

TO: Ms. Maureen Sanchez, Washington State Department of Ecology

FROM: Meg Strong, LG, LHG *MS*

DATE: October 26, 2020

PROJECT: Jorgensen Forge Corporation Property

PROJ. #: 21-1-12596-012

SUBJECT: Revised Response to Remedial Investigation Work Plan  
Comments Letter Dated September 15, 2020

This Addendum memorandum has been prepared on behalf of the Earle M. Jorgensen Company. The purpose of this Addendum is to respond to your request for additional sampling work and to provide information related to the Remedial Investigation (RI) at the Jorgensen Forge Corporation (JFC) property located at 8531 East Marginal Way South, Tukwila, Washington (Agreed Order Number DE 14143). The original copy of the Addendum was issued on October 12, 2020. Revisions to the Addendum are in response to your request for additional work at some of the new sampling points. Responses to requests for additional sampling and clarifications are provided below.

## ADDITIONAL EVALUATION WORK

As a result of recent Clean Closure work undertaken by Star Forge, the owner of the JFC property, you identified two areas for evaluation that are not part of the Clean Closure work. The two areas are (1) the soil that was exposed after removal of equipment within the Melt, Forge, and Heat Treat Shops, and (2) polychlorinated biphenyls (PCBs) identified in asphalt, specifically within the former Acid Etch House now known as the Tote Storage Area (TSA). Details about the requested additional investigation in the two areas are provided below.

### Soil Sampling in the Melt, Forge, and Heat Treat Shops

Much of the exposed soil now observed at the property was beneath machinery or presses that were recently removed from the facility. Exposed soil in the Melt, Forge, and Heat Treat Shops is shown in the enclosed Surface Condition figure generated by Sound Earth Strategies (SES) and dated 2020 (Figure 1 from SES). The SES figure depicts the areas where soil was present and where concrete was present or absent below the soil in the Melt, Forge, and Heat Treat Shops in April 2020.

During the Clean Closure work by DH Environmental in June 2020, samples of the exposed surface soil were collected and analyzed for waste designation, as shown in the enclosed

Figure 9. The soil was analyzed for Resource Conservation Recovery Act metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) plus copper, nickel, and zinc; total PCBs; and for volatile organic compounds. Some samples were also analyzed for polycyclic aromatic hydrocarbons. Toxicity Characteristic Leachate Procedure (TCLP) extraction and testing was completed for the analyzed metals and a bulk sample was run for fish bioassay analysis. Exposed soil in the Melt, Heat Treat, and Forge Shops was not removed during Clean Closure as it did not designate as dangerous waste based on the TCLP and fish bioassay result. PCBs were detected in most samples (mean concentration of 0.82 milligram per kilogram [mg/kg]) and polycyclic aromatic hydrocarbons were either nondetect or detected at a low concentration (with individual concentrations not exceeding 0.05 mg/kg) in one sample. Star Forge will pave over the exposed soil in advance of building demolition.

During the RI, in advance of the paving event, samples of exposed soil in the Melt, Forge, and Heat Treat Shops will be collected and analyzed for the presence of metals. Soil that overlies concrete will not be sampled because surface samples were collected as part of the waste designation process. In addition, soil overlying the concrete is likely to be removed prior to paving since its loose nature makes it difficult to pave over.

Using the SES figure information, we will collect samples in representative areas where soil does not overlie concrete. Two to three soil samples will be collected using hand tools and/or a hand auger. The first sample will be collected from the loose soil, the second sample will be collected from beneath the loose soil in the near surface, and a third sample will be collected approximately 6 inches below the second sample. The upper soil sample will be analyzed first. If concentrations of any one metal is elevated in the upper soil sample, the overlying loose soil sample and the deeper soil sample will be analyzed for that metal to determine if there is correlation between the samples and vertically delineate, if possible.

The soil samples will be analyzed for metals that were identified within the RI Work Plan as chemicals of potential concern for the site, including arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, vanadium, and zinc by U.S. Environmental Protection Agency (EPA) Methods 200.8 and 7471B. Three locations (near SB-2020-040 and SB-2020-012 and in the proximity of DH sample number AW-19) will also be analyzed for PCBs. A total of 27 samples and a duplicate will be collected. The enclosed Figure 20A shows the proposed location of the sampling points.

