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After-Action Report

Date	20 June 2013
To	Bob Brock, USACE
CC	Joe Malen, DPW
From	Sharon Richmond, Jacobs
Subject	**2011 Building 2077 Parking Lot After-Action Report (Final)**

This After-Action Report describes the environmental sampling support provided during construction activities in the Building 2077 Parking Lot in September 2011. Building 2077 is located on Montgomery Road at Fort Wainwright, Alaska (Figure 1). The work described in this Report was conducted in accordance with the *Fort Wainwright Post Wide Work Plan* (U.S. Army Corps of Engineers [USACE] 2011). Slight deviations to the Work Plan are discussed later in this After-Action Report.

In September 2011, Paving Products Inc. removed the existing pavement in the parking lot south of Building 2077 and Salcha Electrical trenched to approximately 2 feet below ground surface (bgs) for new head bolt outlet (HBO) lines. Jacobs Engineering Group Inc. (Jacobs) responded to the site when Salcha Electrical encountered soil with a strong fuel odor and suspected diesel contamination.

Project Execution Approach

The excavation initiated by Salcha Electrical was extended to a maximum depth of 4 feet bgs at the location of the HBO post bell hole where the strong fuel odor was encountered. Jacobs field personnel recorded visual and olfactory field observations in the logbook (Attachment 3).

A photoionization detector (PID) was used to screen for volatile organic compounds (VOC) in the soil. One analytical sample was collected from the location of the highest PID reading inside the trench to determine the nature of contamination.

Diesel-range organics (DRO) were the main contaminant of potential concern (COPC) at the site. Other COPCs included gasoline-range organics (GRO), residual-range organics, VOCs, semivolatile organic compounds, and Resource Conservation and Recovery Act metals.

Work Plan Deviations

Deviations to the work plan include the following:

- Logbook – The sampler name, current weather, year, a record of photos taken, and what field screening method was used were not included in the logbook.
- Duplicate Analytical Sample – A duplicate analytical sample was not collected. This deviation had no impact on the usability of the data as noted in the Data Quality Assessment (Attachment 2).

Results and Conclusions

Field activities were conducted in accordance with the plans and procedures outlined in the Work Plan (USACE 2011), which dictated action based on Alaska Department of Environmental Conservation (ADEC) Method Two, under 40-inch zone, migration to groundwater cleanup levels (ADEC 2008). For reporting purposes, sample results were also compared to U.S. Environmental Protection Agency (EPA) Maximum Contaminant Level-based Soil Screening Levels (SSL) (EPA 2010).

In September 2011, eight field screening samples were collected at the site. PID results ranged from 5.1 to 1,627 parts per million. A characterization sample was taken from the location of the highest field screening sample result, which was located on the floor of the HBO post bell hole at 4 feet bgs (11FWA-B2077-S04-W01), and analyzed for all COPCs. Based on visual and olfactory observations and field screening results, soil contamination appeared to extend west, north, and south of the sample location, but not east (Figure 1).

The characterization sample exceeded ADEC cleanup criteria for DRO (250 milligrams per kilogram [mg/kg]) with a concentration of 2,950 mg/kg, and GRO (300 mg/kg) with a concentration of 1,390 mg/kg. The sample also exceeded the ADEC cleanup criteria for arsenic (3.9 mg/kg) with a concentration of 5.65 mg/kg; however, this corresponds to levels of arsenic that naturally occur in the area and is not related to the known source of contamination (USACE 1994).

It was determined that the site was not a threat to human health, welfare, or the environment based on the 4-foot depth of the sample with exceedances, the fact that the site would be capped with asphalt, and that it would continue to be monitored under the ADEC Contaminated Sites program already in place at Building 2077. On 19 September 2011, ADEC granted approval to backfill the excavation and pave over the site.

Waste Management

During the September 2011 field activities, 4 cubic yards of soil were excavated, loaded into four Super Sacks®, and stored in the Chipbarn Stockpile site at Fort Wainwright. Samples taken from the excavated soil indicated that DRO and GRO concentrations were above cleanup levels. The soil was turned over to the Fort Wainwright Directorate of Public Works and subsequently thermally treated at Organic Incineration Technology, Inc. in Fairbanks, Alaska.

Expended sampling materials and personal protective equipment (e.g., gloves, spoons, paper towels, etc.) were disposed of at the Fairbanks North Star Borough landfill.

References

ADEC (Alaska Department of Environmental Conservation). 2008 (October). *Oil and Hazardous Pollution Control Regulations - Discharge Reporting, Cleanup, and Disposal of Oil and Other Hazardous Substances*. 18 AAC 75.

EPA (U.S. Environmental Protection Agency). 2010 (May). *Regional Screening Levels*. http://www.epa.gov/region9/superfund/prg.

USACE (U.S. Army Corps of Engineers). 2011 (April). *2011 Fort Wainwright Post Wide Work Plan*. Prepared by Jacobs Engineering Group Inc.

USACE. 1994 (March). *Background Data Analysis for Arsenic, Barium, Cadmium, Chromium, and Lead on Fort Wainwright, Alaska*.

Figure

Figure 1	Building 2077 Location and Vicinity Map

Attachments

Attachment 1	Photograph Log
Attachment 2	Data Quality Assessment
Attachment 3	Field Logbook
Attachment 4	Survey Data
Attachment 5	Response to Comments

FIGURE

Characterization Sample Location
Excavation Area
Airfield Surface
Building

Note: All sample identifiers are preceeded by 11FWA-B2077-.

0 25 50 75 100
Feet
UTM Zone 6N Transverse Mercator

N

CHARACTERIZATION SAMPLE AND EXCAVATION AREA
BUILDING 2077

FORT WAINWRIGHT, FAIRBANKS, ALASKA

JACOBS	DATE: 09 Feb 2012	PROJECT MANAGER: S. BELWAY	FIGURE NO: 1

P:\Fort Wainwright\B2077\B2077_85X11P.mxd beatycj

ATTACHMENT 1

Photograph Log

Photo No. 1
Trench excavated for utility lines. View looking east.

Photo No. 2
Sample collection at western end of trench. View looking south.

Photo No. 3
Sample collection at western end of trench. View looking north.

Photo No. 4
Collecting survey data. View looking south.

Photo No. 5
Onsite stockpiles. View looking north.

Photo No. 6
Moving stockpiles to fill Super Sacks®. View looking southeast.

Photo No. 7
Filling Super Sack®. View looking north.

ATTACHMENT 2

Data Quality Assessment

DATA QUALITY ASSESSMENT

INTRODUCTION

This Data Quality Assessment (DQA) was performed to assess the overall quality and usability of the data collected to support the 2011 field activities at Building 2077 at Fort Wainwright, Alaska. This DQA includes a sample summary table and analytical results table (Exhibit 2A), qualified data tables (Exhibit 2B), and the Alaska Department of Environmental Conservation (ADEC) Laboratory Data Review Checklist (Exhibit 2C). The complete laboratory data deliverables are provided as separate electronic files on CD only (Exhibit 2D). SGS Environmental Services of Anchorage, Alaska, (SGS) provided the primary analytical support.

Jacobs Engineering Group Inc. (Jacobs) performed a data review, prepared this DQA, and completed the ADEC Laboratory Data Review Checklist for the analytical data collected during the 2011 field season. The data review and DQA were performed in accordance with the *Fort Wainwright Post Wide Work Plan* (U.S. Army Corps of Engineers [USACE] 2011) and the U.S. Department of Defense (DoD) *Quality Systems Manual* (QSM), version 4.2 (DoD 2010). Results were categorized as “acceptable,” “estimated,” or “rejected”; data qualifier definitions are located in the following section. A completeness check of the hardcopy and electronic data was performed to verify that the data packages and electronic files included all information requested.

