UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140

OFFICE OF ENVIRONMENTAL CLEANUP
EMERGENCY RESPONSE UNIT

Site Specific Sampling Plan

Project Name: Gorst Creek Removal Action Site ID: 10GL

Removal Action Phase: Post Excavation Sampling

Author: Tom Campbell / Jake Moersen Company: E & E Date Completed: July 30, 2016

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.

1. Approvals

Name, Title	Telephone, Email, Address	Signature
Jeffry Rodin, On-Scene Coordinator	206 553-6709, rodin.jeffry@epa.gov USEPA , M/S: ECL-133, 1200 Sixth Ave. Suite 900, Seattle, WA 98101	Jeffry Rodin Digitally signed by Jeffry Rodin DN: cn=Jeffry Rodin, o=EPA, ou=ERU, email=rodin.jeffry@epa.gov, c=US Date: 2016.08.02 10:11:28 -07'00'
Kathy Parker, ERU Quality Assurance Coordinator	206-553-0062, parker.kathy@epa.gov USEPA , M/S: ECL-133, 1200 Sixth Ave. Suite 900, Seattle, WA 98101	Kathy Parker Digitally signed by Kathy Parker DN: cn=Kathy Parker, o=EPA, ou=OSC, email=parker.kathy@epa.gov, c=US Date: 2016.08.02 10:01:36 -07'00'

I. Project Management and Organization

2. Personnel and Roles involved in the project:

Name	Telephone, Email, Company, Address	Project Role	Data Recipient
Jeff Rodin	206 553-6709, rodin.jeffry@epa.gov, USEPA, M/S: ECL-133, 1200 Sixth Ave. Suite 900, Seattle, WA 98101	On Scene Coordinator	Yes
Jake Moersen	206 624-9537, jmoersen@ene.com, E & E 720 Third Avenue, Suite 1700 Seattle, Washington 98104	Superfund Technical Assessment and Response Team (START) Field Manager	Yes
Kathy Parker	206 553-0062, parker.kathy@epa.gov, USEPA, M/S: ECL-133, 1200 Sixth Ave. Suite 900, Seattle, WA 98101	ERU Quality Assurance Coordinator	Yes
Mark Woodke	206 624-9537, mwoodke@ene.com, E & E, 720 Third Ave, Suite 1700 Seattle, WA 98104	START Quality Assurance Reviewer	Yes
Christabel Escarez	253 922-2310, Christabel.excarez@Testamericainc.com, Test America, Inc., 5755 8th Street East, Tacoma, WA 98424	General Laboratory Contact	Yes

3. Physical Description and Site Contact Information:

Site Name	Bremerton Auto Wrecking Landfill/Gorst Creek Removal	
Site Location	4275 State Highway 3 SW, Port Orchard, Washington (See Figure 1).	
Property Size	Approximately 10 acres (See Figure 2).	
Site Contact	Jeffry Rodin	Phone Number: 360-550-4009
Nearest Residents	Within 0.25 miles	Direction: North and east
Primary Land Uses Surrounding the Site	Commercial, recreational, residential	

4. The proposed schedule of project work follows:

Activity	Estimated Start Date	Estimated Completion Date	Comments
SSSP Review/Approval	7/21/2016	8/1/2016	
Mobilize to / Demobilize from Site	4/25/2016	10/30/2016	EPA/START/ERRS mobilized in April 2016.
Sample Collection	7/13/2016	10/20/2016	As needed throughout the project. Completion date is the estimated last date of sampling prior to winter operations.
Laboratory Sample Receipt	7/14/2016	10/20/2016	Completion date is the estimated last date for sample receipt prior to winter operations.
Laboratory Analysis	7/14/2016	10/24/2016	Various turnaround times depending on analyte. Completion date is the estimated last date of laboratory analysis following transition to winter operations.
Data Validation	7/17/2016	10/30/2016	

5. Historical and Background Information

The Bremerton Auto Wrecking Landfill – Gorst Creek Removal Action property encompasses a triangular parcel centered over approximately 700 feet of the Gorst Creek Ravine (Figure 2). An auto wrecking yard (Airport Auto Wrecking) borders the property to the northeast, and the Washington State Department of Transportation (WSDOT) owns the property adjacent to the landfill to the northwest (downstream), including State Highway 3 SW and an easement corridor on either side of the highway. Gorst Creek flows northwest under the property through an approximate 700 foot-long 24-inch diameter corrugated steel culvert, then under State Highway 3 through a box culvert. The Gorst Creek Landfill was an active facility from the late 1960s until approximately 1987. In 1997, Gorst Creek backed up behind the landfill, flooded, and a portion of the northwest slope of the landfill failed, washing into Gorst Creek down slope of the landfill. Wastes deposited approximately one-half mile downstream in Gorst Creek. The site contains an estimated 150,000 cubic yards of waste. Potential contaminants of concern associated with landfill operations include polychlorinated biphenyls (PCBs), target analyte list (TAL) metals, polynuclear aromatic hydrocarbons (PAHs; a subset of semivolatile organic compounds (SVOCs)), gasoline-range total petroleum hydrocarbons (TPHs), diesel-range TPHs, and asbestos. In 2011, EPA performed an Engineering Evaluation/Cost Analysis to determine potential alternative actions at the site. Based on potential threats of site contaminants to human health and the environment, EPA decided to perform a time-critical removal action at the site, which includes removal of waste.

