PES Environmental, Inc.
Engineering & Environmental Services

October 10, 2013

1006.008.03.001

Washington State Department of Ecology
Toxics Cleanup Program – NWRO
3190 160th Avenue SE
Bellevue, Washington 98008-5452

Attention: Ms. Maura O'Brien

POST EXCAVATION COMPLIANCE MONITORING PLAN
FORMER PACE NATIONAL PROPERTY
500 7TH AVENUE SOUTH
KIRKLAND, WASHINGTON

Dear Ms. O'Brien:

PES Environmental, Inc. (PES) has prepared this Post Excavation Compliance Monitoring Plan for the Former Pace National property, located at 500 7th Avenue South, in Kirkland, Washington (Property; Figure 1). SRMKII, LLC (SRMKII) is in the process of redeveloping the Property for use as a commercial office building with two levels of subsurface parking. The northern portion of the Property is the location of the Former Pace National Site (Site) which is the subject of cleanup action being performed pursuant to a Consent Decree between the Washington State Department of Ecology (Ecology), Ultra Corporation, and SRMKII. The cleanup action being performed at the Site is described in detail in the Cleanup Action Plan[1] prepared by Ecology and included as Exhibit B to the Consent Decree. PES has prepared this Post Excavation Compliance Monitoring Plan on behalf of SRMKII in response to your email dated September 26, 2013 and the results of the October 2, 2013 meeting among Ecology, SRMKII, and PES.

A small portion of the soils to be excavated during Property redevelopment for the construction of the subsurface parking garage contain detectable concentrations of contaminants, including concentrations below applicable cleanup levels (referred to as "gray soil") and require off-site disposal at a permitted facility. In addition, saturated soils containing groundwater with vinyl chloride located in the northwest corner of the Property will be removed during redevelopment.

The purpose of this Post Excavation Compliance Monitoring Plan is to describe: (1) the post excavation soil sampling that will be performed as part of the Property redevelopment, and (2) the groundwater compliance monitoring that will be performed in accordance with the requirements of the Consent Decree for the Site.

[1] Washington State Department of Ecology. 2012. *Cleanup Action Plan, Former Pace National Site, 500 7th Avenue South, Kirkland, Washington, Site Cleanup ID# 5063, Facility Site ID# 2159.* January.

SITE DESCRIPTION

The 5-acre Property is currently vacant. The northern one-third portion of the Property is the location of the former Pace National operations and is a mixture of dirt, vegetation, and asphalt surfaces (see Figure 2). The majority of the non-asphalt areas are overgrown with brush, blackberries, and a few small trees. The southern two-thirds of the Property are wooded and have never been developed. The surface terrain of the northern portion of the Property consists of a relatively flat area at an elevation of approximately 169 feet above mean sea level (amsl) and slopes to the west to an elevation of approximately 149 feet amsl along the western property line. The area of a former drum storage yard is at a slightly lower elevation of approximately 160 feet amsl.

REDEVELOPMENT PLANS

The redevelopment plans for the Property include a mass excavation to an elevation of approximately 142.5 feet amsl for the construction of two floors of subsurface parking. The parking garage footprint is shown on Figure 3. A two-story office complex will be constructed above the parking structure. Slope cuts for the mass excavation will be 1.25:1 along the northern, western, and southern excavation limits. The eastern sidewall of the excavation will be shored along the property line. In addition to the redevelopment mass excavation, saturated soils within the vinyl chloride area will be removed. The sidewalls for the vinyl chloride area excavation will be shored along the northern and western property lines as shown on Figure 3.

FIELD PROCEDURES – SITE REDEVELOPMENT ACTIVITIES

The following is a description of the excavation, handling, sampling, and disposal of contaminated soil and groundwater at the Property, as it pertains to the Property redevelopment activities. This work is being conducted in part by the excavation contractor, which has been instructed on the proper handling and disposal of soil to be excavated for the construction of the subsurface parking garage, as well as the work to remove saturated zone soils in the vinyl chloride area, as set forth below.

Gray Soil Excavation

SRMKII will excavate soils in the locations of previous borings with detectable contaminant concentrations prior to the start of the redevelopment mass excavation. The borings were advanced by PES in 2012 and 2013, and the results are documented in PES's *Soil Assessment Report*[2] and PES's *Vinyl Chloride Area Assessment Report*[3]. The proposed locations of the gray soil excavations, designated as "Area 1" through "Area 8," "Area 10," and "Area 11" are shown on Figure 3. The soil excavation activities will be conducted within each of the identified Areas

[2] PES Environmental, Inc. 2012. *Soil Assessment Report. Former Pace National Property, 500 7th Avenue South, Kirkland, Washington*. November 15.
[3] PES Environmental, Inc. 2013. *Vinyl Chloride Area Assessment Report. Former Pace National Property, 500 7th Avenue South, Kirkland, Washington*. June 7.

beginning at the locations with the documented soil contamination and extending radially outward 10 feet and one to two feet below the depth of the soil sample with a detection. The proposed excavations for Area 1 and Areas 4 through 8 begin at the ground surface, due to the chemical detections within the shallowest soil samples. For Areas 2 and 3, the soil from the ground surface to seven feet below ground surface (bgs) is considered clean based on a clean soil sample at seven feet in boring GP-8. It is assumed that seven feet of overburden will be removed and transported off-site as clean soil in Areas 2 and 3. Excavated soils designated for off-site disposal will be directly loaded into trucks and transported off-site. Care will be taken to operate the trucks over clean soil, and all trucks will go through standard tire cleaning procedures typical of this type of construction prior to leaving the site.

Upon completion of the initial excavation of gray soil, discreet samples from each of the four sidewalls and base of each excavation will be collected (i.e., a total of five samples) and analyzed for the known chemical detections in each area (Tables 1 and 2). The soil samples will be analyzed for one or more of the following: gasoline-range organics (GRO) using Ecology Method NWTPH-Gx, diesel-range organics (DRO) and heavy oil-range organics (HO) using Ecology Method NWTPH-Dx, select VOCs using United States Environmental Protection Agency (USEPA) Method 8260B, and/or organochlorine pesticides using USEPA Method 8081.

If the sample results indicate soils with detectable chemical concentrations remain, the sidewalls and/or base, as applicable, will be excavated and extended an additional four feet and the remaining soils will be re-tested until each Area meets the clean soil criteria [i.e., the method reporting limit (MRL)]. If soil with detectable contaminant concentrations extends below the base of the planned redevelopment mass excavation (approximate elevation of 142.5 amsl), confirmation samples will be compared to Ecology's Model Toxics Control Act (MTCA) Method A or, if MTCA Method A levels are not available, MTCA Method B cleanup levels. The soil re-testing will occur at a density of one sidewall sample for every 50 lineal feet of sidewall and one base sample for every 600 square feet of excavation base. The sidewall samples will be collected at the depths of the previous detections (Table 1) and will be collected directly from the center of the backhoe bucket using clean, decontaminated stainless steel spoons and placed into the appropriate laboratory-prepared sample containers (Table 3). Samples from excavated areas less than four feet deep will be directly accessible by field personnel and will be collected directly from the base and/or sidewalls using clean, stainless steel spoons. Samples for VOC analyses will be collected using syringe samplers following the USEPA Method 5035 protocols and placed into laboratory-prepared sample containers (VOA bottles preserved with methanol), sealed, labeled, and placed in a cooler, on ice, for delivery to Fremont Analytical Laboratory, Inc. (Fremont), a Washington State accredited analytical laboratory. Additional sample volumes will be collected in laboratory-prepared glass jars for additional analyses and moisture content.

Once an Area meets the clean soil criteria, the Area will be approved for mass excavation, and no further soil testing will be required or conducted.

It is anticipated that Area 2 will extend beneath the perched water table. The rate of infiltration is expected to be low based on the type of soil present and based on the low recharge rate of the

site monitoring wells (purged dry during sampling). If required for gray soil excavation activities, water that accumulates in the excavation (rainwater or perched water) will be collected, stored, tested, and properly disposed of. The water will be tested for disposal purposes and will not be used to evaluate further excavation. Soils excavated from Area 2 will not be used to backfill the over-excavated areas in Area 9.

Vinyl Chloride Area Excavation

A portion of the proposed subsurface parking garage is located over the area where vinyl chloride is present in perched water near the northwestern corner of the Property (Figure 3). The water is perched on a glaciolacustrine layer (herein referred to as the "confining silt layer"), located at estimated elevations ranging from 130 to 148 feet amsl. SRMKII will extend the excavation in this area to remove the saturated soils, including the perched water containing vinyl chloride at concentrations greater than the applicable cleanup level (0.2 micrograms per liter [µg/L]). The assumed area of vinyl chloride-impacted groundwater (as shown on Figure 3) is based on the area of monitored natural attenuation (MNA) specified in the CAP and revised based on the results of the vinyl chloride area investigation.

Saturated soils within the vinyl chloride area (Area 9) will be excavated to the depth of the confining silt layer. The elevation of this layer is estimated to range from 130 to 132 feet amsl at the western property line to approximately 148 feet amsl at the eastern extent of the vinyl chloride area. A cross section showing the vinyl chloride area excavation is shown on Figure 4. The non-saturated clean overburden will be removed and stockpiled on-site for use as backfill. The saturated soils will be transported off-site for proper disposal. Excavated soils designated for off-site disposal will be directly loaded into trucks and transported off-site, using the same protocols as with the gray soil excavation.

The excavation sidewalls will be sampled at a density of one sample per 50 linear feet, and the base will be sampled at a density of one sample per 600 square feet. The sidewall samples will be collected from the saturated soils, at a depth that is halfway between the top of the saturated zone and the confining silt layer, and will be collected directly from the center of the backhoe bucket using syringe samplers following the USEPA Method 5035 protocols and clean stainless steel spoons. The samples will be placed into laboratory-prepared sample containers (Table 3). Soil samples collected from the vinyl chloride area excavation will be submitted for vinyl chloride analysis using USEPA Method 8260B. In accordance with PES's *Sampling and Analysis Plan*[4] for the vinyl chloride area assessment, the sidewall samples will also be submitted for analysis of DRO and HO using Ecology NWTPH-Dx/Dx extended, and naphthalene and toluene using USEPA Method 8260B (contaminants detected in GP-27 and GP-30).

If vinyl chloride is detected in the sidewall confirmation samples located on the east and/or south boundary of the excavation, additional excavation will be conducted and the area re-sampled.

[4] PES Environmental, Inc. 2013. *Sampling and Analysis Plan, Former Pace National Property, 500 7th Avenue South, Kirkland, Washington.* February 14.

This process will be repeated until the sidewall samples do not contain detectable concentrations of vinyl chloride. The limits of the excavation on the western and northern boundaries are generally defined by the property boundary making further excavation impracticable.

If the sidewall samples contain constituents other than vinyl chloride, additional excavation will be conducted and the area re-sampled. The excavation sidewalls within the garage footprint will be extended and re-sampled until the sidewall samples do not contain detectable concentrations. The excavation sidewalls outside of the garage footprint and within the property boundary will be extended and re-sampled until the sidewalls do not contain concentrations above applicable cleanup levels.

If vinyl chloride is detected in the base samples (confining silt layer) located beneath the planned building footprint, the base of the excavation will be extended an additional one foot and the base re-sampled until the base samples do not contain detectable concentrations. If vinyl chloride is detected in the base samples (confining silt layer) located outside the planned building footprint at concentrations exceeding the MTCA Method B cleanup level (0.67 milligrams per kilogram), the base of the excavation will be extended an additional one foot and the base re-sampled until the base sample results indicate concentrations are below the cleanup level.

Water that accumulates in the excavation (rainwater or perched water) will be collected, stored, tested, and properly disposed of. The excavation areas beneath and outside of the planned garage footprint will be back-filled with either clean on-site soils or imported clean fill material.

The majority of saturated soils within the vinyl chloride area inside the garage footprint will be excavated during planned site mass excavation for the redevelopment (Figure 3). The current planned mass excavation elevation for the base of the parking garage is 142.5 feet amsl. Based on a review of soil boring logs, PES anticipates that the depth to the confining silt layer could extend to an elevation of approximately 132 feet amsl in portions of the vinyl chloride area and therefore, over-excavation deeper than the planned redevelopment excavation will be necessary to remove the saturated soils above the confining silt layer. As shown on Figure 4, upon completion of the proposed excavation, the saturated soil and the perched groundwater containing the vinyl chloride will be removed from the Property.

Laboratory Analytical Procedures, Sampling Labeling, Shipping and Chain-of-Custody

All samples will be submitted to Fremont for laboratory analysis. The soil sample analyses and MRLs are shown in Tables 1 and 2 and the bottle type, preservation, and hold times are shown in Table 3.

Sample container labels will be completed immediately before or immediately following sample collection. Container labels will include the following information:

- Project name;
- Excavation Soil Sample Name: Soil sampling location (with sequential numbering) followed by the depth collected. For example, the sample name for a soil sample

collected after over-excavation on the north sidewall of Area 1 at a depth of 2 feet would be "Area1-N2-2ft";
- Initials of collector;
- Date and time of collection; and
- Analysis requested.

Samples will be transported via courier to the analytical laboratory using the following procedures:

- Sample containers will be place in a sealed, iced cooler after sample collection. This cooler will be used for transporting the samples to the analytical laboratory;
- In each cooler, glass bottles will be separated by a shock absorbing material to prevent breakage and leakage;
- Ice sealed in separate plastic bags or "gel ice" packs, will be placed into each cooler with the samples;
- All sample coolers will be accompanied by a chain-of-custody form (COC). The completed form will be sealed in a plastic bag, which will be taped to the inside lid of the cooler;
- Signed and dated COC seals will be placed on all coolers; and
- The name and address of the analytical laboratory, along with PES's name and office (return) address, will be placed on each cooler prior to transportation to the lab.

Once a sample is collected, it will remain in the custody of the sampler or other PES personnel until transported to the laboratory. Upon transfer of sample possession to subsequent custodians, a COC will be signed by the persons transferring custody of the sample container. A signed and dated COC seal will be placed on each cooler prior to transport. COC records will be included in the analytical report prepared by the laboratory.

Documentation

Excavation – Soil Sampling

- Date and time of sampling;
- Sampling location (Area Number, Sidewall or Base, and Depth), and as determined with a GPS unit;
- Names of sampling team members;
- Sampling technique;
- Parameters to be analyzed;
- PID measurement;
- Weather conditions at the time of sampling; and
- Unusual circumstances.

Decontamination

All excavation equipment, tools, and sampling equipment will have accumulated soils brushed off between boreholes/excavations and be high-pressure-washed with hot water after completion of the work. Equipment washing will be completed in a designated decontamination area so that all rinsate will be contained and collected.

All smaller, non-disposable sampling equipment will be decontaminated prior to initial use, between sampling locations, and at the completion of the site-specific sampling.

The following decontamination procedure will be used for non-dedicated and non-disposable smaller sampling equipment:

- Tap water rinse;
- Non-phosphatic detergent (e.g., Liquinox) and tap water wash;
- Tap water rinse; and
- Distilled water rinse.

Decontamination of personnel involved in sampling activities will be accomplished as described in the site-specific health and safety plan.

Sampling Residuals

Any sampling residuals will be appropriately handled and properly disposed of.

