April 2018
All American Marine Building and C Street Terminal Interim Action Project

ANCHOR QEA

Completion Report, Volume 2 of 2
Central Waterfront Site, All American Marine Interim Action

Prepared for Port of Bellingham

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Central Waterfront Site, All American Marine Interim Action

Prepared for
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ABBREVIATIONS

AAM	All American Marine, Inc.
AO	Agreed Order
City	City of Bellingham
Contractor	Prime Contractor to the Port
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CSGP	NPDES Construction Stormwater General Permit
cy	cubic yard
Ecology	Washington State Department of Ecology
IA	interim action
LAI	Landau Associates, Inc.
LFG	landfill gas
MSW	Municipal Solid Waste
MTCA	Model Toxics Control Act
NPDES	National Pollutant Discharge Elimination System
PAH	polycyclic aromatic hydrocarbon
P.E.	Professional Engineer
Port	Port of Bellingham (Owner)
ppm	part(s) per million
RAM	RAM Construction General Contractors, Inc. (Prime Contractor to the Port)
RI/FS	Remedial Investigation/Feasibility Study
sf	square foot
Site	Central Waterfront Site
SWPPP	Stormwater Pollution Prevention Plan
sy	square yard
TCLP	toxicity characteristic leachability procedure
TESC	temporary erosion and sedimentation control
WAC	Washington Administrative Code
WCR	Weekly Construction Resources
WSST	Washington State Sales Tax

1 Introduction

The Port of Bellingham (Port) constructed a new building and other site infrastructure improvements in support of marine trades within portions of the Central Waterfront Site (Site) in Bellingham, Washington (see Figure 1). Portions of this work were identified as interim action (IA) cleanup by the Washington State Department of Ecology (Ecology), and those portions are the focus of this Completion Report. The IA work was completed in conjunction with two separate projects.

The All American Marine, Inc. (AAM) Project constructed a 52,000-square foot (sf) building and installed 72,200[1] sf of asphalt or concrete surfacing. Road surface improvements included asphalt pavement and concrete sidewalks along Hilton Avenue to Roeder Avenue. Sheets C3 and C6 in Appendix A illustrate the approximate limits of work. Construction of the building and site improvements (e.g., underground utilities, pavements, and grading) required the Contractor to perform earthwork within Site areas known to contain potentially impacted soils, landfill materials, and wood waste from previous tenant operations. Because a portion of the building footprint falls within the Roeder Avenue Landfill perimeter, landfill gas (LFG) controls were installed beneath the building slab to provide ventilation for LFG that may be emitted from the subgrade and prevent LFG from entering the building envelope. Figure 2 illustrates the characterized extents of soil and groundwater impacts within the AAM Project area.

The interim action components of the AAM Project consisted of the excavation, reuse, disposal, and environmental capping of on-site soils[2] as well as installation and monitoring of a LFG control system.

Note that this volume of the Completion Report (Volume 2) is for the AAM Interim Action only; Volume 1 of the Completion Report is for the Phase 1 C Street Terminal Interim Action.

1.1 Limitations

Except for Section 2.4 Landfill Gas Control System, which was prepared by Landau Associates, Inc. (LAI), this Completion Report has been prepared by Anchor QEA, LLC, for the Port. The Report has been prepared in accordance with: 1) the Ecology-approved Interim Action Work Plan (Anchor QEA 2016)[3]; and 2) the Model Toxics Control Act (MTCA)[4] to document cleanup activities. As described further in the report, it is the engineer's opinion that, based on the testing results and periodic inspections, the IA was completed in substantial compliance with the Interim Action Work Plan.

[1] Includes 3,200 sf of replaced asphalt along Hilton Avenue.
[2] Note that the stockpiled soils on the property that were removed early during construction to an off-site location were not subject to the interim action.
[3] Relating to the Agreed Order (AO) No. DE 3441 as amended (Ecology 2006, 2012) between the Port, City, and Ecology.
[4] Washington Administrative Code [WAC] 173-340-400 (6)(b)(ii).

Anchor QEA was contracted by the Port to provide IA-related construction support and documentation services for the AAM Project. Appendix B includes a tabulation of periodic field activities and observations, completed by Anchor QEA and LAI. The role of Anchor QEA and LAI during the IA included the following:

1. Monitoring and documentation of the Contractor's management of soil that was excavated in conjunction with construction of the AAM building.
2. Collecting soil samples from the Contractor's temporary on-site soil stockpiles for analysis by an Ecology-accredited laboratory. Results were used to determine suitability of soils for reuse or characterize soils for off-site disposal.
3. Coordinating with the Port, Contractor, Ecology, and other stakeholders in construction matters relating to implementation of the IA Work Plan.
4. Performance monitoring and documentation of the LFG control system installed in the AAM building. Monitoring was conducted twice for quality assurance purposes.

1.2 Site Description and Background

The Site encompasses approximately 51 acres of upland waterfront industrial property in Bellingham, Washington. The Site is bordered on the north by I&J Waterway, on the east by Roeder Avenue, on the south by Whatcom Waterway, and on the west by the former Aerated Stabilization Basin and Bellingham Bay (Figure 2). Adjacent intertidal and sediment areas are not included within the Site boundary, with the exception of sediment impacts in the nearshore area of Whatcom Waterway. The Site comprises four contaminated subareas that were formerly managed separately under MTCA: the Roeder Avenue Landfill site, the Olivine Corporation Hilton site (Olivine Uplands), the Chevron Bellingham Port site (Chevron Terminal), and the Colony Wharf site. In 2003, due to the presence of comingled groundwater contamination, Ecology consolidated these four sites into a single area-wide site now known as the Central Waterfront Site. In 2006, the Port and City of Bellingham (City) entered into the Agreed Order (AO) with Ecology to perform a remedial investigation/feasibility study (RI/FS) for the Site, which is currently in progress.

The first amendment to the AO (AO Amendment 2012) allows the Port and City to undertake IAs before completing the RI/FS, with public review and Ecology approval, in accordance with Washington Administrative Code (WAC) 173-340-430 and WAC 173-340-600(16). The IAs outlined in the IA Work Plan were implemented to reduce the potential threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance at the Site. The IAs were implemented in advance of selecting the final cleanup action for the Site and will not preclude reasonable alternatives for the final cleanup action (WAC 173-340-430(3)(b)).

The Site is divided into three subareas based on historical land use and associated contamination: the Landfill and Perimeter subarea, C Street Properties subarea, and Hilton Avenue Properties subarea (Figure 2). The AAM Project area is located within the Hilton Avenue Properties and the Landfill and Perimeter subarea.

1.3 Construction Bid Process

In May 2016, Ecology approved the IA Work Plan (Anchor QEA 2016) and the Port and consultant design team[5] prepared the final construction bid documents for the project. The Port published a Notice of Bid in the Bellingham Herald on March 31, 2016, and the bid package was posted with Weekly Construction Resources (WCR) on the same day.

The Port received five bid proposals for the WCR redevelopment project. The bids were opened and made public on April 20, 2016, with bids ranging from $8,873,713 to $11,690,052[6], including Washington State Sales Tax (WSST) of 8.7%. The Port Commission awarded the contract to RAM Construction General Contractors, Inc. (RAM) as the Prime Contractor (Contractor) during their regular commission meeting on May 3, 2016.

[5] Consultant design team included: Carletti Architects, Rice Group Inc., Kingworks Consulting Engineers, K Engineers Inc., Pacific Surveying and Engineering, and Landau Associates.

[6] This range of costs is for the All American Marine Project, of which the IA is a portion of the scope.

2 Construction Activities

IA construction activities are discussed separately in the following subsections.

2.1 Mobilization

The Contractor prepared their work plans and began providing required submittals to the Port during the week of May 9, 2016, for review and approval. The Port issued a Notice to Proceed to the Contractor on May 25, 2016. The Contractor began mobilizing their equipment and supplies to the Site during the week of May 25, 2016, and began site preparation.[7] IA-related construction activities began on June 13, 2016. Mobilization occurred over the course of the following weeks and throughout the Project, as needed, to support various work activities.

2.2 Site Preparation

During the week of June 13, 2016, the Contractor began installing temporary erosion and sedimentation controls (TESC), laying out the temporary stockpile containment area, conducting utility locates, installing signage and access controls, and minor clearing and grubbing.

2.2.1 Temporary Erosion and Sedimentation Control Measures

TESC measures were installed and maintained by the Contractor in accordance with the Stormwater Pollution Prevention Plan (SWPPP) (see Sheet C16 in Appendix A). These measures included stabilized construction entrances to Hilton Avenue, silt fencing along the west and south site boundary, inlet protection for catch basins[8], and dust control[9]. TESC measures were implemented to minimize the effects of erosion and sediment transport within and beyond the Site.

2.2.2 Temporary Stockpile Containment Areas

Temporary stockpile containment areas were constructed to manage soils generated during construction pending soil sampling and testing. The primary temporary stockpile containment areas were located on the project-east side of the AAM building (referred to as "east stockpile area" in Appendix B and subsequent paragraphs). The Contractor lined the stockpile containment areas with impermeable liner in accordance with the IA work plan (Anchor QEA 2016). The containment areas included 2-foot-high berms, covered with the liner(s), on the north, east, and south sides. The containment areas were graded to allow stormwater runoff from the stockpiled soils to drain west on to the site.

[7] Site preparation work included, among other non-IA-related activities, relocation of the existing soil stockpile to an off-site Port property.
[8] Inlet protection measures included fabrics socks and/or sandbag barriers.
[9] Dust control measures included the application of wash-down waters.

Secondary temporary stockpile containment areas were constructed on the west side of the building (referred to as "west stockpile area" in Appendix B and subsequent paragraphs) at different times during excavation activities. Soils temporarily stockpiled within the hardscape environmental capping footprint (building or parking lot areas) were not placed on a liner pending grading and placement.

Characterized soils were removed from the temporary stockpile containment for onsite reuse or offsite disposal. Soils were managed as described in Section 2.3.

2.3 Earthwork

Prior to the start of the interim action work components, the Contractor removed soils previously stockpiled on the site. These soils consisted of excavation material from the Squalicum Peninsula development project and was placed on site in the late-1990s. The stockpiled soils were removed to approximately 6 inches above the pre-stockpiled ground surface. These soils were transported to and stockpiled on the Cornwall Avenue site as part of the Cornwall remedial action prior to construction of the All American Marine building.

Soils were removed to approximately 6 inches above the pre-stockpiled ground surface. These soils were transported to and stockpiled on the Cornwall Avenue site.

For IA-related work, excavation, grading, and backfilling was performed throughout the course of the Project in support of the following work elements:

- Construction of the building, grade beams, foundations, and general site grading
- Construction of electrical, natural gas, telecommunications, public water, sewer, and stormwater utility installations for the new building towards and along Hilton Avenue (project east-west)
- Concrete and asphalt pavement surfacing within the building property and along Hilton Avenue (improvements within the Hilton Avenue right-of-way were backfilled with imported material per City of Bellingham specifications)

Earthwork for utilities along Hilton Avenue was preceded by pavement or structure demolition and removal. Road subgrades were excavated along utility alignments and excavated soils were hauled to the stockpile containment area (see Section 2.2.2). Material excavated from the site during grading activities and installation of structural grade beams for the building, and on-site utility trenches were also added to the stockpile containment area pending characterization.