This SSSP is the sixth of several that have been prepared to support the removal action. Removal action SSSPs include:

1. Pre-removal action sampling at the laydown and stockpile staging area (i.e., background sampling)
2. Air monitoring and sampling
3. Excavation waste profiling
4. Stormwater monitoring and sampling
5. XRF and field screening
6. Post excavation sampling

This SSSP addresses post excavation sampling of upland soils and sediment. Post excavation sampling will be conducted under this SSSP after landfill waste, debris, and visibly contaminated soil has been removed. Post excavation (in place) upland soil and sediment will be screened in accordance with SSSP #5, XRF and Field Screening, prior to the decision to perform post excavation sampling.

References:

Ecology and Environment, April 2012, Final Draft Engineering Evaluation/Cost Analysis, Bremerton Auto Wrecking Landfill - Gorst Creek Site, prepared for the United States Environmental Protection Agency, Seattle, Washington, Contract Number EP-S7-06-02, Technical Direction Document Number 11-11-0005.

Hart Crowser, Inc., October 2000, Site Hazard Assessment Gorst Landfill, prepared for the Department of the Navy, Engineering Field Activity Northwest, Naval Facilities Engineering Command, Contract Number N44255-98-D-4409.

Kitsap County Health Department, Various Dates, Site files for the Gorst Creek – Bremerton Auto Wrecking Landfill.

United States Environmental Protection Agency, January 2003, Geographic Information Query System for Gorst Creek – Bremerton Auto Wrecking Landfill.

6. Conceptual Site Model

Contaminants: PAHs, TPHs, PCBs, Chlorinated Pesticides, Organophosphorus Pesticides, Chlorinated Herbicides, TAL metals, and asbestos.

Transport Mechanisms: Direct contact with excavated materials, soils and/or sediments, migration to groundwater or surface water, vapor or particles moving on air currents.

Receptors: People on site, people using groundwater or surface water sources, people downwind of the site, and ecological receptors in the restored creek system and within the creek downstream of the site.

7. Decision Statement

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

Determine when final restoration of the upland area and creek channel area may proceed following removal of visible landfill waste and debris, including visibly contaminated soil.

8. Action Level

Excavation Base Material (Post Excavation)

Upland Soil: The action/screening levels for upland soil will be compared to the EPA Regional Screening Level (RSL) for residential soil and/or the Washington Model Toxics Control Act (MTCA) Method A for unrestricted soil.

Sediment: The primary action/screening levels for sediment will be the Sediment Cleanup Objectives (SCO) from Table 8-1 of the Washington Sediment Management Standards (Attachment A). If no SCO is available for a detected analyte, then the concentration may be compared to the EPA RSL for residential soil and/or the Washington MTCA Method A for unrestricted soil.

Determination of whether a decision unit is classified as sediment or upland soil will be made by the OSC.

II. Data Acquisition and Measurement Objectives

9. Site Diagram and Sampling Areas

The site diagram is included in Figure 2.

Excavation Base Material
Post excavation sampling under this SSSP will occur after landfill waste, debris, and visibly contaminated soil has been removed. The base of excavations will be screened in accordance with SSSP #5, XRF and Field Screening, in order to determine whether samples should be collected under this SSSP for laboratory analysis.

Discreet decision units (DUs) will be identified by field personnel including the OSC, START PM, and ERRS RM. The target square footage for each DU is approximately 10,000 square feet (ft^2), although additional factors such as topographic features will influence the boundary delineation. The corner of each DU boundary will be marked with wooden stakes and recorded with the GPS unit.

10. The Decision Rules

If results exceed action/screening levels, next steps will be accessed by the management team and as directed by the OSC. If additional excavation occurs, then assessment of the excavation may be repeated following this SSSP.

If surface soil results meet action/screening levels, the area is ready for restoration as determined by the design plans.

11. Information Needed for the Decision Rule

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

Location - to determine if sample results will be compared to soil or sediment action levels.