QUALITY ASSURANCE PROJECT PLAN FOR POST EXCAVATION SOIL SAMPING

The quality assurance project plan (QAPP) describes the measures undertaken so that the data collected during the project are acceptable for their intended use(s). The specific requirements pertaining to this sampling plan are described in this section. The laboratory and field control sample frequency is summarized in Table 4.

Quality Assurance Project Plan Objectives

The overall QAPP objective for measurement data is to provide data of known and acceptable quality. All measurements will be made to yield accurate and precise results representative of the media and conditions measured. Chemical analyses will be performed in accordance with the requirements of the analytical methods. All sample results will be calculated and reported in consistent units to allow comparison of the sample data with regulatory criteria and federal, state, and local databases. QAPP objectives for precision, accuracy, and completeness have been established for each measurement variable, where possible, and are discussed below.

Chemical Analyses

Analysis of environmental samples will be performed in accordance with the laboratory analytical methods summarized in Table 1. The laboratory will report to the MRL. Any special analytical methods or modifications to methods will be determined with laboratory concurrence prior to beginning sample analysis.

Laboratory Quality Control

This section presents quality control (QC) requirements for the analytical laboratory. The purpose of this QC program is to produce data of known quality meeting project objectives and the requirements of the standard methods of analysis. Laboratory QC samples will include laboratory control samples (LCSs), matrix spike/matrix spike duplicate (MS/MSD) samples, and method blanks. Laboratory QC samples (e.g., blanks and LCSs) will be included in the preparation batch with the field samples. An analytical batch is a number of samples (not to exceed 20, including the associated laboratory QC samples, MSs and MSDs) that are from a similar matrix and extracted or digested at the same time, analyzed sequentially, and with the same lot of reagents.

The identity of each analytical batch will be reported with the analyses so that a reviewer can identify the QC samples and the associated environmental samples. Samples that do not need separate extraction or digestion (e.g., volatile analyses by purge and trap) are included in each analytical batch.

All sample preparation and analysis will be completed within the method-required holding times. The holding time begins at the time of sample collection. If holding times are exceeded and the analyses are performed, the data will be qualified during the data review, in accordance with USEPA Functional Guidelines for Organic Data Review[5].

Field Duplicates

A field duplicate sample is a second sample collected at the same location as the original sample. Duplicate samples are collected simultaneously or in immediate succession, using identical sampling techniques, and treated in an identical manner during storage, transportation, and analysis. The sample containers are assigned an identification number in the field so that they cannot be identified (blind duplicate) as duplicate samples by laboratory personnel performing the analysis. Duplicate sample results are used to assess precision of the sample collection process. One duplicate sample will be collected from the base of each gray soil excavation area and one per 20 samples within the vinyl chloride area.

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[5] U.S. Environmental Protection Agency (USEPA). 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*. EPA 540-R-01-008. USEPA Office of Emergency and Remedial Response. October.

Trip Blanks

A trip blank consists of a VOC sample vial filled in the laboratory with reagent-grade water, transported to the sampling site, handled under the same conditions as an environmental sample, and returned to the laboratory for analysis. Trip blanks are not opened in the field. Trip blanks are prepared only when volatile samples are collected and are analyzed only for volatile analytes. Trip blanks are used to assess the potential introduction of contaminants from sample containers or during the transportation and storage procedures. One trip blank per sampling event will be included with the shipment of samples to the laboratory and will be analyzed for VOCs. If an analyte is detected in a trip blank, the data will be qualified during the data review per USEPA Functional Guidelines for Organic Data Review.

Data Reporting and Review

The laboratory performing sample analyses will be required to submit summary data and QA information to permit independent determination of data quality. The determination of data quality will be performed using USEPA Functional Guidelines for Organic Data Review as guidelines for data review.

Laboratory deliverable requirements are outlined below:

- Narrative cover letters for each sample batch will include a summary of any QC, sample, shipment, or analytical problems, and will document all internal decisions. Problems will be outlined and final solutions documented;
- A copy of the signed chain-of-custody form for each batch of samples will be included in the results packet;
- Sample concentrations will be reported on standard data sheets in proper units and to the appropriate number of significant figures. For undetected values, the MRL for each compound will be reported separately for each sample. Dates of sample extraction or preparation and analysis must be included;
- A method blank summary will be included;
- Surrogate percent recovery will be calculated and reported;
- LCS results will be included;
- MS/MSD percent recoveries, spike level, and relative percent difference will be included; and
- Laboratory duplicate results will be included.

GROUNDWATER COMPLIANCE MONITORING

Groundwater compliance monitoring requirements pursuant to the Consent Decree are described in the Compliance Monitoring Plan[6] (CMP) included as Appendix A to the CAP. The CMP specified groundwater performance and confirmational monitoring to include collecting groundwater samples from wells HC-MW-3, HC-MW-7 through HC-MW-10, and SES-MW25 through SES-MW27 for vinyl chloride analysis. The CMP specified that after four semi-annual sampling events were completed, Ecology would conduct an evaluation of the progress of MNA at the Site and determine whether a modification to the number of wells sampled and/or the frequency of sampling was warranted. The fourth semi-annual sampling event was conducted in February 2013 and the results were submitted to Ecology in a letter[7] prepared by SoundEarth Strategies, LLC and dated March 1, 2013. In an e-mail dated March 21, 2013, Ecology agreed to revise the CMP based on the February 2013 groundwater sampling results. Ecology modified the CMP as follows:

- The compliance monitoring well network will be reduced to wells SES-MW-25 through SES-MW-27. All other existing monitoring wells were approved to be decommissioned by a licensed well driller in accordance with WAC 173-160-460;

- The frequency of monitoring was revised to annually beginning in February 2013. The next confirmation sampling event is currently estimated to be February or March 2014 (after the completion of site development excavation and subsurface disturbance); and

- Ecology will review with SRMKII, the option to revise the frequency of sampling to semiannual beginning after the completion of excavation and subsurface disturbance.

SRMKII will conduct groundwater compliance monitoring of wells SES-MW25 through SES-MW27 as described above. All compliance monitoring will be conducted in accordance with the approved CMP and its associated Quality Assurance Project Plan (QAPP). Copies of the approved CMP and QAPP are included as Attachments A and B, respectively.

REPORTING TO ECOLOGY

Reports will be prepared to document the results of the post excavation soil sampling performed as part of the Property redevelopment and the compliance groundwater monitoring performed pursuant to the Consent Decree. The reports and their contents are described in the following sections.

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[6] SoundEarth Strategies, LLC. 2012. *Compliance Monitoring Plan, Appendix A to the Cleanup Action Plan, Former Pace National Site, 500 7th Avenue South, Kirkland, Washington,*

[7] SoundEarth Strategies, LLC. 2013. Letter from T. Cammarata (SES) to M. O'Brien (Ecology), Semiannual Groundwater Monitoring and Sampling Report, February 2013, Former Pace National Site, 500 7th Avenue South, Kirkland, Washington. March 1. (Draft - Issued for Ecology Review)

Post Excavation Soil Sampling

SRMKII will submit a report documenting the results of the gray soil and vinyl chloride area excavation sidewall and base sampling activities to Ecology. The report will be submitted within 45 days of the last date of receipt of laboratory analytical data. The report will include a description of the excavation activities, figures showing the soil sample locations, tables summarizing the laboratory analytical results, the laboratory analytical reports, chain-of-custody documentation, and data validation memorandum.

The report will be submitted in hard copy (two copies) and electronically, and the data will be uploaded to Ecology's Environmental Information Management (EIM) database.

Groundwater Compliance Monitoring

SRMKII will submit groundwater compliance monitoring reports to Ecology within 45 days of receipt of the groundwater sampling laboratory analytical report. These sampling reports may be submitted annually or semi-annually, depending upon the approved sampling frequency. The progress reports will include a summary of the groundwater monitoring activities, tables summarizing the field parameters and laboratory analytical results, a figure summarizing the laboratory analytical results, the laboratory analytical report, chain-of-custody documentation, and a data validation memorandum. Groundwater flow direction and hydraulic gradient maps will not be included in the progress report due to the reduced number of wells and the well locations.

As per the Consent Decree, a site closure report will be prepared and submitted to Ecology after completing four consecutive compliance monitoring events where monitoring results show vinyl chloride concentrations below MTCA Method A cleanup levels in compliance wells SES-MW-25 through SES-MW-27.

All reports will be submitted in hard copy (two copies) and electronically and the data will be uploaded to Ecology's Environmental Information Management (EIM) database.

PES appreciates the opportunity to be of service on this project. If you have any questions regarding this letter, or need any additional information, please feel free to contact either of us at (206) 529-3980.

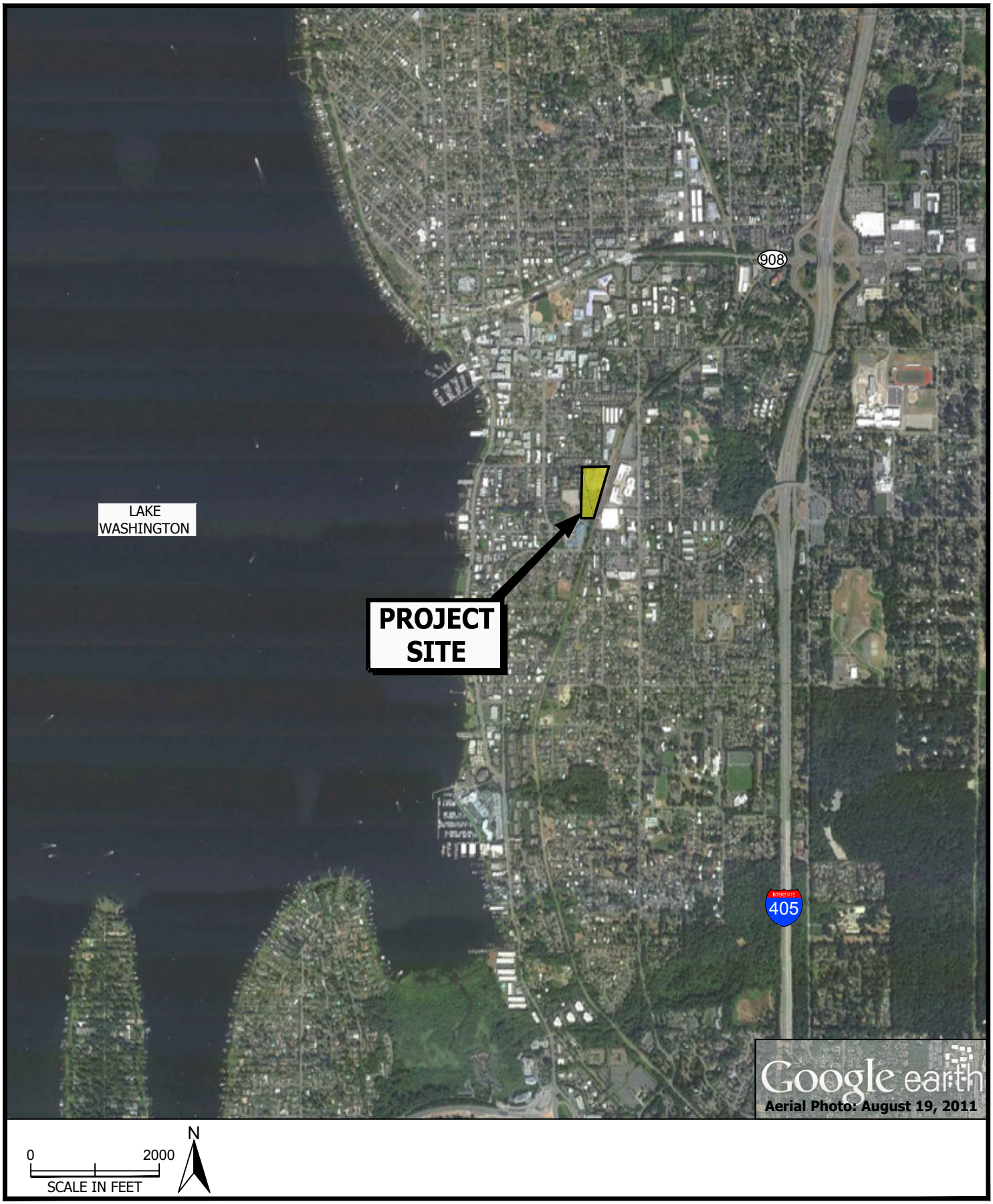
Very truly yours,

PES ENVIRONMENTAL, INC.

Kelly L. Rankich
Project Engineer

Daniel A. Balbiani, P.E.
Principal Engineer

Attachments: Figure 1 – Site Location Map
Figure 2 – Site Map
Figure 3 – Planned Soil Excavation Locations and Cross Section Location
Figure 4 – Cross-Section A-A
Table 1 – Laboratory Analytical Parameters and Screening Levels
Table 2 – Detected VOCs and Vinyl Chloride MRLs and Screening Levels
Table 3 – Analytical Methods and Sample Handling Details
Table 4 – Laboratory and Field Quality Control Summary
Attachment A – Compliance Monitoring Plan
Attachment B – Quality Assurance Project Plan



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Site Location Map
Former Pace National Property
500 7th Avenue South
Kirkland, Washington

FIGURE
1

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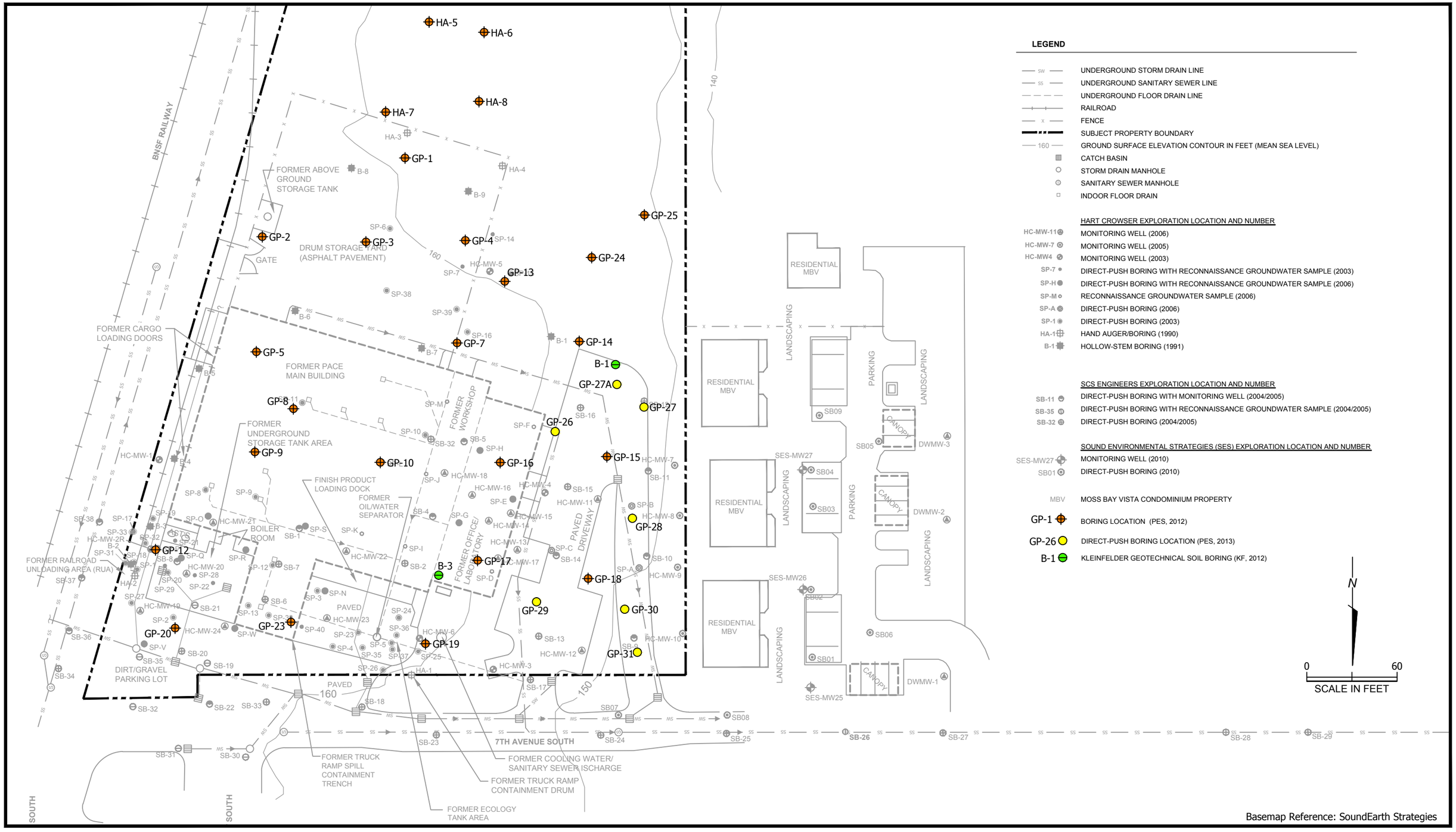
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE



