SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

August 24, 2005

Alaska Department of Transportation and Public Facilities
2301 Peger Road
Fairbanks, Alaska

Attn: Mr. Darren Mulkey

RE: NORTHERN REGION LUST SITE CLEANUP, ADOT&PF EAST FORK MAINTENANCE STATION, MILE 185 PARKS HIGHWAY, ALASKA, ADEC UST FACILITY NO. 1549

This report presents the results of Shannon & Wilson's groundwater monitoring at the Alaska Department of Transportation and Public Facilities (ADOT&PF) East Fork Maintenance Station, Alaska. The objectives of our work were to determine if releases from former underground storage tanks (USTs) have affected groundwater quality at the site. Our work was performed in accordance with the terms of our ADOT&PF Term Contract, PSA No. P22011, NTP S&W 01-011, our LUST Sites Cleanup Management Plan dated September 2003, and the Alaska Department of Environmental Conservation (ADEC) UST regulations (18 AAC 78).

Background

The ADOT&PF East Fork Maintenance Station (ADEC UST Facility No. 1549) is at Mile 185 of the Parks Highway, south of Cantwell, Alaska. The ADOT&PF has discontinued use of this maintenance station, the shop buildings and residence trailers have been removed, and the on-site water well is no longer used.

Four USTs were removed from the property in 1998 by EMCON. In 2000 Shannon & Wilson performed corrective actions at the former UST location, including the removal of approximately 700 cubic yards of contaminated soil; in 2001 we conducted a release investigation that included the installation of four monitoring wells (Figure 1). Groundwater samples were collected from the monitoring wells in June, August, and October 2001 and September 2002; a summary of the groundwater results is presented in Table 1. The groundwater samples did not contain gasoline range organics (GRO), diesel range organics (DRO), or benzene, toluene, ethylbenzene, and

xylenes (BTEX) in excess of the cleanup levels with the exception of MW-4, where DRO was detected at 1.69 mg/L in September 2002 (approximately 0.25 inch of floating product was noted during this sampling event).

The depth to groundwater has ranged from approximately 1.5 to 6 feet below the ground surface (bgs); the groundwater flow at the site has generally been to the southwest.

FIELD ACTIVITIES

Groundwater Samples

We collected groundwater samples from monitoring wells MW-1, MW-2, MW-4, and MW-5 on July 18, 2003, and July 30, 2005. The wells were sampled using a decontaminated, battery-powered, submersible pump and new disposable vinyl tubing. Prior to sampling, the depth to water was measured and the wells were purged until pH, conductivity, temperature, and dissolved oxygen had stabilized. At least three well volumes were purged from each well before samples were collected with the exception of MW-5 during the July 2005 sampling event, where the purge was only one well volume. Poor recharge was encountered; barely enough water was available to fill the sample jars, and the sample was very turbid.

The water samples, including a duplicate sample from MW-4 and a trip blank, were submitted to SGS Environmental Services Inc. (SGS) for analysis of BTEX compounds by Environmental Protection Agency (EPA) Method 8021B, GRO by Alaska Method AK 101, and DRO by AK 102. The purge water was discharged to the ground surface.

RESULTS

Groundwater Analytical Results

The analytical results for the July 2003 and July 2005 groundwater samples are summarized in Table 1, and the laboratory reports are included as an attachment to this report. For comparison, Table 1 also summarizes the groundwater data collected in 2001 and 2002.

DRO were detected in each of the four monitoring wells at least once in 2003 and 2005. Detections above the PQL ranged from 0.429 mg/L in monitoring well MW-1 to 2.28 mg/L in monitoring well MW-5. The volatile organic compounds GRO and o-xylene were only detected in monitoring well MW-4 for these two sampling events. No other analyte was present above the detection limits in the monitoring wells for the 2003 or 2005 sampling events.

QUALITY ASSURANCE/QUALITY CONTROL

Field quality control (QC) procedures included the collection and analysis of field duplicates for both sampling events. Trip blanks and temperature blanks accompanied the samples in the field until delivery to the laboratory control station in Fairbanks. In addition, laboratory quality assurance (QA) included running method blanks, laboratory control spikes, matrix spikes, assessing surrogate recoveries in each sample analyzed, and other internal QA programs as required for approval by the State of Alaska for analytical laboratories. The QC samples were analyzed to assess the quality of sample collection and handling, as well as the accuracy and precision of the laboratory's analytical procedures.

Standard protocol calls for a minimum of three well volumes to be purged from the monitoring wells prior to sampling. During this sampling event, MW-5 only produced one well volume before going dry. Slow recharge yielded a very turbid sample of poor quality.

Field duplicate precision can be expressed as a relative percent difference (RPD) between duplicate samples. If one or both of the analytical results are reported to not exceed the laboratory detection limit, the RPD is not calculable. The RPDs for the duplicate pairs collected as part of this investigation were not calculable, or fell within our Data Quality Objective (DQO) acceptable limits of ±30 percent. Analysis of the trip blanks showed no analytes above the PQL; thus, there is no indication that cross-contamination among samples occurred.

