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OFFICE OF ENVIRONMENTAL CLEANUP
EMERGENCY MANAGEMENT PROGRAM

Draft Site Specific Sampling Plan Alteration Form

Project Name: Swift Creek / Sumas Mountain Asbestos Site ID: 10EG

Author: Steve Hall Company: Ecology and Environment, Inc. Date: September 17, 2012

Changes from Final SSSP (include rationale, decision area, matrices, parameters, equipment, personnel, etc.:

This Sample Plan Alteration Form (SPAF) has been prepared by Ecology and Environment, Inc. (E & E) under a Superfund Technical Assessment and Response Team (START) contract with the United States Environmental Protection Agency (EPA) Region 10.

This SPAF is a summary of the sampling and analytical plan for additional sampling to be performed in September/October 2012 at the Swift Creek / Sumas Mountain Asbestos Site in Whatcom County, Washington. In general, the sampling and analytical procedures from the final Site-Specific Sampling Plan (SSSP) dated July 26, 2012, will be followed, with the following updates and/or changes:

Purpose for Additional Field Sampling Event

The field sampling event performed in July 2012 included analyzing four monitoring wells from the Great Western Lumber property (i.e., the "PMW" monitoring wells) for asbestos in water. The results of the analyses indicated that each of the samples included large quantities of asbestos fibers, particularly those shorter than 10 micrometers (µm) in length.

Additionally, START attempted to collect the groundwater samples using low-flow techniques with a peristaltic pump. However, because of the relatively high depth to water in the monitoring wells, START was unable to collect samples from three of the monitoring wells with the peristaltic pump, and these samples were collected with a bailer after purging three well volumes. There was a relationship between sampling technique and the amount of asbestos detected in the water samples, with the samples collected with the bailer containing greater concentrations of asbestos.

Two possible explanations for the asbestos results in the July 2012 samples have been proposed:

1. The asbestos detected in the groundwater samples could be present and migrating in groundwater, or

2. Asbestos is not migrating in significant quantities in groundwater; rather, the asbestos is present in the subsurface soil in which the monitoring wells were installed, and its presence in the samples was an artifact of the sampling technique.

The objective for the additional field sampling event is to re-sample the monitoring wells under low-flow conditions and obtain sufficient monitoring and analytical data that can determine

which explanation is more appropriate.

Sampling Approach

1. Number of Samples. As many as 10 samples, including seven field samples and three Quality Assurance / Quality Control (QA/QC) samples, will be collected.

Field samples will include:

- Four monitoring wells on the Great Western Lumber property installed by Whatcom County Public Works in 2010 ("PMW" wells);
- Three monitoring wells on area right-of-ways installed by the Whatcom County Health Department in 2009 ("HMW" wells);

The locations of these seven monitoring wells are indicated on Figure 1.

QA/QC samples will include:

- One field duplicate;
- One field blank (asbestos only); and
- One rinse blank.

2. Well Inspection and Gauging. Prior to sampling, the condition of the monitoring well will be noted, and the depth to groundwater in each well will be determined with a water level indicator. Field data and other notes and observations will be recorded on a field log book and on a field data sheet. An example of a field data sheet is attached to this SPAF.

For the two HMW wells located directly adjacent to Swift Creek (i.e., HMW01 and HMW02), the relative elevations of groundwater and surface water will be obtained using a surveyor's level and rod to estimate whether the creek is losing or gaining at those locations at the time of the elevation survey.

3. Low-Flow Sampling Equipment. START will take a variety of sampling pumps and equipment to the site (including a Grundfos submersible pump, bladder pump, and/or peristaltic pump) to allow for low-flow sampling.

4. Water Quality Monitoring. While sampling with the low-flow technique, START will monitor groundwater quality with a Horiba water quality instrument and a flow-through cell. Water quality parameters including turbidity, temperature, dissolved oxygen, pH, conductivity/specific conductance, and oxidation-reduction potential (ORP) will be recorded, and low-flow purging will continue until readings have stabilized, indicating that low-flow sampling conditions have been obtained.