Data Review and Qualification

All analytical data were reviewed by the Jacobs Project Chemist. This evaluation consisted of a review of chain-of-custody and sample receipt records, laboratory case narratives, laboratory data, sample holding times, laboratory blanks, limits of detection (LOD), limits of quantitation (LOQ), surrogate recoveries, laboratory control sample (LCS) recoveries, matrix spike (MS) recoveries, and precision.

Analytical results were evaluated against the data quality objectives (DQO) listed in the Work Plan (USACE 2011), the DoD *Quality Systems Manual for Environmental Laboratories* (QSM) version 4.2 (DoD 2010), and analytical methods (U.S. Environmental Protection Agency [EPA] 1996). If a result or recovery fell outside the control limits, a qualifier code was applied to that datum. Table 1 presents the quality control (QC) criteria for the methods utilized.

Analytical DQOs were considered met when the quality of the sample data met the precision, accuracy, representativeness, completeness, comparability, and sensitivity requirements specified in the Work Plan (USACE 2011). In general, the data DQOs were met with the exception of comparability, which could not be assessed on an inter-sample basis because a field duplicate sample was not collected with the sample discussed in this Sample Delivery Group; however, the data is still usable for its intended purpose, which was to determine the disposal criteria and not to drive further investigation at the site.

Table 1
Quality Control Criteria for Analytical Methods

Parameter	AK101[1]	AK102[1]	AK103[1]	SW6020[2]	SW7471[2]	SW8260[2]
LCS Recovery Limits	60% to 120%	75% to 125%	60% to 120%	80% to 120%	80% to 120%	DoD QSM, Table G-5
LCS RPD	20%	20%	20%	20%	20%	30%
Surrogate Recovery	60% to 120% (lab samples) 50% to 150% (field samples)	60% to 120% (lab samples) 50% to 150% (field samples)	60% to 120% (lab samples) 50% to 150% (field samples)	Not Applicable	Not Applicable	DoD QSM, Table G-3
MS Recovery	60% to 120%	75% to 125%	60% to 120%	80% to 120%	80% to 120%	DoD QSM, Table G-5
MS Recovery RPD	20%	20%	20%	20%	20%	30%

Notes:
[1] Criteria from the Alaska series methods (2002)
[2] Criteria from the DoD QSM v.4.2 (2010)
LCS = laboratory control sample
MS = matrix spike
RPD = relative percent difference

Qualification was not required in the following circumstances:

- Surrogate or MS/matrix spike duplicate (MSD) recoveries were outside QC limits, and the sample was diluted by a factor of 5 or greater.
- MS recoveries were outside QC limits, and the spiked concentration was less than that of the parent sample.
- An analyte was detected in the method blank or trip blank, but there was no detection in the sample.
- MS or LCS recoveries exceeded upper control limits, and there was no detection in the sample(s).

Qualifiers applied to the analytical data set, as appropriate, include the following:

J The analyte was positively identified, but the associated result was less than the LOQ, and greater than or equal to the detection limit (DL).

JS The result was an estimated value because at least one surrogate failed recovery criteria for that sample.

R The result was rejected.

E The result is nondetect and the LOD exceeds the ADEC cleanup level.

+ The result was biased high.

– The result was biased low.

Data may be rejected on the following grounds:

- Initial calibration (per compound) criteria not met
- Continuing calibration (per compound) not verified
- All nondetects with the continuing calibration recovery less than control limits
- Any compound with LCS recovery less than 10 percent
- Missed holding times greater than two times the method-specified holding time
- Surrogate recovery of less than 10 percent and a dilution factor of 5 or less
- Incorrect or inadequate preservation methods
- Cooler temperature reading greater than 12 degrees Celsius

DATA QUALITY SUMMARY

The Jacobs Project Chemist reviewed the analytical results and associated QC samples and found the overall quality of the project data to be acceptable. Complete details of the evaluation and associated samples are provided in the ADEC Laboratory Data Review Checklist (Exhibit 2C). All data were considered usable within the limitations discussed in this DQA and the ADEC Laboratory Data Review Checklist. Qualified results were considered estimated and, whenever possible, indicated as either biased high (+) or low (–).

Surrogate Recovery Exceedances

In general, surrogate recoveries were within the limits specified in Table 1. A gasoline-range organics sample result was qualified JS+ due to a surrogate recovery greater than the upper control limit, which resulted in a high bias. The affected sample result was significantly greater than the ADEC cleanup level for gasoline-range organics of 300 milligrams per kilogram. The affected sample is listed in Exhibit 2B, Table 2-B-1.

Surrogate recovery for method SW8270D for analytes nitrobenzene-d5 and phenol-d6 were outside of quality control limits. Affected samples were qualified JS because nitrobenzene-d5 was greater than the upper control limit and phenol-d6 was below the lower control limit. All affected samples were significantly lower than the ADEC cleanup level, suggesting the usability of sample was not affected by the surrogate recovery exceedance. The affected sample is listed in Exhibit 2B, Table 2-B-1.

Reporting Limit Exceedances

Laboratory LODs were evaluated against the sensitivity requirement specified in the Work Plan (USACE 2011) and ADEC regulatory action levels (ADEC 2009). Sample results where the LOD exceeded the criteria are presented in Exhibit 2B, Table 2-B-2. Due to method limitations, the following SW8260 and SW8270 compounds were identified in the Work Plan (USACE 2011) to have detection limits that exceed ADEC action limits:

- 1,2,3-trichloropropane
- 1,2-1,2-dibromoethane (EDB)
- bis(2-chloroethyl)ether
- n-nitrosodi-n-propylamine, pentachlorophenol
- 1,2-dichloroethane, 1,2-dichloropropane, methylene chloride
- 1,1,2,2-tetrachloroethane
- Vinyl chloride
- 2,4-dinitrotoluene
- 2,6-dinitrotoluene
- 3,3'-dichlorobenzidine

Data with LODs exceeding QC criteria are still considered usable for investigative purposes.

CONCLUSION

In general, the overall quality of the project data was acceptable, and all data were considered usable for the purposes of the Building 2077 Parking Lot After-Action Report, with the limitations discussed above and in the ADEC Laboratory Data Review Checklist (Exhibit 2C).

REFERENCES

ADEC (Alaska Department of Environmental Conservation). 2009 (March). Technical Memorandum 06-002. *Environmental Laboratory Data and Quality Assurance Requirements*.

DoD (U.S. Department of Defense). 2010 (October). *Department of Defense Quality Systems Manual for Environmental Laboratories*. Version 4.2. DoD Environmental Quality Workgroup, Department of the Navy.

EPA (U.S. Environmental Protection Agency). 1996 (September). *Test Methods for Evaluating Solid Waste.* Final Update III, SW-846.

USACE. 2011 (March). *Fort Wainwright Post Wide Work Plan.* Fort Wainwright, Alaska. Prepared by Jacobs Engineering Group Inc.