Stockpiled soils were sampled and analyzed in approximately 200-cubic yard (cy) lots. Analytical results were compared to the IA Soil Cleanup Levels provided in Table 2 to determine final disposition; either off-site disposal or on-site unrestricted reuse. Soils testing below the Soil Cleanup Levels were available for unrestricted reuse within the IA project boundary. These soils were used to

backfill some structural grade beams, on-site electrical, sewer, telecommunications, and stormwater utility trenches. These soils were also used as grading material on the west side of the building and the west landscape area outside of the environmental hardscape cap area. On-site reuse of soil below IA Workplan Cleanup Levels is consistent with the IA Work Plan. Reuse of geotechnically suitable soils[10] above IA Work Plan Soil Cleanup Levels was restricted to beneath on-site hardscape caps. Restricted soils were used to grade the west building and parking lot areas, backfill structural grade beams, and backfill on-site trenches, including electrical, sewer, and telecommunications utilities. Approximately 5,000 cy of soils generated during construction of the AAM building were determined to be suitable for restricted or unrestricted reuse on site. Geotechnically unsuitable soils above IA Work Plan Soil Cleanup Levels were disposed of at an off-site Subtitle D landfill facility. Table 2 presents the soil sampling results.

Utility alignments within Hilton Avenue were backfilled with imported material per City of Bellingham specifications; on-site soils were not reused to backfill these trenches. Additionally, imported soils were used to backfill all potable water utility trenching.

Some soils containing exceedances of benzo(a)pyrene, total carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and nickel concentrations above IA Work Plan Soil Cleanup levels were graded into the west landscape area outside of the environmental capping footprint as shown on Figure 2, per coordination between the Port and Ecology (August 12, 2016 Memorandum). This area has been identified to be capped as part of the Central Waterfront Feasibility Study and will be evaluated during Site-wide remedial design.

[10] Geotechnical suitability was determined by others.

2.4 Landfill Gas Control System

As noted in Section 1.2 of this report, the AAM Project area is located within the Roeder Avenue Landfill and Perimeter subareas. A portion of the AAM Building is located over the former Roeder Avenue Landfill as shown on Figure 2, which contains municipal solid waste (MSW) that was disposed of in the 1960s and 1970s. As the buried waste decomposes, LFG is released that, if not properly ventilated, could accumulate to unsafe or unhealthy levels within the building. A passive LFG mitigation system was constructed beneath the building slab to provide a ventilation pathway and prevent the LFG from entering the building envelope as an interim action to mitigate for potential health or safety risks. The interim action was determined by Ecology to be necessary to protect human health and the environment for the current land use. Ecology confirmed that this interim action is expected to be consistent with the final cleanup effort or final remedy selection.

2.4.1 System Components

The LFG control system consists generally of four components:

1. LFG collection layer
2. Strip geocomposite
3. LFG vents
4. Vapor barrier

The LFG collection layer was constructed using a geocomposite[11], whose function is to intercept LFG from the subgrade, allowing it to migrate through high-transmissivity materials to the strip geocomposite. The strip geocomposite[12] consists of a 12-inch-wide by 1-inch-deep drainage channel constructed with geocomposite material. The strip conveys LFG to vent piping that discharges the collected LFG above the building roofline. Four rooftop vent pipes were constructed with wind turbine caps to dissipate the LFG. Each vent was equipped with a secure monitoring port to test and measure LFG. A vapor barrier was constructed above the LFG collection layer and below the building concrete slab to prevent vapor intrusion into the building. The barrier consists of a 20-mil (thousandth of an inch) thick polyolefin geomembrane liner. Seams in the liner are constructed of overlapped liner, which are sealed with mastic between the layers and secured with tape.

The design basis for selecting system components is presented in a technical memorandum to Carletti Architects (Landau Associates 2016) and is an appendix to the IA Work Plan.

[11] The geocomposite collection layer consists of 200-mil thick HDPE geonet that is bonded, on both sides, to a geotextile with a unit weight of 6 ounces per square yard.

[12] The strip geocomposites used for LFG conveyance are composed of three-dimensional polymeric cores and geotextile filter fabric, providing for LFG flow.

2.4.2 Installation Verification and Indoor Air Monitoring

LAI personnel visited the site to conduct construction quality assurance monitoring during installation of the system. Observations confirmed that construction was consistent with the design plans and specifications. No significant deviations from the plans and specifications were observed. Sheets GC-1.0 and GC-1.5 of the Record Drawings, in Appendix A, illustrate the areas and details of the LFG control system.

Following completion of the building construction, LAI personnel visited the site twice to conduct monitoring. On March 13 and 16, 2017, personnel conducted indoor air monitoring in the AAM building, which involved: 1) screening for potential accumulations of LFG in the building; and 2) vent monitoring to evaluate LFG conditions below the concrete slab and the LFG control system performance. Two monitoring events were conducted to assess repeatability and to test two different operating conditions: initial pre-occupancy and normal operation. For the initial pre-occupancy monitoring, the building was closed and the ventilation system was turned off for at least 24 hours prior to the monitoring event. The second event was conducted with the building closed and with the ventilation system in normal operation. The monitoring events were conducted in accordance with the IA work plan.

Monitoring events targeted periods of decreasing barometric pressure because the potential for vapor intrusion into buildings is considered greatest during this weather condition. Barometric pressure readings from the Bellingham Sunnyland weather station are included in field reports (see Appendix B). Atmospheric pressure on March 13 decreased throughout the day during monitoring. On March 16, pressure slightly increased in the morning, so monitoring was delayed until mid-day when the pressure peaked and then slightly decreased through the remainder of the day.

Indoor air quality was monitored using a field-calibrated flame ionization detector capable of detecting methane at concentrations as low as 1 part per million (ppm). All building rooms were monitored at breathing space height (4 to 5 feet above ground level) and the approximate monitoring path is shown in the attached field reports. Each building slab penetration location (e.g., structural columns, pipe/conduit, etc.) was monitored near the floor. In the crane-bay area, a boom lift was used to monitor air within 3 feet of the highest ceiling locations. Measurements were taken at four points along the western wall, as shown in the attached field monitoring reports provided in Appendix B.

Sub-slab monitoring was conducted at each LFG vent monitoring port using a Landtec GEM 5000 multi-gas meter to measure methane, carbon dioxide, oxygen, and balance gases. The meter's lower level of detection for methane concentrations is 0.1 percent by volume and differential pressure is 0.1 inch of water. Meter calibration was checked each day of monitoring.

Results from indoor air monitoring are recorded on the field monitoring forms provided in Appendix B. Results were similar between both events with very low detections of methane. Methane was detected near the ceiling at a maximum concentration of 4.8 ppm on March 13. Maximum concentrations detected in the breathing space and low-lying areas were similar, at 4.0 ppm and 3.7 ppm, respectively. Maximum concentrations detected on March 16 were less than 2 ppm in all indoor air spaces monitored.

The minor detections of methane in indoor air were likely due to interferences from concurrent construction activities observed during the visit (painting, the use of diesel-powered equipment, etc.), as noted in the monitoring forms, and not from intrusion of sub-slab soil gases. However, regardless of the source, the detected trace-level concentrations were well below the action level of 100 ppm. Methane was not detected in the sub-slab soil vapor during either monitoring event. However, elevated levels of carbon dioxide and depleted oxygen concentrations, indicative of oxidized LFG, were detected beneath the slab, demonstrating that the system was venting the low levels of LFG beneath the building, as designed.

Monitoring indicates the LFG control system is performing effectively. No air quality concerns were noted inside the building based on the monitoring, and no explosive conditions were observed, even below the building slab. Based on these findings and the observation that the system is installed per plan, no restrictive limits to building occupancy were required based on air quality or safety concerns from landfill gas.

2.5 IA Environmental Cap Construction

Asphalt and concrete pavement surfacing was constructed on site and along Hilton Avenue (project east-west) following completion of the below-ground utility installations; these pavements constitute hardscape caps in the IA Work Plan to cover underlying soils that are known to be or are potentially impacted. The IA Work Plan requires hardscape caps to be at least 3 inches thick and underlain with at least 4 inches of gravel base. Landscape areas adjacent to the paved parking areas and paved drive aisles constitute softscape caps that consist of 2-foot-thick clean soil[13] underlain with marker fabric. Hardscape and softscape caps were constructed consistent with the IA Work Plan. In total, about 125,800 sf of hardscape and softscape environmental caps were constructed, including about 60,500 sf of asphalt pavement that was a minimum of 4 inches thick, 7,200 sf of concrete curb and sidewalk that was a minimum of 4-inches thick, 55,400 sf of reinforced concrete foundation that was a minimum of 8 inches thick, and 2,700 sf of softscape cap. Hardscape and softscape caps were constructed in accordance with the IA Work Plan.

[13] Clean soil was sourced from on-site soils below cleanup levels and imported topsoil material.

Environmental capping activities were completed during the week of April 24, 2017. Sheets C1, C6, S4.1, and L-1 of the Record Drawings, in Appendix A, illustrate the areas and details of the constructed caps. An interim cap maintenance plan for IA cap areas is included in Appendix D. This plan identifies operation, inspection, documentation, and maintenance activities for the IA cap areas. A final Site-wide cap maintenance plan will be developed following completion of the Site cleanup activities.

In October 2017, a launch route was constructed for All American Marine on the north side of Hilton Avenue adjacent to I&J Waterway. Approximately 25,600 sf of a softscape cap were constructed consistent with specifications outlined in the IA Work Plan (Anchor QEA 2017). Although this area was not included in the IA, the launch route construction will be evaluated during the Central Waterfront remedial design to identify if it meets the requirements of an environmental cap.

2.6 Soil, Debris, and Water Management

On-site soil and debris generated during the Project were managed as described in the following subsections.

2.6.1 Soil Management

Excavated soils were sampled for chemical and/or geotechnical testing to determine whether they were suitable for on-site unrestricted or restricted reuse, or off-site disposal at a Subtitle D landfill. Suitability for on-site soil reuse was based on the following:

- Soils were deemed suitable for unrestricted use on site if chemical concentrations met IA Work Plan Soil Cleanup Levels[14] (Anchor QEA 2016) and soils met geotechnical requirements[15].
- Soils were deemed suitable for restricted on-site reuse under the hardscape environmental cap areas if they met geotechnical requirements.
- Soils were deemed unsuitable for on-site reuse under the cap areas if chemical concentrations exceeded the IA Plan Soil Cleanup Level (Anchor QEA 2016) and failed to meet geotechnical requirements; these soils were disposed of in an off-site Subtitle D landfill.

All excavated soils[16] were hauled to the stockpile containment area, where soil sampling occurred. Following soil chemical testing, soils were designated for reuse or disposal, which is described further in the following subsections. Table 1 summarizes the approximate soil volume by soil determination.

[14] See Table 1, Soil Cleanup Levels in the IA Work Plan.
[15] Determined by GeoEngineers, Inc.
[16] Asbestos-impacted soils remained in place pending testing and disposal.

