Site Specific Sampling Plan

Project Name: Stubblefield Salvage Yard Monitoring Well Installation   Site ID: 10HD

Author: Joshua Hancock Company: Ecology and Environment, Inc   Date Completed: March 12, 2010

This Site Specific Sampling Plan (SSSP) is prepared and used in conjunction with the Quality Assurance Plan (QAP) for the Emergency Response Unit for collecting samples during this Removal Program project. The information contained herein is based on the information available at the time of preparation. As better information becomes available, this SSSP will be adjusted.

When inadequate time is available for preparing the SSSP in advance of the sampling event, a Field Sampling Form may be prepared on-site immediately prior to sampling. This full length version of the SSSP is written after the sampling event and the completed Field Sampling Form attached to it.

1. Approvals

Name, Title	Telephone, Email, Address	Signature
Greg Weigel **On-Scene Coordinator**	208-378-5773, weigel.greg@epa.gov 1435 North Orchard Street Boise, ID, 83706	Greg Weigel Digitally signed by Greg Weigel DN: cn=Greg Weigel, o=Region 10, ou=ERU, email=weigel.greg@epa.gov, c=US Date: 2010.03.12 14:52:05 -07'00'
Kathy Parker **ERU Quality Assurance Coordinator**	206-553-0062, parker.kathy@epa.gov USEPA , M/S: ECL-116, 1200 Sixth Ave. Suite 900, Seattle, WA 98101	Kathy Parker Digitally signed by Kathy Parker DN: cn=Kathy Parker, o=Region 10, ou=ERU, email=parker.kathy@epa.gov, c=US Date: 2010.03.12 11:20:55 -08'00'

I. Project Management and Organization

2. Personnel and Roles involved in the project:

Name	Telephone, Email, Company, Address	Project Role	Data Recipient
Greg Weigel	208-378-5773, weigel.greg@epa.gov 1435 North Orchard Street Boise, ID, 83706	On Scene Coordinator or Project Manager	Yes
Joshua Hancock	206-624-9537, jhancock@ene.com 720 Third Ave, Seattle, WA 98104 Suite 1700	Author of SSSP, START Project Manager	Yes
Kathy Parker	206 553 0062, parker.kathy@epa.gov USEPA , M/S: ECL-116, 1200 Sixth Ave. Suite 900, Seattle, WA 98101	ERU Quality Assurance Coordinator	No
Mark Woodke	206-624-9537, mwoodke@ene.com 720 Third Ave, Suite 1700 Seattle, WA 98104	START Quality Assurance Reviewer	No
David Baumeister	425 883-3881, dbaumeister@onsite-env.com, 14648 NE 95th Street, Redmond, WA 98052	OnSite Environmental, Inc., Laboratory contact	No

3. Physical Description and Site Contact Information:

Site Name	Stubblefield Salvage Yard	
Site Location	980 NE Myra Road, Walla Walla, WA 99362 Latitude: 46.065044° N Longitude: 118.369051° W (See Figure 1)	
Property Size	11.3 acres (current salvage yard footprint, see figure 2)	
Site Contact	Lily Stubblefield-Shoop, Al Stubblefield, Lenora Thompson	**Phone Number:** 509-525-5572
Nearest Residents	Stephen and Deborah Stubblefield The salvage yard is currently operating with a number of employees that work on-site throughout the week.	**Direction:** South (bordering property)
Primary Land Uses Surrounding the Site	Residence of Stephen and Deborah Stubblefield, Walla Walla Wastewater Treatment Plant (WWTP), Agricultural Land, Mill Creek, Myra Road ROW, land for future residential development (Myra Road Properties LLC)	

4. The proposed schedule of project work follows:

Activity	Estimated Start Date	Estimated Completion Date	Comments
SSSP Review/Approval	03/09/2010	03/12/2010	
Mobilize to / Demobilize from Site	03/14/2010	03/19/2010	
Sample Collection	03/17/2010	03/19/2010	
Laboratory Sample Receipt	03/22/2010	03/22/2010	
Laboratory Analysis	03/23/2010	04/20/2010	
Data Validation	04/21/2010	04/24/2010	

5. Historical and Background Information

Describe briefly what you know about the site that is relevant to sampling and analysis for this investigation.

The site has been operated as a salvage/scrap yard for over 60 years. Emory Stubblefield, who operated the facility during those years, recently passed away. The estate is in trusteeship, but his heirs, Lily Stubblefield-Shoop, Al Stubblefield, and Lenora Thompson are operating the business. The salvage yard is currently in operation.

The historic salvage yard site area was approximately 40 acres, but the business currently operates on an eastern section of the former property that is 11.3 acres. The property has been subdivided and parcels have been sold to the City of Walla Walla, the County of Walla Walla, and Myra Road Properties LLC, a real estate development site. Allegedly, the scrap material that was on the surface of former portions of the property was pushed to the eastern section of the property still in operation as subdivisions were sold. Mill Creek is located directly to the north and downgradient of the site (Figure 2).

Phase I and Phase II environmental assessments were completed for the Myra Road ROW in 2005 and 2006.