EXHIBIT 2A

Sample Summary and Analytical Results

Fort Wainwright, Alaska
2011 Building 2077 Parking Lot After-Action Report

						Loc ID Sample ID Lab Sample ID Collection Date Matrix Lab	B2077-W01 11FWA-B2077-SO4-W01 1118820001 9/8/2011 SO SGSA	TB01 11FWA-B2077-TB01 1118820002 9/8/2011 SO SGSA
Method	**Analyte**	**CAS Number**	**Units**	**ADEC Criteria[1]**	**EPA Criteria[2]**	**RCRA 20x**		
AK101	Gasoline Range Organics	–	mg/kg	300	–	–	**1390 [49.1] JS+**	ND [2.62]
AK102	Diesel Range Organics	–	mg/kg	250	–	–	**2950 [232]**	–
AK103	Residual Range Organics	–	mg/kg	10000*	–	–	121 [23.2]	–
SW6020	Arsenic	7440-38-2	mg/kg	3.9	0.29	60	**5.65 [1.15]**	–
SW6020	Barium	7440-39-3	mg/kg	1100	82	2000	106 [0.344]	–
SW6020	Cadmium	7440-43-9	mg/kg	5	0.38	20	0.182 [0.229] J	–
SW6020	Chromium	7440-47-3	mg/kg	25	180000	100	18.6 [0.458]	–
SW6020	Lead	7439-92-1	mg/kg	400	14	100	7.95 [0.229]	–
SW6020	Selenium	7782-49-2	mg/kg	3.4	0.26	20	0.498 [0.573] J	–
SW6020	Silver	7440-22-4	mg/kg	11.2	–	100	0.0718 [0.115] J	–
SW7471B	Mercury	7439-97-6	mg/kg	1.4	0.1	4	ND [0.0457]	–
SW8260B	1,1,1,2-Tetrachloroethane	630-20-6	mg/kg	–	–	–	ND [0.0491]	ND [0.0262]
SW8260B	1,1,1-Trichloroethane	71-55-6	mg/kg	0.82	0.07	–	ND [0.0491]	ND [0.0262]
SW8260B	1,1,2,2-Tetrachloroethane	79-34-5	mg/kg	0.017	–	–	*ND [0.0982] E*	*ND [0.0523] E*
SW8260B	1,1,2-Trichloroethane	79-00-5	mg/kg	0.018	0.0016	–	*ND [0.0491] E*	ND [0.0262]
SW8260B	1,1-Dichloroethane	75-34-3	mg/kg	25	–	–	ND [0.0491]	ND [0.0262]
SW8260B	1,1-Dichloroethene	75-35-4	mg/kg	0.03	0.0025	14	*ND [0.0491] E*	ND [0.0262]
SW8260B	1,1-Dichloropropene	563-58-6	mg/kg	–	–	–	ND [0.0491]	ND [0.0262]
SW8260B	1,2,3-Trichlorobenzene	87-61-6	mg/kg	–	–	–	ND [0.0982]	ND [0.0523]
SW8260B	1,2,3-Trichloropropane	96-18-4	mg/kg	0.00053	–	–	*ND [0.0491] E*	*ND [0.0262] E*
SW8260B	1,2,4-Trichlorobenzene	120-82-1	mg/kg	0.85	0.2	–	ND [0.0491]	ND [0.0262]
SW8260B	1,2,4-Trimethylbenzene	95-63-6	mg/kg	23	–	–	0.264 [0.0982]	ND [0.0523]
SW8260B	1,2-Dibromo-3-chloropropane	96-12-8	mg/kg	–	0.000086	–	ND [0.196]	ND [0.105]
SW8260B	1,2-Dibromoethane	106-93-4	mg/kg	0.00016	0.000014	–	*ND [0.0491] E*	*ND [0.0262] E*
SW8260B	1,2-Dichlorobenzene	95-50-1	mg/kg	5.1	0.58	–	ND [0.0491]	ND [0.0262]
SW8260B	1,2-Dichloroethane	107-06-2	mg/kg	0.016	0.0014	–	*ND [0.0491] E*	*ND [0.0262] E*
SW8260B	1,2-Dichloropropane	78-87-5	mg/kg	0.018	0.0017	–	*ND [0.0491] E*	ND [0.0262]
SW8260B	1,3,5-Trimethylbenzene	108-67-8	mg/kg	23	–	–	0.518 [0.0491]	ND [0.0262]
SW8260B	1,3-Dichlorobenzene	541-73-1	mg/kg	28	–	–	ND [0.0491]	ND [0.0262]
SW8260B	1,3-Dichloropropane	142-28-9	mg/kg	–	–	–	ND [0.0491]	ND [0.0262]
SW8260B	1,4-Dichlorobenzene	106-46-7	mg/kg	0.64	0.72	150	ND [0.0491]	ND [0.0262]
SW8260B	2,2-Dichloropropane	594-20-7	mg/kg	–	–	–	ND [0.0491]	ND [0.0262]
SW8260B	2-Butanone	78-93-3	mg/kg	59	–	4000	ND [0.491]	ND [0.262]
SW8260B	2-Chlorotoluene	95-49-8	mg/kg	–	–	–	ND [0.0491]	ND [0.0262]
SW8260B	2-Hexanone	591-78-6	mg/kg	–	–	–	ND [0.491]	ND [0.262]
SW8260B	4-Chlorotoluene	106-43-4	mg/kg	–	–	–	ND [0.0491]	ND [0.0262]
SW8260B	4-Isopropyltoluene	99-87-6	mg/kg	–	–	–	13 [0.491]	ND [0.0262]
SW8260B	4-Methyl-2-pentanone	108-10-1	mg/kg	8.1	–	–	ND [0.491]	ND [0.262]
SW8260B	Acetone	67-64-1	mg/kg	88	–	–	ND [0.491]	ND [0.262]
SW8260B	Benzene	71-43-2	mg/kg	0.025	0.0026	10	ND [0.0246]	ND [0.0131]

