



SAMPLING AND ANALYSIS PLAN – SUNSET PARK TRAP SHOOTING RANGE, BANKS, OREGON

ECSI #6501

WSP PROJECT NO. 261M124891

Prepared for:

Banks Sunset Park Association, Inc.
12765 NW Main Street
Banks, OR 97106

Prepared by:

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May 17, 2024

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TITLE AND APPROVAL PAGE

DOCUMENT TITLE

Sampling and Analysis Plan – Sunset Park Trap Shooting Range
Banks, Oregon

PREPARED BY

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Banks Sunset Park Association	Rob Ireland		
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WSP USA Environment & Infrastructure Inc., Technical Lead/Geologist	John Kuiper		May 17, 2024
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ACRONYMS AND ABBREVIATIONS

Amec	Amec Earth and Environmental, Inc.
Apex	Apex Labs
bgs	Below ground surface
DU	Decision Unit
ECSI	Environmental Cleanup Site Information
EPA	United States Environmental Protection Agency
HASP	Site-specific Health and Safety Plan
ISM	Incremental Sampling Methodology
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
PM	Project Manager
SAP	Sampling and Analysis Plan
Site	Sunset Park Trap Shooting Range
WSP	WSP USA Environment & Infrastructure Inc.

1 INTRODUCTION

WSP USA Environment & Infrastructure Inc. (WSP) has prepared this project-specific Sampling and Analysis Plan (SAP) for conducting a Phase II Environmental Site Assessment (ESA) of lead in soil at the Sunset Park Trap Shooting Range property located at 12765 NW Main Street in Banks, Oregon (Site). A Site Location Map is presented as Figure 1, and a Site Plan is presented as Figure 2. The Phase II ESA is being performed for the Banks Sunset Park Association under the oversight of the Oregon Department of Environmental Quality (DEQ) Voluntary Cleanup Program. The Site has been assigned the Environmental Cleanup Site Information (ECSI) No. 6501.

The primary scope of the Phase II ESA is to identify the lateral and vertical extent of lead concentrations exceeding the DEQ Risk-Based Concentrations (RBCs). This SAP describes the methodology for soil sampling that will be conducted during the Phase II ESA activities. The SAP has been developed to detail the procedures that will be utilized for the collection of analytical data necessary to identify and evaluate the presence of contamination in soil at the Site.

2 PROJECT MANAGEMENT

2.1 TITLE AND APPROVAL SHEET

A Title and Approval page is provided as page ii of this document. The names and titles of the approving authorities are provided on the Title and Approval page and in Section 2.2 of this SAP.

2.2 PROJECT ORGANIZATION

The project implementation team will be led by WSP Project Manager (PM) Daniel Schall. Key team member roles and responsibilities are summarized below:

Oregon Department of Environmental Quality Project Manager: Kara Master

Phone: (503) 229-5585

The DEQ PM will provide regulatory review and approval of the SAP. The DEQ PM also will review and provide approval of the proposed sampling activities and the Phase II ESA Report to ensure that DEQ requirements are followed.

Oregon Department of Environmental Quality: Wesley Thomas

Phone: (503) 229-6932

Wesley Thomas will assist the DEQ PM in review of the SAP and any follow-up activities.

Banks Sunset Park Association: Rob Ireland

Phone: (503) 324-1500

Rob Ireland is the primary point of contact for the Bank Sunset Park Association.

WSP Project Manager: Daniel Schall

Phone: (503) 501-8672

The WSP PM will oversee all project activities, provide technical support and oversight to the project, and ensure that resources necessary to complete the project are available. The PM will manage the project, communicate with team members, oversee daily operations, and maintain control over the schedule, budget, and technical aspects of the project. The PM will be responsible for project deliverables and will manage subcontractor procurement.

WSP Technical Lead/Geologist: John Kuiper, RG

Phone: (503) 704-7793

The Technical Lead / Geologist will review or prepare all project deliverables, including verifying the transcription of laboratory data into report text and summary tables, to ensure that high-quality work products are produced.

WSP Field Manager/Site Health and Safety Officer: Matthew Brown, PE

Phone: (707) 407-7765

The Field Manager will be responsible for coordinating and overseeing the field activities, including scheduling, sample collection, documentation, and delivery of samples to the laboratory. In addition, the Site Health and Safety Officer will review/update the Site-specific Health and Safety Plan (HASP) in accordance with Occupational Health and Safety Administration guidelines. The Site Health and Safety Officer will be responsible for ensuring that project personnel have received appropriate levels of training and that field operations are conducted in accordance with appropriate health and safety protocols.