LEGEND

- UNDERGROUND STORM DRAIN LINE
- UNDERGROUND SANITARY SEWER LINE
- UNDERGROUND FLOOR DRAIN LINE
- RAILROAD
- FENCE
- SUBJECT PROPERTY BOUNDARY
- GROUND SURFACE ELEVATION CONTOUR IN FEET (MEAN SEA LEVEL)
- CATCH BASIN
- STORM DRAIN MANHOLE
- SANITARY SEWER MANHOLE
- INDOOR FLOOR DRAIN

HART CROWSER EXPLORATION LOCATION AND NUMBER

- HC-MW-11 — MONITORING WELL (2006)
- HC-MW-7 — MONITORING WELL (2005)
- HC-MW4 — MONITORING WELL (2003)
- SP-7 — DIRECT-PUSH BORING WITH RECONNAISSANCE GROUNDWATER SAMPLE (2003)
- SP-H — DIRECT-PUSH BORING WITH RECONNAISSANCE GROUNDWATER SAMPLE (2006)
- SP-M — RECONNAISSANCE GROUNDWATER SAMPLE (2006)
- SP-A — DIRECT-PUSH BORING (2006)
- SP-1 — DIRECT-PUSH BORING (2003)
- HA-1 — HAND AUGER/BORING (1990)
- B-1 — HOLLOW-STEM BORING (1991)

SCS ENGINEERS EXPLORATION LOCATION AND NUMBER

- SB-11 — DIRECT-PUSH BORING WITH MONITORING WELL (2004/2005)
- SB-35 — DIRECT-PUSH BORING WITH RECONNAISSANCE GROUNDWATER SAMPLE (2004/2005)
- SB-32 — DIRECT-PUSH BORING (2004/2005)

SOUND ENVIRONMENTAL STRATEGIES (SES) EXPLORATION LOCATION AND NUMBER

- SES-MW27 — MONITORING WELL (2010)
- SB01 — DIRECT-PUSH BORING (2010)

- MBV — MOSS BAY VISTA CONDOMINIUM PROPERTY
- GP-1 — BORING LOCATION (PES, 2012)
- GP-26 — DIRECT-PUSH BORING LOCATION (PES, 2013)
- B-1 — KLEINFELDER GEOTECHNICAL SOIL BORING (KF, 2012)

Basemap Reference: SoundEarth Strategies

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Site Map
Former Pace National Property
500 7th Avenue South
Kirkland, Washington

FIGURE
2

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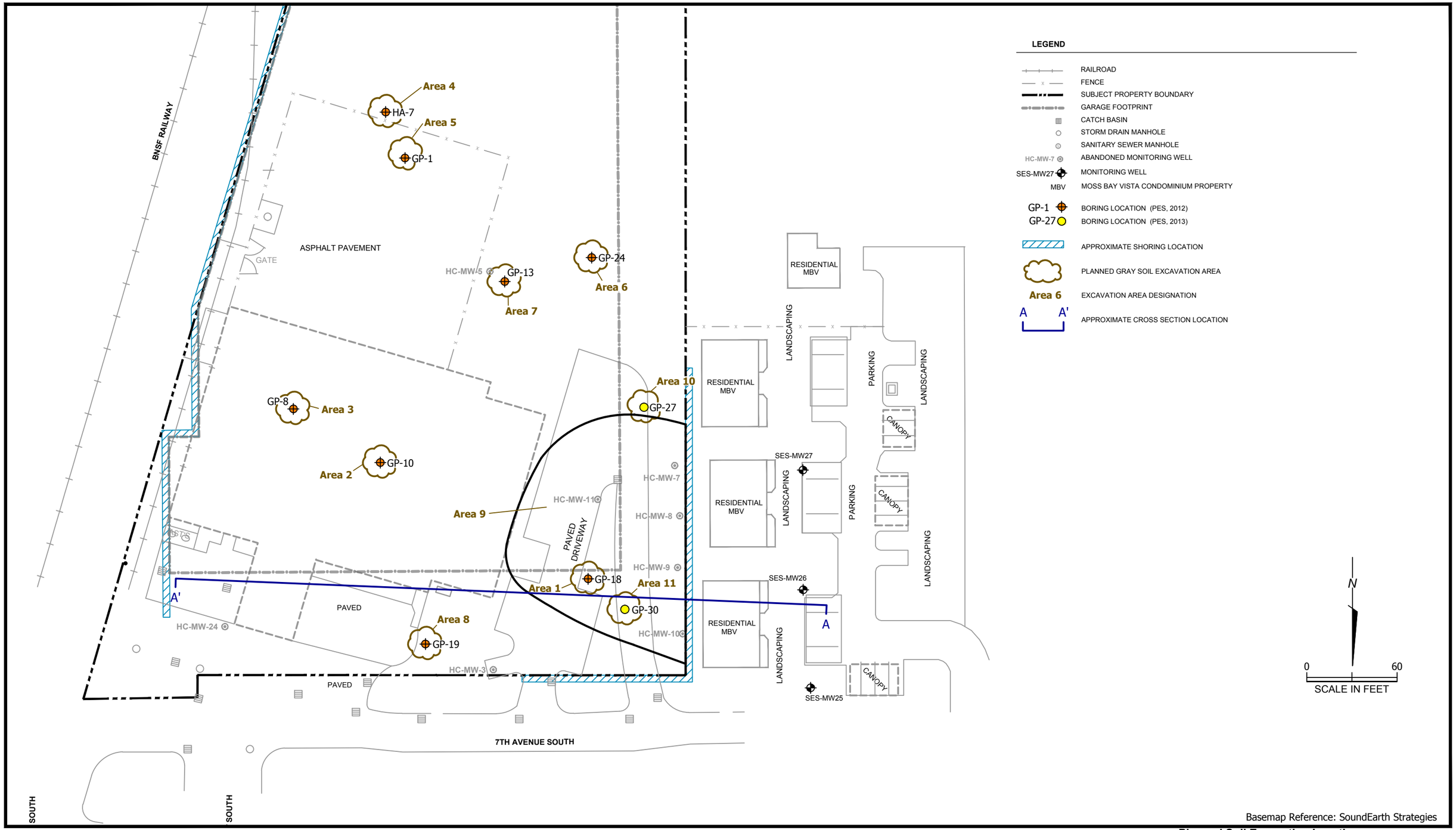
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE



Basemap Reference: SoundEarth Strategies

PES Environmental, Inc.
Engineering & Environmental Services

Planned Soil Excavation Locations and Cross Section Location
Former Pace National Property
500 7th Avenue South
Kirkland, Washington

FIGURE
3

1006.008.03.001	100600803001_POST_3	*KLR*	10/13
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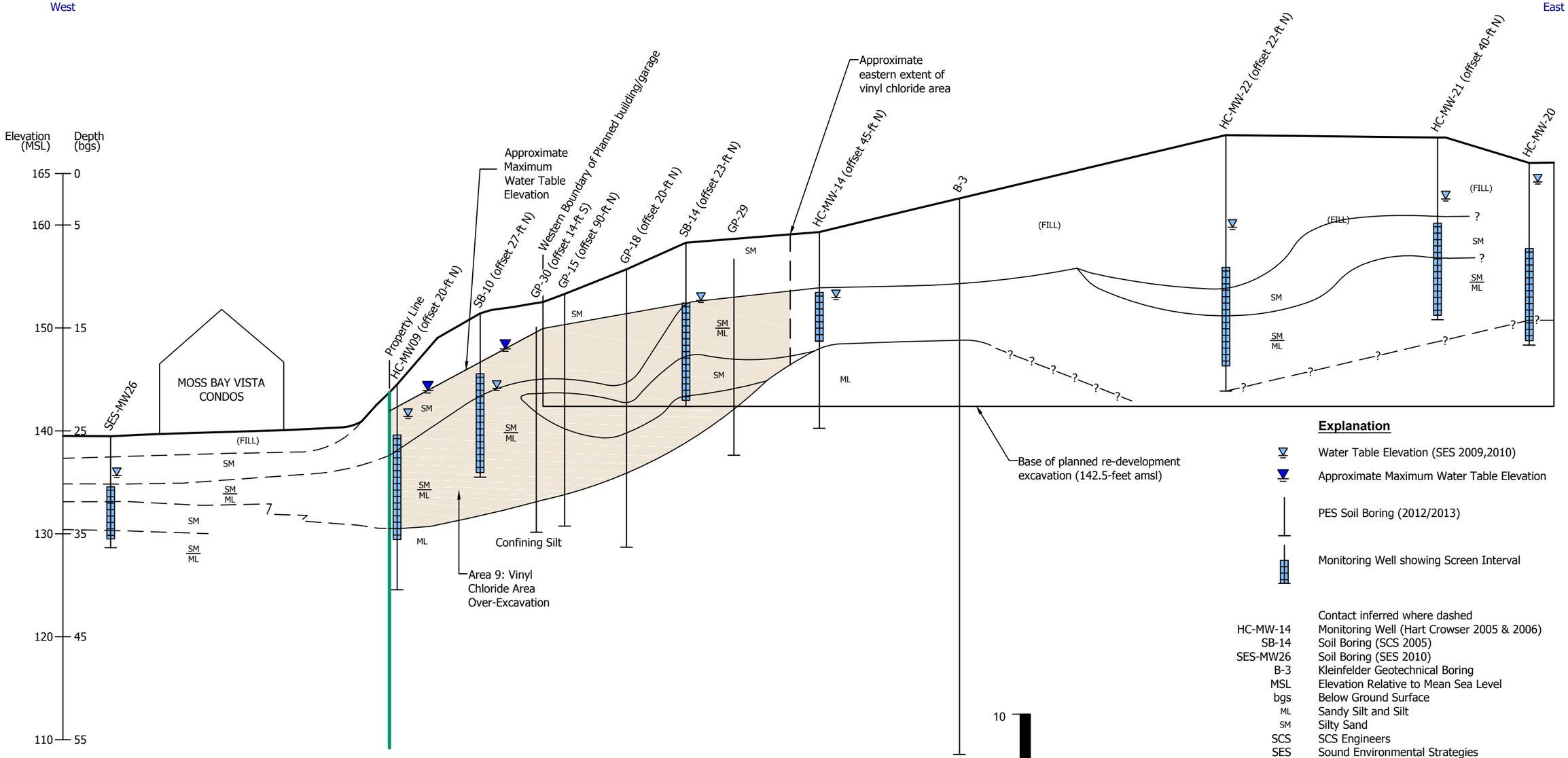
A
West

A'
East



Explanation

- Water Table Elevation (SES 2009,2010)
- Approximate Maximum Water Table Elevation
- PES Soil Boring (2012/2013)
- Monitoring Well showing Screen Interval

Contact inferred where dashed

HC-MW-14	Monitoring Well (Hart Crowser 2005 & 2006)
SB-14	Soil Boring (SCS 2005)
SES-MW26	Soil Boring (SES 2010)
B-3	Kleinfelder Geotechnical Boring
MSL	Elevation Relative to Mean Sea Level
bgs	Below Ground Surface
ML	Sandy Silt and Silt
SM	Silty Sand
SCS	SCS Engineers
SES	Sound Environmental Strategies

Vertical elevations referenced to NAVD88

10
0
Vertical Scale in Feet
0
30
Horizontal Scale in Feet

Vertical Exaggeration 8:1

Source Reference: SoundEarth Strategies' Figure 4, Generalized Geologic Cross Section A-A', Remedial Investigation/Feasibility Study , December 13, 2010

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Cross-Section A-A'
Former Pace National Property
500 7th Avenue South
Kirkland, Washington

FIGURE
4

1006.008.03.001	100600803001_POST_4	KLR	10/13
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

Table 1
Laboratory Analytical Parameters and Screening Levels
Former Pace National Property
500 7th Avenue South, Kirkland, WA

Area	Depth of Historical Detection (ft bgs)	Parameter	Method	Screening Levels (mg/kg)	
				Method Reporting Limit	MTCA Method A/B
1	6 and 12	DRO	NWTPH-Dx	20	2,000
	6 and 12	HO	NWTPH-Dx	50	2,000
	6 and 12	VOCs (full list)	USEPA Method 8260B	see Table 2	see Table 2
2	14.5	GRO	NWTPH-Gx	5	100
	14.5	DRO	NWTPH-Dx	20	2,000
	14.5	VOCs (full list)	USEPA Method 8260B	see Table 2	see Table 2
3	10	cis-1,2 dichloroethene	USEPA Method 8260B	0.02	800
4	2	xylenes	USEPA Method 8260B	0.02	9
5	1	toluene	USEPA Method 8260B	0.02	7
6	0.5	HO	NWTPH-Dx	50	2,000
7	6	GRO	NWTPH-Gx	5	100
	6	DRO	NWTPH-Dx	20	2,000
	6	VOCs (full list)	USEPA Method 8260B	see Table 2	see Table 2
8	1.5	DRO	NWTPH-Dx	20	2,000
	1.5	Chlordane	USEPA Method 8081	0.01	2.86
9	NA	Vinyl Chloride	USEPA Method 8260B	0.002	0.67
10	5	Naphthalene	USEPA Method 8260	0.03	5
	14.5	HO	NWTPH-Dx	50	2,000
11	3	Naphthalene	USEPA Method 8260	0.03	5
	8	Toluene	USEPA Method 8260	0.02	7

Notes:
1) ft bgs = feet below ground surface
2) GRO = gasoline-range organics
3) DRO = diesel-range organics
4) HO = heavy oil
5) VOCs = volatile organic compounds
6) NA = not applicable
7) mg/kg = milligrams per kilogram

Table 2
Detected VOCs and Vinyl Chloride MRLs and Screening Levels
Former Pace National Property
500 7th Avenue South, Kirkland, Washington

Analyte	Screening Level (mg/kg)	
	MRL	MTCA Method A/B
1,2,4-Trimethylbenzene	0.02	NA
1,3,5-Trimethylbenzene	0.02	800*
4-Isopropyltoluene	0.02	NA
Benzene	0.02	0.03
cis-1,2-Dichloroethene	0.02	800*
Cumene	0.08	8000*
Naphthalene	0.03	5
n-Butylbenzene	0.02	NA
n-Propylbenzene	0.02	8000*
Ethylbenzene	0.03	6
o-Xylene	0.02	9
m,p-Xylene	0.02	9
sec-Butylbenzene	0.02	NA
Toluene	0.02	7
Vinyl chloride	0.002	0.67*

Notes:

1) VOCs = volatile organic compounds
2) NA = not available
3) mg/kg = milligrams per kilogram
4) MRL = method reporting limit
5) * = Ecology Model Toxics Control Act (MTCA) Method B cleanup level

Table 3

Analytical Methods and Sample Handling Details
Former Pace National Property
500 7th Avenue South, Kirkland, Washington

Method Number	Analysis	Container[a] Type	Container[a] Size	Preservative	Maximum Holding Time
Soil					
NWTPH-Gx	Gasoline-Range Organics	Glass	4 to 8 oz.	4 ± 2°C	
		Glass - VOA	40 ml	4 ± 2°C; methanol	analyze within 14 days
NWTPH-Dx	Diesel and Heavy Oil-Range Organics	Glass	4 to 8 oz.	4 ± 2°C	extract within 14 days/analyze within 40 days
EPA Method 8260	Volatile Organic Compounds	Glass	4 to 8 oz.	4 ± 2°C	
		Glass - VOA	40 ml	4 ± 2°C; methanol	analyze within 14 days
EPA Method 8081	Organochlorine Pesticides	Glass	4 to 8 oz.	4 ± 2°C	extract within 14 days/analyze within 40 days

Notes:

a) The size and number of containers may be modified by the analytical laboratories.

