



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

November 22, 2019

Mary Logue
Kelly-Moore Paint Company
301 West Hurst Drive
Hurst, TX 76053

Re: Opinion pursuant to WAC 173-340-515(5) on Remedial Action for the following Hazardous Waste Site:

- **Site Name:** Kelly Moore Paint Company
- **Site Address:** 5410 Airport Way South, Seattle, WA 98108
- **Facility/Site No.:** 2163
- **Cleanup Site ID:** 5064
- **VCP Project No.:** NW2305

Dear Mary Logue:

The Washington State Department of Ecology (Ecology) received your request for an opinion on work planned at the Kelly Moore Paint Company facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Pursuant to completion of the Site characterization work described in the *Additional Monitoring Well Installation Work Plan (Work Plan)*, is additional work necessary to resolve data gaps?

YES. Ecology has determined that additional work is needed to characterize the ground water plume at the Site.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following releases:

- Gasoline and diesel range petroleum hydrocarbons (TPHg and TPHd), benzene, toluene,



ethylbenzene, xylenes (BTEX), naphthalene, tetrachloroethylene (PCE), 2-methylphenol, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), arsenic, cadmium, and lead into the Soil.

- TPHg, TPHd, heavy oil-range petroleum hydrocarbons (TPHo), BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, trichloroethylene (TCE), vinyl chloride (VC), arsenic, and lead into the Ground Water.

Enclosure A includes a detailed description and diagrams of the Site, as currently known to Ecology.

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel(s) associated with this Site are affected by other sites.

Basis for the Opinion

This opinion is based on the information contained in the documents listed in **Enclosure B**. Those documents are kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. You can make an appointment by completing a Request for Public Record form (<https://www.ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests>) and emailing it to PublicRecordsOfficer@ecy.wa.gov, or contacting the Public Records Officer at 360-407-6040. A number of these documents are accessible in electronic form from the Site web page <https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=5064>.

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis and Opinion

The following opinion is based on Ecology's review of the following documents:

- *Revised Remedial Investigation, Feasibility Study, and Disproportionate Cost Analysis (RI/FS/DCA)*, dated March 2017, 2017.
- *2017 Summary of Investigations and Remedial Actions (2017 Summary)*, dated June 5, 2018.
- *Additional Monitoring Well Installation Work Plan (Work Plan)*, dated April 8, 2019.
- *2018 Summary of Investigations and Remedial Actions (2018 Summary)*, dated October 8, 2019.

1. Preliminary soil and ground water screening Levels need to be established for Site characterization work.

- Ecology issued an *Opinion Letter* on February 27, 2018, which stated that “the Lower Duwamish Waterway Preliminary Cleanup Levels (PCULs) can be used as the preliminary screening levels for soil and ground water on the Site.” Ecology has worked with Kelly Moore Painting Company (Kelly Moore) on establishing the preliminary screening levels via meetings and email correspondences in May through July 2018. Ecology provided tables of preliminary soil and ground water screening levels in emails dated July 12, 2018 and March 19, 2019.
- PCUL workbook has been updated since the last correspondence. The latest update was completed on April 5, 2019. The current PCUL workbook is available at <https://apps.ecology.wa.gov/gsp/CleanupSiteDocuments.aspx?csid=1643>.
- Additional review of the 2017 *RI/FS/DCA* identified two more contaminants of concern (COCs) for soil:
 - PCE with a preliminary soil screening level of 0.05 milligrams per kilogram (mg/kg). PCE was detected in soil sample TANK2-Soil-S3.5, collected at 5 feet below ground surface (bgs) in June 2015, at a concentration of 0.08 mg/kg.
 - 2-methylphenol with a preliminary screening level of 2.3 mg/kg. 2-methylphenol was detected in a soil sample collected from soil boring KM-7 at 1.8 to 2 feet bgs in August 2009, at a concentration of 3.5 mg/kg.
- Therefore, the tables of preliminary soil and ground water screening levels have been updated to include the latest PCUL workbook updates and the newly identified COCs. These updated preliminary screening levels are provided in **Enclosure C**.
- Ecology will continue to work with Kelly Moore for any updates on the preliminary screening levels, if additional COCs are identified during Site characterization, or additional updates are made to the PCUL workbook.

2. Additional monitoring wells are needed to characterize the ground water plume at the Site.

The proposed monitoring wells in the 2019 *Work Plan* are not sufficient to determine the current ground water conditions and characterize the ground water contaminant plume.

- Based on the current ground water data provided in *2018 Summary*, ground water samples collected from the following monitoring wells contained one or more COCs at concentrations above the preliminary ground water screening levels in the most

recent four groundwater sampling events: KMW-03R, KMW-04, KMW-06, KMW-09, and KMW-10.

- Data provided in the 2017 *RI/FS/DCA* indicated that the grab ground water samples collected on the southern portion of the Property (KM-22 and KM-25) contained concentrations of TPHg, arsenic, lead, BTEX, naphthalene, 1,2,4-trimethylbenzene, and/or 1,3,5-trimethylbenzene above the preliminary ground water screening levels.
- Data provided in the 2017 *RI/FS/DCA* indicated that the grab ground water samples collected at the south end of the Property (KM-1 and KM-29) contained lead and arsenic concentrations above the preliminary ground water screening levels.
- Ecology's February 2018 *Opinion Letter* stated that a "historic chlorinated solvent (TCE and VC) ground water plume on the north end of the Property has not been adequately investigated and characterized." Based on the 2017 *RI/FS/DCA*, this chlorinated solvent plume was detected in grab ground water samples collected from soil borings KM-16 and KM-17.
- Therefore, based on the current and historic ground water monitoring data stated above, Ecology recommends the following:
 - Additional monitoring wells are needed down-gradient (south and southwest) of monitoring well KMW-10 to characterize the ground water plume.
 - One of the proposed monitoring wells should be moved directly down-gradient of historic soil borings KM-22 and KM-25 to determine the current ground water condition.
 - At least one monitoring well is needed at the south end of the Property to determine the ground water condition near and down-gradient of historic soil borings KM-1 and KM-29. More monitoring wells may be needed depending on the ground water sampling results.
 - At least one monitoring well is needed on the north end of the Property to evaluate the historic chlorinated solvent plume. More monitoring wells may be needed depending on the ground water sampling results.

3. Additional Site characterization is needed for other media.

Additional Site characterization is needed for other media, including soil and soil vapor at the least. This letter does not include Ecology's opinion on additional Site characterization on other media.

Limitations of the Opinion

1. Opinion does not settle liability with the state.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

Contact Information

Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP). After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion, please contact me at 425-649-7109 or jing.song@ecy.wa.gov.

Mary Logue
November 22, 2019
Page 6

Sincerely,



Jing Song
Site Manager
Toxics Cleanup Program, NWRO

Enclosures (3): A – Description and Diagrams of the Site
 B – Basis for the Opinion: List of Documents
 C – Preliminary Soil and Ground Water Screening Levels of the Site

cc: Crystal Thimsen, Woods Environment & Infrastructure Solutions, Inc.
 Sonia Fernandez, VCP Coordinator, Ecology

Enclosure A

Description and Diagrams of the Site

Site Description

This section provides Ecology's understanding and interpretation of Site conditions, and is the basis for the opinions expressed in the body of the letter.

Site: The Site is defined by the following releases:

- TPHg, TPHd, BTEX, naphthalene, PCE, 2-methylphenol, cPAHs, arsenic, cadmium, and lead into the Soil.
- TPHg, TPHd, TPHo, BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, TCE, VC, arsenic, and lead into the Ground Water.

The releases occurred on two King County tax parcel numbers 3868400270 and 3868400271, which are 1.26 and 1.49 acres in size respectively, for a total of 2.75 acres (Property). The Property is located on the east side of Airport Way South; South Lucile Street intersects with Airport Way South immediately west of the Property. The Property has a street address range of 5400-5600 Airport Way South in Seattle, Washington (**Figure 1**). The Site consists of the Property and surrounding parcels that are affected or potentially affected by the releases. Currently, the Site boundary is not fully defined.

Area and Property Description: The Property is located in a general industrial use area in the Georgetown neighborhood in south Seattle. The Property is bordered on the north by Union Pacific Railroad Company (UP) tracks and the Olympic Foundry, on the west by Airport Way South and the Airport Way South overpass, on the east by UP and Burlington Northern Santa Fe Railway Company (BNSF) tracks and a steep hillside, and on the south by an Interstate 5 connector ramp overpass. Interstate 5 parallels the Property's eastern border approximately 350 feet to the east.

The current Property layout is depicted on **Figure 2**. Both parcels are currently owned by Encore Elysian LLC. A large warehouse building has been present on the southern portion of the Property since 1997. A new warehouse building was built on the northern portion of the Property in 2015. Elysian Brewing Company (a beer manufacturer) currently occupies both warehouse buildings and uses them for beer brewing and manufacturing.

Site History and Current Use: The Property has been used for industrial purposes since the early 1900s. The southern portion of the Property was used as an auto garage, wrecking yard, and service station from the 1920s through the 1940s. It was then used as a machinist union hall until the 1990s. The northern portion of the Property was used by Pacific Coast Coal Company in the 1940s, and by the Preservative Paints Factory and Asphaltum Products Roofs and Mineral Paints dating back to 1929. Between the 1920s and 1950s, the Property was used for industrial purposes and the presence of underground storage tanks (USTs) is documented.

Kelly Moore acquired the Property in 1994. Portions of the Property were then used as a paint manufacturing plant that blended paints and pigments until 2008. By 2009, Kelly Moore was no

longer using the Property and was leasing the buildings to various commercial tenants. Kelly Moore sold the southern portion of the Property in 2011 and the northern portion in 2014. The former Property layout during Kelly Moore's operation is depicted on **Figure 3**.