START has visited the site three times since April 2009. A limited preliminary removal assessment was conducted in May 2009 to determine if sufficient contamination, or threat of contamination, existed to justify a removal action. The May 2009 assessment identified the presence of:

- Un- or mis-managed drums, open steel tanks, and other containers with potential environmentally harmful contents or hazardous substances
- Arsenic, cadmium, chromium, lead, mercury, lindane, polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs) including polycyclic aromatic hydrocarbons (PAHs), and oil contamination exceeding Washington Department of Ecology (Ecology) Model Toxics Control Act (MTCA) and/or United States Environmental Protection Agency (EPA) Regional Screening Level (RSL) industrial soil screening levels
- Friable chrysotile asbestos-containing material (ACM) including cement asbestos siding (CAB).

In September 2009 a removal assessment was performed to provide sufficient information to conduct a removal action at the site and included soil, bulk, and subsurface sampling. Samples were analyzed for all compounds included in the preliminary removal assessment and other parameters selected by the OSC. The removal assessment found contamination in surface and subsurface boreholes throughout the site at concentrations that exceeded the selected screening criteria (MTCA Unrestricted (i.e., Residential) Cleanup Levels and EPA RSLs for Residential Properties). In addition to a number of isolated areas of contamination, the removal assessment also identified a large 'source area' that was heavily impacted by hydrocarbons and other contaminations including metals, PCBs and SVOCs.

In October 2009 a removal action was performed to address contamination identified during the removal assessment. This removal action resulted in the disposal of a number of 55-gallon drums and their contents, ACM from the side of the shop building and from a pile of debris found at the site, and surface soil that was contaminated with heavy metals. The primary source area identified during the removal assessment was not addressed due to the fact that contamination was observed to extend beneath the shop building, and because ongoing hydraulic fluid spills were evident from the bailer machine. EPA determined during the removal action that additional clean up should not be performed until options for dealing with the source area and the ongoing releases from facility equipment could be evaluated.

In March of 2010 START submitted to EPA a final Alternatives Evaluation report which outlined several potential removal action alternatives. During the course of preparing this Alternatives Evaluation, EPA determined that monitoring wells should be installed to determine what impact, if any, the source area was having on ground water. The site work addressed by this Site Specific Sampling Plan pertains to the installation and sampling of these monitoring wells.

6. Conceptual Site Model

Example: Contaminant: Mercury
Transport Mechanism: vapor moving on air currents
Receptors: people living in the house

Contaminants:
The contaminants of concern include metals (arsenic, cadmium, chromium, lead, mercury), PCBs, PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene), and oil (diesel range and oil range).

Transport Mechanisms:
Contaminants on-site may be transported by vertical migration through soil to groundwater, and by surface runoff to surface water (Mill Creek). Contaminated soil can be a direct contact hazard to site workers and visitors and can travel as wind-blown dust and be transported off site.

Receptors:
Potential receptors include salvage yard employees, recreational users or trespassers, residential users living near the site, industrial workers, excavation workers, and ecological receptors including potential aquatic receptors in Mill Creek. Recreational users, residential users, and industrial users may be exposed to contaminants through drinking water from groundwater wells, consumption of plant or wildlife that may have migrated through the site, direct exposure (dermal and incidental ingestion) to contaminant in surface soils, and inhalation of volatiles from surface soil. Excavation workers may have direct exposure to contaminants in surface and subsurface soils. Terrestrial ecological receptors may be exposed to contaminants through direct exposure to surface soils and accumulation in the food chain.

Aquatic receptors may be exposed to contaminants in surface water and sediment.

7. Decision Statement

Examples: 1) Determine whether surface contamination exceeds the established action level;
2) Determine appropriate disposal options for contaminated materials.

The decision(s) to be made from this investigation is/are to:

1.) Determine if groundwater is contaminated with compounds of concern at concentrations that exceed the established action levels
2.) Determine the depth and flow direction of groundwater
3.) Determine additional information about the horizontal and vertical limits of contamination in soil that exceeds the established action levels

8. Action Level

State the analyte, concentration, and units for each selected action level. Describe the rationale for choosing each action level and its source (i.e. MTCA, PRG, ATSDR, etc.) Example: The action level for total mercury in soil is 6.7 mg/kg (from Regional Screening Level residential).

1. Soil: MTCA Method B and C values for Unrestricted (i.e., Residential Properties) and EPA RSL for Residential Properties.
2. Groundwater: Federal Maximum Contaminant Level (MCL), EPA RSLs for Tap Water and MTCA Method B and C values for tap water.

Specific screening levels are presented in the attached data tables.

II. Data Acquisition and Measurement Objectives

9. Site Diagram and Sampling Areas

A Sampling Area is an area within in which a specific action will be performed.
Examples : 1) Each drum on the site is a Sampling Area;
2) Each section of sidewalk in front of the residence is a Sampling Area;
3) Each sampling grid section is a Sampling Area.

The site diagram is the attached Figure 2. The sampling will be conducted at the proposed monitoring well and hollow stem auger borehole locations.