Laboratory and Field Quality Control Sample Summary
Former Pace National Property
500 7th Avenue South, Kirkland, Washington

Matrix	QA/QC Analyses	Frequency
Field		
Soil	Field duplicate	1 per excavation area
Laboratory		
Soil	Laboratory control sample (LCS)	Every analytical batch
Soil	MS/MSD	1 per 20 project samples
Soil	Method blank	Every analytical batch

ATTACHMENT A

Compliance Monitoring Plan

SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102

COMPLIANCE MONITORING PLAN

APPENDIX A OF THE CLEANUP ACTION PLAN

Property:
Former Pace National Site
500 7th Avenue South
Kirkland, Washington

Prepared for:
Ultra Corporation
5101 25th Avenue Northeast #C335
Seattle, Washington

Report Date:
January 17, 2012

COMPLIANCE MONITORING PLAN
Appendix A of the Cleanup Action Plan

Prepared for:

Ultra Corporation
5101 25th Avenue Northeast #C335
Seattle, Washington 98105

Prepared for:

Former Pace National Site
500 7th Avenue South
Kirkland, Washington 98033

Project No.: 0698-001-03

Prepared by:

Thomas J. Cammarata, LG, LHG
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Reviewed by:

John R. Funderburk MSPH
Principal Scientist

January 17, 2012

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ACRONYMS AND ABBREVIATIONS

CMP	Compliance Monitoring Plan
Consent Decree	Legal agreement for Cleanup Action Plan to be implemented
Defendant	Ultra Corporation, a Washington corporation, and its successors and assigns
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
HASP	Health and Safety Plan
MNA	monitored natural attenuation
MTCA	Washington State Model Toxics Control Act
OnSite	OnSite Environmental Inc.
Periodic Review	Periodic review consists of a review by Ecology of post-cleanup Site conditions and monitoring results to assure that human health and the environment are being protected, following WAC 173-340-420
the Property	500 7th Avenue South, Kirkland, Washington
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
Restrictive Covenant Closure	A delisting of the Site conditioned upon recordation of appropriate restrictive covenants
the Site	the extent of historical and current contamination
SoundEarth	SoundEarth Strategies, Inc.
TSD	treatment, storage, and disposal
Ultra	Ultra Corporation
WAC	Washington Administrative Code

1.0 INTRODUCTION

SoundEarth Strategies, Inc. (SoundEarth) has prepared this Compliance Monitoring Plan (CMP) for the Former Pace National facility located at 500 7th Avenue South in Kirkland, Washington (hereinafter referred to as the Property), shown on Figures A-1 and A-2. The Property is located in Section 8, Township 25 North, Range 5 West in King County, Kirkland, Washington, southwest of the intersection of 7th Avenue South and the Burlington Northern Santa Fe Railroad. For the purposes of this cleanup action, the Site is defined in the Consent Decree as the historical and current area where hazardous substances had come to be located on the Ultra Property and requires remedial action in accordance with the Consent Decree and with the Washington State Model Toxics Control Act (MTCA) Cleanup Regulation as established in Section 200 of Chapter 340 of Title 173 of the Washington Administrative Code (WAC 173-340-200). The boundaries of the Site are shown on Figure A-3. This CMP has been prepared on behalf of Ultra Corporation (Ultra), the owner of the Property, in accordance with the Consent Decree and WAC 173-340-410 of the MTCA.

The purpose of the CMP is to provide the protocols pertaining to sample locations, measurement frequencies, sampling equipment and procedures, and sample handling and analysis that will be used during the cleanup action. In addition, the CMP provides a basis for planning field activities and a mechanism for implementing quality assurance requirements. The Quality Assurance Project Plan (QAPP) and the Health and Safety Plan (HASP) for the cleanup action at the Site are provided under separate cover (Exhibit B of the Consent Decree). The QAPP describes both quantitative and qualitative measures of data quality to ensure that the data quality objectives for the cleanup action are achieved. The HASP outlines the Site-specific health and safety requirements for the cleanup action.

1.1 ORGANIZATION

The CMP is organized into the following sections:

- **Section 1, Introduction.** This section describes the purpose of the CMP and the cleanup action.
- **Section 2, Cleanup Action Components.** Section 2 provides a description of the components for the cleanup action at the Site. The cleanup action components include preparation of the CMP, QAPP, and HASP and compliance monitoring and reporting.
- **Section 3, Sampling Protocols and Procedures.** Section 3 presents details regarding sampling equipment and procedures for the collection of groundwater samples, as well as the sample designation and numbering system for groundwater samples.
- **Section 4, Laboratory Analyses.** Section 4 lists the laboratory analytical methods that will be used for compliance monitoring.
- **Section 5, Sample Handling.** Section 5 provides details on groundwater sampling containers, preservation and hold times, and sample packaging and shipment.
- **Section 6, Management of Investigation-Derived Waste.** Section 6 provides details on waste sampling, profiling, and handling.
- Section **7, Field Documentation.** Section 7 summarizes the field documentation procedures to be implemented during the cleanup action.

2.0 CLEANUP ACTION COMPONENTS

This section provides a description of the cleanup action components intended to reduce concentrations of vinyl chloride exceeding the MTCA Method A cleanup level in groundwater at the Site. The cleanup action will consist of the following components:

- Preparing the CMP, a QAPP, and a HASP for implementation of the cleanup action.
- Monitoring groundwater quality at monitoring wells HC-MW-3, HC-MW-7 through HC-MW-10, and SES-MW25 through SES-MW27 (Figure A-3).
- Documenting the cleanup action and Site closure activities.

The components of the selected cleanup action are discussed in detail in the following subsections.

2.1 CLEANUP ACTION IMPLEMENTATION DOCUMENTS

SoundEarth has prepared the CMP which includes the QAPP and HASP prior to implementation of the cleanup action. The purpose of the CMP is to ensure that the sample collection, handling, and analysis conducted after completion of the cleanup action will result in data that meet the data quality objectives for the cleanup action at the Site. The CMP will include requirements for sampling activities, including sampling frequency and location, analytical testing, documentation, and quality assurance/quality control (QA/QC) for confirmational monitoring and compliance monitoring.

The purpose of the QAPP is to describe both quantitative and qualitative measures of data quality to ensure that the data quality objectives for the cleanup action are achieved. The QAPP identifies the data quality objectives and standard operating procedures for implementation during the cleanup action at the Site. The QAPP contains details regarding sample collection and analysis, including sample collection procedures, analytical methods, QA/QC procedures, and data quality reviews.

The purpose of the HASP is to outline the Site-specific health and safety requirements for the cleanup action. The HASP will include guidelines for SoundEarth personnel to reduce the potential for injury during implementation of the cleanup action. The HASP will include Site-specific incident preparedness and response procedures, emergency response and evacuation procedures, local and project emergency contact information, appropriate precautions for potential airborne contaminants and Site hazards, and expected characteristics of the waste generated by the proposed work.

2.2 REMEDIATION SYSTEM

The selected cleanup alternative for the Site is monitored natural attenuation (MNA). The area of MNA for the Site is shown on Figure A-3. The MNA will include the following components:

- Monitoring changes in groundwater quality and environment that may reduce efficacy of the natural attenuation processes.
- Verifying that the vinyl chloride plume is shrinking or stable.
- Evaluating performance and progress of natural attenuation toward achieving the cleanup level for vinyl chloride.

2.3 COMPLIANCE MONITORING

Compliance monitoring will be performed at the Site during implementation of the cleanup action and in accordance with the requirements of WAC 173-340-410. Compliance monitoring will address performance and confirmational monitoring for groundwater. A discussion of performance and confirmational monitoring is presented below.

2.3.1 Groundwater Performance and Confirmational Monitoring

Performance and confirmation groundwater samples will be collected from groundwater monitoring wells HC-MW-3, HC-MW-7 through HC-MW-10, and SES-MW25 through SES-MW27. Performance groundwater samples will be collected from the monitoring wells semiannually during cleanup action. The direction and gradient of groundwater flow at the Site will be determined for each compliance monitoring event. Confirmation groundwater samples will be collected once the groundwater vinyl chloride concentrations at the compliance monitoring wells are less than the MTCA Method A cleanup level for vinyl chloride in groundwater (0.20 micrograms per liter [μg/L]). Groundwater monitoring and sampling events conducted in September 2011 and January 2012 represent the first year of semiannual compliance monitoring for the Site.

After four semiannual sampling events, Ecology will evaluate the progress of MNA and compliance monitoring. If the vinyl chloride concentration continues to decline, then the Washington State Department of Ecology (Ecology) will require Ultra to revise the CMP to decrease the number of wells monitored and/or change to annual monitoring until four consecutive monitoring events demonstrate that the vinyl chloride concentration is at or below MTCA Method A cleanup level for unrestricted land use at all points of compliance.

If the vinyl chloride concentration remains constant, Defendant may submit a request for final closure and delisting of the Site conditioned upon recordation of appropriate restrictive covenants for the Site addressing groundwater usage and construction worker protection (the Restrictive Covenant Closure). In such circumstance, no further monitoring of the groundwater would be required except in accordance with Periodic Review pursuant to Section XXIV of this Decree. Any such restrictive covenant shall be recorded with the office of the King County Auditor against title to that portion of the Ultra Property then constituting the Site.

If the vinyl chloride concentration stays constant or increases, then Ecology may require additional monitoring, additional data evaluation, and/or the institution of a contingency plan.

Compliance monitoring will be complete after concentrations of vinyl chloride in groundwater samples collected from compliance monitoring wells are at or less than 0.2 micrograms μg/L for four consecutive sampling events. Table A-1 presents the number of anticipated performance and confirmation groundwater samples to be collected during the cleanup action.

Wastewater generated during the development and purging of the compliance monitoring wells will be stored temporarily in properly labeled 55-gallon drums on the Site pending receipt of the analytical results for waste profiling. The wastewater will be removed by a subcontractor on a semiannual basis and will be transported to a permitted treatment, storage, and disposal (TSD) facility for proper disposal if groundwater monitoring results indicate that concentrations of vinyl chloride exceed the MTCA Method A cleanup levels.

2.4 SITE RESTORATION

Following completion of the cleanup action, monitoring wells at the Site will be abandoned in-place in accordance with WAC 173-160-381, *Minimum Standards for Construction and Maintenance of Wells.*

3.0 SAMPLING PROTOCOLS AND PROCEDURES

The following subsections summarize the protocols and procedures that will be implemented during the field data collection phase of the cleanup action. Any deviations from the protocols and procedures presented below will be approved by Ecology and the Project Manager prior to implementation and will be discussed in the Closure Report for the Site.

3.1 SAMPLING PROCEDURES

The field sampling procedures for groundwater sample collection and handling are discussed in detail below. All field sampling data will be recorded and documented on field forms as described in Section 7.0, Field Documentation.

3.1.1 Performance and Confirmation Monitoring

Performance groundwater monitoring will be conducted throughout the cleanup action to assess the effectiveness of the cleanup remedy at reducing concentrations of vinyl chloride in groundwater to below the MTCA Method A cleanup level for vinyl chloride. Confirmation groundwater samples will be collected for a selected period of time after analytical results for performance samples indicate the MTCA Method A cleanup level has been achieved for vinyl chloride at the compliance monitoring wells. The duration and frequency of confirmation groundwater sampling will be determined in consultation with Ecology. Procedures for collecting groundwater performance and confirmation samples are discussed below.

3.1.1.1 Groundwater Performance and Confirmation Sampling Procedures

Performance and confirmation groundwater samples will be collected from groundwater monitoring wells HC-MW-3, HC-MW-7 through HC-MW-10, and SES-MW25 through SES-MW27. Performance groundwater samples will be collected from the monitoring wells semiannually during cleanup action, and the direction and gradient of groundwater flow at the Site will be determined for each compliance monitoring event. Groundwater samples will be collected from compliance monitoring wells semiannually. Compliance monitoring will be complete after concentrations of vinyl chloride in groundwater samples collected from compliance monitoring wells are at or less than 0.2 μg/L for four consecutive sampling events. Wastewater generated during the purging of the compliance monitoring wells will be disposed of at TSD facility permitted to accept hazardous waste.

Sampling procedures for performance and confirmation groundwater sampling activities will be as follows:

- The cap for each monitoring well will be removed 15 minutes prior to sampling to allow equilibrium between the groundwater and the ambient air.
- The depth to the top of the groundwater table in each monitoring well will be measured to an accuracy of 0.01 feet using an electronic water-level meter.

- The monitoring wells will be sampled using low-flow techniques to minimize volatilization of contaminants. A peristaltic pump with dedicated polyethylene tubing will be used to purge groundwater from each monitoring well at rates ranging from 100 to 500 milliliters per minute. Field analysis of pH, temperature, conductivity, dissolved oxygen, and oxidation-reduction potential will be monitored and recorded during purging to evaluate aquifer stabilization. The groundwater monitoring wells will be purged until water quality parameters indicate stability or 3 casing volumes of groundwater have been removed.
- Performance and confirmation groundwater samples will be collected from the discharge tubing of each monitoring well and decanted directly into laboratory-prepared sample containers.
- Performance and confirmation groundwater samples will be labeled, placed on ice in a cooler, and submitted for chemical analysis to the analytical laboratory.
- Performance and confirmation groundwater samples will be submitted to the laboratory and analyzed for vinyl chloride by U.S. Environmental Protection Agency (EPA) Method 8260B.
- Sample containers will be labeled with the following information: client, project name and number, date and time sampled, sample identification, and sampler's initials.
- Samples will be logged on a Chain of Custody form and placed in a chilled cooler at 4 degrees Celsius for transport to the laboratory while maintaining chain-of-custody protocols.
- Duplicate groundwater samples will be used as field QA/QC samples.
- All disposable sampling and health and safety supplies and equipment will be discarded in an appropriate waste dumpster at the Site.
- Decontamination water and purge water generated during performance and confirmational monitoring will be placed into appropriately labeled 55-gallon drums approved by the U.S. Department of Transportation and temporarily stored on the Site. Analytical results from the groundwater samples will be used to develop a waste profile for disposal of investigation-derived waste. Investigation-derived waste will be disposed of on a semiannual basis.