A large warehouse building has been present on the southern portion of the Property since 1997, which is still present on the Property and used for beer manufacturing. A large conglomeration of buildings of various ages had been present on the northern portion of the Property in some form between the 1920s and 2015. Usage of the former buildings on the northern portion of the Property prior to the cessation of manufacturing in 2008 are listed as following (**Figure 3**):

- Building 1 – Used for warehousing but reportedly was formerly used as a tooling area.
- Building 2 – Used for warehousing.
- Building 3 – Used for warehousing but a maintenance shop was reportedly located here in the past.
- Building 4 – Used for warehousing.
- Building 5 – Used for warehousing. A door formerly opened to the east side of the Site and an outdoor dumpster. This area was formerly used for outdoor storage and was not enclosed as part of the building conglomeration until after 1985.
- Building 5A – Used for product storage tanks; a long strip floor drain in the building was routed into a 6-foot-deep sump.
- Building 6 – Two-story building used for paint manufacturing.
- Building 7 – Used for paint manufacturing. A former maintenance shop was reportedly located here in the past. A small electrical room (confined space) located upstairs in this building was accessible only by ladder.
- Building 8 – Used for paint manufacturing. A smaller former retail area located on the west side of the building also included a second story that was used for manufacturing.
- Building 9 – Used for warehousing; office space and restrooms were included on the west side of the building.
- Building 10 – Used for warehousing. This building did not have an exterior wall on the east side and was open to the outdoor loading dock area on this side.
- Building 12 – Used for office space.

A series of USTs were present on the Property; these USTs were periodically replaced and removed in 1985, 1987, 1989, 1997, 1998, and 2009. The documented former USTs were

located on the central portion of the Property between the southern warehouse and the northern building conglomeration. Two additional previously unknown USTs were found and removed in 2015. These two USTs were also located on the central portion of the Property.

Sources of Contamination: Contamination at the Site is believed to be a result of a combination of multiple sources. Specific sources of contamination include the following:

- Leaks or spills related to a series of former USTs and associated piping located on the central portion of the Property, including piping that ran underground into the buildings north of the former UST area, are believed to be sources of contamination.
- Leaks or spills during historical operations before the storage areas were paved, or via sumps and catch basins are also potential sources of contamination. It is unknown when the Property was fully paved and the sumps and catch basins were covered.
- Releases could have migrated from the neighboring rail line property situated slightly uphill and hydraulically up-gradient of the Site. There may be other up-gradient sources.
- Various imported fill materials have been observed during borings and excavations activities and could be sources of contamination.
- Air depositional contributions are suspected to be a source of contamination as the Site is located in a heavily industrial area between an interstate freeway, a major city arterial, and an active rail yard.
- Activities by former owners and operators at the Property prior to paint manufacturing may have contributed to the contamination.

Physiographic Setting: The Property is located immediately west of Beacon Hill and along the eastern boundary of the Duwamish Valley. The Duwamish Valley floor contains the floodplain of the formerly meandering Duwamish River, which historically has been partially filled to prevent and control flooding, straightened and channelized to create the Duwamish Waterway. The Duwamish Waterway is located approximately 5,000 feet west of the Property. The land surface at the Site is relatively flat, at an elevation of approximately 20 feet above mean sea level (amsl). Elevations atop Beacon Hill east of the Site rise to 300 feet amsl.

Surface/Storm Water System: The nearest surface water body is the Duwamish Waterway, which is approximately 5,000 feet west of the Property. Surface water prior to 2015 infiltrated into the soil in unpaved areas of the Property. Some storm water may have discharged to the City of Seattle storm sewer system via a connection on Airport Way South. The Property is currently completely paved; a new storm water system is present on the Property, connecting to the City of Seattle storm sewer system along Airport Way South.

Ecological Setting: The land surface of the Property is covered by two buildings and asphalt or concrete pavement. Other surrounding areas in the vicinity of the Property are covered by

asphalt or buildings. Georgetown Playfield, a 5.13-acre city park, is located approximately 300 feet southwest of the Property and contains grassy areas that could attract wildlife.

Geology: The Site lies at the western base of Beacon Hill, in an area consisting of fluvial deposits made up of interbedded layers of sands, silts, and silty sands. The sand and silt layers in the vicinity of the Site are present to depths of at least 50 to 60 feet bgs. Overlying the fluvial deposits is fill material that was placed throughout the local region early in the twentieth century and as part of the channelization of the Duwamish River into what is now the Duwamish Waterway, when industrial development began in the area. Fill materials typically used in the region may have included dredged Duwamish River sediments, but also other types of fill such as construction and wood debris.

Soils encountered at the Site consists of mostly poorly-graded sand, silt, and occasional gravel fill to the maximum explored depth of 16 feet bgs. Other fill materials encountered included brick and wood fragments, blackened or potentially burned materials and crushed concrete.

Ground Water: Ground water occurs in a poorly-graded sand and silt layer between 5.5 and 11.5 feet bgs at the Site. Shallow ground water generally flows to the west with a gradient of less than 0.5 feet per foot across the Site.

A total of 12 ground water monitoring wells (KMW-01 through KMW-10, KMW-02R, and KMW-03R) have been installed at the Site. These wells were advanced to total depths ranging from 13.5 to 15 feet bgs, and installed with 10-foot-long screens set between depths of 3.25 and 15 feet bgs. Eight monitoring wells (KMW-04, KMW-07 through KMW-10, KMW-02R, and KMW-03R) are still active. Two monitoring wells (KMW-01, KMW-02) were properly decommissioned in February 2015. The other two monitoring wells (KMW-03 and KMW-05) appear to have been destroyed during the demolition and new building construction in 2015.

Water Supply: Drinking water is provided to the Property by City of Seattle through a water line located along 8th Avenue South, west of the Property. The sources of Seattle's drinking water are Cedar River and Tolt River watersheds. According to Ecology's *Well Log* database, no drinking water wells are located within a 0.5-mile radius of the Property.

Release and Extent of Soil and Ground Water Contamination: Multiple environmental investigations and interim remedial actions have been completed at the Site. The bullets below summarize the major investigations and interim remedial activities known to Ecology. The soil excavation and sampling locations in 1997 are depicted on **Figure 4**. The soil excavation and sampling locations after 1997 are depicted on **Figure 5** (northern portion) and **Figure 6** (southern portion). The ground water sampling locations are depicted on **Figure 7**.

- In 1985, six USTs used to store paint manufacturing components were removed. These USTs were reportedly in the same area as later UST removal activities conducted in 1997; however, no additional information is available.
- One diesel UST was removed from the southern portion of the Property around 1987, and a Bunker C heating oil UST was removed from the southern portion of the Property around

1989. The locations and other information for these USTs are not available.

- In February 1994, 250 gallons of toluene reportedly leaked to soil around one of the USTs at the Site. Soil borings were completed near the release, and soil samples collected from a depth of 3 to 6 feet bgs, showed toluene concentrations of 91 to 95 mg/kg in soil. Additional information including the location of the release and soil samples has not been provided to Ecology.
- In 1997, a 300-gallon UST was found under the northern building conglomeration during a demolition project and was removed. No other information is available.
- An additional 14 USTs used to store paint manufacturing components, including several USTs that had been replaced during the 1985 UST removal, were removed in 1997 and 1998.
 - More than 1,000 tons of contaminated soil were reportedly excavated and disposed of off-Site. The excavation did not extend below the water table; however, information on the depth of the water table encountered in the excavation was not provided to Ecology.
 - Based on the soil analytical data, soil with concentrations of TPH (mineral spirits/Stoddard solvent), toluene, ethylbenzene, total xylenes, and naphthalene above the preliminary soil screening levels (**Enclosure C**) remained at the bottom and sidewalls of the excavations.
 - Seven new USTs were reportedly installed between the northern building conglomeration and the southern warehouse building, leaving a total of nine USTs on the Property.
- In October and November 2009, nine USTs (seven 8,000-gallon product USTs and two 7,000-gallon containment USTs) and associated piping were removed from the Site, along with other historical piping associated with former USTs. Soil was excavated to a depth of 9.5 to 10.5 feet bgs in most portions of the excavation and was disposed of off Site.
 - The seven product USTs were installed in 1997 on the eastern portion of the Property and contained a variety of products used in the paint manufacturing process. Confirmation sampling indicated that soil with TPHg concentrations above the preliminary soil screening levels remained at the bottom and sidewalls of the product UST excavation.
 - The two containment USTs were located on the central portion of the Property and were used to contain fire suppression water and spill overflow from the manufacturing facility. Confirmation sampling indicated that soil with concentrations of TPHg, ethylbenzene, xylenes, and/or cPAHs above the preliminary soil screening levels remained at the sidewalls of the containment UST excavation.
 - One grab ground water sample was collected from each of the two excavations. The grab water samples contained concentrations of TPHg, TPHo, BTEX, acetone, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, arsenic, chromium, lead, nickel, and/or cPAHs above the preliminary ground water screening levels. However, Ecology

did not recognize grab water samples from the excavations as representative of Site ground water conditions.

- In November 2009, four test pits were excavated after the UST removal. Three test pits (TP-1 through TP-3) were excavated west of the product UST excavation. Soil or ground water samples were not collected from these test pits. A fourth test pit (TP-4) was excavated south of the containment UST excavation. A soil sample collected at 8 feet bgs from TP-4 contained a TPHg concentration above the preliminary soil screening level.
- Between August 2009 and August 2010, three phases of a Phase II investigation were completed at the Site. A total of 29 direct-push soil borings (KM-1 through KM-29) were advanced throughout the Site to total depths ranging from 2 to 15 feet bgs. Soil samples were collected from 25 of the soil borings between 1.5 and 11.5 feet bgs. Ground water was encountered in the soil borings at depths of 6 to 8 feet bgs; grab ground water samples were collected from 18 of the soil borings.
 - Multiple soil samples throughout the Property between depths of 1.5 and 11 feet bgs contained concentrations of TPHg, BTEX, 2-methylphenol, arsenic, cadmium, lead, and/or cPAHs above the preliminary soil screening levels.
 - Two grab ground water samples collected from the southern portion of the Property (KM-22 and KM-25) contained concentrations of TPHg, BTEX, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, arsenic, and/or lead above the preliminary ground water screening levels.
 - Two grab ground water samples collected from the south end of the Property (KM-1 and KM-29) contained arsenic or lead concentrations above the preliminary ground water screening levels.
 - Two grab ground water samples collected from the north end of the Property (KM-16 and KM-17) contained concentrations of TPHg, TCE and VC above the PCULs.
- Between 2008 and 2015, a polychlorinated biphenyl (PCB) cleanup within the interior of certain buildings was completed. In 2008, several areas of concrete flooring in Buildings 6 and 7 were scarified to remove the PCBs. Analytical results of samples from the scarified concrete surfaces in Buildings 6 and 7 showed PCB concentrations less than the preliminary soil screening level in the remaining concrete flooring material.
- Areas of flooring and scale pits in Building 8 showed PCB concentrations greater than the preliminary soil screening level. As a result of these findings, institutional controls were established as an interim action for Building 8. Building 8 was sealed off, and signage was installed to indicate that building materials remained present with PCBs above the regulatory limit.
- In 2015, a final removal of PCB-impacted materials was completed during the demolition of

Building 8. The aboveground structures were demolished, previously-identified PCB-containing building materials were segregated, the southern portion of concrete slab inside former Building 8 was removed, over-excavation was conducted based on the soil sampling results, and several floor scale pits along with surrounding soil were removed.

