2009 SHANNON & WILSON SAMPLE LOCATION
- DP-5 — DIRECT-PUSH BORING (GEODESIGN 2017)
- AMW-2 — 2008 MWH SAMPLE LOCATION
- GROUNDWATER CONTOUR (0.25-FOOT INTERVAL)
- INFERRED GROUNDWATER FLOW DIRECTION
- A A' — CROSS SECTION
- SUBJECT PROPERTY BOUNDARY

NOTES:

1. GROUNDWATER ELEVATIONS MEASURED ON SEPTEMBER 26, 2017.
2. GRADIENT = 0.006 FOOT/FOOT.

N

0 120 240

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH DATED JUNE 14, 2022, OBTAINED FROM GOOGLE EARTH PRO.

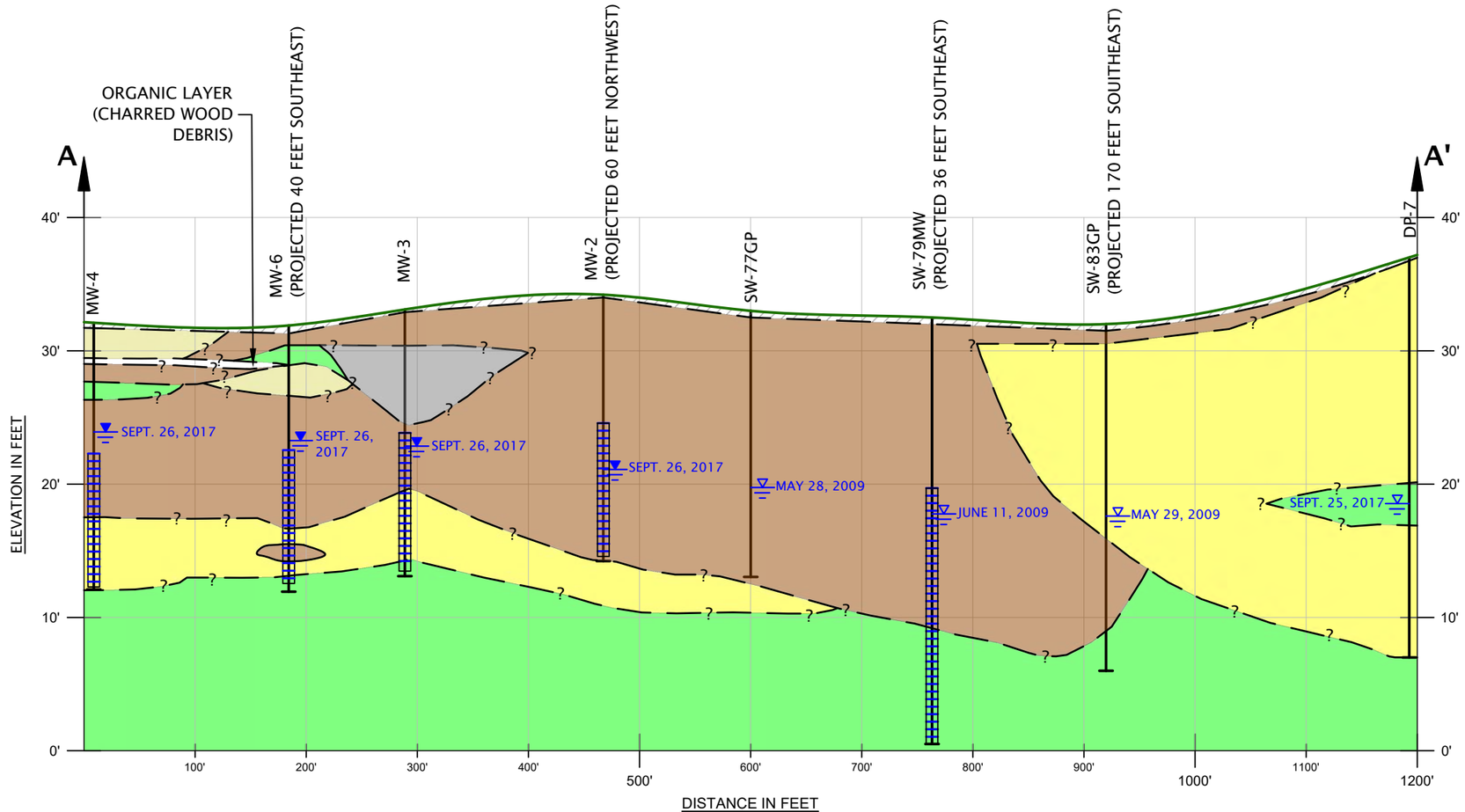
POTENTIOMETRIC SURFACE AND CROSS SECTIONS

Galvanizers Company
Portland, OR

GalvCo-1-01

Figure 3

CENTRAL
ENGINEERING SERVICES



LEGEND:

- SURFACE TOPOGRAPHY
- BORING
- INTERPRETED CONTACT
- GROUNDWATER ELEVATION (MEASURED DURING DRILLING)
- SEPTEMBER 26, 2017, STATIC GROUNDWATER ELEVATION
- PAVEMENT SECTION
- GRAVEL WITH SILT AND SAND
- SILTY GRAVEL WITH SAND
- SAND
- SILT WITH SAND
- SILTY SAND
- SCREENED INTERVAL

0 10 20
(VERTICAL SCALE IN FEET)

0 120 240
(HORIZONTAL SCALE IN FEET)

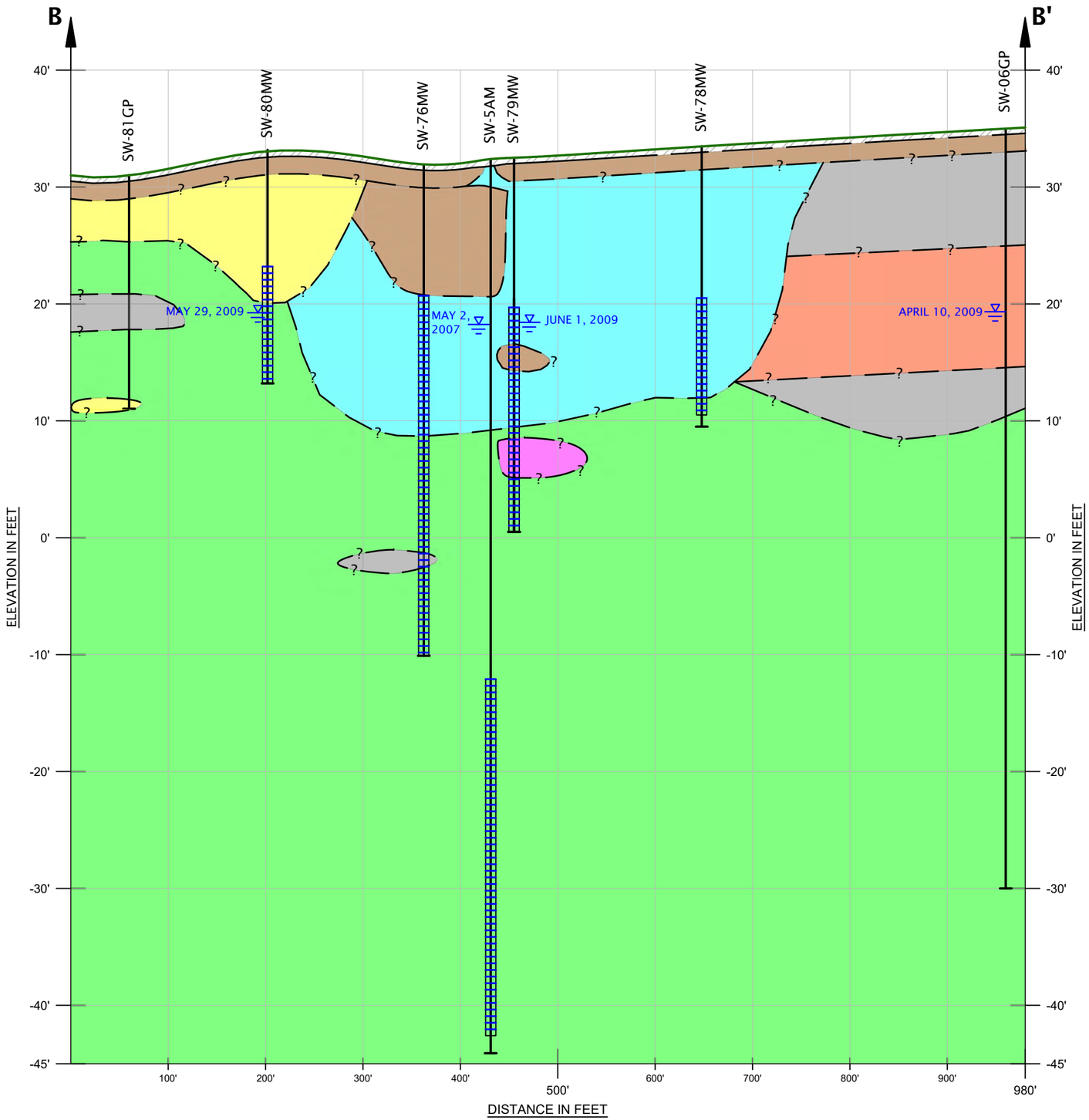
CROSS SECTION A-A'

Galvanizers Company
Portland, OR

GalvCo-1-01

Figure 4

CENTRAL ENGINEERING SERVICES



LEGEND:

- SURFACE TOPOGRAPHY
- BORING
- INTERPRETED CONTACT
- GROUNDWATER ELEVATION (MEASURED DURING DRILLING)
- PAVEMENT SECTION
- GRAVEL WITH SILT AND SAND
- SAND
- SILT WITH SAND
- SILTY SAND
- GRAVEL WITH SAND
- SAND WITH SILT
- SAND WITH SILT AND GRAVEL
- SCREENED INTERVAL

0 10 20
(VERTICAL SCALE IN FEET)

0 120 240
(HORIZONTAL SCALE IN FEET)

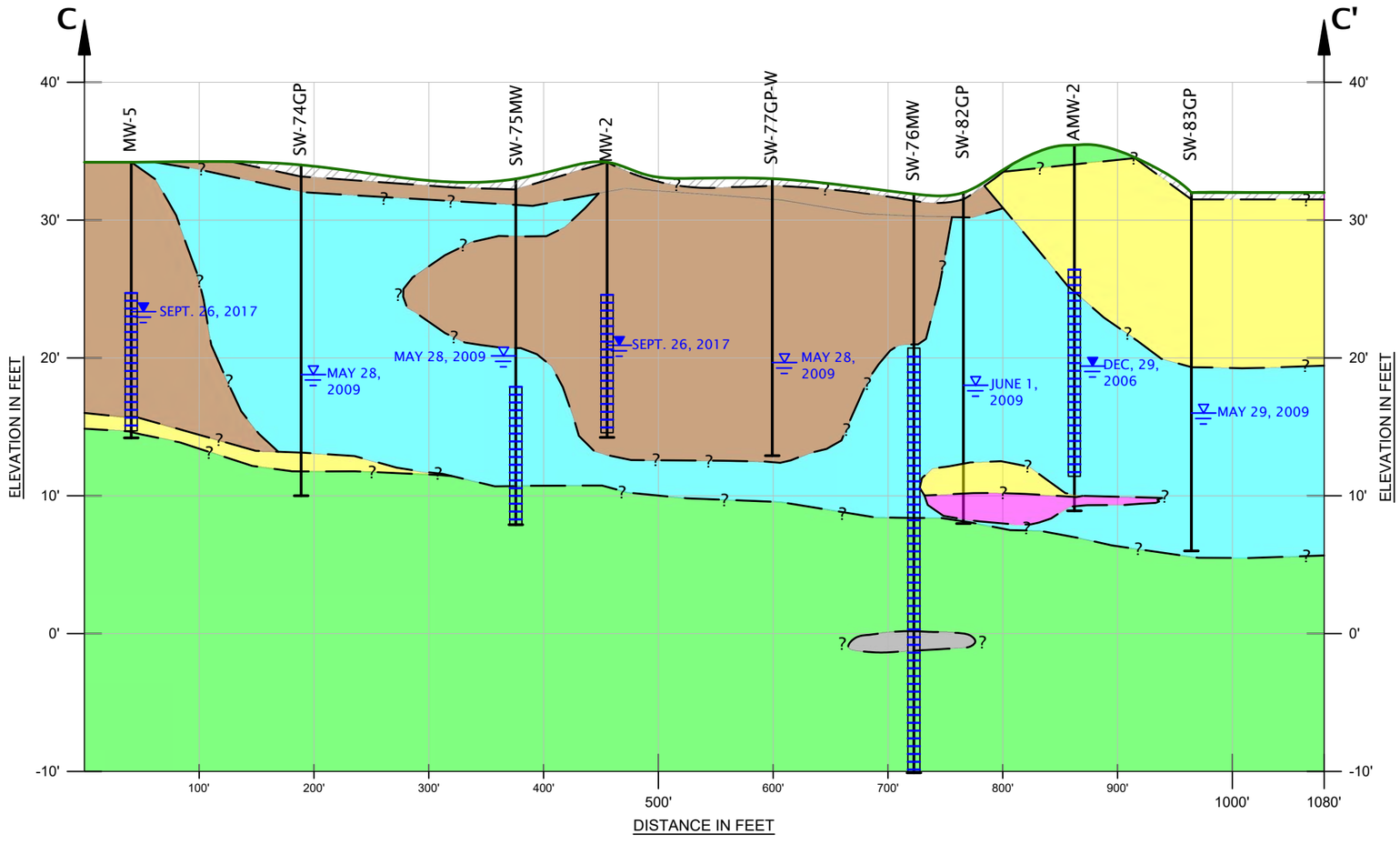
CROSS SECTION B-B'

Figure 5

GalvCo-1-01

Galvanizers Company
Portland, OR

CENTRAL
ENGINEERING SERVICES



LEGEND:

- SURFACE TOPOGRAPHY
- BORING
- INTERPRETED CONTACT
- GROUNDWATER ELEVATION (MEASURED DURING DRILLING)
- STATIC GROUNDWATER ELEVATION
- PAVEMENT SECTION
- GRAVEL WITH SILT AND SAND
- SAND
- SILT WITH SAND
- SILTY SAND
- GRAVEL WITH SAND
- SAND WITH SILT
- SCREENED INTERVAL

0 10 20
(VERTICAL SCALE IN FEET)

0 120 240
(HORIZONTAL SCALE IN FEET)

CROSS SECTION C-C'

Galvanizers Company
Portland, OR

GalvCo-1-01

Figure 6

CENTRAL ENGINEERING SERVICES

CENTRAL
ENGINEERING SERVICES

APPENDIX A: 2025 Risk Evaluation Report

CENTRAL
ENGINEERING SERVICES

Risk Evaluation Report

Galvanizers Company
Portland, Oregon

Central Project: GalvCo-1-01-03

Prepared For:

GalvCo Company
c/o Field Jerger, LLC
PO Box 13326
Portland, Oregon

SBA
U.S. Small Business Administration
SERVICE-DISABLED VETERAN-OWNED CERTIFIED

Date: October 31, 2025

CENTRAL
ENGINEERING SERVICES

7662 SW Mohawk Street
Tualatin, Oregon 97062
(503) 616-9419
www.centralengr.com

October 31, 2025

Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, Oregon

Attention: Jim Orr (Jim.ORR@deq.oregon.gov)

Subject: Risk Evaluation Report
Galvanizers Company
2406 NW 30th Avenue
Portland, Oregon
Central Project No.: GalvCo-1-01

Central Engineering Services (Central) is pleased to submit this risk evaluation report on behalf of GalvCo Company (GalvCo), for the Galvanizers facility located at 2406 NW 30th Avenue in Portland, Oregon (Subject Property). This report summarizes the environmental investigations conducted at the Subject Property and evaluates the potential risks to human health and the environment.

Thank you for the opportunity to work with you on this project. Please feel free to call with questions about this report.

Respectfully,

Central Engineering Services

Mike Coenen, PE
Principal Engineer

cc: Scott Jerger, Field Jerger, LLC
GalvCo Company

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ACRONYMS AND ABBREVIATIONS

1,1-DCA	1,1-dichloroethane
AMEC	AMEC Earth and Environmental, Inc.
Anchor	Anchor Environmental LLC
BCC	Balch Consolidation Conduit
bgs	Below Ground Surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
BWUD	Beneficial Water Use Determination
cfs	cubic feet per second
CMMP	Contaminated Media Management Plan
COP	City of Portland
CSM	conceptual site model
DEQ	Oregon Department of Environmental Quality
DRO	diesel-range organics
ECS	Enviro-Comp Services, Inc.
ECSI	Environmental Cleanup Site Information
EEM	Evergreen Environmental Management, Inc.
EPA	U.S. Environmental Protection Agency
ERA	ecological risk assessment
ESA	environmental site assessment
Galvanizers	Galvanizers Company
gpm	gallons per minute
gpm/ft	gallons per minute per foot
HCID	hydrocarbon identification
HOT	heating oil tank
I.D.	identification
LOF	locality of facility
MDL	method detection limit
MFA	Maul Foster & Alongi, Inc.
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MRL	method reporting limit
MWH	MWH Americas, Inc.
MZR	Metaullics Zinkoff Recovery
NA	not applicable or not available
NE	not established
NITI	no inhalation toxicity information
NON	notice of noncompliance
NWES	Northwest EnviroSearch, Inc
OWRD	Oregon Water Resources Department
PA	preliminary assessment
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
POA	point of appropriation
POD	point of diversion
POTW	publicly owned treatment works
PWB	Portland Water Bureau
RBC	risk-based concentration
RBDM	Risk-Based Decision Making for the Remediation of Petroleum- Contaminated Sites

RCRA	Resource Conservation and Recovery Act
RSL	regional screening level
SCD	Source Control Decision
SCE	Source Control Evaluation
SIM	selective ion monitoring
STI	Soil Tech, Inc.
SVOC	semi-volatile organic compound
TCE	trichloroethene
TCLP	toxicity characteristic leaching procedure
TMB	trimethylbenzene
TPH	total petroleum hydrocarbon(s)
µg/L	micrograms per liter
UST	underground storage tank
VC	vinyl chloride
VOC	volatile organic compound
XPA	Expanded Preliminary Assessment

1.0 INTRODUCTION

On behalf of Galvanizers Company (now known as GalvCo Company (Galvanizers), this report has been prepared to evaluate the risks associated with soil and groundwater impacts at the Galvanizers facility located at 2406 NW 30th Avenue in Portland, Oregon (Subject Property). The Oregon Department of Environmental Quality (DEQ) Environmental Cleanup Site Information (ECSI) database number for the Subject Property is 1196. This report summarizes groundwater delineation activities, summarizes previous soil and groundwater data, and provides a conceptual site model (CSM). Lastly, it provides human health and ecological risk screening to evaluate potential risks to human health and the environment.

The Subject Property is shown relative to surrounding physical features on Figure 1. The Subject Property layout and surrounding properties are shown on Figure 2.

2.0 BACKGROUND

2.1 SUBJECT PROPERTY DISCRIPTION

2.1.1 General

The Subject Property is located at 2406 NW 30th Avenue in Portland, Oregon, in the northwest quarter of the southwest quarter of Section 29, Township 1 North, Range 1 East (Willamette Meridian). The Subject Property is bound by industrial and commercial properties to the north and south, NW 30th Avenue to the west, and NW 29th Avenue to the east. A maintenance building, office, and paved yard are west of NW 30th Avenue, across from the main plant building.

Metal parts are galvanized in the main plant building, which houses the process tanks in an L-shaped configuration. A steel staging yard and steel products yard are north and west of the main plant building. Before 2021, the Galvanizers office building was north of the steel products yard. In 2021, office personnel relocated to the Lindsey Building, which is on the west side of NW 30th Avenue. The former office building was demolished, which allowed for expansion of the steel products yard. The Russell Building, between the main plant and NW 29th Avenue, is used for storage. Building 14, east of the main plant building and south of the Russell Building, houses the acid recovery system and a parts shop. A gravel storage area is on the southeast corner of the Subject Property. The gravel rack yard and the Quonset hut are also south of the main plant building. Figure 2 presents the Subject Property and facility layout.

2.1.2 Land Use and Zoning

The area is zoned heavy industrial (IH) with a prime industrial (k) overlay. The Subject Property is within the Guilds Lake Industrial Sanctuary plan district. This designation protects the area for industrial uses as stipulated by the City of Portland (COP) zoning code, Chapter 33.531. Based on this designation, the area will likely remain zoned for heavy industrial use for the foreseeable future.

2.2 SUBJECT PROPERTY HISTORY

Galvanizers operated at the Subject Property since the 1940s. Galvanizers ceased operations on October 31, 2019. In 2019, Galvanizers sold its assets and its right, title, and interest in and to its business to ZinkPower-Portland, LLC, which has continued galvanizing operations at the Subject Property. On November 16, 2019, Galvanizers Company changed its name to GalvCo Company. ZinkPower Portland LLC is still operating at the site and uses “Galvanizers Company” as an assumed business name. Before the 1940s, the Subject Property was undeveloped.

The galvanizing plant has remained fundamentally unchanged since operations began in 1941. The galvanizing process is performed in an L-shaped configuration within the main plant building (see Figure 2), beginning with

the caustic bath and caustic rinse tanks, followed by the acid process tanks and acid rinse tanks, the flux tank, and the molten-zinc tanks.

Over its decades-long history, Galvanizers completed the following improvements to the facility:

- Converted the boiler used to make steam heat for the process tanks from heating oil to natural gas.
- Paved the storage yard and installed a drywell. The drywell was subsequently removed in 2001 as part of stormwater management improvements.
- Replaced the steam sparge system with a zirconium heat-exchanger system in 1974. The zirconium heat-exchanger prevented the acid tanks from spilling over on the occasions when excess condensate from the steam sparge system overfilled the tanks.
- Installed an asphalt berm containment around the process tanks, which was replaced with concrete containment in 1993.
- Installed a pretreatment system for stormwater in 2009 with upgrades added in 2011.
- Installed a Metaullics Zinkoff Recovery (MZR) system in July 2012. The MZR system recovers free zinc for reuse in the hot dip galvanizing kettles.

3.0 GEOLOGICAL AND HYDROGEOLOGICAL SETTING

Before the early 1900s, the area near the Subject Property was covered by the historical Guilds Lake. Starting in approximately 1905, Guilds Lake was filled using soil sluiced from the nearby hillside and dredged fill from the Willamette River.

Based on nearby explorations, subsurface conditions generally consist of sand to a depth of approximately 16 feet below ground surface (bgs) underlain by silt to a depth of approximately 20 feet bgs. Sand with silt underlies the silt to the total depths explored. The sand unit is interpreted as the sluiced fill or dredged fill that was reportedly used to fill Guilds Lake. The silt and sand with silt units are interpreted as the former bottom of Guilds Lake. A potentiometric surface and geologic cross sections showing the subsurface lithology and groundwater elevations are shown on Figures 3 through 6.

Shallow groundwater at the Subject Property has been encountered at depths between approximately 9 feet and 14 feet bgs. Based on groundwater monitoring data, groundwater flow direction is to the northeast, toward the Willamette River.

4.0 SUMMARY OF ENVIRONMENTAL INVESTIGATIONS

The Subject Property has an extensive history of investigations dating back to the 1990s. During these investigations, soil and groundwater samples were collected from on-site and off-site locations. The following sections summarize the previous investigations.

Figures 7 and 8 present the locations of previous on-site and off-site explorations, respectively. Matrices summarizing historical samples and chemical analyses conducted to evaluate contaminants in soil and groundwater are presented in Tables 1 and 2, respectively. Summaries of soil sample chemical analytical results for total petroleum hydrocarbons (TPH) and polychlorinated biphenyls (PCBs), metals (total and toxicity characteristic leaching procedure [TCLP]) and pH, volatile organic compounds (VOCs), and polycyclic aromatic hydrocarbon (PAHs) in soil are presented in Tables 3 through 6, respectively. Summaries of groundwater sample chemical analytical results for TPH and PCBs, pH and metals (total and dissolved), VOCs, and PAHs are presented in Tables 7 through 10, respectively.

4.1 PREVIOUS ON-SITE INVESTIGATIONS

The following summarizes the on-site investigations conducted to date.

4.1.1 1992-1993 Plant Building Soil Sampling (Soil Tech, Inc. [STI], 1993)

In 1993, Galvanizers completed site upgrades, which included removing soil and installing secondary containment under the process tanks. Approximately 517 cubic yards of soil were excavated around the process tanks. The excavated soil was pH-adjusted with lime and disposed of off the site in accordance with applicable regulations at that time. Additionally, the low-pH soil below the secondary containment was neutralized and the excavation was backfilled with limestone aggregate. STI's report indicates that it collected 12 confirmation soil samples of soil remaining in place and five stockpile samples and analyzed each sample for TCLP metals, pH, or both. One groundwater sample was collected from an excavation and analyzed for pH, total zinc, and total iron. Soil sample results for TCLP metals and pH are summarized on Table 4. TCLP metals results were less than the Resource Conservation and Recovery Act (RCRA) allowable concentrations of a characteristic hazardous waste. Total zinc was detected in the groundwater sample at a concentration of 2,330,000 micrograms per liter (µg/L), total iron was detected in the groundwater sample at a concentration of 2,040,000 µg/L, and pH was measured in the groundwater sample at 4.7 (see Table 8 for metals and pH results in groundwater). Sample locations are shown on Figure 7.

4.1.2 1996 Phase II ESA (Enviro-Comp Services, Inc. [ECS], 1996a)

In 1996, a Phase II environmental site assessment (ESA) was conducted in response to DEQ correspondence notifying Galvanizers that DEQ planned to include the Subject Property on DEQ's Confirmed Release List. The Phase II ESA included drilling eight borings and collecting eight groundwater samples and 20 soil samples. Borings were drilled in the storage yard and plant area (see Figure 7). Additionally, one water sample (#1 – Tank Test Hole) was collected from a plastic pipe between two process tanks. Based on a site plan in the Phase II ESA, the pipe appears to be near the sulfuric acid tanks.

The groundwater samples were analyzed for pH, dissolved lead, and dissolved zinc. Soil samples were analyzed for TCLP lead and pH. The water sample from the pipe was analyzed for pH and total metals (cadmium, chromium, iron, lead, nickel, and zinc). Soil and groundwater results are presented on Tables 4 and 8, respectively. Dissolved lead was detected in one groundwater sample at a concentration of 210 µg/L; dissolved zinc concentrations ranged between 808 and 172,000 µg/L. TCLP lead was not detected in the soil samples collected during this investigation. Soil pH ranged from 4.5 to 6.9 and groundwater pH ranged from 3.8 to 6.5.

4.1.3 1996 Gasoline UST Sampling (ECS, 1996b)

In response to a notice of noncompliance (NON) from DEQ, Galvanizers enlisted the services of ECS to investigate the decommissioning of two gasoline underground storage tank (USTs). The USTs, which are west of the process area, were reportedly decommissioned in 1990. However, the UST service provider did not conduct the decommissioning in accordance with the applicable regulatory requirements. To address the NON, ECS advanced four borings to a depth of approximately 8 feet bgs and collected soil samples. Samples were analyzed for total petroleum hydrocarbons-hydrocarbon identification (TPH-HCID) with follow-up diesel- and oil-range hydrocarbon analyses. Soil sample results indicated gasoline and diesel concentrations were less than the laboratory method reporting limit (MRLs). Heavy oil was detected in the four samples at concentrations ranging from 450 to 15,000 milligrams per kilogram (mg/kg). TPH soil sample results are summarized on Table 3. Sample locations are shown on Figure 7.

4.1.4 1998 Heating Oil UST Decommissioning (ECS, 1998)

In 1998, a 2,000-gallon heating oil UST formerly in the southeast corner of the yard near the main plant building was decommissioned by removal. Two confirmation soil samples were collected from each end of the UST and analyzed for TPH-HCID with follow up diesel-range hydrocarbons analysis, as needed. Diesel-range

hydrocarbons were detected in sample 1-North- B at a concentration of 5,710 mg/kg. The soil was left in place as allowed by applicable DEQ standards at the time the UST was decommissioned. The UST excavation was backfilled with the excavated soil and crushed gravel. TPH soil sample results are summarized on Table 3. Sample locations are shown on Figure 7.

4.1.5 1999 Soil and Groundwater Investigation (ECS, 1999a)

In 1999, Galvanizers conducted a soil and groundwater investigation to evaluate soil and groundwater for potential contamination in preparation for planned Subject Property improvements. Borings were drilled in the following locations:

- The yard between the maintenance building and the Lindsey Building;
- The area around the drywell (before its removal in 2001);
- The area around the former heating oil UST;
- The alley east of the main plant building; and
- The area near the flux tank.

Sample locations are shown on Figure 7. A summary of the soil and groundwater results is provided below.

4.1.5.1 Soil Sampling Results

During the investigation, 14 soil samples were collected and analyzed for one or more of the following:

- TPH-HCID;
- Diesel-range hydrocarbons (based on TPH-HCID results);
- Total metals (chromium, lead, and zinc);
- TCLP metals (chromium and lead);
- VOCs; and
- pH.

A summary of the soil sample results is provided below. A summary of the analytical results is presented in Tables 3, 4, and 5.

4.1.5.2 TPH

Three soil samples were analyzed for TPH-HCID analysis (S-1-1, S-5-4, and S-5-8) with followup analysis for diesel- and heavy-oil-range hydrocarbons on two samples (S-1-1 and S-5-8). Sample S-1-1 was collected from a boring drilled in the paved area between the maintenance building and the Lindsey Building. Samples S-5-4 and S-5-8 were collected from a boring drilled near the former heating oil UST. Heavy oil-range hydrocarbons were detected in S-1-1 and S-5-8 at concentrations of 123 mg/kg and 66.4 mg/kg, respectively. Diesel-range hydrocarbons were not detected in either sample. Results are summarized on Table 3.

4.1.5.3 Total Metals, TCLP Metals, and pH

Thirteen soil samples were analyzed for total chromium and total lead.[1] Total chromium was detected in the 13 samples at concentrations ranging between 11.2 mg/kg (S-5-1) and 201 mg/kg (S-8-1). Total lead was detected in 12 of the 13 samples at concentrations ranging between 16.6 mg/kg (S-8-10) and 4,090 mg/kg (Surface A). Sample Surface A was collected from accumulated material on top of the concrete pad in the plant

[1] Two samples were collected from "dirt (gravel and clay absorbents)" that had accumulated over the concrete in the plant area.

area. Therefore, results from this sample are not representative of soil conditions at the Subject Property. Nine soil samples were analyzed for total zinc. Total zinc concentrations in the samples ranged between 74.8 mg/kg (S-1-1) and 106,000 mg/kg (S-8-1).

4.1.5.4 VOCs

One soil sample (S-1-1) was analyzed for VOCs during this investigation. VOC concentrations were less than the laboratory MRLs. VOC results are summarized in Table 5.

4.1.5.5 Groundwater Sampling Results

Four groundwater samples were collected from the borings drilled in the yard between the maintenance building and the Lindsey Building (S-1-W), in the alley east of the main plant building (S-7-W), near the flux tank (S-8-W), and near the former drywell (S-9-W). According to the 1999 Soil and Groundwater Investigation report, groundwater sample S-1-W was not analyzed because soil contamination was not present in the corresponding boring. Three of the four groundwater samples were analyzed for total chromium, total lead, and total zinc. The pH of the groundwater samples was also field measured using litmus paper. Results are summarized on Table 8. Total chromium, total lead, and total zinc were detected in the three groundwater samples analyzed as summarized below:

- Total chromium: 404 µg/L (S-7-W), 945 µg/L (S-8-W), and 925 µg/L (S-9-W).
- Total lead: 265 µg/L (S-7-W), 5,100 µg/L (S-8-W), and 5,400 µg/L (S-9-W).
- Total zinc: 130,000 µg/L (S-7-W), 845,000 µg/L (S-8-W), 75,000 µg/L (S-9-W).

Field-measured pH in groundwater ranged from 0 (S-7-W) to 5.5 (S-8-W and S-9-W). As noted above, pH was measured using litmus paper, which has limited accuracy when compared to a calibrated pH measurement. Therefore, these pH measurements are considered qualitative, indicating the groundwater was acidic at best.

4.1.6 1999 Building 14 Area Sampling, Kettle Gravels, and Alley Soil Sampling Between Plant & Building 14 (ECS, 1999b)

In June 1999, Galvanizers conducted soil sampling activities near Building 14, the kettle area, and the alley between the main plant building and Building 14. Samples were collected from test pits to assess subsurface conditions and to characterize soil for disposal purposes. Samples were collected from the following locations:

- Six soil samples from the gravel lot near the southwest corner of Building 14.
- One sample of sludge in the flux tank.
- Three soil samples from the alley between the plant and Building 14.
- One composite soil sample collected from the alley and west of the kettle.

The 11 samples were analyzed for TCLP metals (barium, chromium, and lead). Except for the composite sample, soil samples were analyzed for pH by a chemical analytical laboratory.

Results are summarized on Table 4. TCLP metals results indicated leachable concentrations of barium and lead from the soil. The leachable lead concentration exceeded the RCRA hazardous waste concentration in one sample (Bldg. 14-Acid Recovery-“Extra”) collected near Building 14. The pH results ranged from 3.98 (Galvco-Alley-North-"C") to 7.80 (Bldg.14 W-Pit-3').

4.1.7 1999 Kettle Foundation Soils Assessment and Disposal (ECS, 1999c)

In 1999, two soil samples were collected as part of soil characterization activities to support a planned kettle project in the main plant building. Samples G-1 and G-2 were collected from the west part of the main plant

building and submitted for metals (lead only) and TCLP metals (cadmium, chromium, and lead) analyses. Results are summarized on Table 4. Lead was detected in samples G-1 and G-2 at concentrations of 1,800 mg/kg and 294 mg/kg, respectively. TCLP metals results indicated that leachable metals concentrations for cadmium, chromium, and lead were less than respective RCRA hazardous waste concentrations.

4.1.8 Building 14 Unknowns (ECS, 1999d)

One additional investigation was conducted in 1999. Suspect soil and/or fill material was observed during excavation activities at the southwest corner of Building 14. The soil was described as black soil, green-mixed unknown, acid-burned soil, and gray/white unknown material. Samples of the four separate fill materials were collected and analyzed for one or more of the following constituents: TPH, metals, TCLP metals (cadmium, chromium, lead), VOCs, TCLP VOCs, and pH.

The sample described as Black Soil was submitted for TPH-HCID and follow-up diesel- and heavy oil-range hydrocarbon analyses. Heavy oil was detected and quantified at a concentration of 15,200 mg/kg. Results are summarized on Table 3.

Samples Acid Burned Soil, Green Mixed Unk, and Gray/White Unk were analyzed for total and TCLP metals (cadmium, chromium, and lead) and pH. The detected totals and TCLP metals are summarized below:

- Total cadmium: 1.69 mg/kg (Acid Burned Soil), 6.51 mg/kg (Green Mixed Unk), and 546 mg/kg (Gray/White Unk).
- TCLP cadmium: 0.0140 mg/L (Black Soil), 0.0170 mg/L (Green Mixed Unk), and 2.13 mg/L(Gray/White Unk).
- Total chromium: 10.8 mg/kg (Gray/White Unk), 103 mg/kg (Acid Burned Soil), and 119 mg/kg (Green Mixed Unk).
- Total lead: 651 mg/kg (Acid Burned Soil), 9,630 mg/kg (Green Mixed Unk), and 10,100 mg/kg (Gray/White Unk).
- TCLP lead: 0.885 mg/L (Black Soil), 15.9 mg/L (Green Mixed Unk), 18.8 mg/L (Gray/White Unk).

TCLP lead results for Green Mixed Unk and TCLP lead and cadmium results for Gray/White Unk indicated those soils were a RCRA characteristic hazardous waste. The pH ranged from 4.22 to 6.26. Results for pH, metals, and TCLP metals are summarized on Table 4.

Sample Black Soil was analyzed for VOCs and TCLP VOCs. Tetrachloroethene (PCE) and trichloroethene (TCE) were detected at concentrations of 1.37 mg/kg and 0.12 mg/kg, respectively. Results for TCLP VOCs were less than the laboratory MRLs.

The fill material discussed during this investigation was subsequently removed in 2001.

4.1.9 Rick Russell Site Sampling (ECS, 2000)

As part of a real estate transaction, the previous owner decommissioned three heating oil USTs on the Rick Russell property. On behalf of the buyer (GalvCo, LLC), ECS reviewed the closure documentation. Based on historical site knowledge, ECS identified inconsistencies with respect to the depth to groundwater at the Subject Property. In 2000, ECS collected soil and groundwater samples to evaluate the closure method used to decommission three heating oil USTs on the Rick Russell property. The investigation was conducted in two phases – the first in July 2000 and the second in September 2000. Sampling results from both investigations are summarized below.

4.1.9.1 July 2000 Investigation

During the first phase of the investigation, ECS drilled 11 borings to depths up to 16 feet BGS and collected eight soil samples and two groundwater samples. To the extent practicable, samples were co-located with samples previously collected by the Seller's environmental contractor. Soil and groundwater samples were analyzed for diesel- and oil-range hydrocarbons, benzene, toluene, ethylbenzene, and xylenes (BTEX), and PAHs. One groundwater sample was also analyzed for total and dissolved metals (chromium, lead, and zinc). Soil sample analytical results for diesel- and oil-range hydrocarbons, BTEX, and PAHs are summarized on Tables 3, 5, and 6, respectively. Groundwater sample analytical results for diesel- and oil-range hydrocarbons, total and dissolved metals, VOCs (BTEX), and PAHs are summarized on Tables 7, 8, 9, and 10, respectively.

4.1.9.2 Soil Sampling Results

Diesel-range hydrocarbons were detected in five of the eight samples at concentrations ranging between 306 mg/kg and 13,300 mg/kg. Heavy oil-range hydrocarbons were detected in four of the eight samples at concentrations ranging between 67.0 mg/kg and 1,160 mg/kg.

Ethylbenzene was detected in two samples (A-11 and C-13) at concentrations of 4.47 mg/kg and 1.69 mg/kg, respectively. Xylenes were detected in four samples (A-11, B-13, C-13, and C-14) at concentrations ranging from 0.446 mg/kg (B-13) to 11.7 mg/kg (A-11).

One or more PAHs were detected in six of the eight samples. Concentrations ranged from 0.0377 mg/kg (A-16, benzo(a)pyrene) to 3.970 mg/kg (C-13, fluorene).

4.1.9.3 Groundwater Sampling Results

Diesel- and oil-range hydrocarbons were detected in both groundwater samples. Diesel-range hydrocarbon concentrations were 16,300 µg/L in sample B-water and 3,690 µg/L in sample F-water. Heavy oil-range hydrocarbons were detected in samples B-water and F-water at concentrations of 2,330 µg/L and 883 µg/L, respectively.

Reported separately from the heating oil tank (HOT) investigation, ECS requested total and dissolved metals analyses (chromium, lead, and zinc) for groundwater sample B-water. Total chromium and total lead were detected in the sample at concentrations of 257 µg/L and 164 µg/L, respectively. Dissolved chromium and dissolved lead results were less than the laboratory MRLs. Total and dissolved zinc were detected at concentrations of 53,100 µg/L and 25,900 µg/L, respectively.

Ethylbenzene was detected in samples B-water and F-water at concentrations of 4.77 µg/L and 0.820 µg/L, respectively. Toluene was detected in sample F-water only at a concentration of 0.525 µg/L. Xylenes were detected in samples B-water and F-water at concentrations of 33.8 µg/L and 3.41 µg/L, respectively.

Fluorene was detected in samples B-water and F-water at concentrations of 2.52 µg/L and 1.48 µg/L, respectively. Phenanthrene was detected in sample B-water at a concentration of 0.958 µg/L.

4.1.9.4 September 2000 Investigation

During the second phase of the investigation, ECS drilled six borings to depths up to 20 feet bgs and collected 13 soil samples and two groundwater samples to further assess and delineate petroleum contamination associated with the HOT closure in the Russell Building. Soil and groundwater samples were analyzed for diesel- and oil-range hydrocarbons. One soil sample (I-12) and one groundwater sample (I-W) were also analyzed for BTEX and PAHs. Table 3 summarizes the diesel- and oil-range analytical results for the soil samples. Table 7 summarizes the diesel- and oil-range analytical results for the groundwater sample. BTEX and PAHs analytical results for groundwater are summarized on Tables 9 and 10, respectively.

4.1.9.5 Soil Sampling Results

Diesel-range hydrocarbons were detected in soil samples I-12 and J-14 at concentrations of 4,410 mg/kg and 3,970 mg/kg, respectively. Heavy oil-range hydrocarbons were detected in soil samples G-15, H-10, H-15, I-12, and J-14. Heavy oil-range hydrocarbon concentrations ranged between 126 mg/kg (H-15) and 572 mg/kg (H-10).

As noted above, I-12 was analyzed for BTEX and PAHs. BTEX results for soil sample I-12 indicated the presence of ethylbenzene, toluene, and xylenes at concentrations of 1.32 mg/kg, 0.0635 mg/kg, and 1.53 mg/kg, respectively.

Fluorene, phenanthrene, and pyrene were detected at concentrations of 2.060 mg/kg, 2.860 mg/kg, and 0.204 mg/kg, respectively.

4.1.9.6 Groundwater Sampling Results

Diesel-range hydrocarbons were detected in groundwater samples I-W and L-W at concentrations of 1,420 µg/L and 557 µg/L, respectively. Oil-range hydrocarbon results were less than the laboratory MRLs for both samples.

As noted above, I-W was analyzed for BTEX and PAHs. Ethylbenzene was detected at a concentration of 2.65 µg/L. Results for benzene, toluene, and xylenes were less than the laboratory MRLs.

The following PAHs and associated concentrations were detected in groundwater sample I-W:

- Acenaphthene: 0.226 µg/L.
- Fluorene: 0.777 µg/L.
- Phenanthrene: 0.491 µg/L.

4.1.10 2001 Building 14 Area Confirmation Samples (ECS, 2001a)

In 2001, Galvanizers removed contaminated soil discovered in 1999. After removing the contaminated soil near Building 14, ECS collected three confirmation soil samples from the floor and walls of the excavation. The three samples (Pit North Wall, Pit Bottom, and Trench Pit Wall) were analyzed for diesel- and oil-range hydrocarbons, TCLP metals (cadmium, chromium, and lead), and pH. Diesel- and heavy oil-range hydrocarbons were detected at concentrations ranging from 32.9 mg/kg (Trench Pit Wall) to 1,340 mg/kg (Pit North Wall) and from 118 mg/kg (Trench Pit Wall) to 3,020 mg/kg (Pit Bottom), respectively. Results for leachable chromium were less than the laboratory MRLs in the three confirmation soil samples. Leachable cadmium was detected in the Trench Pit Wall sample at a concentration of 0.0734 mg/L and leachable lead was detected in the three samples at concentrations ranging from 0.0978 mg/L to 1.40 mg/L.

4.1.11 2001 Stormwater System Improvements and Drywell Closure (ECS, 2001b)

Also in 2001, confirmation soil samples were collected from the sidewalls and bottom of the drywell excavation as part of the drywell decommissioning and stormwater system improvements at the Subject Property. Ten soil samples were collected and analyzed for one or more of the following constituents:

- TPH identification with follow-up analysis for:
  - Gasoline-range hydrocarbons;
  - Diesel-range hydrocarbons; and
  - Heavy oil-range hydrocarbons.
- Total and TCLP metals.

- pH.
- VOCs (BTEX only).
- PAHs.

Four soil samples were analyzed for TPH identification. Gasoline-range hydrocarbons were identified in three of the four soil samples analyzed, diesel- and oil-range hydrocarbons were identified in the four soil samples analyzed. Follow-up analyses quantified gasoline-range hydrocarbons at concentrations ranging from 28.1 mg/kg (Bottom-14') to 201 mg/kg (North-4'). Diesel-range hydrocarbons were detected at concentrations ranging from 161 mg/kg (West-4') to 5,220 mg/kg (North-9'). Heavy oil-range hydrocarbons were detected at concentrations ranging from 290 mg/kg (West-4') to 10,900 mg/kg (North-9'). TPH analytical results in soil are summarized on Table 3.

Four soil samples were analyzed for total cadmium, total chromium, and total zinc. Total cadmium was detected at concentrations ranging between 1.71 mg/kg (Bottom-14') and 87.7 mg/kg (North-4'). Total chromium was detected at concentrations ranging between 15.1 mg/kg (East-6') and 256 mg/kg (North-9'). Total zinc was detected at concentrations ranging from 191 mg/kg (East-6') to 14,500 mg/kg (North-4'). One soil sample was analyzed for total copper with a detected concentration of 3.09 mg/kg. Nine of the ten soil samples collected were analyzed for total lead. Total lead concentrations in the soil ranged from 317 mg/kg (West-12') to 5,710 mg/kg (South-9'). The 10 soil samples were analyzed for TCLP lead except for samples West-4' and West-12'. The greatest detected concentration of TCLP lead was 7.31 mg/L in sample South-9'. The pH was tested in select samples from the excavation. The pH in soil ranged between 4.10 and 6.78. Total and TCLP metals and pH results in soil are summarized in Table 4.

Samples North-9' and Bottom-14' were analyzed for BTEX. Analytical results were less than the laboratory MRLs for the four compounds analyzed. These two soil samples were also analyzed for PAHs. The following summarizes the detected PAHs and the respective concentrations:

- Benz(a)anthracene: 0.141 mg/kg (North-9').
- Benz(b)fluoranthene: 0.214 mg/kg (North-9') and 0.180 mg/kg (Bottom-14').
- Benzo(g,h,i)perylene: 0.143 mg/kg (North-9').
- Chrysene: 0.373 mg/kg (North-9') and 0.286 mg/kg (Bottom-14').
- Fluoranthene: 0.0.815 mg/kg (North-9') and 0.628 mg/kg (Bottom-14').
- Phenanthrene: 0.461 mg/kg (North-9') and 0.444 mg/kg (Bottom-14').
- Pyrene: 0.528 mg/kg (North-9') and 0.414 mg/kg (Bottom-14').

Approximately 166 tons of excavated soil were transported to Arlington Landfill for disposal as hazardous waste. Approximately 503 tons of excavated soil were transported to Hillsboro Landfill for disposal as non-hazardous contaminated soil. Confirmation soil samples collected from the drywell excavation indicated leachable lead concentrations of 0.559 mg/L in sample South Wall-9'-#2 and 0.229 mg/L in sample Pit Bottom-14.5'-#2.

4.1.12 2002 Alley Soil Assessment (ECS, 2002)

In 2002, ECS conducted an alley assessment report summarizing soil samples collected in October 2001. The soil samples were collected as part of field activities performed during the stormwater improvements and drywell closure. Nine test pits were excavated in the alley east of the main plant building. Test pits were

excavated to depths up to 5.5 feet bgs. Soil samples were analyzed for one or more of the following constituents:

- Gasoline-range hydrocarbons.
- Diesel- and oil-range hydrocarbons.
- BTEX.
- PAHs.

Gasoline-range hydrocarbons were detected in six of the seven soil samples analyzed at concentrations up to 674 mg/kg (TP3-2'). Diesel- and heavy oil-range hydrocarbons were detected in 9 of 10 soil samples analyzed, at concentrations up to 7,440 mg/kg (TP3-2') and 7,020 mg/kg (TP5-4.5'), respectively. Ethylbenzene, toluene, and xylenes were detected in Sample TP1-1.5' at concentrations of 0.0906 mg/kg, 0.0795 mg/kg, and 2.42 mg/kg, respectively.