Table 1
On-site-Generated Soil Summary

Soil Determination	Approximate Soil Volume (cubic yards)
Soils Suitable for On-site Reuse, Restricted and Unrestricted	5,000[1,2]
Soils Unsuitable for On-site Reuse: Hauled and Disposed at Subtitle D Landfill	1,752[1,2]
Asbestos-Impacted Soils	<5
Subtotal	**6,757**

Notes:

1. Volume estimated from reconciled Contract payment quantities. The volume of soils deemed suitable for on-site re-use was estimated based on the engineer's estimate and reconciled Bid Item B.6. The difference between the estimated and actual volume of material required to backfill structures and utilities was assumed to be the volume of material re-used on-site. Soils hauled to the Subtitle D landfill were estimated based on reconciled Bid Item B.2.
2. The approximate soil volume is based on an average, assumed conversion factor of 1.5 tons per cubic yard; imported material and soils hauled to the landfill were tracked by weight (tonnage).

As described in Table 1, approximately 1,752 cy[17] of soils and miscellaneous debris unsuitable for on-site reuse were hauled off site for disposal at the Republic Services Roosevelt Regional Landfill[18]. Miscellaneous debris included woodwaste, pavement, and suspected landfill refusal intermixed with soils. Appendix C summarizes soil disposal at the Subtitle D landfill.

2.6.2 Debris Management

Debris containing soil- or landfill-impacted material was managed along with the soil as described in Section 2.6.1. Suspected refuse was hauled off site for disposal in the approved Subtitle D landfill.[18]Asbestos-impacted material was removed from the site by Environmental Abatement Services and disposed of at Wasco County Landfill in The Dalles, Oregon.

2.6.2.1 Landfill Debris Removal

Landfill debris was encountered during excavation of a storm drain line in the southwest corner of the building near the Sanitary Service Company Property line, approximately 5 feet below finished grade of the parking lot. Installation of the storm drain line in this area was discontinued and the trench was backfilled with imported material. Debris was stockpiled and wrapped in plastic, where it remained until its disposal at the approved Subtitle D landfill facility.

2.6.2.2 Asbestos Management

An abandoned pipe encased in vermiculite was encountered during excavation of the east parking area, approximately 3 feet below surface grade. The area was secured by the Contractor once the suspected asbestos material was observed; material remained in-place pending testing. Analytical

[17] Soil volume estimated based on tonnage reported by the Contractor and disposal facility; see notes in Table 1.

[18] Solid Waste Permit No. SW11-0002, issued by Klickitat County Health Department, valid from March 16, 2016, to April 1, 2017. Municipal Solid Waste Landfilling Permit issued by Klickitat County Health Department on July 15, 1998, modified on March 1, 2014.

results indicated that paper wrapping the pipe contained asbestos. Environmental Abatement Services was contracted to remove and dispose of impacted materials, including the paper, pipe, vermiculite, and soils contacting the asbestos materials. Approximately 5 cy of asbestos-impacted soil and debris were removed from the Site. This material was disposed of at the Wasco County Landfill, a municipal solid waste facility in The Dalles, Oregon. The waste shipment reports for asbestos-impacted material is included in Appendix C.

2.6.3 Water Management – Construction Stormwater

Construction stormwater was managed on site by the Contractor under coverage of the National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit (CSGP)[19] and the SWPPP (see Sheet C16 in Appendix A).

2.7 Demobilization

Demobilization of equipment followed completion of various activities, as described in the following subsections.

2.7.1 Stockpile Containment Areas

Decommissioning of the stockpile containment areas occurred concurrent with the removal of soils stockpiled on the impermeable liners. During the week of January 2, 2017, the Contractor loaded the landfill debris (see Section 2.6.2.1) and the impermeable liner that contained the debris into a container for disposal at the approved Subtitle D landfill. The primary temporary stockpile containment area was decommissioned during the week of April 3, 2017, when the Contractor loaded remaining soils unsuitable for reuse and the impermeable liner into containers for disposal at the approved Subtitle D landfill.

2.7.2 Overall Project Demobilization

Substantial completion was obtained by the Contractor on March 6, 2017. The Contractor conducted final demobilization from the Site during the week of May 5, 2017, following final completion of the Work.

[19] CSGP Permit No. WAR303919; coverage issued to the Port of Bellingham on April 28, 2016, transferred to the Contractor on June 1, 2016.

3 Record Drawings

Record drawings were completed by the Contractor and Engineer (Pacific Surveying and Engineering); see Appendix A for a set of the Record Drawings. Sheet GC-1.0 shows the landfill gas system; see Section 2.4 for more details. Sheet C6 details the extents of the environmental caps constructed as part of the Project; see Section 2.5 for more details. Although the launch route area was not included in the IA, Record Drawings for this area have also been included in Appendix A.

4 Soil Sampling Results

Soil sampling and analysis were conducted throughout the course of the IA consistent with the procedures described in the IA Work Plan. Geotechnical sampling was also performed to determine the suitability of soils placed under hardscape caps or building features. Table 2 summarizes the soil sampling results.

A total of 55 soil samples were collected during construction. Of the 55 samples analyzed, 11 samples exceeded the IA Work Plan Soil Cleanup Levels (Anchor QEA 2016); soils represented by these samples were determined to be chemically and/or geotechnically unsuitable for on-site reuse and were hauled to the approved Subtitle D landfill for disposal. Exceedances varied by sample; analytes that exceeded associated cleanup levels included polycyclic aromatic hydrocarbons (PAHs) and total metals. One sample had an exceedance of the maximum allowable concentration for lead; this sample was then analyzed for Toxicity Characteristic Leachability Procedure (TCLP) for lead and was below the TCLP limit for lead.

Of the 44 samples representing soils that were re-used on site, 36 samples were below the IA Work Plan Soil Cleanup Levels and were determined to be suitable for on-site unrestrictive reuse. Four samples exceeded the IA Work Plan Soil Cleanup Levels for total metals[20]; these soils were determined to be conditionally suitable for on-site reuse and were reused under cap areas only. The remaining four samples reused on site slightly exceeded the IA Work Plan Soil Cleanup Levels for nickel and PAHs; these soils were placed in the west landscape area outside of the environmental cap limits. As described in Section 2.3, this area has been identified to be capped as part of the Central Waterfront FS and will be evaluated during Site-wide remedial design.

Geotechnical data reports, which proctor compaction and soil sieve analysis test results, and analytical data reports for the soil sampling are contained in Appendix E.

[20] Total metals including copper, lead, nickel, and zinc. Two of these four samples exceeded the maximum allowable concentration for lead.

5 Deviations to the Contract Documents and IA Work Plan

While there were minor deviations to the Construction Plans, the substantive elements of the Project's design were implemented in accordance with the contract documents and the IA Work Plan.

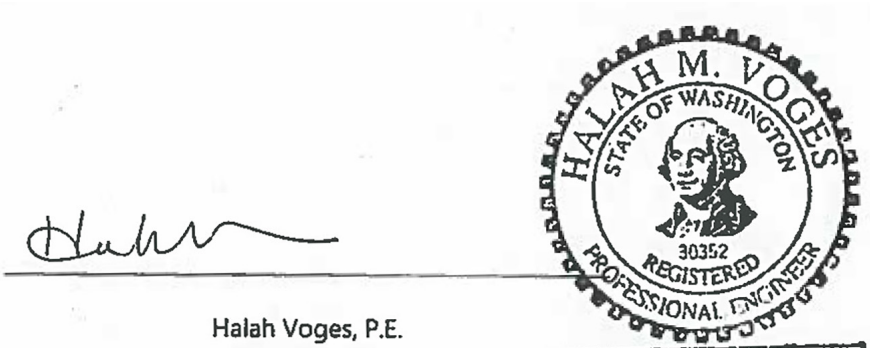
Deviations included the following:

- Conditional reuse of soils exceeding the IA Soil Cleanup Levels determined to be geotechnically suitable; these soils were placed beneath the hardscape environmental cap area.
- Reuse of soils characterized to contain benzo(a)pyrene, total cPAHs, and nickel concentrations slightly above IA Soil Cleanup Levels; these soils were placed outside of the hardscape and softscape cap limits. This area is included in the area subject to capping in the Central Waterfront FS and will be evaluated during Site-wide remedial design.
- Schedule; the Project was completed in October 2017, rather than the anticipated completion in December 2016.

6 Opinion of the Engineer

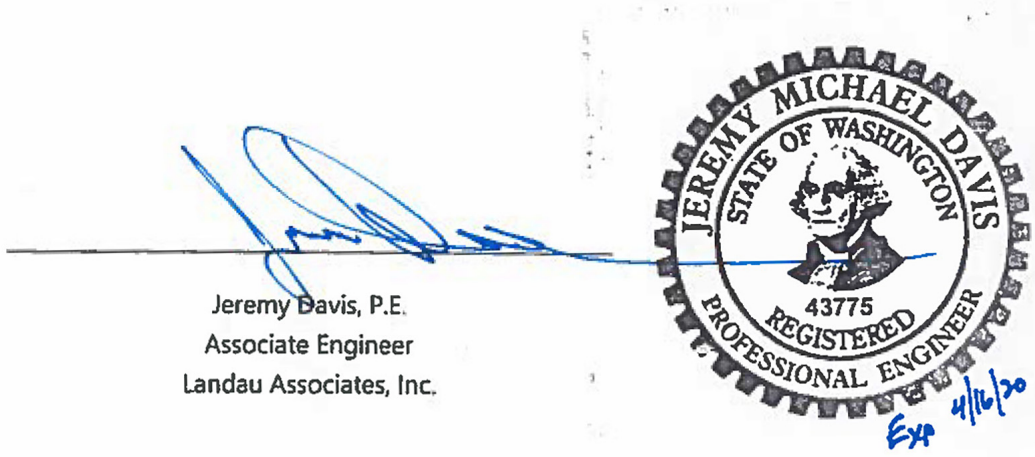
The interim action portions of the All American Marine Interim Action Project on the Central Waterfront Site have been completed in substantial compliance with the Interim Action Work Plan dated March 2016 and project plans and specifications.

Regarding Report content except that relating to the Landfill Gas Control System:



Halah Voges, P.E.
Principal Engineer
Anchor QEA, LLC

Regarding Report content relating to the Landfill Gas Control System:



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Associate Engineer
Landau Associates, Inc.