Analytical Laboratory – Apex: Apex Labs Project Manager: Philip Nerenberg

Phone: (503) 523-6123

Apex Labs (Apex) will be responsible for providing all analytical testing services for soil samples described in this SAP. The Apex PM assigned to this project will report to the WSP Project Manager or designee. Apex is experienced in Incremental Sampling Methodology (ISM) sampling laboratory processing requirements.

3 PROJECT BACKGROUND

The site is the location of a former trap shooting range, where trap shooting occurred for over 70 years before being permanently discontinued in about 2022. Due to the trap shooting activities lead-shot accumulated to the north of the trap houses on both the Sunset Park property and the adjacent property to the north (Figure 3). A history of prior assessments of the lead-shot impact at these two properties includes:

- 2009 - Northwest Geotech, Inc.
- 2011 - Amec
- 2019 - Farallon

Currently there are plans to redevelop the trap shooting range into a recreational area for the Banks Community. To date there has been no assessment of the concentration and distribution of lead in soils at the Site, and therefore it is not known what remedial activities may be required. Before redevelopment planning can begin, soil testing of the subject area must be completed and reviewed with DEQ.

4 SCOPE OF WORK

The scope of work described in subsequent sections has been developed based upon the findings of the prior assessments completed at the Site and the adjacent property to the north.

4.1 PRELIMINARY WORK

As part of the preliminary project work, WSP will prepare a HASP which will cover field safety protocols for all WSP personnel active on the project Site. The HASP will be maintained on-Site during all field activities and can be provided upon request.

4.2 UTILITY LOCATING AND SITE WALK

Prior to intrusive activities, WSP will contract a subcontractor to perform a private utility locate at the locations to be sampled. As an accompaniment, WSP will call the Oregon “One-Call” center to have utilities located and marked at the southwestern and western perimeters of the property where utilities would be expected to enter the Site.

4.3 SOIL INVESTIGATION

Soil sampling will be conducted following Multi-Increment Sampling (MIS) methodology in accordance with the current DEQ guidance (DEQ, 2020). A total of eight (8) Decision Unit (DU) areas, covering about one-half acre apiece, have been defined across the site. The locations of the DUs are based on historical use, aerial photo review, and discussion with DEQ. Each of the DU areas (DU A, DU B, DU C, DU D, DU E, DU F, DU G, and DU H) have been spit vertically into a surface (S) and near-surface (NS) DU resulting in a total of sixteen (16) DUs. The surface DUs will extend from 0.0 – 0.5 feet below ground surface (bgs) and the near surface DUs will extend from 0.5 - 2.0 feet bgs. The selection of 0.0 – 0.5 feet for the surface soil DUs is because as the lead shot falls from the air it is expected to accumulate in the top few inches of soil, and bioturbation is the only significant mechanism actively distributing the lead deeper. This contrasts with the adjacent property to the north where repeated farming/tilling of the soil has resulted in a deeper distribution of the lead in soil (down to a depth of about one foot). Each DU is approximately one-half acre in size (20,000 square feet). The actual areas encompassed by each of the DUs are shown on Figure 3.

WSP will perform the sampling investigation utilizing a combination of hand augur, trowel, and hand-held hammer drill/sampling auger with generator, as deemed appropriate and necessary based on specific field and subsurface conditions. If certain proposed locations are deemed inaccessible due to excessively overgrown vegetation or other features, or if refusal occurs due to subsurface obstructions, then the sampling locations will be adjusted in the field accordingly. Adjusted locations will be as close to the originally proposed locations as practicable.

During sample collection, observations of soil type and presence/absence of lead shot fragments will be documented in a field notebook. Excess soil generated during sampling (soil not required for the ISM composite samples), including potential lead fragments, will be returned to the sample/boring location from which it came, and to the approximate depth from which the material was removed. Additional vertical delineation of contamination, beyond a depth of two feet bgs, is not included as part of this SAP, regardless of observed presence/absence of lead shot. Once laboratory results are received, if near-surface samples are determined to have an exceedance of lead, then during a future removal action, final leave surface samples will be collected and analyzed for lead to confirm vertical extents of contamination have been defined.