- Following building demolition and soil removal, all confirmation samples collected at the Site were below the preliminary soil screening level. The final sampling locations and results for Building 8 are depicted on **Figure 8**.
- In March 2011, fourteen direct-push soil borings (KM-30 through KM-43) were advanced at the Site to total depths of 7 to 16 feet bgs.
 - The soil samples collected between 1.5 and 6.5 feet bgs in multiple soil borings (KM-33, KM-36, KM-37, KM-40) on the northern portion of the Property contained concentrations of TPHg and/or BTEX above the preliminary soil screening levels.
 - The soil samples collected on the north end of the Property (KM-31) and southern portion of the Property (KM-35) contained cPAHs concentrations above the preliminary soil screening level.
 - The ground water samples collected from multiple soil borings on the northern portion of the Property contained concentrations of TPHg, BTEX, lead, and/or arsenic above the preliminary ground water screening levels.
- In March 2011, five monitoring wells (KMW-01 to KMW-05) were installed on the northern portion of the Property to total depths between 13.5 and 14.5 feet bgs. A soil sample collected from monitoring well KMW-02 at 5 feet bgs contained a cPAH concentration above the preliminary soil screening level.
- In March 2015, nine direct-push borings (KM-44 through KM-52) were advanced to a total depth of 10 feet bgs on the central and northern portions of the Property. Soil samples were not collected from these borings. Grab ground water samples were collected from each boring and analyzed for TPHg. TPHg concentrations were detected above the preliminary ground water screening level in ground water from all nine borings.
- In February and March 2015, soil excavations were conducted in six areas after the former building conglomeration on the northern portion of the Property was demolished.
 - Five excavations were identified by historic boring locations KM-19, KM-30, KM-32, KM-39, and KM-41. The KM-19, KM-30, KM-32, KM-39 excavations were completed to a 10 feet by 10 feet lateral extent to total depths between 2.5 and 7 feet bgs. The KM-41 excavation was completed to a lateral extent of 15 feet wide (east-west) by 18 feet long (north-south) to a total depth of 6 feet bgs. Approximately 55.7 cubic yards of soil were removed from the KM-19, KM-30 and KM-32 excavations.

- The sixth excavation was the piping trench between former Buildings 7 and 8. A previously unknown 500-gallon UST was discovered at the north end of the trench excavation and removed from the Property. The final trenching excavation was approximately 8 feet wide by 120 feet long to total depths of 5 to 5.5 feet bgs. A total of approximately 285 cubic yards of soil was removed from the piping trench excavation.
- Confirmation sampling indicated soil with TPHg concentrations above the preliminary soil screening level remained at the bottom and sidewalls of excavation KM-19.
- Confirmation sampling indicated soil with cPAHs concentrations above the preliminary soil screening level remained at the bottom and sidewalls of excavation KM-32.
- Confirmation sampling indicated soil with TPHg, benzene, and cPAHs concentrations above the preliminary soil screening levels remained at the bottoms and sidewalls of excavations KM-30 and KM-41.
- Confirmation sampling indicated soil with TPHg, benzene, ethylbenzene, xylenes, and cPAH concentrations above the preliminary soil screening levels remained at the bottom and sidewalls of excavation KM-39.
- Confirmation sampling indicated soil with TPHg, TPHd, benzene, ethylbenzene, and cPAHs concentrations above the preliminary soil screening levels remained at the bottom and sidewalls of the piping trench excavation.
- Between June and December 2015, remediation piping was installed within two trenches on the northern portion of the Property, including an eastern trench under the new building and a western trench under the new parking lot (**Figure 9**). Approximately 241 tons (180 cubic yards) of contaminated soil were excavated during the trenching work.
 - A second, previously unknown 500-gallon steel UST was discovered in the eastern trench and removed from the Property. Soil with concentrations of TPHg, TPHd, benzene, xylenes, naphthalene, and PCE above the preliminary soil screening levels remained in the UST excavation.
 - Soil samples (KM-R01 through KM-R13) collected from the western trench indicated that soil with TPHg, benzene, and ethylbenzene concentrations above the preliminary soil screening levels remained along the western trench.
- A vapor barrier was reportedly installed beneath the warehouse building on the southern portion of the Property in 1997. In July 2015, a vapor barrier was installed under the new building on the northern portion of the Property (**Figure 9**).
- In August 2016, three direct push soil borings (KM-53 through KM-55) were advanced to total depths of 15 feet bgs to the north of the western remediation piping trench.

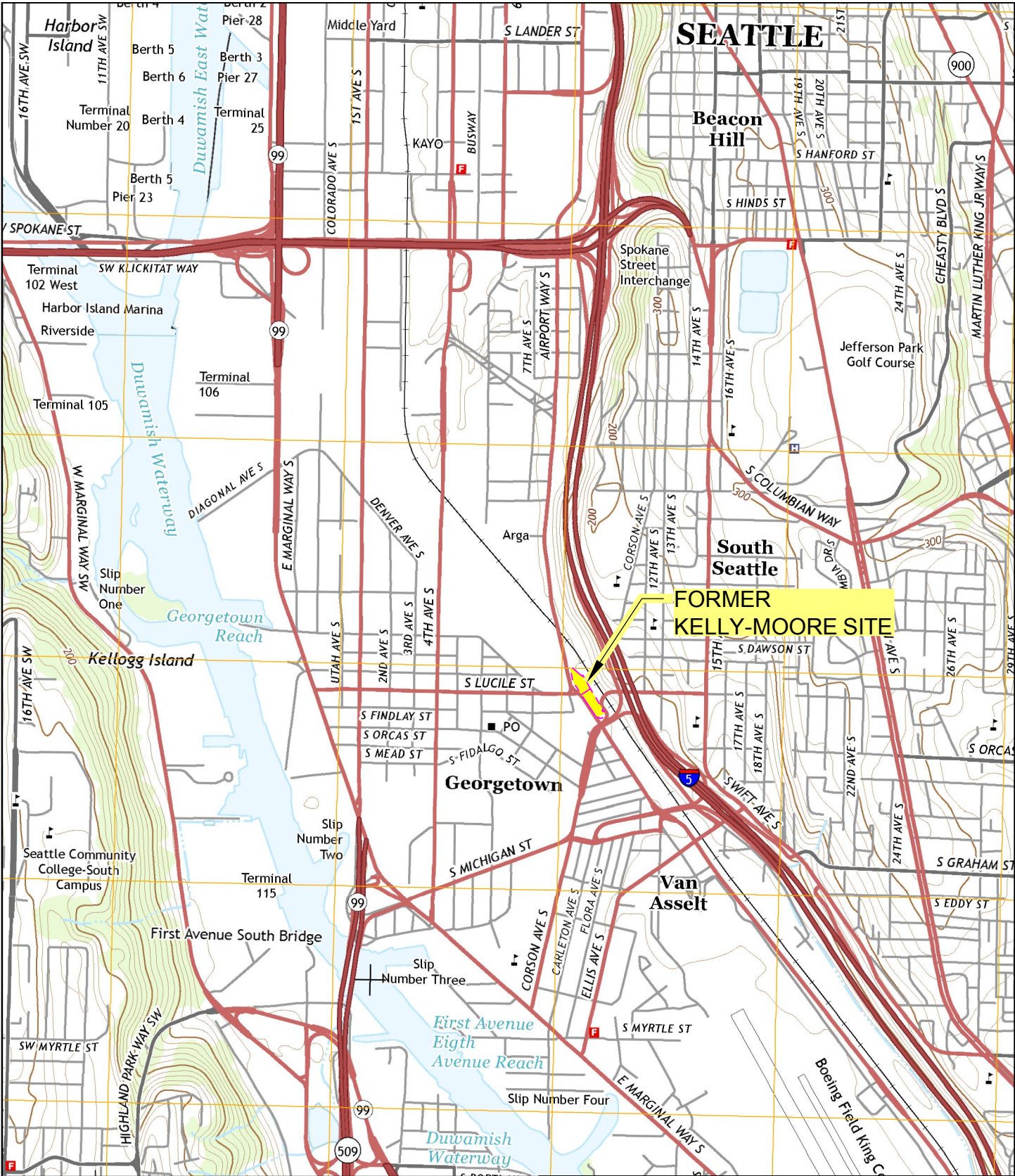
- The soil samples collected from soil boring KM-53 and KM-55 between 3 and 9 feet bgs contained concentrations of TPHg, benzene, cPAHs, and/or arsenic above the .
- The grab ground water samples collected from soil boring KM-53 and KM-55 contained concentrations of TPHd, TPHo, and/or benzene above the preliminary ground water screening levels.
- In June 2016, five monitoring wells (KMW-02R, KMW-03R, and KMW-06 through KMW-08) were installed to replace former monitoring wells (KMW-01 through KMW-03, and KMW-05).
 - The soil samples collected from monitoring well KMW-03R between 8.5 and 11.5 feet bgs contained concentrations of TPHg, benzene, ethylbenzene, xylenes, and/or arsenic above the preliminary soil screening levels.
 - The soil samples collected from monitoring wells KMW-06 through KMW-08 between 8.5 and 12.5 feet bgs contained TPHg and/or TPHd concentrations above the preliminary soil screening levels.
- In November 2016, two off-Property monitoring wells (KMW-10 and KMW-11) were installed west of the Property at downgradient locations. No soil samples were analyzed.
- A soil vapor extraction (SVE) and air sparge system was installed in 2015 to 2017. Twelve horizontal SVE wells (SVE-01 through SVE-07, SVE-09 through SVE-13) were installed within two trenches on the northeastern and northwestern portions of the Property (**Figure 9**). Five air sparge wells were installed between the western SVE wells (**Figure 10**). A SVE blower and an air sparge compressor were installed with a catalytic thermal oxidizer (CATOX) unit to treat the extracted vapor.
- The SVE system started operation on October 31, 2017 and operated until October 2018. The system was shut down in October 2018 due to a vehicle accident. The SVE system was restarted in April 2019, and operated independently until the air sparge system began operating in late May 2019. Since May 29, 2019, both the air sparge and SVE systems have been operating continuously. Since 2017, an estimated 8,400 pounds of TPH (as hexane equivalent) have been removed from the subsurface by the system.
- In conjunction with the air sparge system startup, indoor air samples were collected inside the northern building both prior to (October 2018) and after (June 2019) the startup of the air sparge system. The air samples were analyzed for volatile organic compounds (VOCs). The detected concentrations were below the MTCA Method B air cleanup levels. However, no air phase hydrocarbons (APH) were analyzed. In addition, two indoor air sampling points may not be sufficient to characterize the indoor air quality for the entire buildings.
- Ground water monitoring at the Site has been conducted since 2011. Eight monitoring wells (KMW-04, KMW-06 through KMW-10, KMW-02R, and KMW-03R) are currently active.