As presented in the laboratory QC summary sheet, the laboratory QC parameters fell within the accepted limits, with the exception that laboratory control spike duplicates did not meet QC criteria. The laboratory chemist concluded this was likely due to laboratory error.

It is our opinion that the overall utility of the laboratory data has not been compromised by these QC anomalies, and the results are valid for characterizing groundwater from the monitoring wells. The SGS laboratory reports, including the case narratives and QA/QC data, are included as an attachment to this report.

DISCUSSION

Groundwater cleanup levels are presented in Table C of the ADEC Oil and Hazardous Substances Regulations, 18 AAC 75. The cleanup level is 1.3 mg/L for GRO and 1.5 mg/L for DRO; groundwater cleanup levels for BTEX are 5, 1,000, 700, and 10,000 µg/L, respectively.

DRO were detected above the cleanup level in monitoring well MW-5 for the first time since the well was installed in 2001. This is the only occurrence of a detectable concentration of any of the analytes tested in this well. The groundwater level in this well in 2005 was the lowest observed since the initial 2001 sampling. Groundwater was measured at 5.69 feet bgs. Previous to this sampling event groundwater ranged from 1.35 feet to 4.71 feet bgs. Because of the low groundwater levels, the sample recovery was poor. Purge volume was limited to one well volume. The water sample was extremely turbid. According to the laboratory chemist, the MW-5 result may be biased high due to high turbidity.

DRO in the other wells appear to be decreasing, although only limited data are available to assess trends in groundwater contaminant data. Excluding the DRO detection in MW-5 in 2005, DRO exceeding the groundwater cleanup level were only detected once since 2001 (monitoring well MW-4). This exceedance coincided with the observation of measurable floating product (0.25 inch) in MW-4 in September 2002. This was the only sample event where floating product was observed.

Of the volatile compounds, benzene and toluene have never been detected above the PQL in any of the wells since sampling in 2001. Ethylbenzene was detected only once in monitoring well MW-4, and xylenes were detected in samples from MW-1 and MW-4. GRO were detected once in MW-1 from 2001 to 2005 and were present in MW-4 during each sampling event. None of these have exceeded their cleanup levels.

CONCLUSIONS AND RECOMMENDATIONS

Based on our field observations and the analytical test results, we present the following:

- Groundwater samples collected from the monitoring wells did not contain GRO, or BTEX compounds that exceed their cleanup levels. DRO in monitoring well MW-5 exceeded the DRO cleanup level in September 2005. This anomalous result may be attributable to high turbidity.

- We recommend that the ADOT&PF continue groundwater monitoring at the site to verify decreasing trends of DRO in the monitoring wells and that the detection of DRO in MW-5 is likely due to high turbidity.

LIMITATIONS

This report presents the analytical results from a limited number of groundwater samples and should not be construed as a comprehensive study of groundwater quality at the site. The samples were intended to evaluate the presence or absence of contaminants at the locations selected; detectable levels of petroleum hydrocarbons may be present at other locations. It was also not our intent to detect the presence of groundwater affected by contaminants other than those for which laboratory analyses were performed. No conclusions can be drawn on the presence or absence of other contaminants.

The data presented in this letter report should be considered representative of the time of our site observations and sample collection. Changes in site conditions can occur with time because of natural forces or human activity.

This report was prepared for the exclusive use of the Alaska Department of Transportation and Public Facilities. If it is made available to others, it should be for information on factual data only and not as a warranty of subsurface conditions.

Sincerely,

SHANNON & WILSON, INC.

Mark S. Lockwood, C. P. G.
Principal Geologist

Reviewed by:

David M. McDowell
Vice President

Enclosures: Table 1 Groundwater Results
Figure 1 Site Plan
SGS Analytical Laboratory Reports – July 2003 and July 2005