3.2 SAMPLE DESIGNATION

Each sample collected during the cleanup action will be assigned a unique sample identifier and number. The sample identifier and number will be filled out in indelible ink and affixed to appropriate containers immediately prior to sample collection. In addition to the sample identifier and number, the sample labels will include the following information: client name, project name and number, date and time of sample collection, and sampler's initials. A Sample Summary Form will be maintained as each sample is collected; the form will include the sample location and depth, sample number and identifier, and other observations regarding the sample. The sample designation procedures for groundwater samples collected during the cleanup action are detailed below. The Sample Summary Form is included in Attachment A of the CMP.

3.2.1 Groundwater Sampling

Groundwater samples collected from the compliance monitoring wells will be assigned a unique sample identifier that will include the components listed below:

- The monitoring well identification (e.g., HC-MW-9)
- Date sample collected (e.g., 071011)

For example, a groundwater sample collected from monitoring well HC-MW-9 on July 10, 2011, would be identified as HC-MW-9-071011. The sample identification will be placed on the sample label, Field Report, Sample Summary Form, and Chain-of-Custody form. Duplicate samples will be identified with the addition of a "D" at the end of the sample number (e.g., HC-MW-9-071011D).

4.0 LABORATORY ANALYSES

OnSite Environmental Inc. (OnSite) of Redmond, Washington, has been selected as the laboratory to conduct the analysis of samples collected for the cleanup action. OnSite is certified by Ecology and meets the QA/QC requirements of Ecology and the EPA. A copy of the laboratory quality assurance manuals for OnSite is on file at SoundEarth's offices for review and reference and will be followed throughout the cleanup action. Information relating to laboratory personnel and equipment and records pertaining to sample collection, transportation, and analysis are also available. The laboratory reporting limit for vinyl chloride is presented in Table A-2.

Groundwater collected for the cleanup action will be submitted for laboratory analysis for vinyl chloride analysis by EPA Method 8260B. QA/QC groundwater samples, which will include a duplicate sample, will be collected to provide for data validation as detailed in the QAPP. A duplicate groundwater sample will be collected during each compliance groundwater monitoring and sampling event.

5.0 SAMPLE HANDLING

This section discusses the sample handling methods to be used for the cleanup action. The protocols discussed include sample handling, sample packaging and shipment, sample documentation, and QA/QC samples.

Upon transfer of the samples to laboratory personnel or arrival of samples at the laboratory, the laboratory will assume responsibility for custody of the samples. Laboratory personnel will document the status of shipping and handling containers. The laboratory will use its standard chain-of-custody procedures for tracking each sample through all stages of laboratory processing.

5.1 SAMPLING CONTAINERS, PRESERVATION, AND HOLDING TIMES

Sample container requirements for the cleanup action are based on the medium to be sampled and the types of analyses to be performed. The containers, preservation procedures, and holding times for each matrix to be sampled are shown in Table A-3 and follow standard laboratory protocols.

5.2 SAMPLE PACKAGING AND SHIPMENT

All samples shipped for laboratory analysis will be packaged according to applicable regulations. Samples will be expeditiously transported to the analytical laboratory after being sealed in iced coolers. The sampling team may drive the samples from the Site or SouthEarth's office in Seattle, Washington, to the laboratory, or samples will be shipped by a same-day courier service to OnSite.

The following procedures are to be used for sample packaging and represent the minimum shipping and handling requirements.

- Sample labels will be affixed to corresponding sample containers at the time of sample collection.
- Bubble wrap bags, or equivalent, will be used to protect glass sample jars and/or vials.
- Sample containers will be placed in a cooler and checked against the chain-of-custody record to ensure that all samples are listed and are in the correct cooler.
- One copy of the Chain-of-Custody form will be detached and retained.
- Remaining paperwork will be sealed in a re-sealable plastic bag. The bag will be taped to the inside of the cooler lid.
- One to three re-sealable bags will be filled with ice and/or chemical equivalent and included in the cooler shipment. All ice should be double-bagged in heavy-duty bags and/or garbage bags.
- The cooler will be sealed with a chain-of-custody seal.
- The cooler will be taped shut using strapping tape.
- The laboratory address will be affixed to the cooler.
- Extraneous stickers will be removed from the cooler.
- SoundEarth's return address will be affixed on the cooler.

5.3 SAMPLE DOCUMENTATION

All sample containers will be adequately identified with a durable label, and the sample identification will be recorded on the applicable forms. Sample containers will be labeled with the following information: client, project name and number, date and time sampled, sample identification, and sampler's initials. Other sample documentation to be maintained by field personnel includes Chain-of-Custody forms and seals and sample labels. Examples of these forms are included in Attachment A.

At the time that sampling occurs, the appropriate sample containers will be selected and the sample number for each sample will be recorded on the Field Report form. Samples will be recounted before leaving the Site to verify that no samples are misplaced and a chain-of-custody seal will be used to seal the cooler shut before shipping. Prior to transfer of the samples off of the Site, chain-of-custody entries will be made for all samples on the Chain-of-Custody form. A chain-of-custody seal is used to show that no tampering has occurred between the time the cooler was relinquished by the field personnel and when it arrived at the laboratory. The chain-of-custody seal will be attached so that it must be broken to open the shipping container. Information on the seals will be checked against sample summary log entries.

Each Chain-of-Custody form will contain the following information: media, date, time sampled, sample identification and number, project name, project number, sampler's initials, and analyte preservative(s), if any.

6.0 MANAGEMENT OF INVESTIGATION-DERIVED WASTE

Wastewater generated during collection of groundwater samples will be handled in accordance with the draft Cleanup Action Plan. The procedures for managing investigation-derived waste for each of the expected waste streams are as follows:

- Wastewater generated during the development and purging of groundwater monitoring wells will be stored temporarily in labeled 55-gallon drums on the Site pending receipt of the analytical results for waste profiling. The wastewater will be removed by a subcontractor on a semiannual basis and will be transported to a permitted facility for proper disposal.

6.1 DISPOSABLES

Disposable personal protective clothing (e.g., Tyvek® suits, rubber gloves, boot covers) and disposable sampling devices (e.g., plastic tubing, plastic scoops, bailers) will be placed in plastic garbage bags and disposed of as nonhazardous waste.

7.0 FIELD DOCUMENTATION

Documentation of field activities will be included on Field Report forms, Groundwater Purge and Sample Forms, Sample Summary Forms, Sample labels, Waste Material labels, Chain-of-Custody forms, and Drum Inventory Sheets. Documentation generated during the field program will be retained in the project file and included in the reports generated, as appropriate.

7.1 FIELD REPORT FORM

Field personnel will be required to keep a daily field log on a Field Report form. Field notes will be as descriptive and as inclusive as possible, allowing independent parties to reconstruct the sampling situation from the recorded information. Language will be objective, factual, and free of inappropriate terminology. A summary of each day's events will be completed on a Field Report form. At a minimum, field documentation will include the date, job number, project identification and location, weather conditions, sample collection data, personnel present and responsibilities, field equipment used, and activities performed in a manner other than specified in the CMP. In addition, if other forms are completed or used (e.g., Chain-of-Custody form), they will be referred to in and attached to the Field Report form. Field personnel will sign the Field Report form. An example of the Field Report form is included in Attachment A.

7.2 GROUNDWATER PURGE AND SAMPLE FORM

Field personnel will be required to document groundwater sampling procedures and measured field parameters on the groundwater purge and sample form. Information reported will include but is not limited to date and time of sampling, site name, depth to water, well depth, purge volume, purge rate, sample analyses, and dissolved oxygen concentration and pH, oxidation-reduction, conductivity, and temperature readings. An example of the Groundwater Purge and Sample form is included in Attachment A.

7.3 SAMPLE SUMMARY FORM

Field personnel will be required to keep a Sample Summary Form when collecting performance and confirmation samples during the cleanup action at the Site. At a minimum, field notes on the form will include the monitoring well number, sample collection data, the date, job number, project identification and location, field equipment used, and activities performed in a manner other than specified in the CMP. An example of the Sample Summary Form is included in Attachment A.

7.4 SAMPLE LABELS

Sample labels will be filled out and affixed to appropriate containers immediately prior to sample collection. The labels will be filled out in indelible ink and will include the following information: media, date, time sampled, sample identification and number, project name, project number, sampler's initials, and analyte preservative(s) if any. An example of the sample label is included in Attachment A.

7.5 WASTE MATERIAL LABEL

The waste material labels will be filled out and affixed to the appropriate waste container immediately upon filling. The labels will be filled out in indelible ink and will include the following information: job number and name, address where waste was generated, contents of the container, operation, date, consultant's name and phone number, and sampler's initials. An example of the waste material label is included in Attachment A.

7.6 CHAIN-OF-CUSTODY FORM

The written procedures that are followed whenever samples are collected, transferred, stored, analyzed, or destroyed are designed to create an accurate written record that can be used to trace the possession and handling of the sample from the moment of its collection through analysis and reporting of analytical values. This written record, the Chain-of-Custody form, will be filled out by the field sampling team at the time the sample is obtained. An example of the Chain-of-Custody form is included in Attachment A.

All samples submitted to the laboratory are accompanied by the Chain-of-Custody form. This form will be checked for accuracy and completeness and then signed and dated by the laboratory sample custodian accepting the sample. At the laboratory, each sample will be assigned a unique, sequential laboratory identification number that will be stamped or written on the Chain-of-Custody form.

All samples will be held under internal chain-of-custody in the sample control room using the appropriate storage technique (i.e., ambient, refrigeration, frozen). The laboratory project manager assigned to a particular client will be responsible for tracking the status of the samples throughout the laboratory. Samples will be signed out of the sample control room in a sample control logbook by the analyst who will prepare the samples for analysis.

The Chain-of-Custody form will include the following information: client, project name and number, date and time sampled, sample identification, sampler's initials, analysis, and analyte preservative(s), if any.

7.7 DRUM INVENTORY SHEET

An accurate written record will be created to trace the possession and handling waste generated during groundwater monitoring events. This written record, Drum Inventory Sheet, will be filled out by the field sampling team at the time of each groundwater sampling event. An example of the Drum Inventory Sheet is included in Attachment A.

8.0 REPORTING

Compliance monitoring results will be presented in Compliance Monitoring Process Reports. The reports will be submitted to Ecology with two hard copies and one electronic copy, and submitted electronically to Ecology's Environmental Information Management database. Deliverables will be prepared in accordance with the CAP.

9.0 LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, expressed or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

FIGURES

P:\0698 ULTRA - FORMER PACE NATIONAL\0698-001-03\TECHNICAL\CAD\2012CMP_REV\0698-001 FIG1-VIC_F.DWG

SoundEarth Strategies
WWW.SOUNDEARTHINC.COM

DATE:	01/03/2011
DRAWN BY:	BLR
CHECKED BY:	DMB/TJC
CAD FILE:	0698-001 FIG1-VIC

PROJECT NAME:	FORMER PACE NATIONAL SITE
PROJECT NUMBER:	0698-001
STREET ADDRESS:	500 7TH AVENUE SOUTH
CITY, STATE:	KIRKLAND, WASHINGTON

FIGURE A-1
SITE VICINITY MAP

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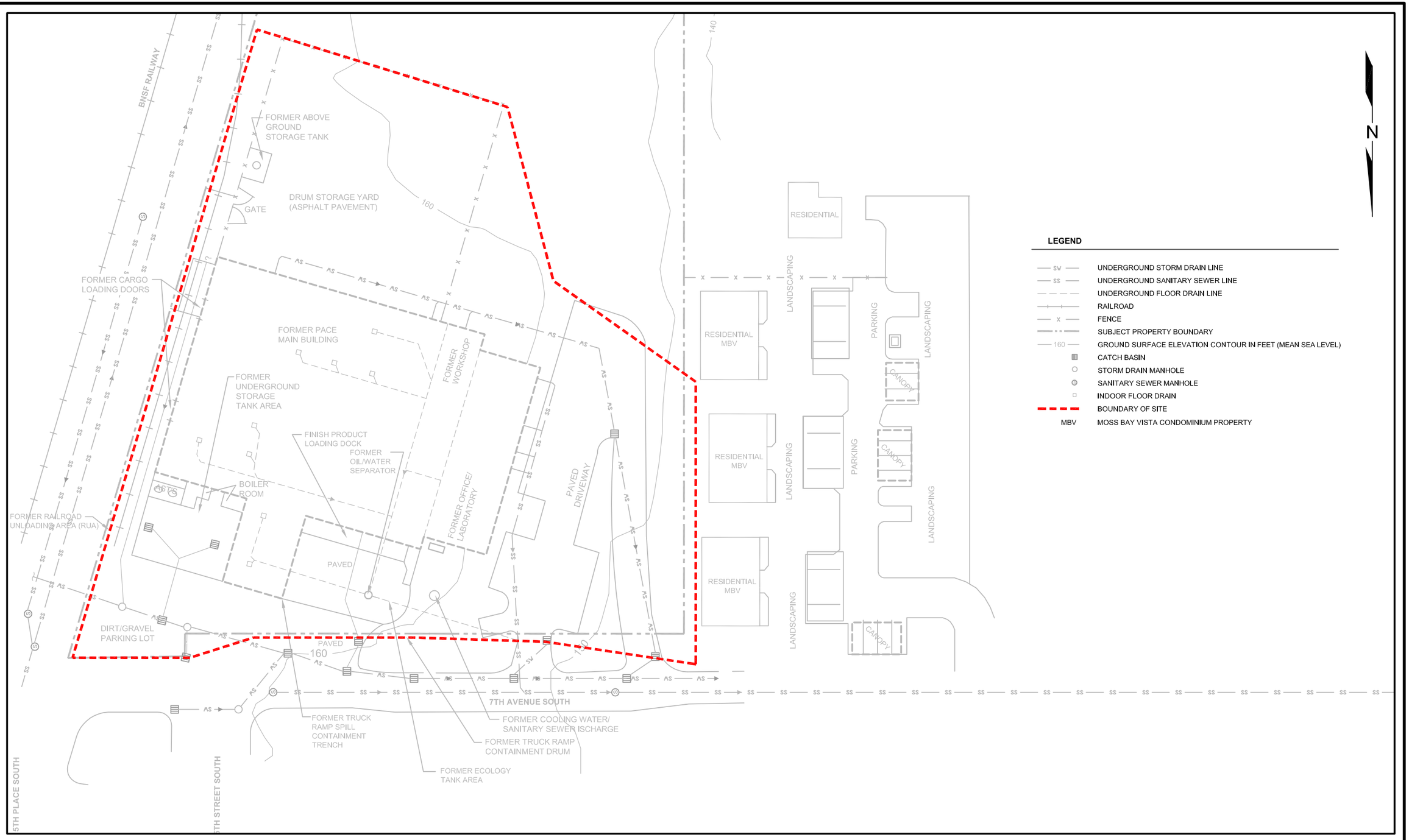
1/16/2012