						Loc ID Sample ID Lab Sample ID Collection Date Matrix Lab	B2077-W01 11FWA-B2077-SO4-W01 1118820001 9/8/2011 SO SGSA	TB01 11FWA-B2077-TB01 1118820002 9/8/2011 SO SGSA
Method	**Analyte**	**CAS Number**	**Units**	**ADEC Criteria[1]**	**EPA Criteria[2]**	**RCRA 20x**		
SW8260B	Bromobenzene	108-86-1	mg/kg	–	–	–	ND [0.0491]	ND [0.0262]
SW8260B	Bromochloromethane	74-97-5	mg/kg	–	–	–	ND [0.0491]	ND [0.0262]
SW8260B	Bromodichloromethane	75-27-4	mg/kg	0.044	0.022	–	ND [0.0491]	ND [0.0262]
SW8260B	Bromoform	75-25-2	mg/kg	0.34	0.021	–	ND [0.0491]	ND [0.0262]
SW8260B	Bromomethane	74-83-9	mg/kg	0.16	–	–	*ND [0.393] E*	ND [0.209]
SW8260B	Carbon disulfide	75-15-0	mg/kg	12	–	–	ND [0.196]	ND [0.105]
SW8260B	Carbon tetrachloride	56-23-5	mg/kg	0.023	0.0019	10	*ND [0.0491] E*	ND [0.0262]
SW8260B	Chlorobenzene	108-90-7	mg/kg	0.63	0.068	2000	ND [0.0491]	ND [0.0262]
SW8260B	Chloroethane	75-00-3	mg/kg	23*	–	–	ND [0.393]	ND [0.209]
SW8260B	Chloroform	67-66-3	mg/kg	0.46	0.022	120	ND [0.0491]	ND [0.0262]
SW8260B	Chloromethane	74-87-3	mg/kg	0.21	–	–	ND [0.0491]	ND [0.0262]
SW8260B	cis-1,2-Dichloroethene	–	mg/kg	–	–	–	ND [0.0491]	ND [0.0262]
SW8260B	cis-1,3-Dichloropropene	–	mg/kg	–	–	–	ND [0.0491]	ND [0.0262]
SW8260B	Dibromochloromethane	124-48-1	mg/kg	0.032	0.021	–	ND [0.0491]	ND [0.0262]
SW8260B	Dibromomethane	74-95-3	mg/kg	1.1	–	–	ND [0.0491]	ND [0.0262]
SW8260B	Dichlorodifluoromethane	75-71-8	mg/kg	140	–	–	ND [0.0982]	ND [0.0523]
SW8260B	Ethylbenzene	100-41-4	mg/kg	6.9	0.78	–	0.188 [0.0491]	ND [0.0262]
SW8260B	Hexachlorobutadiene	87-68-3	mg/kg	0.12	–	10	ND [0.0982]	ND [0.0523]
SW8260B	Isopropylbenzene	98-82-8	mg/kg	51	–	–	1.3 [0.0491]	ND [0.0262]
SW8260B	Methylene chloride	75-09-2	mg/kg	0.016	0.0013	–	*ND [0.196] E*	*ND [0.105] E*
SW8260B	Methyl-tert-butyl ether (MTBE)	1634-04-4	mg/kg	1.3	–	–	ND [0.196]	ND [0.105]
SW8260B	Naphthalene	91-20-3	mg/kg	20	–	–	1.11 [0.0982]	ND [0.0523]
SW8260B	n-Butylbenzene	104-51-8	mg/kg	15	–	–	9.14 [0.491]	ND [0.0262]
SW8260B	n-Propylbenzene	103-65-1	mg/kg	15	–	–	5.2 [0.491]	ND [0.0262]
SW8260B	o-Xylene	95-47-6	mg/kg	63	–	–	ND [0.0491]	ND [0.0262]
SW8260B	sec-Butylbenzene	135-98-8	mg/kg	12	–	–	8.9 [0.491]	ND [0.0262]
SW8260B	Styrene	100-42-5	mg/kg	0.96	0.11	–	ND [0.0491]	ND [0.0262]
SW8260B	tert-Butylbenzene	98-06-6	mg/kg	12	–	–	0.778 [0.0491]	ND [0.0262]
SW8260B	Tetrachloroethene (PCE)	127-18-4	mg/kg	0.024	0.0023	14	ND [0.0246]	ND [0.0131]
SW8260B	Toluene	108-88-3	mg/kg	6.5	0.69	–	ND [0.0491]	ND [0.0262]
SW8260B	trans-1,2-Dichloroethene	156-60-5	mg/kg	0.37	0.029	–	ND [0.0491]	ND [0.0262]
SW8260B	trans-1,3-Dichloropropene	542-75-6	mg/kg	0.033	–	–	ND [0.0491]	ND [0.0262]
SW8260B	Trichloroethene (TCE)	79-01-6	mg/kg	0.02	0.0018	10	ND [0.0246]	ND [0.0131]
SW8260B	Trichlorofluoromethane	75-69-4	mg/kg	86	–	–	ND [0.0982]	ND [0.0523]
SW8260B	Vinyl chloride	75-01-4	mg/kg	0.0085	0.00069	4	*ND [0.0491] E*	*ND [0.0262] E*
SW8260B	Xylene, Isomers m & p	108-38-2	mg/kg	63	–	–	ND [0.0982]	ND [0.0523]
SW8260B	Xylenes	–	mg/kg	63	–	–	ND [0.196]	ND [0.105]
SW8270D	1,2,4-Trichlorobenzene	120-82-1	mg/kg	0.85	0.2	–	ND [0.289] JS	–
SW8270D	1,2-Dichlorobenzene	95-50-1	mg/kg	5.1	0.58	–	ND [0.289] JS	–
SW8270D	1,3-Dichlorobenzene	541-73-1	mg/kg	28	–	–	ND [0.289] JS	–

						Loc ID Sample ID Lab Sample ID Collection Date Matrix Lab	B2077-W01 11FWA-B2077-SO4-W01 1118820001 9/8/2011 SO SGSA	TB01 11FWA-B2077-TB01 1118820002 9/8/2011 SO SGSA
Method	Analyte	CAS Number	Units	ADEC Criteria[1]	EPA Criteria[2]	RCRA 20x		
SW8270D	1,4-Dichlorobenzene	106-46-7	mg/kg	0.64	0.72	150	ND [0.289] JS	–
SW8270D	2,4,5-Trichlorophenol	95-95-4	mg/kg	67	–	8000	ND [0.289] JS	–
SW8270D	2,4,6-Trichlorophenol	88-06-2	mg/kg	1.4	–	40	ND [0.289] JS	–
SW8270D	2,4-Dichlorophenol	120-83-2	mg/kg	1.3	–	–	ND [0.289] JS	–
SW8270D	2,4-Dimethylphenol	105-67-9	mg/kg	8.8	–	–	ND [0.289] JS	–
SW8270D	2,4-Dinitrophenol	51-28-5	mg/kg	0.54	–	–	*ND [3.46] E,JS*	–
SW8270D	2,4-Dinitrotoluene	121-14-2	mg/kg	0.0093	–	2.6	*ND [0.289] E,JS*	–
SW8270D	2,6-Dinitrotoluene	606-20-2	mg/kg	0.0094	–	–	*ND [0.289] E,JS*	–
SW8270D	2-Chloronaphthalene	91-58-7	mg/kg	120	–	–	ND [0.289] JS	–
SW8270D	2-Chlorophenol	95-57-8	mg/kg	1.5	–	–	ND [0.289] JS	–
SW8270D	2-Methyl-4,6-dinitrophenol	534-52-1	mg/kg	–	–	–	ND [2.31] JS	–
SW8270D	2-Methylnaphthalene	91-57-6	mg/kg	6.1	–	–	0.687 [0.289] JS	–
SW8270D	2-Methylphenol (o-Cresol)	95-48-7	mg/kg	15	–	–	ND [0.289] JS	–
SW8270D	2-Nitroaniline	88-74-4	mg/kg	–	–	–	ND [0.289] JS	–
SW8270D	2-Nitrophenol	88-75-5	mg/kg	–	–	–	ND [0.289] JS	–
SW8270D	3,3'-Dichlorobenzidine	91-94-1	mg/kg	0.19	–	–	ND [0.289] JS	–
SW8270D	3-Methylphenol/4-Methylphenol Coelution	–	mg/kg	–	–	–	ND [1.15] JS	–
SW8270D	3-Nitroaniline	99-09-2	mg/kg	–	–	–	ND [0.577] JS	–
SW8270D	4-Bromophenyl phenyl ether	101-55-3	mg/kg	–	–	–	ND [0.289] JS	–
SW8270D	4-Chloro-3-methylphenol	59-50-7	mg/kg	–	–	–	ND [0.289] JS	–
SW8270D	4-Chloroaniline	106-47-8	mg/kg	0.057	–	–	*ND [0.577] E,JS*	–
SW8270D	4-Chlorophenyl phenyl ether	7005-72-3	mg/kg	–	–	–	ND [0.289] JS	–
SW8270D	4-Nitroaniline	100-01-6	mg/kg	–	–	–	ND [3.46] JS	–
SW8270D	4-Nitrophenol	100-02-7	mg/kg	–	–	–	ND [1.15] JS	–
SW8270D	Acenaphthene	83-32-9	mg/kg	180	–	–	ND [0.289] JS	–
SW8270D	Acenaphthylene	208-96-8	mg/kg	180	–	–	ND [0.289] JS	–
SW8270D	Aniline	–	mg/kg	–	–	–	ND [2.31] JS	–
SW8270D	Anthracene	120-12-7	mg/kg	3000	–	–	ND [0.289] JS	–
SW8270D	Azobenzene	–	mg/kg	–	–	–	ND [0.289] JS	–
SW8270D	Benzo(a)anthracene	56-55-3	mg/kg	3.6	–	–	ND [0.289] JS	–
SW8270D	Benzo(a)pyrene	50-32-8	mg/kg	0.49*	0.24	–	ND [0.289] JS	–
SW8270D	Benzo(b)fluoranthene	205-99-2	mg/kg	4.9*	–	–	ND [0.289] JS	–
SW8270D	Benzo(g,h,i)perylene	191-24-2	mg/kg	1400*	–	–	ND [0.289] JS	–
SW8270D	Benzo(k)fluoranthene	207-08-9	mg/kg	49*	–	–	ND [0.289] JS	–
SW8270D	Benzoic acid	65-85-0	mg/kg	410	–	–	ND [1.73] JS	–
SW8270D	Benzyl alcohol	100-51-6	mg/kg	–	–	–	ND [0.289] JS	–
SW8270D	Benzyl butyl phthalate	85-68-7	mg/kg	920	–	–	ND [0.289] JS	–
SW8270D	bis-(2-Chloroethoxy)methane	111-91-1	mg/kg	–	–	–	ND [0.289] JS	–
SW8270D	bis-(2-Chloroethyl)ether	111-44-4	mg/kg	0.0022	–	–	*ND [0.289] E,JS*	–
SW8270D	bis(2-Chloroisopropyl)ether	108-60-1	mg/kg	–	–	–	ND [0.289] JS	–