In the most recent four ground water sampling events, the following COCs were detected at concentrations above the preliminary ground water screening levels in the following monitoring wells:

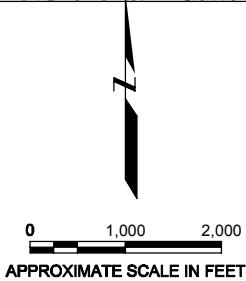
- TPHd in monitoring well KMW-03R.
- TPHg, TPHd, 1,2,4-trimethylbenzene, ethylbenzene, xylenes, toluene, and arsenic in monitoring well KMW-04.
- TPHg, TPHd, and TPHo in monitoring well KMW-06.
- TPHg and TPHd in monitoring well KMW-09.
- TPHg, TPHd, and arsenic in monitoring well KMW-10.

Site Diagrams

Enclosure A: Figure 1



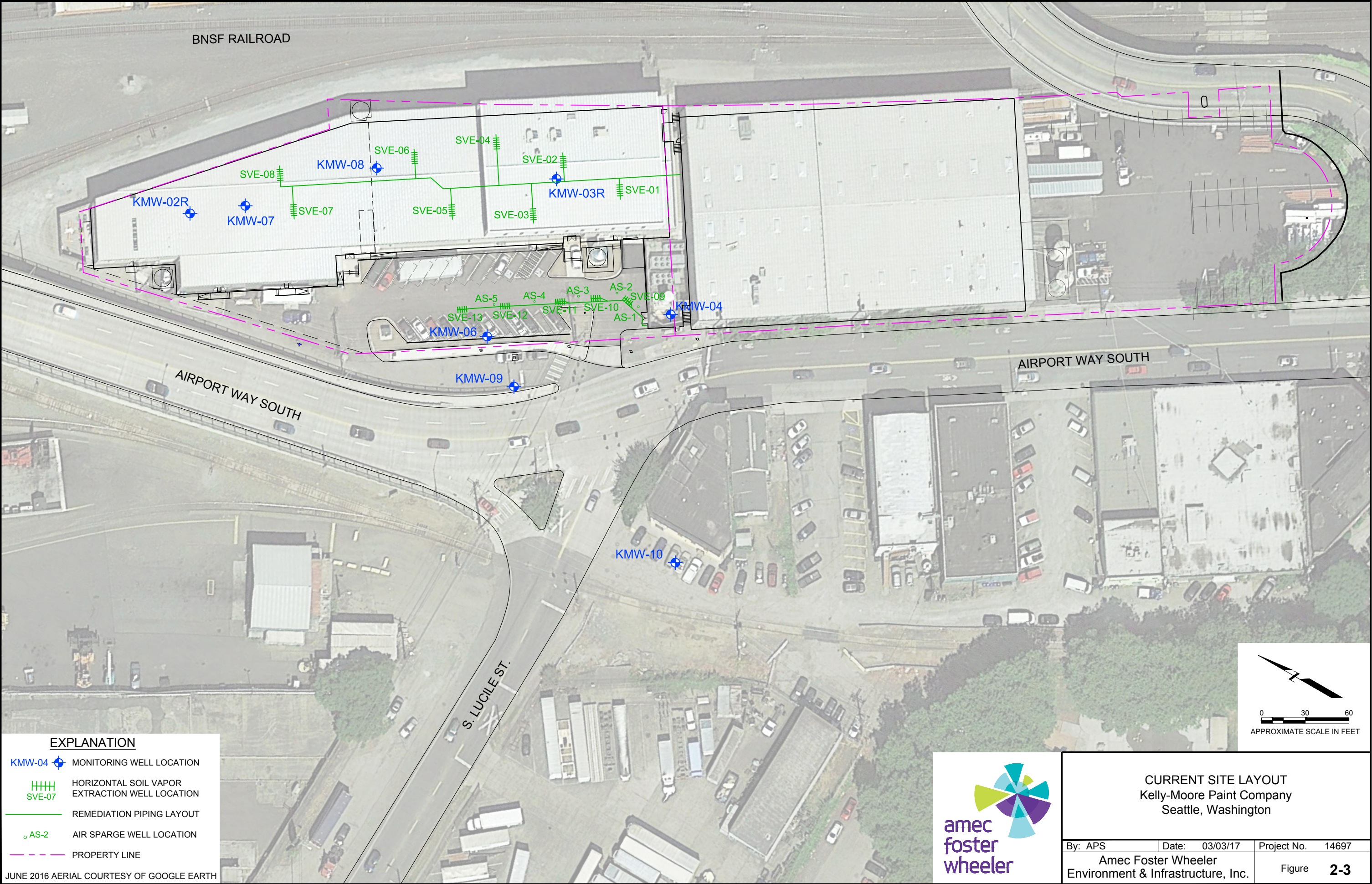
Plot Date: 01/21/16 - 12:40pm, Plotted by: adam.stenberg
Drawing Path: S:\14697014_2015-RIFSCAD\, Drawing Name: KellyMoore-SiteMap_Soil-GW-Samples_011416.dwg



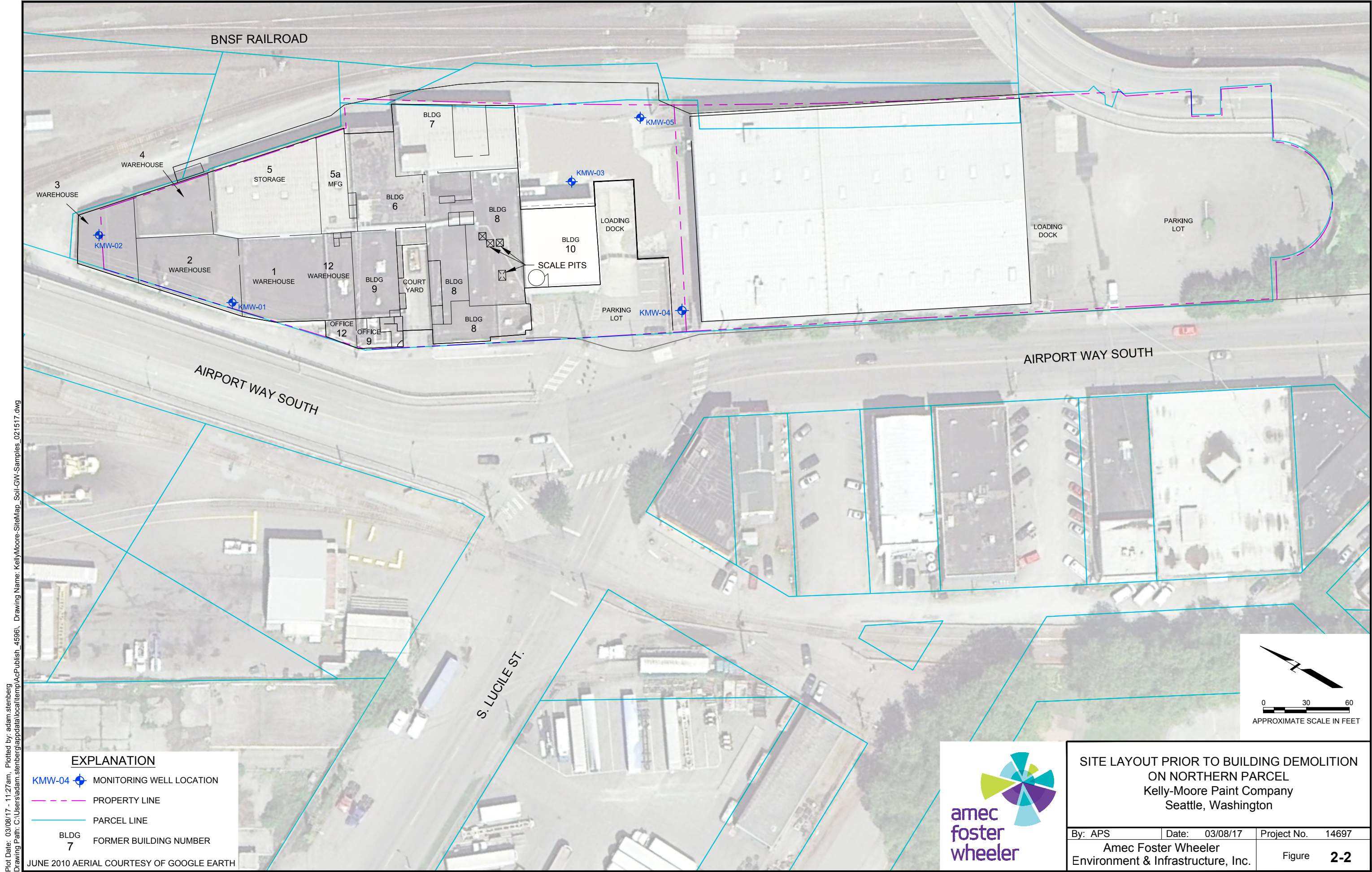
PROJECT LOCATION
Kelly-Moore Paint Company
Seattle, Washington

By: APS	Date: 01/21/16	Project No. 14697
Amec Foster Wheeler Environment & Infrastructure, Inc.		Figure 2-1