P:\0698 ULTRA - FORMER PACE NATIONAL\0698-001-03\TECHNICAL\CAD\2012CMP REV\0698-001 2010CMP BS F.DWG



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DATE: 01/03/2011
DRAWN BY: NAC/BLR
CHECKED BY: TJC
CAD FILE: 0698-001-2010CMP_BS

PROJECT NAME: FORMER PACE NATIONAL
PROJECT NUMBER: 0698-001-03
STREET ADDRESS: 500 7TH AVENUE SOUTH
CITY, STATE: KIRKLAND, WA

REGION:

0 30 60 120
APPROXIMATE SCALE IN FEET

FIGURE A-2
MAP SHOWING BOUNDARIES OF FORMER PACE NATIONAL SITE

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1/16/2012

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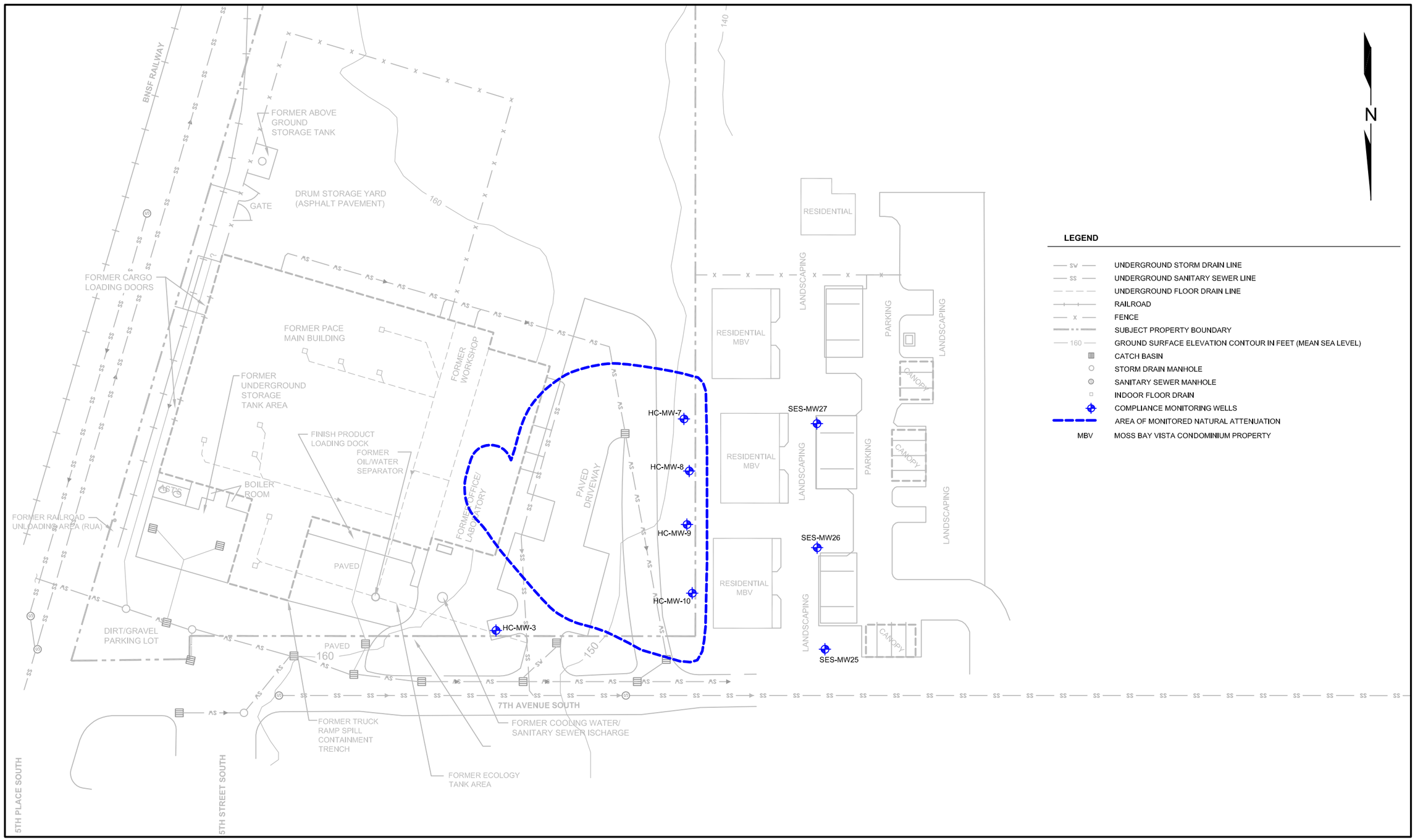

LEGEND

- UNDERGROUND STORM DRAIN LINE
- UNDERGROUND SANITARY SEWER LINE
- UNDERGROUND FLOOR DRAIN LINE
- RAILROAD
- FENCE
- SUBJECT PROPERTY BOUNDARY
- GROUND SURFACE ELEVATION CONTOUR IN FEET (MEAN SEA LEVEL)
- CATCH BASIN
- STORM DRAIN MANHOLE
- SANITARY SEWER MANHOLE
- INDOOR FLOOR DRAIN
- COMPLIANCE MONITORING WELLS
- AREA OF MONITORED NATURAL ATTENUATION
- MBV — MOSS BAY VISTA CONDOMINIUM PROPERTY

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DATE: 3/9/2011
DRAWN BY: NAC/BLR
CHECKED BY: TJC
CAD FILE: 0698-001-2010CMP_CP1

PROJECT NAME: FORMER PACE NATIONAL
PROJECT NUMBER: 0698-001-03
STREET ADDRESS: 500 7TH AVENUE SOUTH
CITY, STATE: KIRKLAND, WASHINGTON

REGION:

0 30 60 120
APPROXIMATE SCALE IN FEET

FIGURE A-3
MAP SHOWING AREA OF MONITORED NATURAL ATTENUATION AND COMPLIANCE MONITORING WELLS

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TABLES

Table A-1
Laboratory Analysis Summary
Former Pace National Site
500 7th Avenue South
Kirkland, Washington

Matrix	Analysis	Performance Samples	Confirmation Samples	Estimated Total
Groundwater	Vinyl Chloride by EPA 8260B	40[1, (a)]	10[2, (a)]	50

NOTES:

[1] Assumes semiannual monitoring for two years

[2] Assumes semiannual sampling for one year

(a) = Includes one duplicate sample for each groundwater sampling event.

EPA = U.S. Environmental Protection Agency

Table A-2
Laboratory Practical Quantitation Limits,
and MTCA Method A Cleanup Levels
Former Pace National Site
500 7th Avenue South
Kirkland, Washington

Chemicals of Concern	GROUNDWATER	
	Laboratory Water PQLs[1] (µg/L)	MTCA Cleanup Levels (µg/L)
Vinyl Chloride	<0.2	0.2[a]

NOTES:

[1] OnSite Environmental Inc. standard PQLs.

[a] MTCA Method A Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.

µg/L = micrograms per liter

< = less than

MTCA = Washington State Model Toxics Control Act

PQLs = practical quantitation limits

Table A-3
Analytical Methods, Container, Preservation, and Holding Time Requirements
Former Pace National Site
500 7th Avenue South
Kirkland, Washington

Analytical Method	Container	Number of Containers	Preservation Requirements	Holding Temperature	Holding Time
Vinyl Chloride by EPA 8260B	40 ml VOA vial	3	hydrochloric acid	4°C	14 days

NOTES:
°C = degrees Celsius
EPA = U.S. Environmental Protection Agency
ml = milliliters
VOA = volatile organic analysis

APPENDIX A
FIELD FORMS

SoundEarth Strategies 2811 Fairview Avenue East, Suite 2000 Seattle, Washington 98102 P: (206) 306-1900 F: (206) 306-1907	**FIELD REPORT**	**Project Number:**	Page _____ of _____
	Client / Project Title:		**Date:**
	Location:	**Time of Arrival/Departure:** _____to _____ (military time)	**Purpose of Visit:**
Prepared by:	**Weather:**	**Travel Time:** **Mileage:**	**Permit:**

Attachments:

Distribution:

This report presents opinions formed as a result of our observation of activities relating to our services only. We rely on the contractor to comply with the plans and specifications throughout the duration of the project irrespective of the presence of our representative. Our work does not include supervision or direction of the work of others. Our firm will not be responsible for job or site safety of others on this project. DISCLAIMER: Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by Sound Environmental Strategies Corporation and will serve as the official document of record.

GROUNDWATER PURGE AND SAMPLE FORM

Client:_____ Project #: _____

Site: _____ Site #: _____ Well ID Number: _____

Field/Sampling Personnel: _____

Total Depth	Depth to Water (Prior To Purging)	Water Column (TD – DTW)	Casing Diameter (inches) 1	2	4	6	Casing Volume (WC X CD)	Total Purge Volume
			0.041	0.16	0.64	1.44		

Water Quality Meter: Type_____ ID #_____ **Date of Sampling**:_____

Sampling Method: Peristaltic Bladder Bailer
Other: _____

Purge/Sampling Method: Low Flow Other: _____ **Time of Sampling:**_____

Screened Interval: Sampling Depth (*approx. the center of saturated screen*):

Time Start Purge: Time End Purge:

Time (3-5 min intervals)	Water Level (*drawdown <0.33'*) WL Meter or Bubbler	Rate of Purging (Liter/min) 0.1 – 0.5	pH ± 0.1	Specific Conductivity _____ ± 3% (UNITS)	Turbidity (NTU)	Dissolved Oxygen (mg/L) ± 10% or if <1.00 mg/L, ± 0.2	Temperature (ºC) ± 3%	ORP (mV)

Sampling Comments:

Sample Number/ID	Container Type	Preservative	Field Filtered?	Analysis Request
			No 0.45 0.10	
			No 0.45 0.10	
			No 0.45 0.10	
			No 0.45 0.10	

PURGE WATER DISPOSAL NOTES:

Total Discharge (1Gal=3.8785Ltr):	Disposal Method: Drummed Remed. System Other:

Well/Site Condition Information:

Well/Security Devices in good condition? (i.e.: Monument, Bolts, Seals, J-cap, Lock) Yes No

Surface Water Infiltration (if yes, describe)? **NO** **YES** ⟹ Monument Well Casing

Action Items (e.g.: repair of any monitoring well components)? Yes No

Additional Well Condition Comments or Explanation of any Access Issues:

_____

_____

- *Three successive readings should be within the indicated parameter limits prior to sampling*
- *All units of measurement are in feet and/or gallons unless otherwise indicated*
- *If static water level is above the screen, avoid drawdown of water level into the screen*

GROUNDWATER PURGE AND SAMPLE FORM (Continued)

Client : _____ Project #: _____ Well ID Number: _____

Site: _____ Site #: _____

Field/Sampling Personnel: _____ Sample Date: _____

Water Quality Meter: Type: _____ ID: _____ Sample Time: _____

Sampling Equipment: Peristaltic Bladder Bailer Other: _____ Sample Number: _____

Purge/Sampling Method: Low Flow Other: _____

Screened Interval:				Sampling Depth (Approx. center of saturated *screen*):				
Time Start Purge:				Time End Purge:				
Time (in 3-5 min intervals)	Depth to Water (*drawdown <0.33'*) WL Meter Bubbler	Rate of Purging (Liter/min) 0.1 – 0.5	pH ± 0.1	Specific Conductivity _____ ± 3% **(UNITS)**	Turbidity (NTU)	Dissolved Oxygen (mg/L) ± 10% or if <1.00 mg/L, ± 0.2	Temperature (ºC) ± 3%	ORP (mV)

Sampling Comments:

_____

_____

_____

_____

SoundEarth Strategies

Sample Summary Form

Project Name: ______________________

Project Number: ______________________

Date: ______________

Sample Name	Date Collected	Time Collected	Location	PID (ppm)	Odors	Observations

14648 NE 95th Street
Redmond, WA 98052
(425) 883-3881

OnSite Environmental Inc.

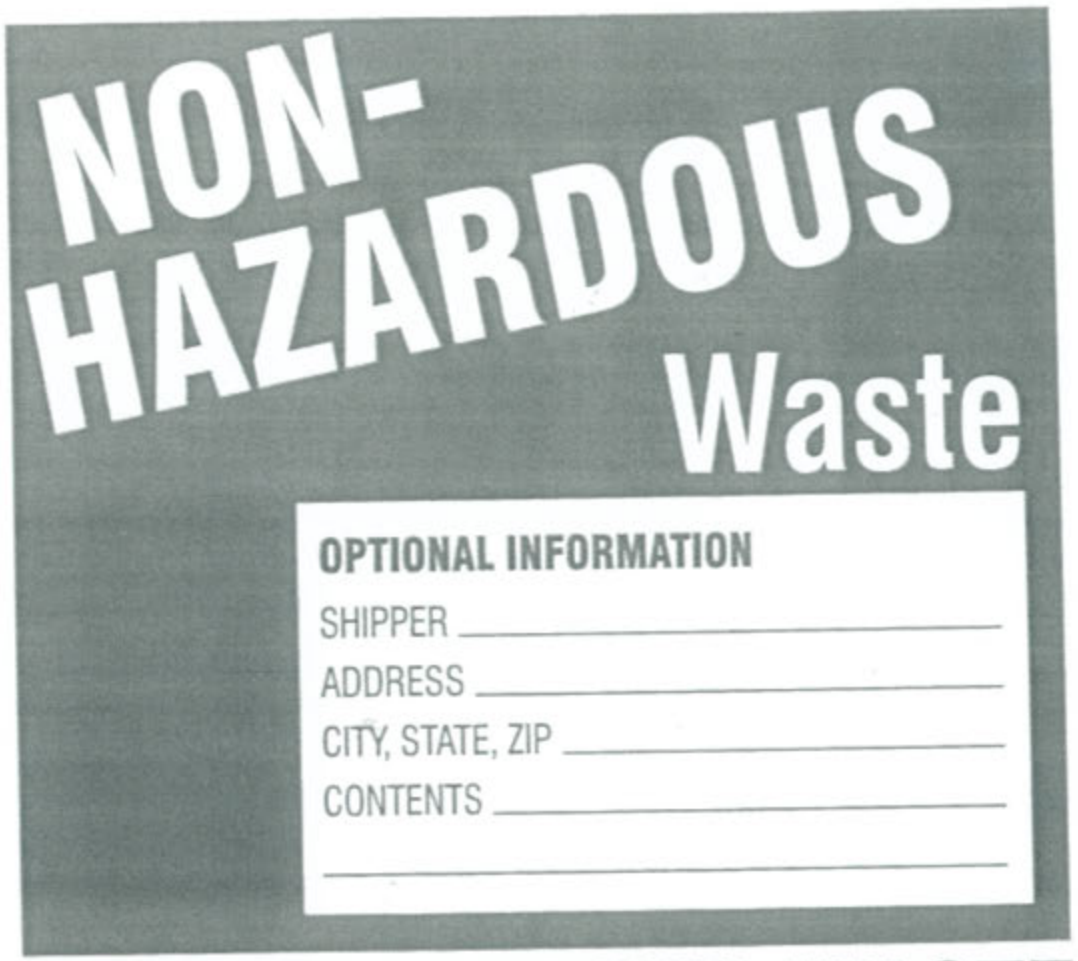
Client _____

Project _____

Sample ID _____

Date _____ Time _____

Analysis _____ Preservative _____



NON-HAZARDOUS WASTE

BRADY SIGNMARK® DN

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Page _____ of _____

Company:

Project Number:

Project Name:

Project Manager:

Sampled by:

Turnaround Request (in working days)

(Check One)

☐ Same Day ☐ 1 Day

☐ 2 Days ☐ 3 Days

☐ Standard (7 Days)
(TPH analysis 5 Days)

☐ _____
(other)

Laboratory Number:

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664							% Moisture

	Signature	Company	Date	Time
Relinquished				
Received				
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

DRUM INVENTORY SHEET

Site Name: _____
Site Address: _____
Reason for Site Visit: _____
Date of Inventory: _____
Field Personnel: _____
_____

Drum #[1] (eg. 001)	Content Information	Date(s) Accumulated	Fullness (%)	Sample Analysis Performed?	Composite Soil Sample (RCRA 8 metals) [2] (Y/N)	Saturated Soil[3] (Y/N)	Drum Labeled (Y/N)	Drum Location Photo (Y/N)	Drum Access[4]

NOTES:
[1]Drum #— Write the Drum # on the drum lid, as well as on the non-hazardous or hazardous waste labels.
[2]Composite Soil Sample—For all sites, collect one composite soil sample from each drum onsite. Place sample on hold at the laboratory, for future RCRA 8 metals analysis. Collect sample in one-4 ounce jar.
[3]Saturated soil—Add bentonite chips or kitty litter to the water that has accumulated or may accumulate inside the drum. Bentonite chips available in the garage.
[4]Drum access for pickup—(eg. fenced, owner notification, lock combination?)