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Table

Table 2A
Soil Sampling Analytical Results for All American Marine Interim Action
(TPHs, PAHs, and Total Metals)

Analyte (by Group)	Cleanup Level for Unrestricted Land Use - Unsaturated Soil (mg/kg)	Maximum Allowable Concentration 20 x TC (mg/kg)	Managed On-Site																			
			Unrestricted Use																			
			AAM-SP-01		AAM-SP-02		AAM-SP-04		AAM-DS-01		AAM-DS-02		AAM-DS-03		AAM-DS-04		AAM-SP-05		AAM-SP-08		AAM-SP-09		AAM-SP-11		AAM-SP-12	
			6/14/2016		6/14/2016		6/14/2016		6/28/2016		6/28/2016		6/28/2016		6/28/2016		7/8/2016		7/8/2016		7/8/2016		7/18/2016		7/18/2016	
pH																										
pH	-	-	7.58		8.20		8.02		--		--		--		--		--		--		--		--		--	
Total Petroleum Hydrocarbons (TPH) (mg/kg)																										
Gasoline Range Hydrocarbons	30	-	4.900	U	2.600	U	2.600	U	**4.800**		**5.200**		**3.100**		**8.800**		2.800	U	3.100	U	2.800	U	2.800	U	3.000	U
Diesel Range Hydrocarbons	2000	-	**9.900**		**16.000**		**11.000**		**11.000**		**11.000**		**9.700**		**14.000**		**14.000**		**10.000**		**14.000**		**6.810**		**8.870**	
Oil Range Hydrocarbons	2000	-	**22.000**		**130.000**		**16.000**		**15.000**		**18.000**		**19.000**		**20.000**		11.000	U	**17.000**		**20.000**		**16.600**		10.600	U
Creosote	-	-																			-					
Total TPHs	2000	-	**31.900**		**146.000**		**27.000**		**30.800**		**34.200**		**31.800**		**42.800**						-					
Polycyclic Aromatic Hydrocarbons (PAHs) (mg/kg)																										
Acenaphthene	2.5	-	**0.006**		**0.003**	**J**	**0.003**	**J**	**0.023**		**0.016**		**0.017**		**0.011**		**0.005**	**J**	**0.004**	**J**	**0.008**		**0.032**		**0.012**	
Acenaphthylene	-	-	0.005	U	**0.003**	**J**	0.005	U	**0.005**		0.004	U	**0.005**		0.004	U	0.005	U	0.005	U	**0.004**	**J**	0.004	U	0.004	U
Anthracene	34	-	**0.003**	**J**	**0.005**	**J**	**0.007**		**0.017**		**0.004**	**J**	**0.007**		**0.005**		**0.028**		0.005	U	**0.009**		**0.005**		0.004	U
Fluoranthene	25	-	**0.022**		**0.032**		**0.042**		**0.220**		**0.027**		**0.060**		**0.029**		**0.048**		**0.012**		**0.060**		**0.051**		**0.012**	
Fluorene	3.6	-	0.005	U	0.005	U	**0.004**	**J**	**0.012**		**0.003**	**J**	**0.004**	**J**	**0.003**	**J**	**0.003**	**J**	0.005	U	**0.004**	**J**			0.004	U
Phenanthrene	-	-	**0.027**		**0.080**		**0.036**		**0.160**		**0.029**		**0.055**		**0.028**		**0.036**		**0.014**		**0.050**		**0.043**		**0.016**	
Pyrene	160	-	**0.027**		**0.039**		**0.043**		**0.200**		**0.030**		**0.059**		**0.032**		**0.041**		**0.012**		**0.053**		**0.054**		**0.015**	
1-Methylnaphthalene	35	-	**0.016**		**0.019**		**0.021**		**0.024**		**0.028**		**0.029**		**0.018**		-		-		-		-		-	
2-Methylnaphthalene	320	-	**0.017**		**0.023**		**0.021**		**0.022**		**0.027**		**0.030**		**0.017**		**0.019**		**0.009**		**0.025**		**0.074**		**0.030**	
Naphthalene	16	-	**0.011**		**0.013**		**0.011**		**0.024**		**0.022**		**0.038**		**0.020**		**0.016**		**0.010**		**0.021**		**0.044**		**0.015**	
Benzo(a)anthracene	1.1	-	**0.010**		**0.018**		**0.018**		**0.075**		**0.011**		**0.024**		**0.012**		**0.024**		**0.005**	**J**	**0.022**		**0.023**		**0.006**	
Benzo(a)pyrene	0.14	-	**0.010**		**0.029**		**0.018**		**0.088**		**0.011**		**0.026**		**0.014**		**0.016**		**0.005**		**0.023**		**0.026**		**0.006**	
Benzo(b)fluoranthene	1.4	-	**0.010**		**0.025**		**0.016**		**0.068**		**0.010**		**0.023**		**0.012**		-		-		-		-		-	
Benzo(k)fluoranthene	3.7	-	**0.005**		**0.012**		**0.009**		**0.043**		**0.005**		**0.012**		**0.007**		-		-		-		-		-	
Chrysene	1.2	-	**0.014**		**0.033**		**0.023**		**0.110**		**0.015**		**0.030**		**0.016**		**0.028**		**0.007**		**0.030**		**0.028**		**0.008**	
Dibenzo(a,h)anthracene	0.14	-	0.005	U	**0.006**		**0.004**	**J**	**0.018**		**0.003**	**J**	**0.007**		**0.004**	**J**	**0.003**	**J**	0.005	U	**0.005**		**0.006**		0.004	U
Indeno(1,2,3-cd)pyrene	1.4	-	**0.007**		**0.016**		**0.012**		**0.057**		**0.010**		**0.021**		**0.012**		**0.009**		**0.004**	**J**	**0.018**		**0.018**		**0.005**	
Benzo(g,h,i)perylene	-	-	**0.010**		**0.048**		**0.014**		**0.066**		**0.012**		**0.030**		**0.016**		**0.010**		**0.006**		**0.023**		**0.021**		**0.006**	
Dibenzofuran	80	-	**0.012**		**0.013**		**0.014**		**0.025**		**0.021**		**0.025**		**0.015**		-		-		-		-		-	
Total Benzofluoranthenes	-	-	**0.021**		**0.120**		**0.034**		**0.160**		**0.021**		**0.047**		**0.027**		**0.031**		**0.010**		**0.048**		**0.046**		**0.010**	
Total cPAHs TEQ	0.14	-	**0.013**		**0.037**		**0.024**		**0.115**		**0.015**		**0.035**		**0.019**		**0.020**		**0.023**		**0.028**		**0.031**		**0.007**	
Total Metals (mg/kg)																										
Arsenic	20	100	**5.107**		5.040	U	**6.065**		**5.191**		**6.110**		**5.407**		**5.733**		**3.680**	**J**	**3.930**	**J**	**3.240**	**J**	12.822	U	5.004	U
Barium	-	2000	**51.376**		**44.529**		**51.394**		**44.608**		**91.583**		**63.246**		**52.028**		**41.100**		**50.400**		**43.100**		**79.863**		**51.977**	
Cadmium	1.2	20	0.200	U	0.200	U	0.210	U	0.205	U	**0.198**		**0.351**		0.195	U	**0.131**	**J**	**0.096**	**J**	**0.152**	**J**	0.513	U	0.200	U
Chromium (Total)	5200	100	**28.989**		**22.914**		**25.754**		**20.700**		**27.088**		**25.608**		**24.819**		**19.700**		**16.700**		**18.100**		**26.318**		**29.810**	
Chromium (VI)	48	100	-		-		-		-		-		-		-		-		-		-					
Copper	36	-	**18.122**		**12.067**		**16.675**		**17.162**		**19.884**		**29.228**		**17.765**		**12.500**		**10.600**		**12.198**		**17.418**		**10.584**	
Lead	250	100	**87.017**		**129.321**		**21.732**		**21.496**		**18.501**		**36.717**		**24.442**		**12.000**		**19.000**		**10.000**		**9.304**		**6.759**	
Mercury	2	4	**0.027**		**0.024**		**0.021**		0.023	U	**0.022**		**0.164**		**0.026**		**0.020**		**0.030**		**0.030**					
Nickel	48	-	**23.754**		**21.950**		**22.419**		**21.173**		**25.022**		**24.876**		**23.238**		**18.000**		**15.000**		**23.000**		**24.515**		**22.659**	
Selenium	7.4	20	4.990	U	5.040	U	5.160	U	5.134	U	4.820	U	5.117	U	4.863	U	5.000	U	5.000	U	**0.900**	**J**	12.822	U	5.004	U
Silver	0.32	100	0.300	U	0.300	U	0.310	U	0.308	U	0.289	U	0.307	U	0.292	U	0.297	U	0.300	U	0.300	U	0.769	U	0.300	U
Zinc	100	-	**66.926**		**45.050**		**51.050**		**65.477**		**57.410**		**87.280**		**66.430**		**38.000**		**46.000**		**42.000**		**44.347**		**32.614**	

Table 2A
Soil Sampling Analytical Results for All American Marine Interim Action
(TPHs, PAHs, and Total Metals)