10. The Decision Rules

These can be written as logical If…, Then.. statements. Describe how the decisions will be made and how to address results falling within the error range of the action level. Examples: 1) In the Old Furnace Sampling Area, the soil in the area around the furnace structure will be excavated until sample analysis with XRF shows no mercury concentrations in surface soil above the lower limit of the error associated with the action level, 18.4 mg/kg. 2) If the concentrations of contaminants in a SA are less than the lower limit of the error associated with the action level, then the area may be characterized as not posing an unacceptable risk to human health or the environment and may be dismissed from additional RP activities. The area may be referred to other Federal, State or Local government agencies.

The following statement(s) describe the decision rules to apply to this investigation:

1.) If groundwater contaminants occur at concentrations that exceed the action level, then EPA will be notified to determine the need for further action.
2.) Data from soil samples collected from monitoring well installation and boreholes will be used to refine the estimated main source area.

11. Information Needed for the Decision Rule

What information needs to be collected to make the decisions – this includes non-sampling info as well: action levels, climate history, direction of water flow, etc. Examples: Current and future on-site and off-site land use; wind direction, humidity and ambient temperature; contaminant concentrations in surface soil.

The following inputs to the decision are necessary to interpret the analytical results:

1.) Screening data (XRF, visual observations by geologist, etc.) needs to be collected to determine which soil samples will be submitted to the analytical laboratory.
2.) Depth to groundwater and other geological and hydrogeological observations will be used to

determine groundwater flow, direction, and other characteristics, which will be used to complete the groundwater CSM and provide context for evaluation of groundwater analytical results.

12. Sampling and Analysis

For each SA, describe:

1. *sampling pattern (random, targeted, scheme for composite)*
2. *number of samples, how many to be collected from where, and why*
3. *sample type (grab, composite)*
4. *matrix (air, water, soil)*
5. *analytes and analytical methods*
6. *name and locations of off-site laboratories, if applicable.*

Only a single sampling area is being addressed by this investigation, termed the source area.

1. The sampling pattern is targeted. Four monitoring well boreholes and two investigative boreholes are planned at the site. All sampling activities are expected to be related to the installation of these wells and boreholes.
2. Soil from each borehole will be sampled continuously by the geologists during borehole installation. From these continuous samples at each monitoring well and investigative borehole, two soil samples will be collected for off-site analyses. One sample will be collected from the groundwater interface, and a second sample will be collected between the surface and groundwater based on screening observations. One groundwater sample will be collected from each monitoring well after the well has been developed.
3. Sample types will be grab
4. The sample matrices are soil and groundwater. After the wells are installed and developed, one groundwater sample will be collected from each monitoring well.
5. All samples will be analyzed for SVOCs, TAL Metals and PCBs. TPH may be included if soil is visibly affected by oil or at the direction of the OSC.
6. The off-site laboratory will be OnSite Environmental, Inc., located in Redmond, WA.

Soil samples will be collected continuously (approximately every two feet) from surface to groundwater and will be screened using an XRF for metals and a TVA-1000 for organics. Samples will also be evaluated by visual observations by the field geologists. One sample will be collected from the groundwater interface at each borehole, and one additional sample will be collected from each borehole which appears to be most affected by contamination based on the screening process. If multiple samples appear to be impacted by contamination, then more than one sample may to sent to the off site analytical laboratory.

Two soil samples will be selected for analysis for hexavalent chromium. The samples will be selected by screening with the XRF. The two samples with the highest concentration of total chromium will be selected for hexavalent analysis.

13. Applicability of Data (place an X in front of the data categories needed, explain with comments)

Do the decisions to be made from the data require that the analytical data be:
1) definitive data, 2) screening data (with definitive confirmation) or 3) screening data (without definitive confirmation)?

X A) Definitive data** is analytical data of sufficient quality for final decision-making. To produce definitive data on-site or off-site, the field or lab analysis will have passed full Quality Control (QC) requirements (continuing calibration checks, Method Detection Limit (MDL) study, field duplicate samples, field blank, matrix spikes, lab duplicate samples, and other method-specific QC such as surrogates) AND the analyst will have passed a Precision and Recovery (PAR) study AND the instrument will have a valid Performance Evaluation sample on file. This category of data is suitable for: **1) enforcement purposes, 2) determination of extent of contamination, 3) disposal, 4) RP verification or 5) cleanup confirmation.

Comments: All samples submitted to off site analytical laboratories need to be definitive data

*___**B) Screening data with definitive confirmation** is analytical data that may be used **to support preliminary or intermediate decision-making** until confirmed by definitive data. However, even after confirmation, this data is often not as precise as definitive data. To produce this category of data, the analyst will have passed a PAR study to determine analytical*

error AND 10% of the samples are split and analyzed by a method that produced definitive data with a minimum of three samples above the action level and three samples below it.
Comments: pH and other water quality parameters requiring immediate analysis will be analyzed on-site.

X C) Screening data *is analytical data which has not been confirmed by definitive data. The QC requirements are limited to an MDL study and continuing calibration checks. This data can be used for making decisions:* ***1) in emergencies, 2) for health and safety screening, 3) to supplement other analytical data, 4) to determine where to collect samples, 5) for waste profiling, and 6) for preliminary identification of pollutants****. This data is not of sufficient quality for final decision-making.*
Comments: Screening data (metals by XRF) will be collected to assist with sample collection decisions.