PAHs were detected in two of the three samples analyzed, as summarized below:

- Benz(a)anthracene: 0.407 mg/kg (TP1-1.5') and 0.0136 mg/kg (TP1-2.5').
- Benz(a)pyrene: 0.629 mg/kg (TP1-1.5') and 0.0221 mg/kg (TP1-2.5').
- Benzo(b)fluoranthene: 0.845 mg/kg (TP1-1.5') and 0.0223 mg/kg (TP1-2.5').
- Benzo(g,h,i)perylene: 0.726 mg/kg (TP1-1.5') and 0.0264 mg/kg (TP1-2.5').
- Benzo(k)fluoranthene: 0.563 mg/kg (TP1-1.5') and 0.0208 mg/kg (TP1-2.5').
- Chrysene: 0.637 mg/kg (TP1-1.5') and 0.0188 mg/kg (TP1-2.5').
- Fluoranthene: 0.536 mg/kg (TP1-1.5') and 0.0157 mg/kg (TP1-2.5').
- Indeno(1,2,3-cd)pyrene: 0.592 mg/kg (TP1-1.5') and 0.0219 mg/kg (TP1-2.5').
- Phenanthrene: 1.180 mg/kg (TP1-1.5').
- Pyrene: 0.697 mg/kg (TP1-1.5') and 0.0240 mg/kg (TP1-2.5').

Results indicated the excavated soil was non-hazardous. The soil was transported to Waste Management's landfill in Hillsboro.

4.1.13 2003 Heating Oil UST Decommissioning; 2429 NW 29th Avenue (Northwest EnviroSearch, Inc [NWES], 2003)

In 2003, a 675-gallon heating oil UST under the sidewalk east of Building 14 was decommissioned. Soil samples were collected using a direct-push drill rig at the north and south edges of the UST. Soil samples were analyzed for TPH identification. TPH identification results were less than the laboratory MRLs. Analytical results are summarized in Table 3. The report indicated the fuel in the heating oil UST was removed before the investigation. Shortly after the investigation, the heating oil UST was decommissioned in place and filled with controlled density fill.

4.1.14 Preliminary Assessment (NWES, 2004) and Expanded Preliminary Assessment (Anchor, 2006, 2007a, 2007b, 2007c, 20008a, and 2008b)

Between 2004 and 2009, Galvanizers conducted a Preliminary Assessment (PA) and Expanded Preliminary Assessment (XPA) under DEQ supervision. The PA and XPA included sampling of stormwater, stormwater solids, soil, and groundwater. Sampling of stormwater and stormwater solids were addressed in the Source Control Evalution (SCE) (Maul Foster Alongi [MFA], 2010) and the SCE Addendum (GeoDesign, 2014) and will

not be discussed in this report. DEQ issued its Source Control Decision (SCD) in March 2021 (DEQ, 2021). The following summarizes soil and groundwater sampling conducted during the PA and XPA for the Subject Property.

4.1.14.1 Soil Sampling Results

In 2005 as part of the XPA, six monitoring wells were installed on the Subject Property. During well installations, continuous soil samples were collected from each boring using a direct push drill rig. Three soil samples from each boring were submitted for laboratory analysis from the following depth intervals:

- 0 to 2.5 feet bgs;
- 2.5 to 5 feet bgs; and
- Soil just above the water table.

Soil samples were analyzed for total metals. Additionally, soil samples collected from boring MW-6 were analyzed for diesel- and heavy oil-range hydrocarbons, VOCs, and PAHs. Heavy oil- range hydrocarbons were detected at concentrations ranging from 77.7 mg/kg [MW-6 (10-12)] to 1,910 mg/kg [MW-6 (0-2.5)]. Analytical results for diesel- and heavy oil-range hydrocarbons, total metals, and VOCs are summarized on Tables 3, 4, and 5, respectively. As shown on Table 5, analytical results for VOCs were less than the laboratory MRLs.

Eighteen soil samples were analyzed for total metals. The range of total metals detected in the 18 samples analyzed is summarized as follows:

- Arsenic: 0.656 mg/kg [MW-5 (0-2.5)] to 73.4 mg/kg [MW-1 (0-2.5)];
- Barium: 58.0 mg/kg [MW-5 (0-2.5)] to 542 mg/kg [MW-1 (11.5-12)];
- Cadmium: 0.0343 mg/kg [MW-2 (2.5-5]) to 2.030 mg/kg [MW-6 (0-2.5)];
- Chromium: 10.3 mg/kg [MW-2 (13-13.5)] to 29.9 mg/kg [MW-5 (2.5-5)];
- Copper: 7.56 mg/kg [MW-4 (11.5-12)] to 85.8 mg/kg [MW-5 (2.5-5)];
- Lead: 2.33 mg/kg [MW-4 (11.5-12)] to 997 mg/kg [MW-6 (0-2.5)];
- Manganese: 77.3 mg/kg [MW-6 (2.5-5)] to 1,130 mg/kg [MW-1 (11.5-12)];
- Mercury: 0.00826 mg/kg [MW-2 (13-13.5)] to 2.16 mg/kg [MW-6 (0-2.5)];
- Nickel: 3.77 mg/kg [MW-5 (0-2.5)] to 25.2 mg/kg [MW-1 (11.5-12)];
- Selenium: 0.0830 mg/kg [MW-4 (11.5-12)] to 0.117 mg/kg [MW-5 (0-2.5)];
- Silver: 0.0473 mg/kg [MW-2 (2.5-5)] to 1.05 mg/kg [MW-1(2.5-5)];
- Thallium: 0.0477 mg/kg [MW-4 (11.5-12)] to 0.136 mg/kg [MW-6 (2.5-5)]; and,
- Zinc: 33.4 mg/kg [MW-2 (2.5-5)] to 9,990 mg/kg [MW-6 (0-2.5)].

PAHs were detected in two of the three soil samples collected from boring MW-6, as summarized below:

- Acenaphthylene: 0.0140 mg/kg [MW-6 (0-2.5)];
- Benz(a)anthracene: 0.0273 mg/kg [MW-6 (0-2.5)] and 0.00733 mg/kg [MW-6 (10-12)];
- Benz(a)pyrene: 0.0327 mg/kg [MW-6 (0-2.5)] and 0.00733 mg/kg [MW-6 (10-12)];
- Benzo(b)fluoranthene: 0.0407 mg/kg [MW-6 (0-2.5)] and 0.00867 mg/kg [MW-6 (10-12)];
- Benzo(g,h,i)perylene: 0.0447 mg/kg [MW-6 (0-2.5)] and 0.00933 mg/kg [MW-6 (10-12)];

- Chrysene: 0.0360 mg/kg [MW-6 (0-2.5)] and 0.00867 mg/kg [MW-6 (10-12)];
- Dibenz(a,h)anthracene: 0.0127 mg/kg [MW-6 (0-2.5)];
- Fluoranthene: 0.0220 mg/kg [MW-6 (0-2.5)] and 0.0107 mg/kg [MW-6 (10-12)];
- Indeno(1,2,3-cd)pyrene: 0.0253 mg/kg [MW-6 (0-2.5)] and 0.00733 mg/kg [MW-6 (10-12)];
- Naphthalene: 0.0113 mg/kg [MW-6 (10-12)];
- Phenanthrene: 0.0173 mg/kg [MW-6 (0-2.5)] and 0.0153 mg/kg [MW-6 (10-12)]; and
- Pyrene: 0.0327 mg/kg [MW-6 (0-2.5)] and 0.0113 mg/kg [MW-6 (10-12)].

Analytical results for PAHs are summarized on Table 6.

4.1.14.2 Groundwater Sampling Results

In 2005, groundwater samples were collected from the six groundwater monitoring wells (MW-1 through MW-6). Groundwater samples from the six monitoring wells were analyzed for total and dissolved metals and field tested for pH. Additionally, groundwater samples collected from MW-3 and MW-6 were analyzed for diesel- and oil-range hydrocarbons, VOCs, and PAHs.

In 2007 and 2008, five rounds of quarterly groundwater monitoring were conducted. As part of the monitoring program, samples were collected from the six groundwater monitoring wells and were analyzed for total and dissolved metals and tested for pH.

During the PA and XPA, diesel-range hydrocarbons were detected in groundwater samples at concentrations ranging from 748 µg/L (MW-6) to 1,690 µg/L (MW-3) and oil-range hydrocarbons were detected at concentrations ranging from 1,090 µg/L (MW-6) to 1,620 µg/L (MW-3).

One or more total and dissolved metals were detected in groundwater during each monitoring event. Results are summarized on Table 8. Generally, concentrations were greater in samples collected from MW-6, which was installed in the approximate location of the former drywell.

BTEX, chloroform, 1,1-dichloroethane (1,1-DCA), 1,1,1-trichloroethane, and vinyl chloride (VC) were detected in groundwater samples from MW-3 and MW-6 analyzed in 2005. Concentrations were not detected at concentrations exceeding applicable RBCs and are summarized in Table 9.

PAHs were detected in groundwater samples collected from MW-3 and MW-6, as summarized below:

- Acenaphthene: 0.0601 µg/L (MW-6);
- Fluorene: 0.0801 µg/L (MW-6);
- Naphthalene: 0.101 µg/L (MW-3) and 0.140 µg/L (MW-6); and
- Phenanthrene: 0.0707 µg/L (MW-3) and 0.130 µg/L (MW-6).

Results from the PA and XPA groundwater sampling are summarized on Tables 7 through 10.

4.1.15 SCE (MFA, 2010)

In 2009, Galvanizers collected groundwater samples from on-site wells to assess the on-site distribution of zinc in groundwater and to continuously monitor water levels during COP dewatering events to assess whether water levels under the site might be influenced by off-site groundwater pumping.

Groundwater samples were collected from the six on-site monitoring wells and analyzed for diesel- and oil-range hydrocarbons, total and dissolved metals (antimony, arsenic, cadmium, chromium, copper, lead,

mercury, nickel, selenium, silver, thallium, and zinc), field measured pH, VOCs, PAHs, and semi-volatile organic compound (SVOCs).

As shown on Table 7, diesel-range hydrocarbons were detected in groundwater samples collected from MW-3 and MW-6 at concentrations of 838 µg/L and 279 µg/L, respectively. Oil-range hydrocarbons were detected in MW-6 only at a concentration of 574 µg/L.

One or more total and dissolved metals were detected in groundwater samples collected during this monitoring event. As previously mentioned, zinc concentrations were generally greater in groundwater collected from MW-6. The pH in groundwater ranged between 4.22 (MW-2) and 6.25 (MW-3). Results are summarized on Table 8.

As shown on Table 9, VOC results were less than the laboratory MRLs.

PAHs were detected in groundwater samples collected from MW-3, MW-5, and MW-6, as summarized below:

- Fluoranthene: 0.0666 µg/L (MW-3) and 0.122 µg/L (MW-5);
- Fluorene: 0.0666 µg/L (MW-3);
- Naphthalene: 0.0999 µg/L (MW-3) and 0.203 µg/L (MW-6);
- Phenanthrene: 0.0888 µg/L (MW-3), 0.0668 µg/L (MW-5), and 0.0747 µg/L (MW-6); and
- Pyrene: 0.100 µg/L (MW-5).

PAH results are summarized on Table 10. SVOCs results were less than the laboratory MRLs. Considering SVOCs were only analyzed during the SCE, results were not tabulated. A copy of the analytical report can be found in Appendix B of the SCE.

4.1.16 2012 Groundwater Delineation Investigation (GeoDesign, 2014)

In 2012, GeoDesign, Inc. (now NV5) conducted a groundwater delineation investigation, which included sampling the on-site monitoring wells and temporary borings off site. The samples were analyzed for total and dissolved zinc. The pH of the groundwater was also measured in the field as part of the investigation. Results from the off-site groundwater sampling is discussed in the "Previous Off-Site Investigations" section.

Total zinc concentrations ranged from 876 µg/L (MW-3) to 140,000 µg/L (MW-6). Dissolved zinc concentrations ranged from 669 µg/L (MW-3) to 124,000 µg/L (MW-6). The pH measurements ranged from 4.24 (MW-6) to 6.77 (MW-3). Metals and pH results are summarized in Table 8.

4.1.17 2017 Groundwater Monitoring Well Sampling (GeoDesign, 2018)

In 2017, GeoDesign conducted a supplemental groundwater delineation investigation that included sampling the on-site monitoring wells. Samples were submitted to an analytical laboratory for analysis of total and dissolved zinc. The pH of the groundwater was also measured in the field as part of the investigation.

Total detected zinc concentrations ranged from 1,240 µg/L (MW-5) to 146,000 µg/L (MW-6). Dissolved zinc concentrations ranged from 1,220 µg/L (MW-5) to 149,000 µg/L (MW-6). The measured groundwater pH ranged from 4.10 (MW-6) to 5.95 (MW-5). Metals and pH results are summarized in Table 8.

4.2 PREVIOUS OFF-SITE INVESTIGATIONS

The following summarizes off-site soil and groundwater investigations that will help delineate the nature and extent of contamination associated with the Subject Property.

4.2.1 J.A. Freeman & Sons Facility Soil and Groundwater Site Characterization (Evergreen Environmental Management, Inc. [EEM], 1999)

In 1999, a site assessment was conducted on the property north of the Subject Property. Eight borings were drilled and soil and groundwater samples were collected. Soil samples were analyzed for TPH identification and follow-up analysis for diesel- and oil-range hydrocarbons. One soil sample was analyzed for PCBs. Groundwater samples were analyzed for TPH identification with follow-up analysis for diesel- and oil-range hydrocarbons. Six of the eight groundwater samples were analyzed for VOCs and metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc). One groundwater sample was analyzed for PCBs and PAHs.

Diesel-range hydrocarbons were detected in one soil sample (GP-4-0-4') at a concentration of 84 mg/kg. Heavy oil-range hydrocarbons were detected in four soil samples at concentrations ranging from 190 mg/kg (GP-5-4'-8') to 1,200 mg/kg (GP-4-0-4'). PCB results were less than the laboratory MRLs for the one soil sample analyzed. TPH and PCB analytical results for soil are summarized in Table 3. Heavy oil-range hydrocarbons were detected in one groundwater sample (GP-5-GW) at a concentration of 790 µg/L. PCB results for groundwater sample GP-5-GW were less than the laboratory MRLs. TPH and PCB analytical results for groundwater are summarized in Table 7.

As summarized in Table 8, metals concentrations in groundwater samples were generally low, except for zinc. Greater concentrations of zinc were observed in groundwater samples collected from GP-1-GW and GP-2-GW, northeast of the Subject Property. Zinc concentrations ranged from 3,030 µg/L (GP-6-GW) to 84,000 µg/L (GP-1-GW).

Chloroform was detected in five of the six samples analyzed for VOCs at concentrations ranging between 1.0 µg/L (GP-2-GW) and 6.0 µg/L (GP-6-GW). Other VOC concentrations were less than the laboratory MRLs. VOC results are summarized on Table 9. PAH results were less than laboratory MRLs for the one sample analyzed. PAH results are summarized on Table 10.

4.2.2 Groundwater Assessments – GE Energy Facility

4.2.2.1 2008 Groundwater Assessment (AMEC Earth and Environmental, Inc. [AMEC], 2008)

In April 2008, a groundwater assessment report was prepared for the GE Energy facility north of the Subject Property at the corner of NW Industrial Street and NW 29th Avenue. The groundwater assessment included the following:

- Installation of six groundwater monitoring wells (AMW-1 through AMW-6)[2];
- Collection of soil samples from the borings;
- Two rounds of groundwater sampling from AMW-5; and
- Collection of six rounds of monthly groundwater elevation measurements from all six monitoring wells.

The GE groundwater monitoring well locations are shown on Figure 8 as the locations where AMEC/MWH Americas, Inc. (MWH) sampling was performed.

[2] An 'A' designator was added to the monitoring well I.D.s to distinguish them from the monitoring wells installed on a the Subject Property with the same I.D.s.

Fifteen soil samples were collected from the six borings. Soil samples were analyzed for the following constituents:

- Diesel-range organics (DROs) by method NWTPH-Dx;
- PCBs as Aroclors by U.S. Environmental Protection Agency (EPA) Method 8082;
- Priority pollutant (13) metals by EPA Series 6000/7000 methods; and
- PAHs by EPA Method 8270C SIM.

DROs were detected in 7 of the 15 soil samples at concentrations ranging from 4.76 mg/kg [MW06-SO-1 (AMW-6)] to 385 mg/kg [MW04-SO-1 (AMW-4)]. PCBs were detected in 10 of the 15 samples at concentrations ranging between 0.0146 mg/kg [MW01-SO-1 (AMW-1)] and 1.66 mg/kg [MW03-SO-1 (AMW-3)]. DRO and PCB results are summarized on Table 3.

One or more priority pollutant metals were detected in the 15 soil samples collected and analyzed, except for selenium and silver. Silver results were less than the laboratory MRLs for all 15 samples analyzed. Select selenium results were flagged as "rejected" due to the low percent recoveries in the continuing calibration recovery. Detected priority pollutant metals ranged between 0.0234 mg/kg [mercury, MW05-SO-6.5 (AMW-5) and MW06-SO-1 (AMW-6)] and 288 mg/kg [zinc, MW01-SO-1 (AMW-1)]. Priority pollutant metals results in soil are summarized on Table 4.

One or more PAHs were detected in each soil sample collected during this investigation. Acenaphthene concentrations were less than the laboratory MRLs for all 15 soil samples analyzed. PAH concentrations in the soil samples ranged from 0.00146 mg/kg [fluorene and naphthalene, MW01-SO-3 (AMW-1)] to 0.275 mg/kg [pyrene, MW02-SO-1 (AMW-2)].

As part of the 2008 groundwater assessment, two rounds of groundwater monitoring were conducted on January 18 and June 28, 2007. Groundwater samples were collected from AMW-05 and analyzed for the following constituents:

- DROs by method NWTPH-Dx;
- PCBs as Aroclors by EPA Method 8082;
- Priority pollutant (13) metals by EPA Series 6000/7000 methods; and
- PAHs by EPA Method 8270C Selective Ion Monitoring (SIM).

DROs were detected in groundwater during the January 18, 2007, monitoring event at a concentration of 217 µg/L (123 µg/L in the duplicate). During the June 2007 monitoring event, DRO results were less than the laboratory MRLs. PCBs were detected in groundwater during both monitoring events. In January 2007, PCBs were detected at a concentration 0.9775 µg/L (0.995 µg/L in the duplicate). In June 2007, PCBs were detected at a concentration 1.67 µg/L (1.67 µg/L in the duplicate). The PCB data were flagged as tentatively identified due to altered PCB patterns likely due to weathering. Groundwater monitoring results for DROs and PCBs are summarized in Table 7.

Priority pollutant metal results were less than the laboratory MRLs for both monitoring events. Groundwater monitoring results for priority pollutant metals are summarized in Table 8.

Similarly, PAH results were less than the laboratory MRLs for both monitoring events. Groundwater monitoring results for PAHs are summarized in Table 9.

4.2.2.2 2009 Groundwater Assessment (MWH Americas, 2009)

In February 2009, a second Groundwater Assessment Report was prepared for the GE Energy facility north of the Subject Property. The 2009 Groundwater Assessment included the following:

- Redevelopment of the six groundwater monitoring wells on the GE Energy facility;
- Six rounds of monthly groundwater elevation measurements; and
- One round of groundwater sampling from the six groundwater monitoring wells.

Groundwater samples were analyzed for the following constituents:

- DROs by method NWTPH-Dx;
- PCBs as Aroclors by EPA Method 8082;
- Priority pollutant (13) metals by EPA Series 6000/7000 methods; and
- PAHs by EPA Method 8270C SIM.

DRO results were less than the laboratory MRLs for all six groundwater samples and duplicates. PCBs were detected in samples AMW-05-GW-111308 and AMW-06-GW-111308 at concentrations of 2.496 µg/L and 0.1377 µg/L, respectively. A duplicate groundwater sample was collected from AMW-05. PCB results for the duplicate sample were 2.73 µg/L. The PCB data were flagged as tentatively identified due to altered PCB patterns, likely due to weathering. Groundwater monitoring results for DROs and PCBs are presented on Table 7.

One or more priority pollutant metals were detected in each groundwater sample except for beryllium, copper, mercury, and silver. Priority pollutant metals results ranged between 1.73 µg/L (zinc, AMW-1) and 2,710 µg/L (zinc, AMW-3). Groundwater monitoring results for priority pollutant metals are presented on Table 8.

PAH results were less than the laboratory MRLs for both monitoring events. Groundwater monitoring results for PAHs are presented on Table 9.

4.2.3 2007 – 2009 Balch Consolidation Conduit (BCC) Project Support Sampling (Shannon & Wilson, 2008 and 2009)

In November 2008, an environmental alternatives analysis technical memorandum and associated amendments were prepared for the BCC project. The 2008 memorandum included analytical data from soil and groundwater samples collected along the BCC project alignment. For this report, soil and groundwater sample results from borings drilled on NW 29th Avenue and north of the intersection of NW Industrial Street and NW 30th Avenue are included in the evaluation of potential risks that may be associated with the Subject Property. In 2009, Shannon & Wilson amended the environmental alternatives technical memorandum with additional groundwater characterization data to supplement groundwater quality information, particularly near BCC Shaft B, which is at the intersection of NW Industrial Street and NW 29th Avenue.

Results relevant to the Subject Property are summarized below.

4.2.3.1 Soil Sample Results

Soil samples were analyzed for one or more of the following:

- TPH-HCID with follow-up analysis for diesel- and heavy oil-range hydrocarbons;
- VOCs;
- PAHs;

- PCBs; and
- Metals.

Thirty-one soil samples collected in the vicinity of the Subject Property were qualitatively analyzed for TPH. Six sample results detected the presence of diesel- and/or heavy oil-range hydrocarbons. The six soil samples were analyzed to quantify the diesel- and heavy oil-range hydrocarbon concentrations. Diesel-range hydrocarbons were not detected in the six soil samples analyzed. Heavy oil-range hydrocarbons were detected in five soil samples at concentrations ranging from 156 mg/kg (SW-64AM-5) to 1,190 mg/kg (SW-66AM-5).

Forty-four soil samples collected in the vicinity of the Subject Property were analyzed for PCBs.

PCBs were detected in four soil samples at concentrations ranging from 0.010 mg/kg (SW-57AM-10) to 0.182 mg/kg (SW-59GP-2.5-3.3). TPH and PCB soil analytical results are summarized in Table 3.

Thirty-two soil samples were analyzed for the following metals:

- Arsenic
- Barium
- Cadmium
- Chromium
- Copper
- Lead
- Mercury
- Selenium
- Silver
- Zinc

Arsenic, barium, chromium, copper, lead, and zinc were detected in the 32 soil samples analyzed for these constituents. Selenium and silver were not detected in any soil samples. Detected metals concentrations in soil samples ranged between 0.011 mg/kg for mercury (SW-56AM-10, SW-57AM-15, and SW-58AM-10) and 1,670 mg/kg for zinc (SW-64AM-5). Soil analytical results for metals are summarized on Table 4.

Thirty-one soil samples were analyzed for VOCs. Benzene was detected in two soil samples: SW-5AM 8:30 (15 ft) at a concentration of 0.0265 mg/kg and (2) SW-66AM-5 at a concentration of 0.0461 mg/kg.

Naphthalene was detected in two soil samples: (1) SW-56AM-10 at a concentration of 0.566 mg/kg and (2) SW-66AM-5 at a concentration of 0.327 mg/kg.

Detected VOC analytical results are summarized in Table 5.

Twenty-six soil samples were analyzed for PAHs. One or more PAHs were detected in 10 of the 26 soil samples analyzed. Detected PAH concentrations ranged between 0.0103 mg/kg for chrysene (SW-65GP 4-5) and 3.000 mg/kg for phenanthrene (SW-56AM-10). PAH analytical results for soil samples are summarized in Table 6.

4.2.3.2 Groundwater Sample Results

Groundwater samples were analyzed for one or more of the following:

- TPH-HCID with follow-up analysis for diesel- and heavy oil-range hydrocarbons;
- PCBs;
- Metals;
- pH;
- VOCs; and
- PAHs.

Five groundwater samples collected in the vicinity of the Subject Property were analyzed for TPH-HCID. Diesel- and heavy oil-range hydrocarbons were qualitatively detected in one groundwater sample (SW-60AM). The follow-up quantitative analytical results were less than the laboratory MRLs for diesel- and heavy oil-range hydrocarbons. Four of the nineteen groundwater samples collected in the vicinity of the Subject Property were analyzed for PCBs. PCBs were detected in one sample (SW-82GP-W) at a concentration of 0.349 µg/L. TPH and PCB analytical results are summarized in Table 7.

As part of the BCC project support sampling, 21 groundwater samples were collected from borings and monitoring wells and analyzed for one or more of the following:

- Arsenic (total and/or dissolved)
- Barium (total and/or dissolved)
- Cadmium (total and/or dissolved)
- Chromium (total and/or dissolved)
- Copper (total and/or dissolved)
- Lead (total and/or dissolved)
- Mercury (total and/or dissolved)
- Selenium (total and/or dissolved)
- Silver (total and/or dissolved)
- Zinc (total and/or dissolved)

Additionally, 13 of the 21 groundwater samples were tested for pH. One or more of the listed metals were detected in the groundwater samples analyzed. Total metal concentrations ranged between 0.0024 µg/L (mercury, 29th/Industrial) and 103,000 µg/L (zinc, SW-77GP-W). Dissolved metal concentrations ranged between 0.0017 µg/L (mercury, SW-05AM) and 309,000 µg/L (zinc, SW-4GP 25). The pH in groundwater ranged between 4.75 (29th/Industrial) and 6.47 (SW-60AM). Metals analytical results and pH test results are summarized in Table 8.

Seventeen groundwater samples were analyzed for VOCs. The following summarizes the detected VOCs in groundwater samples:

- Acetone: 68.3 µg/L (SW-63GP);
- Benzene: 0.250 µg/L (SW-81GP-W);
- Chloroform: 4.26 µg/L (SW-83GP-W) and 7.9 µg/L (SW-75MW); and
- Toluene: 1.22 µg/L (SW-81GP-W).

VOC analytical results in groundwater are summarized in Table 9.

Six groundwater samples were analyzed for PAHs. PAHs were not detected in the groundwater samples. PAH analytical results in groundwater are summarized in Table 10.

4.2.4 Shaft B Bypass Dewatering Documentation (Shannon & Wilson, 2010)

As part of the BCC project, a bypass shaft (Shaft B) was excavated at the intersection of NW 29th Avenue and NW Industrial Street. As part of the excavation activities, construction dewatering was conducted from November 9 to December 21, 2009. During dewatering, water quality was monitored from the following monitoring wells: SW-76MW, SW-78MW, SW-79MW, and SW-80MW. Monitoring well locations are shown on Figure 8 as 2007, 2008, and 2009 Shannon & Wilson sample locations. Groundwater samples collected by BES were submitted to a chemical analytical laboratory and analyzed for one or more of the following parameters:

- PCBs;
- Total metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc); and
- VOCs.

Fifty-nine samples were collected (14 from SW-76MW and 15 from each of the other three monitoring wells). PCBs were detected in 27 samples analyzed at concentrations ranging between 0.027 µg/L (SW-79MW on December 17, 2009) and 0.131 µg/L (SW-78MW on November 3, 2009). PCB concentrations appeared to decrease during the dewatering activities. Results are summarized on Table 7.

One or more metals were detected in the fifty-nine samples analyzed. Concentrations ranged between 0.0042 µg/L for mercury (SW-76MW on November 24, 2009) and 119,000 µg/L for zinc (SW-79MW on December 3, 2009). Results are summarized in Table 8.

Chloroform was detected in one sample (SW-79MW) on November 10, 2009. The remaining VOCs were not detected. Results are summarized on Table 9.

4.2.5 2012 and 2013 BCC Support Project Off-Site Investigations (COP Bureau of Environmental Services [BES], 2013)

In 2012, BES conducted an investigation along NW 30th Avenue as part of the BCC Support project. The BCC Support project included replacement of the 54-inch-by-54-inch storm line that ran along NW 30th Avenue and continued north generally following the Burlington Northern/Santa Fe rail spur. As part of this investigation, BES collected 12 soil samples from four borings drilled in the NW 30th Avenue right-of-way between NW Nicolai Street and NW Industrial Street. Additionally, one groundwater sample was collected as part of this investigation.

Soil samples were collected from each boring at 5-foot intervals to a depth of 15 feet bgs, except for boring B3, which was drilled to a depth of 20 feet bgs. The groundwater sample was collected from boring B3, which is approximately 140 feet south of the intersection of NW 30th Avenue and NW Industrial Street (see Figure 8). Soil samples were analyzed for TPH identification with follow-up analysis for diesel- and/or gasoline-range hydrocarbons, as applicable, and RCRA 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). The groundwater sample was analyzed for TPH identification and dissolved RCRA 8 metals plus dissolved zinc and dissolved copper.[3]

TPH identification results indicated the presence of diesel-range hydrocarbons in one sample and the presence of lube oil in four soil samples. Follow-up analytical results for diesel-range hydrocarbons were less than the laboratory MRL. Lube oil results ranged between 130 mg/kg (B6 0-5) and 2,600 mg/kg (B5 0-5). TPH results are summarized on Table 3.

The following summarizes the range of detected metals concentrations in soil.

- Arsenic: 0.801 mg/kg (B4 10-15) to 3.79 mg/kg (B3 5-10);
- Barium: 42.5 mg/kg (B6 5-10) to 170 mg/kg (B3 0-5);
- Cadmium: 0.135 mg/kg (B3 0-5) to 0.897 mg/kg (B4 0-5);
- Chromium: 12.8 mg/kg (B6 0-5) to 52.5 mg/kg (B4 10-15);
- Lead: 3.06 mg/kg (B6 0-5) to 65 mg/kg (B5 0-5);
- Mercury: 0.0104 mg/kg (B5 10-15) to 0.0397 mg/kg (B4 0-5);
- Selenium: Results less than the laboratory MRL;
- Silver: Results less than the laboratory MRL; and
- Zinc: 50.8 mg/kg (B6 0-5) to 2,930 mg/kg (B4 0-5).

[3] Sample B3 @ 15ft was also analyzed for total suspended solids. Refer to the source document for total suspended solids results.

Metals results are summarized in Table 4.

As noted above, a groundwater sample was collected from boring B3 at a depth of 15 feet bgs. The groundwater sample was analyzed for TPH identification, dissolved RCRA 8 metals, dissolved zinc, and dissolved copper. TPH were not detected. TPH results are summarized in Table 7.

Dissolved metals results from groundwater sample B3 @ 15 ft are summarized below and in Table 8.

- Arsenic: 0.863 µg/L;
- Barium: 34.1 µg/L;
- Cadmium: 0.199 µg/L;
- Chromium: Result less than the laboratory MRL;
- Copper: Result less than the laboratory MRL;
- Lead: Result less than the laboratory MRL;
- Mercury: Result less than the laboratory MRL;
- Selenium: Result less than the laboratory MRL;
- Silver: Result less than the laboratory MRL; and
- Zinc: 659 µg/L.

In 2013, BES drilled a boring approximately 25 feet east of boring B3 on NW 30th Avenue (see Figure 8). This investigation was also associated with replacement of the 54-inch-by-54-inch storm line. Three soil samples were collected from the boring at 5-foot intervals between 5 feet bgs and 20 feet bgs. One groundwater sample was collected at a depth of 10 feet bgs (B3E @ 10ft). Soil samples were analyzed for TPH identification and RCRA 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). The groundwater sample was analyzed for TPH identification with follow-up analysis for diesel- and/or gasoline-range hydrocarbons, as applicable, and RCRA 8 total and dissolved metals and total and dissolved zinc.[3]

TPH were not detected in the soil samples. TPH results are summarized in Table 3.

The range of metals concentrations in soil is summarized as follows:

- Arsenic: 0.802 mg/kg (B3E 15-20) to 3.77 mg/kg (B3E 5-10);
- Barium: 80.3 mg/kg (B3E 10-15) to 182 mg/kg (B3E 5-10);
- Cadmium: 0.116 mg/kg (B3E 10-15) to 0.126 mg/kg (B3E 15-20);
- Chromium: 20.7 mg/kg (B3E 15-20) to 34.8 mg/kg (B3E 5-10);
- Lead: 2.26 mg/kg (B3E 15-20) to 7.64 mg/kg (B3E 5-10);
- Mercury: 0.0180 mg/kg (B3E 5-10), remaining results were less than the laboratory MRL;
- Selenium: Results less than the laboratory MRL;
- Silver: Results less than the laboratory MRL; and
- Zinc: 65.2 mg/kg (B3E 5-10) to 505 mg/kg (B3E 15-20).

Metals results in soil are summarized in Table 4.

TPH identification results for groundwater indicated the presence of lube oil. Follow-up analytical results for diesel-range and heavy oil-range hydrocarbons indicated concentrations of 510 µg/L and 3,400 µg/L, respectively. TPH results for groundwater are summarized on Table 7.

Total and dissolved metals results from groundwater sample B3E @ 10 ft are summarized below and in Table 8:

- Arsenic: 5.79 µg/L total, 0.136 µg/L dissolved;
- Barium: 1,460 µg/L total, 88.4 µg/L dissolved;
- Cadmium: 3.99 µg/L total, 3.10 µg/L dissolved;
- Chromium: 79.8 µg/L total, 0.575 µg/L dissolved;
- Lead: 43.2 µg/L total, result less than the laboratory MRL;
- Mercury: 0.107 µg/L total, result less than the laboratory MRL;
- Selenium: Total and dissolved results less than the laboratory MRLs;
- Silver: Total and dissolved results less than the laboratory MRLs; and
- Zinc: 23,200 µg/L total, 20,600 µg/L dissolved.

Metals results for groundwater samples are summarized in Table 8.

4.2.6 October 2012 Groundwater Investigation

In October 2012, GeoDesign conducted an off-site groundwater investigation to assess the nature and extent of groundwater contamination and address the groundwater migration pathway. The investigation included collecting groundwater samples from four direct-push borings (DP-1 through DP-4) adjacent to the Subject Property. The groundwater samples were submitted to an analytical laboratory and analyzed for total and dissolved zinc. Groundwater pH was also measured in the field during the investigation.

Total zinc concentrations ranged from 45.4 µg/L [DP-3(14-18)] to 2,460 µg/L [DP-2(14-8]. Dissolved zinc concentrations ranged from 14.1 µg/L [DP-4(16-20)] to 848 µg/L [DP-2(14-18)]. The pH measurements ranged from 5.96 [DP-2(14-18)] to 6.97[DP-1(11-15)]. The metals results are summarized in Table 8. Boring locations are shown on Figure 8. The October 2012 investigation was previously presented in the SCE Addendum (GeoDesign, 2014).

4.2.7 2017 Groundwater Sampling (GeoDesign, 2018)

In 2017, GeoDesign conducted additional groundwater sampling to further delineate the zinc plume downgradient of the Subject Property. Three direct-push borings (DP-5, DP-6, and DP-7) were advanced northeast of the Subject Property. Groundwater samples were collected from each boring at two discrete depths, approximately 20 and 27 feet bgs. Groundwater samples were analyzed for total and dissolved zinc. Groundwater pH was also measured in the field as part of the investigation.

Detected concentrations of total zinc ranged from 6.34 µg/L in DP-5(20.0-22.0) to 51.1 µg/L in DP-7(27.0-29.0). Dissolved zinc was detected at a concentration of 16.3 µg/L in sample DP-5(27.0-29.0). Dissolved zinc was not detected at concentrations greater than the laboratory MRLs in the remaining samples submitted for analysis. Groundwater pH measurements ranged from 6.07 in DP-7(20.0-22.0) to 6.87 in DP-6(27.0-29.0). The groundwater sampling results are summarized in Table 8. Sample locations are shown on Figure 8.

5.0 NATURE AND EXTENT OF CONTAMINATION

The sections below summarize our understanding of subsurface impacts at the Subject Property. This understanding is based on the soil and groundwater data generated through the multiple investigations previously summarized.

5.1 SOIL

5.1.1 TPH and PCBs

Fifty-three soil samples collected on the Subject Property have been submitted for chemical analysis of TPH compounds, including gasoline-, diesel-, and heavy oil-range hydrocarbons. Table 3 summarizes the investigative phases and analytical results for associated samples. Approximate sample locations are shown on Figure 7.

Gasoline-range hydrocarbons were detected in nine soil samples at concentrations up to 674 mg/kg. The greatest detected concentrations of gasoline-range hydrocarbons are associated with the 2002 alley soil assessment. Galvanizers excavated nine test pits in the alley east of the main plant building. The purpose of the assessment was to evaluate soil for potential future environmental assessments and to characterize soil for disposal as part of the stormwater improvements planned in the alley. Based on the 2002 alley soil assessment, analytical results indicated impacted soil was limited to soil to a depth of approximately 5.5 feet bgs. The lateral extent was generally limited to the alley. Soil in the alley was partially removed to install catch basins and underground piping. Remaining soil is currently covered with pavement. Gasoline-range hydrocarbons were also detected in soil samples collected during the 2001 drywell decommissioning. Soil samples collected as part of the 2001 drywell decommissioning were for confirmation purposes of soil impacts during removal of the drywell. Analytical results were compared to the 2001 regulatory screening values. The horizontal and vertical extent of gasoline-impacted soil that may remain in place is limited to depths between approximately 4 and 14 feet bgs approximately 15 feet laterally from the former location of the drywell.

Diesel-range hydrocarbons have been detected in 24 soil samples at concentrations up to 13,300 mg/kg. Diesel-range hydrocarbons in soil are generally associated with the former heating oil UST that was in the southeast corner of steel products yard, three former heating oil USTs located under the Russell Building, and the drywell decommissioning. Additionally, diesel- range hydrocarbons were detected in soil samples collected as part of the 2002 alley soil assessment. The greatest detected concentration was observed in a sample collected under the Russell Building. As noted, the heating oil USTs were decommissioned in a general accordance with the applicable regulatory requirements at the time.

Heavy oil-range hydrocarbons have been detected in 32 soil samples at concentrations up to 15,200 mg/kg. Heavy oil-range hydrocarbons in soil are generally associated with the heating oil UST decommissioning activities, drywell closure, and alley sampling. Additionally, soil samples collected near Building 14 and reported USTs in the southeast corner of the steel products yard indicated the presence of heavy oil-range hydrocarbons.

Additionally, diesel- and heavy oil-range hydrocarbons were detected in off-site soil samples collected as part of various investigations. Considering the mobility of diesel- and heavy oil-range hydrocarbons and the on-site sample results, the Subject Property is not considered a source of the off-site TPH contamination.

The Subject Property is not a source of PCBs. Therefore, on-site investigations did not include PCB analyses. Further discussion of PCBs in soil is not warranted.

5.1.2 Metals

As part of the multiple investigations, 45 soil samples were analyzed for total metals and 59 soil samples were analyzed for TCLP metals. One or more of the following metals were detected in the soil samples analyzed for

total metals: arsenic, barium, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, and zinc. Additionally, one or more of the following metals were detected in soil samples analyzed for TCLP metals: barium, cadmium, chromium, iron, lead, and zinc. TCLP metals results were generally used to characterize soil for proper disposal as part of removal actions. Table 4 summarizes the investigative phases and analytical results for associated samples. Figure 7 shows the sample locations. For the purposes of this report, total metals results will be used to develop the CSM and evaluate the associated risk to human health and the environment.

In general, lead and zinc concentrations were elevated in samples collected from within the plant area, adjacent to the former drywell, and on the south end of Building 14. Sample locations are shown on Figure 7. Detected concentrations of the remaining other metals were detected at concentrations generally consistent with DEQ's published background values (DEQ, 2019).

Lead was detected in 42 on-site soil samples; 32 of those sample results were greater than DEQ's published background value. The greatest detected lead concentrations were generally collected from the soil surrounding the former drywell and a limited area on the south end of Building 14.

Zinc has been detected in 31 on-site soil samples; 23 of those sample results were greater than DEQ's published background value. Samples with the greatest detected concentrations were generally collected from around the former drywell and within the plant area.

As part of the off-site investigations, lead results were within DEQ's published background values. Elevated zinc concentrations were observed in samples collected at the intersection of NW 29th Avenue and NW Industrial Street, on NW 29th Avenue adjacent to and downgradient of the subject property, and on NW 30th Avenue adjacent to and downgradient of the Subject Property.

5.1.3 VOCs

As part of on-site investigations, 19 soil samples were analyzed for VOCs. One or more VOC were detected in seven samples. Detected concentrations were primarily petroleum constituents (i.e., BTEX compounds). TCE and PCE were detected in soil samples collected on the south end of Building 14. However, this soil was subsequently removed as part of site improvements. VOC results are summarized in Table 5.

As part of off-site investigations, 31 soil samples were analyzed for VOCs. Benzene was detected in two samples and Naphthalene was detected in two samples.

Overall, detected VOC concentrations in soil that remains on site or off site are generally low and less than applicable regulatory screening values.

5.1.4 PAHs

As part of on-site investigations, 17 soil samples were analyzed for PAHs. One or more PAHs were detected in 13 of the samples analyzed. Samples were collected as part of the Russell Building investigation, the drywell closure, the alley soil assessment, and installation of on-site monitoring wells. Detected PAH concentrations were less than applicable screening values and PAHs are not considered a primary soil contaminant at the Subject Property. Therefore, further discussion of PAHs in soil is not warranted. PAH results are summarized on Table 6.

5.2 GROUNDWATER

5.2.1 TPH

As part of on-site investigations, 12 groundwater samples were analyzed for diesel- and heavy oil-range hydrocarbons. Diesel-range hydrocarbons were detected in eight groundwater samples at concentrations up to 16,300 µg/L. Heavy oil-range hydrocarbons were detected in five groundwater samples at concentrations

up to 1,620 µg/L. Detected concentrations of diesel- and heavy oil-range hydrocarbons appear to be associated with the former heating oil USTs in the Russell Building and the former drywell. TPH results in groundwater are summarized on Table 7.

5.2.2 Metals

As part of on-site investigations and groundwater monitoring, 69 groundwater samples were analyzed for total and/or dissolved metals. One or more of the following metals were detected in the groundwater samples analyzed for total metals: arsenic, barium, cadmium, chromium, copper, iron, lead, manganese, nickel, thallium, and zinc. Additionally, one or more of the following metals were detected in groundwater samples analyzed for dissolved metals: arsenic, barium, cadmium, chromium, copper, lead, manganese, nickel, silver, thallium, and zinc. The greatest detected concentrations were observed in a groundwater sample collected in 1993 from the plant area before facility upgrades. Total iron and total zinc were detected at concentrations of 2,040,000 µg/L and 2,330,000 µg/L, respectively. This sample was collected more than 30 years ago and not representative of current conditions. Total and dissolved metals results are summarized in Table 8. Sample locations are shown on Figure 7.

Off-site investigations indicated elevated zinc concentrations in groundwater in the inferred downgradient direction of the Subject Property. Zinc concentrations in groundwater appear to significantly decrease north of the intersection of NW Industrial Street and NW 29th Avenue. Sample locations are shown on Figure 8. Figures 9 and 10 present zinc isoconcentration maps for dissolved zinc in groundwater for samples collected in 2012 and 2017, respectively.

5.2.3 VOCs

For on-site investigation activities, 11 groundwater samples were analyzed for VOCs. Detected VOCs were TPH constituents (BTEX) generally associated with the former heating oil USTs in the Russell Building and the former drywell. The greatest detected concentration was 33.8 µg/L for total xylenes (B-water). VOC results in groundwater are summarized in Table 9. Sample locations are shown on Figure 7.

For off-site investigation activities, VOC results were either non-detect or less than applicable screening values. Based on this, VOCs are not considered a primary groundwater contaminant at the Subject Property.

5.2.4 PAHs

For on-site investigation activities, 11 groundwater samples were analyzed for PAHs. Detected PAHs were generally associated with the former heating oil USTs in the Russell Building and the former drywell. The greatest detected concentration was 2.52 µg/L (fluorene in sample B-water). PAH results in groundwater are summarized on Table 10. Sample locations are presented on Figure 7.

For off-site investigation activities, PAH results were less than the reporting limits. Based on this, PAHs are not considered a primary groundwater contaminant at the Subject Property.

6.0 CONCEPTUAL SITE MODEL

The CSM presents sources of contaminants, release mechanisms, fate and transport processes, and current and likely future exposure scenarios. Details of the CSM are presented in the following sections.

6.1 SOURCE AND RELEASE MECHANISMS

As described in the “Nature and Extent of Contamination” section, contaminants of interest in soil and groundwater include diesel- and heavy oil-range hydrocarbons and metals. Sources of diesel- and heavy oil-range hydrocarbons are primarily attributed to former heating oil and other USTs. The release mechanism can be attributed to leaking heating oil and other USTs. Sources of metals in soil and groundwater are primarily

attributed to the galvanizing process. Release mechanisms are attributed to inadvertent historical releases to soil, groundwater, or stormwater related to on-site operations. Additionally, incidental dripping from steel drag-out between process tanks may have occurred in the area where the process tanks are located.

Before 1962, the Subject Property was pervious gravel except for roofs and the asphalt concrete surface of the process area, which was covered. Generally, stormwater infiltrated into the ground. In 1962, the yard area was paved and a drywell was installed to manage stormwater runoff. As a result, stormwater no longer infiltrated into the ground across the Subject Property. Stormwater runoff from impervious surfaces was directed to the drywell, where it infiltrated into the ground. In the 1980s, an overflow was added to the drywell that was connected to the storm sewer. The overflow was added to help reduce flooding when stormwater runoff exceeded the capacity of the drywell. In 2001, the drywell was decommissioned and stormwater pre-treatment improvements began at the facility. Since 2001, Galvanizers upgraded or modified the pre-treatment system to improve the quality of stormwater discharged from the Subject Property. Current pre-treatment technologies include an oil water separator, sand filters, pH adjustment, settling tanks, ion exchange, and other proprietary treatment technologies. In addition, areas of the Subject Property were re-graded to redirect stormwater and prevent off-site runoff. In addition, a rainwater harvesting program was implemented to help reduce the amount of runoff.

6.2 FATE AND TRANSPORT

Based on investigations conducted to date, diesel- and oil-range hydrocarbon contamination in soil is limited to the areas near the former heating oil USTs under the Russell Building, the alley on the east side of the plant, and the former drywell in the steel products yard. Diesel- and oil-range hydrocarbons results from soil and groundwater samples indicate these contaminants are relatively stable with limited partitioning to groundwater and not readily mobile. The heating oil USTs and drywell have since been decommissioned in general accordance with applicable regulations. Considering the sources were addressed and the data were collected approximately 20 years ago, it is reasonable to conclude that diesel- and oil-range concentrations in soil and groundwater have significantly decreased and/or stabilized.

The distribution and transport of zinc in groundwater and soil are dependent on the species of zinc present and the characteristics of the environment. The solubility of zinc is a function of pH. Lower pH values tend to increase the solubility of zinc allowing for greater concentrations of zinc in groundwater. As pH increases closer to neutral (pH=7.0), zinc tends to sorb to soil particles. Groundwater data indicate that on-site groundwater exhibits pH between 3.84 and 6.77. With more acidic conditions on site, elevated zinc concentrations in groundwater are observed. However, zinc concentrations in groundwater significantly decrease as natural buffering conditions neutralize the groundwater, decreasing the solubility of zinc and groundwater. This was demonstrated through fate and transport modeling (GeoDesign, 2017) and off site, downgradient groundwater sampling (GeoDesign, 2018).

6.3 LOCALITY OF FACILITY

The locality of facility (LOF) is defined by DEQ as any point where a human or ecological receptor may reasonably likely contact site-related hazardous substances. The LOF considers factors such as existing site conditions, regional and local hydrogeology, and the likelihood of contaminants migrating over time.

On-site and off-site subsurface explorations performed to date indicate that the areal extent of the LOF is governed by the presence of zinc in groundwater. Specifically, this LOF encompasses the area within which zinc in groundwater is present at concentrations that may exceed applicable screening criteria. For the purposes of establishing the LOF, the DEQ Ecological Risk-Based Concentration (RBC) for water of 36 µg/L was used (DEQ, 2020). The LOFs based on dissolved zinc in groundwater from 2012 and 2017 are shown on Figures 9 and 10, respectively.