						Loc ID Sample ID Lab Sample ID Collection Date Matrix Lab	B2077-W01 11FWA-B2077-SO4-W01 1118820001 9/8/2011 SO SGSA	TB01 11FWA-B2077-TB01 1118820002 9/8/2011 SO SGSA
Method	**Analyte**	**CAS Number**	**Units**	**ADEC Criteria[1]**	**EPA Criteria[2]**	**RCRA 20x**		
SW8270D	bis-(2-Ethylhexyl)phthalate	117-81-7	mg/kg	13	1.4	–	ND [0.289] JS	–
SW8270D	Chrysene	218-01-9	mg/kg	360	–	–	ND [0.289] JS	–
SW8270D	Dibenzo(a,h)anthracene	53-70-3	mg/kg	0.49*	–	–	ND [0.289] JS	–
SW8270D	Dibenzofuran	132-64-9	mg/kg	11	–	–	ND [0.289] JS	–
SW8270D	Diethyl phthalate	84-66-2	mg/kg	130	–	–	ND [0.289] JS	–
SW8270D	Dimethyl phthalate	131-11-3	mg/kg	1100	–	–	ND [0.289] JS	–
SW8270D	Di-n-butyl phthalate	84-74-2	mg/kg	80	–	–	ND [0.289] JS	–
SW8270D	Di-n-octyl phthalate	117-84-0	mg/kg	3100*	–	–	ND [0.577] JS	–
SW8270D	Fluoranthene	206-44-0	mg/kg	1400	–	–	ND [0.289] JS	–
SW8270D	Fluorene	86-73-7	mg/kg	220	–	–	ND [0.289] JS	–
SW8270D	Hexachlorobenzene	118-74-1	mg/kg	0.047	0.013	2.6	*ND [0.289] E,JS*	–
SW8270D	Hexachlorobutadiene	87-68-3	mg/kg	0.12	–	–	*ND [0.289] E,JS*	–
SW8270D	Hexachlorocyclopentadiene	77-47-4	mg/kg	1.3	0.16	–	ND [0.808] JS	–
SW8270D	Hexachloroethane	67-72-1	mg/kg	0.21	–	–	ND [0.289] JS	–
SW8270D	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	4.9*	–	–	ND [0.289] JS	–
SW8270D	Isophorone	78-59-1	mg/kg	3.1	–	–	ND [0.289] JS	–
SW8270D	Naphthalene	91-20-3	mg/kg	20	–	–	0.591 [0.289] JS	–
SW8270D	Nitrobenzene	98-95-3	mg/kg	0.094	–	40	*ND [0.289] E,JS*	–
SW8270D	n-Nitrosodimethylamine	62-75-9	mg/kg	0.000053	–	–	*ND [0.289] E,JS*	–
SW8270D	n-Nitrosodi-n-propylamine	621-64-7	mg/kg	0.0011	–	–	*ND [0.289] E,JS*	–
SW8270D	n-Nitrosodiphenylamine	86-30-6	mg/kg	15	–	–	ND [0.289] JS	–
SW8270D	Pentachlorophenol	87-86-5	mg/kg	0.047	0.01	2000	*ND [2.31] E,JS*	–
SW8270D	Phenanthrene	85-01-8	mg/kg	3000	–	–	ND [0.289] JS	–
SW8270D	Phenol	108-95-2	mg/kg	68	–	–	ND [0.289] JS	–
SW8270D	Pyrene	129-00-0	mg/kg	1000	–	–	ND [0.289] JS	–

Notes:

[1] 18 AAC 75, Table B1 and B2, Migration to Groundwater most stringent criteria

[2] EPA MCL-based SSLs (EPA 2010)

* 18 AAC 75, Table B1 and B2, under 40-inch direct contact

BOLD = Exceeds ADEC Criteria

Italics = Analyte was not detected and the LOD was greater than the cleanup level

– = not applicable

[ ] = limit of quantitation (LOQ)

ND = nondetect

SGSA-SGS Laboratories, Alaska

SO - Soil

For additional definitions, refer to the Data Quality Assessment

Fort Wainwright, Alaska
2011 Building 2077 Parking Lot After-Action Report
Sample Summary Table

Project ID	COC Number	Cooler ID	Lab	Site ID	Sample ID	Location ID	Date	Time	Sampler	QTY	Container	Volume	Preservation	Matrix	Method	QC	TAT	Laboratory SDG
FWA-B2077	11FWAB207701	Babcock	SGSA	B2077	11FWA-B2077-S04-W01	B2077-W01	9/8/2011	1510	CJ	1	Amber	8oz	4C	SO	AK102; AK103; SW8270; SW6020/7471		24hr	1118820
FWA-B2077	11FWAB207701	Babcock	SGSA	B2077	11FWA-B2077-S04-W01	B2077-W01	9/8/2011	1510	CJ	1	Amber	4oz	4C-MeOH	SO	AK101; SW8260		24hr	1118820
FWA-B2077	11FWAB207701	Babcock	SGSA	B2077	11FWA-B2077-T 01	TB01	9/8/2011	800	CJ	1	Amber	4oz	4C-MeOH	SO	AK101; SW8260	TB	24hr	1118820