14. Special Sampling or Analysis Directions

Describe any special directions for the planned sampling and analysis such as additional quality controls or sample preparation issues. Examples: 1) XRF and Lumex for sediment will be calibrated before each day of use and checked with a second source standard. 2) A field blank will be analyzed with each calibration to confirm the concentration of non-detection. 3) A Method Detection Limit determination will be performed prior to the start of analysis so that the lower quantitation limit can be determined. 4) If particle size is too large for accurate analyses, the samples will be ground prior to analysis. If the sample contains too much moisture for accurate analyses, the sample will be decanted and air dried prior to analysis.

1. XRF will require an MDL study prior to use, and will also require daily MDL and PAR studies prior to use as a field screening tool.
2. Soil samples may require drying depending on soil moisture content prior to screening with the XRF.
3. The E&E operations guide for the XRF will be followed to ensure effective operation of the instrument.
4. MS/MSD samples for the groundwater matrix will require the collection of additional sample containers
5. Samples will be analyzed using a standard turn around time
6. Monitoring wells will be sampled in accordance with the E&E groundwater sampling SOP including the use of low flow sampling pumps and screening of water quality parameters (temperature, pH, salinity and conductivity).

15. Method Requirements

[Describe the restrictions to be considered in choosing an analytical method due to the need to meet specific regulations, policies, ARARs, and other analytical needs. Examples: 1) Methods must meet USEPA Drinking Water Program requirements. 2) Methods must achieve lower quantitation limits of less than 1/10 the action levels.3) Methods must be performed exactly as written without modification by the analytical laboratory.]

None

16. Sample Collection Information

[Describe any activities that will be performed related to sample collection]

The applicable sample collection Standard Operating Procedures (SOPs) or methods will be followed and include:
Field Activity Logbook SOP
Sample Packaging and Shipping SOP
Sampling Equipment Decontamination SOP
XRF Instrument SOP, Quick Start Guide, and Field Portable XRF E&E operations guide
TVA-1000 Instrument SOP and Quick Start Guide
Groundwater Sampling SOP
SW-846 Method 6200 (Field Portable XRF)

17. Optimization of Sampling Plan (Maximizing Data Quality While Minimizing Time and Cost)

[Describe what choices were made to reduce cost of sampling while meeting the needed level of data quality. Example: The XRF will be used in situ whenever possible to achieve accurate results. Reproducibility and accuracy of in situ XRF analyses will be checked by collecting, air drying, analyzing and comparing five in situ samples at the start of sampling. Where interferences are suspected, steps will be taken to eliminate the interferences by mechanisms such as drying, grinding or sieving the samples or analyzing them using the Lumex with soil attachment.]

Sample collection will be optimized using field screening. Only the most contaminated samples will be submitted to the laboratory to represent worse case scenario contamination conditions. Additional samples will not be submitted to the analytical laboratory unless field conditions indicate that additional data will be of

value to the delineation of contamination at the site.

The format for sample number identification is summarized in Table 1. Sample collection and analysis information is summarized in Table 2.

Table 1
SAMPLE CODING

Project Name Stubblefield Salvage Yard Monitoring Well Installation **Site ID:**10HD

***SAMPLE NUMBER* (1)**

Digits	Description	Code (Example)
1,2,3,4	Year and Month Code	YYMM (1010)
5,6,7,8	Consecutive Sample Number (grouped by SA as appropriate)	0001 – First sample of SA

***SAMPLE NAME / LOCATION ID* (2)**
(Optional)

1,2	Sampling Area	SA – Source Area MW – Monitoring Well
3,4	Consecutive Sample Number	01 – First sample of Sampling Area
5,6	Matrix Code	GW – Groundwater SB – Subsurface Soil TB – Trip Blank SS – Surface Soil RB – Rinse Blank
7,8	Depth (Optional)	01 (feet below ground surface)

Notes:
(1) The Sample Number is a unique, 8-digit number assigned to each sample.
(2) The Sample Name or Location ID is an optional identifier that can be used to further describe each sample or sample location.