6.4 BENEFICIAL WATER USE DETERMINATION

The purpose of the Beneficial Water Use Determination (BWUD) is to provide information regarding the current and reasonably likely future beneficial uses of water in the Subject Property vicinity. BWUDs provide the basis for the development of exposure scenarios applicable to the Subject Property. This BWUD helped identify potential consumptive beneficial groundwater uses in the Subject Property vicinity to develop potential risk scenarios for the CSM.

NV5 conducted a BWUD for the Subject Property and surrounding vicinity. The determination of current and reasonably likely future beneficial water use was conducted in general accordance with DEQ's Final Guidance for Conducting Beneficial Water Use Determinations at Environmental Cleanup Sites (DEQ, 1998). Supporting documentation for the beneficial land and water use determination is presented in Appendix A.

The BWUD included the following:

- A review of publicly available water well logs available from the Oregon Water Resources Department (OWRD) within 0.5 mile of the Subject Property.
- A review of wetlands and/or sensitive environments within 0.5 mile of the Subject Property.
- A review of groundwater and/or surface water rights within 0.5 mile of the Subject Property.
- Correspondence with utility representatives (Portland Water Bureau [PWB]) and government officials (OWRD).
- A postcard survey of businesses adjacent to the Subject Property.

6.4.1 Land Use

The Subject Property is in the Guilds Lake Industrial Sanctuary Plan District. The area is zoned Heavy Industrial with a prime Industrial overlay (IHk). Properties north, west, east, and immediately south of the Subject Property are similarly zoned Heavy Industrial (IHk). Properties farther south of the Subject Property, across NW Nicolai Street, comprise a mixed zoning array of General Employment 1 (EG1) and Central Employment (EXd). It is anticipated that current land use will continue for the foreseeable future. The COP site area zoning map is presented in Appendix A.

6.4.2 Current and Reasonably Likely Beneficial Use of Water

Water is supplied to the Subject Property and surrounding area (Northwest Industrial Neighborhood) by COP. COP distributes the primary supply from the Bull Run Reservoir. Contingency supplies to this source include the Columbia South Shore Wellfield and Powell Valley Wells (Powell Valley Road Water District). The primary and contingency water supplies for the Subject Property are at least 7 miles from the Subject Property. According to the 2023 Seasonal Water Supply Augmentation and Contingency Plan (PWB, 2023), these resources appear sufficient to supply the Subject Property vicinity with water into the foreseeable future.

Correspondence with OWRD and PWB personnel indicates groundwater development for beneficial use at or near the Subject Property is unlikely due to the historical nature of industrial activity in the vicinity (northwest Portland) and sufficient municipal water supplies for the foreseeable future. In addition, our review of DEQ databases indicates the presence of many environmental sites within the project area with historical and/or current groundwater impacts that would significantly impede the development of groundwater resources for consumptive purposes. Based on these lines of evidence, it is highly unlikely that groundwater in the Northwest Industrial Neighborhood will be developed as a drinking water supply.

6.4.3 Surface Water Research

The Willamette River is approximately 0.75 mile northeast of the Subject Property. Our review of OWRD records did not indicate the presence of any surface-water-right point of diversions (PODs) within 0.5 mile of the Subject Property. Although groundwater in the Subject Property vicinity may flow toward the river, the contribution of groundwater originating from the Subject Property to the maintenance of aquatic or terrestrial habitat is considered very low; this determination is supported by DEQ's SCD that the groundwater pathway from the Subject Property to the river does not pose a threat to the river (DEQ, 2021). Supporting water-right information is presented in Appendix A.

6.4.4 Groundwater Research

A review of well logs on file with OWRD indicated that two groundwater supply wells could potentially be within an approximately 0.5-mile radius of the Subject Property. The remaining wells identified in the OWRD database were either abandoned or do not represent water wells (i.e., test borings, monitoring wells, abandoned dewatering wells, etc.).

One groundwater right point of appropriation (POA) was identified in the OWRD database within 0.5 mile of the Subject Property. The POA is associated with the two groundwater supply wells for industrial uses.

According to the water rights documentation, the wells are north of NW Yeon Avenue, which is approximately 3,000 feet north-northeast of the Subject Property. Additionally, the documentation indicates the wells were up to 243 feet deep, indicating a deeper aquifer was the groundwater source. As mentioned previously, groundwater at the Subject Property was encountered at depths of approximately 9 feet and 14 feet bgs. NV5 conducted further research regarding each of these wells to evaluate their presence, use, and/or likelihood of contact with Subject Property-derived groundwater. Table A-1 in Appendix A summarizes the available information regarding each of these wells and a summary of findings during the additional research. As detailed in Table A-1, neither of the identified wells and/or water rights appear to represent a beneficial use of Subject Property derived groundwater.

Review of well logs and environmental investigation sites (DEQ on-line databases) in the vicinity of the Subject Property indicates that the uppermost groundwater aquifer in the Subject Property area is characterized by relatively low yield and low-quality groundwater that is not suitable for municipal or industrial use.

6.4.5 Wetland Research

The U.S. Fish and Wildlife Service National Wetlands Inventory database did not indicate the presence of wetlands or sensitive habitats within 0.5 mile of the Subject Property. The closest listed surface waterbody is the Willamette River approximately 0.75 mile northeast of the Subject Property. The Wetlands Map is presented in Appendix A.

6.4.6 Postcard Survey

NV5 conducted a postcard survey of 14 properties/businesses adjacent to the Subject Property. None of the received questionnaires indicated the presence of water wells at the subject properties. The responses to postcard survey are summarized in Appendix A.

6.4.7 BWUD

After reviewing relevant information, the following is a summary of BWUD findings:

- Two water wells potentially within 0.5 mile of the Subject Property were identified during our research. Subsequent research on the water wells indicated the following:
  - The wells are in an area with potential groundwater impacts originating from other nearby site(s), and DEQ records from those sites indicate that beneficial use (particularly direct contact and/or consumptive use) of groundwater would be prohibited; and/or
  - The well locations, well end depths, and permitted pumping rates indicate that no hydraulic connection exists between the wells and shallow groundwater at the Subject Property.
- Municipal water is provided to the Subject Property and surrounding area by the COP. The primary, secondary, and tertiary sources of municipal water are not within 0.5 mile of the Subject Property and are expected to meet current and foreseeable water demands. Additionally, site-area groundwater is not likely to be developed for municipal purposes due to historical, current, and future land uses and poor groundwater quality.
- The nearest surface water body is the Willamette River, which is 0.75 mile northeast of the Subject Property. Surface water right PODs were not identified within a 0.5-mile radius of the Subject Property. The non-potable nature of this water use, combined with the distance from the Subject Property indicates that end users of surface water will not likely have contact with site-related substances in groundwater; this determination is supported by DEQ's SCD stating that the groundwater pathway from the Subject Property to the river does not pose a significant threat to the river.
- Shallow groundwater under the Subject Property vicinity is not used for consumptive use and will not likely be used in the foreseeable future.

6.5 ECOLOGICAL RISK ASSESSMENT

NV5 conducted a Tier I Generic Screening Level Ecological Risk Assessment (ERA) in general accordance with DEQ's Conducting Ecological Risk Assessments Internal Management Directive dated September 14, 2020. The ERA was conducted to gather basic site information and evaluate if ecological features and/or species are present at the Subject Property as well as evaluate the potential for complete exposure pathways to ecological receptors within the LOF at the Subject Property. DEQ (2020) guidance states, "For very simple sites where ecological exposure is not expected, such as in highly urbanized areas, a checklist of basic information may be used to determine if complete exposure pathways are present."

On January 31, 2022, NV5 observed conditions at the Subject Property. Observations included no on-site vegetation, limited vegetation nearby, no wildlife, and no other observable impacts from Subject Property-related contaminants. Water bodies and wetlands were not observed within the LOF. Based on these observations, it is our opinion that ecological receptors are not present within the LOF. Additionally, current and future use at the Subject Property and surrounding area will remain heavy industrial for the foreseeable future. Therefore, future ecological receptors will not be present in the foreseeable future. The completed Basic Site Information Checklist and Ecological Scoping Checklist are presented in Appendix B.

6.6 CURRENT AND FUTURE EXPOSURE SCENARIOS

This section summarizes complete exposure pathways for soil and groundwater at the Subject Property. Figure 11 presents a graphical representation of the CSM showing the sources, release mechanisms, exposure routes, and complete exposure pathways.

6.6.1 Soil Exposure Pathways

Potentially complete exposure scenarios for soil include direct contact and/or exposure to subsurface soil and soil vapor by occupational and construction/excavation workers. The Subject Property is covered by asphalt concrete pavement, hardscapes, and structures; therefore, routine exposure to subsurface soil by occupational workers is not expected. Future exposure to construction/excavation workers is possible in the event the Subject Property is redeveloped. Correspondingly, the following DEQ RBC pathways apply:

- Soil Ingestion, Dermal Contact and Inhalation for occupational, construction, and excavation worker receptors.
- Volatilization to Outdoor Air for occupational receptors.
- Vapor Intrusion into Buildings for occupational receptors.

6.6.2 Groundwater

Before the BCC project was completed in 2011 and the Balch Conduit Support project was completed in 2016, stormwater utility lines adjacent to the Subject Property (and situated within the groundwater zinc plume) were below the water table and therefore subject to potential infiltration of impacted groundwater. Specifically, the 54-inch-by-54-inch stormwater conveyance pipe on NW 30th Avenue was identified as the only pipe partially or completely within groundwater. With the completion of the above-referenced projects, the groundwater infiltration and migration pathway through stormwater utility lines was eliminated. In 2021, DEQ concurred in their SCD that the stormwater and groundwater pathways from the Subject Property to the Willamette River are no longer considered complete.

The BWUD indicates that groundwater under the Subject Property and the surrounding area is not currently used for consumptive purposes and is not reasonably likely to be used for this purpose in the future.

However, the following DEQ RBC pathways appear to be complete:

- Volatilization to Outdoor Air for occupational receptors.
- Vapor Intrusion into Buildings for occupational receptors.
- Groundwater in Excavations for construction and excavation worker receptors.

Additionally, DEQ requested an evaluation of the potential preferential pathway of groundwater through COP's stormwater conveyance system to the publicly owned treatment works (POTW) with respect to COP's discharge limit of 3,700 µg/L for zinc. As discussed above, groundwater no longer infiltrates into the pipes.

Therefore, this pathway is incomplete. Additionally, Galvanizers has installed an extensive stormwater pre-treatment system to help meet the requirements of industrial wastewater discharge permit. Discharges to the COP stormwater system are conveyed to the POTW and regulated by the COP. Water discharged to the COP's stormwater system from the Subject Property is not applicable to this risk evaluation report.

6.7 RISK SCREENING

6.7.1 Soil

6.7.1.1 TPH

Gasoline-range hydrocarbons exceeded the DEQ RBC for the Leaching to Groundwater for occupational receptors. However, the BWUD concluded that groundwater in the shallow aquifer is not suitable for potable or industrial uses. Therefore, the Leaching to Groundwater is considered incomplete and gasoline-range hydrocarbons in soil does not pose an unacceptable risk. Diesel-range hydrocarbons exceeded the DEQ RBC for

the Soil Ingestion, Dermal Contact, and Inhalation for construction worker receptors. RBC exceedances were observed in samples collected from subsurface soil under the Russell Building, in the alley on the east side of the plant, and near the former drywell. Impacted soil is covered with building or pavement. The exposure pathway is considered complete under future scenarios if excavation is conducted in these specific areas. Risks associated with the scenario can be managed with the development and implementation of a Contaminated Media Management Plan (CMMP).

6.7.1.2 Metals

Except for one soil sample, arsenic was detected at concentrations less than DEQ default background concentrations in metals. The one elevated arsenic result was collected from soil near MW-1 when the monitoring well was installed. The exceedance is considered anomalous and not representative of Subject Property soil.

Lead was detected at concentrations exceeding the DEQ RBC for the Soil Ingestion, Dermal Contact, and Inhalation for occupational, construction worker, and excavation worker receptors. Soil exceeding the RBC is limited to the area near the former drywell and under the area of the main plant building. The impacted soil is under pavement or concrete and receptors would be exposed under potential future scenarios in which the excavation was necessary in these areas for maintenance purposes or redevelopment. Routine exposure under current conditions is unlikely. Future intrusive activity that exposes subsurface soil at the Subject Property would be managed with a CMMP.

Elevated zinc concentrations were observed in soil at the Subject Property. However, DEQ has not established an RBC for zinc. Therefore, we compared zinc concentrations to EPA's regional screening level (RSL) for industrial soil of 350,000 mg/kg. Zinc results were significantly less than the EPA RSL. Therefore, zinc in soil at the Subject Property does not pose an unacceptable risk.

6.7.1.3 VOCs

Ethylbenzene concentrations exceeded the DEQ RBC for the Leaching to Groundwater for occupational receptors. However, the BWUD concluded that groundwater in the shallow aquifer is not suitable for potable or industrial uses. Therefore, the Leaching to Groundwater pathway is considered incomplete and ethylbenzene concentrations in soil do not pose an unacceptable risk.

6.7.1.4 PAHs

As noted previously, detected values of PAHs were less than RBCs. Therefore, PAHs do not pose an unacceptable risk at the Subject Property.

6.7.2 Groundwater

6.7.2.1 TPH

Diesel-range hydrocarbons exceeded the DEQ RBC for the Vapor Intrusion into Buildings – Chronic for commercial receptors. The exceedances were observed in samples collected from underneath the Russell Building in 2000. Results from groundwater samples collected from MW-3 in 2005 and 2009 were less than the applicable RBC. MW-3 is approximately 35 feet downgradient and slightly cross-gradient from samples collected in 2000. Therefore, diesel- range hydrocarbons in groundwater do not pose an unacceptable risk to commercial receptors at the Subject Property.

6.7.2.2 Metals

Metals results in groundwater samples collected to date were less than DEQ RBCs. Elevated zinc concentrations were observed in groundwater. However, DEQ has not established an RBC for zinc. We compared zinc concentrations to EPAs RSL for tap water of 6,000 µg/L. Zinc concentrations in groundwater samples collected

at the Subject Property exceeded the EPA RSL for tap water. However, the BWUD concluded that groundwater in the shallow aquifer is not suitable for potable or industrial uses. Therefore, this tap water pathway is considered incomplete and zinc in groundwater does not pose an unacceptable risk.

6.7.2.3 VOCs

VC in groundwater samples exceeded the Vapor Intrusion into Buildings – Chronic for commercial receptors. The exceedances were observed in groundwater samples collected from MW-3 and MW-6 in 2005. VC results from subsequent samples collected from the same monitoring wells in 2009 were less than the MRL and less the applicable RBC. Therefore, VC in groundwater does not pose an unacceptable risk.

6.7.2.4 PAHs

As noted previously, detected values of PAHs were less than RBCs. Therefore, PAHs do not pose an unacceptable risk at the Subject Property.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on review and evaluation of soil and groundwater samples collected on site and off site to date, diesel-range hydrocarbons in soil pose unacceptable risk to construction worker receptors and lead in soil poses an unacceptable risk to occupational, construction worker, and excavation worker receptors. The risk is isolated to select areas of the Subject Property and is considered a completed pathway under future scenarios where excavation may be needed for maintenance purposes or redevelopment. Based on our review of the collective, updated information, we present the following general conclusions and recommendations:

- Soil and groundwater impacts have been adequately characterized through several phases of subsurface exploration.
- No beneficial uses of groundwater were identified within 0.5 mile of the Subject Property.
- Based on the Level 1 Ecological Scoping, we conclude that ecological risk is not suspected within the LOF.
- Lead and diesel-range hydrocarbons were detected in soil samples at concentrations exceeding DEQ's applicable RBCs. The elevated concentrations of lead are generally situated near the former drywell location. Because the Subject Property is covered by asphalt concrete, buildings, and other hardscape material, we do not anticipate routine exposure to subsurface soil by occupational, construction workers, or excavation workers. However, future intrusive activity that exposes subsurface soil at the Subject Property may potentially encounter soil impacted with lead and/or diesel-range hydrocarbons. Consequently, the management of any such future invasive activity can be adequately controlled through the implementation of a CMMP to protect site workers.

Based on the information presented herein, generation of a CMMP and subsequent site closure appears warranted for the Subject Property. On behalf of Galvanizers, Central respectfully requests that DEQ issue a No Further Action determination.

8.0 SIGNATURES

We appreciate DEQ's continued assistance on this project. Please call if you have questions regarding this submittal.

Central Engineering Services

EXPIRES 12/31/2025

Mike Coenen, PE
Principal Engineer

9.0 LIMITATIONS

This environmental investigation was conducted following industry standards to assess site conditions accurately. However, the following limitations apply:

Scope and Boundaries: The assessment was limited to the defined scope of work. Areas outside the specified boundaries were not evaluated.

Site Access: Access restrictions, including physical barriers and safety concerns, may have limited observations in certain areas.

Sampling and Analysis: Samples were collected at representative locations. Environmental conditions may vary spatially and over time, so findings reflect conditions at the time of sampling.

Data Accuracy: Analytical results were obtained from accredited laboratories. Variations in sampling, handling, and analysis procedures may affect data accuracy.

Historical Information: Historical records and third-party information were reviewed. The accuracy of these sources cannot be independently verified.

Regulatory Scope: This report is for environmental assessment purposes only and is not intended as a legal or regulatory compliance document.

Unanticipated Conditions: Findings are based on observed conditions. Unidentified environmental issues may exist and require further assessment if encountered in the future.

Report Use: This report is intended solely for GalvCo Company and their authorized agents. Third parties should not rely on it without permission from Central.

These limitations should be considered when interpreting this report's findings and conclusions.

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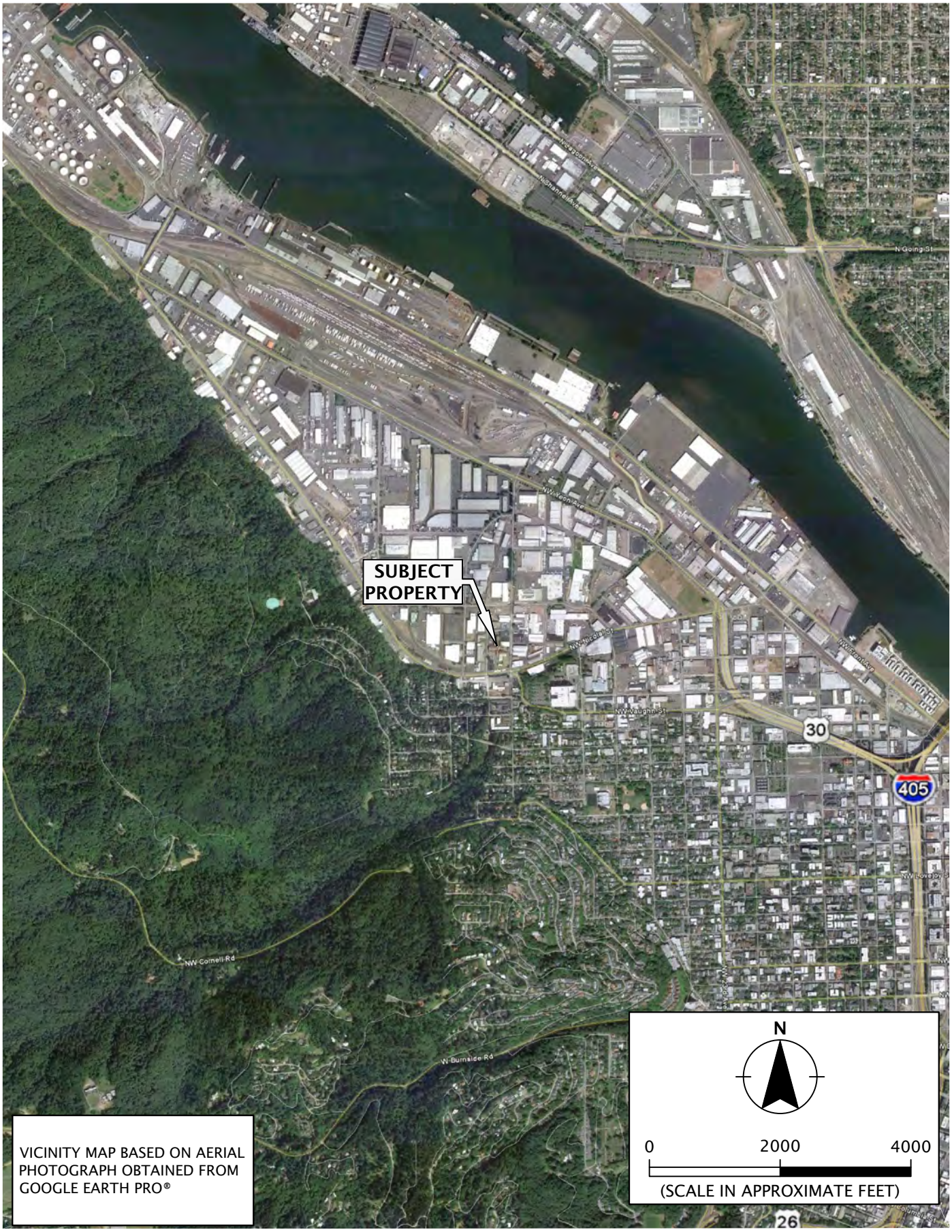
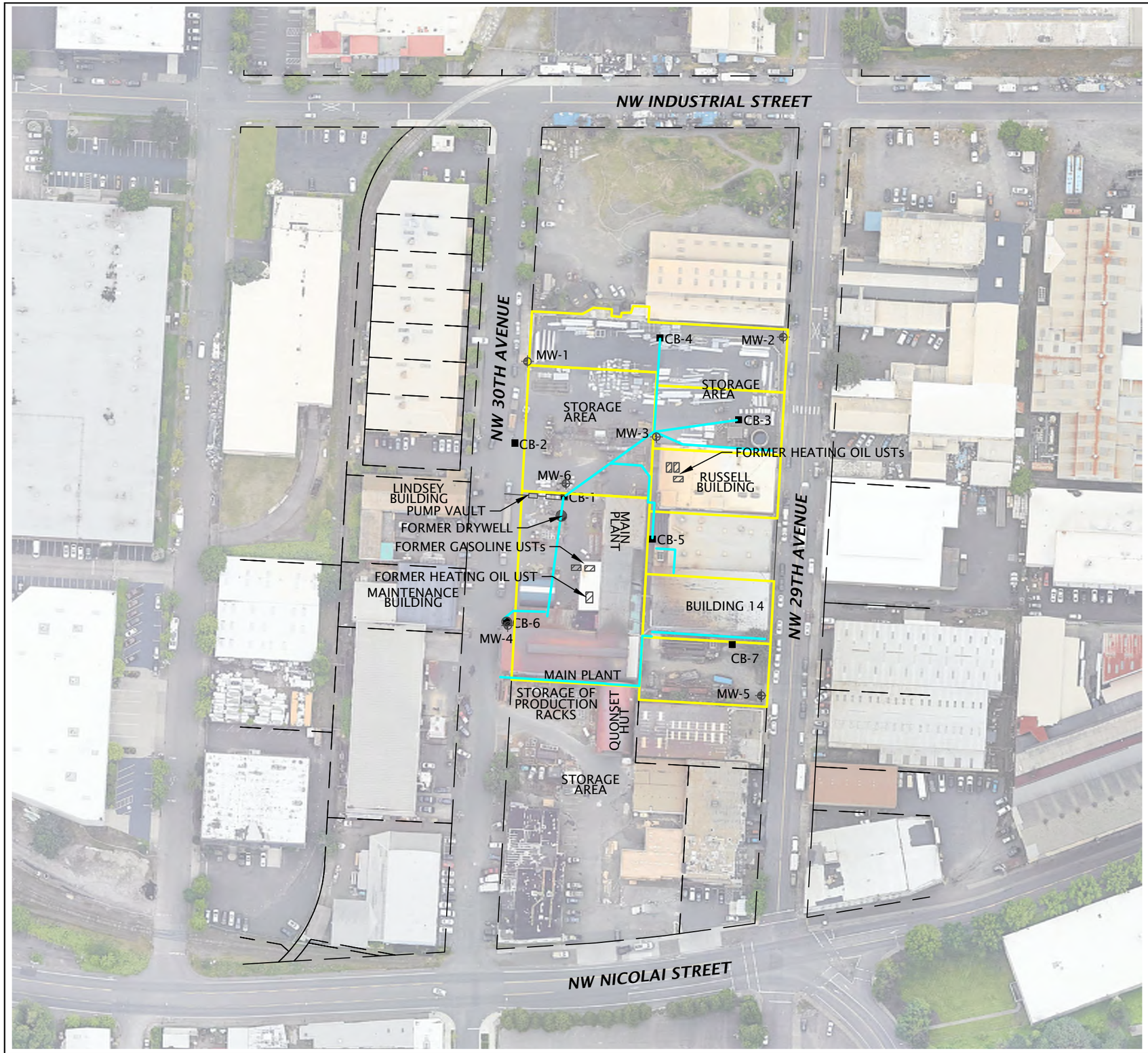
CENTRAL
ENGINEERING SERVICES

FIGURES



VICINITY MAP BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO®

CENTRAL ENGINEERING SERVICES	VICINITY MAP	GalvCo-1-01
	Galvanizers Company Portland, OR	Figure 1



LEGEND:

- MONITORING WELL
- ON-SITE CATCH BASIN
- ON-SITE STORMLINE
- GALVANIZERS COMPANY
- TAX LOT BOUNDARY

N

0 120 240

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH DATED JUNE 14, 2022, OBTAINED FROM GOOGLE EARTH PRO.

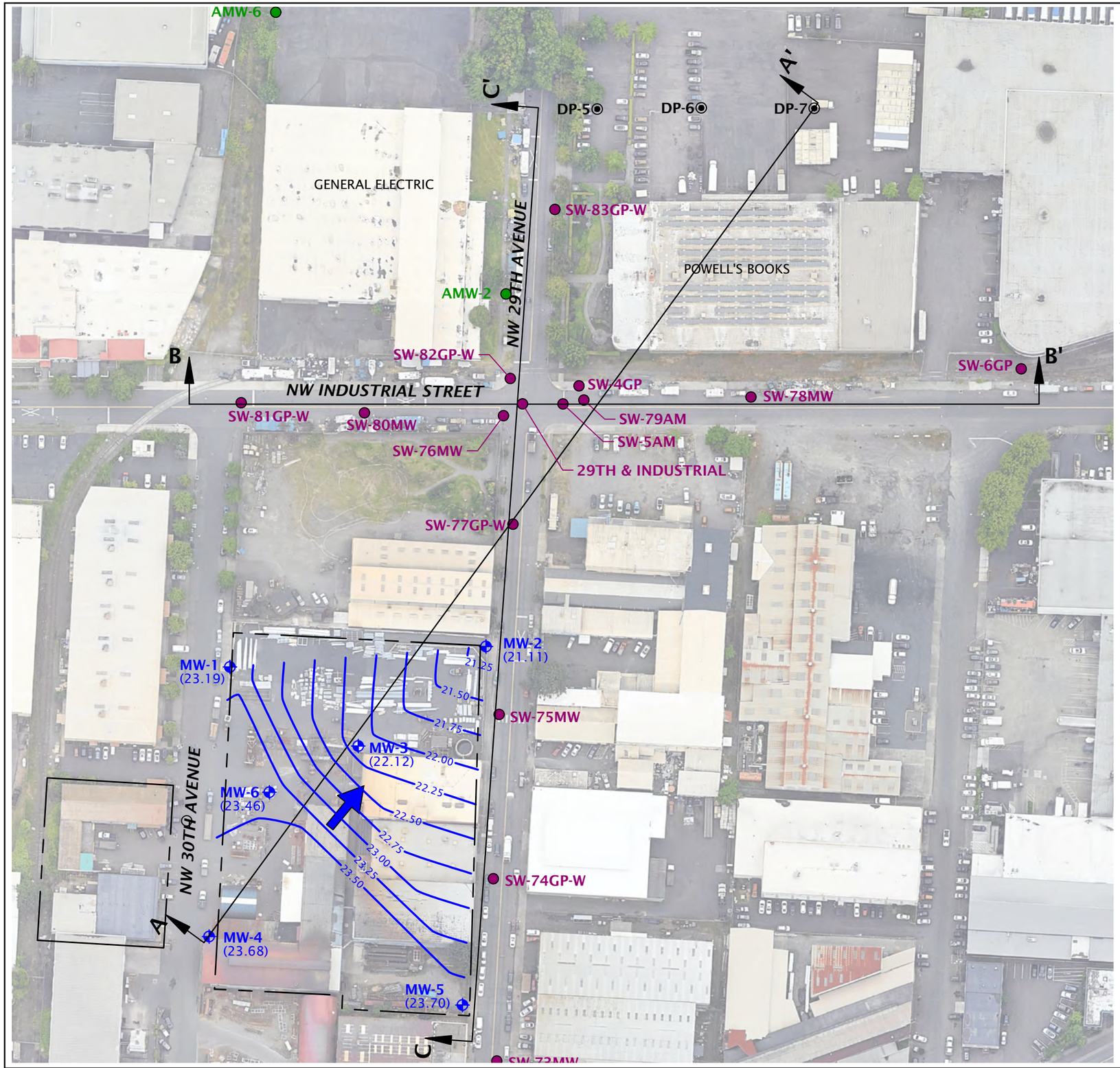
SITE PLAN

Galvanizers Company
Portland, OR

GalvCo-1-01

Figure 2

CENTRAL
ENGINEERING SERVICES



LEGEND:

- MW-1 (23.19) — GROUNDWATER MONITORING WELL WITH GROUNDWATER ELEVATION (FEET, COP DATUM)
- SW-5AM — 2007, 2008, AND 2009 SHANNON & WILSON SAMPLE LOCATION
- DP-5 — DIRECT-PUSH BORING (GEODESIGN 2017)
- AMW-2 — 2008 MWH SAMPLE LOCATION
- GROUNDWATER CONTOUR (0.25-FOOT INTERVAL)
- INFERRED GROUNDWATER FLOW DIRECTION
- A A' — CROSS SECTION
- SUBJECT PROPERTY BOUNDARY

NOTES:

1. GROUNDWATER ELEVATIONS MEASURED ON SEPTEMBER 26, 2017.
2. GRADIENT = 0.006 FOOT/FOOT.

N

0 120 240

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH DATED JUNE 14, 2022, OBTAINED FROM GOOGLE EARTH PRO.

POTENTIOMETRIC SURFACE AND CROSS SECTIONS

Galvanizers Company
Portland, OR

GalvCo-1-01

Figure 3

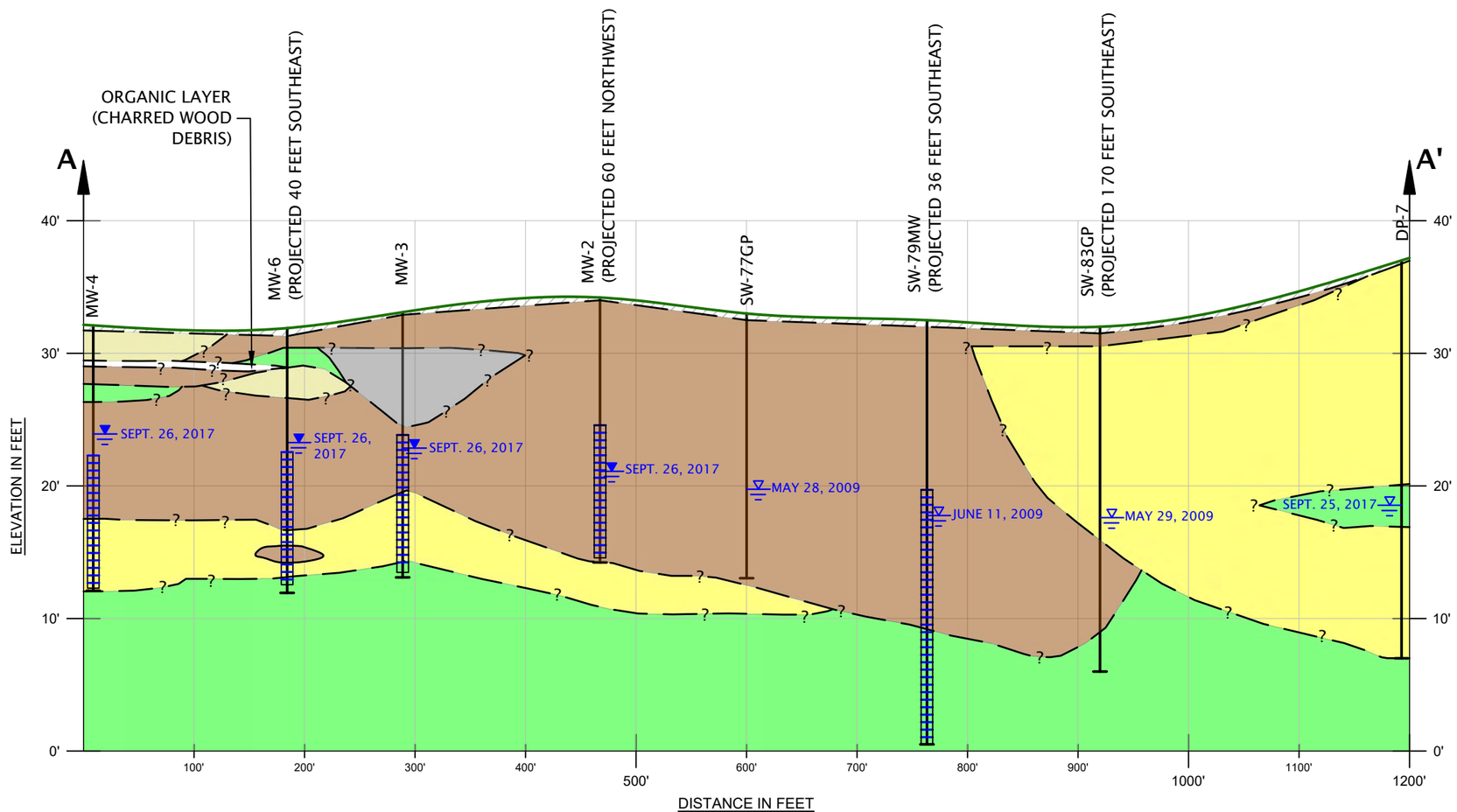
CENTRAL
ENGINEERING SERVICES

CROSS SECTION A-A'

Galvanizers Company
Portland, OR

GalvCo-1-01

Figure 4



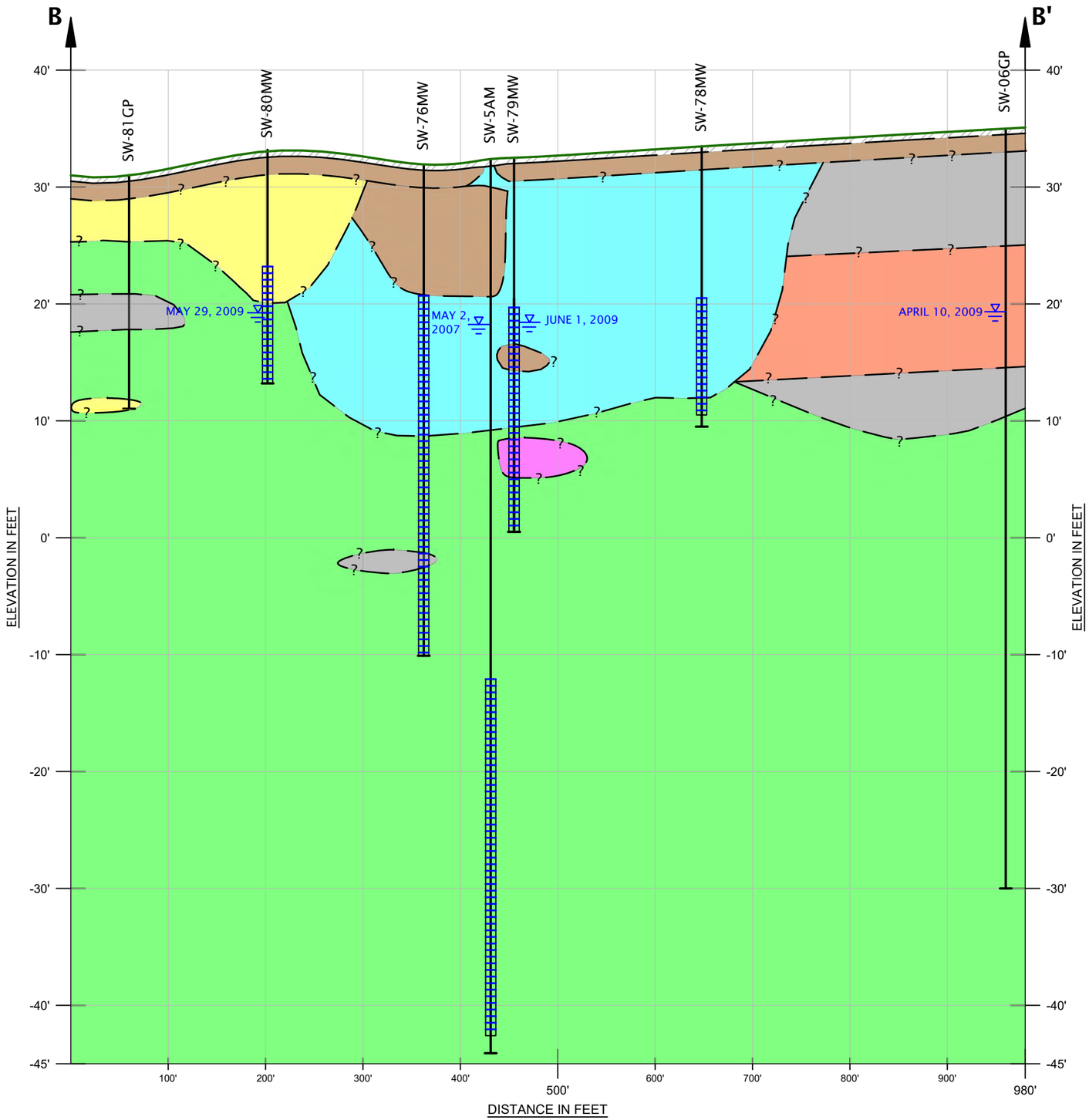
LEGEND:

- SURFACE TOPOGRAPHY
- BORING
- INTERPRETED CONTACT
- GROUNDWATER ELEVATION (MEASURED DURING DRILLING)
- SEPTEMBER 26, 2017, STATIC GROUNDWATER ELEVATION
- PAVEMENT SECTION
- GRAVEL WITH SILT AND SAND
- SILTY GRAVEL WITH SAND
- SAND
- SILT WITH SAND
- SILTY SAND
- SCREENED INTERVAL

0 10 20
(VERTICAL SCALE IN FEET)

0 120 240
(HORIZONTAL SCALE IN FEET)

CENTRAL
ENGINEERING SERVICES



LEGEND:

- SURFACE TOPOGRAPHY
- BORING
- INTERPRETED CONTACT
- GROUNDWATER ELEVATION (MEASURED DURING DRILLING)
- PAVEMENT SECTION
- GRAVEL WITH SILT AND SAND
- SAND
- SILT WITH SAND
- SILTY SAND
- GRAVEL WITH SAND
- SAND WITH SILT
- SAND WITH SILT AND GRAVEL
- SCREENED INTERVAL

0 10 20
(VERTICAL SCALE IN FEET)

0 120 240
(HORIZONTAL SCALE IN FEET)

CROSS SECTION B-B'

Figure 5

GalvCo-1-01

Galvanizers Company
Portland, OR

CENTRAL
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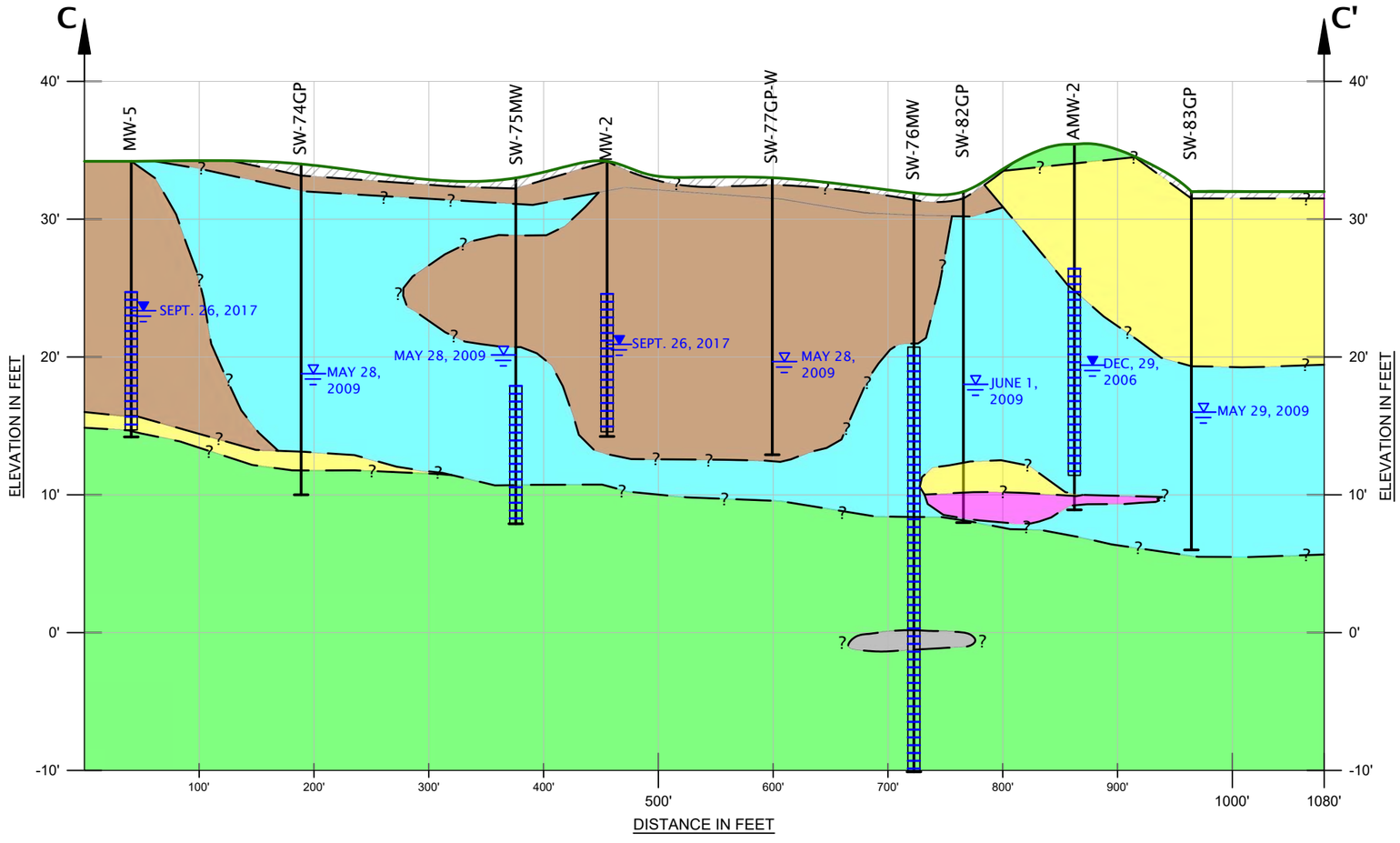


LEGEND:

- SURFACE TOPOGRAPHY
- BORING
- INTERPRETED CONTACT
- GROUNDWATER ELEVATION (MEASURED DURING DRILLING)
- STATIC GROUNDWATER ELEVATION
- PAVEMENT SECTION
- GRAVEL WITH SILT AND SAND
- SAND
- SILT WITH SAND
- SILTY SAND
- GRAVEL WITH SAND
- SAND WITH SILT
- SCREENED INTERVAL

0 10 20
(VERTICAL SCALE IN FEET)

0 120 240
(HORIZONTAL SCALE IN FEET)

CROSS SECTION C-C'

Galvanizers Company
Portland, OR

GalvCo-1-01

Figure 6

CENTRAL ENGINEERING SERVICES

LEGEND:

- MONITORING WELL
- ON-SITE CATCH BASIN
- ON-SITE STORMLINE
- GALVANIZERS COMPANY PROPERTY
- TAX LOT BOUNDARY
- 1992/1993 SAMPLE
- JULY 1996 SOIL BORING
- NOVEMBER 1996 SOIL BORING
- OCTOBER 1998 SOIL BORING
- OCTOBER 1998 HEATING OIL UST SOIL BORING
- NOVEMBER 1999 UNKNOWN BACKFILL MATERIAL SAMPLES
- MAY 1999 SOIL SAMPLE
- SEPTEMBER 1999 FREEMAN
- JULY/SEPTEMBER 2000 SOIL BORINGS
- OCTOBER 2001 TEST PIT
- AUGUST 2001 CONFIRMATION SAMPLES
- AREA OF 2001 DRY WELL CLOSURE
- OCTOBER 2003 SOIL BORING

N

0 80 160

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH DATED JUNE 14, 2022, OBTAINED FROM GOOGLE EARTH PRO.

PREVIOUS INVESTIGATION SAMPLE LOCATIONS - ON SITE

Figure 7

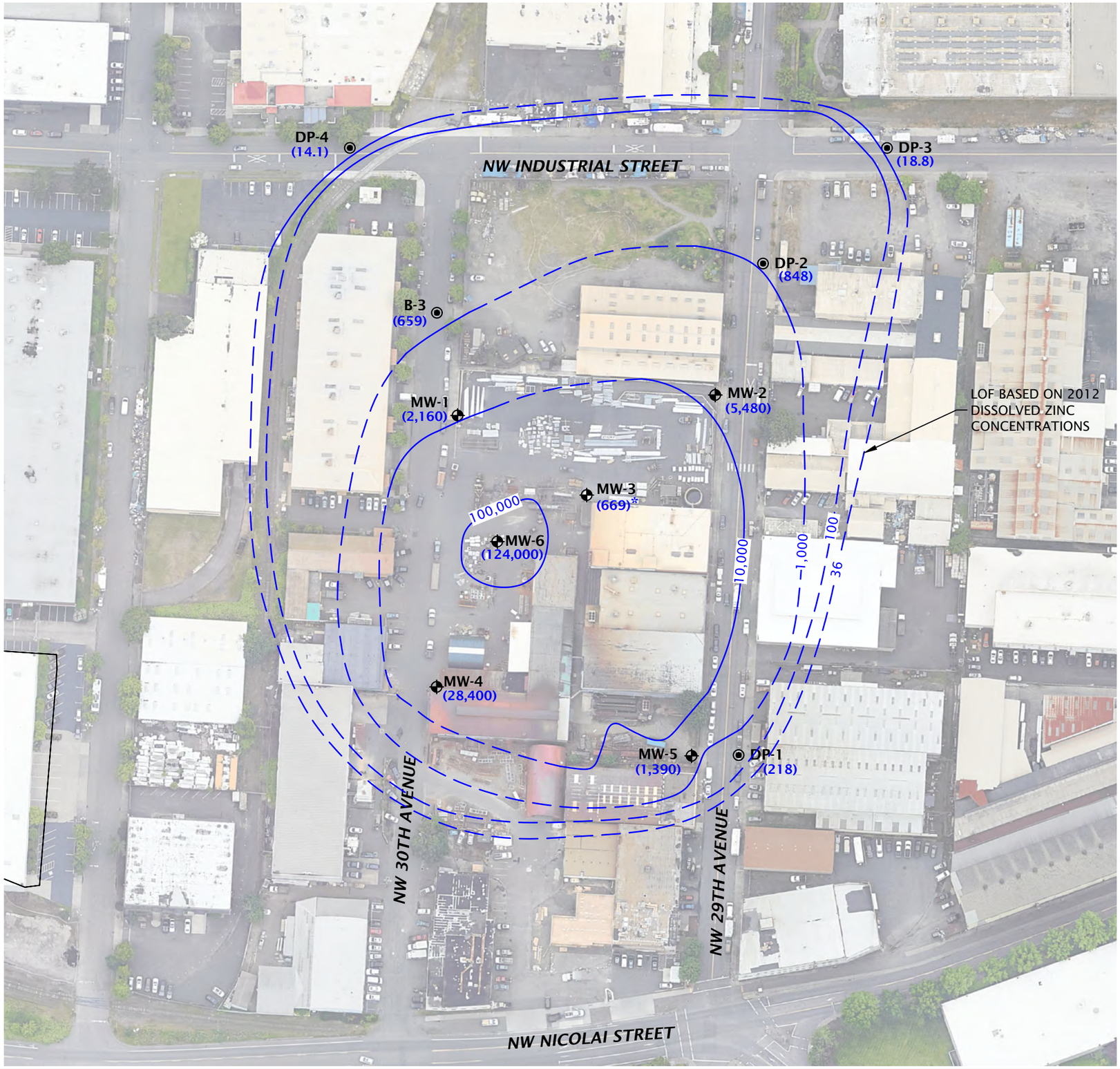
GalvCo-1-01

Galvanizers Company
Portland, OR

CENTRAL
ENGINEERING SERVICES

CENTRAL ENGINEERING SERVICES

PREVIOUS INVESTIGATION SAMPLE LOCATIONS - OFF SITE	GalvCo-1-01
Galvanizers Company Portland, OR	Figure 8



LEGEND:

MW-1	GROUNDWATER MONITORING WELL
DP-1	DIRECT-PUSH BORING (GEODESIGN, 2012)
B-3	BORING BY BES (2012)
(669)	DISSOLVED ZINC CONCENTRATION (μg/L)
10,000	DISSOLVED ZINC ISOCONCENTRATION CONTOUR (INFERRED WHERE DASHED)
36	DEQ ECOLOGICAL RBC FOR WATER = 36μg/L (INFERRED WHERE DASHED)
*	DATA POINT CONSIDERED AN OUTLIER AND THEREFORE NOT INCLUDED IN CONTOURS.