EXHIBIT 2B

Qualified Data Tables

Table 2-B-1
Sample Results Qualified JS± due to Surrogate Recovery Exceedances

Sample ID	Laboratory Sample ID	Method	Analyte	Result	Recovery	Units	Lower Control Limit	Upper Control Limit	Laboratory SDG	Qualifier
11FWA-B2077-SO4-W01	1118820001	AK101	4-Bromofluorobenzene	–	12100	T	50	150	1118820	
11FWA-B2077-SO4-W01	1118820001	AK101	Gasoline Range Organics	1390	–	mg/kg	–	–	1118820	JS+
11FWA-B2077-SO4-W01	1118820001	SW8270D	Nitrobenzene-d5	–	157	T	35	100	1118820	
11FWA-B2077-SO4-W01	1118820001	SW8270D	Phenol-d6	–	3.6	T	40	100	1118820	
11FWA-B2077-SO4-W01	1118820	SW8270D	Acenaphthene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Acenaphthylene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Aniline	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Anthracene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Azobenzene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Benzyl butyl phthalate	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	bis-(2-Chloroethoxy)methane	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	bis-(2-Chloroethyl)ether	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	bis(2-Chloroisopropyl)ether	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	bis-(2-Ethylhexyl)phthalate	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	4-Bromophenyl phenyl ether	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Benzo(a)anthracene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Benzoic acid	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Benzo(a)pyrene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Benzo(b)fluoranthene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Benzo(g,h,i)perylene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Benzo(k)fluoranthene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Benzyl alcohol	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	4-Chloro-3-methylphenol	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Chrysene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	4-Chloroaniline	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	2-Chlorophenol	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	2-Chloronaphthalene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	4-Chlorophenyl phenyl ether	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Dibenzo(a,h)anthracene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Dibenzofuran	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	3,3'-Dichlorobenzidine	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	1,2-Dichlorobenzene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	1,3-Dichlorobenzene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	1,4-Dichlorobenzene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	2,4-Dichlorophenol	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Diethyl phthalate	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	2,4-Dimethylphenol	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Dimethyl phthalate	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	2-Methyl-4,6-dinitrophenol	ND	–	mg/kg	–	–	1118820	JS

Table 2-B-1
Sample Results Qualified JS± due to Surrogate Recovery Exceedances

Sample ID	Laboratory Sample ID	Method	Analyte	Result	Recovery	Units	Lower Control Limit	Upper Control Limit	Laboratory SDG	Qualifier
11FWA-B2077-SO4-W01	1118820	SW8270D	Di-n-butyl phthalate	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Di-n-octyl phthalate	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	2,4-Dinitrophenol	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	2,4-Dinitrotoluene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	2,6-Dinitrotoluene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Fluorene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Fluoranthene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Hexachlorobutadiene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Hexachlorocyclopentadiene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Hexachlorobenzene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Hexachloroethane	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Indeno(1,2,3-cd)pyrene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Isophorone	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	2-Methylphenol (o-Cresol)	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	3-Methylphenol/4-Methylphenol Coelution	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	2-Methylnaphthalene	0.687	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Naphthalene	0.591	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	n-Nitrosodimethylamine	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	n-Nitrosodiphenylamine	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	n-Nitrosodi-n-propylamine	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	2-Nitroaniline	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	3-Nitroaniline	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	4-Nitroaniline	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Nitrobenzene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	2-Nitrophenol	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	4-Nitrophenol	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Pentachlorophenol	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Phenanthrene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Phenol	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	Pyrene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	1,2,4-Trichlorobenzene	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	2,4,5-Trichlorophenol	ND	–	mg/kg	–	–	1118820	JS
11FWA-B2077-SO4-W01	1118820	SW8270D	2,4,6-Trichlorophenol	ND	–	mg/kg	–	–	1118820	JS

Table 2-B-2
Sample Results with LODs Greater than the ADEC Cleanup Level

Sample ID	Laboratory Sample ID	Method	Analyte	Result	LOD	LOQ	Units	QC Lot Number	SDG Number
11FWA-B2077-SO4-W01	1118820001	SW8260B	Bromomethane	ND	0.244	0.393	mg/kg	VMS12398	1118820
11FWA-B2077-SO4-W01	1118820001	SW8260B	Carbon tetrachloride	ND	0.0306	0.0491	mg/kg	VMS12398	1118820
11FWA-B2077-SO4-W01	1118820001	SW8260B	1,2-Dichloroethane	ND	0.0306	0.0491	mg/kg	VMS12398	1118820
11FWA-B2077-SO4-W01	1118820001	SW8260B	1,1-Dichloroethene	ND	0.0306	0.0491	mg/kg	VMS12398	1118820
11FWA-B2077-SO4-W01	1118820001	SW8260B	1,2-Dichloropropane	ND	0.0306	0.0491	mg/kg	VMS12398	1118820
11FWA-B2077-SO4-W01	1118820001	SW8260B	1,2-Dibromoethane	ND	0.0306	0.0491	mg/kg	VMS12398	1118820
11FWA-B2077-SO4-W01	1118820001	SW8260B	Methylene chloride	ND	0.122	0.196	mg/kg	VMS12398	1118820
11FWA-B2077-SO4-W01	1118820001	SW8260B	1,1,2,2-Tetrachloroethane	ND	0.059	0.0982	mg/kg	VMS12398	1118820
11FWA-B2077-SO4-W01	1118820001	SW8260B	1,1,2-Trichloroethane	ND	0.0306	0.0491	mg/kg	VMS12398	1118820
11FWA-B2077-SO4-W01	1118820001	SW8260B	1,2,3-Trichloropropane	ND	0.0306	0.0491	mg/kg	VMS12398	1118820
11FWA-B2077-SO4-W01	1118820001	SW8260B	Vinyl chloride	ND	0.0306	0.0491	mg/kg	VMS12398	1118820
11FWA-B2077-SO4-W01	1118820001	SW8270D	bis-(2-Chloroethyl)ether	ND	0.18	0.289	mg/kg	XXX25630	1118820
11FWA-B2077-SO4-W01	1118820001	SW8270D	4-Chloroaniline	ND	0.346	0.577	mg/kg	XXX25630	1118820
11FWA-B2077-SO4-W01	1118820001	SW8270D	2,4-Dinitrophenol	ND	2.18	3.46	mg/kg	XXX25630	1118820
11FWA-B2077-SO4-W01	1118820001	SW8270D	2,4-Dinitrotoluene	ND	0.18	0.289	mg/kg	XXX25630	1118820
11FWA-B2077-SO4-W01	1118820001	SW8270D	2,6-Dinitrotoluene	ND	0.18	0.289	mg/kg	XXX25630	1118820
11FWA-B2077-SO4-W01	1118820001	SW8270D	Hexachlorobutadiene	ND	0.18	0.289	mg/kg	XXX25630	1118820
11FWA-B2077-SO4-W01	1118820001	SW8270D	Hexachlorobenzene	ND	0.18	0.289	mg/kg	XXX25630	1118820
11FWA-B2077-SO4-W01	1118820001	SW8270D	n-Nitrosodimethylamine	ND	0.18	0.289	mg/kg	XXX25630	1118820
11FWA-B2077-SO4-W01	1118820001	SW8270D	n-Nitrosodi-n-propylamine	ND	0.18	0.289	mg/kg	XXX25630	1118820
11FWA-B2077-SO4-W01	1118820001	SW8270D	Nitrobenzene	ND	0.18	0.289	mg/kg	XXX25630	1118820
11FWA-B2077-SO4-W01	1118820001	SW8270D	Pentachlorophenol	ND	1.43	2.31	mg/kg	XXX25630	1118820
11FWA-B2077-TB01	1118820002	SW8260B	1,2-Dichloroethane	ND	0.0163	0.0262	mg/kg	VMS12398	1118820
11FWA-B2077-TB01	1118820002	SW8260B	1,2-Dibromoethane	ND	0.0163	0.0262	mg/kg	VMS12398	1118820
11FWA-B2077-TB01	1118820002	SW8260B	Methylene chloride	ND	0.065	0.105	mg/kg	VMS12398	1118820
11FWA-B2077-TB01	1118820002	SW8260B	1,1,2,2-Tetrachloroethane	ND	0.0314	0.0523	mg/kg	VMS12398	1118820
11FWA-B2077-TB01	1118820002	SW8260B	1,2,3-Trichloropropane	ND	0.0163	0.0262	mg/kg	VMS12398	1118820
11FWA-B2077-TB01	1118820002	SW8260B	Vinyl chloride	ND	0.0163	0.0262	mg/kg	VMS12398	1118820

EXHIBIT 2C

ADEC Checklists

Laboratory Data Review Checklist

Completed by: Julieanna Orczewska – Jacobs Engineering

Title: Chemist Date: 2-22-12

CS Report Name: FWA-B2077 Report Date: February 2012

Consultant Firm: Jacobs Engineering Group Inc.