Table 2. Sampling and Analysis

Data Quality	Sampling Area	Matrix	Sampling Pattern	Sample Type	Data Quality	Number of Field Samples	Analyte or Parameter	EPA Method Number	Action Level	Method Quant. Limit	#/type of Sample Containers per Sample	Preservative	Hold Time	Field QC
Field Screening (XRF)	Source Area	Soil	Targeted	Grab	Screening	200	TAL Metals	6200	See Tables	10 – 100 mg/kg	1x8-ouncd glass jar	None	6 months (28 days for mercury)	1 Field Duplicate
Lab Analysis	Source Area	Soil	Targeted	Grab	Definitive	12	TAL Metals	6000 and 7000 Series	See Tables	0.1 – 500 mg/kg	1x8 ounce glass jar	None	6 months (28 days for mercury)	1 Field Duplicate
Lab Analysis	Source Area	Soil	Targeted	Grab	Definitive	12	PCBs	8082	See Tables	20 ug/kg	1x8 ounce glass jar	None	14 days/40 days	1 Field Duplicate
Lab Analysis	Source Area	Soil	Targeted	Grab	Definitive	12	SVOCs	8270	See Tables	50 – 200 ug/kg	1x8 ounce glass jar	None	14 days/40 days	1 Field Duplicate
Lab Analysis	Source Area	Water	Targeted	Grab	Definitive	4	TAL Metals	6000 and 7000 Series	See Tables	0.2 – 5,000 ug/L	1x1-liter polyethylene	HN03 to ph < 2	6 months (28 days for mercury)	1 Field Duplicate 1 Rinsate Blank
Lab Analysis	Source Area	Water	Targeted	Grab	Definitive	4	PCBs	8082	See Tables	1 ug/L	2x1-liter amber glass	None	7 days/40 days	1 Field Duplicate 1 Rinsate Blank
Lab Analysis	Source Area	Water	Targeted	Grab	Definitive	4	SVOCs	8270	See Tables	5 ug/L	2x1-liter amber glass	None	7 days/40 days	1 Field Duplicate 1 Rinsate Blank
Lab Analysis	Source Area	Soil	Targeted	Grab	Definitive	2	Hexavalent Chromium	Lab X method 7196	See Tables	0.5 mg/kg	1x8 ounce glass jar	None	28 days to extraction	1 Field Duplicate

Note:
For matrix spike and/or duplicate samples, no extra volume is required for air (unless co-located samples are collected), oil, product, or soil samples except soil VOC or NWTPH-Gx samples (triple volume).
Triple volume is also required for organic water samples (double volume for inorganic).

Table 3. Common Sample Handling Information

Analysis Type	Sub Analysis	Matrix	Analytical Method	Container Type	Minimum Volume	Preservative	Temperature/ Storage	Hold Time	Source
Metals	Metals Not including Mercury or Hexachrome. Includes TAL, PP, RCRA lists)	Solid	EPA 6000 / 7000 Series	Glass Jar	200 g	n/a	None	6 months	SW-846 ch. 3
		Aqueous	EPA 6000 / 7000 Series	PTFE or HDPE	600 mL	HNO_3 to pH < 2	Not listed	6 months	SW-846 ch. 3
	Mercury	Solid	EPA 7471B	Glass Jar	200 g	n/a	$\leq 6^o$ C	28 days	SW-846 ch. 3
		Aqueous	EPA 7470A	PTFE or HDPE	400 mL	HNO_3 to pH < 2	Not listed	28 days	SW-846 ch. 3
	Hexavalent Chromium, (Hexachrome, Cr+6)	Solid	Lab X method, EPA 7196A	Glass Jar	100 g	n/a	$\leq 6^o$ C	28 days to extraction	SW-846 ch. 3
		Aqueous	EPA 218.6 (Drinking Water)	PTFE or HDPE	400 mL	n/a	$\leq 6^o$ C	24 hours	SW-846 ch. 3
	XRF	Solid (in situ; on the ground surface)	6200	none	n/a	none	none	Analyze Immediately	n/a
		Solid (ex situ)	6200	plastic bag	200 g	none	none	6 months	n/a
VOCs	VOCs / BTEX	Solid	EPA 5035 / 8260B	*	*	*	*	2 days to lab / 14 days	SW-846 ch. 4
		Aqueous	EPA 8260B	Amber Vial with Septa Lid	2 x 40 mL	HCl to pH< 2	$\leq 6^o$ C (headspace free)	14 days	SW-846 ch. 4
SVOCs	SVOCs / PAHs	Solid	EPA 8270D	Glass Jar	8 ounces	n/a	$\leq 6^o$ C	14 days	SW-846 ch. 4
		Aqueous	EPA 8270D	Amber Glass	2 x 1 L	n/a	$\leq 6^o$ C	7 days	SW-846 ch. 4
PCBs and Dioxins/Furans	PCBs	Solid	EPA 8082	Glass Jar	8 ounces	n/a	$\leq 6^o$ C	none	SW-846 ch. 4
		Aqueous	EPA 8082	Amber Glass	2 x 1 L	n/a	$\leq 6^o$ C	none	SW-846 ch. 4
	Dioxins/Furans	Solid	EPA 8280 or 8290	Glass Jar	8 ounces	n/a	$\leq 6^o$ C	none	SW-846 ch. 4
		Aqueous	EPA 8280 or 8290	Amber Glass	2 x 1 L	n/a	$\leq 6^o$ C	none	SW-846 ch. 4
Pesticides and Herbicides	Chlorinated Pesticides	Solid	EPA 8081	Glass Jar	8 ounces	n/a	$\leq 6^o$ C	14 days	SW-846 ch. 4
		Aqueous	EPA 8081	Amber Glass	2 x 1 L	n/a	$\leq 6^o$ C	7 days	SW-846 ch. 4
	Chlorinated Herbicides	Solid	EPA 8151	Glass Jar	8 ounces	n/a	$\leq 6^o$ C	14 days	SW-846 ch. 4
		Aqueous	EPA 8151	Amber Glass	2 x 1 L	n/a	$\leq 6^o$ C	7 days	SW-846 ch. 4
NWTPH	Gasoline-Range Organics	Solid	TPHs/NWTPH-Gx	Amber Glass Jar with Septa Lid	4 ounces	n/a	$\leq 6^o$ C (headspace free)	14 days	Method
		Aqueous	TPHs/NWTPH-Gx	Amber Vial with Septa Lid	2 x 40 mL	pH < 2 with HCl	$\leq 6^o$ C (headspace free)	7 days unpreserved 14 days preserved	Method
	Diesel-Range Organics	Solid	3510, 3540/3550, 8000	Glass Jar	8 ounces	n/a	$\leq 6^o$ C	14 days	Method
		Aqueous	3510, 3540/3550, 8000	Glass Amber	2 x 1 L	pH < 2 with HCl	$\leq 6^o$ C	7 days unpreserved 14 days preserved	Method
Geotechnical	Particle Size Analysis	Solid	ASTM D-422	Glass Jar or Plastic Bag	2 x 8 ounce	none	n/a	n/a	Method