	Managed On-Site																					
	Unrestricted Use																					
	AAM-SP-13		AAM-SP-14		AAM-SP-15		AAM-SP-16		AAM-SP-17		AAM-SP-18		AAM-SP-19		AAM-SP-23		AAM-SP-24		AAM-SP-25		AAM-SP-27		AAM-SP-28		AAM-SP-29		AAM-SP-31	
Analyte (by Group)	7/18/2016		7/18/2016		7/18/2016		7/18/2016		7/18/2016		7/18/2016		7/21/2016		7/28/2016		7/28/2016		7/28/2016		7/28/2016		8/9/2016		8/9/2016		8/29/2016	
pH																												
pH	--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Total Petroleum Hydrocarbons (TPH																												
Gasoline Range Hydrocarbons	2.700	U	2.700	U	2.500	U	2.900	U	2.900	U	2.800	U	2.800	U	2.900	U	2.800	U	2.800	U	3.100	U	**7.940**		2.830	U	2.700	U
Diesel Range Hydrocarbons	**6.440**		**14.700**		**10.700**		**13.700**		**6.720**		**9.590**		**14.000**		**9.800**		**18.000**		**14.000**		**17.000**		**8.390**		**6.280**		**6.240**	
Oil Range Hydrocarbons	10.400	U	**64.400**		**50.200**		**43.800**		10.300	U	**20.800**		**26.000**		**17.000**		**49.000**		**36.000**		**43.000**		**12.000**		**11.200**		10.400	U
Creosote															-		-		-		-		-		-		-	
Total TPHs															-		-		-		-		-		-		-	
Polycyclic Aromatic Hydrocarbons (																												
Acenaphthene	**0.006**		**0.008**		**0.010**		**0.008**		**0.006**		**0.060**		**0.013**		**0.007**		**0.014**		**0.010**		**0.021**		**0.021**		**0.006**		**0.006**	
Acenaphthylene	0.004	U	0.004	U	0.004	U	**0.005**		0.004	U	0.004	U	**0.006**		0.005	U	**0.003**		0.005	U	0.005	U	**0.003**	**J**	0.005	U	0.005	U
Anthracene	0.004	U	**0.003**	**J**	**0.009**		**0.009**		0.004	U	**0.005**		**0.015**		**0.002**	**J**	**0.007**	**J**	**0.004**	**J**	**0.011**		**0.011**		**0.003**	**J**	0.005	U
Fluoranthene	**0.011**		**0.032**		**0.110**		**0.072**		**0.009**		**0.017**		**0.076**		**0.017**		**0.045**		**0.032**		**0.085**		**0.069**		**0.030**		**0.012**	
Fluorene	0.004	U	0.004	U	**0.006**		**0.005**		0.004	U	0.004	U	**0.008**		0.005	U	**0.005**		**0.003**	**J**	**0.009**		**0.008**		0.005	U	0.005	U
Phenanthrene	**0.015**		**0.025**		**0.094**		**0.059**		**0.013**		**0.021**		**0.075**		**0.019**		**0.043**		**0.032**		**0.084**		**0.047**		**0.020**		**0.015**	
Pyrene	**0.014**		**0.033**		**0.100**		**0.065**		**0.010**		**0.022**		**0.079**		**0.017**		**0.040**		**0.033**		**0.080**		**0.075**		**0.024**		**0.010**	
1-Methylnaphthalene	-		-		-		-		-		-		-		-		-		-		-		**0.032**		**0.021**		**0.017**	
2-Methylnaphthalene	**0.013**		**0.029**		**0.014**		**0.035**		**0.021**		**0.039**		**0.034**		**0.019**		**0.037**		**0.024**		**0.057**		**0.028**		**0.019**		**0.016**	
Naphthalene	**0.008**		**0.015**		**0.008**		**0.029**		**0.012**		**0.029**		**0.022**		**0.013**		**0.032**		**0.017**		**0.042**		**0.019**		**0.012**		**0.010**	
Benzo(a)anthracene	**0.005**		**0.014**		**0.039**		**0.026**		**0.004**		**0.007**		**0.031**		**0.006**		**0.016**		**0.011**		**0.028**		**0.032**		**0.012**		**0.005**	
Benzo(a)pyrene	**0.006**		**0.017**		-		**0.034**		**0.005**		**0.009**		**0.051**		**0.006**		**0.016**		**0.011**		**0.031**		**0.032**		**0.013**		**0.006**	
Benzo(b)fluoranthene	-		-		-		-		-		-		-		**0.006**		**0.014**		**0.012**		**0.024**		**0.024**		**0.011**		**0.004**	**J**
Benzo(k)fluoranthene	-		-		-		-		-		-		-		**0.003**	**J**	**0.007**		**0.006**		**0.015**		**0.013**		**0.007**		**0.002**	**J**
Chrysene	**0.008**		**0.019**		-		**0.042**		**0.006**		**0.012**		**0.038**		**0.010**		**0.020**		**0.017**		**0.038**		**0.037**		**0.015**		**0.007**	
Dibenzo(a,h)anthracene	0.004	U	**0.005**		**0.009**		**0.008**		0.004	U	**0.003**	**J**	**0.011**		0.005	U	**0.004**	**J**	**0.003**	**J**	**0.006**		**0.006**		**0.003**	**J**	0.005	U
Indeno(1,2,3-cd)pyrene	**0.005**		**0.013**		**0.028**		**0.024**		**0.004**	**J**	**0.007**		**0.052**		**0.005**		**0.010**		**0.009**		**0.019**		**0.017**		**0.009**		0.005	U
Benzo(g,h,i)perylene	**0.007**		**0.016**		**0.032**		**0.030**		**0.004**		**0.010**		**0.088**		**0.006**		**0.014**		**0.016**		**0.024**		**0.022**		**0.012**		**0.005**	
Dibenzofuran	-		-		-		-		-		-		-		-		-		-		-		-		-		-	
Total Benzofluoranthenes	**0.011**		**0.029**		**0.074**		**0.068**		**0.008**		**0.017**		**0.077**		**0.013**		**0.028**		**0.025**		**0.055**		**0.051**		**0.024**		**0.009**	**J**
Total cPAHs TEQ	**0.008**		**0.020**		**0.008**		**0.040**		**0.006**		**0.011**		**0.061**		**0.008**		**0.021**		**0.007**		**0.016**		**0.041**		**0.018**		**0.008**	
Total Metals (mg/kg)																												
Arsenic	4.861	U	5.109	U	4.896	U	13.224	U	**5.460**		4.882	U	**6.000**		**4.460**	**J**	**4.680**	**J**	**6.000**		**3.690**	**J**	**4.800**	**J**	**5.500**		**4.900**	**J**
Barium	**49.228**		**39.132**		**64.711**		**110.746**		**47.884**		**51.236**		**54.500**		**53.500**		**82.500**		**69.900**		**72.800**		**51.200**		**139.000**		**54.400**	
Cadmium	0.194	U	0.204	U	0.196	U	0.529	U	0.209	U	0.195	U	**0.125**	**J**	**0.131**	**J**	**0.200**		**0.200**		**0.101**	**J**	**0.160**	**J**	**0.400**		**0.090**	**J**
Chromium (Total)	**25.115**		**30.479**		**27.963**		**38.679**		**29.269**		**30.505**		**29.400**		**36.000**		**26.500**		**23.600**		**13.300**		**27.000**		**25.300**		**25.700**	
Chromium (VI)															-		-		-		-		-		-		-	
Copper	**8.147**		**10.432**		**17.733**		**32.814**		**10.862**		**14.110**		**14.100**		**12.400**		**20.900**		**26.600**		**14.800**		**14.800**		**17.700**		**12.700**	
Lead	**2.563**		**2.115**		**13.448**		**20.176**		**8.980**		**15.935**		**20.000**		**7.000**		**11.000**		**17.000**		**7.000**		**6.700**		**11.200**		**6.000**	
Mercury													**0.040**		**0.030**		**0.050**		**0.060**		**0.050**		**0.005**	**J**	**0.008**	**J**	-	
Nickel	**19.743**		**26.617**		**21.943**		**35.617**		**21.472**		**24.807**		**21.000**		**32.000**		**26.000**		**29.000**		**19.000**		**22.900**		**29.700**		**21.800**	
Selenium	4.861	U	5.109	U	4.896	U	13.224	U	5.227	U	4.882	U	5.000	U	5.000	U	5.000	U	5.000	U	5.000	U	**1.100**	**J**	**1.100**	**J**	5.100	U
Silver	0.292	U	0.307	U	0.294	U	0.793	U	0.314	U	0.293	U	0.300	U	0.300	U	0.300	U	0.300	U	0.300	U	0.300	U	0.300	U	0.310	U
Zinc	**29.982**		**34.020**		**57.418**		**78.597**		**41.109**		**52.128**		**48.000**		**41.000**		**54.000**		**61.000**		**25.000**		**38.000**		**46.400**		**37.500**	

Table 2A
Soil Sampling Analytical Results for All American Marine Interim Action
(TPHs, PAHs, and Total Metals)

	Managed On-Site																					
	Unrestricted Use																					
	AAM-SP-32		AAM-SP-33		AAM-SP-34		AAM-SP-38		AAM-SP-40		AAM-SP-41		AAM-SP-42		AAM-SP-46		AAM-SP-48		AAM-SP-49		AAM-SP-51	
Analyte (by Group)	**8/29/2016**		**8/29/2016**		**8/29/2016**		**9/1/2016**		**9/19/2016**		**9/19/2016**		**9/19/2016**		**10/19/2016**		**10/31/2016**		**11/29/2016**		**2/21/2017**	
pH																						
pH	--		--		--		--		--		--		--		--		--		--		--	
Total Petroleum Hydrocarbons (TPH																						
Gasoline Range Hydrocarbons	2.780	U	3.010	U	2.330	U	3.050	U	2.900	U	2.880	U	3.400	U	3.000	U	2.770	U	2.88	U	2.77	U
Diesel Range Hydrocarbons	**11.000**		**9.340**		**10.100**		**18.500**		**14.500**		**10.400**		**11.300**		**27.100**		**15.0**		**10.8**		**8.34**	
Oil Range Hydrocarbons	**36.700**		**17.100**		**28.600**		**67.600**		**92.700**		**49.700**		**36.900**		**297.000**		**22.5**		**41.8**		**21.6**	
Creosote	**-**		**-**		**-**		**-**		**-**		**-**		**-**		**-**		**-**		**-**		**-**	
Total TPHs	**-**		**-**		**-**		**-**		**-**		**-**		**-**		**-**		**-**		**-**		**-**	
Polycyclic Aromatic Hydrocarbons (																						
Acenaphthene	0.005	U	0.005	U	**0.009**		**0.008**		**0.006**		**0.005**	**J**	**0.009**		**0.007**		**0.008**		**0.007**		**0.004**	**J**
Acenaphthylene	**0.004**	**J**	0.005	U	**0.004**	**J**	**0.006**		**0.007**		**0.009**		**0.013**		**0.005**	**J**	0.005	U	0.005	U	0.005	U
Anthracene	**0.005**		**0.004**		**0.027**		**0.018**		**0.016**		**0.013**		**0.015**		**0.007**		**0.004**	**J**	0.005	U	**0.003**	**J**
Fluoranthene	**0.055**		**0.024**		**0.318**		**0.162**		**0.158**		**0.156**	**Q**	**0.151**	**Q**	**0.070**		**0.017**		**0.019**		**0.009**	
Fluorene	**0.004**	**J**	0.005	U	**0.012**		**0.011**		**0.010**		**0.008**		**0.012**		**0.004**	**J**	**0.005**		0.005	U	0.005	U
Phenanthrene	**0.041**		**0.025**		**0.202**		**0.125**		**0.106**		**0.108**		**0.139**		**0.066**		**0.029**		**0.023**		**0.013**	
Pyrene	**0.046**		**0.019**		**0.219**		**0.107**	**Q**	**0.095**		**0.085**		**0.085**		**0.065**		**0.016**		**0.020**		**0.011**	
1-Methylnaphthalene	**0.016**		**0.039**		**0.017**		**0.045**		**0.035**		**0.031**		**0.040**		**0.014**		**0.024**		**0.022**		**0.014**	
2-Methylnaphthalene	**0.017**		**0.034**		**0.020**		**0.047**		**0.042**		**0.044**		**0.050**		**0.018**		**0.034**		**0.021**		**0.015**	
Naphthalene	**0.015**		**0.025**		**0.019**		**0.059**		**0.030**		**0.058**		**0.113**		**0.021**		**0.015**		**0.013**		**0.013**	
Benzo(a)anthracene	**0.022**		**0.009**		**0.093**		**0.046**		**0.044**		**0.035**		**0.025**		**0.025**		**0.007**		**0.008**		**0.004**	**J**
Benzo(a)pyrene	**0.028**		**0.009**		**0.095**		**0.051**		**0.047**		**0.040**		**0.027**		**0.028**		**0.005**		**0.007**		**0.004**	**J**
Benzo(b)fluoranthene	**0.024**		**0.007**		**0.071**		**0.046**		**0.041**		**0.034**		**0.027**		**0.031**		**0.006**		**0.007**		**0.006**	
Benzo(k)fluoranthene	**0.012**		**0.004**	**J**	**0.045**		**0.024**		**0.020**		**0.020**		**0.013**		**0.015**		**0.003**	**J**	**0.004**	**J**	**0.002**	**J**
Chrysene	**0.033**		**0.009**		**0.113**		**0.063**		**0.082**		**0.049**		**0.040**		**0.055**		**0.011**		**0.011**		**0.008**	
Dibenzo(a,h)anthracene	**0.004**		0.005	U	**0.016**		**0.011**		**0.010**		**0.007**		**0.005**		**0.007**		0.005	U	0.005	U	0.005	U
Indeno(1,2,3-cd)pyrene	**0.016**		0.005	U	**0.055**		**0.035**		**0.026**		**0.028**		**0.021**		**0.014**		**0.003**	**J**	**0.005**		**0.005**	
Benzo(g,h,i)perylene	**0.024**		0.005	U	**0.064**		**0.046**		**0.046**		**0.042**		**0.029**		**0.029**		**0.005**		**0.008**		**0.008**	
Dibenzofuran	**-**		**-**		**-**		**-**		**-**		**-**		**0.036**		-	U	**-**		-		**-**	
Total Benzofluoranthenes	0.009	U	0.010	U	0.009	U	**0.095**		**0.085**		**0.075**		**0.056**		**0.060**		**-**		-		**-**	
Total cPAHs TEQ	**0.036**		**0.012**		**0.124**		**0.068**		**0.062**		**0.053**		**0.036**		**0.038**		**0.008**		**0.010**		**0.007**	
Total Metals (mg/kg)																						
Arsenic	**5.700**		**5.700**		**4.200**	**J**	**5.700**		**5.600**		**7.000**		**5.200**		**3.040**	**J**	13.4	U	5.42	U	**18.5**	
Barium	**60.100**		**51.100**		**38.800**		**64.600**		**90.400**		**63.800**		**59.900**		**62.900**		**55.0**	**D**	**56.0**		**69.3**	
Cadmium	**0.190**	**J**	**0.130**	**J**	**0.120**	**J**	**0.230**		**0.160**	**J**	**0.180**	**J**	**0.180**	**J**	**0.249**		**0.329**	**J,D**	**0.259**		**0.226**	
Chromium (Total)	**25.600**		**49.700**		**39.700**		**23.300**		**25.700**		**27.800**		**23.300**		**29.700**		**21.8**	**D**	**27.6**		**28.3**	
Chromium (VI)	**-**		**-**		**-**		**-**															
Copper	**24.300**		**13.800**		**13.900**		**21.700**		**22.200**		**23.000**		**16.500**		**20.600**		**23.9**	**D**	**14.4**		**23.1**	
Lead	**18.100**		**7.000**		**32.500**		**22.800**		**11.100**		**15.800**		**9.800**		**12.800**		**7.67**	**D**	**5.56**		**10.4**	
Mercury	**-**		**-**		**-**		**0.161**		**0.035**		**0.039**		**0.035**		**0.180**		**0.09985**		**0.03241**		**0.04547**	
Nickel	**39.700**		**36.400**		**35.300**		**37.900**		**41.800**		**36.500**		**26.300**		**45.200**		**27.4**	**D**	**26.6**		**29.9**	
Selenium	4.900	U	5.000	U	**1.100**	**J**	**1.600**	**J**	**2.600**	**J**	**2.000**	**J**	**1.800**	**J**	**2.500**	**J**	**3.38**	**J,D**	**3.73**	**J**	**2.19**	**J**
Silver	0.290	U	0.300	U	0.290	U	0.310	U	0.320	U	0.320	U	0.300	U	0.337	U	0.806	U	0.325	U	0.325	U
Zinc	**54.300**		**37.800**		**45.100**		**63.700**		**52.700**		**55.100**		**47.800**		**49.900**		**51.6**	**D**	**43.7**		**60.4**	