For each of the 16 DUs (8 surface DUs and 8 near-surface DUs), fifty to fifty-two (50-52) sample increment collection points will be located using a systematic random sampling scheme, so that sample increment collection points are spread out equilaterally across the DU (as shown in Figure 4) and located in the field with a GPS. Each sampling point will have a sample collected from the upper (surface) DU and the lower (near surface) DU using the equipment described above. Based on this a total of 16 primary samples will be collected (see Table 1 below). Effort will be made for each of the 50-52 sample increments to be of consistent volume (approximately 20 grams of material apiece from along the length of the interval/core), and collectively providing sufficient mass for testing (slightly greater than 1,000 grams per DU). A geologist, or environmental professional/engineer under the supervision of a geologist, will log the character of the soil encountered in addition to any other observations.

In addition to the 16 primary DU samples, quality assurance/quality control samples will be collected at an approximate 10% rate as follows:

- Triplicate Sample Sets - The DU C -S and DU C-NS samples will be collected as triplicate sample sets consisting of one primary sample and two replicate samples. The replicate samples will be collected by shifting the primary sampling grid by 3 feet north [e.i., DU C -S(R1)] and three feet south [DU C -S(R2)]. [Note: the sample

increments within the DU C primary sample grid are approximately 20 feet apart from one another]. The primary sample and replicates will each be placed into separate containers.

- Duplicate Samples - The DU G-S and DU G-NS samples will have duplicates collected. During sampling, each of the 50-52 sample increments (approximately 40 grams apiece) will be split into two halves (approximately 20 grams each) and placed in separate containers (one for the primary sample and one for the duplicate).

Soil increments will be collected directly from each soil depth interval (separately) and increments from each interval will be composited into a single sample (placed inside plastic/Ziplock bags. Sample homogenization and compositing, and sub-sampling of the collected samples for analyses, will be performed by the analytical laboratory (Apex).

Separate sampling equipment will be used to collect the surface versus near surface samples at each boring location, when practical. If not practical, then sampling equipment will be brushed clean of soil particles between the collection of the surface and the subsequent near surface samples at each sampling location. Complete decontamination of sampling equipment will be completed between DU areas and between the primary and replicate samples within DU C. The decontamination procedure will consist of washing with a non-phosphate detergent and tap water, using a brush, if necessary, a tap water rinse, and a final rinse with deionized water.

At the completion of sampling activities, each bore hole will be properly abandoned by backfilling with soil cuttings and/or sand to match surrounding conditions.

4.4 INVESTIGATION DERIVED WASTE

Investigation Derived Waste (IDW) including soil cuttings and decontamination wash water is expected to be minimal, and no off-site disposal of contaminated media is anticipated. Soil cuttings Excess soil generated during sampling (soil not required for the ISM composite samples), including potential lead fragments, will be returned to the sample/borehole location from which it came, and to the approximate depth from which the material was removed. Decontamination water will be returned to the ground near the sampling/boring locations.

4.5 SUMMARY OF ENVIRONMENTAL SAMPLES

As summarized in the Table 1 below, sixteen (16) primary ISM DU samples will be collected. The surface soil samples will be analyzed for lead by EPA Method 6020B, and the near surface soil samples will be placed on “hold” pending the results of the surface samples. If a surface soil sample exceeds 200 milligrams per kilogram (mg/kg) then the corresponding near-surface soil sample from that DU will also be analyzed for lead by EPA Method 6020B. The target analytical reporting limit for lead will be 1.0 mg/kg (detection limit will be equal to or lower than the reporting limit). If lead contaminant concentrations exceed the EPA ‘Rule of 20’ guidance, which is likely, then the laboratory also will analyze the three (3) highest-concentration samples for Toxicity Characteristic Leaching Procedure (TCLP) for lead by EPA Method 6020B. The ‘Rule of 20’ guidance indicates that if a soil result (in mg/kg) is greater than 20 times the regulatory levels for TCLP (milligrams per liter [mg/L]), then TCLP analysis should be performed to determine if the soil could become a hazardous waste if excavated. For lead the TCLP limit is 5.0 mg/L and thus soils with lead concentrations greater than 100 mg/kg could potentially be hazardous. The target analytical reporting limit for TCLP lead will be 0.10 mg/L (detection limit will be equal to or lower than the reporting limit).