## Polychlorinated Biphenyl (PCB) Sampling

Four samples of asphalt were collected from within the TSA during Clean Closure work and PCBs were detected in each sample. The total PCB concentrations ranged from 15.1 to 40 mg/kg. A paint sample collected in 2019 from within the TSA building contained total PCBs of 11,600 mg/kg. No known past use of the TSA building could be linked to the presence of PCBs in the asphalt. In addition, the paint and asphalt PCB aroclor signatures are different, suggesting that the paint likely did not settle on the asphalt resulting in the detected concentrations of PCBs.

Soil samples will be collected from beneath the asphalt floor in the TSA building (one sample will be in the same area where the 40 mg/kg of total PCBs was identified) and around the perimeter of the building for PCBs analysis. Concrete coring will be used to expose the soil. Two samples of the concrete beneath the building asphalt floor will be collected for PCB analysis. Once the soil is exposed, a direct-push probe rig or hand auger will be used to collect samples from depths of approximately 6 and 12 inches below any subbase. Seven borings will be used to collect the samples as shown in Figure 20A. The concrete and upper soil samples will be analyzed for PCBs and the deeper soil samples will be held pending the results. If total PCBs above 1 mg/kg are detected in the upper sample, the deeper sample will be analyzed.

Five randomly selected asphalt samples from around the perimeter of the TSA and other buildings will be collected. In addition, up to five asphalt samples in areas of significant staining will be selected, if such locations exist. The samples will be analyzed for total PCBs by EPA Method 8082.

## ADDITIONAL INFORMATION AND CLARIFICATIONS

As requested in the September 15, 2020, Comment letter, the following sections include additional information or clarifications to the RI Work Plan.

### Monitoring Well Construction

The monitoring well installations will be 2 inches in diameter. The boring flights will have an approximately 4.25-inch interior and 8-inch exterior dimension.

### Boring Depth Cessation Criteria

We will extend borings 1 foot beyond the point at which indications of contamination have ceased or the proposed depth in the RI Work Plan, whichever is deeper, and collect a base

sample from each boring. The base sample will be archived. Our field plan as presented in the RI Work Plan is to complete deeper borings before shallow borings. This reversal of typical procedures was to provide field data to assess whether the shallower borings could terminate as planned or needed to be extended. We will assess the shallow boring program using both soil and groundwater data to guide us before we commence. In addition, we will discuss the boring depths with you before we commence the shallow drilling activities.

### Inadvertent Discovery Plan (IDP)

The IDP has been amended by the archaeologist. The revisions consist of changing tribal contact phone numbers as requested within your email dated September 10, 2020. The revised IDP was submitted to the Department of Archaeology and Historic Preservation (DAHP) on October 2, 2020, and a copy of the revised report was sent to you. The DAHP concurred with the IDP on October 22, 2020, and provided you an email documenting their acceptance.

### Vinyl Chloride Presence

During the evaluation of the RI data, we will check through our historic records for the use of tetra- or trichloroethene (TCE). Our record checks to date indicate that the two areas of TCE use were the shipping area east of the Hollowbore area and within the laboratory.

### Perfluoroalkyl and Polyfluoroalkyl (PFAS) Compounds

The laboratory method proposed in the RI Work Plan is EPA Method 537 modified. We understand that there is not currently an EPA-approved method to analyze for PFAS in matrices other than drinking water. We will note that re-analysis may be required in the future if an approved method is developed.

### Monitoring Well MW-13R

The groundwater monitoring well MW-13R will be installed if light non-aqueous phase liquid (LNAPL) is present in the soil/groundwater as observed using the laser-induced fluorescence (LIF) technology.

### Consultation with the Washington State Department of Ecology

We will continue to liaise with you during the field activities and will discuss with you field alterations related to adjusting boring locations, notable and unusual field observations, and major deviations from the sampling plan. As discussed above, we will coordinate with you