Analysis Type	Sub Analysis	Matrix	Analytical Method	Container Type	Minimum Volume	Preservative	Temperature/ Storage	Hold Time	Source
Miscellaneous	pH	Solid	EPA 9045	Glass Jar	8 ounces	n/a	n/a	Analyze Immediately	SW-846 ch. 3
		Aqueous	EPA 9040	PTFE	25 mL	n/a	n/a	Analyze Immediately	SW-846 ch. 3
	Total Organic Carbon (TOC)	Solid	SW-846 9060	Glass Jar	100 mL	n/a	$\leq 6^{o}$ C	28 days	SW-846
		Aqueous	EPA 415.1	PTFE or HDPE	200 mL	store in dark HCL or H_2SO_4 to pH <2	$\leq 6^{o}$ C	7 days unpreserved 28 days preserved	Method
	Cyanide	Solid	SW-846 9013	Glass Jar	5 g	n/a	$\leq 6^{o}$ C	14 days	SW-846 ch. 3
		Aqueous	SW-846 9010C	PTFE or HDPE	500 mL	NaOH to pH > 12	$\leq 6^{o}$ C	14 days	SW-846 ch. 3
	Conductivity	Aqueous	EPA 120.1	PTFE or HDPE	100 mL	n/a	n/a	Analyze Immediately	Method
	Hardness	Aqueous	EPA 130.1	PTFE or HDPE	1 x 1 L	HNO3 to pH<2	$\leq 6^{o}$ C	28 days	Method
	Total Suspended Solids	Aqueous	EPA 160.2	PTFE or HDPE	100 mL	n/a	$\leq 6^{o}$ C	7 days	Method
	Total Dissolved Solids	Aqueous	EPA 160.1	PTFE or HDPE	100 mL	n/a	$\leq 6^{o}$ C	7 days	Method
	Nitrate/nitrite	Aqueous	EPA 353.2	PTFE or HDPE	1 x 250 mL	H_2SO_4 to pH <2	$\leq 6^{o}$ C	28 days	Method
	Nitrate	Aqueous	SW-846 9210A	PTFE or HDPE	1,000 mL	n/a	$\leq 6^{o}$ C	28 days	SW-846 ch. 3
	Nitrite	Aqueous	SW-846 9216	PTFE or HDPE	25 mL	n/a	$\leq 6^{o}$ C	48 hours	SW-846 ch. 3, Method
	Fluoride	Aqueous	SW-846 9214	PTFE or HDPE	300 mL	n/a	$\leq 6^{o}$ C	28 days	SW-846 ch. 3
	Chloride	Aqueous	SW-846 9250	PTFE or HDPE	50 mL	n/a	$\leq 6^{o}$ C	28 days	SW-846 ch. 3
	Sulfate	Aqueous	SW-846 9035	PTFE or HDPE	50 mL	n/a	$\leq 6^{o}$ C	28 days	SW-846 ch. 3
	Sulfide	Solid	SW-846 9215	Glass Jar	1 x 4 ounces	Fill sample surface with 2N zinc acetate until moistened.	$\leq 6^{o}$ C (headspace free)	7 days	SW-846 ch. 3
		Aqueous	SW-846 9031	PTFE or HDPE	100 mL	4 drops 2N zinc acetate/100 mL sample; NaOH to pH>9.	$\leq 6^{o}$ C (headspace free)	7 days	SW-846 ch. 3

Key:

*	= See individual methods. We typically collect 3xEnCore-type samplers and 1x40 mL VOA vial per sample, keep at $\leq 6^{o}$C with no chemical preservative, and they must be at the lab within 48 hours of collection.				
C	= Celsius	HNO_3	= nitric acid	SVOCs	= semivolatile organic compounds
Cr	= chromium	L	= liter	SW-846	= EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods
EPA	= Environmental Protection Agency	mL	= milliliter	TAL	= Target Analyte List
g	=grams	n/a	= not applicable	TPH	= total petroleum hydrocarbons
H2SO4	= sulfuric acid	NaOH	= sodium hydroxide	VOA	= Volatile Organic Analysis
HCL	= hydrochloric acid	PCBs	= polychlorinated biphenyls	VOCs	= Volatile Organic Compounds
HDPE	= high-density polyethylene	PTFE	= polytetrafluoroethylene		
Hg	= mercury	RCRA	= Resource Conservation and Recovery Act		

III Assessment and Response

A Sample Plan Alteration Form (SPAF) will be used to describe project discrepancies (if any) that occur between planned project activities listed in the final SSSP and actual project work. The completed SPAF will be approved by the OSC and QAC and appended to the original SSSP.