Enclosure A: Figure 2

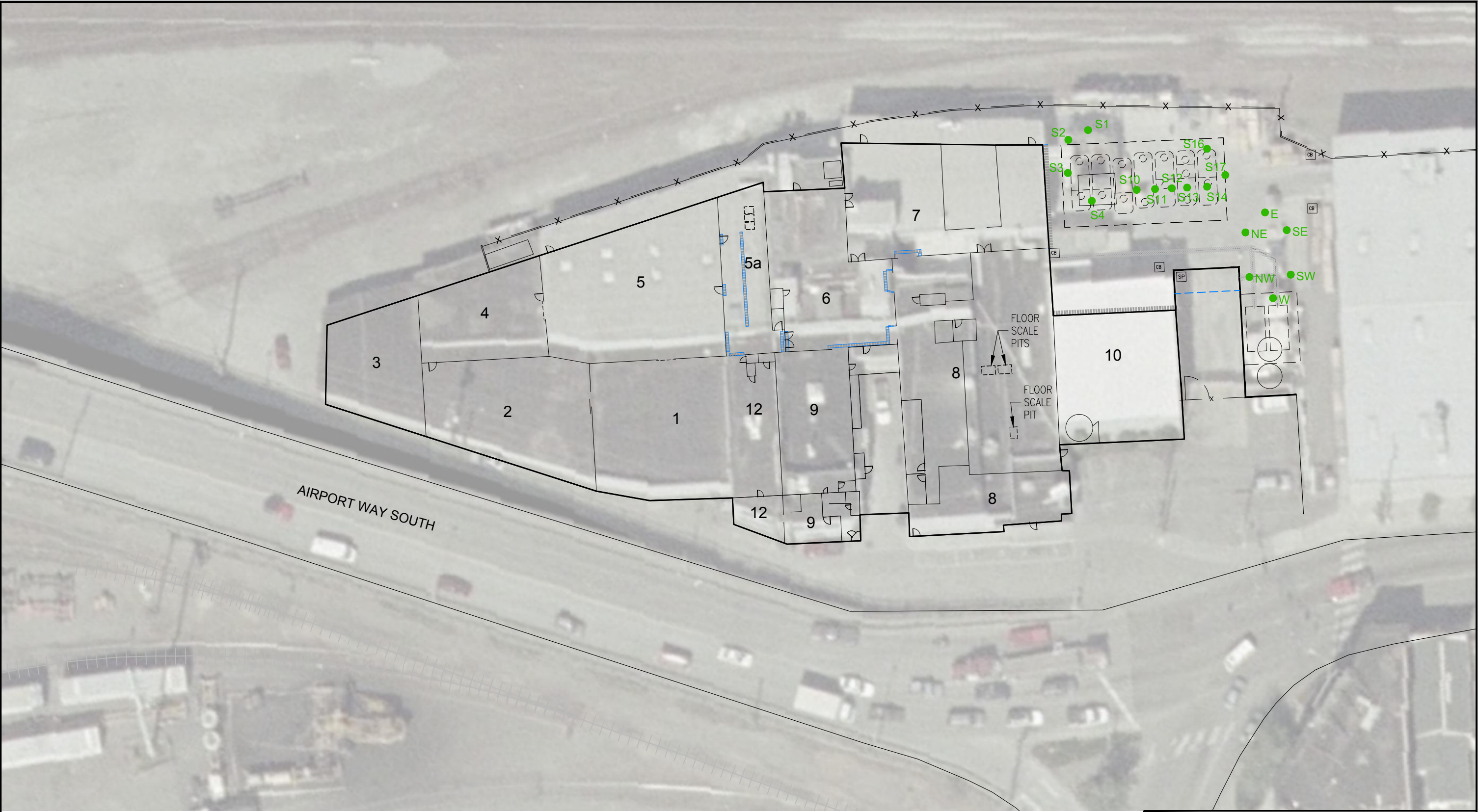


Enclosure A: Figure 3



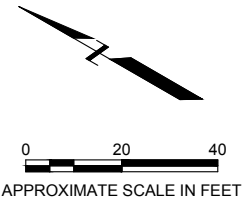
Plot Date: 03/08/17 - 11:27am, Plotted by: adam.stenberg
Drawing Path: C:\Users\adam.stenberg\appdata\local\temp\AcPublish_4596\ Drawing Name: KellyMoore-SiteMap_Soil-GW-Samples_021517.dwg

Enclosure A: Figure 4



EXPLANATION

- S1 ● HISTORICAL SOIL SAMPLE LOCATION (1997)
- FLOOR DRAIN
- X — FENCE LINE
- 7 BUILDING NUMBER

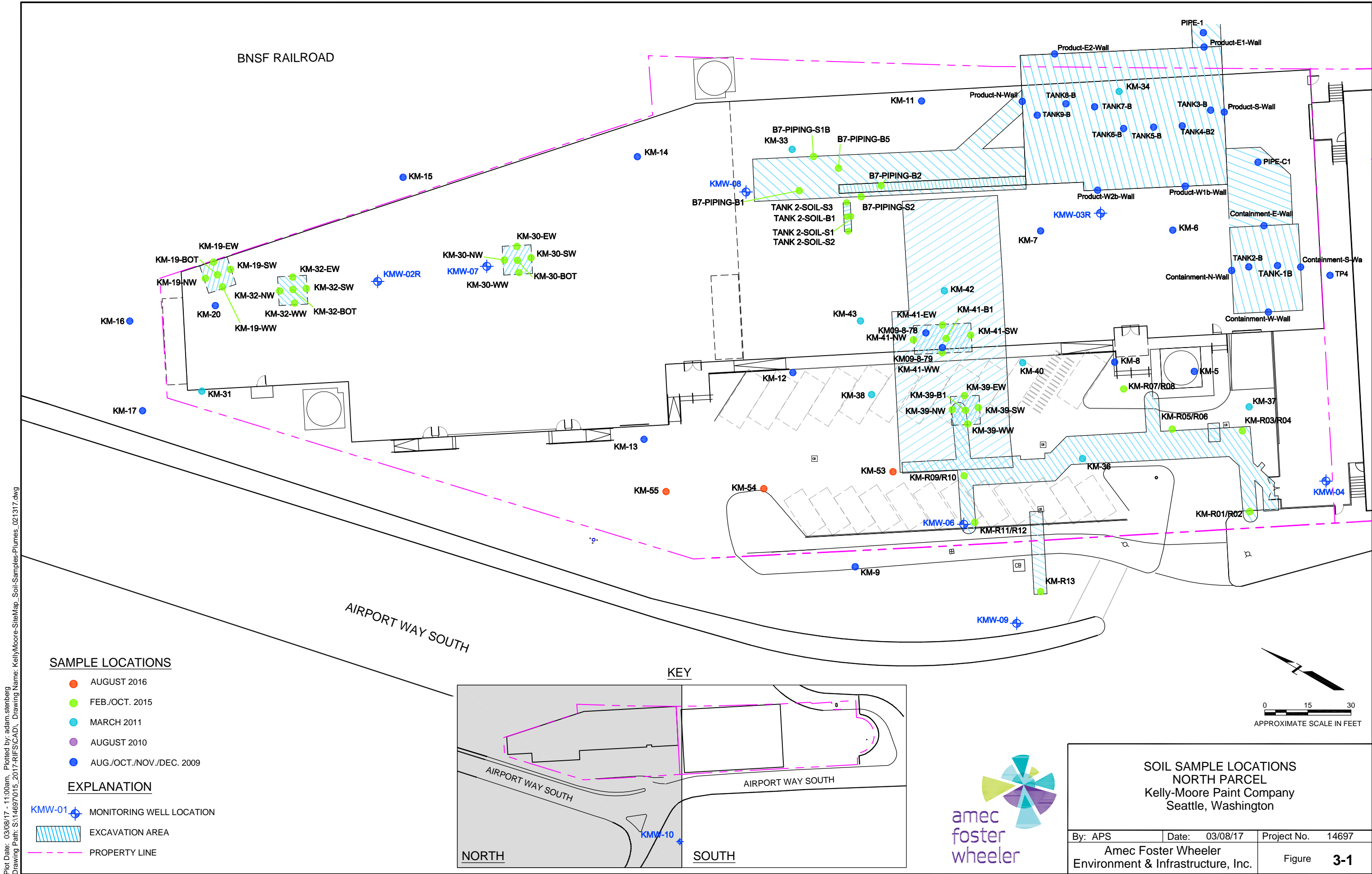


HISTORIC SOIL SAMPLE
LOCATIONS AND SUMMARY RESULTS - NORTH
Former Kelly-Moore Manufacturing Facility
Seattle, Washington