Table 1. Soil Sample Summary

Sample ID	Sample Depth (feet)	Number of Samples	Analysis	
			Lead	TCLP Lead
DU A-S	0.0-0.5	1	X	H
DU A-NS	0.5-2.0	1	H	H
DU B-S	0.0-0.5	1	X	H
DU B-NS	0.5-2.0	1	H	H
DU C-S-0100	0.0-0.5	1	X	H
DU C-S-0200	0.0-0.5	1	X	H
DU C-S-0300	0.0-0.5	1	X	H
(0100, 1200, and 0300, comprise a Triplicate set consisting of primary and two replicates)				
DU C-NS-0100	0.5-2.0	1	H	H
DU C-NS-0200	0.5-2.0	1	H	H
DU C-NS-0300	0.5-2.0	1	H	H
DU D-S	0.0-0.5	1	X	H
DU D-NS	0.5-2.0	1	H	H
DU E-S	0.0-0.5	1	X	H
DU E-NS	0.5-2.0	1	H	H
DU F-S	0.0-0.5	1	X	H
DU F-NS	0.5-2.0	1	H	H
DU G-S-0100	0.0-0.5	1	X	H
DU G-S-0400	0.0-0.5	1	X	H
(0100 and 0400 comprise a duplicate sample)				
DU G-NS-0100	0.5-2.0	1	H	H
DU G-NS-0400	0.5-2.0	1	H	H
DU H-S	0.0-0.5	1	X	H
DU H-NS	0.5-2.0	1	H	H
Total Number of Samples		22	9–24	0–3

Notes:

1. Sample Designations: Surface Sample (S); Near Surface Sample (NS)
2. Triplicate set = primary plus two replicates (replicates determined by shifting grid 3 feet north and 3 feet south – with adjustments as necessary based on field conditions)
3. “X” = To be Analyzed
4. “H” = sample placed on hold pending analysis of other samples

4.5.1 QUALITY CONTROL REPLICATE AND DUPLICATE SAMPLES

As stated above, replicate soil samples will be collected to provide a means of assessing sampling precision. Precision is a measurement of random error and may be used to assess both field and laboratory contributions to overall error. Precision will be monitored as the relative percent difference (RPD) between duplicate analyses when an analyte concentration is greater than 5 times the reporting limit (RL), and as an absolute concentration

based on the RL when an analyte concentration is less than five times the RL. Precision related to sample collection in the field will be monitored as the RPD between field duplicates and triplicates, and for laboratory precision the RPD between blank spike duplicates.

Replicate sampling at the Site will be accomplished via collection of a triplicate sample set from DU C (surface and near surface soil). Since there are eight (8) DUs to be sampled at the Site, collecting one triplicate sample from a DU satisfies the Quality Control (QC) target of 10% replicates of the DUs to be sampled. As mentioned previously, the replicate samples will be collected by shifting the primary grid three feet north (first replicate) and then three feet south (second replicate) of the primary grid.

In addition to the soil replicate samples discussed above, duplicate soil samples will be collected from DU G (surface and near surface soil).

5 SAMPLE HANDLING PROCEDURES

Following collection, samples will be appropriately labeled and immediately stored on ice while awaiting shipment to the laboratory. Samples will be transported to a subcontracted laboratory (Apex) following standard chain-of-custody (COC) procedures.

The laboratory will log in the samples and send a confirmation of the selected analytical tests to the WSP project manager. For the ISM soil samples the lab will proceed to homogenize the soil samples and then collect subsamples to perform the analyses.

Samples will be prepared by the lab and analyzed for the following:

- Homogenization of ISM samples (specific protocol to be determined based on characteristics of the received samples – i.e., whether significant rocks are present)
- Lead by SW6020B

5.1 SAMPLE LABELING AND IDENTIFICATION

The purpose of sample designation is to enable sample tracking and documentation. At a minimum, sample labels will include the sample identification (ID), date and time of sample collection, and sampler's initials. Sample labels will include the sample location (DU for Decision Unit), depth, and date of sample collection (MMDDYY).

Pursuant to standard field sampling protocols, the identification of field QC samples will be kept blind from the receiving laboratory. Field QC samples used during this project are detailed in Section 4.5.1. QC designations indicate what type of sample was collected:

- 0100 – indicates a primary sample
- 0200 – indicates the first replicate sample
- 0300 – indicates the second replicate sample
- 0400 – indicates a duplicate sample

For example, a primary soil sample collected from DU D would have the sample ID: DU D-S 0100-MMDDYY.

5.2 SAMPLE CONTAINERS AND PRESERVATION

Samples will be collected in the appropriate containers as specified below and transferred to the analytical laboratory under strict COC procedures. Multiple analyses may be taken from the same container as long as they are analyzed by the same lab and there is sufficient sample mass.

Table 2. Sample Container and Preservation Requirements

Analyte	Sample Matrix	Sample Container	Preservation	Holding Time
Lead	Soil	One-gallon Ziplock bag*	Chill to < 6 °C	6 months

Note:

* Sample aliquots are combined in field with the homogenization and sub-sampling to be performed by the analytical laboratory.