12. Sampling and Analysis

One random composite upland soil sample will be collected from each DU. The target area for each DU is 10,000 ft^2, subject to other factors (Section 9). The base of each DU will be screened in-situ at 10 locations in accordance with SSSP #5, XRF and Field Screening, in order to determine whether samples should be collected under this SSSP for laboratory analysis. Each XRF screening location will be marked with a pin flag.

One random composite sediment sample will be collected from every 100 linear feet (lf) of excavation within the future creek channel (floodplain) area.

Each composite sample will be composed of a minimum of 10 subsamples, which will be collected from 0 to 2 inches below ground surface using dedicated field sampling equipment at the locations marked with the pin flag.

Each composite sample will be submitted for the *modified suite of parameters*:

- TAL Metals with Mercury (EPA Methods 6010D/6020B/7471B)
- Polychlorinated biphenyls (PCBs) (EPA Method 8082A)

A minimum of 10% of the composite* upland soil samples and 20% of the sediment samples will also be submitted for a *full suite of parameters*, consisting of:

- Volatile organic compounds (VOCs) (EPA Method 8260B)
- Semi-volatile organic compounds (SVOCs) (EPA Method 8270D)
- Herbicides (EPA Method 8151A)
- Pesticides (EPA Method 8081B)
- Organophosphorus Pesticides (EPA Method 8141B)
- Gasoline Range Organics (NWTPH-Gx)
- Diesel Range Organics (NWTPH-Dx)

* When feasible, the following approach is recommended for the upland soil sample full suite of parameters:

- For each group of DUs sampled at one time, collect a super-composite sample - a composite composed of equal-volume aliquots of each DU's well-mixed composite sample that will be submitted for analysis.
- Submit the super-composite sample for the full suite of parameters.

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

_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 chemical analyses at the off-site laboratory will produce 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: None

__ ***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: the XRF field analyses mentioned in section 9 are covered by SSSP #5.

14. Special Sampling or Analysis Directions

Combination of sample volumes for TPH-Dx and SVOCs are acceptable to a single sample container.

Combination of sample volumes for Pesticides, Herbicides, and PCBs are acceptable to a single sample container.

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

The applicable sample collection Standard Operating Procedures (SOPs) or methods will be followed and include:

Field Activity Logbook SOP
Soil Sampling SOP
VOC – Soil and Sediment Sampling SOP
Sample Packaging and Shipping SOP
Hazardous Waste Site Entry and Egress SOP
Sampling Equipment Decontamination SOP

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

Perform in-situ XRF field screening prior to collecting samples in order to identify areas of elevated metals contamination and allow for additional excavation.

Collect composite samples to reduce number of laboratory analyses.

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: Gorst Creek Removal: Post Excavation Sampling **Site ID:** 10GL

SAMPLE NUMBER [(1)]		
Digits	**Description**	**Code (Example)**
1,2,3,4	Year and Month Code	1607 (YYMM)
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	PE – Post Excavation
3,4	Consecutive Sample Number	01 – Decision Unit
5,6	Depth (Optional)	00-02 (inches 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 (containers may be combined at the discretion of the lab)	Preservative (Ice to ≤6oC)	Hold Time (days unless otherwise noted) (to extraction/to analysis)	Field QC
Definitive	Upland and Channel Post Excavation Decision Units	Soil and sediment	Targeted. Sub-sampled on grid.	Composite	Definitive	1/10,000 ft^2 1/100 lf	Target Analyte List Metals	SW-846 6010D/ 6020B/ 7471B	See Attach A	0.1 - 5 mg/kg	1x8-oz glass jar	NA	6 months 28 days for mercury	5% Field Duplicates
							Polychlorinated Biphenyls	SW-846 8082A		30 µg/kg	1x8-oz glass jar		14 days extraction 40 days analysis	
Definitive	Each Sampling Group of Decision Units	Soil and sediment	Random	Super-composite	Definitive	10% Upland 20% Channel	Semivolatile Organic Compounds	SW-846 8270D	See Attach A	10 µg/kg	1x8-oz glass jar	NA	14 days extraction 40 days analysis	None
							Chlorinated Herbicides	SW-846 8151A		5 µg/kg	1x8-oz glass jar		14 days extraction 40 days analysis	
							Chlorinated Pesticides	SW-846 8081B		2 µg/kg	1x8-oz glass jar		14 days extraction 40 days analysis	
							Organophosphorus Pesticides	SW-846 8141B		0.1 - 5 µg/kg	1x8-oz glass jar		14 days extraction 40 days analysis	
							Extended Gasoline Range TPHs	Ecology NWTPH-Gx		5 µg/kg	2x2-oz glass with Teflon lined septa		14 days	
							Extended Diesel Range TPHs	Ecology NWTPH-Dx		5 µg/kg	1x8-oz glass jar		14 days extraction 40 days analysis	