ATTACHMENT B

Quality Assurance Project Plan

SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102

QUALITY ASSURANCE PROJECT PLAN

APPENDIX B OF THE CLEANUP ACTION PLAN

Property:
Former Pace National Site
500 7th Avenue South
Kirkland, Washington

Prepared for:
Ultra Corporation
5101 25th Avenue Northeast #C335
Seattle, Washington

Report Date:
January 17, 2012

QUALITY ASSURANCE PROJECT PLAN
Appendix B of the Cleanup Action Plan

Prepared for:

Ultra Corporation
5101 25th Avenue Northeast #C335
Seattle, Washington 98105

Prepared for:

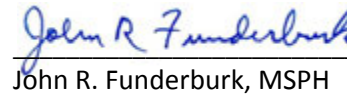
Former Pace National Site
500 7th Avenue South
Kirkland, Washington 98033

Project No.: 0698-001-03

Prepared by:

Thomas J. Cammarata, LG, LHG
Senior Environmental Geochemist

Reviewed by:



John R. Funderburk, MSPH
Principal Scientist

January 17, 2012

SoundEarth Strategies

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ACRONYMS AND ABBREVIATIONS

%R	percent recovery
CAP	Cleanup Action Plan
CMP	Compliance Monitoring Plan
COC	chemical of concern
DQO	data quality objective
CAP	Cleanup Action Plan
Consent Decree	legal agreement for Cleanup Action Plan to be implemented
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
MTCA	Washington State Model Toxics Control Act
OnSite	OnSite Environmental Inc.
the Property	500 7th Avenue South in Kirkland, Washington
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
RPD	relative percent difference
the Site	the extent of historical and current contamination
SoundEarth	SoundEarth Strategies, Inc.
Ultra	Ultra Corporation
WAC	Washington Administrative Code

1.0 INTRODUCTION

This Quality Assurance Project Plan (QAPP) has been prepared by SoundEarth Strategies, Inc. (SoundEarth) for the Former Pace National facility located at 500 7th Avenue South in Kirkland, Washington (hereinafter referred to as the Property) on behalf of Ultra Corporation (Ultra), the owner of the property. This QAPP was prepared in accordance with Consent Decree and the Washington State Model Toxics Control Act (MCTA) Cleanup Regulation as established in Section 380 of Chapter 340 of Title 173 of the Washington Administrative Code (WAC 173-340-380) The QAPP provides specific requirements for quality assurance and quality control (QA/QC) procedures for the cleanup action for the Property. The Former Pace National Site (the Site) is defined in the Consent Decree as the extent of historical and current contamination (Figure B-1).

This QAPP is part of the Compliance Monitoring Plan (CMP) prepared for the cleanup action. The cleanup action at the Site will be conducted in accordance with the Cleanup Action Plan (CAP), and Exhibit B of the Consent Decree.

The purpose of this QAPP is to:

- Assist the project manager and project team to focus on the factors affecting data quality during the planning stage of the project.
- Facilitate communication among field, laboratory, and project staff as the project progresses.
- Document the planning, implementation, and assessment procedures for QA/QC activities for the cleanup action.
- Ensure that the data quality objectives (DQOs) are achieved.
- Provide a record of the project to facilitate final report preparation.

The DQOs for the project include both qualitative and quantitative objectives, which define the appropriate type of data and specify the tolerable levels of potential decision errors that will be used as a basis for establishing the quality and quantity of data needed to support the cleanup action. To ensure that the DQOs are achieved, this QAPP details aspects of sample collection and analysis, including analytical methods, QA/QC procedures, and data quality reviews. This QAPP describes both qualitative and quantitative measures of data quality to ensure that the DQOs are achieved.

2.0 PROJECT ORGANIZATION

The project organization for the completion of the cleanup action, including identification of key personnel and their responsibilities, is described below.

2.1 KEY PERSONNEL

SoundEarth has been contracted by Ultra to plan and implement the cleanup action at the Site. The Project Contact for the Site is:

Ultra Corporation
c/o Ms. Andrea Lieberman
5101 25th Avenue Northeast #C335
Seattle, Washington 98105

The Project Manager for SoundEarth is:

Mr. Thomas Cammarata, LG, LHG
SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102
(206) 306-1900
Fax (206) 306-1907
tcammarata@soundearthinc.com

The Project QA/QC Officer for SoundEarth is:

Mr. Ron Honsberger
SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102
(206) 306-1900
Fax (206) 306-1907
rhonsberger@soundearthinc.com

2.2 RESPONSIBILITIES OF KEY PERSONNEL

The responsibilities of key personnel involved in the cleanup action are described below.

2.2.1 Regulatory Agency

The Washington State Department of Ecology (Ecology) is the lead regulatory agency for the cleanup action at the Site as promulgated in the MTCA Cleanup Regulation. The cleanup action is being conducted in accordance with the Consent Decree and the MTCA Cleanup Regulations as established in WAC 173-340-380

2.2.2 Project Manager

The Project Manager has overall responsibility for developing the QAPP, monitoring the quality of the technical and managerial aspects of the cleanup action, and implementing the QAPP and corresponding corrective measures, where necessary.

2.2.3 Project QA/QC Officer

The Project QA/QC Officer has the responsibility of monitoring and verifying that the work is performed in accordance with the CMP and other applicable procedures. The Project QA/QC

Officer has the responsibility of assessing the effectiveness of the QA/QC program and of recommending modifications to the program when applicable. The Project QA/QC Officer is responsible for assuring that the personnel assigned to the project are trained relative to the requirements of the QA/QC program and for reviewing and verifying the disposition of nonconformance and corrective action reports.

2.2.4 Project Staff

Members of the project staff are responsible for understanding and implementing the QA/QC program as it relates to the cleanup action objectives as presented in the CAP.

3.0 DATA QUALITY OBJECTIVES

The DQOs for the cleanup action will be used to develop and implement procedures to ensure that data collected is of sufficient quality to adequately address the objectives of the cleanup action at the Site as defined in the CAP. All observations and measurements will be made and recorded in such a manner as to yield results representative of the media and conditions observed and/or measured. Goals for representativeness will be met by ensuring that sampling locations are selected properly, that a sufficient number of samples are collected, and that field screening and laboratory analyses are conducted properly.

The quality of the laboratory data will be assessed by precision, accuracy, representativeness, completeness, and comparability. Definitions of these parameters and the applicable quality control procedures are described in Subsections 3.2 through 3.6 of this QAPP. Quantitative DQOs for applicable parameters (e.g., precision, accuracy, completeness) are provided following each definition. Laboratory DQOs have been established by the analytical laboratory.

3.1 QUANTITATION LIMITS

The specific analytes and corresponding laboratory practical quantitation limits that will be required for the cleanup action are presented in Table B-1. The detection or reporting limits for actual samples may be higher depending on the sample matrix, moisture content, and laboratory dilution factors. Laboratory control limits for each analyte are presented in Table B-2.

3.2 PRECISION

Precision measures the reproducibility of measurements under a given set of conditions. Specifically, it is a quantitative measure of the variability of two or more measurements compared to their average values. Precision is calculated from results of duplicate sample analyses. Precision is quantitatively expressed as the relative percent difference (RPD) and is calculated as follows:

$$RPD = \frac{(C_1 - C_2)}{(C_1 + C_2)/2} x\ 100$$

Where:

RPD = relative percent difference

C_1 = larger of the two duplicate results (i.e., the highest detected concentration)

C_2 = smaller of the two duplicate results (i.e., the lowest detected concentration)

There are no specific RPD criteria for organic chemical analyses. Quantitative RPD criteria for organic analyses will be based on laboratory-derived control limits.

3.3 ACCURACY

Accuracy is a measure of the closeness (bias) of the measured value to the true value. The accuracy of chemical analytical results is assessed by "spiking" samples in the laboratory with known standards (a surrogate or matrix spike of known concentration) and determining the percent recovery. The accuracy is measured as the percent recovery (%R) and is calculated as follows:

$$\%R = \frac{(M_{sa} - M_{ua})}{C_{sa}} x\ 100$$

Where:

%R = percent recovery

M_{sa} = measured concentration in spiked aliquot

M_{ua} = measured concentration in unspiked aliquot

C_{sa} = actual concentration of spike added

Laboratory matrix spikes and surrogates will be carried out at the analytical laboratory in accordance with the U.S. Environmental Protection Agency (EPA) SW-846 and Ecology for inorganic and organic chemical analyses. The frequency of matrix spikes and matrix spike duplicates will each be one per batch of samples. Quantitative %R criteria for organic analyses will be based on laboratory-derived control limits for surrogate recovery and matrix spike results.

The accuracy of sample results can also be affected by the introduction of contaminants to the sample during collection, handling, or analysis. Contamination of the sample can occur because of improperly cleaned sampling equipment, exposing samples to chemical concentrations in the field or during transport to the laboratory, or because of chemical concentrations in the laboratory. To demonstrate that the samples collected are not contaminated, laboratory method blank samples will be analyzed.

3.3.1 Laboratory Method Blanks

The laboratory will run method blanks at a minimum frequency of 5 percent or one per batch to assess potential contamination of the sample within the laboratory.

3.4 REPRESENTATIVENESS

Representativeness is a qualitative assessment of how closely the measured results reflect the actual concentration or distribution of the constituent concentrations in the matrix sampled. The sampling plan design, sample collection techniques, sample handling protocols, sample analysis methods, and data review procedures have been developed to verify that the results obtained are representative of the Site conditions. These issues are addressed in detail in CMP and in this document.

3.5 COMPLETENESS

Completeness is defined as the percentage of measurements judged to be valid. Results will be considered valid if they are not rejected during data validation (Section 6.0, Data Management, Reduction, Quality Assurance, Review, and Reporting). Completeness is calculated as follows:

$$C = \frac{(Number\ of\ Valid\ Measurements)}{(Total\ Number\ of\ Measurements)}\ x\ 100$$

Objectives for completeness are based, in part, on the subsequent uses of the data (i.e., the more critical the use, the greater the completeness objective). The objectives for completeness of samples are expressed as percentages, which refer to the minimum acceptable percentages of samples received at the laboratory in good condition and acceptable for analysis. The objectives of completeness for other samples are 95 percent for water samples. These objectives will be met through the use of proper sample containers, proper sample packaging procedures to prevent breakage during shipment, proper sample preservation, and proper labeling and chain-of-custody procedures.

The objectives for completeness of chemical analyses are also expressed as percentages and refer to the percentages of analytical requests for which usable analytical data are produced. The initial objective for completeness of chemical analyses in the laboratory is 95 percent.

3.6 COMPARABILITY

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. The use of standard Ecology and EPA methods and procedures for both sample collection and laboratory analysis will make the data collected comparable to both internal and other data generated.

4.0 DATA COLLECTION APPROACH

Procedures that will be used to collect, preserve, transport, and store samples are described in Section 5.0 of the CMP. All sampling protocols will be performed in accordance with generally accepted environmental practices and will meet or exceed current regulatory standards and guidelines. Sampling procedures may be modified, if necessary, to satisfy amendments to current regulations, methods, or guidelines. The data collection approach for key elements of the cleanup action field program will ensure the project DQOs are met or exceeded. The key elements include groundwater samples collected and analytical results used to demonstrate that the concentrations of chemicals of concern (COCs) at the points of compliance for groundwater are below applicable cleanup levels as defined in the CMP. The total number of samples collected and specific analyses to be performed will be based on field screening results, field observations, and analytical results for performance and confirmational monitoring.

5.0 ANALYTICAL PROCEDURES

OnSite Environmental Inc. (OnSite) has been selected as the laboratory to conduct the COCs analysis of the samples collected for the cleanup action. OnSite is certified by Ecology and meets the QA/QC requirements of both Ecology and the EPA. The contact for OnSite is:

Mr. David A. Baumeister
OnSite Environmental, Inc.
14648 Northeast 95th Street
Redmond, Washington 98052
(425) 883-3881

Copies of the *Laboratory Quality Assurance Manual* from OnSite are on file at SoundEarth's offices for review and reference and will be followed throughout the cleanup action. Access to laboratory personnel, equipment, and records pertaining to samples, collection, transportation, and analysis can be provided. Groundwater samples collected during the cleanup action will be analyzed by EPA Method 8260B for vinyl chloride.

Preservation and holding times for each analyte and media of concern are presented in Table B-3.

6.0 DATA MANAGEMENT, REDUCTION, QUALITY ASSURANCE, REVIEW, AND REPORTING

This section outlines the procedures to be followed for the inventory, control, storage, and retrieval of data collected during performance of the cleanup action. The procedures contained in this QAPP are designed to ensure that the integrity of the collected data is maintained for subsequent use. Moreover, project-tracking data (e.g., schedules and progress reports) will be maintained to monitor, manage, and document the progress of the cleanup action.

6.1 DATA TYPES

A variety of data will be generated by the cleanup action, including sampling and analytical data. The laboratory analytical data will be transmitted to SoundEarth as an electronic file, in addition to a hardcopy laboratory data report. This will facilitate the subsequent validation and analysis of these data while avoiding transcription errors that may occur with computer data entry. Examples of data types include manually recorded field data, such as sampling logs, and electronically reported laboratory data.

6.2 DATA TRANSFER

Procedures controlling the receipt and distribution of incoming data packages to SoundEarth and outgoing data reports from SoundEarth include the following:

- Incoming documents will be date-stamped and filed. Correspondence and transmittal letters for all reports, maps, and data will be filed chronologically. Data packages, such as those from field personnel, laboratories (such as soil), and surveyors (elevation data), will be filed by project task, subject heading, and date. If distribution is required, the appropriate number of copies will be made and distributed to the appropriate persons or agencies.
- A transmittal sheet will be attached to all project data and reports sent out. A copy of each transmittal sheet will be kept in the administrative file and the project file. The Project Manager and Project QA/QC Officer will review all outgoing reports and maps.

6.3 DATA INVENTORY

Procedures for filing, storage, and retrieval of project data and reports are discussed below.