LOF BASED ON 2012 DISSOLVED ZINC CONCENTRATIONS

NOTE:
1. ANALYTICAL RESULTS SHOWN ARE FOR GROUNDWATER SAMPLES COLLECTED ON OCTOBER 8 AND 9, 2012, BY GEODESIGN AND NOVEMBER 6, 2012, BY COP BES.
2. CONTOUR INTERVAL: LOGARITHMIC

N

0 120 240

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH DATED JUNE 14, 2022, OBTAINED FROM GOOGLE EARTH PRO.

SITE PLAN - ISOCONCENTRATION CONTOURS - DISSOLVED ZINC 2012

Galvanizers Company
Portland, OR

GalvCo-1-01

Figure 9

CENTRAL ENGINEERING SERVICES

LEGEND:

MW-1	GROUNDWATER MONITORING WELL
DP-5	DIRECT-PUSH BORING (GEODESIGN 2017)
(2,600)	DISSOLVED ZINC CONCENTRATION (μg/L)
	PROJECT SITE BOUNDARY
U	ANALYTE NOT DETECTED GREATER THAN THE REFERENCED LABORATORY MDL
10,000	DISSOLVED ZINC ISOCONCENTRATION CONTOUR (INFERRED WHERE DASHED)
36	DEQ ECOLOGICAL RBC FOR WATER = 36μg/L

NOTE:
1. ANALYTICAL RESULTS SHOWN ARE FOR GROUNDWATER SAMPLES COLLECTED ON SEPTEMBER 25 AND 26, 2017.
2. CONTOUR INTERVAL: LOGARITHMIC

N

0 120 240

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH DATED JUNE 14, 2022, OBTAINED FROM GOOGLE EARTH PRO.

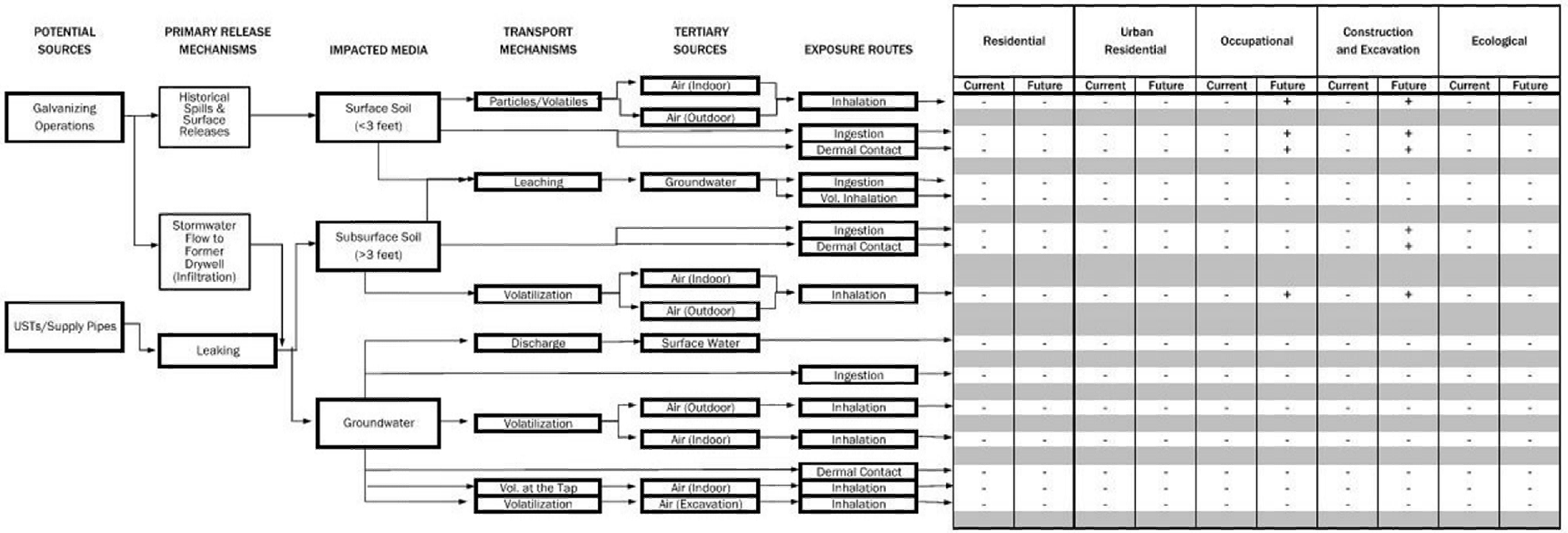
SITE PLAN - ISOCONCENTRATION CONTOURS - DISSOLVED ZINC 2017

Galvanizers Company
Portland, OR

Figure 10

GalvCo-1-01

CENTRAL ENGINEERING SERVICES



Notes:
+ This route is a primary source of exposure.
- There is no exposure by this route.

CONCEPTUAL SITE MODEL

Galvanizers Company
Portland, OR

GalvCo-1-01

Figure 11

CENTRAL
ENGINEERING SERVICES

CENTRAL
ENGINEERING SERVICES

TABLES

TABLE 1
Historical Chemical Analytical Soil Sample Matrix
Galvanizers Company
Portland, Oregon

Sample I.D.	Sample Date	Sampled By	Completed Analyses[1]								
			HCID	Gasoline-Range Hydrocarbons	Diesel- and Oil-Range Hydrocarbons	VOCs	PAHs/SVOCs	PCBs	Metals	TCLP Metals	pH
1992 – 1993 Plant Building Soil Sampling											
SP	03/12/92	STI	--	--	--	--	--	--	--	X	--
SP1	05/06/92		--	--	--	--	--	--	--	X	X
SP2			--	--	--	--	--	--	--	--	X
SP3			--	--	--	--	--	--	--	--	X
SP4			--	--	--	--	--	--	--	--	X
A	03/19/92		--	--	--	--	--	--	--	X	--
B			--	--	--	--	--	--	--	X	--
C			--	--	--	--	--	--	--	X	--
D	09/04/92		--	--	--	--	--	--	--	X	--
E			--	--	--	--	--	--	--	X	--
F	10/26/92		--	--	--	--	--	--	--	X	--
G	10/28/92		--	--	--	--	--	--	--	X	--
H	11/03/92		--	--	--	--	--	--	--	X	--
I			--	--	--	--	--	--	--	X	--
J 6.5	02/22/92		--	--	--	--	--	--	--	X	--
J 7.5			--	--	--	--	--	--	--	X	--
K	2/30/93[2]		--	--	--	--	--	--	--	X	X
1996 Phase II Environmental Site Assessment											
1-S-2/4	07/12/96	ECS	--	--	--	--	--	--	--	X	X
1-S-4/6			--	--	--	--	--	--	--	X	X
2-S-2/4			--	--	--	--	--	--	--	X	X
2-S-4/6			--	--	--	--	--	--	--	X	X
2-S-10/12			--	--	--	--	--	--	--	X	X
3-S-2/4			--	--	--	--	--	--	--	X	X
4-S-10/12			--	--	--	--	--	--	--	X	X
5-S-2/4			--	--	--	--	--	--	--	X	X
8-S-4/6			--	--	--	--	--	--	--	X	X
1996 Gasoline UST Soil Sampling											
#1	11/11/96	ECS	X	--	X	--	--	--	--	--	--
#2			X	--	X	--	--	--	--	--	--
#3			X	--	X	--	--	--	--	--	--
#4			X	--	X	--	--	--	--	--	--
1998 HOT Decommissioning											
1-North-B	10/26/98	ECS	X	--	--	--	--	--	--	--	--
1-South-B			X	--	X	--	--	--	--	--	--
1999 Soil and Groundwater Investigation											
S-1-1	10/02/98	ECS	X	--	X	X	--	--	X	--	X
S-2-1			--	--	--	--	--	--	X	--	X
S-4-1			--	--	--	--	--	--	X	--	X
S-5-1			--	--	--	--	--	--	X	--	X
S-5-4			X	--	--	--	--	--	--	--	--
S-5-8			X	--	X	--	--	--	X	--	X
S-7-1			--	--	--	--	--	--	X	X	X
S-7-8			--	--	--	--	--	--	X	X	X
S-8-1			--	--	--	--	--	--	X	X	X
S-8-4			--	--	--	--	--	--	X	X	X
S-8-10			--	--	--	--	--	--	X	X	X
S-10-1			--	--	--	--	--	--	X	X	X
Surface A			--	--	--	--	--	--	X	X	X
Surface B			--	--	--	--	--	--	X	X	X
1999 Building 14 Area Sampling, Kettle Gravels, and Alley Soil Sampling Between Plant & Building 14											
Bldg.14 W-Pit-1'	05/26/99	ECS	--	--	--	--	--	--	--	X	X
Bldg.14 W-Pit-3'			--	--	--	--	--	--	--	X	X
Bldg.14-Acid Recovery-"Extra"			--	--	--	--	--	--	--	X	X
Bldg.14-Acid Recovery-1'			--	--	--	--	--	--	--	X	X
Bldg.14-Acid Recovery-3'			--	--	--	--	--	--	--	X	X
Bldg.14-Acid Recovery-5'			--	--	--	--	--	--	--	X	X
Galvco-Flue Tank Sludge #2			--	--	--	--	--	--	--	X	X
Galvco-Alley-North-"A"			--	--	--	--	--	--	--	X	X
Galvco-Alley-North-"B"			--	--	--	--	--	--	--	X	X
Galvco-Alley-North-"C"			--	--	--	--	--	--	--	X	X
Galvco-Kettle E&W Comp.			--	--	--	--	--	--	--	X	–

TABLE 1
Historical Chemical Analytical Soil Sample Matrix
Galvanizers Company
Portland, Oregon

Sample I.D.	Sample Date	Sampled By	Completed Analyses[1]								
			HCID	Gasoline-Range Hydrocarbons	Diesel- and Oil-Range Hydrocarbons	VOCs	PAHs/SVOCs	PCBs	Metals	TCLP Metals	pH
1999 Kettle Foundation Soil Assessment and Disposal											
G-1	06/28/99	ECS	--	--	--	--	--	--	X	X	--
G-2			--	--	--	--	--	--	X	X	--
1999 Building 14 Unknowns											
Acid Burned Soil	11/17/99	ECS	--	--	--	--	--	--	X	X	X
Green Mixed Unk			--	--	--	--	--	--	X	X	X
Black Soil			X	--	X	X[3]	--	--	--	X	–
Gray/White Unk			--	--	--	--	--	--	X	X	X
2000 Rick Russell Site Sampling											
A-11	07/21/00	ECS	--	--	X	X[4]	X	--	--	--	--
A-16			--	--	X	X[4]	X	--	--	--	--
B-13			--	--	X	X[4]	X	--	--	--	--
C-13			--	--	X	X[4]	X	--	--	--	--
C-14			--	--	X	X[4]	X	--	--	--	--
D-14			--	--	X	X[4]	X	--	--	--	--
F-10			--	--	X	X[4]	X	--	--	--	--
F-14			--	--	X	X[4]	X	--	--	--	--
G-12	09/07/00		--	--	X	--	--	--	--	--	--
G-15			--	--	X	--	--	--	--	--	--
H-10			--	--	X	--	--	--	--	--	--
H-15			--	--	X	--	--	--	--	--	--
I-12			--	--	X	X[4]	X	--	--	--	--
I-15			--	--	X	--	--	--	--	--	--
I-20			--	--	X	--	--	--	--	--	--
J-14			--	--	X	--	--	--	--	--	--
J-16			--	--	X	--	--	--	--	--	--
K-11			--	--	X	--	--	--	--	--	--
K-15			--	--	X	--	--	--	--	--	--
L-12			--	--	X	--	--	--	--	--	--
L-16			--	--	X	--	--	--	--	--	--
2001 Building 14 Area Confirmation Samples											
Pit North Wall	08/06/01	ECS	--	--	X	--	--	--	--	X	X
Pit Bottom			--	--	X	--	--	--	--	X	X
Trench Pit Wall			--	--	X	--	--	--	--	X	X
2001 Stormwater System Improvements and Drywell Closure											
North-4'	09/20/01	ECS	X	X	X	--	--	--	X	X	–
North-9'			X	X	X	X[4]	X	--	X	X	X
South-9'			--	--	--	--	--	--	X	X	X
West-4'			X	--	X	--	--	--	X	--	–
West-12'			--	--	--	--	--	--	X	--	X
East-6'			--	--	--	--	--	--	X	X	–
Bottom-14'			X	X	X	X[4]	X	--	X	X	X
South Wall-9'-#2	10/03/01		--	--	--	--	--	--	X	X	–
Pit Bottom-14.5'-#2			--	--	--	--	--	--	X	X	–
Bldg. 14 Dirt Pile (H)			--	--	--	--	--	--	--	X	–
2002 Alley Soil Assessment											
TP1-1.5'	10/12/01	ECS	X	X	X	X[4]	X	--	--	--	--
TP1-2.5'			--	X	X	--	X	--	--	--	--
TP2-2'			--	X	X	--	--	--	--	--	--
TP2-4'			--	--	X	--	--	--	--	--	--
TP3-2'			--	X	X	--	--	--	--	--	--
TP3-3'		ECS	--	--	X	--	--	--	--	--	--
TP4-1.5'			--	X	X	--	--	--	--	--	--
TP4-2.5'			--	--	X	--	--	--	--	--	--
TP5-4.5'			--	X	X	X[4]	X	--	--	--	--
TP7-3'			--	X	X	--	--	--	--	--	--
2003 Heating Oil UST Decomissioning; 2429 NW 29th Avenue											
H.O.T. North	10/22/03	NWES	X	--	--	--	--	--	--	--	--
H.O.T. South			X	--	--	--	--	--	--	--	--

TABLE 1
Historical Chemical Analytical Soil Sample Matrix
Galvanizers Company
Portland, Oregon

Sample I.D.	Sample Date	Sampled By	Completed Analyses[1]								
			HCID	Gasoline-Range Hydrocarbons	Diesel- and Oil-Range Hydrocarbons	VOCs	PAHs/SVOCs	PCBs	Metals	TCLP Metals	pH
2005 XPA – Monitoring Well Installations											
MW-1 (0-2.5)	07/22/05	Anchor	--	--	--	--	--	--	X	--	--
MW-1 (2.5-5)			--	--	--	--	--	--	X	--	--
MW-1 (11.5-12.0)			--	--	--	--	--	--	X	--	--
MW-2 (0-2.5)	7/21/05		--	--	--	--	--	--	X	--	--
MW-2 (2.5-5)			--	--	--	--	--	--	X	--	--
MW-2 (13-13.5)			--	--	--	--	--	--	X	--	--
MW-3 (0-2.5)	7/21/05		--	--	--	--	--	--	X	--	--
MW-3 (2.5-5)			--	--	--	--	--	--	X	--	--
MW-3 (7-7.5)			--	--	--	--	--	--	X	--	--
MW-4 (0-2.5)	07/22/05		--	--	--	--	--	--	X	--	--
MW-4 (2.5-5)			--	--	--	--	--	--	X	--	--
MW-4 (11.5-12)			--	--	--	--	--	--	X	--	--
MW-5 (0-2.5)	7/21/05		--	--	--	--	--	--	X	--	--
MW-5 (2.5-5)			--	--	--	--	--	--	X	--	--
MW-5 (12.5-13)			--	--	--	--	--	--	X	--	--
MW-6 (0-2.5)	07/22/05		--	--	X	X	X	--	X	--	--
MW-6 (2.5-5)			--	--	X	X	X	--	X	--	--
MW-6 (10-12)			--	--	X	X	X	--	X	--	--
1999 J. A. Freeman & Sons Facility – Off Site											
GP-1-0-4'	09/15/99	EEM	X	--	--	--	--	--	--	--	--
GP-1-12'-16'			X	--	--	--	--	--	--	--	--
GP-2-0-4'			X	--	--	--	--	--	--	--	--
GP-2-8'-12'			X	--	--	--	--	--	--	--	--
GP-3-0-4'			X	--	--	--	--	--	--	--	--
GP-3-12'-16'			X	--	--	--	--	--	--	--	--
GP-4-0-4'			X	--	X	--	--	X	--	--	--
GP-4-4'-8'			X	--	X	--	--	--	--	--	--
GP-4-8'-12'			X	--	--	--	--	--	--	--	--
GP-5-0-4'			X	--	X	--	--	--	--	--	--
GP-5-4'-8'			X	--	X	--	--	--	--	--	--
GP-5-8'-12'			X	--	--	--	--	--	--	--	--
GP-6-0-4'			X	--	--	--	--	--	--	--	--
GP-6-12'-16'			X	--	--	--	--	--	--	--	--
GP-7-0-4'			X	--	--	--	--	--	--	--	--
GP-7-8'-12'			X	--	--	--	--	--	--	--	--
GP-8-0-4'			X	--	--	--	--	--	--	--	--
GP-8-8'-12'			X	--	--	--	--	--	--	--	--
2007 – 2008 GE Groundwater Assessment – Off Site											
AMW-1	12/28/06	AMEC	--	--	X	--	X	X	X	--	--
AMW-2			--	--	X	--	X	X	X	--	--
AMW-3	12/27/06		--	--	X	--	X	X	X	--	--
AMW-4			--	--	X	--	X	X	X	--	--
AMW-5	12/29/06		--	--	X	--	X	X	X	--	--
AMW-6			--	--	X	--	X	X	X	--	--

TABLE 1
Historical Chemical Analytical Soil Sample Matrix
Galvanizers Company
Portland, Oregon

Sample I.D.	Sample Date	Sampled By	Completed Analyses[1]								
			HCID	Gasoline-Range Hydrocarbons	Diesel- and Oil-Range Hydrocarbons	VOCs	PAHs/SVOCs	PCBs	Metals	TCLP Metals	pH
2007 – 2009 BCC Project Support Sampling – Off Site											
SW-4GP 15-20	04/05/07	Shannon & Wilson	X	--	--	--	X	X	X	--	--
SW-5AM 8:30 (15 ft)	05/02/07		--	--	--	X	--	--	--	--	--
SW-5AM 10:07 (45 ft)	05/02/07		X	--	--	X	X	X	X	--	--
SW-30R-6	03/17/08		--	--	--	--	--	X	--	--	--
SW-30R-10			--	--	--	--	--	X	--	--	--
SW-30R-15			--	--	--	--	--	X	--	--	--
SW-30R-20			--	--	--	--	--	X	--	--	--
SW-30R-25			--	--	--	--	--	X	--	--	--
SW-30R-30			--	--	--	--	--	X	--	--	--
SW-30R-35			--	--	--	--	--	X	--	--	--
SW-30R-40			--	--	--	--	--	X	--	--	--
SW-30R-45			--	--	--	--	--	X	--	--	--
SW-30R-50			--	--	--	--	--	X	--	--	--
SW-30R-55			--	--	--	--	--	X	--	--	--
SW-30R-60			--	--	--	--	--	X	--	--	--
SW-56AM-5	06/23/08		--	--	--	--	--	X	X	--	--
SW-56AM-10			X	--	--	X	X	X	X	--	--
SW-56AM-15			X	--	--	X	X	X	X	--	--
SW-57AM-5	06/24/08		X	--	X	X	X	X	X	--	--
SW-57AM-7.5			X	--	--	X	X	X	X	--	--
SW-57AM-10			X	--	--	X	X	X	X	--	--
SW-57AM-15			X	--	--	X	X	X	X	--	--
SW-58AM-2.5	06/25/08		X	--	X	X	--	X	X	--	--
SW-58AM-5			X	--	X	X	--	X	X	--	--
SW-58AM-7.5			X	--	--	X	--	X	X	--	--
SW-58AM-10			X	--	--	X	--	X	X	--	--
SW-58AM-15			X	--	--	X	--	X	X	--	--
SW-59GP-2.5-3.3	06/18/08		X	--	X	X	X	X	X	X	--
SW-59GP-7.0-7.9			X	--	--	X	X	X	X	--	--
SW-59GP-10-10.9			X	--	--	X	X	X	X	--	--
SW-59GP-15-15.9			X	--	--	X	X	X	X	--	--
SW-59GP-20-20.9			X	--	--	X	X	X	X	--	--
SW-59GP-25-25.9			X	--	--	X	X	X	X	--	--
SW-59GP-29-29.9			X	--	--	X	X	X	X	--	--
SW-63GP-3.8-4.5	06/18/08		X	--	--	X	X	X	X	--	--
SW-63GP-7-7.8			X	--	--	X	X	X	X	--	--
SW-64AM-5	06/26/08		X	--	X	X	X	X	X	--	--
SW-64AM-7.5			X	--	--	X	X	X	X	--	--
SW-64AM-10			X	--	--	X	X	X	X	--	--
SW-65GP 4-5	06/18/08		X	--	--	X	X	X	X	--	--
SW-65GP 15-16			X	--	--	X	X	X	X	--	--
SW-66AM-2.5	06/26/08		X	--	--	X	X	X	X	--	--
SW-66AM-5			X	--	X	X	X	X	X	--	--
SW-66AM-7.5			X	--	--	X	X	X	X	--	--
SW-66AM-10			X	--	--	X	X	X	X	--	--
2012 and 2013 BCC Support Project – Off Site											
B3 0-5	11/06/12	BES	X	--	--	--	--	--	X	--	--
B3 5-10			X	--	--	--	--	--	X	--	--
B3 10-15			X	--	--	--	--	--	X	--	--
B3 15-20			X	--	--	--	--	--	X	--	--
B4 0-5			X	--	--	--	--	--	X	--	--
B4 5-10			X	--	--	--	--	--	X	--	--
B4 10-15			X	--	--	--	--	--	X	--	--
B5 0-5			X	--	X	--	--	--	X	--	--
B5 5-10			X	--	X	--	--	--	X	--	--
B5 10-15			X	--	--	--	--	--	X	--	--
B6 0-5			X	--	X	--	--	--	X	--	--
B6 5-10			X	--	X	--	--	--	X	--	--
B3E 5-10	03/06/13		X	--	--	--	--	--	X	--	--
B3E 10-15			X	--	--	--	--	--	X	--	--
B3E 15-20			X	--	--	--	--	--	X	--	--

TABLE 1
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Galvanizers Company
Portland, Oregon

Sample I.D.	Sample Date	Sampled By	Completed Analyses[1]								
			HCID	Gasoline-Range Hydrocarbons	Diesel- and Oil-Range Hydrocarbons	VOCs	PAHs/SVOCs	PCBs	Metals	TCLP Metals	pH

Notes:
1. Test methods identified on individual chemical summary tables unless noted otherwise.
2. Date shown is as reported. It cannot be 02/30/93. Actual sample date is most likely 02/12/1993 based on information provided in analytical report.
3. Sample was also analyzed for TCLP VOCs by EPA Methods 1311/8260B.
4. Samples analyzed for BTEX only by EPA Method 8021B.

X: Sample analyzed
--: Sample not analyzed

TABLE 2
Historical Chemical Analytical Groundwater Sample Matrix
Galvanizers Company
Portland, Oregon

Sample I.D.	Sample Date	Sampled By	Completed Analyses[1]							
			HCID	Gasoline-Range Hydrocarbons	Diesel- and Oil-Range Hydrocarbons	VOCs	PAHs/SVOCs	PCBs	Metals	pH
1992 – 1993 Plant Building Soil Sampling										
L	03/19/92	STI	--	--	--	--	--	--	X	X
1996 Phase II Environmental Site Assessment										
#1-Tank Test Hole	05/18/96	ECS	--	--	--	--	--	--	X	X
1-GW-12/16	07/12/96		--	--	--	--	--	--	X	X
2-GW-12/16			--	--	--	--	--	--	X	X
3-GW-12/16			--	--	--	--	--	--	X	X
4-GW-12/16			--	--	--	--	--	--	X	X
5-GW-12/16			--	--	--	--	--	--	X	X
6-GW-12/16			--	--	--	--	--	--	X	X
7-GW-12/16			--	--	--	--	--	--	X	X
8-GW-12/16			--	--	--	--	--	--	X	X
1999 Soil and Groundwater Investigation										
S-7-W	10/02/98	ECS	--	--	--	--	--	--	X	X
S-8-W			--	--	--	--	--	--	X	X
S-9-W			--	--	--	--	--	--	X	X
2000 Rick Russell Site Sampling										
B-water	07/21/00	ECS	--	--	X	X[2]	X	--	X	--
F-water			--	--	X	X[2]	X	--	--	--
I-W	09/07/00		--	--	X	X[2]	X	--	--	--
L-W			--	--	X	--	--	--	--	--

TABLE 2
Historical Chemical Analytical Groundwater Sample Matrix
Galvanizers Company
Portland, Oregon

Sample I.D.	Sample Date	Sampled By	Completed Analyses[1]							
			HCID	Gasoline-Range Hydrocarbons	Diesel- and Oil-Range Hydrocarbons	VOCs	PAHs/SVOCs	PCBs	Metals	pH
2005 – 2009 XPA Groundwater Monitoring										
MW-1	Varies	Anchor, MFA, and GDI	--	--	X	X	X	--	X	X
MW-2			--	--	X	X	X	--	X	X
MW-3			--	--	X	X	X	--	X	X
MW-4			--	--	X	X	X	--	X	X
MW-5			--	--	X	X	X	--	X	X
MW-6			--	--	X	X	X	--	X	X
1999 J. A. Freeman & Sons Facility – Off Site										
GP-1-GW	09/15/99	EEM	X	--	--	X	--	--	X	--
GP-2-GW			X	--	--	X	--	--	X	--
GP-3-GW			X	--	--	X	--	--	X	--
GP-4-GW			X	--	--	X	--	--	X	--
GP-5-GW			X	--	X	X	X	X	X	--
GP-6-GW			X	--	--	X	--	--	X	--
GP-7-GW			X	--	--	--	--	--	--	--
GP-8-GW			X	--	--	--	--	--	--	--
2007 – 2008 GE Groundwater Assessment – Off Site										
AMW-1	11/13/08	MWH	--	--	X	--	X	X	X	X
AMW-2			--	--	X	--	X	X	X	X
AMW-3			--	--	X	--	X	X	X	X
AMW-4			--	--	X	--	X	X	X	X
AMW-5	Varies	MWH, AMEC	--	--	X	--	X	X	X	X
AMW-6	11/13/08	MWH	--	--	X	--	X	X	X	X

TABLE 2
Historical Chemical Analytical Groundwater Sample Matrix
Galvanizers Company
Portland, Oregon

Sample I.D.	Sample Date	Sampled By	Completed Analyses[1]							
			HCID	Gasoline-Range Hydrocarbons	Diesel- and Oil-Range Hydrocarbons	VOCs	PAHs/SVOCs	PCBs	Metals	pH
2007 – 2009 BCC Project Support Sampling – Off Site										
SW-04GP	04/05/07	Shannon & Wilson	X	--	--	X	X	–	X	--
SW-05AM	Varies		--	--	--	X	--	X	X	X
SW-6GP	04/10/07		--	--	--	--	X	--	X	--
SW-60AM	Varies		X	--	X	X	X	--	X	X
SW-63GP	06/18/08		X	--	--	X	X	X	X	--
SW-64AM	08/28/08		X	--	--	X	X	--	X	--
SW-65GP	06/18/08		X	--	--	X	X	X	X	--
29th/Industrial	02/05/09	BES	--	--	--	–	--	--	X	X
SW-73MW	06/11/09	Shannon & Wilson	--	--	--	X	--	--	X	X
SW-74GP-W	05/28/09		--	--	--	X	--	--	X	X
SW-75MW	06/11/09		--	--	--	X	--	--	X	X
SW-76MW	Varies		--	--	--	X	--	X	X	X
SW-77GP-W	05/28/09		--	--	--	X	--	--	X	X
SW-78MW	Varies		--	--	--	X	--	X	X	X
SW-79MW	Varies		--	--	--	X	--	X	X	X
SW-80MW	Varies		--	--	--	X	--	X	X	X
SW-81GP-W	06/01/09		--	--	--	X	--	--	X	–
SW-82GP-W	06/01/09		--	--	--	X	--	X	X	X
SW-83GP-W	05/29/09		--	--	--	X	--	--	X	X

TABLE 2
Historical Chemical Analytical Groundwater Sample Matrix
Galvanizers Company
Portland, Oregon

Sample I.D.	Sample Date	Sampled By	Completed Analyses[1]							
			HCID	Gasoline-Range Hydrocarbons	Diesel- and Oil-Range Hydrocarbons	VOCs	PAHs/SVOCs	PCBs	Metals	pH
October 2012 Subsurface Explorations – Off Site										
DP-1 (11-15)	10/08/12	GDI	--	--	--	--	--	--	X	X
DP-2 (14-18)			--	--	--	--	--	--	X	X
DP-3 (14-18)			--	--	--	--	--	--	X	X
DP-4 (16-20)			--	--	--	--	--	--	X	X
2012 and 2013 BCC Support Project – Off Site										
B3 @ 15 ft	11/06/12	BES	X	--	--	--	--	--	X	--
B3E @ 10 ft	03/06/13		X	--	X	--	--	--	X	--
September 2017 Subsurface Explorations – Off Site										
DP-5(20.0-22.0)	09/25/17	GDI	--	--	--	--	--	--	X	X
DP-5(27.0-29.0)	09/25/17		--	--	--	--	--	--	X	X
DP-7(20.0-22.0)	09/25/17		--	--	--	--	--	--	X	X
DP-7(27.0-29.0)	09/25/17		--	--	--	--	--	--	X	X
DP-6(20.0-22.0)	09/25/17		--	--	--	--	--	--	X	X
DP-6(27.0-29.0)	09/25/17		--	--	--	--	--	--	X	X

Notes:
1. Test methods identified on individual chemical summary tables, unless noted otherwise.
2. Samples analyzed for BTEX only by EPA Method 8021B.
X: Sample analyzed
--: not analyzed

TABLE 3
Summary of Soil Sample Chemical Analytical Results
Total Petroleum Hydrocarbons and PCBs
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Sample Depth (feet BGS)	Hydrocarbon Identification by Method NWTPH-HCID			Gasoline-Range Hydrocarbons by Method NWTPH-Gx (mg/kg)	Diesel- and Oil-Range Hydrocarbons by Method NWTPH-Dx (mg/kg)		PCBs by EPA Method 608/8082 (mg/kg)
			Gasoline	Diesel	Heavy Oil		Diesel	Heavy Oil	
1996 Gasoline UST Soil Sampling									
#1	11/11/96	4 – 8	20 U	50 U	DET	--	--	450[1]	--
#2		4 – 8	20 U	50 U	DET	--	--	1,200[1]	--
#3		4 – 8	20 U	50 U	DET	--	--	4,900[1]	--
#4		4 – 8	20 U	50 U	DET	--	--	15,000[1]	--
1998 Heating Oil Tank Decommissioning									
1-North-B	10/26/98	NA	20.0 U	DET	100 U	--	5,710	500 U	--
1-South-B		NA	20.0 U	50.0 U	100 U	--	--	--	--
1999 Soil and Groundwater Investigation									
S-1-1	10/02/98	1	20 U	DET	DET	--	25 U	123	--
S-5-4		4	20 U	50 U	100 U	--	--	--	--
S-5-8		8	20 U	50 U	DET	--	25 U	66.4	--
1999 Building 14 Unknowns									
Black Soil[2]	11/17/99	NA	20.0 U	50.0 U	DET	--	1,000 U	15,200	--
2000 Rick Russell Site Sampling									
A-11	07/21/00	11	--	--	--	--	3,720	895	--
A-16		16	--	--	--	--	25.0 U	50.0 U	--
B-13		13	--	--	--	--	3,540	50.0 U	--
C-13		13	--	--	--	--	13,300	1,070	--
C-14		14	--	--	--	--	2,830	50.0 U	--
D-14		14	--	--	--	--	306	67.0	--
F-10		10	--	--	--	--	500 U	1,160	--
F-14		14	--	--	--	--	25.0 U	50.0 U	--
G-12	09/07/00	12	--	--	--	--	25.0 U	50.0 U	--
G-15		15	--	--	--	--	250 U	483	--
H-10		10	--	--	--	--	250 U	572	--
H-15		15	--	--	--	--	25.0 U	126	--
I-12		12	--	--	--	--	4,410	425	--
I-15		15	--	--	--	--	25.0 U	50.0 U	--
I-20		20	--	--	--	--	25.0 U	50.0 U	--
J-14		14	--	--	--	--	3,970	397	--
J-16		16	--	--	--	--	25.0 U	50.0 U	--
K-11		11	--	--	--	--	25.0 U	50.0 U	--
K-15		15	--	--	--	--	25.0 U	50.0 U	--
L-12		12	--	--	--	--	25.0 U	50.0 U	--
L-16		16	--	--	--	--	25.0 U	50.0 U	--
2001 Building 14 Area Confirmation Samples									
Pit North Wall	08/06/01	NA	--	--	--	--	1,340	2,800	--
Pit Bottom		NA	--	--	--	--	757	3,020	--
Trench Pit Wall		NA	--	--	--	--	32.9	118	--
2001 Stormwater Improvements and Drywell Closure									
North-9'	09/20/01	9	DET	DET	DET	75.8	5,220	10,900	--
North-4'		4	DET	DET	DET	201	477	334	--
West-4'		4	20 U	DET	DET	--	161	290	--
Bottom-14'		14	DET	DET	DET	28.1	1,460	3,520	--
2002 Alley Soil Assessment									
TP1-1.5'	10/12/01	1.5	DET	DET	DET	173	5,270	2,320	--
TP1-2.5'		1.5	--	--	--	5.46	100	103	--
TP2-2'		2	--	--	--	545	867	635	--
TP2-4'		4	--	--	--	--	25.0 U	50.0 U	--
TP3-2'		2	--	--	--	674	7,440	3,240	--
TP3-3'		3	--	--	--	--	73.2	160	--
TP4-1.5'		1.5	--	--	--	111	697	1,030	--
TP4-2.5'		2.5	--	--	--	--	85.8	181	--
TP5-4.5'		4.5	--	--	--	2.00 U	4,650	7,020	--
TP7-3'		3	--	--	--	91.7	2,330	1,170	--
2003 Heating Oil UST Decomissioning; 2429 NW 29th Avenue									
H.O.T. South	10/22/03	6 – 7	20.0 U	50.0 U	100 U	--	--	--	--
H.O.T. North		6 – 7	20.0 U	50.0 U	100 U	--	--	--	--
2005 XPA – Monitoring Well Installations									
MW-6 (0-2.5)	07/22/05	0 – 2.5	--	--	--	--	91.1 U	1,910	--
MW-6 (2.5-5)		2.5 – 5	--	--	--	--	16.9 U	56.2 U	--
MW-6 (10-12)		10 – 12	--	--	--	--	16.3 U	77.7	--

TABLE 3
Summary of Soil Sample Chemical Analytical Results
Total Petroleum Hydrocarbons and PCBs
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Sample Depth (feet BGS)	Hydrocarbon Identification by Method NWTPH-HCID			Gasoline-Range Hydrocarbons by Method NWTPH-Gx (mg/kg)	Diesel- and Oil-Range Hydrocarbons by Method NWTPH-Dx (mg/kg)		PCBs by EPA Method 608/8082 (mg/kg)
			Gasoline	Diesel	Heavy Oil		Diesel	Heavy Oil	
1999 J. A. Freeman & Sons Facility – Off Site									
GP-1-0-4'	09/15/99	0 – 4	20 U	50 U	100 U	--	--	--	--
GP-1-12'-16'		12 – 16	20 U	50 U	100 U	--	--	--	--
GP-2-0-4'		0 – 4	20 U	50 U	100 U	--	--	--	--
GP-2-8'-12'		8 – 12	20 U	50 U	100 U	--	--	--	--
GP-3-0-4'		0 – 4	20 U	50 U	100 U	--	--	--	--
GP-3-12'-16'		12 – 16	20 U	50 U	100 U	--	--	--	--
GP-4-0-4'		0 – 4	20 U	**DET**	**DET**	--	**84**	**1,200**	0.05 U
GP-4-4'-8'		4 – 8	20 U	50 U	**DET**	--	25 U	**450**	--
GP-4-8'-12'		8 – 12	20 U	50 U	100 U	--	--	--	--
GP-5-0-4'		0 – 4	20 U	50 U	**DET**	--	25 U	**390**	--
GP-5-4'-8'		4 – 8	20 U	50 U	**DET**	--	25 U	**190**	--
GP-5-8'-12'		8 – 12	20 U	50 U	100 U	--	--	--	--
GP-6-0-4'		0 – 4	20 U	50 U	100 U	--	--	--	--
GP-6-12'-16'		12 – 16	20 U	50 U	100 U	--	--	--	--
GP-7-0-4'		0 – 4	20 U	50 U	100 U	--	--	--	--
GP-7-8'-12'		8 – 12	20 U	50 U	100 U	--	--	--	--
GP-8-0-4'		0 – 4	20 U	50 U	100 U	--	--	--	--
GP-8-8'-12'		8 – 12	20 U	50 U	100 U	--	--	--	--
2007 – 2008 GE Groundwater Assessment – Off Site									
MW01-SO-1 (AMW-1)	12/28/06	0 – 1	--	--	--	--	3.77 U	--	**0.0146** J
MW01-SO-3 (AMW-1)		1.5 – 3	--	--	--	--	3.72 U	--	0.0123 U
MW02-SO-1 (AMW-2)		0 – 1	--	--	--	--	**9.21**	--	**0.767**
MW02-SO-3 (AMW-2)		1.5 – 3	--	--	--	--	**12.8**	--	0.0116 U
MW03-SO-1 (AMW-3)	12/27/06	0.5 – 1.5	--	--	--	--	**213**	--	**1.66**
MW03-SO-3 (AMW-3)		2 – 3.5	--	--	--	--	**20.9**	--	0.0118 U
MW04-SO-1 (AMW-4)		0.5 – 1	--	--	--	--	**385**	--	**0.0849**
MW04-SO-3 (AMW-4)		1 – 2.5	--	--	--	--	3.51 U	--	0.0119 U
MW05-SO-1 (AMW-5)	12/29/06	0.5 – 2	--	--	--	--	3.57 U	--	**1.65**
MW05-SO-3 (AMW-5)		2 – 3.5	--	--	--	--	3.59 U	--	**0.184**
MW05-SO-6.5 (AMW-5)		5 – 6.5	--	--	--	--	3.62 U	--	**0.76**
MW05-SO-11.5 (AMW-5)		10 – 11.5	--	--	--	--	3.71 U	--	0.0125 U
MW05-SO-16.5 (AMW-5)		15 – 16.5	--	--	--	--	4.39 U	--	**0.0692**
MW06-SO-1 (AMW-6)		0.5 – 1.5	--	--	--	--	**4.76**	--	**1.23**
MW06-SO-3 (AMW-6)		1.5 – 3	--	--	--	--	**79.1** J	--	**0.0625** J
2007 – 2009 BCC Project Support Sampling – Off Site									
SW-4GP 15-20	04/05/07	15 – 20	20 U	50 U	100 U	--	--	--	**0.015**[3]
SW-5AM 10:07 (45 ft)	05/02/07	45	20 U	50 U	100 U	--	--	--	0.020 U
SW-30R-6	03/17/08	6	--	--	--	--	--	--	**0.014**[4]
SW-30R-10		10	--	--	--	--	--	--	0.020 U
SW-30R-15		15	--	--	--	--	--	--	0.020 U
SW-30R-20		20	--	--	--	--	--	--	0.020 U
SW-30R-25		25	--	--	--	--	--	--	0.020 U
SW-30R-30		30	--	--	--	--	--	--	0.020 U
SW-30R-35		35	--	--	--	--	--	--	0.020 U
SW-30R-40		40	--	--	--	--	--	--	0.020 U
SW-30R-45		45	--	--	--	--	--	--	0.020 U
SW-30R-50		50	--	--	--	--	--	--	0.020 U
SW-30R-55		55	--	--	--	--	--	--	0.020 U
SW-30R-60		60	--	--	--	--	--	--	0.020 U
SW-56AM-5	06/23/08	5	--	--	--	--	--	--	0.020 U
SW-56AM-10		10	20 U	50 U	100 U	--	--	--	0.020 U
SW-56AM-15		15	20 U	50 U	100 U	--	--	--	0.020 U
SW-57AM-5	06/24/08	5	20 U	50 U	**DET**[5]	--	25 U	50 U	0.020 U
SW-57AM-7.5		7.5	20 U	50 U	100 U	--	--	--	0.020 U
SW-57AM-10		10	20 U	50 U	100 U	--	--	--	**0.010**[3]
SW-57AM-15		15	20 U	50 U	100 U	--	--	--	0.020 U
SW-58AM-2.5	06/25/08	2.5	20 U	50 U	**DET**[5]	--	25 U	**337**	0.020 U
SW-58AM-5		5	20 U	50 U	**DET**[5]	--	25 U	**247**	0.020 U
SW-58AM-7.5		7.5	20 U	50 U	100 U	--	--	--	0.020 U
SW-58AM-10		10	20 U	50 U	100 U	--	--	--	0.020 U
SW-58AM-15		15	20 U	50 U	100 U	--	--	--	0.020 U

TABLE 3
Summary of Soil Sample Chemical Analytical Results
Total Petroleum Hydrocarbons and PCBs
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Sample Depth (feet BGS)	Hydrocarbon Identification by Method NWTPH-HCID			Gasoline-Range Hydrocarbons by Method NWTPH-Gx (mg/kg)	Diesel- and Oil-Range Hydrocarbons by Method NWTPH-Dx (mg/kg)		PCBs by EPA Method 608/8082 (mg/kg)
			Gasoline	Diesel	Heavy Oil		Diesel	Heavy Oil	
SW-59GP-2.5-3.3	06/18/08	2.5	20 U	50 U	**DET**[5]	--	25 U	**202**	**0.182**[3]
SW-59GP-7.0-7.9		7	20 U	50 U	100 U	--	--	--	0.020 U
SW-59GP-10-10.9		10	20 U	50 U	100 U	--	--	--	0.020 U
SW-59GP-15-15.9		15	20 U	50 U	100 U	--	--	--	0.020 U
SW-59GP-20-20.9		20	20 U	50 U	100 U	--	--	--	0.020 U
SW-59GP-25-25.9		25	20 U	50 U	100 U	--	--	--	0.020 U
SW-59GP-29-29.9		29	20 U	50 U	100 U	--	--	--	0.020 U
SW-63GP-3.8-4.5	06/18/08	3.8 – 4.5	20 U	50 U	100 U	--	--	--	0.020 U
SW-63GP-7-7.8		7 – 7.8	20 U	50 U	100 U	--	--	--	0.020 U
SW-64AM-5	06/26/08	5	20 U	50 U	**DET**[5]	--	25 U	**156**	0.020 U
SW-64AM-7.5		7.5	20 U	50 U	100 U	--	--	--	0.020 U
SW-64AM-10		10	20 U	50 U	100 U	--	--	--	0.020 U
SW-65GP 4-5	06/18/08	4 – 5	20 U	50 U	100 U	--	--	--	0.020 U
SW-65GP 15-16		15 – 16	20 U	50 U	100 U				0.020 U
SW-66AM-2.5	06/26/08	2.5	20 U	50 U	100 U	--	--	--	0.020 U
SW-66AM-5		5	20 U	**DET**	**DET**[5]	--	75 U	**1,190**	0.020 U
SW-66AM-7.5		7.5	20 U	50 U	100 U	--	--	--	0.020 U
SW-66AM-10		10	20 U	50 U	100 U	--	--	--	0.020 U
2012 BCC Support Project – Off Site									
B3 0-5	11/06/12	0 – 5	20 U	50 U	100 U	--	--	--	--
B3 5-10		5 – 10	20 U	50 U	100 U	--	--	--	--
B3 10-15		10 – 15	20 U	50 U	100 U	--	--	--	--
B3 15-20		15 – 20	20 U	50 U	100 U	--	--	--	--
B4 0-5		0 – 5	20 U	50 U	100 U	--	--	--	--
B4 5-10		5 – 10	20 U	50 U	100 U	--	--	--	--
B4 10-15		10 – 15	20 U	50 U	100 U	--	--	--	--
B5 0-5		0 – 5	20 U	**DET**	**DET**	--	500 U	**2,600**	--
B5 5-10		5 – 10	20 U	50 U	100 U	--	--	--	--
B5 10-15		10 – 15	20 U	50 U	**DET**	--	120 U	**480**	--
B6 0-5		0 – 5	20 U	50 U	**DET**	--	25 U	**130**	--
B6 5-10		5 – 10	20 U	50 U	**DET**	--	120 U	**450**	--
2013 BCC Support Project – Off Site									
B3E 5-10	03/06/13	5 – 10	20 U	50 U	100 U	--	--	--	--
B3E 10-15		10 – 15	20 U	50 U	100 U	--	--	--	--
B3E 15-20		15 – 20	20 U	50 U	100 U	--	--	--	--
DEQ Generic RBCs[6]									
Soil Ingestion, Dermal Contact, and Inhalation									
Occupational			NE	NE	NE	20,000	14,000	NE	0.59
Construction Worker			NE	NE	NE	9,700	4,600	NE	4.9
Excavation Worker			NE	NE	NE	>Max	>Max	NE	140
Volatilization to Outdoor Air									
Occupational			NE	NE	NE	69,000	>Max	NE	>Csat
Leaching to Groundwater									
Occupational			NE	NE	NE	130	>Max	NE	1.1

Notes:
1. Samples analyzed by method DEQ TPH-418.1 Modified.
2. Sample represents material that was subsequently transported off site for disposal.
3. Concentration shown is for Aroclor 1260; other Aroclors were less than the laboratory MRLs.
4. Concentration shown is for Aroclor 1254; other Aroclors were less than the laboratory MRLs.
5. Results shown are for Lube Oil, as shown in source report.
6. DEQ Generic RBCs dated May 2018, amended August 2023

>Csat: This soil RBC exceeds the limit of three-phase equilibrium partitioning.
DET: analyte detected
J: The identification of the analyte is acceptable; the reported value is an estimate.
>Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates concentration exceeding one or more of DEQ's generic RBCs.
--: not analyzed