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	≤ 6° 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-specific soil extraction modification, EPA 7196A	Glass Jar	100 g	n/a	≤ 6° C	28 days to extraction	SW-846 ch. 3
		Aqueous	EPA 218.6 (Drinking Water)	PTFE or HDPE	400 mL	n/a	≤ 6° 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	≤ 6° C (headspace free)	14 days	SW-846 ch. 4
SVOCs	SVOCs / PAHs	Solid	EPA 8270D	Glass Jar	8 ounces	n/a	≤ 6° C	14 days	SW-846 ch. 4
		Aqueous	EPA 8270D	Amber Glass	2 x 1 L	n/a	≤ 6° C	7 days	SW-846 ch. 4
PCBs and Dioxins/Furans	PCBs	Solid	EPA 8082	Glass Jar	8 ounces	n/a	≤ 6° C	none	SW-846 ch. 4
		Aqueous	EPA 8082	Amber Glass	2 x 1 L	n/a	≤ 6° C	none	SW-846 ch. 4
	Dioxins/Furans	Solid	EPA 8280 or 8290	Glass Jar	8 ounces	n/a	≤ 6° C	none	SW-846 ch. 4
		Aqueous	EPA 8280 or 8290	Amber Glass	2 x 1 L	n/a	≤ 6° C	none	SW-846 ch. 4
Pesticides and Herbicides	Chlorinated Pesticides	Solid	EPA 8081	Glass Jar	8 ounces	n/a	≤ 6° C	14 days	SW-846 ch. 4
		Aqueous	EPA 8081	Amber Glass	2 x 1 L	n/a	≤ 6° C	7 days	SW-846 ch. 4
	Chlorinated Herbicides	Solid	EPA 8151	Glass Jar	8 ounces	n/a	≤ 6° C	14 days	SW-846 ch. 4
		Aqueous	EPA 8151	Amber Glass	2 x 1 L	n/a	≤ 6° 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	≤ 6° C (headspace free)	14 days	Method
		Aqueous	TPHs/NWTPH-Gx	Amber Vial with Septa Lid	2 x 40 mL	pH < 2 with HCl	≤ 6° C (headspace free)	7 days unpreserved 14 days preserved	Method
	Diesel-Range Organics	Solid	3510, 3540/3550, 8000	Glass Jar	8 ounces	n/a	≤ 6° C	14 days	Method
		Aqueous	3510, 3540/3550, 8000	Glass Amber	2 x 1 L	pH < 2 with HCl	≤ 6° C	7 days unpreserved 14 days preserved	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	≤ 6° 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	≤ 6° C	7 days unpreserved 28 days preserved	Method
	Cyanide	Solid	SW-846 9013	Glass Jar	5 g	n/a	≤ 6° C	14 days	SW-846 ch. 3
		Aqueous	SW-846 9010C	PTFE or HDPE	500 mL	NaOH to pH > 12	≤ 6° 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	≤ 6° C	28 days	Method
	Total Suspended Solids	Aqueous	EPA 160.2	PTFE or HDPE	100 mL	n/a	≤ 6° C	7 days	Method
	Total Dissolved Solids	Aqueous	EPA 160.1	PTFE or HDPE	100 mL	n/a	≤ 6° C	7 days	Method
	Nitrate/nitrite	Aqueous	EPA 353.2	PTFE or HDPE	1 x 250 mL	H_2SO_4 to pH <2	≤ 6° C	28 days	Method
	Nitrate	Aqueous	SW-846 9210A	PTFE or HDPE	1,000 mL	n/a	≤ 6° C	28 days	SW-846 ch. 3
	Nitrite	Aqueous	SW-846 9216	PTFE or HDPE	25 mL	n/a	≤ 6° C	48 hours	SW-846 ch. 3, Method
	Fluoride	Aqueous	SW-846 9214	PTFE or HDPE	300 mL	n/a	≤ 6° C	28 days	SW-846 ch. 3
	Chloride	Aqueous	SW-846 9250	PTFE or HDPE	50 mL	n/a	≤ 6° C	28 days	SW-846 ch. 3
	Sulfate	Aqueous	SW-846 9035	PTFE or HDPE	50 mL	n/a	≤ 6° 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.	≤ 6° 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.	≤ 6° 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 ≤ 6°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 can be 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:

ERU's general recommendation on validation is that a minimum of CLP-equivalent stage IIA verification and validation be performed for every SSSP involving laboratory analyses. However, stage IIB is preferred if the lab can provide it. Dioxins should be validated at CLP-equivalent stage 4.

	Data Verification and Validation Stages						
Performed by:	I	IIA	IIB	III	IV	Verification	Other:
E and E QA Reviewer			100%		10%		
EPA Region 10 QA Office							
MEL staff							
Other:							