Laboratory Name: SGS Environmental Services, Inc Laboratory Report Number: 1118820

ADEC File Number: ADEC RecKey Number:

1. Laboratory
   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
      ●Yes ☐ No ☐NA (Please explain.) Comments:

      SGS Environmental Services, Inc. Alaska performed all analyses.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
      ☐Yes ☐ No ●NA (Please explain.) Comments:

      All samples were analyzed by SGS-Alaska

2. Chain of Custody (COC)
   a. COC information completed, signed, and dated (including released/received by)?
      ●Yes No ☐NA (Please explain.) Comments:

   b. Correct analyses requested?
      ●Yes ☐ No ☐NA (Please explain.) Comments:

3. Laboratory Sample Receipt Documentation
   a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?
      Yes ●No ☐NA (Please explain.) Comments:

      Cooler 'Babcock' was received by SGS-Fairbanks with a temperature of 0.0°C. Samples were transferred to SGS-Anchorage and upon receipt; the cooler had a temperature of 1.1°C. Samples were not frozen upon receipt by either location and were likely minimally affected by the low temperature. Samples did not require qualification under the approved work plan.

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

●Yes ☐ No ☐NA (Please explain.) Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

●Yes ☐ No NA (Please explain.) Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes ☐ No ●NA (Please explain.) Comments:

There were no sample discrepanies.

e. Data quality or usability affected? (Please explain.)

Yes ●No ☐NA (Please explain.) Comments:

Data quality and usability was not affected.

4. Case Narrative

a. Present and understandable?

●Yes ☐ No ☐NA (Please explain.) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

●Yes ☐ No ☐NA (Please explain.) Comments:

QC failures are discussed in the relevant section of this checklist.

c. Were all corrective actions documented?

●Yes ☐ No NA (Please explain.) Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

There was no effect on the data quality and usability.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

●Yes ☐ No ☐NA (Please explain.) Comments:

b. All applicable holding times met?

●Yes ☐ No ☐NA (Please explain.) Comments:

c. All soils reported on a dry weight basis?

●Yes ☐ No ☐NA (Please explain.) Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

Yes ● No ☐NA (Please explain.) Comments:

Several limits of detections (LODs) were greater than the Cleanup Level for this SDG. Affected samples are listed in Table 2-B-2.

e. Data quality or usability affected?

Comments:

The data quality and usability were minimally affected by LOD exceedances. Data with LODs exceeding QC criteria were still considered usable for investigative purposes.

6. <u>QC Samples</u>

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

●Yes ☐ No ☐NA (Please explain.) Comments:

ii. All method blank results less than PQL?

●Yes No ☐NA (Please explain.) Comments:

iii. If above PQL, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?

☐Yes No ●NA (Please explain.) Comments:

No samples were affected by method blank exceedances.

v. Data quality or usability affected? (Please explain.)

Comments:

The data quality and usability were not affected.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

● Yes ☐ No ☐NA (Please explain.) Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

●Yes ☐ No ☐NA (Please explain.) Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes ● No ☐NA (Please explain.) Comments:

LCS and/or LCSD recoveries were acceptable for all analyses.

MS/MSD %R exceedances reported in the case narrative were not project samples.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

●Yes No ☐NA (Please explain.) Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

LCS percent recoveries and RPD values were acceptable; sample results were not affected.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No ●NA (Please explain.) Comments:

MS/MSD %R exceedances reported in the case narrative were not project samples.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability were not affected.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?
●Yes ☐ No ☐NA (Please explain.) Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)
Yes☐ ● No ☐ NA (Please explain.) Comments:

4-Bromofluorobenzene for method AK101 exceeded %R QC criteria for sample '11FWA-B2077-SO4-W01.' Additionally, two of the five surrogate %R for method SW8270D, Nitrobenzene-d5 and Phenol-d6 was outside QC criteria limits for sample '11FWA-B2077-SO4-W01.'

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?
●Yes ☐ No NA (Please explain.) Comments:

Surrogate recovery for Nitrobenzene-d5 exceeded QC criteria and Phenol-d6 was below QC limits for method SW8270D, sample '11FWA-B2077-SO4-W01.' The affected sample '11FWA-B2077-SO4-W01' was flagged JS.

iv. Data quality or usability affected? (Use the comment box to explain.)
Comments:

Data quality was minimally affected by the surrogate %R exceedance. Data usability was not affected.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)
●Yes ☐ No ☐NA (Please explain.) Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)
●Yes ☐ No ☐NA (Please explain.) Comments:

iii. All results less than PQL?
●Yes ☐ No ☐NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

The Trip Blank results were non-detect; qualification of samples were not required

v. Data quality or usability affected? (Please explain.)

Comments:

The data quality and usability are not affected.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes ● No NA (Please explain.) Comments:

A field duplicate was not included in this SDG.

ii. Submitted blind to lab?

Yes No ●NA (Please explain.) Comments:

A field duplicate was not submitted in this SDG.

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

Yes No ●NA (Please explain.) Comments:

A field duplicate was not submitted in this SDG.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality was minimally affected by the lack of a field duplicate. Data usability was not affected.

f. Decontamination or Equipment Blank (If not used explain why).

Yes No ●NA (Please explain.) Comments:

A decontamination blank was not collected because only clean, disposable sampling equipment was used to collect the samples.

i. All results less than PQL?

Yes No ●NA (Please explain.) Comments:

N/A

ii. If above PQL, what samples are affected?

Comments:

N/A

iii. Data quality or usability affected? (Please explain.)

Comments:

The data quality and usability were not affected.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)
   a. Defined and appropriate?
      ●Yes ☐ No ☐NA (Please explain.) Comments:

EXHIBIT 2D

Laboratory Data Deliverables

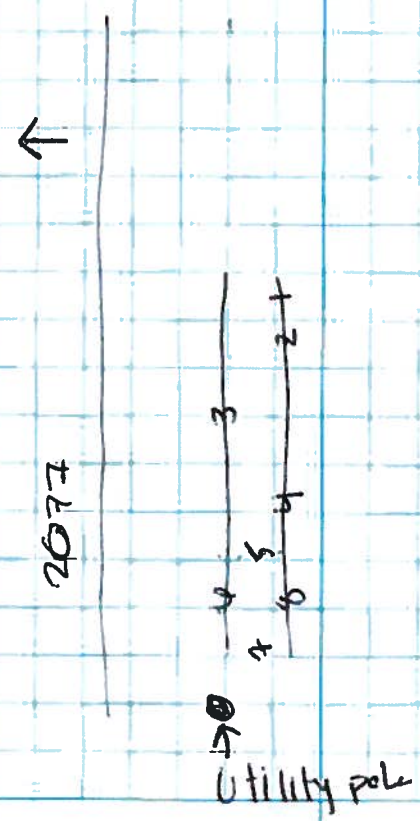
(Provided separately on CD)

ATTACHMENT 3

Field Logbook

B2077 9/8

1434 Arrive on site w/
SB, PR, CARLTON + Salcha electrical
- Digging ~~thru~~ for utility trench
- strong smell of diesel starting approx 2' bgs
- collect field screens to determine extent



FS 1 ~~10.~~ 10.1
FS 2 10.1
FS 3 9.3
FS 4 5.1
FS 5 1627
FS 6 1546
FS 7 1573
FS 8 1576

1510 Collect sample from FS5

11FWA-B2077-S04-W01
1x 4oz + MeOH AK101, 8260
1x 8oz AK102/103, 8270, 6020/7471

1525 Depart site for sample management

ATTACHMENT 4

Survey Data

Attachment 4
Survey Data

Following sample collection activities and when it was practical and safe for the worker, a global positioning system (GPS) survey was performed to record soil boring, surface soil, test pitting, trenching, and excavation locations. Information was collected with a **Trimble GeoExplorer Geo XH Handheld** and all sample coordinates are presented based on UTM Zone 6, World Geodetic System (WGS) 84, and measured in meters. The Geo XH was programmed to receive correctional data from the Satellite Based Augmentation System allowing for real-time correction with submeter accuracy at the time of data recording, in most cases. Additionally the data was post-processed and corrected using data from the Continuously Operating Reference Station located 9 miles outside of Fairbanks. All survey data that was collected for the site is listed below.