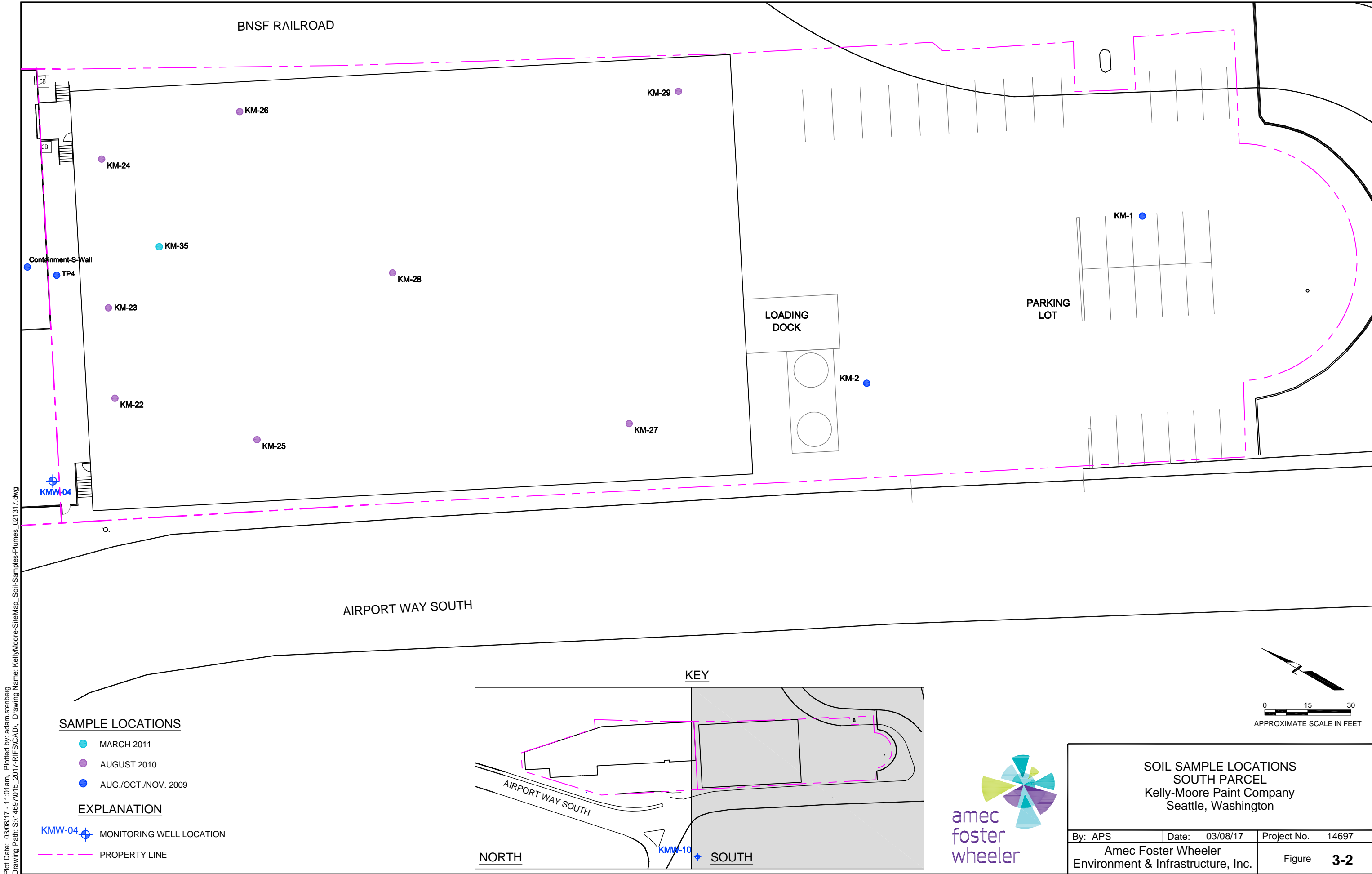
By: APS	Date: 03/27/17	Project No. 14697
Amec Foster Wheeler Environment & Infrastructure, Inc.		Figure 2

Plot Date: 03/27/17 - 3:54pm, Plotted by: adam.stenberg
Drawing Path: C:\Users\adam.stenberg\appdata\local\temp\AcPublish_10764\, Drawing Name: SiteMap_KellyMoore-report_110909.dwg

Enclosure A: Figure 5

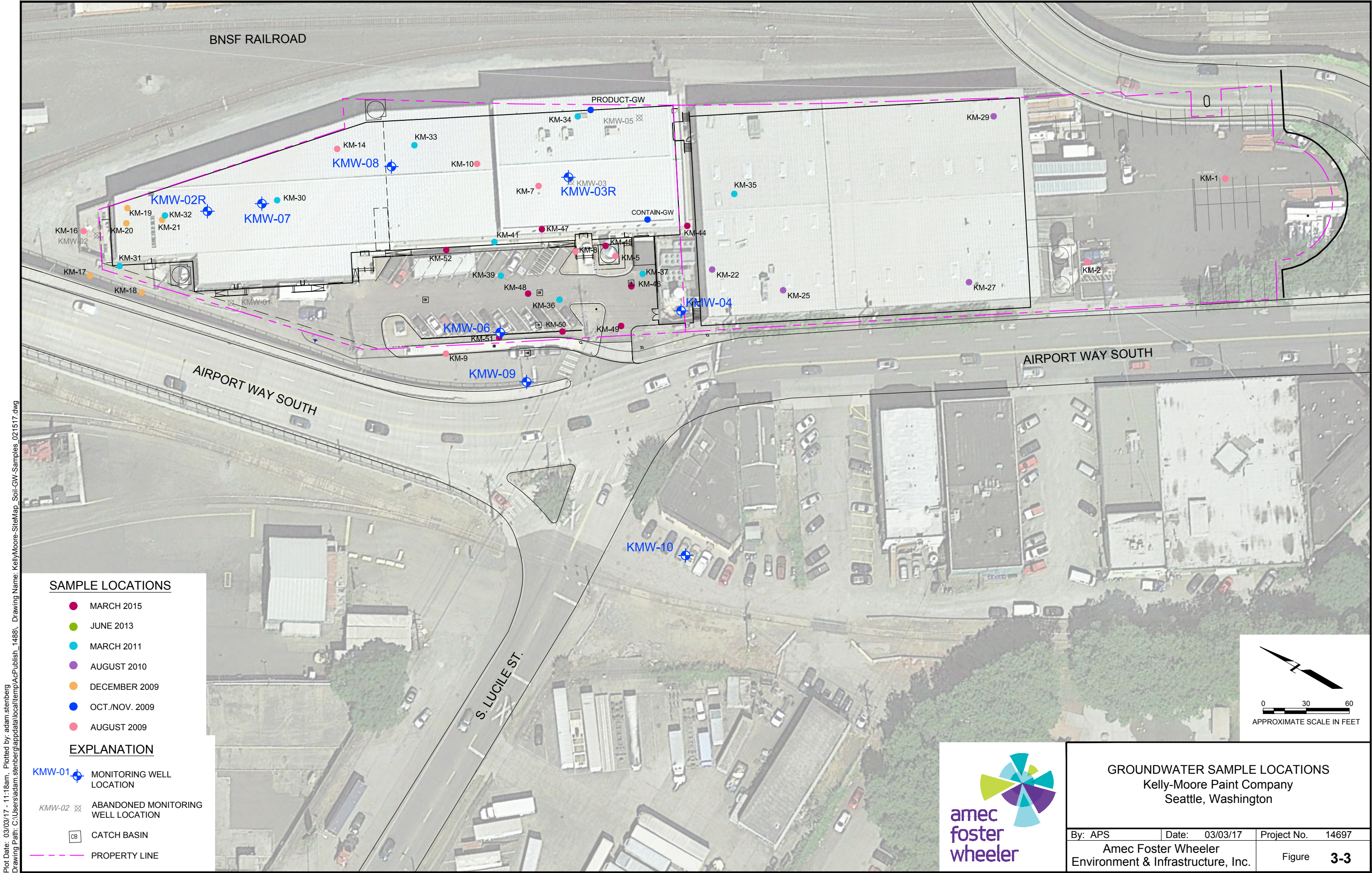


Enclosure A: Figure 6



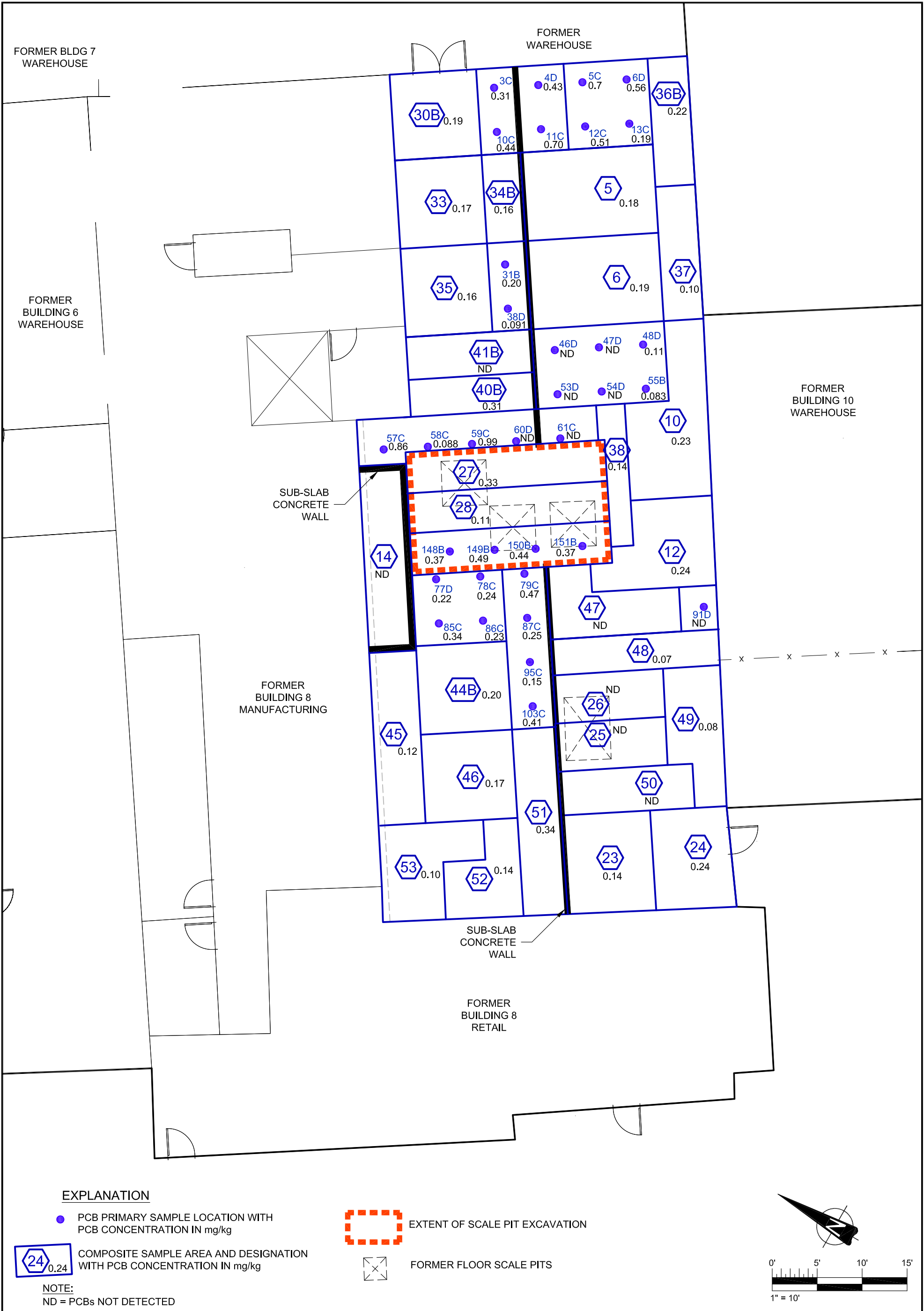
Plot Date: 03/08/17 - 11:01am, Plotted by: adam.stenberg
Drawing Path: S:\14697\015_2017-RIFS\CAD\ Drawing Name: KellyMoore-SiteMap_Soil-Samples-Plumes_021317.dwg