5. Assess for Need to Re-Develop Wells. During low-flow sampling, START will evaluate water quality monitoring results to determine whether low-flow sampling conditions have been obtained or if it might be necessary to re-develop the monitoring wells. If necessary, START will re-develop the wells to remove particulates and allow for the collection of a sample representative of aquifer conditions.

If re-development is performed, development water will be discharged through a filter to the

ground.

6. Analytical Parameters. All field and QA/QC samples will be analyzed for the following analytical parameters:

- Total Target Analyte List (TAL) Metals, SW-846 Methods 6010C/7470A
- Dissolved TAL Metals, SW-846 Methods 6010C/7470A
  (Note: groundwater samples for dissolved metals will be filtered at time of collection through 0.45-µm in-line filter cassettes)
- Asbestos in Water, EPA Method 100.2, including all fiber sizes greater than 0.5 µm
- Total Suspended Solids (TSS), EPA Method 160.2

Metals and TSS analyses will be performed by ALS Environmental in Kelso, Washington. Asbestos in water analyses will be performed by EMSL Analytical, Inc. in Cinnaminson, New Jersey.

A summary of these analytical parameters and applicable sample containers, preservatives, and hold times are included in Table 1.

7. Equipment Decontamination. Non-dedicated sampling equipment (i.e., water level indicator, submersible pumps, etc.) will be decontaminated before use in each monitoring well. Decontamination will include washing with a solution of Alconnox and water and rinsing with distilled or deionized water.

To determine whether any cross-contaminants are present in samples, the QA/QC samples will include a rinse blank analyzed for all parameters of concern. The rinse blank will be prepared by pouring distilled or deionized water across the recently decontaminated equipment and collected into the appropriate sample containers.

8. Schedule. The field sampling is tentatively scheduled for the week of September 24, 2012.

Approvals of SSSP Alteration Form		
Name	**Title**	**Signature**
Jeffry Rodin	On-Scene Coordinator (OSC)	
Kathy Parker	Emergency Management Program (EMP) Quality Assurance Coordinator (QAC) or alternate	

Table 1. Sampling and Analysis

Data Quality	Sampling Area	Matrix	Sampling Pattern	Sample Type	Data Quality	Number of Field Samples	Analyte or Parameter	Method Number	Action Level	Method Quant. Limit	#/type of Sample Containers per Sample	Preservative	Hold Time	Field QC
Field Screen	Groundwater	Water	Targeted	Grab	Screening	7	Water Quality Parameters (turbidity, pH, temperature, conductivity, dissolved oxygen, ORP)	n/a	n/a	n/a	n/a	n/a	n/a	Field calibration of water quality meter
Lab Analysis	Groundwater	Water	Targeted	Grab	Definitive	7	Total TAL Metals	SW 846 6010C/7470A	n/a	1 mg/L	1 x 1L HDPE	HNO_3 pH<2	6 months (28 days for Hg)	1 Field Duplicate, 1 Rinse Blank
Lab Analysis	Groundwater	Water	Targeted	Grab	Definitive	7	Dissolved TAL Metals	SW 846 6010C/7470A	n/a	1 mg/L	1 x 1L HDPE	HNO_3 pH<2	6 months (28 days for Hg)	1 Field Duplicate, 1 Rinse Blank
Lab Analysis	Groundwater	Water	Targeted	Grab	Definitive	7	Asbestos	EPA Method 100.2 (all fibers sizes > 0.5 µm)	n/a	0.2 MFL	1 x 1L HDPE	n/a	n/a	1 Field Blank, 1 Field Duplicate, 1 Rinse Blank
Lab Analysis	Groundwater	Water	Targeted	Grab	Definitive	7	Total Suspended Solids	EPA Method 160.2	n/a	4 mg/L	1 x 1L HDPE	n/a	as soon as possible	1 Field Duplicate, 1 Rinse Blank

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).

HDPE – high-density polyethylene
Hg – mercury
HNO_3 – nitric acid
L – liter
MFL – million fibers per liter
mg/L – milligrams per liter
n/a – not applicable
TAL – Target Analyte List

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Source: Bing 2012

Monitoring Well

0 500 1,000 2,000 Feet

N

Swift Creek / Sumas Mountain Asbestos Site

Whatcom County, WA

Figure 1
Proposed Sample Locations
September 2012

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