Horizontal: WGS84 UTM Zone 6N Vertical: NAVD88

Project	Site Name	Name	Easting (m)	Northing (m)	Type	Notes
TO20	B2077- Parking Lot	B2077-W01	471739.853	7189794.771	soil sample	confirmation sample

ATTACHMENT 5

Response to Comments

REVIEW COMMENTS

PROJECT: Fort Wainwright, Building 2077
DOCUMENT: Building 2077 Parking Lot After Action Report (Draft) Location: Fort Wainwright , Alaska

U.S. ARMY CORPS OF ENGINEERS	DATE: 08-May-2013 REVIEWER: Benjamin PHONE: 907-753-5514	Action taken on comment by:

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	REVIEW CONFERENCE A - comment accepted W - comment withdrawn (if neither, explain)	CONTRACTOR RESPONSE	USAED/ADEC RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)
1.	ADEC Checksheet	Under the LCS (section 6.b) also state that the MS/MSDs were good.		MS/MSD analyses were not performed on the one sample submitted in this report. The following text has been added to Section 6.b.iii "LCS and/or LCSD recoveries were acceptable for all analyses." The notes about the MS/MSD samples are acceptable as written.	A
2.	ADEC Checksheet	Section 6.b.v – there are no check boxes here, so state N/A		The following has been added Section 6.b.v: "LCS percent recoveries and RPD values were acceptable; sample results were not affected."	A
3.	ADEC Checksheet	Section 6.d.iv – same as comment #2		The following has been added Section 6.d.iv: "The Trip Blank results were non-detect; qualification of samples were not required."	A
4.	ADEC Checksheet	Section 6.e.iv – a field dup is required per SAP – how does this not affect the data usability? Explain here.		The data is usable for its intended purpose, which was to determine if the sample exceeded any ADEC criteria (which it did, for GRO, DRO and arsenic) in order to determine its disposal criteria. Since the results weren't used to drive additional investigation, and because it is unlikely, based on the sample matrix, that a FD would yield significantly different results (i.e., GRO and DRO results below their respective ADEC limits) or cause the disposal method to be treated differently (i.e., the strictest criteria would be followed in a case where on FD yielded results greater than an action limit and one less than the action limit in order to address the most conservative case).	A

U.S. ARMY CORPS OF ENGINEERS	DATE: 08-May-2013 REVIEWER: Benjamin PHONE: 907-753-5514	Action taken on comment by:

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	REVIEW CONFERENCE A - comment accepted W - comment withdrawn (if neither, explain)	CONTRACTOR RESPONSE	USAED/ADEC RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)
5.	Field book	If a field book is going to be used for multiple jobs, then the first page of the next job should act as a cover page, with the pertinent information. The following information is missing: Sampler name, approximate map, weather, year, photos taken, why no dupe was collected, page numbers, what field screening method used.	A	A Workplan deviation section will be added to address these concerns.	A
6.	Data table	What is the difference between table 2A and 2-B-3? Wouldn't one table suffice? Also, table 2A doesn't have a table description (title) on every page.	A	They are the same table. Table 2-B-3 will be removed and Table 2A will be reformatted to include the table title on every page.	A
7.	Table 2A	Data flag "E" not defined in report or on table, other data flags not on table.		Qualifiers are generally not included on the cross-tab data summary; instead the reader is referred to the DQA. The definition for the "E" qualifier has been added to the DQA: "E The result is non-detect and the LOD exceeds the ADEC cleanup level."	A
8.	Report, Page 1	First paragraph, 3rd sentence – this was not done in accordance to the WP – field book info missing and no duplicate. Rewrite – "deviations are explained later in this report."	A	The following text will be added at the end of the first paragraph: "Slight deviations to the Work Plan are discussed later in the report."	A
9.	Report, Page 2	First sentence – see comment #8. Delete and create a section for deviations and just list them.		Please see response to comment #5	A
10.	Report, Page 3	References – add DOD QSM		The reference for the DOD QSM is in the DQA where it is referenced.	A

REVIEW COMMENTS

PROJECT: Fort Wainwright, Building 2077
DOCUMENT: Building 2077 Parking Lot After Action Report (Draft) Location: Fort Wainwright , Alaska

U.S. ARMY CORPS OF ENGINEERS	**DATE: 08-May-2013** **REVIEWER: Benjamin** **PHONE: 907-753-5514**	**Action taken on comment by:**

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	REVIEW CONFERENCE A - comment accepted W - comment withdrawn (if neither, explain)	CONTRACTOR RESPONSE	USAED/ADEC RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)
11.	Data review	Data review and Qualification, first paragraph on page two – how is comparability measured with no duplicate sample? Add a paragraph about the duplicate.	A	The following was added to the end of the paragraph: "In general, the data DQOs were met with the exception of comparability, which could not be assessed on an inter-sample basis because a field duplicate sample was not collected with the sample discussed in this SDG. However, the data is still usable for its intended purpose, which was to determine the disposal criteria and not to drive further investigation at the site."	A
12.		----- End of Comments ----			
13.					
14.					
15.					
16.					
17.					

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Environmental Conservation
DIVISION OF SPILL PREVENTION & RESPONSE
Contaminated Sites Program
555 Cordova Street
Anchorage, Alaska 99501
Phone: 907.269.7503
Fax: 907.269.7649
dec.alaska.gov

File No: 108.38.120

May 3, 2013

Dept. of the Army
Directorate of Public Works
Attn: IMPC-FWA-PWE (Malen)
1060 Gaffney Rd, #4500
Fort Wainwright, Alaska 99703-4500

Re: 2011 Building 2077 Parking Lot After-Action Report, Draft, April 16, 2013

Dear Mr. Malen;

The Alaska Department of Environmental Conservation (ADEC) received the referenced report on April 17, 2013. ADEC has no comment on the report and has created a new site in the Contaminated Sites Database, Fort Wainwright Hangar 7-8 (Bldg 2077) South Parking Lot, Hazard ID 26047. The report documents a release with a soil sample analyzed containing gasoline range organics of 1390 mg/kg and diesel range organics of 2950 mg/kg. Based on field screening, visual and olfactory observations is the contamination appeared to extend to the west, north and south of the sample point. Groundwater was not investigated.

ADEC requests this site be added to the Fort Wainwright Army Environmental Database Record and included in the Installation Action Plan for investigation to delineate the extent of the contamination. A review of the OU1 investigation shows no sampling in this area. There are two USTs that are associated with Building 2080 that were removed and replaced in 1990 that had releases, but ADEC can find no other apparent source for this release.

Sincerely,

Deb Caillouet
Environmental Program Specialist