A Field Sampling Form (FSF) may be used to capture the sampling and analysis scheme for emergency responses in the field and then the FSF pages inserted into the appropriate areas of the final SSSP.

Corrective actions will be assessed by the sampling team and others involved in the sampling and a corrective action report describing the problem, solution and recommendations will be forwarded to the OSC and the ERU QAC.

IV Data Validation and Usability

The sample collection data will be entered into Scribe and Scribe will be used to print lab Chains of Custody. Results of field and lab analyses will be entered into Scribe as they are received and uploaded to Scibe.net when the sampling and analysis has been completed.

18. Data Validation or Verification will be performed by:

(Mark as appropriate and elaborate if necessary)

X Ecology and Environment Quality Assurance Officer, validation
_ Techlaw Quality Assurance Officer, validation
_ EPA Region 10 Quality Assurance Office, validation
_Manchester Environmental Lab (MEL) staff, verification
_ Other ____

19. Data Validation Type will be:

_ Stage IIA, percentage to be validated:
_ Stage IIB, percentage to be validated:
_ Stage III, percentage to be validated:
X Stage IV, percentage to be validated: All chromatograms, cal curves, QC evaluated; 10% recalculated
_ Verification, percentage:

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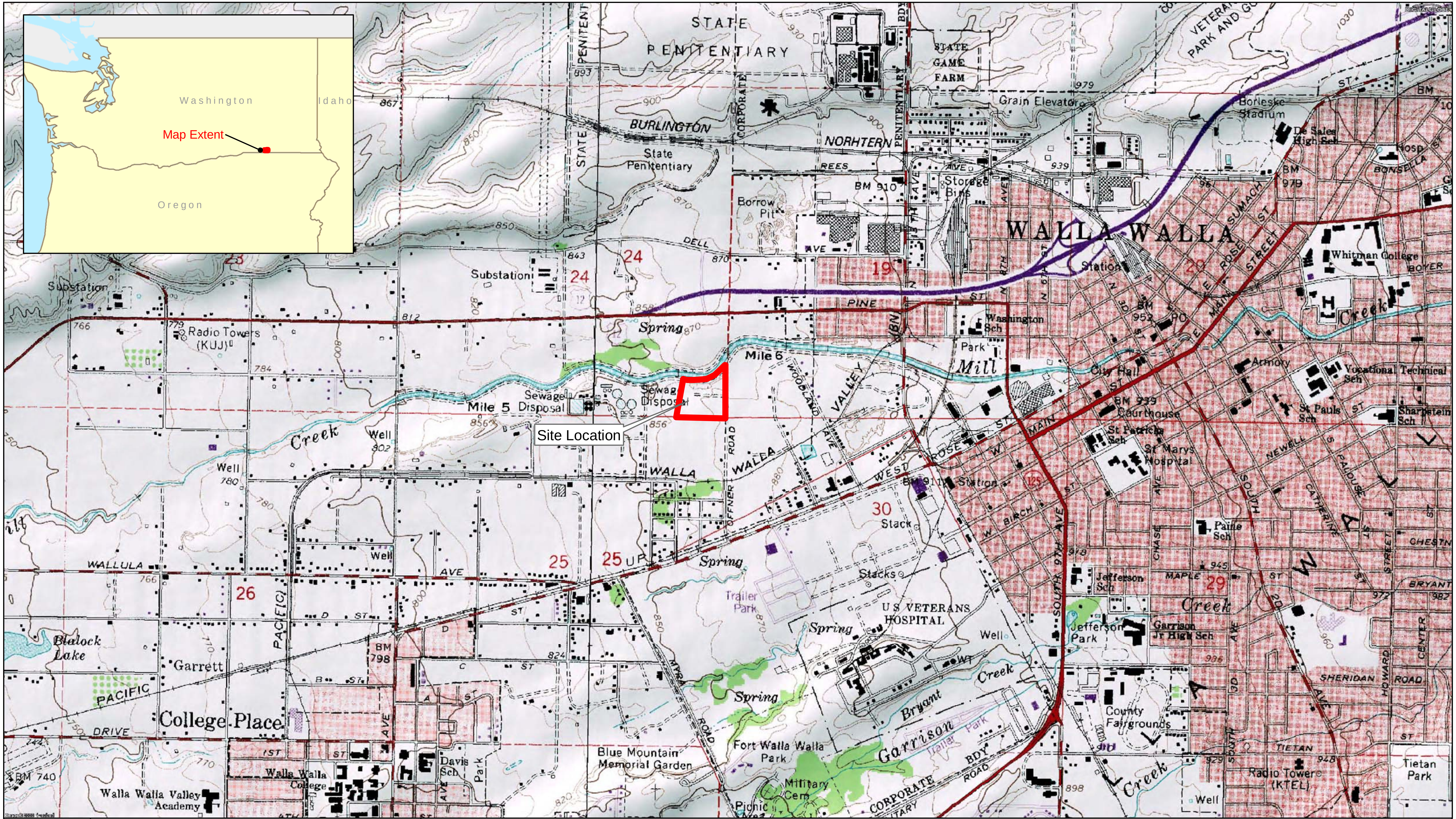