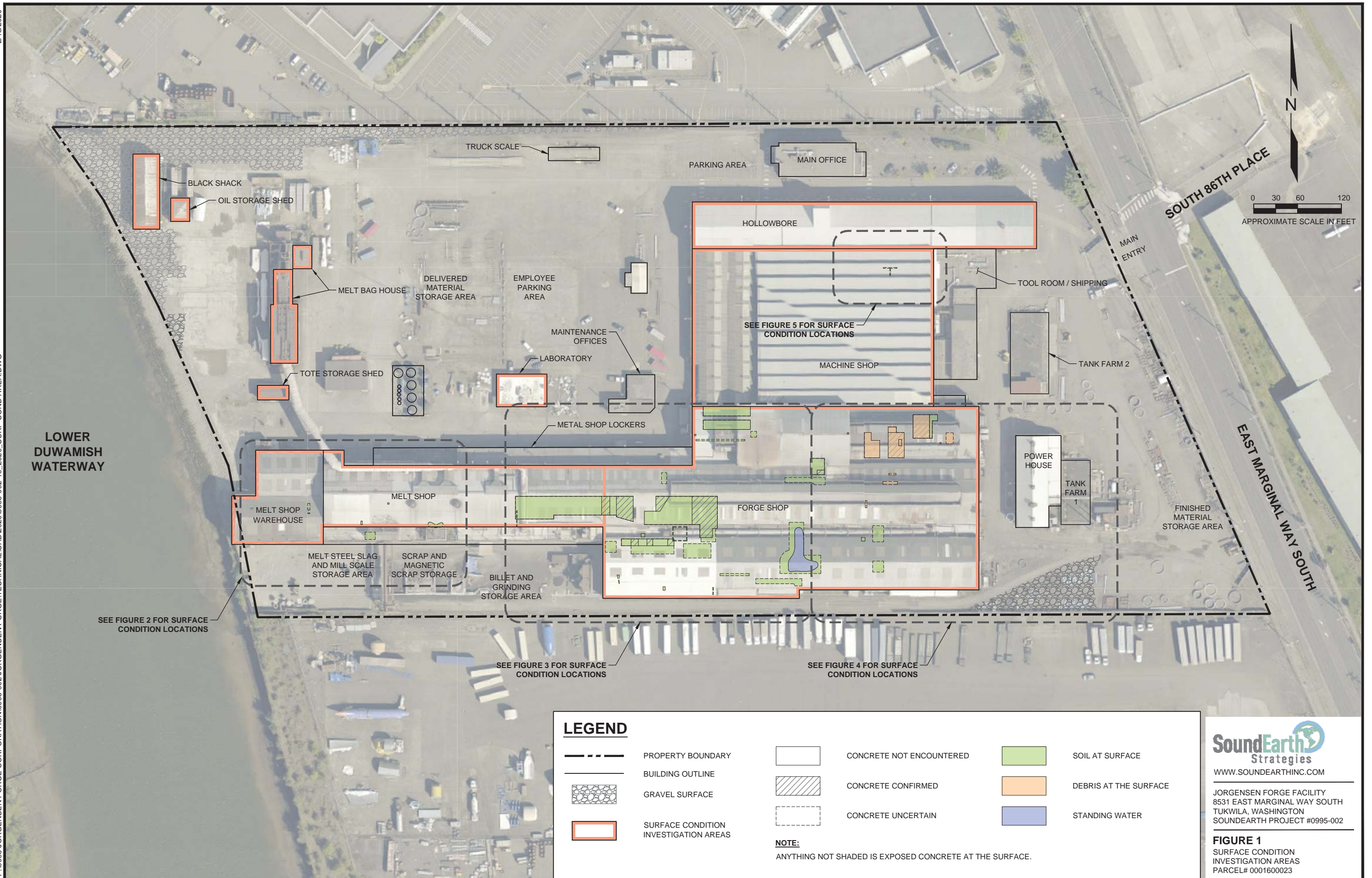
between sampling events as there will be up to seven mobilizations (LIF, deep soil borings, remaining soil borings and groundwater monitoring well installations, and quarterly groundwater sampling events).

## Fieldwork Schedule

Utility location work and LNAPL gauging were completed in early October. LIF will begin on October 26, 2020. Drilling activities will be undertaken in November and December. The working remedial investigation schedule is enclosed for your reference (an earlier version of the schedule was provided to Star Forge on September 16, 2020).