TABLE 4
Summary of Soil Sample Chemical Analytical Results
Total Metals, TCLP Metals, and pH
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Depth (feet BGS)	pH	Total Metals by EPA 6000/7000 Series Methods (mg/kg)														TCLP Metals by EPA 1311 and 6000/7000 Series Methods (mg/L)					
				Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc	Barium	Cadmium	Chromium	Iron	Lead	Zinc
1992 – 1993 Plant Building Soil Sampling																								
SP	03/12/92	Stockpile	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	0.1 U	**4.00**	0.1 U	**43.7**
SP1	05/06/92		8.3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	–	**91.2**
SP2			7.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SP3			6.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SP4			6.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
A	03/19/92	7.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	0.1 U	**0.31**	0.1 U	**49.3**
B		7.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	0.1 U	0.1 U	0.1 U	**11.3**
C		7.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	0.1 U	**0.22**	0.1 U	**16.8**
D	09/04/92	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	**2.27**	**170**	0.25 U	**548**
E		8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	**0.744**	**241**	0.25 U	**592**
F	10/28/92	7.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	0.1 U	**5.95**	0.1 U	**4.68**
G		7.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	0.1 U	**0.225**	0.1 U	**2.66**
H	11/03/92	7.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	0.1 U	0.1 U	0.1 U	**17.0**
I		7.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	0.1 U	0.1 U	**1.36**	**7.59**
J 6.5	02/22/92	6.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	0.1 U	**39.4**	0.1 U	**16.8**
J 7.5		7.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	0.1 U	**49.6**	0.1 U	**40.1**
K	2/30/93[1]	8	2.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	0.1 U	**5.11**	**0.787**	**181**
1996 Phase II Environmental Site Assessment																								
1-S-2/4	07/12/96	2 – 4	5.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	–
1-S-4/6		4 – 6	5.2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	–
2-S-2/4		2 – 4	4.6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	–
2-S-4/6		4 – 6	4.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	–
2-S-10/12		10 – 12	4.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	–
3-S-2/4		2 – 4	5.9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	–
4-S-10/12		10 – 12	4.9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	–
5-S-2/4		2 – 4	6.9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	–
8-S-4/6		4 – 6	6.9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.1 U	–
1999 Soil and Groundwater Investigation																								
S-1-1	10/02/98	1	7.05	–	–	–	–	–	**12.3**	–	**37.2**	–	–	–	–	–	–	**74.8**	–	–	–	–	–	–
S-2-1		1	5.11	–	–	–	–	–	**13.9**	–	**49.5**	–	–	–	–	–	–	–	–	–	–	–	–	–
S-4-1		1	4.65	–	–	–	–	–	**16.9**	–	**116**	–	–	–	–	–	–	–	–	–	–	–	–	–
S-5-1		1	4.44	–	–	–	–	–	**11.2**	–	**287**	–	–	–	–	–	–	**903**	–	–	–	–	–	–
S-5-8		8	4.54	–	–	–	–	–	**28.7**	–	**293**	–	–	–	–	–	–	**769**	–	–	–	–	–	–
S-7-1		1	5.77	–	–	–	–	–	**37.8**	–	**410**	–	–	–	–	–	–	**11,600**	–	–	**0.018**	–	0.2 U	–
S-7-8		8	4.42	–	–	–	–	–	**12.3**	–	10 U	–	–	–	–	–	–	**621**	–	–	0.01 U	–	0.2 U	–
S-8-1		1	5.36	–	–	–	–	–	**201**	–	**832**	–	–	–	–	–	–	**106,000**	–	–	**0.089**	–	**0.255**	–
S-8-4		4	3.51	–	–	–	–	–	**72.2**	–	**61.2**	–	–	–	–	–	–	**7,140**	–	–	**0.065**	–	0.2 U	–
S-8-10		10	4.16	–	–	–	–	–	**17.6**	–	**16.6**	–	–	–	–	–	–	**1,110**	–	–	**0.011**	–	0.2 U	–
S-10-1		1	7.10	–	–	–	–	–	**43.5**	–	**207**	–	–	–	–	–	–	**17,000**	–	–	0.01 U	–	0.2 U	–
Surface A		Surface	6.02	–	–	–	–	–	**58.0**	–	**4,090**	–	–	–	–	–	–	–	–	–	–	–	**6.58**	–
Surface B		Surface	5.64	–	–	–	–	–	**138**	–	**2,070**	–	–	–	–	–	–	–	–	–	–	–	**7.77**	–
1999 Building 14 Area Sampling, Kettle Gravels, and Alley Soil Sampling Between Plant & Building 14																								
Bldg.14 W-Pit-1'	05/26/99	1	7.43	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.394**	–	0.0250 U	–	0.0250 U	–
Bldg.14 W-Pit-3'		3	7.80	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.598**	–	0.0250 U	–	0.0250 U	–
Bldg.14-Acid Recovery-"Extra"		–	6.30	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.905**	–	0.0500 U	–	**8.30**	–
Bldg.14-Acid Recovery-1'		1	4.42	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.614**	–	0.0250 U	–	**0.144**	–
Bldg.14-Acid Recovery-3'		3	4.73	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.642**	–	0.0250 U	–	0.0250 U	–
Bldg.14-Acid Recovery-5'		5	4.59	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.850**	–	0.0250 U	–	**0.0440**	–
Galvco-Flue Tank Sludge #2		NA	6.16	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.802**	–	0.0500 U	–	**2.71**	–
Galvco-Alley-North-"A"		0 – 1	5.27	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.188**	–	0.0250 U	–	0.0250 U	–
Galvco-Alley-North-"B"		3	4.17	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.407**	–	0.0250 U	–	0.0250 U	–
Galvco-Alley-North-"C"		5.5	3.98	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.280**	–	0.0250 U	–	0.0250 U	–
Galvco-Kettle E&W Comp.		Composite	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.200 U	–
1999 Kettle Foundation Soils Assessment and Disposal																								
G-1[2]	06/28/99	NA	–	–	–	–	–	–	–	–	**1,800**	–	–	–	–	–	–	–	–	**0.025**	0.01 U	–	**0.388**	–
G-2[2]		NA	–	–	–	–	–	–	–	–	**294**	–	–	–	–	–	–	–	–	**0.033**	0.01 U	–	**4.78**	–
1999 Building 14 Unknowns																								
Acid Burned Soil[2]	11/17/99	NA	4.22	–	–	–	–	**1.69**	**103**	–	**651**	–	–	–	–	–	–	–	–	0.0100 U	0.0100 U	–	0.200 U	–
Green Mixed Unk[2]		NA	4.57	–	–	–	–	**6.51**	**119**	–	**9,630**	–	–	–	–	–	–	–	–	**0.0170**	0.0100 U	–	**15.9**	–
Black Soil[2]		NA	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.0140**	0.0100 U	–	**0.885**	–
Gray/White Unk[2]		NA	6.26	–	–	–	–	**546**	**10.8**	–	**10,100**	–	–	–	–	–	–	–	–	**2.13**	0.0100 U	–	**18.8**	–
2001 Building 14 Area Confirmation Samples																								
Pit North Wall	08/06/01	~1.5	4.03	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.0500 U	0.0500 U	–	**0.322**	–
Pit Bottom		~1.5	4.38	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.0500 U	0.0500 U	–	**0.0978**	–
Trench Pit Wall		~1.5	6.08	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.0734**	0.0500 U	–	**1.40**	–

TABLE 4
Summary of Soil Sample Chemical Analytical Results
Total Metals, TCLP Metals, and pH
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Depth (feet BGS)	pH	Total Metals by EPA 6000/7000 Series Methods (mg/kg)														TCLP Metals by EPA 1311 and 6000/7000 Series Methods (mg/L)					
				Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc	Barium	Cadmium	Chromium	Iron	Lead	Zinc
2001 Stormwater System Improvements and Drywell Closure																								
North-4'	09/20/01	4	–	–	–	–	–	**87.7**	**69.1**	–	**2,600**	–	–	–	–	–	–	**14,500**	–	–	–	–	**0.416**	–
North-9'		9	6.78	–	–	–	–	**22.3**	**256**	–	**3,200**	–	–	–	–	–	–	**9,530**	–	–	–	–	**0.918**	–
South-9'[2]		9	4.45	–	–	–	–	–	–	–	**5,710**	–	–	–	–	–	–	–	–	–	–	–	**7.31**	–
West-4'		4	4.10	–	–	–	–	–	–	–	**398**	–	–	–	–	–	–	–	–	–	–	–	–	–
West-12'		12	–	–	–	–	–	–	–	–	**317**	–	–	–	–	–	–	–	–	–	–	–	–	–
East-6'		6	–	–	–	–	–	0.500 U	**15.1**	**3.09**	**1,150**	–	–	–	–	–	–	**191**	–	–	–	–	0.100 U	–
Bottom-14'[2]		14	5.60	–	–	–	–	**1.71**	**47.1**	–	**844**	–	–	–	–	–	–	**1,460**	–	–	–	–	**2.09**	–
South Wall-9'-#2	10/03/01	9	–	–	–	–	–	–	–	–	**1,750**	–	–	–	–	–	–	–	–	–	–	–	**0.559**	–
Pit Bottom-14.5'-#2		14.5	–	–	–	–	–	–	–	–	**976**	–	–	–	–	–	–	–	–	–	–	–	**0.229**	–
Bldg. 14 Dirt Pile (H)		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.117**	–
2005 XPA – Monitoring Well Installations																								
MW-1 (0-2.5)	07/22/05	0 – 2.5	–	–	**73.4**	**66.3**	–	**0.865**	**22.1**	**70.4**	**198**	**278**	**0.209**	**9.40**	**0.111**	**0.112** B	**0.0975**	**7,840**	–	–	–	–	–	–
MW-1 (2.5-5)		2.5 – 5	–	–	**1.79**	**149**	–	**0.190**	**14.9**	**31.6**	**63**	**587**	**0.137**	**9.96**	**0.108**	**1.05** B	**0.0966**	**2,140**	–	–	–	–	–	–
MW-1 (11.5-12)		11.5 – 12	–	–	**0.696**	**542**	–	**0.0974**	**17.2**	**19.4**	**5.82**	**1,130**	**0.00934**	**25.2**	0.0714 U	**0.0972** B	**0.0489**	**1,440**	–	–	–	–	–	–
MW-2 (0-2.5)	07/21/05	0 – 2.5	–	–	**0.849**	**65.5**	–	**0.0586**	**29.4**	**13.4**	**3.22**	**354**	**0.0485**	**12.4**	0.0909 U	**0.0635** B	**0.0541**	**48.4**	–	–	–	–	–	–
MW-2 (2.5-5)		2.5 – 5	0 – 2.5	–	**0.796**	**92.9**	–	**0.0343**	**16.4**	**11.3**	**4.00**	**310**	0.00862 U	**8.26**	0.0862 U	**0.0473** B	**0.0605**	**33.4**	–	–	–	–	–	–
MW-2 (13-13.5)		13 – 13.5	–	–	**0.986**	**122**	–	**0.0413**	**10.3**	**13.3**	**3.03**	**1,000**	**0.00826**	**9.12**	0.0820 U	**0.0519** B	**0.0916**	**42.1**	–	–	–	–	–	–
MW-3 (0-2.5)		0 – 2.5	–	–	**1.39**	**84.1**	–	**0.288**	**13.8**	**27.1**	**68.5**	**589**	**0.0309**	**13.7**	**0.112**	**0.0896** B	**0.0714**	**1,060**	–	–	–	–	–	–
MW-3 (2.5-5)		2.5 – 5	–	–	**3.09**	**117**	–	**0.0540**	**14.6**	**9.92**	**8.60**	**620**	**0.0169**	**9.82**	**0.103**	**0.0882** B	**0.119**	**105**	–	–	–	–	–	–
MW-3 (7-7.5)		7 – 7.5	–	–	**2.58**	**97.3**	–	**0.0667**	**13.2**	**12.0**	**5.66**	**462**	**0.0168**	**11.8**	**0.103**	**0.0811** B	**0.102**	**51.0**	–	–	–	–	–	–
MW-4 (0-2.5)	07/22/05	0 – 2.5	–	–	**1.56**	**66.8**	–	**0.487**	**14.1**	**18.6**	**19.3**	**721**	**0.0268**	**10.8**	**0.0946**	**0.0802** B	**0.0767**	**1,900**	–	–	–	–	–	–
MW-4 (2.5-5)		2.5 – 5	–	–	**2.23**	**103**	–	**0.0769**	**12.5**	**10.0**	**4.81**	**679**	**0.0160**	**10.7**	**0.0840**	**0.0634** B	**0.0982**	**53.0**	–	–	–	–	–	–
MW-4 (11.5-12)		11.5 – 12	–	–	**0.715**	**123**	–	**0.173**	**10.4**	**7.56**	**2.33**	**201**	0.0082 U	**6.04**	**0.0830**	**0.0482** B	**0.0477**	**381**	–	–	–	–	–	–
MW-5 (0-2.5)	07/21/05	0 – 2.5	–	–	**0.656**	**58.0**	–	**0.133**	**12.4**	**59.6**	**24.2**	**435**	0.00962 U	**3.77**	**0.117**	**0.0775** B	**0.0578**	**320**	–	–	–	–	–	–
MW-5 (2.5-5)		2.5 – 5	–	–	**1.23**	**102**	–	**0.308**	**29.9**	**85.8**	**112**	**551**	**0.0316**	**13.0**	**0.105**	**0.132** B	**0.0885**	**910**	–	–	–	–	–	–
MW-5 (12.5-13)		12.5 – 13	–	–	**0.666**	**65.4**	–	**0.0833**	**12.9**	**16.7**	**15.3**	**318**	0.00862 U	**7.34**	**0.0934**	**0.0772** B	**0.0928**	**140**	–	–	–	–	–	–
MW-6 (0-2.5)	07/22/05	0 – 2.5	–	–	**2.49**	**327**	–	**2.030**	**23.3**	**50.1**	**997**	**167**	**2.16**	**13.7**	0.0909 U	**0.664** B	**0.123**	**9,990**	–	–	–	–	–	–
MW-6 (2.5-5)		2.5 – 5	–	–	**3.17**	**114**	–	**0.504**	**28.2**	**15.9**	**610**	**77.3**	**0.0735**	0.403 U	0.0847 U	**0.0583** B	**0.136**	**1,080**	–	–	–	–	–	–
MW-6 (10-12)		10 – 12	–	–	**1.56**	**119**	–	**0.995**	**24.0**	**25.0**	**146**	**125**	**0.349**	**4.11**	0.0926 U	**0.0923** B	**0.092**	**2,550**	–	–	–	–	–	–
2007-2008 GE Groundwater Assessment - Offsite																								
MW01-S0-1 (AMW-1)	12/28/06	0 – 1.0	–	**4.56** J	2.05 U	–	0.205 U,J	0.205 U,J	**16.3**	**20**	**10.2**	–	**0.053**	**17.9**	3.07 R	0.512 U	**11.2**	**288**	–	–	–	–	–	–
MW01-S0-3 (AMW-1)		1.5 – 3	–	**3.00** J	1.99 U	–	0.199 U,J	0.199 U,J	**14.6**	**16.2**	**2.49**	–	**0.0278**	**17.5**	2.98 R	0.497 U	**9.32**	**47.1**	–	–	–	–	–	–
MW02-S0-1 (AMW-2)		0 – 1	–	**8.45** J	**2.63**	–	0.21 U,J	**0.439** J	**82.4**	**26**	**82.5**	–	**0.136**	**18.9**	3.15 R	0.525 U	**12.3**	**153**	–	–	–	–	–	–
MW02-S0-3 (AMW-2)		1.5 – 3	–	**3.85** J	1.88 U	–	0.188 U,J	0.188 U	**15.6**	**16.8**	**2.3**	–	**0.0359**	**16.1**	2.81 R	0.469 U	**8.87**	**45.7**	–	–	–	–	–	–
MW03-S0-1 (AMW-3)	12/27/06	0.5 – 1.5	–	**10.4** J	2.17 U	–	**0.354**	0.217 U	**14.4**	**23**	**81.6** J	–	0.0224 U	**16.2**	3.25 U,J	0.542 U	**8.81** J	**59.1**	–	–	–	–	–	–
MW03-S0-3 (AMW-3)		2 – 3.5	–	**3.68** J	2.18 U	–	**0.247**	0.218 U	**13.5**	**15.5**	**5.03** J	–	**0.0563**	**16.8**	3.27 U,J	0.544 U	**7.54** J	**46.1**	–	–	–	–	–	–
MW04-S0-1 (AMW-4)		0.5 – 1	–	**6.42** J	2.12 U	–	**0.345**	0.212 U	**11.5**	**18.9**	**8.17**	–	0.0208 U	**15.2**	3.17 U,J	0.529 U	**12.20** J	**54.8**	–	–	–	–	–	–
MW04-S0-3 (AMW-4)		1 – 2.5	–	**4.26** J	2.01 U	–	**0.203**	0.201 U	**12.3**	**14.2**	**3.32**	–	0.022 U	**16.9**	3.02 U,J	0.503 U	**7.44** J	**43.1**	–	–	–	–	–	–
MW05-S0-1 (AMW-5)	12/29/06	0.5 – 2	–	**2.52** J	1.85 U	–	0.185 U,J	0.185 U,J	**3.83**	**2.8**	0.925 U	–	**0.0258**	**4.08**	2.77 R	0.462 U	**2.92**	**11.2**	–	–	–	–	–	–
MW05-S0-3 (AMW-5)		2 – 3.5	–	**3.04** J	2.06 U	–	0.206 U,J	0.206 U,J	**14.8**	**15.5**	**1.92**	–	0.0208 U	**17.1**	3.10 R	0.516 U	**9.08**	**45.1**	–	–	–	–	–	–
MW05-S0-6.5 (AMW-5)		5 – 6.5	–	**3.25** J	2.06 U	–	0.206 U,J	0.206 U,J	**14.5**	**23.8**	**3.01**	–	**0.0234**	**16.4**	3.09 R	0.515 U	**9.52**	**47.1**	–	–	–	–	–	–
MW05-S0-11.5 (AMW-5)		10.0 – 11.5	–	**4.85** J	1.97 U	–	0.197 U,J	0.197 U,J	**17.6**	**17.2**	**2.99**	–	**0.0335**	**18.2**	2.96 R	0.493 U	**10.4**	**50.5**	–	–	–	–	–	–
MW05-S0-16.5 (AMW-5)		15.0 – 16.5	–	**3.71** J	2.23 U	–	0.223 U,J	0.223 U,J	**15.1**	**24.1**	**3.04**	–	**0.0260**	**15.7**	3.35 R	0.558 U	**9.91**	**50.4**	–	–	–	–	–	–
MW06-S0-1 (AMW-6)		0.5 – 1.5	–	**3.83** J	2.16 U	–	0.216 U,J	0.216 U,J	**15.8**	**16.2**	**1.94**	–	**0.0234**	**16.6**	3.24 R	0.54 U	**10.1**	**47.1**	–	–	–	–	–	–
MW06-S0-3 (AMW-6)		1.5 – 3	–	**3.7** J	2.14 U	–	0.214 U,J	0.214 U,J	**13.1**	**33**	**4.14**	–	0.0212 U	**15**	3.21 R	0.534 U	**10.9**	44.5 U	–	–	–	–	–	–

TABLE 4
Summary of Soil Sample Chemical Analytical Results
Total Metals, TCLP Metals, and pH
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Depth (feet BGS)	pH	Total Metals by EPA 6000/7000 Series Methods (mg/kg)														TCLP Metals by EPA 1311 and 6000/7000 Series Methods (mg/L)					
				Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc	Barium	Cadmium	Chromium	Iron	Lead	Zinc
2007-2009 BCC Project Support Sampling – Off Site																								
SW-4GP 15-20	04/05/07	15 – 20	–	–	**2.43**	**94.1**	–	0.10 U	**30.8**	**28.4**	**3.16**	–	**0.019**	–	1.00 U	0.10 U	–	**399**	–	–	–	–	–	–
SW-5AM 10:07 (45 ft)	05/02/07	45	–	–	**3.29**	**211**	–	**0.11**	**40.3**	**19.4**	**7.09**	–	**0.023**	–	1.00 U	0.10 U	–	**85.0**	–	–	–	–	–	–
SW-56AM-5	06/23/08	5	–	–	**1.57**	**78.6**	–	0.10 U	**32.2**	**17.1**	**5.29**	–	**0.021**	–	1.00 U	0.10 U	–	**45.4**	–	–	–	–	–	–
SW-56AM-10		10	–	–	**1.72**	**107**	–	0.10 U	**29.2**	**21.7**	**2.84**	–	**0.011**	–	1.00 U	0.10 U	–	**46.5**	–	–	–	–	–	–
SW-56AM-15		15	–	–	**1.17**	**65.2**	–	0.10 U	**22.1**	**18.7**	**2.89**	–	0.010 U	–	1.00 U	0.10 U	–	**379**	–	–	–	–	–	–
SW-57AM-5	06/24/08	5	–	–	**1.05**	**111**	–	0.10 U	**24.5**	**16.6**	**3.83**	–	0.010 U	–	1.00 U	0.10 U	–	**46.5**	–	–	–	–	–	–
SW-57AM-7.5		7.5	–	–	**1.11**	**113**	–	0.10 U	**17.9**	**16.9**	**4.37**	–	0.010 U	–	1.00 U	0.10 U	–	**52.9**	–	–	–	–	–	–
SW-57AM-10		10	–	–	**0.90**	**161**	–	**0.14**	**16.4**	**15.9**	**5.95**	–	**0.017**	–	1.00 U	0.10 U	–	**53.0**	–	–	–	–	–	–
SW-57AM-15		15	–	–	**1.65**	**96.6**	–	**0.30**	**23.0**	**16.4**	**4.95**	–	**0.011**	–	1.00 U	0.10 U	–	**499**	–	–	–	–	–	–
SW-58AM-2.5	06/25/08	2.5	–	–	**1.07**	**76.4**	–	0.10 U	**18.0**	**19.8**	**6.96**	–	**0.023**	–	1.00 U	0.10 U	–	**53.5**	–	–	–	–	–	–
SW-58AM-5		5	–	–	**0.81**	**84.4**	–	0.10 U	**30.3**	**18.9**	**4.78**	–	0.010 U	–	1.00 U	0.10 U	–	**47.5**	–	–	–	–	–	–
SW-58AM-7.5		7.5	–	–	**0.68**	**71.6**	–	0.10 U	**17.4**	**14.6**	**3.40**	–	0.010 U	–	1.00 U	0.10 U	–	**42.1**	–	–	–	–	–	–
SW-58AM-10		10	–	–	**0.83**	**98.4**	–	0.10 U	**23.4**	**16.8**	**3.79**	–	**0.011**	–	1.00 U	0.10 U	–	**43.2**	–	–	–	–	–	–
SW-58AM-15		15	–	–	**0.62**	**86.0**	–	0.10 U	**21.0**	**19.5**	**2.67**	–	0.010 U	–	1.00 U	0.10 U	–	**402**	–	–	–	–	–	–
SW-59GP-2.5-3.3	06/18/08	2.5	–	–	**3.81**	**119**	–	**0.45**	**27.3**	–	**161**	–	**0.097**	–	1.00 U	0.10 U	–	–	–	–	–	–	0.010 U	–
SW-59GP-7.0-7.9		7	–	–	**3.42**	**211**	–	0.10 U	**25.3**	–	**8.98**	–	**0.034**	–	1.00 U	0.10 U	–	–	–	–	–	–	–	–
SW-59GP-10-10.9		10	–	–	**6.07**	**219**	–	**0.10**	**34.9**	–	**10.4**	–	**0.046**	–	1.00 U	0.10 U	–	–	–	–	–	–	–	–
SW-59GP-15-15.9		15	–	–	**2.32**	**130**	–	0.10 U	**16.5**	–	**4.63**	–	**0.016**	–	1.00 U	0.10 U	–	–	–	–	–	–	–	–
SW-59GP-20-20.9		20	–	–	**2.20**	**135**	–	0.10 U	**13.9**	–	**4.41**	–	**0.015**	–	1.00 U	0.10 U	–	–	–	–	–	–	–	–
SW-59GP-25-25.9		25	–	–	**3.86**	**127**	–	0.10 U	**18.3**	–	**6.19**	–	0.010 U	–	1.00 U	0.10 U	–	–	–	–	–	–	–	–
SW-59GP-29-29.9		29	–	–	**2.00**	**108**	–	0.10 U	**14.4**	–	**4.03**	–	0.010 U	–	1.00 U	0.10 U	–	–	–	–	–	–	–	–
SW-63GP-3.8-4.5	06/18/08	3.8 – 4.5	–	–	**4.45**	**165.0**	–	0.10 U	**24.2**	–	**6.96**	–	**0.030**	–	1.00 U	0.10 U	–	–	–	–	–	–	–	–
SW-63GP-7-7.8		7 – 7.8	–	–	**3.98**	**144**	–	**0.10**	**21.0**	–	**7.54**	–	**0.028**	–	1.00 U	0.10 U	–	–	–	–	–	–	–	–
SW-64AM-5	06/26/08	5	–	–	**1.05**	**80.0**	–	**0.15**	**17.8**	**15.3**	**2.94**	–	0.010 U	–	1.00 U	0.10 U	–	**1,670**	–	–	–	–	–	–
SW-64AM-7.5		7.5	–	–	**1.08**	**101**	–	**0.12**	**19.7**	**16.2**	**3.01**	–	0.010 U	–	1.00 U	0.10 U	–	**1,250**	–	–	–	–	–	–
SW-64AM-10		10	–	–	**1.01**	**87.3**	–	**0.17**	**19.1**	**14.3**	**3.27**	–	0.010 U	–	1.00 U	0.10 U	–	**1,140**	–	–	–	–	–	–
SW-65GP 4-5	06/18/08	4-5	–	–	**5.16**	**194**	–	**0.67**	**25**	–	**16.4**	–	**0.040**	–	1.00 U	0.10 U	–	–	–	–	–	–	–	–
SW-65GP 15-16		15 – 16	–	–	**2.25**	**146**	–	0.10 U	**32.5**	–	**6.94**	–	**0.042**	–	1.00 U	0.10 U	–	–	–	–	–	–	–	–
SW-66AM-2.5	06/26/08	2.5	–	–	**2.39**	**178**	–	**0.25**	**31.2**	**17.9**	**26.3**	–	**0.036**	–	1.00 U	0.10 U	–	**161**	–	–	–	–	–	–
SW-66AM-5		5	–	–	**2.64**	**139**	–	**0.18**	**25.0**	**20.5**	**79.5**	–	**0.029**	–	1.00 U	0.10 U	–	**83.5**	–	–	–	–	–	–
SW-66AM-7.5		7.5	–	–	**2.96**	**146**	–	0.10 U	**22.0**	**18.2**	**6.24**	–	**0.018**	–	1.00 U	0.10 U	–	**59.5**	–	–	–	–	–	–
SW-66AM-10		10	–	–	**1.01**	**85.2**	–	0.10 U	**39.0**	**20.7**	**2.77**	–	0.010 U	–	1.00 U	0.10 U	–	**47.9**	–	–	–	–	–	–
2012 BCC Support Project – Off Site																								
B3 0-5	11/06/12	0 – 5	–	–	**2.09**	**170**	–	**0.135**	**34.0**	–	**17.5**	–	**0.0316**	–	1.00 U	0.100 U	–	**80.5**	–	–	–	–	–	–
B3 5-10		5 – 10	–	–	**3.79**	**161**	–	0.100 U	**29.8**	–	**9.45**	–	**0.0232**	–	1.00 U	0.100 U	–	**68.9**	–	–	–	–	–	–
B3 10-15		10 – 15	–	–	**3.15**	**129**	–	0.100 U	**24.1**	–	**6.69**	–	**0.0207**	–	1.00 U	0.100 U	–	**59.0**	–	–	–	–	–	–
B3 15-20		15 – 20	–	–	**1.48**	**78.5**	–	**0.186**	**29.8**	–	**5.77**	–	**0.0108**	–	1.00 U	0.100 U	–	**803**	–	–	–	–	–	–
B4 0-5		0 – 5	–	–	**2.51**	**153**	–	**0.897**	**33.1**	–	**38.4**	–	**0.0397**	–	1.00 U	0.100 U	–	**2,930**	–	–	–	–	–	–
B4 5-10		5 – 10	–	–	**1.14**	**89.6**	–	**0.281**	**19.5**	–	**9.57**	–	0.0100 U	–	1.00 U	0.100 U	–	**1,220**	–	–	–	–	–	–
B4 10-15		10 – 15	–	–	**0.801**	**77.5**	–	**0.484**	**52.5**	–	**4.58**	–	0.0100 U	–	1.00 U	0.100 U	–	**882**	–	–	–	–	–	–
B5 0-5		0 – 5	–	–	**2.40**	**83.7**	–	**0.497**	**18.7**	–	**65.0**	–	**0.0319**	–	1.00 U	0.100 U	–	**702**	–	–	–	–	–	–
B5 5-10		5 – 10	–	–	**1.56**	**86.9**	–	0.100 U	**26.4**	–	**5.91**	–	**0.0152**	–	1.00 U	0.100 U	–	**235**	–	–	–	–	–	–
B5 10-15		10 – 15	–	–	**1.22**	**72.8**	–	0.100 U	**19.1**	–	**9.15**	–	**0.0104**	–	1.00 U	0.100 U	–	**66.7**	–	–	–	–	–	–
B6 0-5		0 – 5	–	–	**1.15**	**42.9**	–	0.100 U	**12.8**	–	**3.06**	–	0.0100 U	–	1.00 U	0.100 U	–	**50.8**	–	–	–	–	–	–
B6 5-10		5 – 10	–	–	**1.01**	**42.5**	–	0.100 U	**13.5**	–	**3.49**	–	0.0100 U	–	1.00 U	0.100 U	–	**51.2**	–	–	–	–	–	–
2013 BCC Support Project – Off Site																								
B3E 5-10	03/06/13	5 – 10	–	–	**3.77**	**182**	–	0.100 U	**34.8**	–	**7.64**	–	**0.0180**	–	1.00 U	0.100 U	–	**65.2**	–	–	–	–	–	–
B3E 10-15		10 – 15	–	–	**0.983**	**80.3**	–	**0.116**	**21.2**	–	**2.53**	–	0.0100 U	–	1.00 U	0.100 U	–	**281**	–	–	–	–	–	–
B3E 15-20		15 – 20	–	–	**0.802**	**96.6**	–	**0.126**	**20.7**	–	**2.26**	–	0.0100 U	–	1.00 U	0.100 U	–	**505**	–	–	–	–	–	–
DEQ Generic RBCs[3]																								
Soil Ingestion, Dermal Contact, and Inhalation																								
Occupational				NE	1.9	220,000	2,300	1,100	>Max	47,000	800	25,000	350	22,000	NE	5,800	NE	NE	NA	NA	NA	NA	NA	NA
Construction Worker				NE	15	69,000	700	350	530,000	14,000	800	8,200	110	7,000	NE	1,800	NE	NE	NA	NA	NA	NA	NA	NA
Excavation Worker				NE	420	>Max	19,000	9,700	>Max	390,000	800	230,000	2,900	190,000	NE	49,000	NE	NE	NA	NA	NA	NA	NA	NA
Volatilization to Outdoor Air																								
Occupational				NE	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NE	NV	NE	NE	NA	NA	NA	NA	NA	NA
Leaching to Groundwater																								
Occupational				NE	NA[4]	NA[4]	NA[4]	NA[4]	NA[4]	NA[4]	30	NA[4]	NA[4]	NA[4]	NE	NA[4]	NE	NE	NA	NA	NA	NA	NA	NA
DEQ Default Background Concentrations for Metals in Soil – Portland Basin[5]				**0.56**	**8.8**	**790**	**2**	**0.63**	**76**	**34**	**28**	**1,800**	**0.23**	**47**	**0.71**	**0.82**	**5.2**	**180**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

TABLE 4
Summary of Soil Sample Chemical Analytical Results
Total Metals, TCLP Metals, and pH
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Depth (feet BGS)	pH	Total Metals by EPA 6000/7000 Series Methods (mg/kg)														TCLP Metals by EPA 1311 and 6000/7000 Series Methods (mg/L)					
				Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc	Barium	Cadmium	Chromium	Iron	Lead	Zinc

Notes:
1. Date shown is as reported on analytical report. Actual date is most likely 02/12/1993 based on other samples collected during that period.
2. Sample represents material that was subsequently transported off site for disposal.
3. DEQ Generic RBCs dated May 2018, amended August 2023.
4. Leaching to Groundwater RBCs are not provided for most inorganic chemicals. If this pathway is of concern, then site-specific leaching tests must be performed.
5. Table 1 DEQ Clean Fill Determinations dated February 21, 2019

B: The target analyte was detected in the associated blank.
J: The identification of the analyte is acceptable; the reported value is an estimate.
>Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.
NV: chemical is considered non-volatile
R: rejected result
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates concentration exceeding one or more of DEQ's generic RBCs.
--: not analyzed

TABLE 5
Summary of Soil Sample Chemical Analytical Results
VOCs
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Depth (feet BGS)	VOCs by EPA Method 8260B[1] (unless noted otherwise) (mg/kg)						
			Benzene	Ethylbenzene	Naphthalene	PCE	Toluene	TCE	Xylenes
1999 Soil and Groundwater Investigation by EPA Method 8021B									
S-1-1	10/02/98	1.0	0.0500 U	0.0500 U	-- U	0.0500 U	0.0500 U	0.0500 U	0.100 U
1999 Building 14 Unkowns									
Black Soil[2]	11/17/99	NA	0.100 U	0.100 U	0.100 U	**1.370**	0.100 U	**0.120**	0.300 U
2000 Rick Russell Site Sampling by EPA Method 8021B									
A-11	07/21/00	11.0	0.200 U	**4.47**	--	--	0.200 U	--	**11.7**
A-16		16.0	0.0500 U	0.0500 U	--	--	0.0500 U	--	0.0500 U
B-13		13.0	0.200 U	0.200 U	--	--	0.200 U	--	**0.446**
C-13		13.0	0.500 U	**1.69**	--	--	0.500 U	--	**6.63**
C-14		14.0	0.100 U	0.100 U	--	--	0.100 U	--	**0.646**
D-14		14.0	0.0500 U	0.0500 U	--	--	0.0500 U	--	0.0500 U
F-10		10.0	0.0500 U	0.0500 U	--	--	0.0500 U	--	0.0500 U
F-14		14.0	0.0500 U	0.0500 U	--	--	0.0500 U	--	0.0500 U
I-12	09/07/00	12.0	0.0500 U	**1.32**	--	--	**0.0635**	--	**1.53**
2001 Stormwater System Improvements and Drywell Closure by EPA Method 8021B									
North-9'	09/20/01	9	0.0500 U	0.0500 U	--	--	0.0500 U	--	0.0500 U
Bottom-14'		14	0.0500 U	0.0500 U	--	--	0.0500 U	--	0.0500 U
2002 Alley Soil Assessment									
TP1-1.5'	10/12/01	1.5	0.0500 U	**0.0906**	--	--	**0.0795**	--	**2.42**
TP1-2.5'		2.5	0.0500 U	0.0500 U	--	--	0.0500 U	--	0.0500 U
TP5-4.5'		4.5	0.0500 U	0.0500 U	--	--	0.0500 U	--	0.0500 U
2005 XPA – Monitoring Well Installations									
MW-6 (0-2.5)	07/22/05	0-2.5	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0300 U
MW-6 (2.5-5)		2.5 – 5	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0300 U
MW-6 (10-12)		10 – 12	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0300 U
2007 – 2009 BCC Project Support Sampling – Off Site									
SW-5AM 8:30 (15 ft)	05/02/07	15	**0.0265**	0.132 U	0.265 U	0.132 U	0.132 U	0.132 U	0.397 U
SW-5AM 10:07 (45 ft)		45	0.0290 U	0.145 U	0.290 U	0.145 U	0.145 U	0.145 U	0.435 U
SW-56AM-10	06/23/08	10	0.0214 U	0.107 U	**0.566**	0.107 U	0.107 U	0.107 U	0.321 U
SW-56AM-15		15	0.0237 U	0.118 U	0.237 U	0.118 U	0.118 U	0.118 U	0.355 U
SW-57AM-5	06/24/08	5	0.0195 U	0.0976 U	0.195 U	0.0976 U	0.0976 U	0.0976 U	0.293 U
SW-57AM-7.5		8	0.0216 U	0.108 U	0.216 U	0.108 U	0.108 U	0.108 U	0.324 U
SW-57AM-10		10	0.0214 U	0.107 U	0.214 U	0.107 U	0.107 U	0.107 U	0.321 U
SW-57AM-15		15	0.0223 U	0.111 U	0.223 U	0.111 U	0.111 U	0.111 U	0.334 U
SW-58AM-2.5	06/25/08	2.5	0.0214 U	0.107 U	0.214 U	0.107 U	0.107 U	0.107 U	0.321 U
SW-58AM-5		5	0.0213 U	0.106 U	0.213 U	0.106 U	0.106 U	0.106 U	0.319 U
SW-58AM-7.5		7.5	0.0223 U	0.111 U	0.223 U	0.111 U	0.111 U	0.111 U	0.334 U
SW-58AM-10		10	0.0214 U	0.107 U	0.214 U	0.107 U	0.107 U	0.107 U	0.321 U
SW-58AM-15		15	0.0223 U	0.111 U	0.223 U	0.111 U	0.111 U	0.111 U	0.334 U
SW-59GP-2.5-3.3	06/18/08	2.5	0.0227 U	0.114 U	0.227 U	0.114 U	0.114 U	0.114 U	0.341 U
SW-59GP-7.0-7.9		7	0.0264 U	0.132 U	0.264 U	0.132 U	0.132 U	0.132 U	0.396 U
SW-59GP-10-10.9		10	0.0248 U	0.124 U	0.248 U	0.124 U	0.124 U	0.124 U	0.372 U
SW-59GP-15-15.9		15	0.0256 U	0.128 U	0.256 U	0.128 U	0.128 U	0.128 U	0.384 U
SW-59GP-20-20.9		20	0.0269 U	0.135 U	0.269 U	0.135 U	0.135 U	0.135 U	0.404 U
SW-59GP-25-25.9		25	0.0285 U	0.142 U	0.285 U	0.142 U	0.142 U	0.142 U	0.427 U
SW-59GP-29-29.9		29	0.0231 U	0.116 U	0.231 U	0.116 U	0.116 U	0.116 U	0.347 U
SW-63GP-3.8-4.5	06/18/08	3.8 – 4.5	0.0229 U	0.115 U	0.229 U	0.115 U	0.115 U	0.115 U	0.344 U
SW-63GP-7-7.8		7 – 7.8	0.0227 U	0.114 U	0.227 U	0.114 U	0.114 U	0.114 U	0.341 U
SW-64AM-5	06/26/08	5	0.0210 U	0.105 U	0.210 U	0.105 U	0.105 U	0.105 U	0.315 U
SW-64AM-7.5		7.5	0.0208 U	0.104 U	0.208 U	0.104 U	0.104 U	0.104 U	0.312 U
SW-64AM-10		10	0.0213 U	0.107 U	0.213 U	0.107 U	0.107 U	0.107 U	0.320 U
SW-65GP 4-5	06/18/08	4 – 5	0.0235 U	0.118 U	0.235 U	0.118 U	0.118 U	0.118 U	0.353 U
SW-65GP 15-16		15 –16	0.0324 U	0.162 U	0.324 U	0.162 U	0.162 U	0.162 U	0.486 U
SW-66AM-2.5	06/26/08	2.5	0.0236 U	0.118 U	0.236 U	0.118 U	0.118 U	0.118 U	0.354 U
SW-66AM-5		5	**0.0461**	0.107 U	**0.327**	0.107 U	0.107 U	0.107 U	0.321 U
SW-66AM-7.5		7.5	0.0226 U	0.113 U	0.226 U	0.113 U	0.113 U	0.113 U	0.339 U
SW-66AM-10		10	0.0218 U	0.109 U	0.218 U	0.109 U	0.109 U	0.109 U	0.327 U

TABLE 5
Summary of Soil Sample Chemical Analytical Results
VOCs
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Depth (feet BGS)	VOCs by EPA Method 8260B[1] (unless noted otherwise) (mg/kg)						
			Benzene	Ethylbenzene	Naphthalene	PCE	Toluene	TCE	Xylenes
DEQ Generic RBCs[3]									
Soil Ingestion, Dermal Contact, and Inhalation									
Occupational			37	150	23	1,000	88,000	51	25,000
Construction Worker			380	1,700	580	1,800	28,000	130	20,000
Excavation Worker			11,000	49,000	16,000	50,000	770,000	3,700	560,000
Volatilization to Outdoor Air									
Occupational			50	160	83	>Csat	>Csat	96	>Csat
Leaching to Groundwater – Occupational									
Occupational			0.10	0.90	0.34	1.9	490	0.087	100

Notes:
1. Only detected VOCs are shown.
2. Sample represents material that was subsequently transported off site for disposal.
3. DEQ Generic RBCs dated May 2018, amended August 2023.
>Csat: This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product may be present.
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates concentration exceeding one or more of DEQ's generic RBCs.
--: not analyzed

TABLE 6
Summary of Soil Sample Chemical Analytical Results
PAHs
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Depth (feet BGS)	PAHs by EPA Method 8270 SIM (mg/kg)																
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(e)pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
2000 Rick Russell Site Sampling																			
A-11	07/21/00	11	1.340 U	0.134 U	**0.180**	0.134 U	0.134 U	0.134 U	--	0.134 U	0.134 U	0.134 U	0.134 U	0.134 U	**0.759**	0.134 U	1.340 U	**1.000**	0.134 U
A-16		16	0.0268 U	0.0268 U	0.0268 U	**0.0417**	**0.0377**	0.0268 U	--	0.0268 U	0.0268 U	**0.0430**	0.0268 U	**0.0766**	0.0268 U	0.0268 U	0.0268 U	**0.0575**	**0.0946**
B-13		13	1.340 U	0.268 U	1.340 U	0.134 U	0.134 U	0.134 U	--	0.134 U	0.134 U	0.134 U	0.134 U	0.268 U	**1.430**	0.134 U	0.268 U	0.268 U	0.134 U
C-13		13	6.700 U	0.670 U	**0.980**	0.268 U	0.268 U	0.268 U	--	0.268 U	0.268 U	0.268 U	0.268 U	0.670 U	**3.970**	0.268 U	3.350 U	**3.810**	**0.268**
C-14		14	0.134 U	0.134 U	0.134 U	0.134 U	0.134 U	0.134 U	--	0.134 U	0.134 U	0.134 U	0.134 U	0.134 U	**0.206**	0.134 U	0.134 U	0.134 U	0.134 U
D-14		14	0.134 U	0.134 U	0.134 U	0.134 U	0.134 U	0.134 U	--	0.134 U	0.134 U	0.134 U	0.134 U	0.134 U	0.670 U	0.134 U	0.134 U	0.134 U	0.134 U
F-10		10	0.0670 U	0.0670 U	0.0670 U	0.0670 U	0.0670 U	0.0670 U	--	0.0670 U	0.0670 U	**0.110**	0.0670 U	0.0670 U	0.0670 U	0.0670 U	0.0670 U	**0.0709**	**0.0958**
F-14		14	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	--	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
I-12	09/07/00	12	0.670 U	0.670 U	0.670 U	0.0670 U	0.0670 U	0.0670 U	--	0.0670 U	0.0670 U	0.0670 U	0.0670 U	0.670 U	**2.060**	0.0670 U	0.670 U	**2.860**	**0.204**
2001 Stormwater System Improvements and Drywell Closure																			
North-9'	09/20/01	9	0.134 U	0.134 U	0.134 U	**0.141**	0.134 U	**0.214**	--	**0.143**	0.134 U	**0.373**	0.134 U	**0.815**	0.134 U	0.134 U	0.134 U	**0.461**	**0.528**
Bottom-14'[1]		14	0.134 U	0.134 U	0.134 U	0.134 U	0.134 U	**0.180**	--	0.134 U	0.134 U	**0.286**	0.134 U	**0.628**	0.134 U	0.134 U	0.134 U	**0.444**	**0.414**
2002 Alley Soil Assessment																			
TP1-1.5'	10/12/01	1.5	0.536 U	0.268 U	0.536 U	**0.407**	**0.629**	**0.845**	--	**0.726**	**0.563**	**0.637**	0.268 U	**0.536**	1.340 U	**0.592**	1.340 U	**1.180**	**0.697**
TP1-2.5'		2.5	0.0134 U	0.0134 U	0.0134 U	**0.0136**	**0.0221**	**0.0223**	--	**0.0264**	**0.0208**	**0.0188**	0.0134 U	**0.0157**	0.0134 U	**0.0219**	0.0134 U	**0.0240**	0.0134 U
TP5-4.5'		4.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	--	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
2005 XPA – Monitoring Well Installations																			
MW-6 (0-2.5)	07/22/05	0 – 2.5	0.00667 U	**0.0140**	0.00667 U	**0.0273**	**0.0327**	**0.0407**	--	**0.0447**	0.00667 U	**0.0360**	**0.0127**	**0.0220**	0.00667 U	**0.0253**	0.00667 U	**0.0173**	**0.0327**
MW-6 (2.5-5)		2.5 – 5	0.00667 U	0.00667 U	0.00667 U	0.00667 U	0.00667 U	0.00667 U	--	0.00667 U	0.00667 U	0.00667 U	0.00667 U	0.00667 U	0.00667 U	0.00667 U	0.00667 U	0.00667 U	0.00667 U
MW-6 (10-12)		10 – 12	0.00667 U	0.00667 U	0.00667 U	**0.00733**	**0.00733**	**0.00867**	--	**0.00933**	0.00667 U	**0.00867**	0.00667 U	**0.0107**	0.00667 U	**0.00733**	**0.0113**	**0.0153**	**0.0113**
2007 – 2008 GE Groundwater Assessment – Off Site																			
MW01-SO-1 (AMW-1)	12/28/06	0 – 1	0.0015 U	**0.003** J	**0.00522**	**0.0154**	**0.0204**	**0.0233**	--	**0.02**	**0.00758**	**0.0186**	**0.00451**	**0.0428**	0.0015 U	**0.0141**	**0.0102**	**0.0298**	**0.0539**
MW01-SO-3 (AMW-1)		1.5 – 3	0.00146 U,J	0.00146 U,J	**0.00224** J	**0.00843** J	**0.00698** J	**0.00747** J	--	**0.00441** J	**0.00273** J	**0.00741** J	**0.00148** J	**0.015** J	**0.00146** J	**0.00359** J	**0.00146** J	**0.00658** J	**0.0155** J
MW02-SO-1 (AMW-2)		0 – 1	0.00317 U	**0.01047**	**0.0199**	**0.0902**	**0.145**	**0.166**	--	**0.13**	**0.0534**	**0.116**	**0.0266**	**0.24** J	**0.00354** J	**0.0959**	**0.00862**	**0.0843**	**0.275** J
MW02-SO-3 (AMW-2)		1.5 – 3	0.00289 U	**0.00837**	**0.012**	**0.0447**	**0.0859**	**0.0809**	--	**0.0904**	**0.0251**	**0.0526**	**0.00645** J	**0.114**	0.00286 U	0.0593 U	**0.00505** J	**0.0405**	**0.165**
MW03-SO-1 (AMW-3)	12/27/06	0.5 – 1.5	0.0867 U	0.0146 U	0.0146 U	0.0146 U	**0.0173** J	**0.0372**	--	**0.0363** J	0.0146 U	0.0146 U	0.0146 U	**0.0176** J	0.0146 U	0.0146 U	**0.0178** J	**0.0283** J	**0.0333** J
MW03-SO-3 (AMW-3)		2 – 3.5	0.0152 U	0.0072 U	0.0072 U	**0.00831** J	0.0072 U	**0.0143** J	--	**0.0101** J	0.0072 U	**0.0115** J	0.0072 U	**0.0134** J	0.0072 U	**0.0072**	0.0072 U	**0.00858** J	**0.0187**
MW04-SO-1 (AMW-4)		0.5 – 1	0.0256 U	0.0145 U	**0.0153** J	**0.0369**	**0.0822**	**0.0925**	--	**0.0904**	**0.0152** J	**0.146**	**0.0343** J	**0.0642**	0.0145 U	**0.0401**	0.0145 U	**0.0375**	**0.104**
MW04-SO-3 (AMW-4)		1 – 2.5	0.00286 U	0.00286 U	0.00286 U	0.00286 U	0.00286 U	**0.0392**	--	**0.0108**	**0.0243**	**0.0146** J	**0.00922**	0.00286 U	0.00286 U	**0.0127**	0.00286 U	0.00286 U	0.00286 U
MW05-SO-1 (AMW-5)	12/29/06	0.5 – 2	0.00141 U	0.00141 U	**0.00217** J	**0.00559**	**0.00687** J	**0.00692** J	--	**0.00644**	**0.00246** J	**0.00696** J	0.00141 U	**0.0123** J	0.00141 U	**0.00438**	0.00141 U	**0.00432**	**0.0148** J
MW05-SO-3 (AMW-5)		2 – 3.5	0.00143 U	0.00143 U	**0.00395**	**0.0102**	**0.00838**	**0.0085**	--	**0.00468**	**0.00304** J	**0.00986**	0.00143 U	**0.0199**	0.00143 U	**0.00442**	0.00143 U	**0.0143**	**0.024**
MW05-SO-6.5 (AMW-5)		5 – 6.5	0.00145 U	**0.0032** J	**0.00928**	**0.0289**	**0.0249**	**0.0266**	--	**0.0158**	**0.0087**	**0.0303**	**0.00518**	**0.053**	0.00145 U	**0.0129**	0.00145 U	**0.0286**	**0.0598**
MW05-SO-11.5 (AMW-5)		10 – 11.5	0.00417 U	**0.00955**	**0.0178**	**0.068**	**0.0711**	**0.0644**	--	**0.042**	**0.0212**	**0.0693**	**0.0128**	**0.0983** J	**0.00421**	**0.033**	**0.00743**	**0.0528**	**0.143** J
MW05-SO-16.5 (AMW-5)		15 – 16.5	0.0018 U	0.0018 U	0.0018 U	**0.00564**	**0.0044** J	**0.00437** J	--	**0.00245** J	0.0018 U	**0.0062**	0.0018 U	**0.0081**	0.0018 U	**0.00232** J	0.0018 U	**0.00401** J	**0.0104**
MW06-SO-1 (AMW-6)		0.5 – 1.5	0.00149 U	0.00149 U	0.00149 U	**0.00149**	**0.00161** J	**0.00187** J	--	**0.00203** J	0.00149 U	**0.00149** J	0.00149 U	**0.00353** J	0.00149 U	0.00149 U	0.00149 U	**0.00176** J	**0.0048**
MW06-SO-3 (AMW-6)		1.5 – 3	0.00281 U	0.00281 U	**0.00313** J	**0.00424** J	**0.00523** J	**0.00639** J	--	**0.00588** J	0.00281 U	**0.0052** J	0.00281 U	**0.0159**	0.00281 U	**0.00389** J	0.00281 U	**0.0134**	**0.018**
2007 – 2009 BCC Project Support Sampling – Off Site																			
SW-4GP 15-20	04/05/07	15 – 20	0.0158 U	0.0158 U	0.0158 U	0.0158 U	0.0158 U	0.0158 U	0.0158 U	0.0158 U	0.0158 U	0.0158[2] U	0.0158 U	0.0158 U	0.0158 U	0.0158 U	0.0158 U	0.0158 U	0.0158 U
SW-5AM 10:07 45ft	05/02/07	45	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194[2] U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U
SW-56AM-10	06/23/08	10	**0.064**	**0.460**	**0.760**	**0.950**	**1.200**	**0.980**	--	**0.510**	**0.320**	**0.960**	**0.096**	**2.400**	**0.340**	**0.460**	**0.510**	**3.000**	**1.900**
SW-56AM-15		15	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	--	0.020 U	0.020 U	0.020 U	0.020 U	**0.020**	0.020 U	0.020 U	0.020 U	**0.029**	0.020 U
SW-57AM-5	06/24/08	5	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	**0.017**	0.010 U	0.010 U	0.010 U	**0.021**	**0.013**
SW-57AM-7.5		7.5	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	**0.019**	0.010 U	0.010 U
SW-57AM-10		10	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
SW-57AM-15		15	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
SW-59GP-2.5-3.3	06/18/08	2.5	0.020 U	0.020 U	0.020 U	**0.049**	**0.075**	**0.088**	--	**0.079**	**0.028**	**0.050**	0.020 U	**0.110**	0.020 U	**0.060**	0.020 U	**0.048**	**0.084**
SW-59GP-7.0-7.9		7	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	**0.103**	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
SW-59GP-10-10.9		10	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
SW-59GP-15-15.9		15	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
SW-59GP-20-20.9		20	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
SW-59GP-25-25.9		25	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
SW-59GP-29-29.9		29	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U