Enclosure A: Figure 7



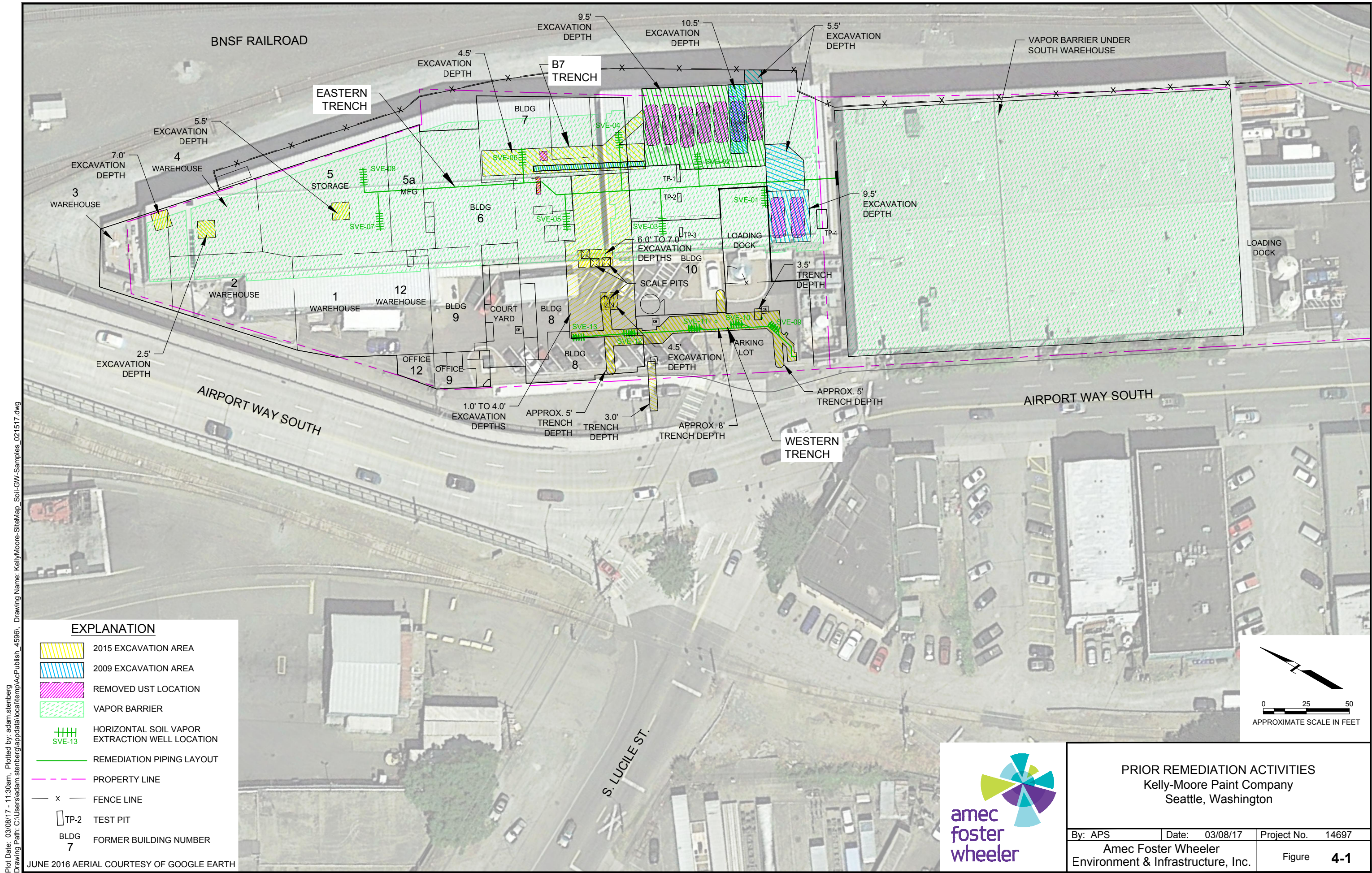
Plot Date: 03/03/17 - 11:18am, Plotted by: adam.stenberg
Drawing Path: C:\Users\adam.stenberg\appdata\local\temp\AcPublish_1488\ Drawing Name: KellyMoore-SiteMap_Soil-GW-Samples_021517.dwg

Enclosure A: Figure 8



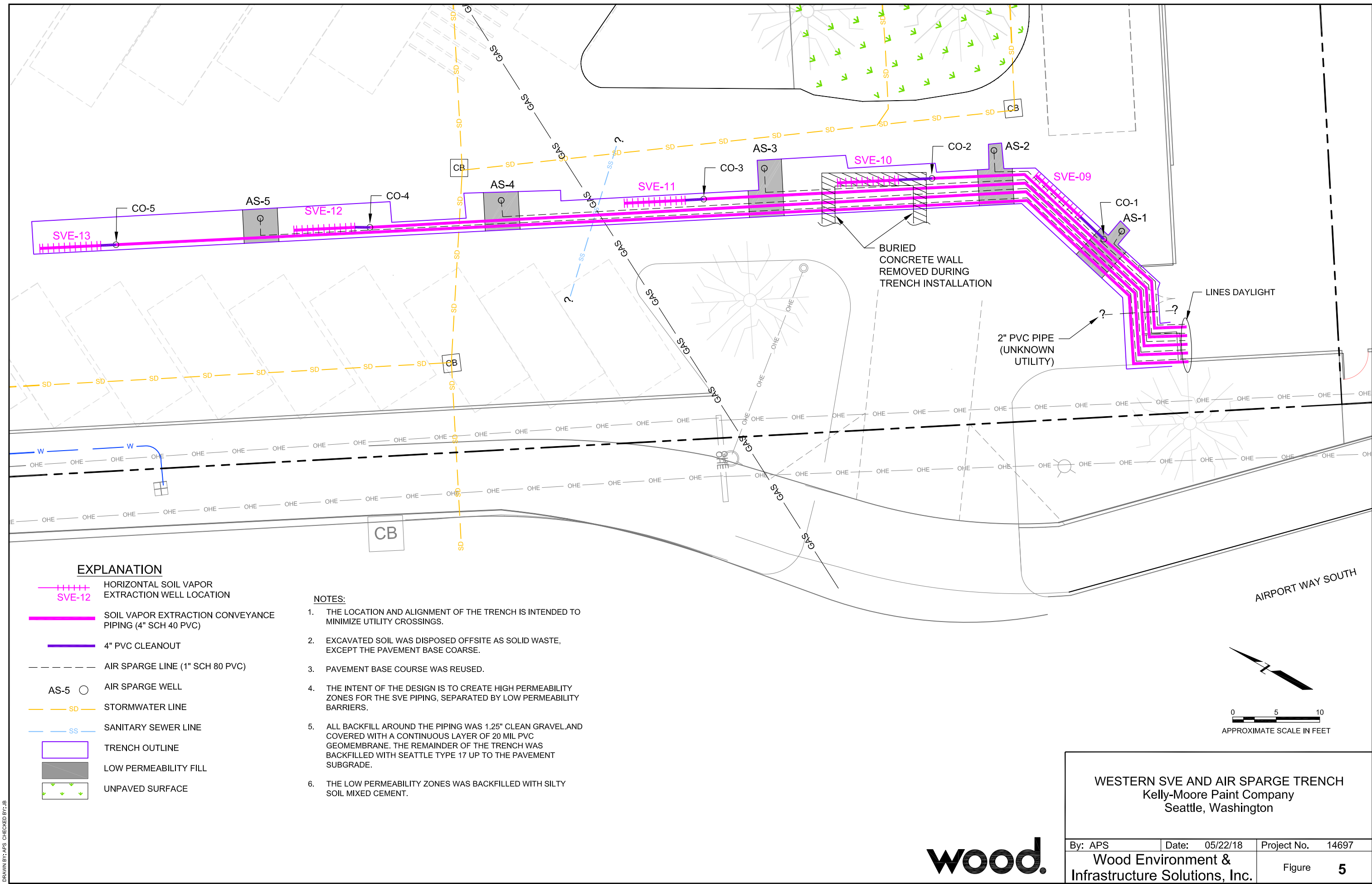
CLIENT	NEW CORE DEVELOPMENT		PROJECT	5410 Airport Way South Seattle, Washington	DATE	MAY 2015
					SCALE	1" = 10'
Amec Foster Wheeler Environment & Infrastructure, Inc. 600 University Street, Suite 600 Seattle, WA 98101			TITLE	BUILDING 8 EXCAVATION FINAL PCB SAMPLE RESULTS	PROJECT NO.	16110
					FIGURE	4

Enclosure A: Figure 9



Plot Date: 03/08/17 - 11:30am, Plotted by: adam.stenberg
Drawing Path: C:\Users\adam.stenberg\appdata\local\temp\AcPublish_4596\ Drawing Name: KellyMoore-SiteMap_Soil-GW-Samples_021517.dwg
JUNE 2016 AERIAL COURTESY OF GOOGLE EARTH

Enclosure A: Figure 10



DRAWN BY: APS CHECKED BY: JB

S:\14697\016_2018-RIFS\Kelly-Moore-WesternSVEtrench_052118_recover.dwg - Flg5-Trench - May, 22, 2018 3:47pm - adam.stenberg