MJS:SKH/mjs

- Enc. Figure 1 – Surface Condition Investigation Areas from Sound Earth Strategies
- Figure 9 – Area Wide Statistical Sampling Locations from DH Environmental
- Figure 20A – Proposed Sampling Locations
- Working Remedial Investigation Schedule dated October 26, 2020



**LEGEND**

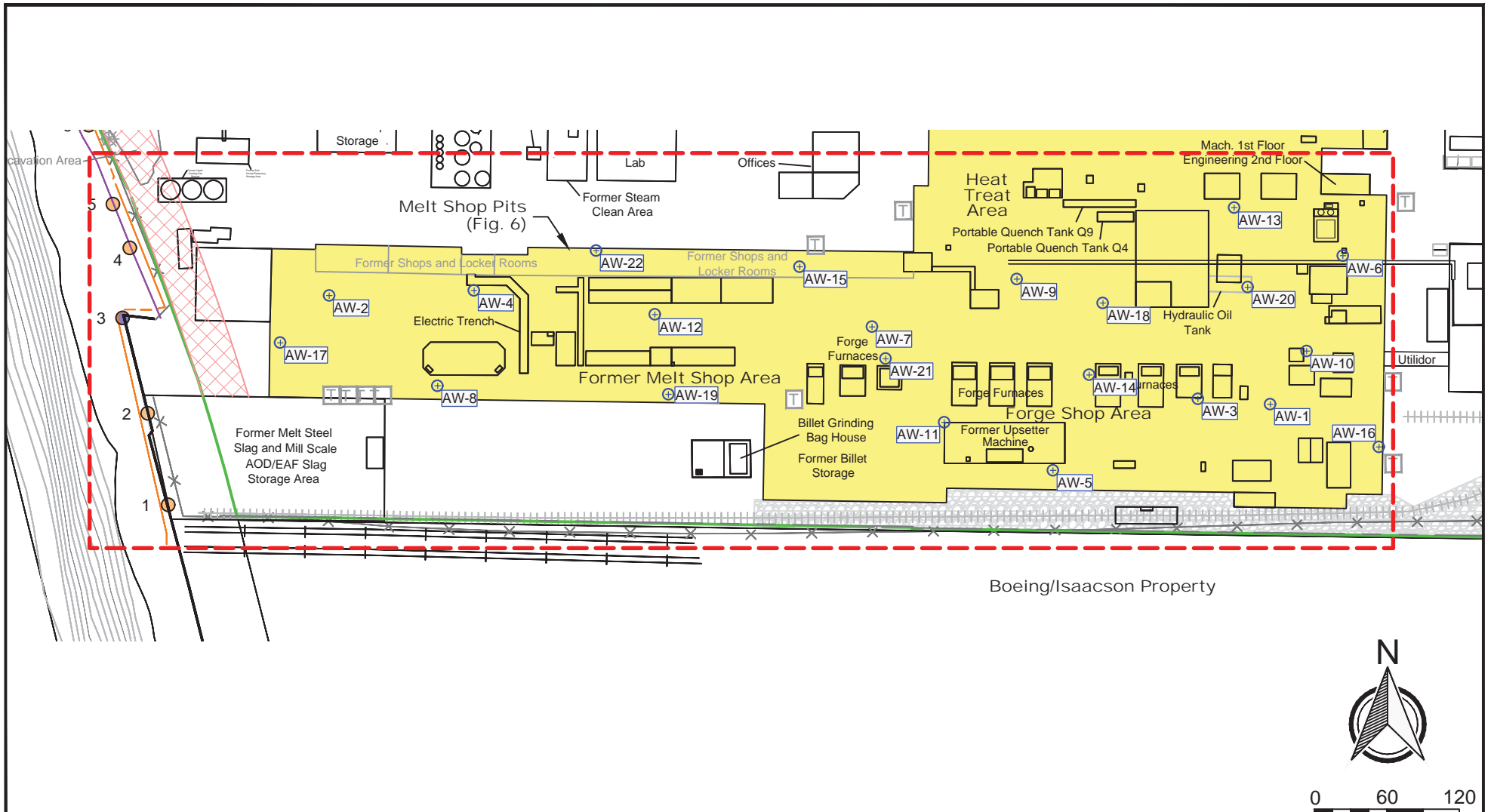
|  |                                       |  |                          |  |                       |
|--|---------------------------------------|--|--------------------------|--|-----------------------|
|  | PROPERTY BOUNDARY                     |  | CONCRETE NOT ENCOUNTERED |  | SOIL AT SURFACE       |
|  | BUILDING OUTLINE                      |  | CONCRETE CONFIRMED       |  | DEBRIS AT THE SURFACE |
|  | GRAVEL SURFACE                        |  | CONCRETE UNCERTAIN       |  | STANDING WATER        |
|  | SURFACE CONDITION INVESTIGATION AREAS |  |                          |  |                       |