5.3 SAMPLE CUSTODY

Properly collected and labeled soil sample containers will be immediately placed in a sample cooler. Ice will be used to cool the samples to the required preservative temperature. At the end of daily sample collection activities, a complete COC form will be placed into a sealable plastic bag and taped to the inside top lid of the cooler. The sampling field staff will maintain custody of the samples until they are delivered to the laboratory.

6 ANALYTICAL METHODS

Laboratory analytical methods to be used in testing soil and groundwater samples from the Site are presented in Table 3 below.

Table 3. DEQ RBCs for Lead in Soil

COPC	Analytical Method	DEQ RBCss (mg/kg soil)		
		Residential	Occupational	Construction or Excavation Worker
Lead	SW-6020B	200	800	800

Notes:

mg/kg = milligrams per kilogram

RBCss = RBC for soil ingestion, dermal contact, and inhalation exposure pathways

7 DOCUMENTATION AND REPORTING

Upon receipt of the final laboratory analytical report(s), WSP will prepare a Phase II ESA Report that will document the activities conducted, sampling methodologies implemented, and laboratory analytical results. The report will include:

- Tabulated laboratory results with comparisons to RBCs.
- A discussion of the results with regards to DEQ's regulatory framework.
- Figures showing site and sampling locations.
- Analytical reports and chain-of-custody records.
- Identification of any deviations to this SAP.
- Applicable recommendations.

8 SCHEDULE

WSP will schedule the field work following the approval by DEQ. The work is anticipated to begin in May or June 2024. It is anticipated that the field work covered by this SAP will require three or four days to complete. A draft report will be prepared for this project within two weeks of receipt of final laboratory results.

If you have any questions regarding this SAP, please contact the undersigned.

We appreciate the opportunity to assist with this project.

Sincerely,

WSP USA Environment & Infrastructure Inc.



John Kuiper, RG
Vice President; Geologist

Reviewed by:



Daniel Schall, P.E.
Vice President; Project Manager

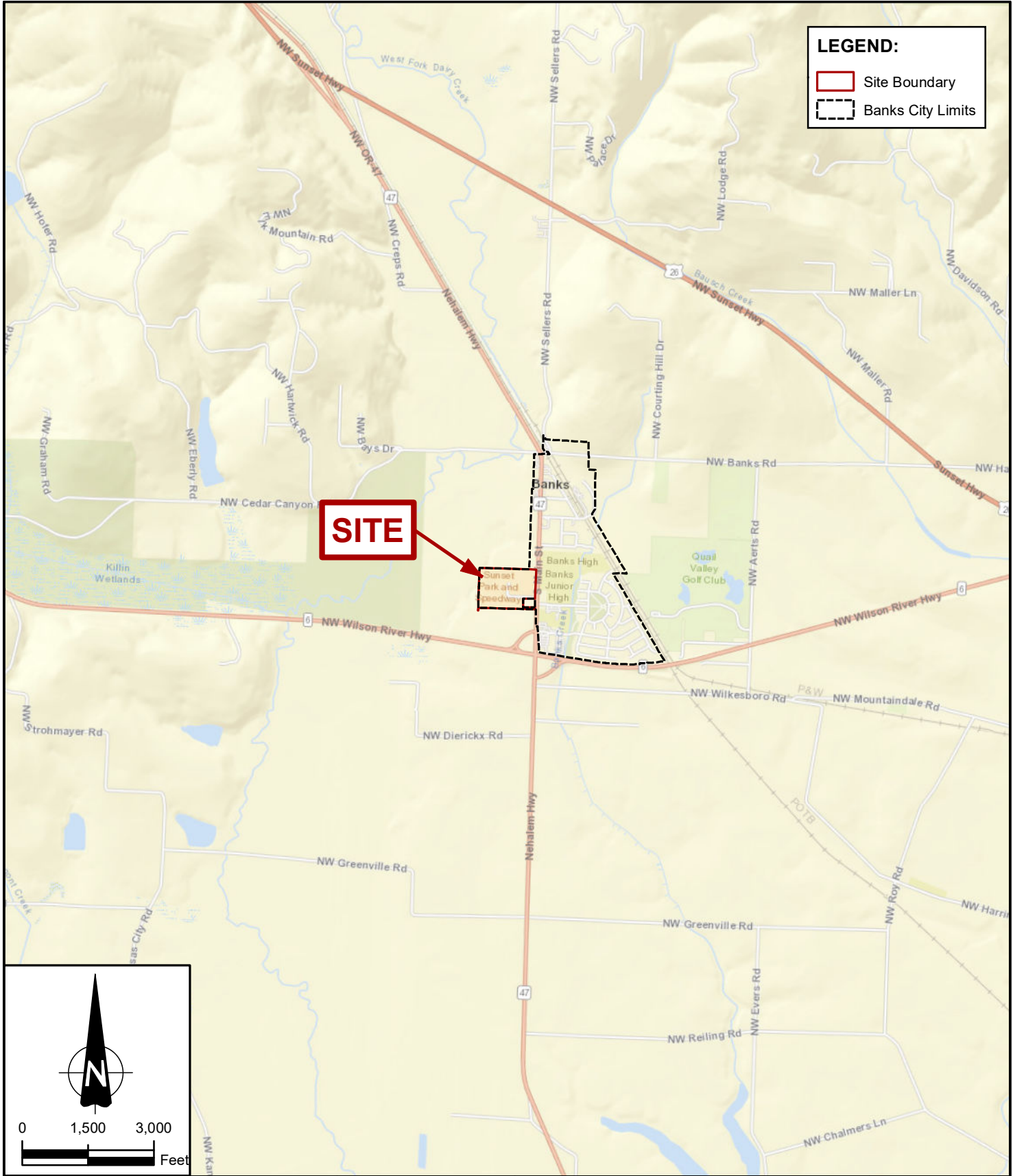
9 REFERENCES

- Amec Earth and Environmental, Inc. (Amec), 2011a. Trap Ranges Sampling and Analysis Plan. Banks, Sunset Park, Banks, Oregon, September 2011.
- Amec, 2011b. Trap Ranges Visual Survey and Soil Sampling Results. December 2011.
- Farallon, 2019. Subsurface Investigation Results 42580 Northwest Cedar Canyon Road, Banks Oregon. September 12, 2019.
- Northwest Geotech, Inc., 2009. Environmental Assessment, 42580 NW Cedar Canyon Road, Banks Oregon. June 10, 2009.
- Oregon Department of Environmental Quality (DEQ), 2020. Decision Unit Characterization. September 14, 2020.

10 LIMITATIONS

WSP services have been performed in accordance with the normal and reasonable standard of care exercised by similar professionals performing services under similar conditions and geographic locations. Except for our stated standard of care, no other warranties or guarantees are offered as part of WSPs contracted services.

FIGURES



BANKS SUNSET PARK ASSOCIATION		BANKS SUNSET PARK BANKS, OREGON	DATE
			MARCH 2024
WSP USA 15862 SW 72nd Ave., Suite 150 Portland, OR 97224		SITE LOCATION MAP	SCALE
			1" = 3,000 feet
	PROJECT NO.		
			261M124891
			FIGURE
			1