Legend

Site Boundary

0 0.125 0.25 0.5 0.75 1 Miles

Figure 1: Site Location
Stubblefield Salvage Yard Site
Walla Walla, Washington
Time Critical Removal Assessment

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Seattle, Washington

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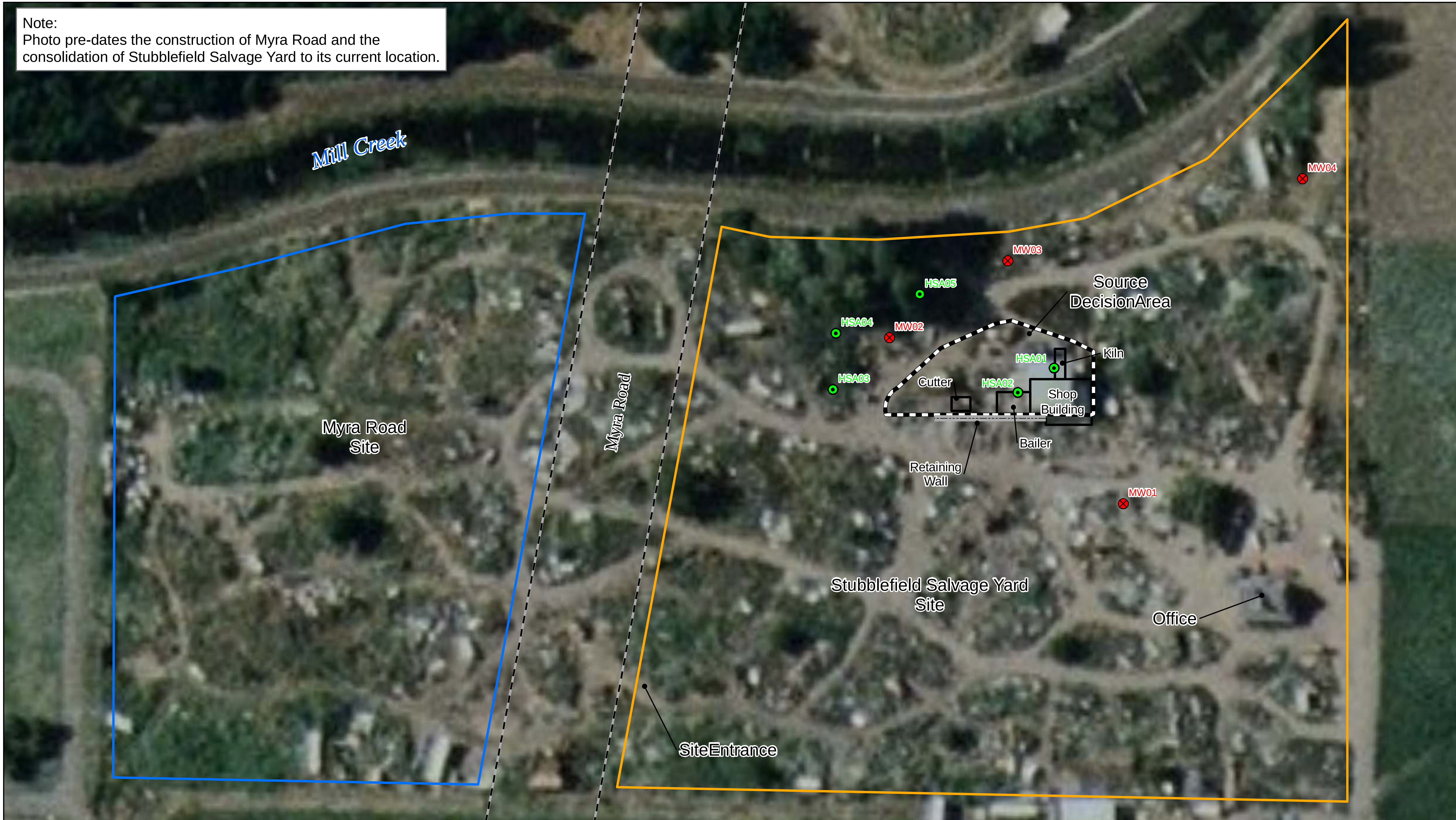

Legend

Site Boundary
- Myra Road
- Stubblefield Salvage Yard
- Myra Road ROW
- Proposed Investigative Boreholes
- Proposed Monitoring Wells

250 125 0
Feet

Figure 2: Site Layout
Stubblefield Salvage Yard Site
Walla Walla, Washington
Time Critical Removal Assessment

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