**NOTE:**  
ANYTHING NOT SHADED IS EXPOSED CONCRETE AT THE SURFACE.

**SoundEarth Strategies**  
[WWW.SOUNDEARTHINC.COM](http://WWW.SOUNDEARTHINC.COM)


JORGENSEN FORGE FACILITY  
 8531 EAST MARGINAL WAY SOUTH  
 TUKWILA, WASHINGTON  
 SOUNDEARTH PROJECT #0995-002

**FIGURE 1**  
 SURFACE CONDITION INVESTIGATION AREAS  
 PARCEL# 0001600023



**LEGEND**

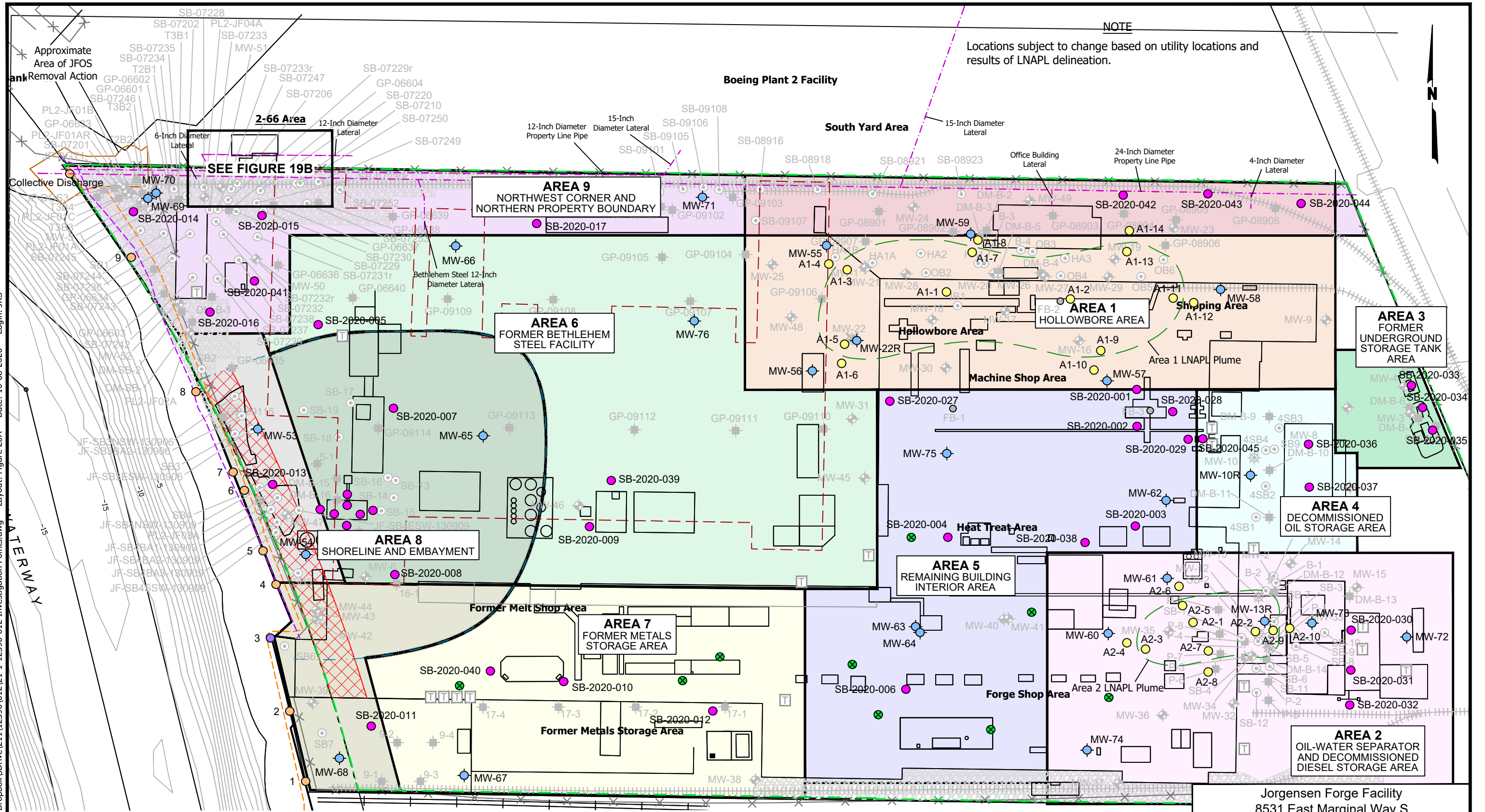
⊕ Statistical Sample Location

|   |            |                    |
|---|------------|--------------------|
|  |            |                    |
| <p><b>Area Wide<br/>Statistical Sampling Locations</b></p>                          |            |                    |
| Former Jorgensen Forge Facility<br>8531 East Marginal Way S<br>Tukwila, WA, 98108   | 06-19-2020 | Figure<br><b>9</b> |