TABLE 6
Summary of Soil Sample Chemical Analytical Results
PAHs
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Depth (feet BGS)	PAHs by EPA Method 8270 SIM (mg/kg)																	
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(e)pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
SW-63GP-3.8-4.5	06/18/08	3.8 – 4.5	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
SW-63GP-7-7.8		7 – 7.8	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
SW-64AM-5	06/26/08	5	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	**0.018**	0.010 U	0.010 U
SW-64AM-7.5		7.5	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
SW-64AM-10		10	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	**0.012**	0.010 U
SW-65GP 4-5	06/18/08	4 – 5	0.010 U	0.010 U	0.010 U	0.010 U	**0.014**	**0.014**	--	**0.020**	0.010 U	**0.0103**	0.010 U	**0.016**	0.010 U	**0.014**	0.010 U	0.010 U	**0.019**
SW-65GP 15-16		15 – 16	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
SW-66AM-2.5	06/26/08	2.5	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
SW-66AM-5		5	**0.036**	**0.022**	**0.029**	**0.180**	**0.320**	**0.320**	--	**0.400**	**0.093**	**0.260**	**0.061**	**0.580**	**0.044**	**0.300**	**0.790**	**0.370**	**0.600**
SW-66AM-7.5		7.5	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
SW-66AM-10		10	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
DEQ Generic RBCs[3]																			
Soil Ingestion, Dermal Contact, and Inhalation																			
Occupational			70,000	NE	350,000	21	2.1	21	NE	NE	210	2,100	2.1	30,000	47,000	21	23	NE	23,000
Construction Worker			21,000	NE	110,000	170	17	170	NE	NE	1,700	17,000	17	10,000	14,000	170	580	NE	7,500
Excavation Worker			590,000	NE	>Max	4,800	490	4,900	NE	NE	49,000	490,000	490	280,000	390,000	4,900	16,000	NE	210,000
Volatilization to Outdoor Air																			
Occupational			>Max	NE	>Max	>Csat	NV	NV	NE	NE	NV	NV	NV	NV	>Max	NV	83	NE	>Max
Leaching to Groundwater																			
Occupational			>Csat	NE	>Csat	>Csat	>Csat	>Csat	NE	NE	>Csat	>Csat	>Csat	>Csat	>Csat	>Csat	0.34	NE	>Csat

Notes:
1. Sample represents material that was subsequently transported off site for disposal.
2. Results shown are for Benzo(j,k)fluoranthene, as shown in source report.
3. DEQ Generic RBCs dated May 2018, amended August 2023.
4. Noted sediment samples were collected from the Outfall 16 storm basin. Remaining samples for this investigation were collected from the Outfall 17 storm basin.

>Csat: This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product may be present.
J: The identification of the analyte is acceptable; the reported value is an estimate.
>Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.
NV: chemical is considered non-volatile
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates concentration exceeding one or more of DEQ's generic RBCs.
--: not analyzed

TABLE 7
Summary of Groundwater Sample Chemical Analytical Results Total Petroleum Hydrocarbons and PCBs
Galvanizers Company
Portland, Oregon

Exploration I.D.	Date	Screened Interval (feet BGS)	HCID by Method NWTPH-HCID (µg/L)			Diesel- and Oil-Range Hydrocarbons by Method NWTPH-Dx (µg/L)		PCBs by EPA Method 8082 (µg/L)
			Gasoline	Diesel	Heavy Oil	Diesel	Heavy Oil	
2000 Rick Russell Site Sampling								
B-water	07/21/00	12 – 16	--	--	--	**16,300**	**2,330**	--
F-water		NA	--	--	--	**3,690**	**883**	--
I-W	09/07/00	NA	--	--	--	**1,420**	581 U	--
L-W		NA	--	--	--	**557**	581 U	--
2005 and 2008 XPA Groundwater Monitoring and 2009 SCE								
MW-1	06/18/09	9.3 – 19.3	--	--	--	279 U	558 U	--
MW-2		9.4 – 19.4	--	--	--	283 U	567 U	--
MW-3	07/27/05	9.4 – 19.4	--	--	--	**1,690**	**1,620**	--
	06/18/09		--	--	--	**838**	548 U	--
MW-4	06/18/09	9.6 – 19.6	--	--	--	258 U	516 U	--
MW-5		9.4 – 19.4	--	--	--	282 U	563 U	--
MW-6	07/27/05	9.2 – 19.2	--	--	--	**748**	**1,090**	--
	06/18/09		--	--	--	**279**	**574**	--
1999 J. A. Freeman & Sons Facility – Off Site								
GP-1-GW	09/15/99	14 – 18	250 U	630 U	630 U	--	--	--
GP-2-GW		14 – 18	250 U	630 U	630 U	--	--	--
GP-3-GW		12 – 16	250 U	630 U	630 U	--	--	--
GP-4-GW		12 – 16	250 U	630 U	630 U	--	--	--
GP-5-GW		12 – 16	250 U	630 U	**DET**	250 U	**790**	0.5 U
GP-6-GW		12 – 16	250 U	630 U	630 U	--	--	--
GP-7-GW		20 – 24	250 U	630 U	630 U	--	--	--
GP-8-GW		16 – 20	250 U	630 U	630 U	--	--	--
2007 – 2008 GE Groundwater Assessment – Off Site								
AMW-1	11/13/08	9 – 24	--	--	--	167 U	--	0.0250 U
AMW-2		9 – 24	--	--	--	95.2 U	--	0.0250 U
AMW-3		12.5 – 27.5	--	--	--	94.3 U	--	0.0250 U
AMW-4		12.5 – 27.5	--	--	--	98 U	--	0.0250 U
AMW-5	01/18/07	10 – 25	--	--	--	**217** J	--	**0.9775** N
AMW-5 (Dup)			--	--	--	**123** J	--	**0.995** N
AMW-5	06/28/07		--	--	--	92.6 U	--	**1.67** N
AMW-5 (Dup)			--	--	--	94.3 U,J	--	**1.67** N
AMW-5	11/13/08		--	--	--	182 U	--	**2.496** N
AMW-5 (Dup)			--	--	--	95.2 U	--	**2.73** N
AMW-6	11/13/08	12.5 – 27.5	--	--	--	200 U	--	**0.1377** N
2007 – 2009 BCC Project Support Sampling – Off Site								
SW-4GP	04/05/07	25	250 U	630 U	630 U	--	--	--
SW-5AM (2)	07/26/07	45 – 75	--	--	--	--	--	ND
SW-60AM	08/28/08	35	236 U	**DET**	594 U	472 U	943 U	--
SW-63GP	06/18/08	25	500 U	1,260 U	1,260 U	--	--	0.5 U
SW-64AM	08/28/08	17 – 27	236 U	594 U	594 U	--	--	--
SW-65GP	06/18/08	30	500 U	1,260 U	1,260 U	--	--	1.0 U
SW-76MW	11/03/09	11.5 – 41.5	--	--	--	--	--	**0.041**
	11/05/09		--	--	--	--	--	0.050 U
	11/10/09		--	--	--	--	--	**0.104**
	11/12/09		--	--	--	--	--	**0.036**
	11/17/09		--	--	--	--	--	**0.075**
	11/19/09		--	--	--	--	--	**0.071**
Duplicate			--	--	--	--	--	**0.067**
	11/24/09		--	--	--	--	--	0.050 U
	11/27/09		--	--	--	--	--	0.050 U
	12/01/09		--	--	--	--	--	0.050 U
	12/03/09		--	--	--	--	--	0.050 U
	12/08/09		--	--	--	--	--	0.050 U
	12/10/09		--	--	--	--	--	0.050 U
Duplicate			--	--	--	--	--	0.050 U
	12/16/09		--	--	--	--	--	0.050 U
	12/17/09		--	--	--	--	--	0.050 U

TABLE 7
Summary of Groundwater Sample Chemical Analytical Results Total Petroleum Hydrocarbons and PCBs
Galvanizers Company
Portland, Oregon

Exploration I.D.	Date	Screened Interval (feet BGS)	HCID by Method NWTPH-HCID (µg/L)			Diesel- and Oil-Range Hydrocarbons by Method NWTPH-Dx (µg/L)		PCBs by EPA Method 8082 (µg/L)
			Gasoline	Diesel	Heavy Oil	Diesel	Heavy Oil	
SW-78MW	11/03/09	13 – 23.5	--	--	--	--	--	**0.131**
	11/05/09		--	--	--	--	--	**0.125**
	11/10/09		--	--	--	--	--	**0.098**
Duplicate			--	--	--	--	--	**0.058**
	11/12/09		--	--	--	--	--	**0.087**
	11/17/09		--	--	--	--	--	**0.090**
	11/19/09		--	--	--	--	--	**0.085**
	11/24/09		--	--	--	--	--	**0.109**
	11/27/09		--	--	--	--	--	**0.094**
	12/01/09		--	--	--	--	--	**0.065**
	12/03/09		--	--	--	--	--	**0.090**
Duplicate			--	--	--	--	--	**0.091**
	12/08/09		--	--	--	--	--	**0.079**
	12/10/09		--	--	--	--	--	**0.082**
	12/16/09		--	--	--	--	--	**0.052**
	12/17/09		--	--	--	--	--	**0.070**
	12/21/09		--	--	--	--	--	**0.035**
SW-79MW	11/03/09	13 – 33	--	--	--	--	--	0.050 U
	11/05/09		--	--	--	--	--	0.050 U
Duplicate			--	--	--	--	--	0.050 U
	11/10/09		--	--	--	--	--	**0.036**
	11/12/09		--	--	--	--	--	0.050 U
	11/17/09		--	--	--	--	--	0.050 U
	11/19/09		--	--	--	--	--	**0.041**
	11/24/09		--	--	--	--	--	0.050 U
	11/27/09		--	--	--	--	--	0.050 U
Duplicate			--	--	--	--	--	0.050 U
	12/01/09		--	--	--	--	--	0.050 U
	12/03/09		--	--	--	--	--	0.050 U
	12/08/09		--	--	--	--	--	0.050 U
	12/10/09		--	--	--	--	--	0.050 U
	12/16/09		--	--	--	--	--	0.050 U
	12/17/09		--	--	--	--	--	**0.027**
Duplicate			--	--	--	--	--	**0.028**
	12/21/09		--	--	--	--	--	0.050 U
Duplicate			--	--	--	--	--	0.050 U
SW-80MW	11/03/09	10 – 20	--	--	--	--	--	0.050 U
	11/05/09		--	--	--	--	--	0.050 U
	11/10/09		--	--	--	--	--	0.050 U
	11/12/09		--	--	--	--	--	0.050 U
	11/17/09		--	--	--	--	--	0.050 U
	11/19/09		--	--	--	--	--	0.050 U
	11/24/09		--	--	--	--	--	0.050 U
	11/27/09		--	--	--	--	--	0.050 U
	12/01/09		--	--	--	--	--	0.050 U
	12/03/09		--	--	--	--	--	0.050 U
	12/08/09		--	--	--	--	--	0.050 U
	12/10/09		--	--	--	--	--	0.050 U
	12/16/09		--	--	--	--	--	0.050 U
	12/17/09		--	--	--	--	--	0.050 U
	12/21/09		--	--	--	--	--	0.050 U
SW-82GP-W	06/01/09	22	--	--	--	--	--	**0.349**
2012 and 2013 BCC Support Project – Off Site								
B3 @ 15ft	11/06/12	15	250 U	630 U	630 U	--	--	--
B3E @ 10ft	03/06/13	10	250 U	630 U	**DET**[1]	**510**	**3,400**	--

TABLE 7
Summary of Groundwater Sample Chemical Analytical Results Total Petroleum Hydrocarbons and PCBs
Galvanizers Company
Portland, Oregon

Exploration I.D.	Date	Screened Interval (feet BGS)	HCID by Method NWTPH-HCID (µg/L)			Diesel- and Oil-Range Hydrocarbons by Method NWTPH-Dx (µg/L)		PCBs by EPA Method 8082 (µg/L)
			Gasoline	Diesel	Heavy Oil	Diesel	Heavy Oil	
DEQ Generic RBCs[2]								
Volatilization to Outdoor Air								
Occupational			NE	NE	NE	>S	NE	>S
Groundwater in Excavation								
Construction/Excavation Worker			NA	NA	NA	>S	NE	30
Vapor Intrusion into Buildings - Chronic[4]								
Commercial - Cancer			NE	NE	NE	NITI	NE	See Note 3
Commercial - Noncancer			NE	NE	NE	1,700	NE	See Note 3
Vapor Intrusion into Buildings - Acute[5]								
Commercial			NE	NE	NE	NE	NE	NE

Notes:

1. Results shown are for Lube Oil as shown in source report.
2. DEQ Generic RBCs dated May 2018, amended August 2023.
3. RBCs for this pathway are based on Aroclor concentrations. Detected Aroclor concentrations were less than the respective RBCs.
4. DEQ Table 1. Chronic Vapor Intrusion RBCs dated March 2025.
5. DEQ Table 2. Acute Vapor Intrusion RBCs dated March 2025.

DET: analyte detected

J: The identification of the analyte is acceptable; the reported value is an estimate.

N: Analyte tentatively identified; flagged in Data Validation Report, Appendix E of Groundwater Assessement Report prepared by AMEC dated April 2008.

ND: Analyte not detected above laboratory MRL; laboratory MRL not available.

>S: This groundwater RBC exceeds the solubility limit. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of S. Groundwater concentrations in excess of S indicate that free product may be present.

U: Not detected. Reporting or detection limit shown.

Bolding indicates analyte detection.

Shading indicates analyte detection at a concentration greater than DEQ RBCs.

--: not analyzed

TABLE 8
Summary of Groundwater Sample Chemical Analytical Results pH and Total and Dissolved Metals
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Screen Interval (feet BGS)	pH	Metals by EPA 1311 and 200/6000/7000 Series Methods (µg/L)																													
				Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Copper		Iron		Lead		Manganese		Mercury		Nickel		Selenium		Silver		Thallium		Zinc	
				Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
1992 – 1993 Plant Building Soil Sampling																																	
L	02/14/93	--	4.7	--	--	--	--	--	--	--	--	100 U	--	300 U	--	--	--	**2,040,000**	--	2,000 U	--	--	--	--	--	--	--	--	--	--	--	**2,330,000**	--
1996 Phase II Environmental Site Assessment																																	
#1-Tank Test Hole	05/18/96	--	6.9	--	--	--	--	--	--	--	--	100 U	--	100 U	--	--	--	100 U	--	100 U	--	--	--	--	--	100 U	--	--	--	--	--	--	--	**19,500**	--
1-GW-12/16	07/12/96	12 – 16	4.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25 U	--	--	--	--	--	--	--	--	--	--	--	**110,000**
2-GW-12/16		12 – 16	3.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25 U	--	--	--	--	--	--	--	--	--	--	--	**172,000**
3-GW-12/16		12 – 16	3.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**210**	--	--	--	--	--	--	--	--	--	--	--	**121,000**
4-GW-12/16		12 – 16	4.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25 U	--	--	--	--	--	--	--	--	--	--	--	**20,100**
5-GW-12/16		12 – 16	6.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25 U	--	--	--	--	--	--	--	--	--	--	--	**15,800**
6-GW-12/16		12 – 16	4.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25 U	--	--	--	--	--	--	--	--	--	--	--	**124,000**
7-GW-12/16		12 – 16	4.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25 U	--	--	--	--	--	--	--	--	--	--	--	**11,500**
8-GW-12/16		12 – 16	6.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25 U	--	--	--	--	--	--	--	--	--	--	--	**808**
1999 Soil and Groundwater Investigation																																	
S-7-W	10/02/98	11.9	0	--	--	--	--	--	--	--	--	--	--	**404**	--	--	--	--	--	**265**	--	--	--	--	--	--	--	--	--	--	--	**130,000**	--
S-8-W		11.9	5.5	--	--	--	--	--	--	--	--	--	--	**945**	--	--	--	--	--	**5,100**	--	--	--	--	--	--	--	--	--	--	--	**845,000**	--
S-9-W		10.1	5.5	--	--	--	--	--	--	--	--	--	--	**925**	--	--	--	--	--	**5,400**	--	--	--	--	--	--	--	--	--	--	--	**75,000**	--
2000 Rick Russell Site Sampling																																	
B-water	07/21/00	12 – 16	--	--	--	--	--	--	--	--	--	--	--	**257**	1.0 U	--	--	--	--	164	1.0 U	--	--	--	--	--	--	--	--	--	--	**53,100**	**25,900**
2005 and 2008 XPA Groundwater Monitoring, 2009 SCE, and 2012 and 2017 Monitoring Well Investigation																																	
MW-1	07/27/05	9.3 – 19.3	3.84	--	--	1.00 U	1.0 U	**26.0**	**19.6**	--	--	**0.349**	0.10 U	**7.70**	**5.60**	10.0 U	10.0 U	--	--	**0.725**	**0.39**	**79.7**	**66.0**	0.050 U	0.050 U	**5.30**	5.00 U	1.00 U	1.0 U	0.100 U	0.10 U	0.500 U	0.50 U	**2,390**	**2,140**
	01/30/07		--	--	--	**1.00**	**1.2**	**18.6**	**16.9**	--	--	**0.551**	**0.54**	5.00 U	5.00 U	10.0 U	10.0 U	--	--	0.100 U	0.10 U	**153**	**147**	0.050 U	0.050 U	**5.10**	5.00 U	1.00 U	1.0 U	0.100 U	0.10 U	0.500 U	0.50 U	**3,280**	**3,200**
	04/25/07		4.59	--	--	**1.53**	--	**23.3**	--	--	--	**7.3** J	--	5.00 U	--	10.0 U	--	--	--	**3.450**	--	**241**	--	0.050 U	--	**7.70**	--	1.00 U	--	0.100 U	--	**0.600**	--	**4,820**	--
	07/30/07		4.78	--	--	**1.7**	--	**15.1**	--	--	--	**0.29**	--	5.00 U	--	10.0 U	--	--	--	**0.19**	--	**61.3**	--	0.050 U	--	5.00 U	--	1.0 U	--	0.10 U	--	0.50 U	--	**2,040**	--
	10/25/07		4.40	--	--	**1.6**	--	**21.9**	--	--	--	**0.38**	--	5.00 U	--	10.0 U	--	--	--	**0.30**	--	**81.4**	--	0.050 U	--	5.00 U	--	1.0 U	--	0.10 U	--	**1.3**	--	**2,570**	--
	01/29/08		4.55	--	--	**1.6**	--	10.0 U	--	--	--	**1.0**	--	5.00 U	--	**27.8**	--	--	--	**0.14**	--	**294**	--	0.050 U	--	**13.1**	--	1.0 U	--	0.10 U	--	**0.68**	--	**5,920**	--
Duplicate			4.55	--	--	**1.4**	--	10.0 U	--	--	--	**0.93**	--	5.00 U	--	**30.4**	--	--	--	**0.26**	--	**312**	--	0.050 U	--	**13.4**	--	1.0 U	--	0.10 U	--	0.50 U	--	**6,260**	--
	06/18/09		4.44	0.50 U	0.50 U	**2.2**	1.0 U	--	--	--	--	**0.32**	**0.34**	1.0 U	1.0 U	**1.1**	**1.1**	--	--	**0.12**	0.10 U	--	--	0.100 U	0.100 U	**4.7**	**4.0**	1.0 U	1.0 U	0.10 U	0.10 U	0.50 U	0.50 U	**2,400**	**2,300**
	10/09/12		4.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2,170**	**2,160**
	09/26/17		4.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2,560**	**2,620**
MW-2	07/27/05	9.4 – 19.4	4.54	--	--	1.00 U	1.0 U	**58.4**	**61.4**	--	--	**0.358**	**0.12**	**7.20**	**7.50**	10.0 U	10.0 U	--	--	0.100 U	0.10 U	**193**	**197**	0.050 U	0.050 U	5.00 U	5.00 U	1.00 U	1.00 U	0.100 U	0.10 U	0.500 U	0.50 U	**1,740**	**1,780**
	01/30/07		--	--	--	1.00 U	1.0 U	**21.4**	**19.4**	--	--	**0.153**	**0.42**	5.00 U	5.00 U	10.0 U	10.0 U	--	--	0.100 U	**0.22**	**36.4**	**25.9**	0.050 U	0.050 U	5.00 U	5.00 U	1.00 U	1.0 U	0.100 U	0.20	0.500 U	**0.83**	**400**	**398**
	04/25/07		5.97	--	--	1.00 U	--	**20.2**	--	--	--	**0.130** J	--	5.00 U	--	10.0 U	--	--	--	0.100 U	--	**28.3**	--	0.050 U	--	5.00 U	--	1.00 U	--	0.100 U	--	0.500 U	--	**373**	--
	07/30/07	--	--	--	1.0 U	--	**17.5**	--	--	--	0.10 U	--	5.00 U	--	10.0 U	--	--	--	--	**0.38**	--	**51.1**	--	0.050 U	--	5.00 U	--	1.0 U	--	0.10 U	--	0.50 U	--	**323**	--
Duplicate			--	--	1.0 U	--	**15.6**	--	--	--	0.10 U	--	5.00 U	--	10.0 U	--	--	--	--	**0.29**	--	**29.8**	--	0.050 U	--	5.00 U	--	1.0 U	--	0.10 U	--	0.50 U	--	**310**	--
	10/25/07		4.81	--	--	1.0 U	--	**19.3**	--	--	--	**0.10**	--	5.00 U	--	10.0 U	--	--	--	**0.47**	--	**45.3**	--	0.050 U	--	5.00 U	--	1.0 U	--	0.10 U	--	**1.0**	--	**315**	--
	01/29/08		5.14	--	--	1.0 U	--	10.0 U	--	--	--	**0.21**	--	5.00 U	--	**32.5**	--	--	--	**0.84**	--	**95.4**	--	0.050 U	--	5.00 U	--	1.0 U	--	0.10 U	--	**0.50**	--	**346**	--
	06/18/09		4.22	0.50 U	0.50 U	1.0 U	1.0 U	--	--	--	--	**1.8**	**1.8**	1.0 U	1.0 U	**11**	**9.3**	--	--	**0.29**	**0.12**	--	--	0.100 U	0.100 U	**24**	**21**	1.0 U	1.0 U	0.10 U	0.10 U	0.50 U	0.50 U	**10,000**	**9,800**
	10/09/12		4.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5,290**	**5,480**
	09/26/17		4.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7,680**	**7,750**
MW-3	07/27/05	9.4 – 19.4	5.75	--	--	**1.97**	**2.2**	**514**	**700**	--	--	**1.12**	**0.88**	**7.30**	**6.90**	10.0 U	10.0 U	--	--	0.100 U	0.10 U	**1,280**	**1,280**	0.050 U	0.050 U	**54.8**	**62.9**	1.00 U	1.0 U	0.100 U	0.10 U	0.500 U	0.50 U	**21,200**	**24,500**
	01/30/07	--	--	--	1.00 U	1.0 U	**130**	**106**	--	--	**0.851**	**0.84**	5.00 U	5.00 U	10.0 U	10.0 U	--	--	0.100 U	0.10 U	**286**	**268**	0.050 U	0.050 U	**16.3**	**14.4**	1.00 U	1.0 U	0.100 U	0.10 U	0.500 U	0.50 U	**5,000**	**4,840**
Duplicate			--	--	1.00 U	1.0 U	**110**	**97.8**	--	--	**0.774**	**0.78**	5.00 U	5.00 U	10.0 U	**11.3**	--	--	0.100 U	0.10 U	**267**	**257**	0.050 U	0.050 U	**15.9**	**14.2**	1.00 U	1.0 U	0.100 U	0.10 U	0.500 U	0.50 U	**4,760**	**4,740**
	04/25/07		6.39	--	--	1.00 U	--	**179**	--	--	--	**0.640** J	--	5.00 U	--	10.0 U	--	--	--	0.100 U	--	**227**	--	0.050 U	--	**12.1**	--	1.00 U	--	0.100 U	--	0.500 U	--	**3,690**	--
	07/30/07		6.02	--	--	1.0 U	--	**274**	--	--	--	**0.72**	--	5.00 U	--	10.0 U	--	--	--	**2.1**	--	**130**	--	0.050 U	--	**6.50**	--	1.0 U	--	0.10 U	--	0.50 U	--	**1,930**	--
	10/25/07		5.91	--	--	1.0 U	--	**246**	--	--	--	**0.88**	--	5.00 U	--	10.0 U	--	--	--	**0.50**	--	**190**	--	0.050 U	--	**12.1**	--	1.0 U	--	0.10 U	--	0.50 U	--	**4,140**	--
	01/29/08		5.47	--	--	1.0 U	--	10.0 U	--	--	--	**1.6**	--	5.00 U	--	**32.0**	--	--	--	**0.23**	--	**446**	--	0.050 U	--	**38.9**	--	1.0 U	--	0.10 U	--	0.50 U	--	**10,400**	--
	06/18/09		6.25	0.50 U	0.50 U	**1.1**	**1.2**	--	--	--	--	**0.30**	**0.28**	**1.4**	**1.2**	**3.4**	**2.3**	--	--	0.100 U	0.10 U	--	--	0.100 U	0.100 U	**9.0**	**8.1**	1.0 U	1.0 U	0.10 U	0.10 U	0.50 U	0.50 U	**2,400**	**2,400**
	10/09/12		6.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**876**	**669**
	09/26/17		4.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**37,400**	**38,600**
MW-4	07/27/05	9.6 – 19.6	5.23	--	--	**1.36**	**1.3**	**118**	**110**	--	--	**3.52**	**3.6**	**6.70**	**5.00**	10.0 U	10.0 U	--	--	**1.10**	0.10 U	**1,900**	**2,170**	0.050 U	0.050 U	**30.2**	**29.2**	1.00 U	1.0 U	0.100 U	0.10 U	0.500 U	0.50 U	**13,100**	**12,200**
	01/30/07		--	--	--	1.00 U	1.0 U	**69.5**	**72.9**	--	--	**2.30**	**2.3**	5.00 U	5.00 U	10.0 U	10.0 U	--	--	0.100 U	**0.13**	**9.00**	**7.40**	0.050 U	0.050 U	**7.20**	**6.70**	1.00 U	1.0 U	0.100 U	0.10 U	0.500 U	0.50 U	**5,490**	**5,840**
	04/25/07		6.38	--	--	1.00 U	--	**88.9**	--	--	--	**3.61**	--	5.00 U	--	10.0 U	--	--	--	**1.980**	--	**8.00**	--	0.050 U	--	**14.0**	--	1.00 U	--	0.100 U	--	0.500 U	--	**9,050**	--
Duplicate			--	--	1.00 U	--	**87.2**	--	--	--	**3.55** J	--	5.00 U	--	10.0 U	--	--	--	1.00 U	--	**7.90**	--	0.050 U	--	**12.7**	--	1.00 U	--	0.100 U	--	0.500 U	--	**8,850**	--
	07/30/07		--	--	--	1.0 U	--	**79.8**	--	--	--	**3.8**	--	5.00 U	--	10.0 U	--	--	--	0.10 U	--	**188**	--	0.050 U	--	**13.7**	--	1.0 U	--	0.10 U	--	0.50 U	--	**9,490**	--
	10/25/07		5.86	--	--	1.0 U	--	**99.7**	--	--	--	**5.4**	--	5.00 U	--	10.0 U	--	--	--	**0.16**	--	**652**	--	0.050 U	--	**18.6**	--	1.0 U	--	0.10 U	--	0.50 U	--	**12,000**	--
	01/29/08		6.09	--	--	1.0 U	--	**76.9**	--	--	--	**2.6**	--	5.00 U	--	**27.5**	--	--	--	**0.33**	--	**9.30**	--	0.050 U	--	**14.5**	--	1.0 U	--	0.10 U	--	0.50 U	--	**6,720**	--
	06/18/09		5.90	0.50 U	0.50 U	1.0 U	1.0 U	--	--	--	--	**2.2**	**2.4**	1.0 U	1.0 U	**1.9**	**0.77**	--	--	**0.49**	0.10 U	--	--	0.100 U	0.100 U	**8.9**	**8.5**	1.0 U	1.0 U	0.10 U	0.10 U	0.50 U	0.50 U	**6,100**	**6,600**
	10/09/12		5.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**28,000**	**28,400**
	09/26/17		5.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**22,900**	**24,000**
MW-5	07/27/05	9.4 – 19.4	4.58	--	--	1.00 U	1.0 U	**80.9**	**71.8**	--	--	**12.1**	**13.0**	5.00 U	5.00 U	**13.3**	**13.2**	--	--	**0.702**	0.10 U	**3,730**	**3,550**	0.050 U	0.050 U	**94.1**	**98.4**	1.00 U	1.0 U	**0.150**	0.10 U	0.500 U	0.50 U	**42,000**	**43,700**
Duplicate			--	--	1.00 U	1.0 U	**83.1**	**71.6**	--	--	**12.4**	**13.0**	5.00 U	**5.50**	**11.5**	**13.4**	--	--	**0.797**	0.10 U	**3,750**	**3,580**	0.050 U	0.050 U	**94.2**	**98.9**	1.00 U	1.0 U	**0.143**	0.10 U	0.500 U	0.50 U	**43,100**	**44,900**
	01/30/07		--	--	--	1.00 U	1.0 U	**30.0**	**29.0**	--	--	**5.80**	**5.4**	5.00 U	5.00 U	**11.5**	**10.3**	--	--	0.100 U	0.10 U	**599**	**626**	0.050 U	0.050 U	**26.2**	**25.8**	1.00 U	1.0 U	0.100 U	0.10 U	**0.863**	0.50 U	**11,600**	**11,800**
	04/25/07		5.14	--	--	1.00 U	--	**41.8**	--	--	--	**8.12** J	--	5.00 U	--	**15.8**	--	--	--	0.100 U	--	**900**	--	0.050 U	--	**39.5**	--	1.00 U	--	0.100 U	--	0.500 U	--	**17,000**	--
	07/30/07		--	--	--	1.0 U	--	**24.2**	--	--	--	**5.0**	--	5.00 U	--	**10.3**	--	--	--	**1.0**	--	**429**	--	0.050 U	--	**20.9**	--	1.0 U	--	0.10 U	--	0.50 U	--	**9,640**	--
	10/25/07		4.12	--	--	1.0 U	--	**26.6**	--	--	--	**5.5**	--	5.00 U	--	**10.3**	--	--	--	**0.11**	--	**366**	--	0.050 U	--	**21.6**	--	1.0 U	--	0.10 U	--	0.50 U	--	**9,830**	--
	01/29/08		4.64	--	--	1.0 U	--	**22.3**	--	--	--	**3.6**	--	5.00 U	--	**36.0**	--	--	--	**0.47**	--	**443**	--	0.050 U	--	**23.0**	--	1.0 U	--	0.10 U	--	0.50 U	--	**8,030**	--
	06/18/09		4.33	0.50 U	0.50 U	1.0 U	1.0 U	--	--	--	--	**4.1**	**4.6**	1.0 U	1.0 U	**10**	**9.8**	--	--	**0.16**	0.10 U	--	--	0.100 U	0.100 U	**27**	**25**	1.0 U	1.0 U	0.10 U	0.10 U	0.50 U	0.50 U	**13,000**	**13,000**
	10/09/12		5.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1,700**	**1,390**
	09/26/17		5.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1,240**	**1,220**
MW-6	07/27/05	9.2 – 19.2	4.18	--	--	**13.1**	**14.0**	**95.1**	**100**	--	--	**6.51**	**7.0**	**9.80**	**7.30**	10.0 U	10.0 U	--	--	**3.50**	**2.9**	**3,380**	**3,420**	0.050 U	0.050 U	**194**	**197**	1.00 U	1.0 U	**0.280**	**0.13**	**0.705**	**0.53**	**146,000**	**148,000**
	01/30/07		--	--	--	**12.3**	**13.0**	**86.1**	**84.7**	--	--	**24.1**	**23**	**38.9**	**37.7**	10.0 U	10.0 U	--	--	**1.81**	**1.8**	**5,190**	**4,650**	0.050 U	0.050 U	**336**	**339**	1.00 U	1.0 U	**0.252**	**0.25**	**1.24**	**1.3**	**247,000**	**224,000**
	04/25/07		4.59	--	--	**15.3**	--	**74.2**	--	--	--	**28.6** J	--	**27.4**	--	10.0 U	--	--	--	**2.04**	--	**4,000**	--	0.050 U	--	**258**	--	1.00 U	--	**0.330**	--	**2.01**	--	**190,000**	--
	07/30/07		--	--	--	**9.8**	--	**100**	--	--	--	**45**	--	**301**	--	10.0 U	--	--	--	**2.8**	--	**5,540**	--	0.050 U	--	**620**	--	1.0 U	--	**0.14**	--	**0.84**	--	**263,000**	--
	10/25/07		4.06	--	--	**13**	--	**97.7**	--	--	--	**81**	--	**20.3**	--	10.0 U	--	--	--	**2.6**	--	**4,820**	--	0.050 U	--	**314**	--	1.0 U	--	**0.15**	--	**2.4**	--	**245,000**	--
Duplicate			--	--	**13**	--	**100**	--	--	--	**78**	--	**33.0**	--	10.0 U	--	--	--	**2.8**	--	**5,280**	--	0.050 U	--	**326**	--	1.0 U	--	**0.15**	--	**2.0**	--	**269,000**	--
	01/29/08		4.00	--	--	**11**	--	10.0 U	--	--	--	**74**	--	**10.4**	--	10.0 U	--	--	--	**3.5**	--	**4,180**	--	0.050 U	--	**270**	--	1.0 U	--	0.10 U	--	**0.95**	--	**211,000**	--
	06/18/09		4.28	0.50 U	0.50 U	**13**	**13**	--	--	--	--	**29**	**29**	**13**	**11**	**0.56**	0.50 U	--	--	**1.0**	**0.46**	--	--	0.100 U	0.100 U	**83**	**75**	1.0 U	1.0 U	0.10 U	0.10 U	0.50 U	0.50 U	**62,000**	**63,000**
	10/09/12		4.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**140,000**	**124,000**
	09/26/17		4.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**146,000**	**149,000**
1999 J. A. Freeman & Sons Facility – Off Site																																	
GP-1-GW	09/15/99	14 – 18	--	25 U	--	**11**	--	--	--	**5.7**	--	**8.4**	--	**126**	--	**165**	--	--	--	**52**	--	--	--	0.20 U	--	**217**	--	10 U	--	3.0 U	--	5.0 U	--	**84,000**	--
GP-2-GW		14 – 18	--	25 U	--	10 U	--	--	--	**3.7**	--	**4.9**	--	**75.2**	--	**90.2**	--	--	--	25 U	--	--	--	0.20 U	--	**172**	--	**16**	--	3.0 U	--	5.0 U	--	**65,600**	--
GP-3-GW		12 – 16	--	25 U	--	10 U	--	--	--	1.0 U	--	**2.3**	--	**16**	--	**24.2**	--	--	--	25 U	--	--	--	0.20 U	--	**70**	--	10 U	--	3.0 U	--	5.0 U	--	**36,300**	--
GP-4-GW		12 – 16	--	25 U	--	10 U	--	--	--	1.0 U	--	**2.6**	--	**18**	--	**19**	--	--	--	25 U	--	--	--	0.20 U	--	**98**	--	10 U	--	3.0 U	--	5.0 U	--	**51,300**	--
GP-5-GW		12 – 16	--	25 U	--	10 U	--	--	--	1.0 U	--	2.0 U	--	**34**	--	**25.3**	--	--	--	25 U	--	--	--	0.20 U	--	**34**	--	10 U	--	3.0 U	--	5.0 U	--	**12,500**	--
GP-6-GW		12 – 16	--	25 U	--	10 U	--	--	--	1.0 U	--	2.0 U	--	**41**	--	**29.2**	--	--	--	25 U	--	--	--	0.20 U	--	**24**	--	10 U	--	3.0 U	--	5.0 U	--	**3,030**	--
2007 – 2008 GE Groundwater Assessment – Off Site																																	
AMW-1	11/13/08	9 – 24	6.44	20.0 U	--	20.0 U	--	--	--	2.00 U	--	2.00 U	--	5.00 U	--	5.00 U	--	--	--	**7.62** J	--	--	--	0.200 U	--	5.00 U	--	30.0 U	--	5.00 U	--	20.0 U	--	**1.73** J	--
AMW-2		9 – 24	6.63	**4.9** J	--	20.0 U	--	--	--	2.00 U	--	2.00 U	--	**2.24** J	--	5.00 U	--	--	--	10.0 U	--	--	--	0.200 U	--	**2.17** J	--	30.0 U	--	5.00 U	--	**6.87** J	--	**6.54**	--
AMW-3		12.5 – 27.5	5.40	20.0 U	--	20.0 U	--	--	--	2.00 U	--	2.00 U	--	5.00 U	--	5.00 U	--	--	--	10.0 U	--	--	--	0.200 U	--	**7.51**	--	30.0 U	--	5.00 U	--	20.0 U	--	**2,710**	--
AMW-4		12.5 – 27.5	6.27	**39.3**	--	**16.8** J	--	--	--	2.00 U	--	**10.4**	--	5.00 U	--	5.00 U	--	--	--	**9.22** J	--	--	--	0.200 U	--	5.00 U	--	**78.6**	--	5.00 U	--	20.0 U	--	2.00 U	--
AMW-5	01/18/07	10 – 25	6.43	20.0 U	--	20.0 U	--	--	--	2.00 U	--	2.00 U	--	5.00 U	--	5.00 U	--	--	--	10.0 U	--	--	--	0.20 U	--	5.00 U	--	30.0 U	--	5.00 U	--	20.0 U	--	20.0 U	--
AMW-5 (Dup)				20.0 U	--	20.0 U	--	--	--	2.00 U	--	2.00 U	--	5.00 U	--	5.00 U	--	--	--	10.0 U	--	--	--	0.20 U	--	5.00 U	--	30.0 U	--	5.00 U	--	20.0 U	--	20.0 U	--
AMW-5	06/28/07		6.51	20.0 U	--	20.0 U	--	--	--	2.00 U	--	2.00 U	--	5.00 U	--	5.00 U	--	--	--	10.0 U	--	--	--	0.200 U	--	5.00 U	--	30.0 U	--	5.00 U	--	20.0 U	--	20.0 U	--
AMW-5 (Dup)				20.0 U	--	20.0 U	--	--	--	2.00 U	--	2.00 U	--	5.00 U	--	5.00 U	--	--	--	10.0 U	--	--	--	0.200 U	--	5.00 U	--	30.0 U	--	5.00 U	--	20.0 U	--	20.0 U	--
AMW-5	11/13/08		6.81	20.0 U	--	20.0 U	--	--	--	2.00 U	--	2.00 U	--	5.00 U	--	5.00 U	--	--	--	10.0 U	--	--	--	0.200 U	--	5.00 U	--	30.0 U	--	5.00 U	--	**8.1** J	--	2.00 U	--
AMW-5 (Dup)				20.0 U	--	20.0 U	--	--	--	2.00 U	--	2.00 U	--	5.00 U	--	5.00 U	--	--	--	10.0 U	--	--	--	0.200 U	--	5.00 U	--	30.0 U	--	5.00 U	--	20.0 U	--	**1.98** J	--
AMW-6	11/13/08	12.5 – 27.5	6.17	20.0 U	--	20.0 U	--	--	--	2.00 U	--	2.00 U	--	5.00 U	--	5.00 U	--	--	--	10.0 U	--	--	--	0.200 U	--	5.00 U	--	30.0 U	--	5.00 U	--	20.0 U	--	**33.1**	--