Table 2A
Soil Sampling Analytical Results for All American Marine Interim Action
(TPHs, PAHs, and Total Metals)

	Managed On-Site													
	Placed Under Hardscape Cap						Placed at West Landscape Area							
	AAM-SP-03		AAM-SP-06		AAM-SP-07		AAM-SP-30		AAM-SP-35		AAM-SP-36		AAM-SP-37	
Analyte (by Group)	6/14/2016		7/8/2016		7/8/2016		8/29/2016		9/1/2016		9/1/2016		9/1/2016	
pH														
pH	8.18		--		--		--		--		--		--	
Total Petroleum Hydrocarbons (TPH														
Gasoline Range Hydrocarbons	2.400	U	3.100	U	2.900	U	2.730	U	2.880	U	3.000	U	2.870	U
Diesel Range Hydrocarbons	**8.800**		**58.000**		**6.800**		**11.300**		**17.400**		**19.700**		**18.100**	
Oil Range Hydrocarbons	**18.000**		**27.000**		12.000		**34.800**		**58.000**		**69.100**		**64.500**	
Creosote							-		-		-		-	
Total TPHs	**26.800**						-		-		-		-	
Polycyclic Aromatic Hydrocarbons (I														
Acenaphthene	**0.004**	**J**	**0.005**		**0.006**		0.005	U	**0.003**	**J**	**0.007**	**J**	**0.006**	
Acenaphthylene	**0.003**	**J**	0.005	U	0.003	J	**0.002**	**J**	**0.006**		**0.030**	**J**	**0.007**	
Anthracene	**0.009**		**0.003**	**J**	**0.005**		**0.004**	**J**	**0.012**		**0.056**		**0.012**	
Fluoranthene	**0.130**		**0.015**		**0.036**		**0.037**		**0.103**		**0.570**		**0.119**	
Fluorene	**0.005**		0.005	U	**0.005**	**U**	0.005	U	**0.007**		**0.020**		**0.009**	
Phenanthrene	**0.027**		**0.020**		**0.023**		**0.027**		**0.090**		**0.344**		**0.116**	
Pyrene	**0.120**		**0.016**		**0.032**		**0.027**		**0.064**	**Q**	**0.410**	**Q**	**0.070**	**Q**
1-Methylnaphthalene	**0.016**		-		-		**0.012**		**0.022**		**0.056**		**0.026**	
2-Methylnaphthalene	**0.015**		**0.014**		**0.015**		**0.014**		**0.029**		**0.057**		**0.043**	
Naphthalene	**0.010**		**0.017**		**0.011**		**0.011**		**0.039**		**0.092**		**0.040**	
Benzo(a)anthracene	**0.052**		**0.004**	**J**	**0.017**		**0.013**		**0.024**		**0.201**		**0.030**	
Benzo(a)pyrene	**0.066**		**0.004**	**J**	**0.019**		**0.014**		**0.025**		**0.253**		**0.032**	
Benzo(b)fluoranthene	**0.053**		-		-		**0.014**		**0.024**		**0.167**		**0.033**	
Benzo(k)fluoranthene	**0.032**		-		-		**0.007**		**0.011**		**0.101**		**0.016**	
Chrysene	**0.071**		**0.006**		**0.018**		**0.019**		**0.037**		**0.262**		**0.047**	
Dibenzo(a,h)anthracene	**0.011**		0.005	U	**0.004**	**J**	0.005	U	**0.004**	**J**	**0.040**		**0.006**	
Indeno(1,2,3-cd)pyrene	**0.041**		**0.004**	**J**	**0.014**		**0.010**		**0.016**		**0.144**		**0.024**	
Benzo(g,h,i)perylene	**0.027**		**0.005**		**0.020**		**0.014**		**0.024**		**0.169**		**0.035**	
Dibenzofuran	**0.010**		-		-		-		-		-		-	
Total Benzofluoranthenes	**0.049**		**0.007**		**0.036**		0.009	U	**0.049**		**0.382**		**0.066**	
Total cPAHs TEQ	**0.086**		**0.005**		**0.007**		**0.019**		**0.034**		**0.321**		**0.043**	
Total Metals (mg/kg)														
Arsenic	12.460	U	**5.000**		**5.000**		**6.700**		**6.300**		**5.900**		**8.900**	
Barium	**82.788**		**28.700**		**138.000**		**58.800**		**82.300**		**62.900**		**68.700**	
Cadmium	**0.793**		**0.200**		**1.000**		**0.190**	**J**	**0.270**		**0.240**		**0.300**	
Chromium (Total)	**21.310**		**24.300**		**20.600**		**24.900**		**26.900**		**25.100**		**32.200**	
Chromium (VI)	-		-		-		-		-		-		-	
Copper	**71.815**		**13.002**		**32.500**		**19.500**		**22.900**		**25.700**		**25.700**	
Lead	**106.025**		**55.000**		**80.000**		**16.000**		**23.300**		**20.400**		**26.000**	
Mercury	**0.040**		**0.030**		**0.360**		-		**0.195**		**0.163**		**0.401**	
Nickel	**36.321**		**22.000**		**22.000**		**54.400**		**77.800**		**63.300**		**87.200**	
Selenium	12.460	U	5.000	U	5.000	U	4.900	U	**2.000**	**J**	**1.900**	**J**	**1.300**	**J**
Silver	0.750	U	0.298	U	0.300	U	0.290	U	0.290	U	0.300	U	0.300	U
Zinc	**158.137**		**101.000**		**839.000**		**53.100**		**62.600**		**63.400**		**85.900**	

Table 2A
Soil Sampling Analytical Results for All American Marine Interim Action
(TPHs, PAHs, and Total Metals)