**Notes:**

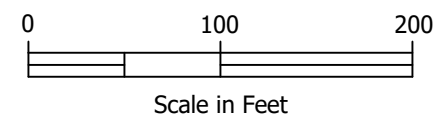
- Figure adapted from client file, 141500101002\_1-8.dwg, prepared by PES Environmental, Inc. dated July 2017, and 01012802-006.dwg, prepared by Anchor Environmental, LLC and Farallon Consulting. Property Boundary from client file, 11078 Topo E-MAIL.dwg, prepared by Anchor QEA, LLC., dated Jan 24, 2012.

Filename: C:\Users\jrs\CAD Group Dropbox\Drive\211\12596\012\21-1-12596-012 Investigation Points.dwg Layout: Figure 20A Date: 10-08-2020 LogIn: JRS



**NOTE**  
Locations subject to change based on utility locations and results of LNAPL delineation.

| Explanation |  | Soil Boring Location (Various) |             | Location Unknown |                            |
|-------------|--|--------------------------------|-------------|------------------|----------------------------|
|             | Approximate Property Boundary                                    |                                | SB-19       |                  | MW-22                      |
|             | Top of Shoreline Bank (2012)                                     |                                | MW-23       |                  | FB-1                       |
|             | Top of Shoreline Bank (2014)                                     |                                | MW-2        |                  | SB-2020-001                |
|             | Former Bethlehem Steel Facility                                  |                                | P-7         |                  | MW-69                      |
|             | Former Embayment   |                                | MW-22       |                  | A2-1                       |
|             | Estimated Extent of LNAPL on Groundwater (Farallon, August 2009) |                                | MW-22       |                  | Proposed Hand Auger Sample |
|             | Steam Tunnel   |                                | MW-22       |                  |                            |
|             | Railroad   |                                | MW-22       |                  |                            |
|             | Bulkhead Area  |                                | MW-22       |                  |                            |
|             | 3 Outfall (Active)   |                                | MW-22       |                  |                            |
|             | 9 Outfall (Inactive)   |                                | MW-22       |                  |                            |
|             |  |                                | Transformer |                  |                            |



Jorgensen Forge Facility  
8531 East Marginal Way S  
Tukwila, Washington

**PROPOSED INVESTIGATION LOCATIONS**

October 2020      21-1-12596-012

**SHANNON & WILSON, INC.**  
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

**FIG. 20A**



## JFC - Working RI Work Schedule

|   | Oct-20 | Nov-20 | Dec-20 | Jan-21 | Apr-21 | Jul-21 | Oct-21 |
|---|--------|--------|--------|--------|--------|--------|--------|
| LNAPL Gauging (in building footprint)   | X      |        |        |        |        |        |        |
| Utility Location                        | X      |        |        |        |        |        |        |
| LIF Borings (in building footprint)     | X      |        |        |        |        |        |        |
| Hand Auguring (in building footprint)   | X      |        |        |        |        |        |        |
| First Phase Soil Borings (site wide)    |        | X      |        |        |        |        |        |
| Northern Boundary Soil Borings          |        |        | X      |        |        |        |        |
| Second Phase Soil Borings (site wide)   |        |        | X      |        |        |        |        |
| LNAPL Transmissivity Test               |        |        | X      |        |        |        |        |
| Groundwater MW Installation (site wide) |        |        | X      |        |        |        |        |
| Groundwater Monitoring 1                |        |        |        | X      |        |        |        |
| Groundwater Monitoring 2                |        |        |        |        | X      |        |        |
| Groundwater Monitoring 3                |        |        |        |        |        | X      |        |
| Groundwater Monitoring 4                |        |        |        |        |        |        | X      |

### NOTES:

LIF = laser induced fluorescence; LNAPL = light non aqueous phase liquid

Subject to change based on availability of drilling contractors.

Created: 9/15/2020

Revised: 10/26/2020