TABLE 8
Summary of Groundwater Sample Chemical Analytical Results pH and Total and Dissolved Metals
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Screen Interval (feet BGS)	pH	Metals by EPA 1311 and 200/6000/7000 Series Methods (µg/L)																											
				Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Copper		Iron		Lead		Manganese		Mercury		Nickel		Selenium		Silver		Thallium		Zinc	
				Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
2007 – 2009 BCC Project Sampling – Off Site																															
SW-4GP	04/05/07	25	--	--	--	--	**20.2**	--	**62.0**	--	--	--	**3.04**	--	2.00 U	--	**44.1**	--	--	--	0.50 U	--	--	--	0.0020 U	--	--	--	5.00 U	--	0.50 U	--	--	--	**309,000**
SW-05AM	07/26/07	45 – 75	--	--	--	--	**4.10**	--	**62.8**	--	--	--	0.10 U	--	0.40 U	--	**0.24**	--	--	--	0.10 U	--	--	--	**0.0017**	--	--	--	0.50 U	--	0.10 U	--	--	--	**12.9**
	06/12/09		6.39	--	--	**6.39**	--	**234**	--	--	--	1.00 U	--	**14.3**	--	**13.4**	--	--	--	**4.72**	--	0.100 U	--	--	--	**3.17**	--	1.00 U	--	--	--	**115**	--
SW-6GP 65	04/10/07	65	--	--	--	--	**1.03**	--	**47.1**	--	--	--	**0.17**	--	0.40 U	--	**0.4**	--	--	--	0.10 U	--	--	--	0.0010 U	--	--	--	0.50 U	--	0.10 U	--	--	--	**5.43**
SW-60AM	08/28/08	35	--	--	--	--	**0.44**	--	**25.1**	--	--	--	0.10 U	--	**0.73**	--	**2.3**	--	--	--	**0.39**	--	--	--	**0.0040**	--	--	--	0.50 U	--	0.10 U	--	--	--	**12.4**
	06/12/09		6.47	--	--	1.00 U	--	**61.4**	--	--	--	1.00 U	--	**4.99**	--	**14.2**	--	--	--	**16.2**	--	0.100 U	--	--	--	1.00 U	--	1.00 U	--	--	--	**137**	--
SW-63GP	06/18/08	25	--	--	--	--	**1.20**	--	**192**	--	--	--	0.10 U	--	0.40 U	--	0.20 U	--	--	--	0.10 U	--	--	--	0.0010 U	--	--	--	0.50 U	--	0.10 U	--	--	--	**71.5**
SW-64AM	08/28/08	17 – 27	--	--	--	--	**0.66**	--	**44.1**	--	--	--	0.10 U	--	0.40 U	--	0.20 U	--	--	--	0.10 U	--	--	--	0.0010 U	--	--	--	0.50 U	--	0.10 U	--	--	--	**680**
SW-65GP	06/18/08	30	--	--	--	--	**0.48**	--	**26.7**	--	--	--	0.10 U	--	0.40 U	--	0.20 U	--	--	--	0.10 U	--	--	--	0.0010 U	--	--	--	0.50 U	--	0.10 U	--	--	--	**137**
29th/Industrial	02/05/09	15	4.75	--	--	**0.16**	0.10 U	**76.5**	**69.2**	--	--	**1.60**	**1.58**	**0.86**	0.40 U	**14.2**	**13.0**	--	--	**1.78**	**0.82**	--	--	**0.0024**	0.0010 U	--	--	**0.76**	**0.77**	0.10 U	0.10 U	--	--	**10,400**	**9,530**
SW-73MW	06/11/09	16	5.84	--	--	**8.14**	--	**761**	--	--	--	**2.07**	--	**97.6**	--	**78.4**	--	--	--	**22.0**	--	0.100 U	--	--	--	2.00 U	--	1.00 U	--	--	--	**838**	--
SW-74GP-W	05/28/09	22	4.98	--	--	**48.2**	--	**2,600**	--	--	--	**9.33**	--	**543**	--	**842**	--	--	--	**219**	--	**1.50**	--	--	--	5.00 U	--	5.00 U	--	--	--	**35,400**	--
SW-75MW	06/11/09	22	5.31	--	--	**12.4**	--	**408**	--	--	--	**1.38**	--	**87.2**	--	**102**	--	--	--	**25.5**	--	**0.112**	--	--	--	**8.48**	--	1.00 U	--	--	--	**3,050**	--
SW-76MW	06/11/09	11.5 – 41.5	5.29	--	--	**1.46**	1.00 U	**110**	**50.1**	--	--	**1.50**	**1.18**	**11.6**	1.00 U	**16.6**	**8.93**	--	--	**3.37**	1.00 U	0.100 U	0.100 U	--	--	2.00 U	**2.23**	1.00 U	1.00 U	--	--	**12,200**	**12,500**
SW-76MW (Duplicate)				--	--	**4.20**	1.00 U	**266**	**50.8**	--	--	**1.60**	**1.17**	**47.7**	**1.66**	**49.4**	**8.40**	--	--	**16.4**	1.00 U	0.100 U	0.100 U	--	--	2.00 U	2.00 U	1.00 U	1.00 U	--	--	**12,400**	**11,400**
	11/03/09		4.7	--	--	**4.44**	--	**485**	--	--	--	**1.21**	--	**40.1**	--	**45.1**	--	--	--	**12.6**	--	**0.042**	--	--	--	0.50 U	--	**0.11**	--	--	--	**30,300**	--
	11/05/09		5.5	--	--	**1.75**	--	**185**	--	--	--	**1.17**	--	**14.2**	--	**17.8**	--	--	--	**3.70**	--	**0.014**	--	--	--	2.00 U	--	0.40 U	--	--	--	**37,800**	--
	11/10/09		5.6	--	--	**1.32**	--	**180**	--	--	--	**0.60**	--	**8.24**	--	**12.4**	--	--	--	**4.65**	--	**0.013**	--	--	--	2.00 U	--	0.40 U	--	--	--	**25,200**	--
	11/12/09		5.9	--	--	**1.49**	--	**115**	--	--	--	0.40 U	--	**2.53**	--	**5.40**	--	--	--	**1.10**	--	**0.0051**	--	--	--	2.00 U	--	0.40 U	--	--	--	**58,900**	--
	11/17/09		5.6	--	--	**2.57**	--	**160**	--	--	--	**1.26**	--	**10.6**	--	**30.9**	--	--	--	**6.25**	--	**0.023**	--	--	--	2.00 U	--	0.40 U	--	--	--	**40,600**	--
	11/19/09		5.9	--	--	**2.89**	--	**214**	--	--	--	**0.95**	--	**16.3**	--	**30.1**	--	--	--	**7.54**	--	**0.026**	--	--	--	2.00 U	--	0.40 U	--	--	--	**21,500**	--
SW-76MW (Duplicate)				--	--	**2.60**	--	**201**	--	--	--	**1.00**	--	**15.0**	--	**30.5**	--	--	--	**7.20**	--	**0.025**	--	--	--	2.00 U	--	0.40 U	--	--	--	**19,200**	--
	11/24/09		5.4	--	--	**0.68**	--	**88.2**	--	--	--	**1.22**	--	**3.59**	--	**12.4**	--	--	--	**1.83**	--	**0.0042**	--	--	--	2.00 U	--	0.40 U	--	--	--	**11,300**	--
	11/27/09		5.5	--	--	**0.44**	--	**54.0**	--	--	--	**1.14**	--	1.60 U	--	**7.22**	--	--	--	**0.75**	--	0.0040 U	--	--	--	2.00 U	--	0.40 U	--	--	--	**10,300**	--
	12/01/09		4.9	--	--	0.50 U	--	**87.6**	--	--	--	**2.19**	--	**2.07**	--	**14.0**	--	--	--	**1.16**	--	0.0040 U	--	--	--	2.50 U	--	0.50 U	--	--	--	**17,900**	--
	12/03/09		5.4	--	--	0.50 U	--	**79.8**	--	--	--	**2.10**	--	2.00 U	--	**12.3**	--	--	--	**0.80**	--	0.0040 U	--	--	--	2.50 U	--	0.50 U	--	--	--	**19,100**	--
	12/08/09		5.4	--	--	**0.59**	--	**114**	--	--	--	**2.60**	--	**4.69**	--	**17.8**	--	--	--	**2.11**	--	**0.0045**	--	--	--	2.50 U	--	0.50 U	--	--	--	**22,700**	--
	12/10/09		5.4	--	--	**0.63**	--	**86.8**	--	--	--	**2.50**	--	2.00 U	--	**16.8**	--	--	--	**0.53**	--	0.0040 U	--	--	--	2.50 U	--	0.50 U	--	--	--	**25,600**	--
SW-76MW (Duplicate)				--	--	**0.53**	--	**77.9**	--	--	--	**2.44**	--	2.00 U	--	**14.5**	--	--	--	0.50 U	--	0.0040 U	--	--	--	2.50 U	--	0.50 U	--	--	--	**23,100**	--
	12/17/09		5.6	--	--	0.50 U	--	**55.0**	--	--	--	**2.52**	--	**2.07**	--	**25.8**	--	--	--	**0.66**	--	0.0040 U	--	--	--	2.50 U	--	**0.78**	--	--	--	**32,000**	--
SW-77GP-W	05/28/09	8	6.46	--	--	**68.8**	--	**8,080**	--	--	--	**30.8**	--	**1,980**	--	**2,110**	--	--	--	**622**	--	**2.00**	--	--	--	**6.56**	--	5.00 U	--	--	--	**103,000**	--
SW-78MW	06/11/09	13 – 23.5	6.03	--	--	**8.58**	--	**389**	--	--	--	1.00 U	--	**92.9**	--	**116**	--	--	--	**35.9**	--	**0.150**	--	--	--	2.00 U	--	**2.34**	--	--	--	**286**	--
	11/03/09		6.6	--	--	**5.99**	--	**387**	--	--	--	**0.42**	--	**76.0**	--	**108**	--	--	--	**38.9**	--	**0.178**	--	--	--	0.50 U	--	**1.69**	--	--	--	**358**	--
	11/05/09		6.5	--	--	**5.04**	--	**298**	--	--	--	0.40 U	--	**71.3**	--	**85.3**	--	--	--	**30.4**	--	**0.130**	--	--	--	2.00 U	--	**1.54**	--	--	--	**276**	--
	11/10/09		6.5	--	--	**2.79**	--	**114**	--	--	--	0.40 U	--	**24.6**	--	**29.4**	--	--	--	**12.1**	--	**0.044**	--	--	--	2.00 U	--	**0.52**	--	--	--	**125**	--
SW-78MW (Duplicate)				--	--	**3.92**	--	**130**	--	--	--	0.40 U	--	**26.9**	--	**32.1**	--	--	--	**13.5**	--	**0.046**	--	--	--	2.00 U	--	**0.58**	--	--	--	**140**	--
	11/12/09		6.7	--	--	**2.02**	--	**100**	--	--	--	0.40 U	--	**21.4**	--	**24.4**	--	--	--	**11.2**	--	**0.034**	--	--	--	2.00 U	--	**0.42**	--	--	--	**110**	--
	11/17/09		6.4	--	--	**4.51**	--	**235**	--	--	--	0.40 U	--	**59.5**	--	**72.8**	--	--	--	**27.0**	--	**0.110**	--	--	--	2.00 U	--	**1.26**	--	--	--	**250**	--
	11/19/09		6.6	--	--	**3.98**	--	**211**	--	--	--	0.40 U	--	**53.7**	--	**65.3**	--	--	--	**24.7**	--	**0.094**	--	--	--	2.00 U	--	**1.06**	--	--	--	**241**	--
	11/24/09		6.6	--	--	**3.29**	--	**133**	--	--	--	0.40 U	--	**32.8**	--	**36.3**	--	--	--	**15.0**	--	**0.053**	--	--	--	2.00 U	--	**0.70**	--	--	--	**126**	--
	11/27/09		6.6	--	--	**2.63**	--	**108**	--	--	--	0.40 U	--	**26.1**	--	**27.7**	--	--	--	**14.5**	--	**0.047**	--	--	--	2.00 U	--	**0.48**	--	--	--	**109**	--
	12/01/09		6.6	--	--	**2.49**	--	**101**	--	--	--	0.50 U	--	**25.3**	--	**27.9**	--	--	--	**12.1**	--	**0.036**	--	--	--	2.50 U	--	0.50 U	--	--	--	**102**	--
	12/03/09		6.5	--	--	**4.00**	--	**188**	--	--	--	0.50 U	--	**47.8**	--	**52.8**	--	--	--	**20.9**	--	**0.067**	--	--	--	2.50 U	--	**0.84**	--	--	--	**186**	--
SW-78MW (Duplicate)				--	--	**3.47**	--	**149**	--	--	--	0.50 U	--	**37.0**	--	**40.5**	--	--	--	**16.6**	--	**0.056**	--	--	--	2.50 U	--	**0.69**	--	--	--	**144**	--
	12/08/09		6.3	--	--	**3.90**	--	**165**	--	--	--	0.50 U	--	**39.6**	--	**43.6**	--	--	--	**17.2**	--	**0.065**	--	--	--	2.50 U	--	**0.70**	--	--	--	**144**	--
	12/10/09		6.6	--	--	**3.61**	--	**122**	--	--	--	0.50 U	--	**31.1**	--	**33.3**	--	--	--	**11.6**	--	**0.050**	--	--	--	2.50 U	--	0.50 U	--	--	--	**105**	--
	12/16/09		6.5	--	--	**3.14**	--	**123**	--	--	--	0.50 U	--	**31.7**	--	**34.6**	--	--	--	**15.4**	--	**0.042**	--	--	--	2.50 U	--	0.50 U	--	--	--	**153**	--
	12/17/09		6.6	--	--	**3.11**	--	**100**	--	--	--	0.50 U	--	**30.4**	--	**39.7**	--	--	--	**12.3**	--	**0.038**	--	--	--	2.50 U	--	**0.92**	--	--	--	**127**	--
	12/21/09		6.3	--	--	**3.05**	--	**116**	--	--	--	0.50 U	--	**31.2**	--	**34.7**	--	--	--	**13.2**	--	**0.035**	--	--	--	2.50 U	--	**0.63**	--	--	--	**136**	--
SW-79MW	06/11/09	13 – 33	5.12	--	--	**1.53**	1.00 U	**85.2**	**32.0**	--	--	1.00 U	1.00 U	**7.64**	1.00 U	**8.29**	5.00 U	--	--	**2.27**	1.00 U	0.100 U	0.114 U	--	--	2.00 U	2.00 U	1.00 U	1.00 U	--	--	**8,120**	**7,320**
	11/03/09		5.3	--	--	**4.80**	--	**196**	--	--	--	**0.26**	--	**31.7**	--	**27.0**	--	--	--	**14.8**	--	**0.047**	--	--	--	0.50 U	--	**0.22**	--	--	--	**33,800**	--
	11/05/09		5.1	--	--	**3.71**	--	**170**	--	--	--	0.40 U	--	**20.6**	--	**17.7**	--	--	--	**6.80**	--	**0.029**	--	--	--	2.00 U	--	0.40 U	--	--	--	**22,400**	--
SW-79MW (Duplicate)				--	--	**4.30**	--	**209**	--	--	--	0.40 U	--	**26.0**	--	**22.6**	--	--	--	**8.37**	--	**0.029**	--	--	--	2.00 U	--	0.40 U	--	--	--	**32,100**	--
	11/10/09		5.1	--	--	**3.41**	--	**187**	--	--	--	0.40 U	--	**26.9**	--	**25.0**	--	--	--	2.00 U	--	**0.036**	--	--	--	2.00 U	--	0.40 U	--	--	--	**6,330**	--
	11/12/09		5.2	--	--	**2.59**	--	**165**	--	--	--	0.40 U	--	**20.1**	--	**18.8**	--	--	--	**7.51**	--	**0.026**	--	--	--	2.00 U	--	0.40 U	--	--	--	**6,730**	--
	11/17/09		4.4	--	--	**1.85**	--	**161**	--	--	--	**0.63**	--	**8.75**	--	**22.6**	--	--	--	**3.71**	--	**0.013**	--	--	--	0.50 U	--	0.10 U	--	--	--	**54,800**	--
	11/19/09		4.8	--	--	**6.82**	--	**470**	--	--	--	**0.99**	--	**52.7**	--	**45.0**	--	--	--	**23.9**	--	**0.080**	--	--	--	0.50 U	--	**0.43**	--	--	--	**71,500**	--
	11/24/09		5.6	--	--	**1.18**	--	**36.3**	--	--	--	0.40 U	--	**3.41**	--	**4.52**	--	--	--	**1.59**	--	**0.0052**	--	--	--	2.00 U	--	0.40 U	--	--	--	**36,600**	--
	11/27/09		5.4	--	--	**2.65**	--	**106**	--	--	--	0.40 U	--	**11.4**	--	**13.2**	--	--	--	**5.63**	--	**0.023**	--	--	--	2.00 U	--	0.40 U	--	--	--	**48,000**	--
SW-79MW (Duplicate)				--	--	**2.32**	--	**91.8**	--	--	--	0.40 U	--	**9.21**	--	**11.5**	--	--	--	**4.56**	--	0.020 U	--	--	--	2.00 U	--	0.40 U	--	--	--	**64,800**	--
	12/01/09		5.6	--	--	**3.54**	--	**91.9**	--	--	--	0.50 U	--	**7.09**	--	**12.7**	--	--	--	**2.65**	--	**0.013**	--	--	--	2.50 U	--	0.50 U	--	--	--	**108,000**	--
	12/03/09		5.6	--	--	**2.36**	--	**68.3**	--	--	--	0.50 U	--	**7.02**	--	**13.4**	--	--	--	**2.09**	--	**0.0079**	--	--	--	2.50 U	--	0.50 U	--	--	--	**119,000**	--
	12/08/09		5.7	--	--	**2.58**	--	**75.5**	--	--	--	0.50 U	--	**8.28**	--	**14.6**	--	--	--	**2.39**	--	**0.0091**	--	--	--	2.50 U	--	0.50 U	--	--	--	**118,000**	--
	12/10/09		5.6	--	--	**2.81**	--	**101**	--	--	--	0.50 U	--	**13.2**	--	**13.3**	--	--	--	**4.39**	--	**0.038**	--	--	--	2.50 U	--	0.50 U	--	--	--	**5,100**	--
	12/16/09		6.0	--	--	**0.82**	--	**50.1**	--	--	--	0.50 U	--	**8.52**	--	**8.22**	--	--	--	**4.79**	--	**0.013**	--	--	--	2.50 U	--	0.50 U	--	--	--	**615**	--
	12/17/09		6.2	--	--	**4.08**	--	**110**	--	--	--	0.50 U	--	**30.4**	--	**30.4**	--	--	--	**13.4**	--	**0.049**	--	--	--	2.50 U	--	0.50 U	--	--	--	**1,070**	--
SW-79MW (Duplicate)				--	--	**4.28**	--	**123**	--	--	--	0.50 U	--	**34.2**	--	**33.3**	--	--	--	**15.8**	--	**0.061**	--	--	--	2.50 U	--	0.50 U	--	--	--	**1,110**	--
	12/21/09		6.2	--	--	**2.81**	--	**101**	--	--	--	0.50 U	--	**19.5**	--	**19.3**	--	--	--	**8.41**	--	**0.025**	--	--	--	2.50 U	--	0.50 U	--	--	--	**1,130**	--
SW-79MW (Duplicate)				--	--	**2.71**	--	**106**	--	--	--	0.50 U	--	**19.4**	--	**20.4**	--	--	--	**8.68**	--	**0.029**	--	--	--	2.50 U	--	0.50 U	--	--	--	**1,140**	--

TABLE 8
Summary of Groundwater Sample Chemical Analytical Results pH and Total and Dissolved Metals
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Screen Interval (feet BGS)	pH	Metals by EPA 1311 and 200/6000/7000 Series Methods (µg/L)																									
				Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Copper		Iron		Lead		Manganese		Mercury		Nickel		Selenium		Silver		Thallium		Zinc	
				Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
SW-80MW	06/11/09	10 – 20	5.85	--	--	**2.54**	--	**148**	--	--	--	**2.44**	--	**12.2**	--	**16.7**	--	--	--	**2.79**	--	--	--	0.100 U	--	--	--	2.00 U	--	1.00 U	--	--	--	**26,000**	--
SW-80MW (Duplicate)				--	--	**3.38**	--	**200**	--	--	--	**2.88**	--	**21.5**	--	**28.1**	--	--	--	**4.76**	--	--	--	0.100 U	--	--	--	2.00 U	--	1.00 U	--	--	--	**26,400**	--
	11/03/09		5.8	--	--	**1.94**	--	**69.5**	--	--	--	**5.69**	--	**2.97**	--	**22.1**	--	--	--	**0.91**	--	--	--	**0.0048**	--	--	--	**0.40**	--	0.10 U	--	--	--	**47,800**	--
	11/05/09		5.6	--	--	**3.87**	--	**80.3**	--	--	--	**4.41**	--	**5.38**	--	**18.6**	--	--	--	**1.54**	--	--	--	**0.0069**	--	--	--	2.00 U	--	0.40 U	--	--	--	**28,600**	--
	11/10/09		5.7	--	--	**1.54**	--	**64.0**	--	--	--	**3.97**	--	**2.32**	--	**15.4**	--	--	--	**1.04**	--	--	--	0.0040 U	--	--	--	2.00 U	--	0.40 U	--	--	--	**32,300**	--
	11/12/09		5.7	--	--	**0.86**	--	**54.1**	--	--	--	**3.16**	--	1.60 U	--	**7.98**	--	--	--	**0.56**	--	--	--	0.0040 U	--	--	--	2.00 U	--	0.40 U	--	--	--	**24,800**	--
	11/17/09		5.5	--	--	**1.47**	--	**59.2**	--	--	--	**1.30**	--	**2.73**	--	**9.01**	--	--	--	**0.97**	--	--	--	0.0040 U	--	--	--	0.50 U	--	0.10 U	--	--	--	**10,900**	--
	11/19/09		5.6	--	--	**1.86**	--	**65.7**	--	--	--	**1.43**	--	**4.47**	--	**12.5**	--	--	--	**1.38**	--	--	--	**0.0052**	--	--	--	0.50 U	--	0.10 U	--	--	--	**11,000**	--
	11/24/09		5.8	--	--	**1.67**	--	**69.3**	--	--	--	**0.97**	--	**4.60**	--	**9.09**	--	--	--	**1.59**	--	--	--	**0.0043**	--	--	--	2.00 U	--	0.40 U	--	--	--	**8,550**	--
	11/27/09		5.6	--	--	**0.82**	--	**50.9**	--	--	--	**0.86**	--	1.60 U	--	**4.52**	--	--	--	**0.41**	--	--	--	0.0040 U	--	--	--	2.00 U	--	0.40 U	--	--	--	**8,330**	--
	12/01/09		5.8	--	--	**1.04**	--	**43.7**	--	--	--	**1.00**	--	2.00 U	--	**6.56**	--	--	--	**0.51**	--	--	--	0.0040 U	--	--	--	2.50 U	--	0.50 U	--	--	--	**9,380**	--
	12/03/09		5.6	--	--	**1.47**	--	**53.6**	--	--	--	**1.01**	--	**3.84**	--	**9.35**	--	--	--	**1.18**	--	--	--	0.0040 U	--	--	--	2.50 U	--	0.50 U	--	--	--	**8,870**	--
	12/08/09		5.2	--	--	**1.12**	--	**63.3**	--	--	--	**1.03**	--	**3.64**	--	**11.1**	--	--	--	**1.09**	--	--	--	0.0040 U	--	--	--	2.50 U	--	0.50 U	--	--	--	**9,090**	--
	12/10/09		5.8	--	--	**1.13**	--	**59.0**	--	--	--	**1.16**	--	**3.40**	--	**10.8**	--	--	--	**1.01**	--	--	--	0.0040 U	--	--	--	2.50 U	--	0.50 U	--	--	--	**10,700**	--
	12/16/09		5.6	--	--	**0.71**	--	**36.4**	--	--	--	**1.36**	--	2.00 U	--	**6.31**	--	--	--	0.50 U	--	--	--	0.0040 U	--	--	--	2.50 U	--	0.50 U	--	--	--	**13,200**	--
	12/17/09		5.5	--	--	**1.14**	--	**55.9**	--	--	--	**0.75**	--	**2.62**	--	**11.8**	--	--	--	**0.84**	--	--	--	0.0040 U	--	--	--	2.50 U	--	0.50 U	--	--	--	**7,230**	--
	12/21/09		5.6	--	--	**0.60**	--	**49.9**	--	--	--	**0.96**	--	2.00 U	--	**7.79**	--	--	--	0.50 U	--	--	--	0.0040 U	--	--	--	2.50 U	--	0.50 U	--	--	--	**10,100**	--
SW-81GP-W	06/01/09	19	--	--	--	**82.3**	--	**16,100**	--	--	--	**11.6**	--	**1,200**	--	**1,290**	--	--	--	**278**	--	--	--	**0.750**	--	--	--	10.0 U	--	**1.12**	--	--	--	**64,300**	--
SW-82GP-W		22	5.63	--	--	**61.5**	--	**3,450**	--	--	--	**6.92**	--	**949**	--	**1,110**	--	--	--	**213**	--	--	--	**2.12**	--	--	--	**5.12**	--	**2.67**	--	--	--	**40,100**	--
SW-83GP-W	05/29/09	24	5.2	--	--	**71.3**	--	**3,690**	--	--	--	**4.13**	--	**913**	--	**881**	--	--	--	**211**	--	--	--	**1.06**	--	--	--	5.00 U	--	1.00 U	--	--	--	**3,390**	--
October 2012 Subsurface Explorations – Off Site																																	
DP-1 (11-15)	10/08/12	11 – 15	6.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**977**	**218**
DP-2 (14-18)		14 – 18	5.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2,460**	**848**
DP-3 (14-18)		14 – 18	6.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**45.4**	**18.8**
DP-4 (16-20)		16 – 20	6.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**48.3**	**14.1**
2012 and 2013 BCC Support Project – Off Site																																	
B3 @ 15 ft	11/06/12	15	--	--	--	--	**0.863**	--	**34.1**	--	--	--	**0.199**	--	0.400 U	--	0.200 U	--	--	--	0.100 U	--	--	--	0.00100 U	--	--	--	0.500 U	--	0.100 U	--	--	**659**
B3E @ 10ft	03/06/13	10	--	--	--	**5.79**	**0.136**	**1,460**	**88.4**	--	--	**3.99**	**3.10**	**79.8**	**0.575**	--	--	--	**43.2**	0.100 U		--	--	**0.107**	0.00100 U	--	--	2.00 U	0.500 U	0.400 U	0.100 U	--	--	**23,200**	**20,600**
September 2017 Subsurface Explorations – Off Site																																	
DP-5(20.0-22.0)	09/25/17	20 – 22	6.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.34** J	5.9 U
DP-5(27.0-29.0)	09/25/17	27 – 20	6.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**47.3** J	**16.3** J
DP-6(20.0-22.0)	09/25/17	20 – 22	6.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.9 U	5.9 U
DP-6(27.0-29.0)	09/25/17	27 – 29	6.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.55** J	5.9 U
DP-7(20.0-22.0)	09/25/17	20 – 22	6.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**13.4** J	5.9 U
DP-7(27.0-29.0)	09/25/17	27 – 29	6.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**51.1**	**21.3** J
DEQ Generic RBCs[1]																																	
Volatilization to Outdoor Air																																	
Occupational			NE	NE		NV		NV		NV		NV		NV		NE		NV		NV		NV		NV		NE		NV		NE		NE	
Groundwater in Excavation																																	
Construction/Excavation Worker			NE	NE		6,300		>S		270,000		130,000		>S		5,400,000		NE		>S		3,200,000		>S		>S		NE		1,100,000		NE		NE	
Vapor Intrusion into Buildings - Chronic[2]																																	
Commercial - Cancer			NE	NITI, NV		NV		NITI, NV		NV		NV		NITI, NV		NE		NE		NE		NITI, NV		NITI		NV		NITI, NV		NE		NE		NE	
Commercial - Noncancer			NE	NV		NV		NV		NV		NV		NV		NE		NE		NE		NV		11		NV		NV		NE		NE		NE	
Vapor Intrusion into Buildings - Acute[3]																																	
Commercial - Noncancer			NE	NV		NV		NE		NV		NV		NV		NE		NE		NE		NV		15		NV		NV		NE		NE		NE	

Notes:
1. DEQ Generic RBCs dated May 2018, amended August 2023.
2. DEQ Table 1. Chronic Vapor Intrusion RBCs dated March 2025.
3. DEQ Table 2. Acute Vapor Intrusion RBCs dated March 2025.
J: The identification of the analyte is acceptable; the reported value is an estimate.
NV: chemical is considered non-volatile
U: Not detected. Reporting or detection limit shown.
>S: This groundwater RBC exceeds the solubility limit. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of S. Groundwater concentrations in excess of S indicate that free product may be present.
Bolding indicates analyte detection.
--: not analyzed

TABLE 9
Summary of Groundwater Sample Chemical Analytical Results VOCs
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Screen Interval/ Sample Depth (feet BGS)	VOCs by EPA Method 8260 (µg/L)[1]															
			Acetone	Benzene	Carbon disulfide	Carbon Tetrachloride	Chloroform	2-Chlorotoluene	1,1-Dichloroethane	Ethylbenzene	PCE	Toluene	1,1,1-Trichloroethane	1,2,4-TMB	1,3,5-TMB	VC	Total Xylenes
2000 Rick Russell Site Sampling[2]																	
B-water	07/21/00	12 – 16	--	0.500 U	--	--	--	--	--	**4.77**	--	0.500 U	--	--	--	--	**33.8**
F-water		NA	--	0.500 U U	--	--	--	--	--	**0.820**	--	**0.525**	--	--	--	--	**3.41**
I-W	09/07/00	NA	--	0.500 U U	--	--	--	--	--	**2.65**	--	0.500 U	--	--	--	--	1.0 U
2005 and 2008 XPA Groundwater Monitoring and 2009 SCE																	
MW-1	06/18/09	9.3 – 19.3	50.0 U	0.300 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
MW-2		9.4 – 19.4	50.0 U	0.300 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
MW-3	07/27/05	9.4 – 19.4	50.0 U	**1.95**	2.0 U	1.0 U	**2.01**	1.0 U	**2.87**	**10.5**	1.0 U	**129**	**5.00**	1.0 U	1.0 U	**3.76**	**25.91**
	06/18/09		50.0 U	0.300 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
MW-4	06/18/09	9.6 – 19.6	50.0 U	0.300 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
MW-5	06/18/09	9.4 – 19.4	50.0 U	0.300 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
MW-6	07/27/05	9.2 – 19.2	50.0 U	**2.00**	2.0 U	1.0 U	**2.45**	1.0 U	**3.08**	**10.6**	1.0 U	**127**	**5.78**	1.0 U	1.0 U	**4.01**	**26.47**
	06/18/09		50.0 U	0.300 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
1999 J. A. Freeman & Sons Facility – Off Site																	
GP-1-GW	09/15/99	14 – 18	20.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
GP-2-GW		14 – 18	20.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
GP-3-GW		12 – 16	20.0 U	1.0 U	1.0 U	1.0 U	**2.0**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
GP-4-GW		12 – 16	20.0 U	1.0 U	1.0 U	1.0 U	**2.0**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
GP-5-GW		12 – 16	20.0 U	1.0 U	1.0 U	1.0 U	**4.0**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
GP-6-GW		12 – 16	20.0 U	1.0 U	1.0 U	1.0 U	**6.0**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
2007 – 2009 BCC Project Support Sampling – Off Site																	
SW-4GP	04/05/07	25.0	20.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	3.0 U
SW-05AM	06/12/09	45 – 75	20.0 U	0.250 U	--	0.500 U	1.0 U	1.0 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	1.0 U	1.0 U	0.500 U	1.50 U
SW-60AM	08/28/08	35	20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	06/12/09		20.0 U	0.250 U	--	0.500 U	1.0 U	1.0 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	1.0 U	1.0 U	0.500 U	1.50 U
SW-63GP	06/18/08	25	**68.3**	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
SW-64AM	08/28/08	17 – 27	20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
SW-65GP	06/18/08	30	20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
SW-73MW	06/11/09	15 – 25	20.0 U	0.250 U	--	0.500 U	1.0 U	1.0 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	1.0 U	1.0 U	0.500 U	1.50 U
SW-74GP-W	05/28/09	22	20.0 U	0.250 U	--	0.500 U	2.0 U	0.500 U	0.500 U	0.500 U	0.500 U	1.0 U	0.500 U	1.0 U	1.0 U	0.500 U	1.50 U
SW-75MW	06/11/09	15.5 – 25.5	20.0 U	0.250 U	--	0.500 U	**7.88**	1.0 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	1.0 U	1.0 U	0.500 U	1.50 U

TABLE 9
Summary of Groundwater Sample Chemical Analytical Results VOCs
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Screen Interval/ Sample Depth (feet BGS)	VOCs by EPA Method 8260 (µg/L)[1]													
			Acetone	Benzene	Carbon disulfide	Carbon Tetrachloride	Chloroform	2-Chlorotoluene	1,1-Dichloroethane	Ethylbenzene	PCE	Toluene	1,1,1-Trichloroethane	1,2,4-TMB	1,3,5-TMB	VC	Total Xylenes
SW-76MW	06/11/09	11.5 – 41.5	20.0 U	0.250 U	--	0.500 U	1.0 U	1.0 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	1.0 U	1.0 U	0.500 U	1.50 U
Duplicate			20.0 U	0.250 U	--	0.500 U	1.0 U	1.0 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	1.0 U	1.0 U	0.500 U	1.50 U
	11/03/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	11/05/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	11/10/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	11/12/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	11/17/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	11/19/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
Duplicate			20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	11/24/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	11/27/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	12/01/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	12/03/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	12/08/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	12/10/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
Duplicate			20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	12/16/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	12/17/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
SW-77GP-W	05/28/09	8	20.0 U	0.500 U	--	0.500 U	2.0 U	0.500 U	0.500 U	0.500 U	0.500 U	1.0 U	0.500 U	1.0 U	1.0 U	0.500 U	1.50 U
SW-78MW	06/11/09	13.5 – 23.5	20.0 U	0.250 U	--	0.500 U	1.0 U	1.0 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	1.0 U	1.0 U	0.500 U	1.50 U
	11/03/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	11/05/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	11/10/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
Duplicate			20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	11/12/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	11/17/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	11/19/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	11/24/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	11/27/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	12/01/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	12/03/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
Duplicate			20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	12/08/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	12/10/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	12/16/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	12/17/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
	12/21/09		20.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U

TABLE 9
Summary of Groundwater Sample Chemical Analytical Results VOCs
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Screen Interval/ Sample Depth (feet BGS)	VOCs by EPA Method 8260 (µg/L)[1]																					
			Acetone		Benzene		Carbon disulfide		Carbon Tetrachloride		Chloroform		2-Chlorotoluene		1,1-Dichloroethane		Ethylbenzene		PCE		Toluene		1,1,1-Trichloroethane		1,2,4-TMB		1,3,5-TMB		VC		Total Xylenes	
SW-79MW	06/11/09	13 – 33	20.0	U	0.250	U	--		0.500	U	1.0	U	1.0	U	0.500	U	0.500	U	0.500	U	0.500	U	0.500	U	1.0	U	1.0	U	0.500	U	1.50	U
	11/03/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/05/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
Duplicate			20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/10/09		20.0	U	1.0	U	2.0	U	1.0	U	**2.14**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/12/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/17/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/19/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/24/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/27/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
Duplicate			20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	12/01/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	12/03/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	12/08/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	12/10/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	12/16/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	12/17/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
Duplicate			20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	12/21/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
Duplicate			20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
SW-80MW	06/11/09	10 – 20	20.0	U	0.250	U	--		0.500	U	1.0	U	1.0	U	0.500	U	0.500	U	0.500	U	0.500	U	0.500	U	1.0	U	1.0	U	0.500	U	1.50	U
Duplicate			20.0	U	0.250	U	--		0.500	U	1.0	U	1.0	U	0.500	U	0.500	U	0.500	U	0.500	U	0.500	U	1.0	U	1.0	U	0.500	U	1.50	U
	11/03/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/05/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/10/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/12/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/17/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/19/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/24/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/27/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	12/01/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	12/03/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	12/08/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	12/10/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	12/16/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	12/17/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	12/21/09		20.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
SW-81GP-W	06/01/09	19	20.0	U	**0.250**		--		0.500	U	2.0	U	0.500	U	0.500	U	0.500	U	0.500	U	**1.22**		0.500	U	1.0	U	1.0	U	0.500	U	1.50	U
SW-82GP-W	06/01/09	22	20.0	U	0.250	U	--		0.500	U	2.0	U	0.500	U	0.500	U	0.500	U	0.500	U	1.0	U	0.500	U	1.0	U	1.0	U	0.500	U	1.50	U
SW-83GP-W	05/29/09	24	20.0	U	0.250	U	--		0.500	U	**4.26**		0.500	U	0.500	U	0.500	U	0.500	U	1.0	U	0.500	U	1.0	U	1.0	U	0.500	U	1.50	U

TABLE 9
Summary of Groundwater Sample Chemical Analytical Results VOCs
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Screen Interval/ Sample Depth (feet BGS)	VOCs by EPA Method 8260 (µg/L)[1]													
			Acetone	Benzene	Carbon disulfide	Carbon Tetrachloride	Chloroform	2-Chlorotoluene	1,1-Dichloroethane	Ethylbenzene	PCE	Toluene	1,1,1-Trichloroethane	1,2,4-TMB	1,3,5-TMB	VC	Total Xylenes
DEQ Generic RBCs[3]																	
Volatilization to Outdoor Air																	
Occupational			NE	14,000	NE	7,700	6,300	NE	68,000	43,000	>S	>S	>S	>S	>S	5,900	>S
Groundwater in Excavation																	
Construction/Excavation Worker			NE	1,800	NE	1,800	720	NE	10,000	4,500	5,600	220,000	1,100,000	6,300	7,500	960	23,000
Vapor Intrusion into Buildings – Chronic [4]																	
Commercial - Cancer			NE	12	NITI	3.1	5.9	NE	55	31	130	NITI	NITI	NITI	NITI	3.3	NITI
Commercial - Noncancer			NE	1,000	8,200	670	95	NE	NITI	27,000	470	150,000	53,000	2,400	1,700	270	3,300
Vapor Intrusion into Buildings – Acute [5]																	
Commercial - Noncancer			NE	670	51,000	8,700	17,000	NE	NE	410,000	320	160,000	80,000	NE	NE	4,600	190,000

Notes:
1. Only detected VOCs are shown.
2. Samples analyzed for BTEX by EPA Method 8021B.
3. DEQ Generic RBCs dated May 2018, amended August 2023.
4. DEQ Table 1. Chronic Vapor Intrusion RBCs dated March 2025.
5. DEQ Table 2. Acute Vapor Intrusion RBCs dated March 2025.

>S: This groundwater RBC exceeds the solubility limit. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of S. Groundwater concentrations in excess of S indicate that free product may be present.
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ RBCs.
--: not analyzed

TABLE 10
Summary of Groundwater Sample Chemical Analytical Results PAHs
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Screen Interval/ Sample Depth (feet BGS)	PAHs by EPA Method 8270 SIM (µg/L)																
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
2000 Rick Russell Site Sampling																		
B-water	07/21/00	12 – 16	2.00 U	2.00 U	2.00 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.400 U	2.00 U	**2.52**	0.200 U	10.0 U	**0.958**	2.00 U
F-water		NA	2.00 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.400 U	0.200 U	**1.48**	0.200 U	2.00 U	0.200 U	0.200 U
I-W	09/07/00	NA	**0.226**	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.400 U	0.200 U	**0.777**	0.200 U	0.200 U	**0.491**	0.200 U
2005 and 2008 XPA Groundwater Monitoring and 2009 SCE																		
MW-1	06/18/09	9.3 – 19.3	0.0537 U	0.0537 U	0.0537 U	0.0537 U	0.0537 U	0.0537 U	0.0537 U	0.0537 U	0.0537 U	0.0537 U	0.0537 U	0.0537 U	0.0537 U	0.0537 U	0.0537 U	0.0537 U
MW-2	06/18/09	9.4 – 19.4	0.0590 U	0.0590 U	0.0590 U	0.0590 U	0.0590 U	0.0590 U	0.0590 U	0.0590 U	0.0590 U	0.0590 U	0.0590 U	0.0590 U	0.0590 U	0.0590 U	0.0590 U	0.0590 U
MW-3	07/27/05	9.4 – 19.4	0.0505 U	0.0505 U	0.0505 U	0.0505 U	0.0505 U	0.0505 U	0.0505 U	0.0505 U	0.0505 U	0.0505 U	0.0505 U	0.0505 U	0.0505 U	**0.101**	**0.0707**	0.0505 U
	06/18/09		0.0555 U	0.0555 U	0.0555 U	0.0555 U	0.0555 U	0.0555 U	0.0555 U	0.0555 U	0.0555 U	0.0555 U	**0.0666**	**0.0666**	0.0555 U	**0.0999**	**0.0888**	0.0555 U
MW-4	06/18/09	9.6 – 19.6	0.0575 U	0.0575 U	0.0575 U	0.0575 U	0.0575 U	0.0575 U	0.0575 U	0.0575 U	0.0575 U	0.0575 U	0.0575 U	0.0575 U	0.0575 U	0.0575 U	0.0575 U	0.0575 U
MW-5	06/18/09	9.4 – 19.4	0.0557 U	0.0557 U	0.0557 U	0.0557 U	0.0557 U	0.0557 U	0.0557 U	0.0557 U	0.0557 U	0.0557 U	**0.122**	0.0557 U	0.0557 U	0.0557 U	**0.0668**	**0.100**
MW-6	07/27/05	9.2 – 19.2	**0.0601**	0.0501 U	0.0501 U	0.0501 U	0.0501 U	0.0501 U	0.0501 U	0.0501 U	0.0501 U	0.0501 U	0.0501 U	**0.0801**	0.0501 U	**0.140**	**0.130**	0.0501 U
	06/18/09		0.0534 U	0.0534 U	0.0534 U	0.0534 U	0.0534 U	0.0534 U	0.0534 U	0.0534 U	0.0534 U	0.0534 U	0.0534 U	0.0534 U	0.0534 U	**0.203**	**0.0747**	0.0534 U
1999 J. A. Freeman & Sons Facility – Off Site																		
GP-5-GW	09/15/99	12 – 16	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2007 – 2008 GE Groundwater Assessment – Off Site [1]																		
AMW-1	11/13/08	9 – 24	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U
AMW-2		9 – 24	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U
AMW-3		12.5 – 27.5	0.0980 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U
AMW-4		12.5 – 27.5	0.135 U	0.135 U	0.135 U	0.135 U	0.135 U	0.135 U	0.135 U	0.135 U	0.135 U	0.135 U	0.135 U	0.135 U	0.135 U	0.135 U	0.135 U	0.135 U
AMW-5	01/18/07	10 – 25	0.0971 U	0.0971 U	0.0971 U	0.0971 U	0.0971 U	0.0971 U	0.0971 U	0.0971 U	0.0971 U	0.0971 U	0.0971 U	0.0971 U	0.0971 U	0.0971 U	0.0971 U	0.0971 U
AMW-5 (Dup)			0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U
AMW-5	06/28/07		0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U
AMW-5 (Dup)			0.0926 U	0.0926 U	0.0926 U	0.0926 U	0.0926 U	0.0926 U	0.0926 U	0.0926 U	0.0926 U	0.0926 U	0.0926 U	0.0926 U	0.0926 U	0.0926 U	0.0926 U	0.0926 U
AMW-5	11/13/08		0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U	0.167 U
AMW-5 (Dup)			0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U	0.0943 U
AMW-6	11/13/08	12.5 – 27.5	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U	0.182 U
2007 – 2009 BCC Project Support Sampling																		
SW-4GP	04/05/07	25	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
SW-6GP 65	04/10/07	65	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
SW-60 AM	08/28/08	35	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
SW-63GP	06/18/08	25	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
SW-64AM	08/28/08	17 – 27	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
SW-65GP	06/18/08	30	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U

TABLE 10
Summary of Groundwater Sample Chemical Analytical Results PAHs
Galvanizers Company
Portland, Oregon

Sample I.D.	Date	Screen Interval/ Sample Depth (feet BGS)	PAHs by EPA Method 8270 SIM (µg/L)														
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
DEQ Generic RBCs[2]																		
Volatilization to Outdoor Air																		
Occupational			>S	NE	>S	>S	NV	NV	NE	NV	NV	NV	NV	>S	NV	16,000	NE	>S
Groundwater in Excavation																		
Construction/Excavation Worker			>S	NE	>S	>S	>S	>S	NE	>S	>S	>S	>S	>S	>S	500	NE	>S
Vapor Intrusion into Buildings – Chronic [3]																		
Commercial - Cancer			NE	NE	NE	2,300	NITI, NV	NV	NE	NV	NV	NV	NE	NE	NV	50	NE	NE
Commercial - Noncancer			NE	NE	NE	NITI	NV	NITI, NV	NE	NITI, NV	NITI, NV	NITI, NV	NE	NE	NITI, NV	1,800	NE	NE
Vapor Intrusion into Buildings – Acute [4]																		
Commercial - Noncancer			NE	NE	NE	NE	NV	NE	NE	NE	NE	NE	NE	NE	NE	82,000	NE	NE

Notes:
1. Groundwater samples collected by AMEC and MWH as part of a groundwater assessment completed at the GE Inspection and Repair Services Center site.
2. DEQ Generic RBCs dated May 2018, amended August 2023.
3. DEQ Table 1. Chronic Vapor Intrusion RBCs dated March 2025.
4. DEQ Table 2. Acute Vapor Intrusion RBCs dated March 2025.
NV: chemical is considered non-volatile
>S: This groundwater RBC exceeds the solubility limit. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of S. Groundwater concentrations in excess of S indicate that free product may be present.
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.

CENTRAL
ENGINEERING SERVICES

APPENDIX A: BWUD Documentation

Summary of Water Well Database Search – Water Wells
Potentially Located Within 1 Mile of Subject Property Table A-1

TABLE A-1
Summary of Water Well Database Search
Water Wells Potentially Located Within 1 Mile of Subject Property
Galvanizers Company
Portland, Oregon

County Well I.D.	Street Address	Distance From Project Site		Direction From Subject Property	Location Confidence	Year Drilled	Use/Well Type	Total Depth (feet BGS)	Intake Depth (feet BGS)	Reported First Water (feet BGS)	Reported Static Water Level (feet BGS)	Inferred Confined?	Inferred Same Aquifer at Project Site?	Well Tests		Specific Capacity (gpm/ft)	Inferred Up/Cross/Down Gradient?	Comments/Notes
		Feet	Miles											Yield (gpm)	Drawdown (feet)			
Township 1 North, Range 1 East, Section 29																		
MULT 1017	3366 NW Yeon Ave.	2,300	0.44	North	High	1962	IND	574	Open hole below 243	--	30	Yes	No	315	275	1.1	Down	Water right associated with these two wells allows instantaneous pumping rates of 0.74 cfs (332 gpm) and 1.02 cfs (458 gpm) for industrial use, respectively. These wells were completed as open-hole construction within a lower confined basalt aquifer. The completion depths of these wells within a separate aquifer indicate that little or no hydraulic connection exists with the shallow aquifer at the subject property. Conservatively assuming that groundwater pumping from these wells does affect shallow groundwater hydraulics, the distance from the subject property and low specific capacity indicate very low likelihood of contact with site-derived groundwater.
MULT 1018	3366 NW Yeon Ave.	2,700	0.51	North	High	1963	IND	679	Open hole below 195	--	32	Yes	No	365	190	1.9	Down	

Notes:
--: not reported or not applicable
IND: industrial well

Water Use Survey Questionnaire

Property Address:

Owner: Clover Enterprises LLC

Telephone Number: 503-224-9276

Please answer the following questions below.

1. Are there any water wells used on this property?

NO

2. If yes, how is the water used?

3. For all water wells, please provide the following information:

Location of Well(s) on Property	Depth of Well(s)	Use of Water From Well(s)

Additional Well Information:

Water Use Survey Questionnaire

Property Address: 2537 NW 29th Ave, Portland, OR 97210

Owner: Ralph Staver

Telephone Number: 503 866-3357

Please answer the following questions below.

1. Are there any water wells used on this property?

NO

2. If yes, how is the water used?

3. For all water wells, please provide the following information:

Location of Well(s) on Property	Depth of Well(s)	Use of Water From Well(s)

Additional Well Information:

Water Use Survey Questionnaire

Property Address: 2730 NW 31ST AVENUE

Owner: MACTARNAHAN LIMITED PARTNERSHIP

Telephone Number: 503-502-1363

Please answer the following questions below.

1. Are there any water wells used on this property?

NO

2. If yes, how is the water used?

—

3. For all water wells, please provide the following information:

Location of Well(s) on Property	Depth of Well(s)	Use of Water From Well(s)

Additional Well Information:

—

Water Use Survey Questionnaire

Property Address:

Owner: 2516 + 2508 NW 29TH AVE

Telephone Number: 503-957-9832

Please answer the following questions below.

1. Are there any water wells used on this property?

NO

2. If yes, how is the water used?

3. For all water wells, please provide the following information:

Location of Well(s) on Property	Depth of Well(s)	Use of Water From Well(s)

Additional Well Information:

Water Use Survey Questionnaire

Property Address:

Owner:

OSEKAN INVESTMENT COMPANY LLC

Telephone Number: 503-223-1466

Please answer the following questions below.

1. Are there any water wells used on this property?

N/A

2. If yes, how is the water used?

N/A

3. For all water wells, please provide the following information:

Location of Well(s) on Property	Depth of Well(s)	Use of Water From Well(s)

Additional Well Information:

N/A

Water Use Survey Questionnaire

Property Address: 2300 NW 29TH AVE PORTLAND OR 97210
Owner: PETERSON INDUSTRIAL PRODUCTS INC

Telephone Number: 503-222-9446

Please answer the following questions below.

1. Are there any water wells used on this property? NO

2. If yes, how is the water used?

3. For all water wells, please provide the following information:

Location of Well(s) on Property	Depth of Well(s)	Use of Water From Well(s)

Additional Well Information:

Water Use Survey Questionnaire

Property Address: 2328 NW 29TH AVE PORTLAND OR 97210

Owner: PETERSON INDUSTRIAL PRODUCTS INC

Telephone Number: 503-222-9446

Please answer the following questions below.

1. Are there any water wells used on this property? NO.

2. If yes, how is the water used?

3. For all water wells, please provide the following information:

Location of Well(s) on Property	Depth of Well(s)	Use of Water From Well(s)

Additional Well Information:

Water Use Survey Questionnaire

Property Address: 2727 NW 29th Avenue
Owner: General Electric Company

Telephone Number: 518-796-5971

Please answer the following questions below.

1. Are there any water wells used on this property?

There are no water supply wells on this property.

2. If yes, how is the water used?

3. For all water wells, please provide the following information:

Location of Well(s) on Property	Depth of Well(s)	Use of Water From Well(s)

Additional Well Information:

Wells on site are monitoring wells only (no water supply wells).