Analyte (by Group)	Disposed																					
	AAM-SP-10		AAM-SP-20		AAM-SP-21 (Woody Debris)		AAM-SP-22		AAM-SP-26		AAM-SP-39		AAM-SP-43		AAM-SP-44		AAM-SP-45		AAM-SP-47		AAM-SP-50	
	7/8/2016		7/21/2016		7/21/2016		7/21/2016		7/28/2016		9/19/2016		9/22/2016		9/22/2016		10/19/2016		10/19/2016		11/29/2016	
pH																						
pH	--		--		--		--		--		--		--		--		--		--		--	
Total Petroleum Hydrocarbons (TPH																						
Gasoline Range Hydrocarbons	3.000	U	2.800	U	**10.000**		3.100	U	**6.300**		2.560	U	**7.460**		**9.490**		3.030	U	3.510	U	2.75	U
Diesel Range Hydrocarbons	**12.000**		**19.000**		**390.000**	**E**	**32.000**		**18.000**		**6.050**		**74.700**		**40.600**		**18.900**		**11.000**		**55.8**	
Oil Range Hydrocarbons	**57.000**		**45.000**		**320.000**		**74.000**		**43.000**		**23.700**		**526.000**		**178.000**		**61.500**		**51.500**		**234**	
Creosote	-		-		**680.000**	**BE**	-		-		-		-		-		-		-		-	
Total TPHs	-		-		-		-		-		-		-		-		-		-		-	
Polycyclic Aromatic Hydrocarbons (																						
Acenaphthene	**0.180**		**0.012**		**0.074**		**0.019**		**0.013**		**0.005**	U	**0.020**		**0.009**		**0.158**		**0.015**		**0.004**	**J**
Acenaphthylene	**0.077**		**0.017**		**0.022**		**0.027**		0.005	U	**0.003**	**J**	**0.010**	**J**	**0.005**		**0.062**		**0.006**		**0.003**	**J**
Anthracene	**0.300**		**0.042**		**0.072**		**0.023**		**0.009**		**0.005**	**J**	**0.018**		**0.020**		**0.377**		**0.008**		**0.003**	**J**
Fluoranthene	**2.700**		**0.300**		**0.100**		**0.075**		**0.037**		**0.038**		**0.164**		**0.121**		**3.250**	**D**	**0.066**		**0.024**	
Fluorene	**0.320**		**0.014**		**0.140**		**0.008**		**0.005**	**J**	**0.005**	U	**0.021**		**0.021**		**0.201**		**0.008**		**0.005**	U
Phenanthrene	**2.800**		**0.250**		**0.610**		**0.068**		**0.044**		**0.028**		**0.160**		**0.137**		**2.110**	**D**	**0.058**		**0.025**	
Pyrene	**2.300**		**0.260**		**0.200**		**0.069**		**0.037**		**0.021**		**0.105**	**Q**	**0.094**	**Q**	**3.570**	**D**	**0.066**		**0.023**	
1-Methylnaphthalene	-		-		-		-		-		**0.009**		**0.095**		**0.066**		**0.048**		**0.028**		**0.014**	
2-Methylnaphthalene	**0.079**		**0.025**		**1.200**		**0.064**		**0.041**		**0.012**		**0.100**		**0.058**		**0.040**		**0.031**		**0.017**	
Naphthalene	**0.210**		**0.048**		**0.470**		**0.058**		**0.031**		**0.013**		**0.062**		**0.045**		**0.032**		**0.028**		**0.014**	
Benzo(a)anthracene	**0.730**		**0.100**		**0.060**		**0.031**		**0.014**		**0.011**		**0.064**		**0.047**		**1.450**	**D**	**0.021**		**0.009**	
Benzo(a)pyrene	**0.880**		**0.110**		**0.070**		**0.120**		**0.017**		**0.012**		**0.082**		**0.058**		**1.550**	**D**	**0.025**		**0.009**	
Benzo(b)fluoranthene	-		-		-		-		**0.014**		**0.016**		**0.075**		**0.041**		**1.020**	**D**	**0.024**		**0.011**	
Benzo(k)fluoranthene	-		-		-		-		**0.009**		**0.006**		**0.075**		**0.022**		**0.679**	**D**	**0.012**		**0.005**	
Chrysene	**1.100**		**0.130**		**0.120**		**0.053**		**0.020**		**0.024**		**0.132**		**0.074**		**1.720**	**D**	**0.037**		**0.016**	
Dibenzo(a,h)anthracene	**0.140**		**0.018**		**0.018**	**QJ**	**0.021**		**0.006**		**0.003**		**0.025**		**0.012**		**0.221**		**0.006**		**0.003**	**J**
Indeno(1,2,3-cd)pyrene	**0.520**		**0.066**		**0.034**	**Q**	**0.088**		**0.013**		**0.011**		**0.045**		**0.028**		**0.763**	**D**	**0.016**		**0.009**	
Benzo(g,h,i)perylene	**0.620**		**0.077**		**0.063**	**Q**	**0.100**		**0.015**		**0.018**		**0.098**		**0.055**		**0.869**	**D**	**0.021**		**0.011**	
Dibenzofuran	-		-		**0.100**		-		-		-		-		-		-		-		-	
Total Benzofluoranthenes	**1.600**		**0.190**		**0.087**		**0.110**		**0.030**		**0.030**		**0.193**		**0.087**		**2.360**	**D**	**0.051**		-	
Total cPAHs TEQ	**1.030**		**0.130**		**0.082**		**0.135**		**0.009**		**0.017**		**0.112**		**0.074**		**1.981**		**0.033**		**0.013**	
Total Metals (mg/kg)																						
Arsenic	**4.290**	**J**	**5.000**		**20.000**		**8.000**		**1.260**	**J**	**5.200**		**5.600**		**12.100**		**2.250**	**J**	**2.020**	**J, D**	12.2	U
Barium	**30.500**		**48.500**		**123.000**		**77.800**		**31.600**		**165.000**		**79.900**		**364.000**		**54.800**		**61.000**	**D**	**65.3**	**D**
Cadmium	**0.193**	**J**	**0.200**		**2.400**		**0.500**		**0.300**		**0.240**		**0.190**	**J**	**0.160**	**J**	**0.189**	**J**	**0.255**	**J, D**	**0.477**	**J,D**
Chromium (Total)	**23.400**		**21.600**		**47.000**		**30.700**		**34.400**		**21.500**		**21.700**		**27.200**		**25.900**		**26.200**	**D**	**25.1**	**D**
Chromium (VI)	-		-		-		-		-													**D**
Copper	**11.797**		**16.600**		**48.500**		**30.600**		**28.100**		**21.500**		**25.600**		**26.000**		**25.900**		**20.100**	**D**	**21.3**	**D**
Lead	**10.000**		**15.000**		**56.000**		**25.000**		**28.000**		**112.000**		**15.600**		**15.700**		**11.900**		**21.200**	**D**	**28.5**	**D**
Mercury	**0.070**		**0.040**		**0.820**		**0.410**		**0.050**		**0.034**		**0.013**		**0.037**		**0.038**		**0.146**		**0.04344**	**D**
Nickel	**41.000**		**140.000**		**53.000**		**31.000**		**19.000**		**60.500**		**117.000**		**100.000**		**95.100**		**140.000**	**D**	**55.1**	**D**
Selenium	5.000	U	**1.000**	**J**	**3.000**	**J**	5.000	U	5.000	U	**2.300**	**J**	**3.500**	**J**	**4.600**	**J**	**3.570**	**J**	**4.520**	**J, D**	**4.70**	**J,D**
Silver	0.300	U	0.300	U	1.000	U	0.300	U	0.300	U	0.300	U	0.320	U	0.330	U	0.310	U	0.783	U	**0.397**	**J,D**
Zinc	**38.000**		**58.000**		**1,210.000**		**148.000**		**133.000**		**97.800**		**51.300**		**62.800**		**45.000**		**56.400**	**D**	**78.5**	**D**

Table 2A
Soil Sampling Analytical Results for All American Marine Interim Action
(TPHs, PAHs, and Total Metals)

Notes:

1. Soil cleanup levels are based on Table 4-2a of the RI (Anchor QEA 2015) for unrestricted land use. Cleanup levels are the most stringent value, protective of all exposure pathways, adjusted upward for background or Method A criteria.
2. Soil cleanup levels based on protection of groundwater may be adjusted based on site-specific leaching tests during development of the cleanup action plan, during remedial design, or during compliance monitoring.

Bold = Detected result

J = Estimated concentration value detected below the reporting limit.
U = This analyte is not detected above the applicable reporting or detection limit.
E= The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
B= This analyte was detected in the method blank.
Q= Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria.
D= The reported value is from a dilution.

Analyte exceeding the Cleanup Level for Unrestricted Land Use (unsaturated soil).
Non-Detect analyte exceeding Cleanup Level for Unrestricted Land Use (unsaturaded soil).
X Analyte exceeding the Maximum Allowable Concentration (20 x TC).
Analyte exceeding the Maximum Concentration for the Toxicity Characteristic (TC).

Table 2B
Soil Sampling Analytical Results for All American Marine Interim Action
(VOCs and SVOCs)

Analyte (by Group)	Cleanup Level for Unrestricted Land Use - Unsaturated Soil (mg/kg)	Maximum Allowable Concentration 20 x TC (mg/kg)	Managed On-site						Disposed	
			AAM-SP-42		AAM-SP-46		AAM-SP-48		AAM-SP-21 (Woody Debris)	
			9/19/2016		10/19/2016		10/31/2016		7/21/2016	
Total Petroleum Hydrocarbons (TPH) (mg/kg)										
Creosote	-	-					-		680	BE
Volatile Organic Compounds (mg/kg)										
1,1,1,2-Tetrachloroethane	38	-	0.000	U	-	U	0.001	U	-	
1,1,1-Trichloroethane	300	-	0.000	U	-	U	0.001	U	-	
1,1,2 - Trichlorotrifluoroethane	2400000	-	0.000	U	-	U	0.001	U	-	
1,1,2,2-Tetrachloroethane	0.065	-	0.000	U	-	U	0.001	U	-	
1,1,2-Trichloroethane	0.12	-	0.000	U	-	U	0.001	U	-	
1,1-Dichloroethane	29	-	0.000	U	-	U	0.001	U	-	
1,1-Dichloroethene	0.051	-	0.000	U	-	U	0.001	U	-	
1,1-Dichloropropene	-	-	0.000	U	-	U	0.001	U	-	
1,2,3-Trichlorobenzene	-	-	0.002	U	-	U	0.003	U	-	
1,2,3-Trichloropropane	0.033	-	0.001	U	-	U	0.001	U	-	
1,2,4-Trichlorobenzene	0.13	-	0.002	U	-	U	0.003	U	-	
1,2,4-Trimethylbenzene	-	-	0.000	U	-	U	0.001	U	-	
1,2-Dibromo-3-chloropropane	1.3	-	0.002	U	-	U	0.003	U	-	
1,2-Dibromoethane (EDB)	0.029	-	0.000	U	-	U	0.001	U	-	
1,2-Dichlorobenzene	0.39	-	0.000	U	-	U	0.001	U	-	
1,2-Dichloroethane (EDC)	0.042	-	0.000	U	-	U	0.001	U	-	
1,2-Dichloropropane	0.17	-	0.000	U	-	U	0.001	U	-	
1,3,5-Trimethylbenzene	800	-	0.000	U	-	U	0.001	U	-	
1,3-Dichlorobenzene	-	-	0.000	U	-	U	0.001	U	-	
1,3-Dichloropropane	-	-	0.000	U	-	U	0.001	U	-	
1,4-Dichloro-2-Butene	-	-	0.002	U	-	U	0.003	U	-	
1,4-Dichlorobenzene	0.5	-	0.000	U	-	U	0.001	U	-	
2,2-Dichloropropane	-	-	0.000	U	-	U	0.001	U	-	
2-Butanone	48000	-	0.002	J	-	U	0.003	U	-	
2-Chloroethyl Vinyl Ether	-	-	0.000	U	-	U	0.003	U	-	
2-Chlorotoluene	1600	-	0.000	U	-	U	0.001	U	-	
2-Hexanone	-	-	0.002	U	-	U	0.003	U	-	
4-Chlorotoluene	-	-	0.000	U	-	U	0.001	U	-	
4-Methyl-2-pentanone	6400	-	0.002	U	-	U	0.003	U	-	
Acetone	72000	-	0.037		-	U	0.003	U	-	
Acrolein	40	-	0.002	U	-	U	0.003	U	-	
Acrylonitrile	1.9	-	0.002	U	-	U	0.003	U	-	
Benzene	0.034	10	0.000	J	-		0.001		-	
Bromobenzene	-	-	0.000	U	-	U	0.001	U	-	
Bromochloromethane	-	-	0.000	U	-	U	0.001	U	-	
Bromodichloromethane	0.0063	-	0.000	U	-	U	0.001	U	-	
Bromoethane	-	-	0.001	U	-	U	0.001	U	-	
Bromoform	3.4	-	0.000	U	-	U	0.001	U	-	
Bromomethane	0.076	-	0.000	U	-	U	0.001	U	-	
Carbon disulfide	5.3	-	0.007		-		0.001		-	
Carbon tetrachloride	0.015	-	0.000	U	-	U	0.001	U	-	
Chlorobenzene	3.9	-	0.000	U	-	U	0.001	U	-	
Chloroethane	-	-	0.000	U	-	U	0.001	U	-	
Chloroform	0.015	-	0.000	U	-	U	0.001	U	-	
Chloromethane	0.026	-	0.000	J	-	U	0.001	U	-	
cis-1,2-Dichloroethene (DCE)	1.6	-	0.000	U	-	U	0.001	U	-	
cis-1,3-Dichloropropene	-	-	0.000	U	-	U	0.001	U	-	
Dibromochloromethane	0.0069	-	0.000	U	-	U	0.001	U	-	
Dibromomethane	800	-	0.000	U	-	U	0.001	U	-	
Dichlorodifluoromethane	16000	-	0.000	U	-	U	0.001	U	-	
Ethylbenzene	75	-	0.000	U	-	U	0.001	U	-	
Hexachlorobutadiene	1.7	-	0.002	U	-	U	0.003	U	-	
Isopropylbenzene	8000	-	0.000	U	-	U	0.001	U	-	
m,p-Xylenes	-	-	0.000	J	-	U	0.001	U	-	
Methylene chloride	0.54	-	0.001	J	-	U	0.001	U	-	
Methyliodide	-	-	-		-	U	-	U	-	
n-Butylbenzene	-	-	0.000	U	-	U	0.001	U	-	
n-Propylbenzene	8000	-	0.000	U	-	U	0.001	U	-	
o-Xylene	18	-	0.000	J	-	U	0.001	U	-	
p-Isopropyltoluene	-	-	0.000	U	-	U	0.001	U	-	
sec-Butylbenzene	-	-	0.000	U	-	U	0.001	U	-	
Styrene	11	-	0.000	U	-	U	0.001	U	-	
tert-Butylbenzene	-	-	0.000	U	-	U	0.001	U	-	
Tetrachloroethene (PCE)	0.16	-	0.000	U	-	U	0.001	U	-	
Toluene	190	-	0.000	J	-		0.001		-	
trans-1,2-Dichloroethene	1.4	-	0.000	U	-	U	0.001	U	-	
trans-1,3-Dichloropropene	-	-	0.000	U	-	U	0.001	U	-	
Trichloroethene (TCE)	0.031	-	0.000	U	-	U	0.001	U	-	
Trichlorofluoromethane	24000	-	0.000	U	-	U	0.001	U	-	
Vinyl acetate	38	-	0.002	U	-	U	0.003	U	-	
Vinyl chloride	0.005	-	0.000	U	-	U	0.001	U	-	
Xylenes (total)	16000	-	0.000	J	-	U	0.001	U	-	
Naphthalene	16	-	0.000	J	-	J	0.000	J	-	

