

# Former Communications Site (Taku Gardens) 2008 Spring Groundwater Sampling Program

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## 1.0 Purpose

The purpose of this memorandum is to present the proposed 2008 spring groundwater sampling plan as part of the Remedial Investigation (RI) at the Former Communications Site (FCS), Fort Wainwright, Alaska. This document will provide the appropriate references to previously approved FCS work plans applicable to the groundwater sampling event and describe any deviations from those approved plans.

## 2.0 Well Selection and Analytical Methods

The 28 proposed wells are identified and the rationale for their selection is provided in Table 1. The locations of the wells selected for sampling are provided in Figure 5-2, Proposed Additional Monitoring Wells and Spring 2008 Groundwater Sample Locations, from the *Preliminary Risk Screening Evaluation Report* (CH2M HILL, 2008), which is included at the end of this memorandum. The proposed additional monitoring wells are not addressed in this document.

Groundwater samples will be analyzed based on subarea designation, as described in Addendum 4 to the Remedial Investigation Work Plan (CH2M HILL, 2007a) with the following changes:

- Samples for analysis of extractable petroleum hydrocarbon/volatile petroleum hydrocarbon (EPH/VPH) will be collected only from monitoring wells MW35, MW58, MW37, MW64, MW6A, MW12, MW33, and MW32 because these wells are associated with the petroleum, oil, and lubricants (POL) source and POL plume area.
- Subareas A and D will not be analyzed for semivolatile organic compounds (SVOCs) that are tentatively identified compounds (TICs). The TIC data from the 2007 groundwater sampling event are sufficient for use in the risk assessment.

TABLE 1  
Existing Monitoring Wells to Be Sampled During 2008 Groundwater Monitoring Event

Well	Rationale for Sampling	Subarea
MW08	Capture zone, 1,2,3-TCP exceedance	A
MW39	Capture zone deep	A
MW45	East of TCE plume	A
MW47	Capture zone, 1,2,3-TCP exceedance	A
MW48	Capture zone	A
MW53	TCE exceedance	A
MW56	TCE and PCE exceedances	A
MW57	Site coverage, southeastern site boundary	A
MW61	TCE and PCE exceedances (max detects)	A
MW62	TCE exceedance in groundwater and shallow PAHs/pesticides in soil	A
MW69	BAP and DBA exceedances	A
MW70	1,2-DCA exceedance	A
MW40	Capture zone deep	A
MW43	TCE Plume slough channel	A
MW06A	Explosives exceedances	B
MW12	Explosives exceedances	B
MW33	POL Source Area (maximum detects)	B
MW64	TCE exceedance, POL plume	B
MW32	POL plume boundary	C
MW13	Downgradient of anomaly and near soil gas exceedances	D
MW03	Dieldrin exceedance	E
MW76	Perimeter of exclusion zone	E
MW26	Site coverage, western site boundary	Undefined <sup>a</sup>
MW36	Perimeter nearest surface water	Undefined <sup>a</sup>
MW37	POL and TCE plume downgradient	Undefined <sup>a</sup>
MW38	TCE plume downgradient boundary	Undefined <sup>a</sup>
MW58	POL plume (School Age Services)	Undefined <sup>a</sup>
MW35	POL plume downgradient	Undefined <sup>a</sup>

<sup>a</sup>According to Addendum 4 (CH2M HILL, 2007a), wells in the "undefined area" are analyzed for the same chemicals as for the Subarea B wells.

BAP = benzo(a)pyrene

PCE = tetrachloroethene

DBA = dibenzo(a,h)anthracene

POL = petroleum, oil, and lubricants

DCA = dichloroethane

TCE = trichloroethene

PAH = polynuclear aromatic hydrocarbon

TCP = trichloropropane

- For these chemicals of potential concern (COPCs) – 1,1,2,2-tetrachloroethane, 1,2,3-trichloropropane, and trichloroethene (TCE) – and the possible COPC vinyl chloride, the analytical method SW8260-SIM will be used to attempt to achieve lower method detection limits (MDLs). Table 2 lists the 2007 MDLs achieved with method SW8260.
- Addendum 4 incorrectly lists SW8330 as the method used for explosives analysis. The 2007 groundwater samples were analyzed by method SW8321A and the 2008 groundwater samples will also be analyzed by SW8321A. This method experiences less interference from hydrocarbons than does method SW8330. The wells with previous explosive compound detections are in the POL source area or POL plume area.

TABLE 2  
SW8260 Method Detection Limits for Volatile Organic Compounds from 2007 Groundwater Sampling Event

Analyte Name	Minimum MDL (achieved to date) (µg/L)	Groundwater Screening Level (µg/L)	Magnitude of MDL Exceedances (µg/L)
1,1,2,2-Tetrachloroethane	0.11	0.055	2.0
1,2,3-Trichloropropane	0.11	0.034	3.2
Trichloroethene (TCE)	0.074	0.028	2.6
Vinyl chloride	0.12	0.015	8.0

µg/L = micrograms per liter

MDL = method detection limit

VOC = volatile organic compound

A sample collection summary by subarea is provided in Table 3.