Enclosure B

Basis for the Opinion: List of Documents

1. SECOR International Incorporated, *Phase I Environmental Site Assessment, Former Preservative Paints, Office Building Parcel, 5502 Airport Way South, Seattle, Washington*, August 29, 1997.
2. Amec Foster Wheeler Environment & Infrastructure, Inc., *PCB Closure and Characterization Plan, Former Kelly-Moore Manufacturing Facilities, 5410 Airport Way South, Seattle, Washington*, July 2009.
3. Amec Foster Wheeler Environment & Infrastructure, Inc., *Limited Phase II Environmental Site Assessment Report, Kelly Moore Facility, Seattle, Washington*, November 12, 2009.
4. Amec Foster Wheeler Environment & Infrastructure, Inc., *Polychlorinated Biphenyl (PCB) Investigation and Cleanup Report, Former Kelly-Moore Manufacturing Facility, 5410 Airport Way South, Seattle, Washington*, January 2010.
5. Amec Foster Wheeler Environment & Infrastructure, Inc., *Remedial Investigation and Feasibility Study, Kelly Moore Facility, Seattle, Washington*, October 2011.
6. Ecology, *Opinion on Work Plan for Monitored Natural Attenuation, Kelly-Moore Paint Co., 5410 Airport Way South, Seattle, WA, VCP NW2305*, February 19, 2014.
7. Amec Foster Wheeler Environment & Infrastructure, Inc., *Underground Storage Tank Removal and Site Assessment Report, 5400 Airport Way South, Seattle, Washington*, May 2015.
8. Amec Foster Wheeler Environment & Infrastructure, Inc., *PCB Closure Report, 5400 Airport Way South, Seattle, Washington*, July 2015.
9. Amec Foster Wheeler Environment & Infrastructure, Inc., *Revised Remedial Investigation, Former Kelly-Moore Manufacturing Facility, 5400–5580 Airport Way South, Seattle, Washington*, January 2016.
10. Ecology, *Opinion on Remedial Investigation, Kelly-Moore Paint Co., 5410 Airport Way South, Seattle, WA, VCP NW2305*, May 4, 2016.
11. Amec Foster Wheeler Environment & Infrastructure, Inc., *Revised Remedial Investigation, Feasibility Study, and Disproportionate Cost Analysis, Former Kelly-Moore Manufacturing Facility, 5400–5580 Airport Way South, Seattle, Washington*, March 2017.
12. Ecology, *Opinion on Proposed Cleanup, Kelly Moore Paint Company, 5410 Airport Way South, Seattle, WA 98108, VCP No. NW 2305*, February 27, 2018.
13. Wood Environment & Infrastructure Solutions, Inc, *2017 Summary of Investigations and Remedial Actions, Former Kelly-Moore Manufacturing Facility, 5400–5580 Airport Way South*, June 5, 2018.

14. Ecology, *Re: Annual Update* (email correspondence), July 12, 2018.
15. Ecology, *Re: Annual Update* (email correspondence), March 19, 2019.
16. Wood Environment & Infrastructure Solutions, Inc., *Additional Monitoring Well Installation Work Plan, Former Kelly-Moore Manufacturing Facility, 5400–5580 Airport Way South*, April 8, 2019.
17. Wood Environment & Infrastructure Solutions, Inc., *2018 Summary of Investigations and Remedial Actions, Former Kelly-Moore Manufacturing Facility, 5400–5580 Airport Way South*, October 8, 2019.

Enclosure C

Preliminary Soil and Ground Water Screening Levels of the Site

TABLE 1: SELECTION OF PRELIMINARY SOIL SCREENING LEVELS

Kelly Moore Paint Company
5410 Airport Way South, Seattle, Washington 98108
Facility Site No. 2163 VCP No. NW2305

Constituents	MTCA Method B		Protection of Potable Water Use Vadose Zone (Equation 747-1 Value)	Simplified TEE Values for Industrial or Commercial Land Use ^a	PQLs	Puget Sound Regional Background Levels ^b	Preliminary Soil Screening Levels ^c
	Noncancer (Equation 740-1 Value)	Cancer (Equation 740-2 Value)					
Metals							
Arsenic	24	0.667	0.34	20	2.0	7.0	7.0
Cadmium	80	0.69	0.69	36	0.20	0.77	0.77
Copper	3,200	--	284	550	0.20	36	284
Lead	250 ^d	--	3000	220	2.0	24	220
Mercury	24		2.10	9	0.02	0.07	2.10
Zinc	24,000	--	5970	570	1.0	85	570
Total Petroleum Hydrocarbons							
Diesel Range Organics	--	--	2,000	15,000	5.0	--	2,000
Lube Oil	--	-	2,000	--	10	--	2,000
Gasoline Range Organics	1,500	--	30	12,000	4.0	--	30
Volatile Organic Compounds							
Benzene	320	18.2	0.027	--	0.001	--	0.027
Ethylbenzene	8,000	--	5.9	--	0.001	--	5.9
Naphthalene	1,600	--	4.45	--	0.001	--	4.45
Total xylenes	16,000	--	14	--	0.002	--	14
Toluene	6,400	--	4.52	--	0.005	--	4.52
Trichloroethene	40	12.0	0.025	--	0.001	--	0.025
Tetrachloroethene	480	476	0.05	--	--	--	0.05
Semivolatile Organic Compounds							
2-methylphenol (o-cresol)	4,000	--	2.3	--	--	--	2.3
Benzo[a]pyrene	--	--	--	300	--	--	300 ^e
Dibenzofuran	80.0	--	--	--	0.0017	--	80.0
Total cPAHs TEQ	--	0.19	3.9	--	0.0017 ^f	--	0.19
Polychlorinated Biphenyls (PCBs)							
Total PCBs	--	1.0 ^d	2.7	2.0	--	--	1.0

All values are in milligrams per kilogram (mg/kg)

-- = not applicable or not provided

Abbreviations

MTCA = Model Toxics Control Act

TEE = Terrestrial Ecological Evaluation

PQL = Practical Quantitation Limit

cPAH = Carcinogenic Polycyclic Aromatic Hydrocarbons

Total TEQ = Total Toxic Equivalent Concentration

a = Simplified TEE values for industrial or commercial sites are based on MTCA WAC 173-340-900 Table 749-2.

b = Puget Sound regional background levels are based on Ecology's *Natural Background Soil Metals Concentration in Washington State, Publication No. 94-115* , October 1994.

c = The screening level for a constituent is determined by: 1) identify the lowest risk-based value among: Method B non-cancer value, cancer value, protection of potable water use value, and simplified TEE value;
2) compare the lowest risk-based value to PQL and background concentration, and the highest value of the three is the preliminary screening level.

d = MTCA Method A level is used.

e = When the total cPAH TEQ screening level is met, the benzo[a]pyrene screening level will automatically be met.

f = The value of 0.0017 mg/kg is for each individual cPAHs.

TABLE 2: SELECTION OF PRELIMINARY GROUND WATER SCREENING LEVELS

Kelly Moore Paint Company
5410 Airport Way South, Seattle, Washington 98108
Facility Site No. 2163 VCP No. NW2305

Constituents	MTCA Method B		Federal Maximum Contaminant Levels	Federal Maximum Contaminant Level Goals	Washington State Maximum Contaminant Levels	Most Stringent ARARs	Ground Water Levels Protective of Potable Water Use ^a	PQLs	Natural Background	Preliminary Screening Levels ^b
	Non-cancer Levels (Equation 720-1 Value)	Cancer Levels (Equation 720-2 Value)								
Metals										
Arsenic	4.8	0.06	10	--	10	10	0.6 ^c	0.5	5.0	5.0 ^d
Chromium	24,000	--	100	100	100	100	100	0.2	--	100
Copper	640	--	1,300	1,300	1,300	1,300	640 ^e	0.1	--	640
Lead	--	--	15	--	15	15	15	0.02	--	15
Mercury	2.4	--	2.0	2.0	2.0	2.0	2.0	0.1	--	2.0
Nickel	320	--	--	--	100	100	100	0.2	--	100
Zinc	4,800	--	5,000	--	--	--	4,800	0.5	--	4,800
Total Petroleum Hydrocarbons										
Diesel Range Organics	500	--	--	--	--	--	500	250	--	500
Lube Oil	500	--	--	--	--	--	500	400	--	500
Gasoline Range Organics	800	--	--	--	--	--	800	100	--	800
Volatile Organic Compounds										
1,2,4-Trimethylbenzene	80	--	--	--	--	--	80	0.20	--	80
1,3,5-Trimethylbenzene	80	--	--	--	--	--	80	0.20	--	80
Acetone	7,200	--	--	--	--	--	7,200	5.0	--	7,200
Benzene	32	0.8	5.0	--	5.0	5.0	5.0	0.20	--	5.0
Ethylbenzene	800	--	700	700	700	700	700	0.20	--	700
Naphthalene	160	--	--	--	--	--	160	1.0	--	160
Total xylenes	1,600	--	10,000	10,000	10,000	10,000	1,600	0.40	--	1,600
Toluene	640	--	1,000	1,000	1,000	1,000	640 ^e	1.0	--	640
Trichloroethene	4.0	0.5	5.0	--	5.0	5.0	4.0 ^e	0.20	--	4.0
Vinyl chloride	24.0	0.029	2.0	--	2.0	2.0	0.29 ^e	0.07	--	0.29
Semivolatile Organic Compounds										
Total cPAH TEQ	4.80	0.02	0.20	--	0.20	0.20	0.20	0.01	--	0.20
Polychlorinated Biphenyls (PCBs)										
Total PCBs	--	0.044	0.50	--	--	0.50	0.44 ^c	0.01	--	0.44

All values are in micrograms per liter (µg/L).

-- = not applicable

Abbreviations

MTCA = Model Toxics Control Act

Federal Maximum Contaminant Levels and Maximum Contaminant Level Goals are based on 40 CFR 141.

Washington State Maximum Contaminant Levels are based on WAC 246-290.

ARAR = Applicable or Relevant and Appropriate Requirements

PQL = Practical Quantitation Limit

cPAH = Carcinogenic Polycyclic Aromatic Hydrocarbons

Total TEQ = Total Toxic Equivalent Concentration

a = According to WAC 173-340-720(7)(b), the determination of ground water levels that are protective of potable water use involves identifying the most stringent ARARs and calculating values per MTCA Equations 720-1 and 720-2.

If the ratio of the most stringent ARAR to the Equation 720-1 value exceeds 1, the most stringent ARAR should be adjusted down to the Equation 720-1 value to achieve a hazard quotient of 1.

If the ratio of the most stringent ARAR to the Equation 720-2 value exceeds 10, the most stringent ARAR should be adjusted down to 10 times the Equation 720-2 value to achieve a cancer risk of 1x10⁻⁵.

b = According to WAC 173-340-720(7)(c), cleanup levels should not be set at levels below PQLs or natural background concentrations, whichever is higher.

c = The most stringent ARAR was adjusted down to 10 times the Equation 720-2 value to achieve a cancer risk of 1x10⁻⁵.

d = The screening level is the highest among the ground water level protective of potable water use, PQL, and the natural background concentration.

e = The most stringent ARAR was adjusted down to Equation 720-1 value to achieve a hazard quotient of 1.