6.3.1 Document Filing and Storage

As previously discussed, project files and raw data files will be maintained at SoundEarth's office. Files will be organized by project tasks or subject heading and maintained by the document control clerk. Hardcopy project files will be archived for a minimum of 3 years after

completion of the project. Electronic copies of files will be maintained in a project directory and backed up on a daily, weekly, and monthly basis.

6.3.2 Access to Project Files

Access to project files will be controlled and limited to Ultra and their authorized representatives, Ecology, and SoundEarth personnel. When a hardcopy file is removed for use, a sign-out procedure will be used to track custody. If a document is to be used for a long period, a copy will be used and the original will be returned to the project file. Electronic access to final reports, tables, and figures will be write-protected in the project directory.

6.4 INDEPENDENT DATA QUALITY REVIEW

Data quality review will be performed, where applicable, using the current EPA Functional Guidelines for Organic Data Quality Review. The following types of quality control information will be reviewed, as appropriate:

- Method deviations
- Sample extraction and holding times
- Method reporting limits
- Blank samples (laboratory method)
- Duplicate samples
- Matrix spike/matrix spike duplicate samples (accuracy)
- Surrogate recoveries
- Percent completeness and RPD (precision
- A quality assurance review of the final analytical data packages for samples collected during the cleanup action

6.5 DATA REDUCTION AND ANALYSIS

The Project Manager and Project QA/QC Officer are responsible for data review and validation. Data validation parameters are outlined in Section 3.0, Data Quality Objectives. The particular type of analyses and presentation method selected for any given data set will depend on the type, quantity, quality, and prospective use of the data in question. The analysis of the project data will require data reduction for the preparation of tables, charts, and maps. To ensure that data are accurately transferred during the reduction process, two data reviews will be performed, one by the Project QA/QC Officer or Project Manager and another by the Project Principal, prior to issuing the documents. Any incorrect transfers of data will be highlighted and changed.

6.5.1 Data Reporting Formats

The physical and chemical characterization information developed in connection with the cleanup action will be presented in the final report in the following format.

6.5.1.1 Summary Tables and Plots

The laboratory reports will be sorted according to various parameters to summarize the information for easier assimilation and presentation. Groundwater sampling and analysis data

will be sorted several ways, including by sample point number, constituent, and date of sample collection. The parameters chosen for sorting will depend on the selection of the most appropriate format and the utility of that format in demonstrating the physical and chemical characteristics of interest.

6.5.1.2 Maps

Plan maps needed to illustrate results of the cleanup action will be assembled or prepared. They may include, but are not limited to, plan maps of the Site showing confirmed and suspected sources, sampling locations, chemical concentrations for individual chemicals and groups of chemicals, groundwater elevation contour maps, the Site features and potential preferential pathways (e.g., sewer lines), and cross section locations.

6.5.1.3 Cross Sections

Vertical profiles or cross sections may be generated from field data to display the Site stratigraphy or other aspects of the cleanup action.

Reports will be submitted to Ecology in hard copy and electronically to Ecology's Environmental Information Management and database and Document Storage and Retrieval System.

6.6 QUALITY CONTROL SUMMARY REPORT

A quality control summary report will be prepared by SoundEarth based on the quality control summary data provided by the laboratory and validation report provided by the QA/QC validator. QC summary reports may be incorporated into Annual Progress Reports but will not be submitted as separate deliverables. A discussion of deliverable related to the cleanup action is presented in the CAP.

7.0 QUALITY CONTROL PROCEDURES

This section provides a description of the quality control procedures for both field activities and laboratory analysis. The field quality control procedures include standard operating procedures for sample collection and handling, equipment calibration, and field quality control samples.

7.1 FIELD QUALITY CONTROL

Field quality control samples (e.g., duplicate samples) to be collected during this project are described in the CMP. The purpose of these samples is also discussed in Section 3.0 of this document. In addition, standard operating procedures will be implemented during field screening activities. The procedural basis for these field data collection activities will be documented on the field report forms, as described in Sections 7.0 of the CMP. Any deviations from the established protocols will be documented on the field report forms.

7.2 LABORATORY QUALITY CONTROL

Analytical laboratory QA/QC procedures are provided in the OnSite *Laboratory Quality Assurance Manual* that is on file at SoundEarth's offices.

7.3 DATA QUALITY CONTROL

All data generated by OnSite will undergo two levels of QA/QC evaluation: one by the laboratory and one by SoundEarth. As specified in OnSite's *Laboratory Quality Assurance Manual*, the laboratory will

perform initial data reduction, evaluation, and reporting. The analytical data will then be validated at SoundEarth under the supervision of the Project QA/QC Officer. The following types of quality control information will be reviewed, as appropriate:

- Method deviations
- Sample transport conditions (temperature and integrity)
- Sample extraction and holding times
- Method reporting limits
- Blank samples
- Duplicate samples
- Surrogate recoveries
- Percent completeness
- RPD (precision)

SoundEarth will review field records and results of field observations and measurements to ensure procedures were properly performed and documented. The review of field procedures will include the following:

- Completeness and legibility of field logs
- Preparation and frequency of field quality control samples
- Equipment calibration and maintenance
- Chain-of-Custody forms

Corrective actions are described in Section 10.0.

7.4 DATA ASSESSMENT PROCEDURES

The Project Manager and Project QA/QC Officer are responsible for data review and validation. Upon receipt of each data package from the laboratory, calculations using the equations presented for precision, accuracy, and completeness will be performed. Results will be compared to quantitative DQOs, where established, or qualitative DQOs. Data validation parameters are outlined in Section 3.0 of this QAPP.

7.5 QUALITY CONTROL SUMMARY REPORT

A quality control summary report will be prepared by SoundEarth based on the quality control summary data provided by the laboratory.

8.0 PERFORMANCE AND SYSTEM AUDITS

Performance audits will be completed for both sampling and analysis work. Field performance will be monitored through regular review of Chain-of-Custody forms, field forms, and field measurements. The Project Manager and/or the Project QA/QC Officer may also perform periodic on-Site review of work in progress.

Accreditations received from Ecology for each analysis by the analytical laboratory demonstrate the laboratory's ability to properly perform the requested methods. Therefore, a system audit of the analytical laboratory during the course of this project will not be conducted.

The Project Manager and/or Project QA/QC Officer will oversee communication with the analytical laboratory on a frequent basis while samples are being processed and analyzed at the laboratory. This will allow SoundEarth to assess progress toward meeting the DQOs and to take corrective measures if problems arise.

The analytical laboratory will be responsible for identifying and correcting, as appropriate, any deviations from performance standards as discussed in the laboratory QA/QC plan. The laboratory will communicate to the Project Manager or the Project QA/QC Officer all deviations to the performance standards and the appropriate corrective measures made during sample analysis. Corrective actions are discussed in Section 10.0.

9.0 PREVENTIVE MAINTENANCE

Operation and maintenance manuals will accompany all field parameter analysis and measurement equipment. Included in these manuals will be procedures for calibration, operation, and troubleshooting. All maintenance activities will be documented in the project field report forms and/or equipment logbooks. A schedule of preventive maintenance activities will be maintained. In addition, spare parts and tools will be included in each equipment storage case to minimize equipment downtime.

10.0 CORRECTIVE ACTION

Corrective actions will be the joint responsibility of the Project Manager and the Project QA/QC Officer. Corrective procedures can include:

- Identifying the source of the violation.
- Re-analyzing samples, if holding time criteria permit.
- Re-sampling and analyzing.
- Re-measuring parameter.
- Evaluating and amending sampling and analytical procedures.
- Qualifying data to indicate the level of uncertainty.

During field sampling operations, the Project Manager and field team members will be responsible for identifying and correcting protocols that may compromise the quality of the data. All corrective actions taken will be documented in the field notes.

11.0 QUALITY ASSURANCE REPORTS

The Cleanup Action Report will include a quality assurance section that summarizes data quality information in the deliverables generated during the project. This summary will include at a minimum:

- Assessment of data accuracy and completeness.

- Results of performance and/or system audits.
- Significant quality assurance problems and their impacts on the DQOs.

12.0 LIMITATIONS

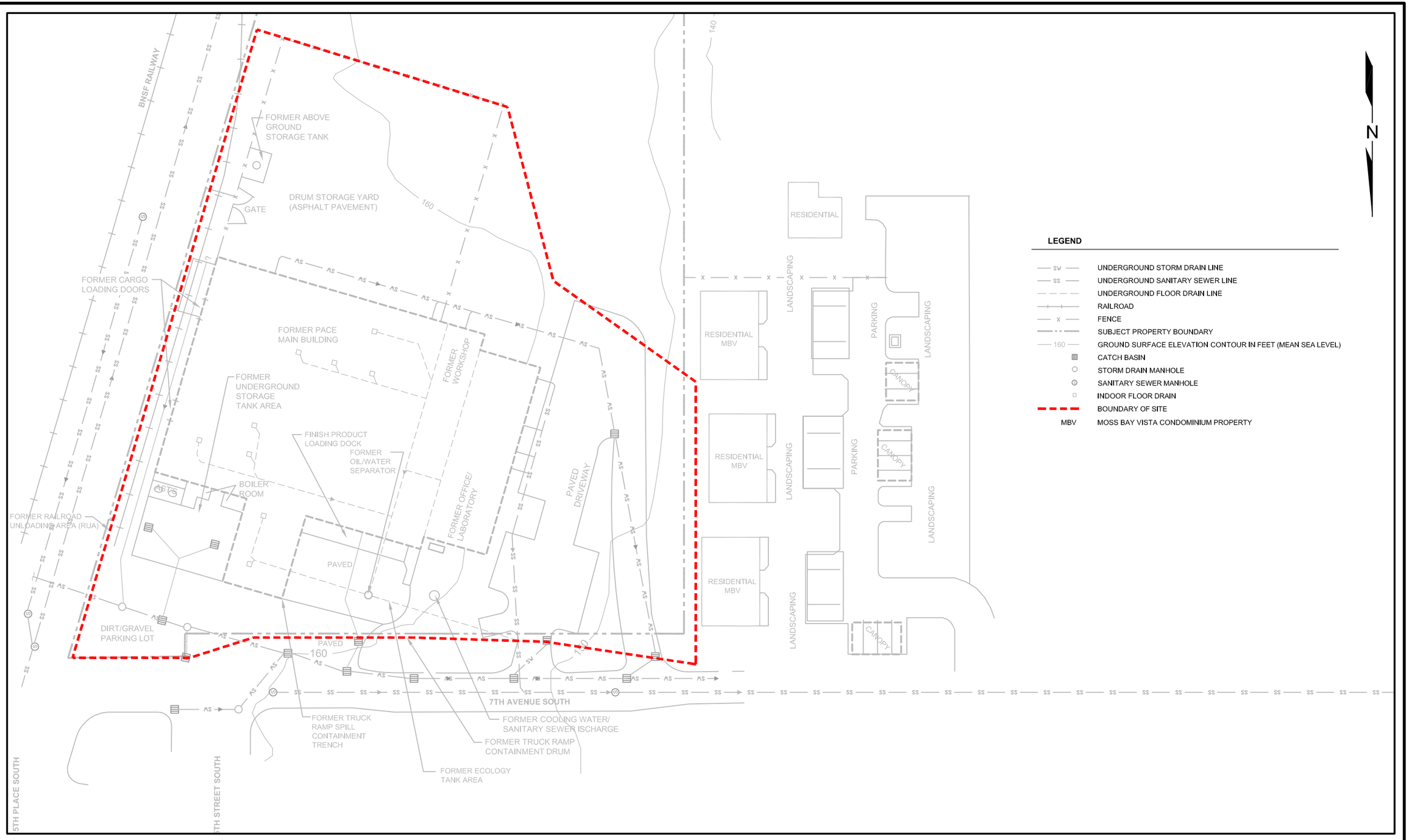
The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, expressed or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

FIGURE

1/16/2012

P:\0698 ULTRA - FORMER PACE NATIONAL\0698-001-03\TECHNICAL\CAD\2012QAPP_REV\0698-001_2012QAPP_BS_F.DWG



LEGEND

SW	UNDERGROUND STORM DRAIN LINE
SS	UNDERGROUND SANITARY SEWER LINE
	UNDERGROUND FLOOR DRAIN LINE
	RAILROAD
X	FENCE
	SUBJECT PROPERTY BOUNDARY
160	GROUND SURFACE ELEVATION CONTOUR IN FEET (MEAN SEA LEVEL)
	CATCH BASIN
	STORM DRAIN MANHOLE
	SANITARY SEWER MANHOLE
	INDOOR FLOOR DRAIN
	BOUNDARY OF SITE
MBV	MOSS BAY VISTA CONDOMINIUM PROPERTY

SoundEarth Strategies
WWW.SOUNDEARTHINC.COM

DATE: 01/03/2011
DRAWN BY: NAC/BLR
CHECKED BY: TJC
CAD FILE: 0698-001-2010CMP_BS

PROJECT NAME: FORMER PACE NATIONAL
PROJECT NUMBER: 0698-001-03
STREET ADDRESS: 500 7TH AVENUE SOUTH
CITY, STATE: KIRKLAND, WA

REGION:

0 30 60 120
APPROXIMATE SCALE IN FEET

FIGURE B-1
MAP SHOWING BOUNDARIES OF FORMER PACE NATIONAL SITE

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TABLES

Table B-1
Analytical Methods Practical Quantitation Limits
Former Pace National Site
500 7th Avenue South
Kirkland, Washington

Compounds	Water PQL (µg/L)
Vinyl chloride	< 0.2

NOTES:

< = less than

µg/L = micrograms per liter

PQL = practical quantitation limit

Table B-2
Laboratory Control Limits
Former Pace National Site
500 7th Avenue South
Seattle, Washington

Analytical Method	QC Parameter	Matrix	Analyte	Lower QC Limit	Upper QC Limit	RPD
8260B	Surrogate	Water	Dibromofluoromethane	71	126	NA
8260B	Surrogate	Water	Toluene-d8	76	116	NA
8260B	Surrogate	Water	4-Bromofluorobenzene	70	123	NA
8260B	LCS	Water	1,1-Dichloroethene	70	130	NA
8260B	LCS	Water	Benzene	73	130	NA
8260B	LCS	Water	Trichloroethene	79	122	NA
8260B	LCS	Water	Toluene	80	121	NA
8260B	LCS	Water	Chloroebenzne	83	116	NA
8260B	LCSD	Water	1,1-Dichloroethene	NA	NA	25
8260B	LCSD	Water	Benzene	NA	NA	25
8260B	LCSD	Water	Trichloroethene	NA	NA	25
8260B	LCSD	Water	Toluene	NA	NA	25
8260B	LCSD	Water	Chloroebenzne	NA	NA	25

NOTES:
LCS = laboratory control sample
LCSD = laboratory control sample duplicate
NA = not applicable
QC = Quality Control
QC = quality control
RPD = relative percent difference

Table B-3
Analytical Methods, Container, Preservation, and Holding Time Requirements
Former Pace National Site
500 7th Avenue South
Kirkland, Washington

Analytical Method	Container	Number of Containers	Preservation Requirements	Holding Time
Groundwater Samples				
Vinyl Chloride by EPA 8260B	40 ml VOA vial	3	hydrochloric acid/4°C	14 days

NOTES:

°C = degrees Celsius

EPA = U.S. Environmental Protection Agency

ml = milliliters

VOA = volatile organic analysis