32230

RECEIVED
SEP 27 1962
STATE ENGINEER
SALEM, OREGON

Permit No. G- 2226

APPLICATION FOR A PERMIT

To Appropriate the Ground Waters of the State of Oregon

I, Hercules Powder Company (Name of applicant)

of P.O. Box 3939 Portland (Postoffice Address), county of Multnomah,

state of Oregon, *do hereby make application for a permit to appropriate the following described ground waters of the state of Oregon, SUBJECT TO EXISTING RIGHTS:*

If the applicant is a corporation, give date and place of incorporation

October 18, 1912 - Wilmington, Delaware

1. *Give name of nearest stream to which the well, tunnel or other source of water development is situated* Willamette River (Name of stream)

tributary of Columbia River

2. *The amount of water which the applicant intends to apply to beneficial use is* ..... *cubic feet per second or* 800 *gallons per minute,* from 2 wells each of 400 g.p.m.

3. *The use to which the water is to be applied is* Industrial process cooling operations and effluent dilution.

4. *The well or other source is located* #1-230ft. S 1260ft. W NE
#2-680ft. N and 1970 ft. W *from the* NE
(N or S) (E or W)

corner of Sect. 29 T.1N. R.1E (Section or subdivision)

(If preferable, give distance and bearing to section corner)

(If there is more than one well, each must be described. Use separate sheet if necessary)

being within the Peter Guild Donation Land Claim NW¼NE¼ *of Sec.* 29 *, Twp.* 1N *, R.* 1E ,

W. M., in the county of Multnomah .

5. *The* pipe line to connect the two wells and process operations (pipe line) *to be* 1060 ft. *in length, terminating in the* NW ¼ of NE ¼ (Smallest legal subdivision) *of Sec.* 29 *, Twp.* 1N ,

R. 1E *W. M., the proposed location being shown throughout on the accompanying map.*

6. *The name of the well or other works is* #1 and #2 wells.

DESCRIPTION OF WORKS

7. *If the flow to be utilized is artesian, the works to be used for the control and conservation of the supply when not in use must be described.*

Not expected

8. *The development will consist of* two wells (Give number of wells, tunnels, etc.) *having a diameter of* 12" *inches and an estimated depth of* 400 *feet. It is estimated that* 240 *feet of the well will require* 12" steel pipe (Kind) *casing. Depth to water table is estimated* 26 (Feet).

Each will have a capacity of approximately 400 g.p.m.

G1 -2 5M

2226

CANAL SYSTEM OR PIPE LINE—

9. *(a) Give dimensions at each point of canal where materially changed in size, stating miles from headgate. At headgate: width on top (at water line)* ..... *feet; width on bottom* ..... *feet; depth of water* ..... *feet; grade* ..... *feet fall per one thousand feet.*

(b) At ..... *miles from headgate: width on top (at water line)* ..... *feet; width on bottom* ..... *feet; depth of water* ..... *feet; grade* ..... *feet fall per one thousand feet.*

(c) Length of pipe, ... *ft.; size at intake,* ..... *in.; in size at* ..... *ft. from intake* ..... *in.; size at place of use* ..... *in.; difference in elevation between intake and place of use,* ..... *ft. Is grade uniform?* ..... *Estimated capacity,* ..... *sec. ft.*

10. *If pumps are to be used, give size and type* 10" deepwell

Give horsepower and type of motor or engine to be used 40 H.P. Est.

11. *If the location of the well, tunnel, or other development work is less than one-fourth mile from a natural stream or stream channel, give the distance to the nearest point on each of such channels and the difference in elevation between the stream bed and the ground surface at the source of development*

12. *Location of area to be irrigated, or place of use* NW ¼ of NE ¼

Township N. or S.	Range E or W of Willamette Meridian	Section	Forty-acre Tract	Number Acres To Be Irrigated
T.1N	R.1E	29	NW¼ NE¼	~~None~~ Industrial

(If more space required, attach separate sheet)

Character of soil .....

Kind of crops raised .....

MUNICIPAL SUPPLY—

13. To supply the city of .....

in ..... county, having a present population of .....

and an estimated population of ..... in 19.....

ANSWER QUESTIONS 14, 15, 16, 17 AND 18 IN ALL CASES

14. Estimated cost of proposed works, $ 25,000

15. Construction work will begin on or before July 5, 1962

16. Construction work will be completed on or before December 30, 1962

17. The water will be completely applied to the proposed use on or before March 1, 1963

18. If the ground water supply is supplemental to an existing water supply, identify any application for permit, permit, certificate or adjudicated right to appropriate water, made or held by the applicant. .....

HERCULES POWDER COMPANY

W. J. Janes Jr.
(Signature of applicant)
Plant Manager

Remarks: .....

STATE OF OREGON, }
County of Marion, } ss.

This is to certify that I have examined the foregoing application, together with the accompanying maps and data, and return the same for .....

.....

In order to retain its priority, this application must be returned to the State Engineer, with corrections on or before ....., 19.....

WITNESS my hand this ..... day of ....., 19.....

.....
STATE ENGINEER

By .....
ASSISTANT

STATE OF OREGON, }
County of Marion, } ss.

PERMIT

This is to certify that I have examined the foregoing application and do hereby grant the same, SUBJECT TO EXISTING RIGHTS and the following limitations and conditions:

The right herein granted is limited to the amount of water which can be applied to beneficial use and shall not exceed 1.78 cubic feet per second measured at the point of diversion from the well or source of appropriation, or its equivalent in case of rotation with other water users, from two wells, being 0.89 c.f.s. from each of the two wells

The use to which this water is to be applied is industrial.

If for irrigation, this appropriation shall be limited to - - of one cubic foot per second or its equivalent for each acre irrigated and shall be further limited to a diversion of not to exceed ..... acre feet per acre for each acre irrigated during the irrigation season of each year;

and shall be subject to such reasonable rotation system as may be ordered by the proper state officer.

The well shall be cased as necessary in accordance with good practice and if the flow is artesian the works shall include proper capping and control valve to prevent the waste of ground water.

The works constructed shall include an air line and pressure gauge or an access port for measuring line, adequate to determine water level elevation in the well at all times.

The permittee shall install and maintain a weir, meter, or other suitable measuring device, and shall keep a complete record of the amount of ground water withdrawn.

The priority date of this permit is July 6, 1962

Actual construction work shall begin on or before December 10, 1963 and shall thereafter be prosecuted with reasonable diligence and be completed on or before October 1, 19 64

Complete application of the water to the proposed use shall be made on or before October 1, 19 65

WITNESS my hand this 10th day of December, 19 62

Chris L. Wheeler
STATE ENGINEER

Application No. G- 2374

Permit No. G- 2226

PERMIT

TO APPROPRIATE THE GROUND WATERS OF THE STATE OF OREGON

This instrument was first received in the office of the State Engineer at Salem, Oregon, on the 6th day of July, 1962, at 8:00 o'clock A. M.

Returned to applicant:

Approved:

December 10, 1962

Recorded in book No. 9 of Ground Water Permits on page 2226

CHRIS L. WHEELER
STATE ENGINEER

Drainage Basin No. 3 page 30

State Printing

STATE OF OREGON

COUNTY OF MULTNOMAH

CERTIFICATE OF WATER RIGHT

This Is to Certify, *That* HERCULES POWDER COMPANY

of P. O. Box 3939, Portland *, State of* Oregon *, has made proof to the satisfaction of the STATE ENGINEER of Oregon, of a right to the use of the waters of* Two wells

a tributary of Willamette River *for the purpose of* industrial

under Permit No. G-2226 *of the State Engineer, and that said right to the use of said waters has been perfected in accordance with the laws of Oregon; that the priority of the right hereby confirmed dates from* July 6, 1962

that the amount of water to which such right is entitled and hereby confirmed, for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed 1.76 cubic feet per second, being 1.02 c.f.s. from well #2 and 0.74 c.f.s. from well #1

or its equivalent in case of rotation, measured at the point of diversion from the stream. The point of diversion is located in the NW¼ NE¼ and NE¼ NE¼, as projected within Guild DLC 54, Section 29, T. 1 N., R. 1 E., W. M.; wells located: Well No. 1, 230 feet S. and 1260 feet W.; well no. 2, 680 feet S. and 1970 feet W., (cont. below)

The amount of water used for irrigation, together with the amount secured under any other right existing for the same lands, shall be limited to - - - - - - - *of one cubic foot per second per acre,*

(cont. from above)
both from the NE corner of Section 29.

and shall conform to such reasonable rotation system as may be ordered by the proper state officer.

A description of the place of use under the right hereby confirmed, and to which such right is appurtenant, is as follows:

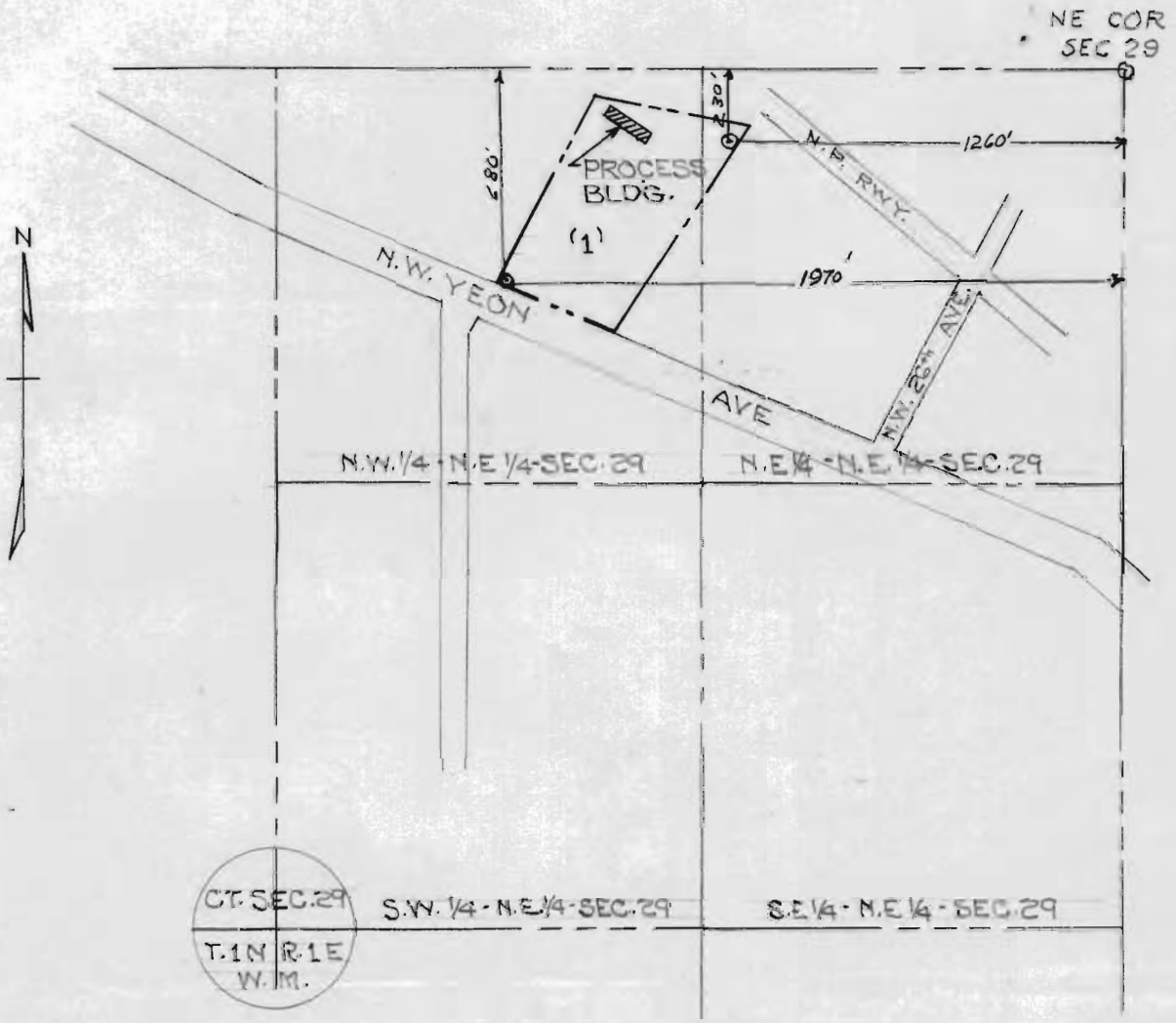
NW¼ NE¼
as projected within Guild DLC 54
Section 29
T. 1 N., R. 1 E., W. M.

The right to the use of the water for the purposes aforesaid is restricted to the lands or place of use herein described.

WITNESS the signature of the State Engineer, affixed this date. May 24, 1965

CHRIS L. WHEELER
State Engineer

Recorded in State Record of Water Right Certificates, Volume 24 *, page* 32230



PROCESS BUILDING AT
HERCULES POWDER CO. PLANT
PORTLAND OREGON.
PLACE OF USE OF GROUNDWATER FROM
WELLS NOS. 1 & 2
SCALE 1" = 600' SEPT. 18, 1962.

Application No. G-2374
Permit No. G-2226


Untitled Map
Write a description for your map.
Legend
Circle Measure
MULT 108
MULT 1017
Guild's Lake
NW St Helens Rd
NW 35th Ave
NW Front Ave
NW 26th Dr
NW Yeon Ave
NW 29th Ave
FOREST PARK - NORTHWEST DISTRICT
NW Industrial St
NW 31st Ave
NW Gordon St
NW Thurman St
NW Aspen Ave
NW Nicolai St
Balch Canyon
NW Wilson St
NW Wardway
NW Vaughn St
NW 22nd Ave
WILLAMETTE HEIGHTS
NW Savier St
NW Raleigh St
NW Cornell Rd
NORTHWEST DISTRICT
30
Google Earth
Image Landsat / Copernicus
3000 ft
N

RECEIVED
OCT 24 1962
STATE ENGINEER
SALEM, OREGON

MULT 1017

1N/1-29

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM 10, OREGON within 30 days from the date of well completion.

WATER WELL REPORT
STATE OF OREGON
(Please type or print)

State Well No. .....

State Permit No. .....

(1) OWNER:
Name HERCULES POWDER CO
Address 3366 NW YEON AVE
PORTLAND ORE

(2) LOCATION OF WELL:
County MULT. Driller's well number 4133
¼ ¼ Section 29 T. 1N R. 1E W.M.
Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☒ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED:
Threaded ☐ Welded ☐
12" Diam. from 0 ft. to 243 ft. Gage .330
..." Diam. from ..... ft. to ..... ft. Gage .....
..." Diam. from ..... ft. to ..... ft. Gage .....

(7) PERFORATIONS:
Perforated? ☐ Yes ☒ No
Type of perforator used
Size of perforations in. by in.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.

(8) SCREENS:
Well screen installed ☐ Yes ☐ No
Manufacturer's Name .....
Type ..... Model No. .....
..... Slot size ..... Set from ..... ft. to ..... ft.
..... Slot size ..... Set from ..... ft. to ..... ft.

(9) CONSTRUCTION:
Well seal—Material used in seal CEMENT GROUT
Depth of seal 31 ft. Was a packer used? NO
Diameter of well bore to bottom of seal 16 in.
Were any loose strata cemented off? ☐ Yes ☐ No Depth .....
Was a drive shoe used? ☐ Yes ☐ No
Was well gravel packed? ☐ Yes ☐ No Size of gravel: .....
Gravel placed from ..... ft. to ..... ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? Depth of strata
Method of sealing strata off

(10) WATER LEVELS:
Static level 30 ft. below land surface Date 10/13/62
Artesian pressure lbs. per square inch Date

(11) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: 315 gal./min. with 275 ft. drawdown after 1 hrs.
" 295 " 254 " 1½ "
" 225 " 203 " 1½ "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? ☒ Yes ☐ No

(12) WELL LOG:
Diameter of well below casing .....
Depth drilled ft. Depth of completed well ft.

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
SAND AND GRAVEL FILL	0	27
DARK GREY SILT	27	106
CLAY, GREEN AND BROWN	106	137
SAND, GRAVEL AND CLAY	137	201
SAND AND GRAVEL	201	207
CONGLOMERATE	207	243
MED. HARD BASALT	243	262
SOFT BROWN ROCK	262	271
MED HARD GREY BASALT	271	295
HARD GREY BASALT SOME SEAMS	295	330
POROUS GREY ROCK	330	368
HARD GREY BASALT	368	372
MED. HARD GREY BASALT	372	393
MED. HARD BROWN "	393	409
HARD GREY BASALT	409	413
POROUS BLACK ROCK	413	487
MED HARD GREY "	487	496
HARD GREY BASALT	496	519
MED SOFT POROUS BLACK ROCK	519	556
HARD BLACK ROCK	556	574

Work started 7/2 1962 Completed 10/16 1962
Date well drilling machine moved off of well 10/17 1962

(13) PUMP:
Manufacturer's Name .....
Type: ..... H.P. .....

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R.J. STRASSER DRILLING CO
(Person, firm or corporation) (Type or print)
Address 8110 SE SUNSET LANE PORTLAND OR
Drilling Machine Operator's License No. GLENN RYDMAN
[Signed] Robert L Strasser
(Water Well Contractor)
Contractor's License No. 10 Date OCT 22 1962

(USE ADDITIONAL SHEETS IF NECESSARY)

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM 10, OREGON within 30 days from the date of well completion.

WATER WELL REPORT
STATE OF OREGON
(Please type or print)

MULT 1018

State Well No. 1N/1-29 C

State Permit No. .....

(1) OWNER:
Name HERCULES POWDER CO
Address 3366 N.W. YEON AVE. PORTLAND, ORE.

(2) LOCATION OF WELL:
County MULT. Driller's well number 4148
¼ ¼ Section T. R. W.M.
Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☒ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED:
Threaded ☐ Welded ☒
12" Diam. from 0 ft. to 195 ft. Gage .330
..." Diam. from ... ft. to ... ft. Gage ...
..." Diam. from ... ft. to ... ft. Gage ...

(7) PERFORATIONS:
Perforated? ☐ Yes ☒ No
Type of perforator used
Size of perforations in. by in.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.

(8) SCREENS:
Well screen installed ☐ Yes ☒ No
Manufacturer's Name ...
... Model No. ...
... Slot size ... Set from ... ft. to ... ft.
... Slot size ... Set from ... ft. to ... ft.

(9) CONSTRUCTION:
Well seal—Material used in seal CEMENT GROUT
Depth of seal 50 ft. Was a packer used? NO
Diameter of well bore to bottom of seal 16 in.
Were any loose strata cemented off? ☐ Yes ☒ No Depth ...
Was a drive shoe used? ☒ Yes ☐ No
Was well gravel packed? ☐ Yes ☒ No Size of gravel: ...
Gravel placed from ... ft. to ... ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? Depth of strata
Method of sealing strata off

(10) WATER LEVELS:
Static level 32 ft. below land surface Date MAY 13, 1963
Artesian pressure lbs. per square inch Date

(11) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? R.J. STRASSER
Yield: 365 gal./min. with 190 ft. drawdown after 12 hrs.
" " " "
" " " "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 57 Was a chemical analysis made? ☒ Yes ☐ No

(12) WELL LOG:
Diameter of well below casing ...
Depth drilled ft. Depth of completed well ft.
Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
BROWN FILL SAND	0	28
DARK GREY SILT	28	49
GRAVEL, CLAY BINDER	49	96
GREY SILT	96	104
SAND, GRAVEL, AND CLAY	104	195
MEDIUM HARD BASALT	195	208
HARD GREY BASALT	208	234
BROWN BASALT	234	245
BLACK BASALT	245	252
HARD GREY BASALT	252	295
BLACK BASALT	295	319
HARD GREY BASALT	319	324
BLACK BASALT	324	364
HARD GREY BASALT	364	402
BLACK BASALT, CLAY SEAMS	402	411
HARD GREY BASALT	411	420
MEDIUM SOFT BLACK BASALT	420	455
HARD GREY BASALT	455	509
BLACK ROCK AND CLAY	509	521
MEDIUM HARD BLACK BASALT	521	536
HARD GREY BASALT	536	594
BLACK SHALE AND ROCK	594	608
MEDIUM HARD BLACK BASALT	608	647
HARD GREY BASALT	647	679

Work started OCT 30 1962 Completed MAY 16 1963
Date well drilling machine moved off of well MAY 16 1963

(13) PUMP:
Manufacturer's Name LAYNE AND BOWLER
Type: DEEP WELL TURBINE H.P. ...

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R.J. STRASSER DRILLING CO
(Person, firm or corporation) (Type or print)
Address 8110 SE SUNSET LANE PORTLAND, ORE.
Drilling Machine Operator's License No. ...
[Signed] Robert L. Strasser
(Water Well Contractor)
Contractor's License No. 10 Date MAY 21

(USE ADDITIONAL SHEETS IF NECESSARY)

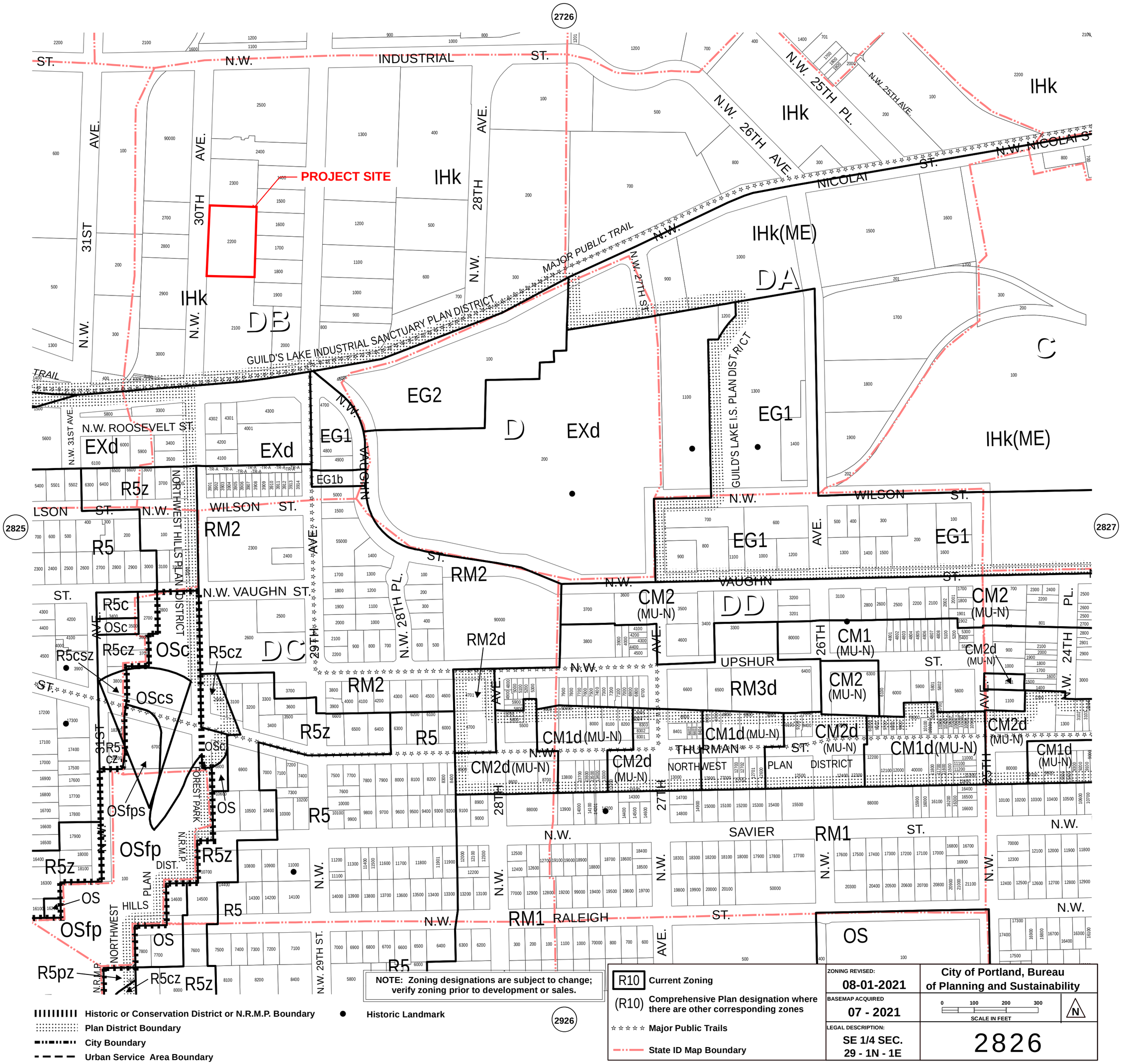
U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetlands Map - 2406 NW 30th Ave.

January 25, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine


2726
2825
2827
2926
PROJECT SITE
N.W. INDUSTRIAL ST.
N.W. 31ST AVE.
N.W. 30TH AVE.
N.W. 28TH AVE.
N.W. 26TH AVE.
N.W. 25TH PL.
N.W. 25TH AVE.
N.W. NICOLAI ST.
NICOLAI ST.
MAJOR PUBLIC TRAIL
GUILD'S LAKE INDUSTRIAL SANCTUARY PLAN DISTRICT
N.W. 27TH ST.
GUILD'S LAKE I.S. PLAN DISTRICT
N.W. ROOSEVELT ST.
N.W. VAUGHN ST.
WILSON ST.
N.W. 29TH PL.
N.W. 29TH ST.
N.W. 24TH PL.
UPSHUR ST.
THURMAN ST.
SAVIER ST.
RALEIGH ST.
NORTHWEST HILLS PLAN DISTRICT
FOREST PARK
N.R.M.P.
IHk
IHk(ME)
DA
DB
DC
DD
EG1
EG2
EXd
R5
R5c
R5cz
R5csz
R5pz
R5z
OSc
OScs
OSfp
OSfps
OS
RM1
RM2
RM2d
RM3d
CM1 (MU-N)
CM2 (MU-N)
CM2d (MU-N)
CM1d (MU-N)
R10 Current Zoning
(R10) Comprehensive Plan designation where there are other corresponding zones
Major Public Trails
State ID Map Boundary
Historic or Conservation District or N.R.M.P. Boundary
Plan District Boundary
City Boundary
Urban Service Area Boundary
Historic Landmark
NOTE: Zoning designations are subject to change; verify zoning prior to development or sales.
ZONING REVISED: 08-01-2021
BASEMAP ACQUIRED 07 - 2021
LEGAL DESCRIPTION: SE 1/4 SEC. 29 - 1N - 1E
City of Portland, Bureau of Planning and Sustainability
0 100 200 300
SCALE IN FEET
N
2826
\\bpsfile1\support$\gis\Publish_Data\Zoning\Maps\zone_quarter_section_maps.mxd

CENTRAL
ENGINEERING SERVICES

APPENDIX B: Level I Ecological Scoping Documentation

ATTACHMENT 1
Ecological Scoping Checklist

Site Name	Galvanizers Company
Date of Site Visit	1/31/22
Site Location	2406 NW 30th Ave. Portland, OR
Site Visit Conducted by	Julian Peter

Part ❶

CONTAMINANTS OF INTEREST IN LOCALITY OF FACILITY† Types, Classes, Or Specific Hazardous Substances ‡ Known Or Suspected	Upland	Aquatic
Total Petroleum Hydrocarbons - Soil & GW	X	N/A
Volatile Organic Compounds - Soil & GW	X	N/A
Metals (Lead & Zinc) - Soil & GW	X	N/A
Polycyclic Aromatic Hydrocarbons - Soil & GW	X	N/A

‡ As defined by OAR 340-122-115(30) † As defined by OAR 340-122-115(34)

Part ❷

OBSERVED IMPACTS OBSERVED IN THE LOCALITY OF THE FACILITY	Finding
Onsite vegetation (None, Limited, Extensive)	N
Vegetation in the locality of the site (None, Limited, Extensive)	L
Onsite wildlife such as macroinvertebrates, reptiles, amphibians, birds, mammals, other (None, Limited, Extensive)	N
Wildlife such as macroinvertebrates, reptiles, amphibians, birds, mammals, other in the locality of the site (None, Limited, Extensive)	N
Other readily observable impacts (None, Discuss below)	None
Discussion: • Heavy Industrial Area - Little to no vegetation observed. • No animals observed on site • No waterbodies on or adjacent to site.	

ATTACHMENT 1
Ecological Scoping Checklist (cont'd)

Part ❸

SPECIFIC EVALUATION OF ECOLOGICAL RECEPTORS / HABITAT	Finding
Terrestrial - Wooded	
Percentage of site that is wooded	0%
Dominant vegetation type (**E**vergreen, **D**eciduous, **M**ixed)	N/A P *
Prominent tree size at breast height, i.e., four feet (<6", 6" to 12", >12")	N/A
Evidence / observation of wildlife (**M**acroinvertebrates, **R**eptiles, **A**mphibians, **B**irds, **M**ammals, **O**ther)	N/A
Terrestrial - Scrub/Shrub/Grasses	
Percentage of site that is scrub/shrub	0%
Dominant vegetation type (**S**crub, **S**hrub, **G**rasses, **O**ther)	N/A P
Prominent height of vegetation (<2', 2' to 5', >5')	N/A
Density of vegetation (**D**ense, **P**atchy, **S**parse)	N/A P
Evidence / observation of wildlife (**M**acroinvertebrates, **R**eptiles, **A**mphibians, **B**irds, **M**ammals, **O**ther)	N/A
Terrestrial - Ruderal	
Percentage of site that is ruderal	0% (All Paved)
Dominant vegetation type (**L**andscaped, **A**griculture, **B**are ground)	N/A P
Prominent height of vegetation (0', >0' to <2', 2' to 5', >5')	N/A
Density of vegetation (**D**ense, **P**atchy, **S**parse)	N/A P
Evidence / observation of wildlife (**M**acroinvertebrates, **R**eptiles, **A**mphibians, **B**irds, **M**ammals, **O**ther)	N/A
Aquatic - Non-flowing (lentic)	
Percentage of site that is covered by lakes or ponds	0%
Type of water bodies (**L**akes, **P**onds, **V**ernal pools, **I**mpoundments, **L**agoon, **R**eservoir, **C**anal)	N/A
Size (acres), average depth (feet), trophic status of water bodies	N/A
Source water (**R**iver, **S**tream, **G**roundwater, **I**ndustrial discharge, **S**urface water runoff)	N/A
Water discharge point (**N**one, **R**iver, **S**tream, **G**roundwater, **W**etlands impoundment)	N/A
Nature of bottom (**M**uddy, **R**ocky, **S**and, **C**oncrete, **O**ther)	N/A P
Vegetation present (**S**ubmerged, **E**mergent, **F**loating)	N/A P
Obvious wetlands present (**Y**es / **N**o)	NO
Evidence / observation of wildlife (**M**acroinvertebrates, **R**eptiles, **A**mphibians, **B**irds, **M**ammals, **O**ther)	N/A
Aquatic - Flowing (lotic)	
Percentage of site that is covered by rivers, streams (brooks, creeks), intermittent streams, dry wash, arroyo, ditches, or channel waterway	0%
Type of water bodies (**R**ivers, **S**treams, **I**ntermittent Streams, **D**ry wash, **A**rroyo, **D**itches, **C**hannel waterway)	N/A
Size (acres), average depth (feet), approximate flow rate (cfs) of water bodies	N/A P
Bank environment (cover: **V**egetated, **B**are / slope: **S**teep, **G**radual / height (in feet))	N/A

SPECIFIC EVALUATION OF ECOLOGICAL RECEPTORS / HABITAT	Finding
Source water (River, Stream, Groundwater, Industrial discharge, Surface water runoff)	N/A
Tidal influence (Yes / No)	N/A
Water discharge point (None, River, Stream, Groundwater, Wetlands impoundment)	N/A
Nature of bottom (Muddy, Rocky, Sand, Concrete, Other)	N/A
Vegetation present (Submerged, Emergent, Floating)	N/A 📷
Obvious wetlands present (Yes / No)	NO
Evidence / observation of wildlife (Macroinvertebrates, Reptiles, Amphibians, Birds, Mammals, Other)	N/A
Aquatic - Wetlands	
Obvious or designated wetlands present (Yes / No)	NO
Wetlands suspected as site is/has (Adjacent to water body, in Floodplain, Standing water, Dark wet soils, Mud cracks, Debris line, Water marks)	N/A
Vegetation present (Submerged, Emergent, Scrub/shrub, Wooded)	N/A 📷
Size (acres) and depth (feet) of suspected wetlands	N/A
Source water (River, Stream, Groundwater, Industrial discharge, Surface water runoff)	N/A
Water discharge point (None, River, Stream, Groundwater, Impoundment)	N/A
Tidal influence (Yes / No)	N/A
Evidence / observation of wildlife (Macroinvertebrates, Reptiles, Amphibians, Birds, Mammals, Other)	N/A

📷: Photographic documentation of these features is highly recommended.

Part ❹

HABITATS AND SPECIES OBSERVED OR DOCUMENTED IN LOF
No ecologically important species / habitats observed.

ATTACHMENT 2
Evaluation of Receptor-Pathway Interactions

EVALUATION OF RECEPTOR-PATHWAY INTERACTIONS	Y	N	U
Are hazardous substances present or potentially present in surface waters? This includes tidal or seasonally inundated areas and wetlands. **AND** **Could hazardous substances reach these receptors via surface water?**		X X	
When answering the above questions, consider the following: • Known or suspected presence of hazardous substances in surface waters. • Ability of hazardous substances to migrate to surface waters. Consider migration pathways such as erosion of soils adjacent to aquatic environments (e.g., banks or riparian areas), subsurface preferential pathways (e.g., pipes), outfalls, groundwater discharges, and surface migration (e.g., ditches). • Terrestrial organisms may be dermally exposed to water-borne contaminants as a result of wading or swimming in contaminated waters. Aquatic receptors may be exposed through osmotic exchange, respiration or ventilation of surface waters. • Contaminants may be taken-up by terrestrial plants whose roots are in contact with surface waters. • Terrestrial receptors may ingest water-borne contaminants if contaminated surface waters are used as a drinking water source.			
Are hazardous substances present or potentially present in groundwater? **AND** **Could hazardous substances reach these receptors via groundwater?**	X	 X	
When answering the above questions, consider the following: • Known or suspected presence of hazardous substances in groundwater. • Ability of hazardous substances to migrate to groundwater. • Potential for hazardous substances to migrate via groundwater and discharge into habitats and/or surface waters. • Contaminants may be taken-up by terrestrial and rooted aquatic plants whose roots are in contact with groundwater present within the root zone (~1m depth). • Terrestrial wildlife receptors generally will not contact groundwater unless it is discharged to the surface.			

(No Pathway between site & Willamette R.)
↓
See GeoDesign "Stormwater Flow Pathway Verification" Memo dated 2/17/12

"Y" = yes; "N" = No, "U" = Unknown (counts as a "Y")

ATTACHMENT 2
Evaluation of Receptor-Pathway Interactions (cont'd)

EVALUATION OF RECEPTOR-PATHWAY INTERACTIONS	Y	N	U
Are hazardous substances present or potentially present in sediments? This includes tidal or seasonally inundated areas and wetlands.		X	
AND			
Could hazardous substances reach receptors via contact with sediments?		X	
When answering the above questions, consider the following: • Known or suspected presence of hazardous substances in sediment. • Ability of hazardous substances to leach or erode from surface soils and be carried into sediment via surface runoff. • Potential for contaminated groundwater to upwell through, and deposit contaminants in, sediments. • If sediments are present in an area that is only periodically inundated with water, both aquatic and terrestrial species may exposed. Aquatic receptors may be directly exposed to sediments or may be exposed through osmotic exchange, respiration or ventilation of sediment pore waters. • Terrestrial species may be exposed to sediment in an area that is only periodically inundated with water. • If sediments are present in an area that is only periodically inundated with water, terrestrial species may have direct access to sediments for the purposes of incidental ingestion. Aquatic receptors may regularly or incidentally ingest sediment while foraging.			
Are hazardous substances present or potentially present in prey or food items of ecologically important receptors?		X	
AND			
Could hazardous substances reach these receptors via consumption of food items?		X	
When answering the above questions, consider the following: • Higher trophic level terrestrial and aquatic consumers and predators may be exposed through consumption of contaminated food sources. • In general, organic contaminants with log K_{ow} > 3.5 may accumulate in terrestrial mammals and those with a log K_{ow} > 5 may accumulate in aquatic vertebrates.			

"Y" = yes; "N" = No, "U" = Unknown (counts as a "Y")

ATTACHMENT 2
Evaluation of Receptor-Pathway Interactions (cont'd)

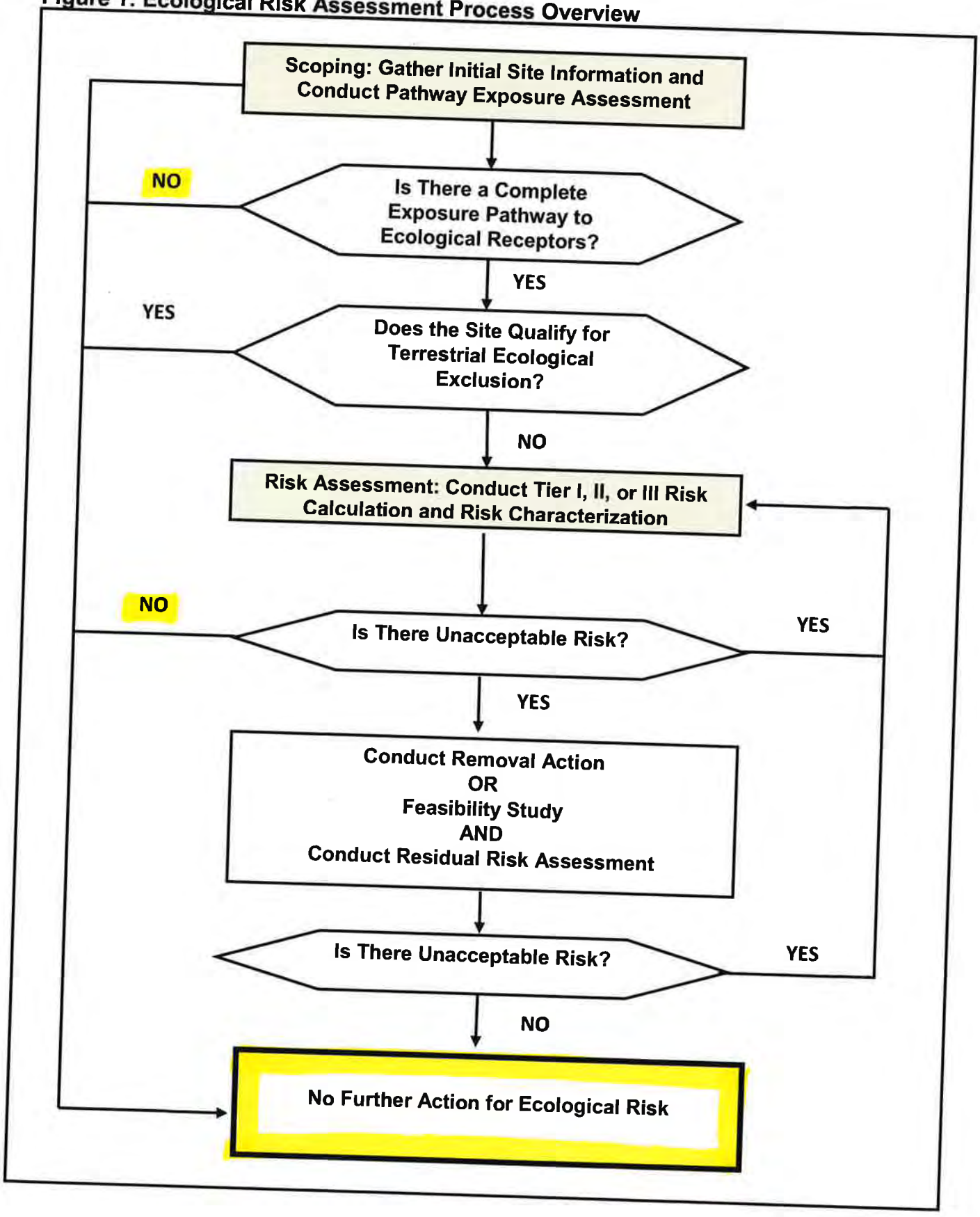
EVALUATION OF RECEPTOR-PATHWAY INTERACTIONS	Y	N	U
Are hazardous substances present or potentially present in surficial soils? **AND** **Could hazardous substances reach these receptors via incidental ingestion of or dermal contact with surficial soils?**	X	X	
When answering the above questions, consider the following: • Known or suspected presence of hazardous substances in surficial (~1m depth) soils. • Ability of hazardous substances to migrate to surficial soils. • Significant exposure via dermal contact would generally be limited to organic contaminants which are lipophilic and can cross epidermal barriers. • Exposure of terrestrial plants to contaminants present in particulates deposited on leaf and stem surfaces by rain striking contaminated soils (i.e., rain splash). • Contaminants in bulk soil may partition into soil solution, making them available to roots. • Incidental ingestion of contaminated soil could occur while animals grub for food resident in the soil, feed on plant matter covered with contaminated soil or while grooming themselves clean of soil.			
Are hazardous substances present or potentially present in soils? **AND** **Could hazardous substances reach these receptors via vapors or fugitive dust carried in surface air or confined in burrows?**	X	X	
When answering the above questions, consider the following: • Volatility of the hazardous substance (volatile chemicals generally have Henry's Law constant > 10^{-5} atm-m^3/mol and molecular weight < 200 g/mol). • Exposure via inhalation is most important to organisms that burrow in contaminated soils, given the limited amounts of air present to dilute vapors and an absence of air movement to disperse gases. • Exposure via inhalation of fugitive dust is particularly applicable to ground-dwelling species that could be exposed to dust disturbed by their foraging or burrowing activities or by wind movement. • Foliar uptake of organic vapors would be limited to those contaminants with relatively high vapor pressures. • Exposure of terrestrial plants to contaminants present in particulates deposited on leaf and stem surfaces.			

(Paved)

(Paved)

"Y" = yes; "N" = No, "U" = Unknown (counts as a "Y")

Figure 1: Ecological Risk Assessment Process Overview



ATTACHMENT 3
Deliverable - Site Ecology Scoping Report
Outline

(1) **EXISTING DATA SUMMARY**
- (a) Site location
- (b) Site history
- (c) Site land and/or water use(s)
  - (i) Current
  - (ii) Future
- (d) Known or suspected hazardous substance releases
- (e) Sensitive environments
- (f) Threatened and/or endangered species (USFWS/ODFW/NMFS data)

See updated CSM report

(2) **SITE VISIT SUMMARY**
- (a) Contaminants of Interest (Part ❶, Attachment 1)
- (b) Observed impacts (Part ❷, Attachment 1)
- (c) Ecological features (Part ❸, Attachment 1)
- (d) Ecologically important species/habitats (Part ❹, Attachment 1)
  - (i) Threatened and/or endangered species
  - (ii) Threatened and/or endangered species habitat
- (e) Exposure pathways (Attachment 2)

See attached forms

(3) **RECOMMENDATIONS** - No Further Assessment

(4) **ATTACHMENTS**
- (a) Regional map showing location of site - See Report
- (b) Local map showing site in relation to adjacent property - See Report
- (c) Aerial photograph or map of LOF and adjacent areas within ¼ mile showing zoning, current land use, location of surface water, critical habitat, and sensitive environments. - See report
- (d) Topographic map - See Report
- (e) Figures showing source/release areas, estimated areas of contamination, and surface features such as pavement, stormwater catch basins/drainage systems including outfalls, dry wells, or stormwater swales. - See Report
- (f) Site photograph(s)
- (g) Documentation of the likelihood of T&E species to be present in the LOF.

(5) **REFERENCES / DATA SOURCES**

Appendix A1:
Basic Site Information Checklist

General Site Information
ECSI File No. or LUST File No.: 1196
Site Name: Galvanizers Company
Site Location (address, city, and/or county): 2406 NW 30th Ave. Portland, OR
Latitude/Longitude or other location documentation for site: 45.53967, -122.71207
Current and Historical Site Use (gas station, dry cleaner, jet hangar, etc.) [1]: Metal parts galvanizing
Zoning: Heavy Industrial (IHk)
Site[2] Features: Main plant building, office building, storage/staging buildings and yards
Chemicals of Interest[3]: Petroleum hydrocarbons, metals, PAHs

[1] Include contaminant management, treatment, storage or disposal and areas where a release may have occurred. Historical sources should be identified using sources of information which help in identifying current or past uses or occupants of a site including aerial photographs, fire insurance maps, property tax files, recorded land title records, United States Geological Survey (USGS) 7.5 minute topographic maps, local street directories, building department records, zoning or land use records. Any previous site assessments, environmental assessments or studies should be summarized

[2] Facility or Site (OAR 340-122-0115(26)) means any building, structure, installation, equipment, pipe or pipeline including any pipe into a sewer or publicly owned treatment works, well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, above ground tank, underground storage tank, motor vehicle, rolling stock, aircraft, or any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located and where a release has occurred or where there is a threat of a release, but does not include any consumer product in consumer use or any vessel.

[3] A COI list should include chemicals that are detected or are suspected to be present based on historical and current operations. For Stage 1, the site-specific history of hazardous substance uses and releases is usually the source of potential chemical information. Identify hazardous substances that have the potential to bioaccumulate in Section C2 of Attachment 1.

Site Conditions – Provide Approximate Areas (acreage or square feet)

These habitats may occur in a range of natural and protected areas, including parks and green space found within urban areas. More information and habitat classification can be found at: https://oregonexplorer.info/content/classification-wildlife-habitats

Site	Adjacent to Site	
N/A	N/A	**Terrestrial Open Habitat / Grasslands**: Dominated by short to medium-tall grasses, low to medium shrubs, or bare soil.
N/A	N/A	**Forest or Woodland Habitats:** Woodlands (maple, alder, aspen), conifer forest (Douglas fir, hemlock, cedar, spruce), mixed-woodland, juniper, pine (ponderosa, lodgepole).
N/A	N/A	**Wetland[4]:** May be either tidal or non-tidal wetlands with emergent herbaceous plants.
N/A	N/A	**Riparian Zone:** Patches or linear strips of land adjacent to waterbodies (rivers, streams, waterbodies), or on nearby floodplains and terraces. May be impacted by periodic riverine flooding or perennial flowing water**.** May or may not also contain wetlands.
N/A	N/A	**Aquatic Open Water:** Ponds, lakes, reservoirs, rivers, creeks, streams, bays estuaries, and nearshore marine and intertidal.
3.56 ac	10.06 ac	**Impermeable Surface:** Pavement, structures.

Documentation

- Aerial Site Vicinity Map(s) identifying zoning and Site features. Include topographic map.
- Summarize known or potential contaminated soil, groundwater, migration pathways.
- Figure illustrating source/release areas, sample locations, estimated areas of contamination, and surface features such as pavement, stormwater catch basins/drainage system including outfalls, dry wells or stormwater swales.
- Aerial Map showing habitat types described above both within and adjacent to the Site by at least 1/4 mile from Site boundary. Definitions and tools[5] for identifying wetlands include:

[4] Covered Under Oregon Statewide Wetlands Inventory (ORS 196.674) https://www.oregon.gov/dsl/WW/Pages/SWI.aspx

[5] Information shown on the Local Wetland Inventory maps is for planning purposes only, as wetland information is subject to change. There may be unmapped wetland and waters subject to regulation and all wetlands and waters boundary mapping is approximate. In all cases, actual field conditions determine the presence, absence and boundaries of wetlands and waters.

https://www.oregon.gov/dsl/WW/Pages/Inventories.aspx http://tools.oregonexplorer.info/oe_map_viewer_2_0/viewer.html?Viewer=orwap National Wetlands Inventory: https://www.fws.gov/wetlands/Data/Mapper.html	
Checklist Completed By: Julian Peter Environmental Staff (name and title/expertise)	Date: 1/31/2022