TABLE 3  
Proposed 2008 Spring Groundwater Sample Collection Summary

Monitoring Well Location Identification	Subarea <sup>a</sup>	GRO/AK101	DRO/RRO AK 102/AK103	Metals SW6010/SW7000	Pesticides SW8081A	PCB SW8082	Herbicides SW8151A	VOC SW8260/SW9260-SIM <sup>b</sup>	SVOC SW8270C	PAH SW 8270C-SIM	Explosives SW8321A	NW EPH	NW VPH
MW08	A	X	X	X	X		X	X	X	X	X		
MW39	A	X	X	X	X		X	X	X	X	X		
MW40	A	X	X	X	X		X	X	X	X	X		
MW43	A	X	X	X	X		X	X	X	X	X		
MW45	A	X	X	X	X		X	X	X	X	X		
MW47	A	X	X	X	X		X	X	X	X	X		
MW48	A	X	X	X	X		X	X	X	X	X		
MW53	A	X	X	X	X		X	X	X	X	X		
MW56	A	X	X	X	X		X	X	X	X	X		
MW57	A	X	X	X	X		X	X	X	X	X		
MW61	A	X	X	X	X		X	X	X	X	X		
MW62	A	X	X	X	X		X	X	X	X	X		
MW69	A	X	X	X	X		X	X	X	X	X		
MW70	A	X	X	X	X		X	X	X	X	X		
MW06A	B	X	X	X	X		X	X	X	X	X	X	X
MW12	B	X	X	X	X		X	X	X	X	X	X	X
MW26	B <sup>a</sup>	X	X	X	X		X	X	X	X	X		
MW33	B	X	X	X	X		X	X	X	X	X	X	X
MW35	B <sup>a</sup>	X	X	X	X		X	X	X	X	X	X	X
MW36	B <sup>a</sup>	X	X	X	X		X	X	X	X	X		
MW37	B <sup>a</sup>	X	X	X	X		X	X	X	X	X	X	X
MW38	B <sup>a</sup>	X	X	X	X		X	X	X	X	X		
MW58	B <sup>a</sup>	X	X	X	X		X	X	X	X	X	X	X
MW64	B	X	X	X	X		X	X	X	X	X	X	X
MW32	C	X	X	X	X		X	X	X	X	X	X	X
MW13	D	X	X	X	X	X	X	X	X	X			
MW03	E	X	X	X	X	X	X	X	X	X			
MW76	E	X	X	X	X	X	X	X	X	X			

<sup>a</sup>As described in Addendum 4 of the Remedial Investigation Work Plan (CH2M HILL, 2007a), wells in the "undefined areas" are analyzed for the same analytes as for Subarea B wells.

<sup>b</sup>For the chemicals of potential concern (COPCs) 1,1,2,2-tetrachloroethane, 1,2,3-trichloropropane, and trichloroethene (TCE), and the possible COPC vinyl chloride, the analytical method SW8260-SIM will be used.

GRO = gasoline range organics  
DRO = diesel range organics  
EPH = extractable petroleum hydrocarbon

RRO = residual range organics  
SVOC = semivolatile organic compound

VOC = volatile organic compound  
VPH = volatile petroleum hydrocarbon

### 3.0 Field and Sampling Procedures

Groundwater sampling will be accomplished in accordance with Section 2.5.2.3 of the Field Sampling Plan (FSP), dated October 2007 (CH2M HILL, 2007b). This section describes the criteria for stabilization of parameters during purging before sample collection. All wells sampled during the spring 2008 sampling event will be included in a water level survey, as described in Section 2.6 of the FSP. Decontamination will be accomplished according to Section 2.8 of the FSP.

### 4.0 Quality Assurance

The sample analysis and data management will be accomplished in accordance with the Quality Assurance Project Plan (QAPP), dated July 2007 (CH2M HILL, 2007b). The QAPP will be amended to address the analytical method SW8260-SIM.

### 5.0 References

CH2M HILL. 2007a. *Addendum 4 to the Remedial Investigation Work Plan Groundwater Investigation, Final*. September.

CH2M HILL. 2007b. *Draft Remedial Investigation Management Plan*. September.

CH2M HILL. 2008. *Preliminary Risk Screening Evaluation Report*. April.



**LEGEND**

- 1,000 gpm Pumping Rate Water Supply Capture Zone
- 1,700 gpm Pumping Rate Water Supply Capture Zone
- TCE/PCE Plume
- 2007 Drum and Debris Excavation Area
- 2007 PCB Investigation Area
- POL Plume
- POL Source Area
- Former Hoppe's Slough

**Monitoring Well**

- Proposed new shallow well
- Proposed new deep well
- Shallow existing well recommended for additional well sampling
- Deep existing well recommended for additional sampling
- Shallow existing well not recommended for additional sampling

**March 2007 Magnetic Data EM61 Results (mV)**

- 1500
- 20
- 20
- 30
- 50
- 75
- 100
- 200
- 300
- 500
- 1000
- 2000

0 275 Feet

**FIGURE 5-2**  
**Proposed Additional Monitoring Wells and Spring 2008 Groundwater Sample Location**  
 Former Communications Site  
 Fort Wainwright, Alaska  
*Preliminary Risk Screening Evaluation Report*