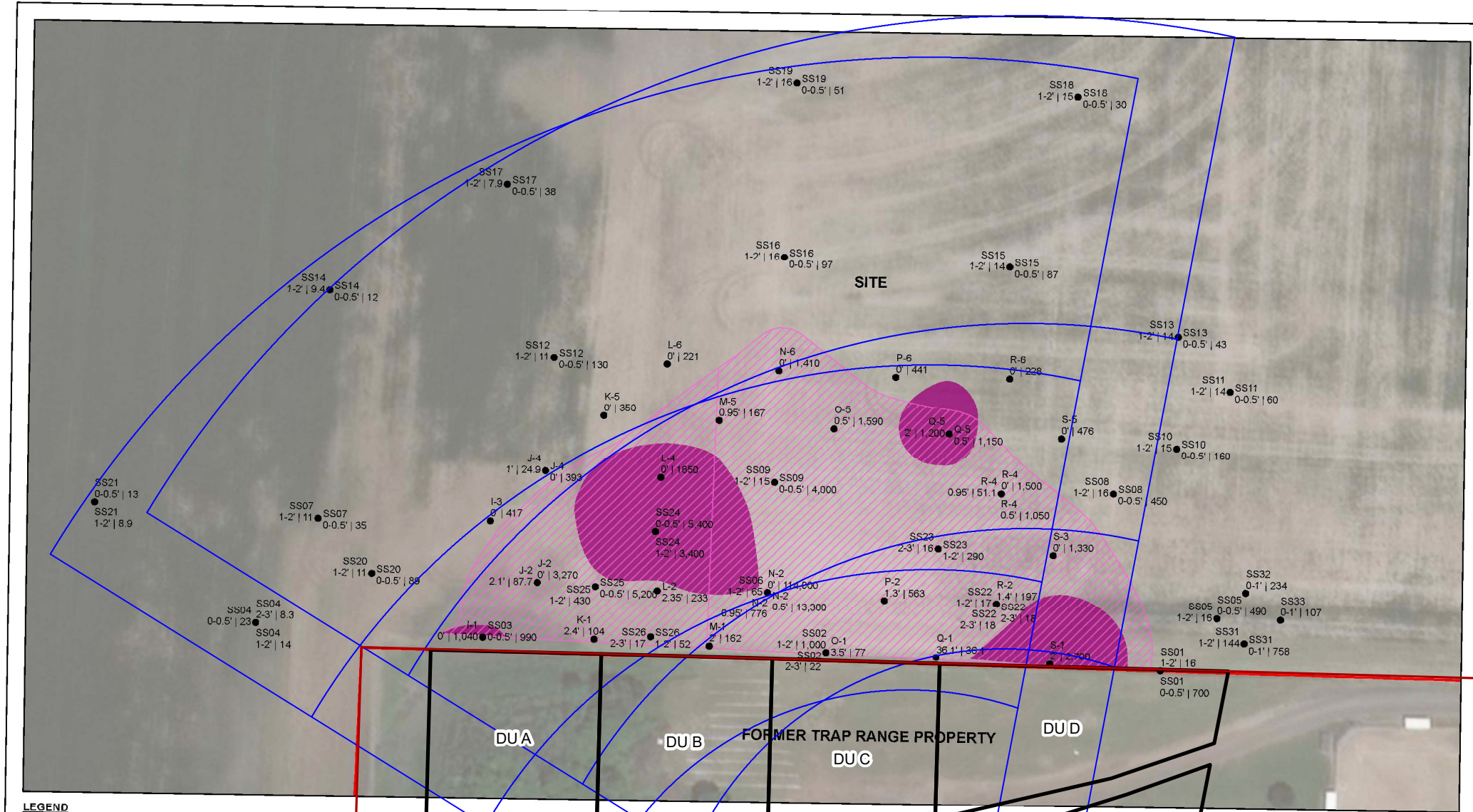


	BANKS SUNSET PARK ASSOCIATION		BANKS SUNSET PARK BANKS, OREGON	DATE MARCH 2024
	WSP USA 15862 SW 72nd Ave., Suite 150 Portland, OR 97224		SITE PLAN	SCALE 1" = 120'
				PROJECT NO. 2-61M-12489-1
				FIGURE 2

LEGEND:

Site Boundary

Decision Unit Boundary



LEGEND

PROPERTY BOUNDARY

EXTENT OF LEAD ABOVE OCCUPATIONAL RBC <1 FOOT (2.69 ACRES)

EXTENT OF LEAD ABOVE OCCUPATIONAL RBC 1-2 FEET (0.65 ACRES)

NOTES:
SAMPLE ID
DEPTH IN FEET BGS | LEAD CONCENTRATION
THE OCCUPATIONAL, CONSTRUCTION WORKER, AND EXCAVATION
WORKER RBC FOR SOIL INGESTION, DERMAL CONTACT, AND
INHALATION IS 300 PPM
RBC = RISK BASED CONC
PPM = POUNDS PER MILLION
SQFT = SQUARE FEET
ALL LOCATIONS ARE APPROXIMATE
FIGURES WERE PRODUCED IN COLOR
GRAYSCALE COPIES MAY NOT REPRODUCE
ALL ORIGINAL INFORMATION

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Olympia | Bend | Baker City
Oregon
California
Oakland | Folsom | Irvine

FIGURE 3
EXTENT OF LEAD EXCEEDING RBCs IN SOIL
GEOSYNTEC, AMEC, AND FARALLON SAMPLE RESULTS
42580 NORTHWEST CEDAR CANYON ROAD
BANKS, OREGON

FARALLON PN: 1826-001

Date: 3/29/2019
Disc Reference:
Document Path: Q:\Projects\1928 Waverline\Modified\Figure 3 - Lead Soil RBCs_FARALLON2018.mxd

DU_ID	AREA (sqft)
A	22,449
B	22,526
C	24,928
D	25,371
E	19,830
F	17,784
G	24,350
H	24,510