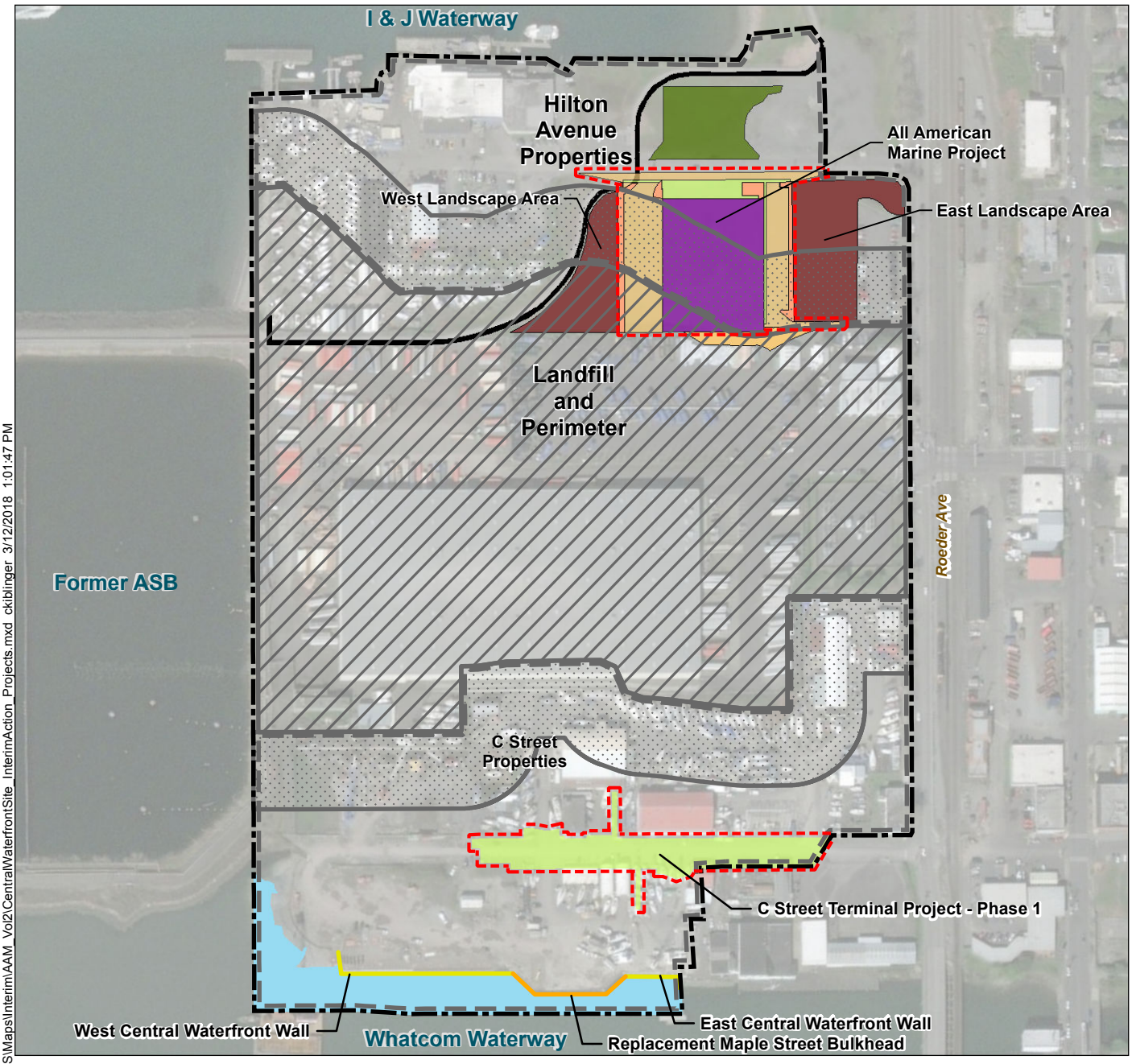
Table 2B
Soil Sampling Analytical Results for All American Marine Interim Action
(VOCs and SVOCs)

Analyte (by Group)	Cleanup Level for Unrestricted Land Use - Unsaturated Soil (mg/kg)	Maximum Allowable Concentration 20 x TC (mg/kg)	Managed On-site						Disposed	
			AAM-SP-42		AAM-SP-46		AAM-SP-48		AAM-SP-21 (Woody Debris)	
			9/19/2016		10/19/2016		10/31/2016		7/21/2016	
SVOCs (mg/kg)										
1,2,4-Trichlorobenzene	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
1,2-Dichlorobenzene	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.028**	
1,3-Dichlorobenzene	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
1,4-Dichlorobenzene	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.023**	
2,2 '-0xybis (1-Chloropropane)	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
2,4,5-Trichlorophenol	-	-	**0.093**	**U**	**-**	**U**	**0.471**	**U**	**0.098**	**U**
2,4,6-Trichlorophenol	-	-	**0.093**	**U**	**-**	**U**	**0.471**	**U**	**0.098**	**U**
2,4-Dichlorophenol	-	-	**0.093**	**U**	**-**	**U**	**0.471**	**U**	**0.098**	**U**
2,4-Dimethylphenol	-	-	**0.093**	**U**	**-**	**U**	**0.471**	**U**	**0.072**	**J**
2,4-Dinitrophenol	-	-	**0.186**	**U**	**-**	**U**	**0.942**	**U**	**0.200**	**U**
2,4-Dinitrotoluene	-	-	**0.093**	**U**	**-**	**U**	**0.471**	**U**	**0.098**	**U**
2,6-Dinitrotoluene	-	-	**0.093**	**U**	**-**	**U**	**0.471**	**U**	**0.098**	**U**
2-Chloronaphthalene	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
2-Chlorophenol	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
2-Methylphenol	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.027**	
2-Nitroaniline	-	-	**0.093**	**U**	**-**	**U**	**0.471**	**U**	**0.098**	**U**
2-Nitrophenol	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
3,3 '-Dichlorobenzidine	-	-	**0.093**	**U**	**-**	**U**	**0.471**	**U**	**0.098**	**U**
3-Nitroaniline	-	-	**0.093**	**U**	**-**	**U**	**0.471**	**U**	**0.098**	**U**
4,6-Dinitro-2-Methylphenol	-	-	**0.186**	**U**	**-**	**U**	**0.942**	**U**	**0.200**	**U**
4-Bromophenyl-phenylether	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
4-Chloro-3-methylphenol	-	-	**0.093**	**U**	**-**	**U**	**0.471**	**U**	**0.098**	**U**
4-Chloroaniline	-	-	**0.093**	**U**	**-**	**U**	**0.471**	**U**	**0.098**	**U**
4-Chlorophenyl -phenylether	-	-	**0.019**	**U**	**--**		**--**		**0.020**	**U**
4-Methylphenol	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.850**	
4-Nitroaniline	-	-	**0.093**	**U**	**-**	**U**	**0.471**	**U**	**0.098**	**U**
4-Nitrophenol	-	-	**0.093**	**U**	**-**	**U**	**0.471**	**U**	**0.098**	**U**
Benzoic Acid	-	-	**0.101**	**J**	**-**	**U**	**0.942**	**U**	**0.240**	**Q**
Benzyl Alcohol	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
bis (2-Ethylhexyl) phthalate	-	-	**0.047**	**U**	**-**	**U**	**0.235**	**U**	**0.045**	**J**
bis(2 -Chloroethoxy) Methane	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
Bis-(2-Chloroethyl) Ether	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
Butylbenzylphthalate	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
Carbazole	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
Diethylphthalate	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
Dimethylphthalate	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.069**	
Di-n-Butylphthalate	-	-	**0.012**	**J**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
Fluorene	-	-	**0.012**	**J**	**-**	**U**	**0.094**	**U**	**0.140**	
Hexachlorobenzene	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
Hexachlorobutadiene	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
Hexachlorocyclopentadiene	-	-	**0.093**	**U**	**-**	**U**	**0.471**	**U**	**0.098**	**U**
Hexachloroethane	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
Isophorone	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
Nitrobenzene	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
N-Nitroso-Di-N-Propylarnine	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
N-Nitrosodiphenylamine	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.020**	**U**
Pentachlorophenol	-	-	**0.093**	**U**	**-**	**U**	**0.471**	**U**	**0.041**	**J**
Phenol	-	-	**0.019**	**U**	**-**	**U**	**0.094**	**U**	**0.460**	
Pyrene	-	-	**0.070**		**-**	**J**	**0.047**	**J**	**0.200**	

Notes:
1. Soil cleanup levels are based on Table 4-2a of the RI (Anchor QEA 2015) for unrestricted land use. Cleanup levels are the most stringent value, protective of all exposure pathways, adjusted upward for background or Method A criteria.
2. Soil cleanup levels based on protection of groundwater may be adjusted based on site-specific leaching tests during development of the cleanup action plan, during remedial design, or during compliance monitoring.
Bold = Detected result
J = Estimated concentration value detected below the reporting limit.
U = This analyte is not detected above the applicable reporting or detection limit.
E= The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
B= This analyte was detected in the method blank.
Q= Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria.
D= The reported value is from a dilution.
Analyte exceeding the Cleanup Level for Unrestricted Land Use (unsaturated soil).
X Analyte exceeding the Maximum Allowable Concentration (20 x TC).
Analyte exceeding the Maximum Concentration for the Toxicity Characteristic (TC).

Figures

Figure 1
Vicinity Map
Completion Report, Volume 2
Central Waterfront Site All American Marine, Interim Action
Port of Bellingham, WA



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Soil Management Area

Surface Treatment

- Gravel
- Landscape

Capping/Hardscape

- All American Marine (AAM) Building/ LFG Control System
- Asphalt
- Concrete
- Softscape Cap

- Footpath
- Dredging/Capping Under the Whatcom Waterway Phase 1 Cleanup Construction
- Central Waterfront Site Boundary
- Extent of Landfill Refuse
- Landfill Perimeter
- Subarea Boundary

Project North

True North

Feet

0 150 300

NOTE:
1. Aerial by National Agriculture Imagery Program (NAIP), July 2013.

ANCHOR QEA

Figure 2
Location of Interim Action Projects
Completion Report, Volume 2
Central Waterfront Site All American Marine, Interim Action
Port of Bellingham, WA