North Arrow

0 60 120 Feet

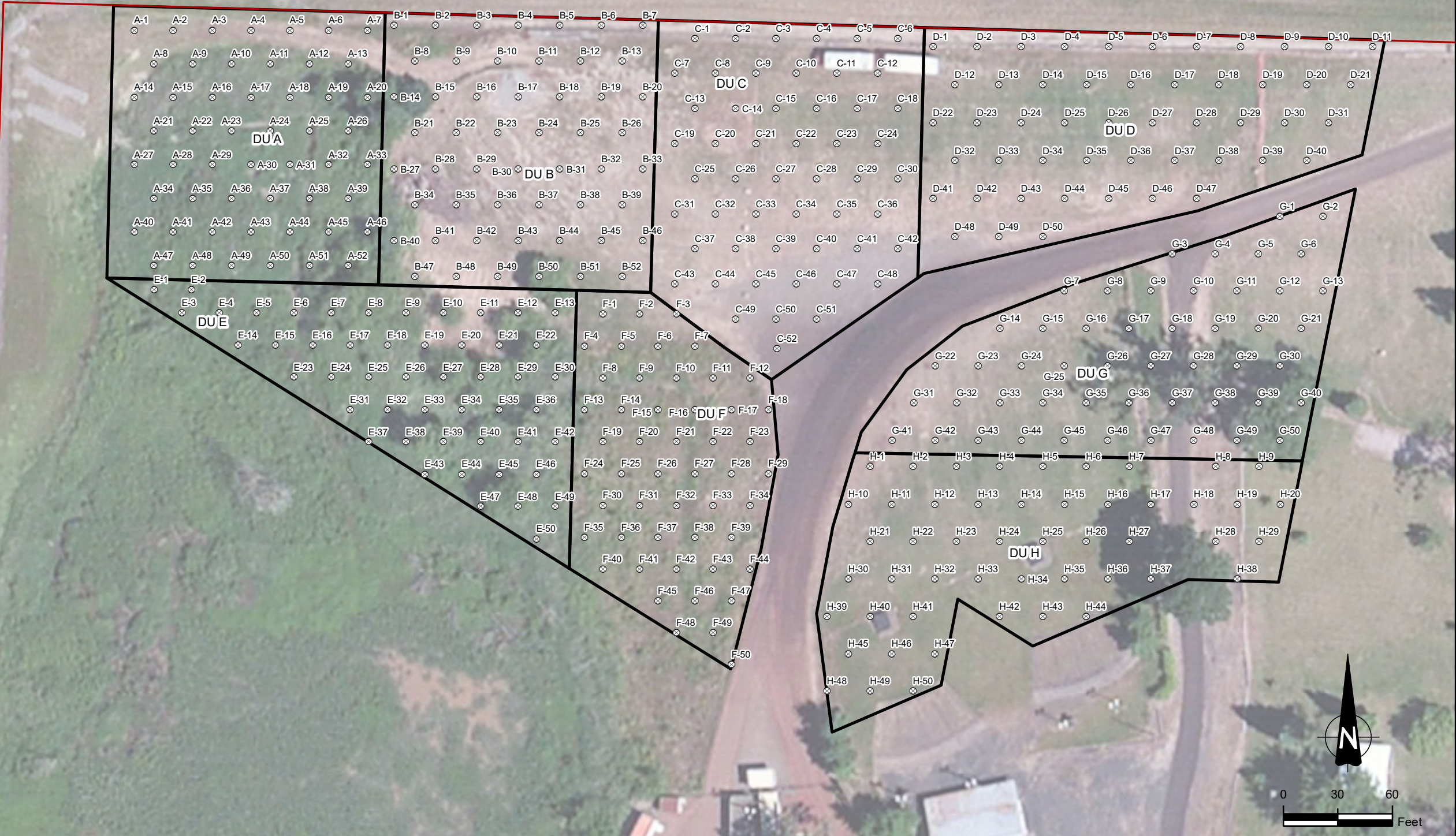
DRAWN BY: PM CHECKED BY: JKH

BANKS SUNSET PARK ASSOCIATION		BANKS SUNSET PARK BANKS, OREGON	DATE APRIL 2024
		PROPOSED SAMPLING GRID (ADJACENT PROPERTY LEAD RESULTS INCLUDED)	SCALE 1" = 120'
			PROJECT NO. 2-61M-12489-1
			FIGURE 3

LEGEND:

- ⊗ Proposed Soil Sample Location
- ▭ Site Boundary
- ▭ Decision Unit Boundary

DU_ID	AREA (sqft)
A	22,449
B	22,526
C	24,928
D	25,371
E	19,830
F	17,784
G	24,350
H	24,510



BANKS SUNSET PARK ASSOCIATION		BANKS SUNSET PARK BANKS, OREGON		DATE APRIL 2024
		PROPOSED SAMPLING GRID AND SAMPLE LOCATIONS		SCALE 1" = 61'
				PROJECT NO. 2-61M-12489-1
				FIGURE 4