TABLE 1

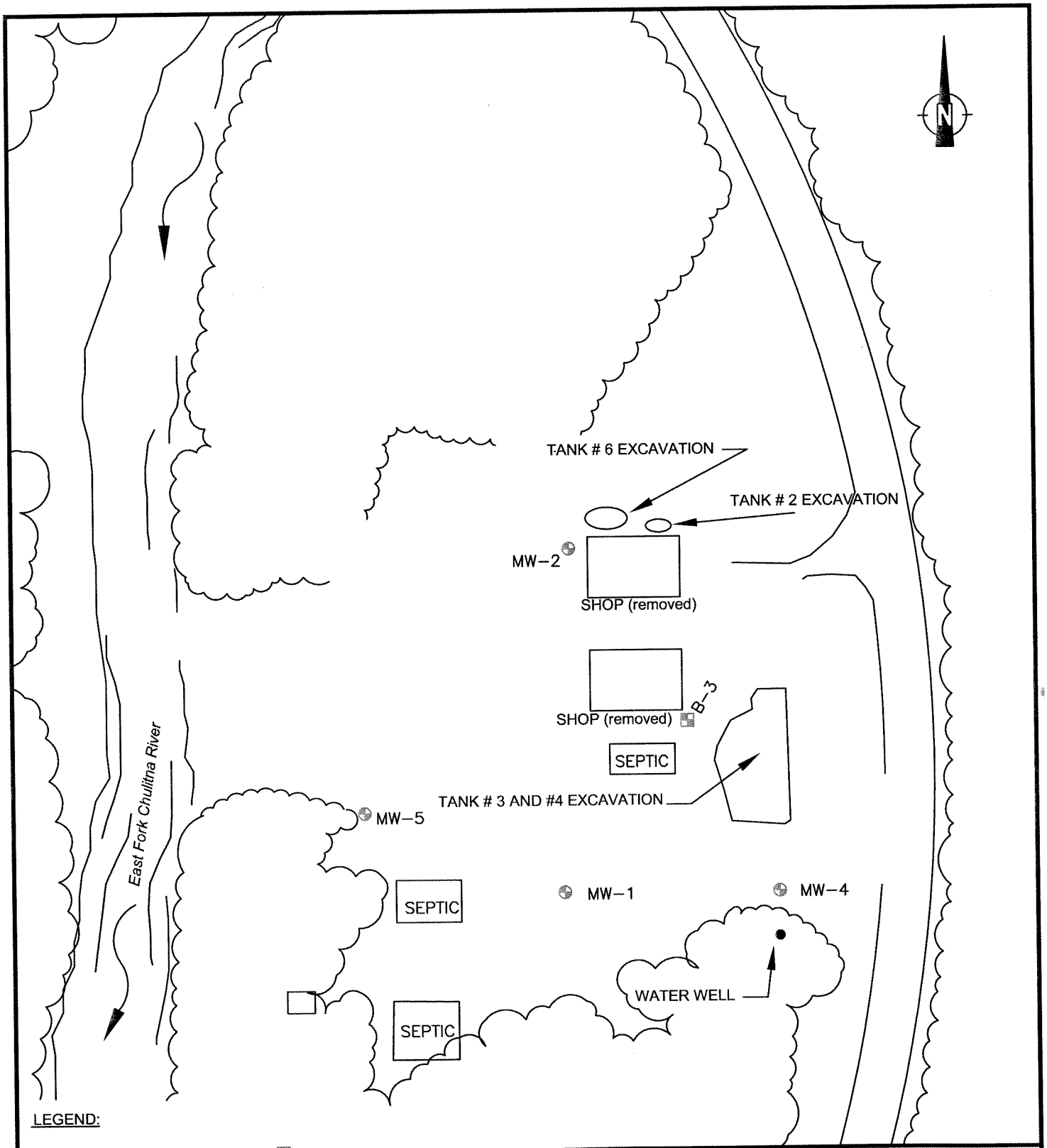
GROUNDWATER RESULTS
ADOT & PF East Fork Maintenance Station

Well	Date	Depth to Water (feet)	GRO (mg/L)	DRO (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	p&m-Xylenes (µg/L)	o-Xylene (µg/L)
MW-1	6/1/2001	3.12	nd (0.0900)/ nd (0.0900)*	0.847/ 0.955*	nd (0.500)/ nd (0.500)*	nd (2.00)/ nd (2.00)*	nd (2.00)/ nd (2.00)*	nd (2.00)/ nd (2.00)*	nd (2.00)/ nd (2.00)*
	8/22/2001	4.71	0.0912	nd (0.505)	nd (0.500)	nd (2.00)	nd (2.00)	2.17	3.60
	10/11/2001	5.90	nd (0.0900)	0.795	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	nd (2.00)
	9/12/2002	4.95	nd (0.0900)/ nd (0.0900)*	nd (0.538)/ nd (0.571)	nd (0.500)/ nd (0.500)*	nd (2.00)/ nd (2.00)*	nd (2.00)/ nd (2.00)*	nd (2.00)/ nd (2.00)*	2.08/ 2.37
	7/18/2003	2.53	nd (0.0900)	0.429	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	nd (2.00)
	7/30/2005	6.98	nd (0.0900)	nd (0.417)	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	nd (2.00)
MW-2	6/1/2001	3.60	nd (0.0900)	nd (0.500)	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	nd (2.00)
	8/22/2001	6.15	nd (0.0900)	nd (0.505)	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	nd (2.00)
	10/11/2001	5.76	nd (0.0900)	0.890	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	nd (2.00)
	9/12/2002	4.86	nd (0.0900)	nd (0.515)	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	nd (2.00)
	7/18/2003	2.56	nd (0.0900)	nd (0.313)	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	nd (2.00)
	7/30/2005	6.90	nd (0.0900)	1.05	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	nd (2.00)

TABLE 1
GROUNDWATER RESULTS
ADOT & PF East Fork Maintenance Station

Well	Date	Depth to Water (feet)	GRO (mg/L)	DRO (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	p&m-Xylenes (µg/L)	o-Xylene (µg/L)
MW-4	6/1/2001	1.85	0.12	0.810	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	nd (2.00)
	8/22/2001	6.32	0.404/ 0.343*	1.020/ 0.997*	nd (0.500)/ nd (0.500)*	nd (2.00)/ nd (2.00)*	2.53/ 3.07*	4.06/ 2.58*	6.77/ 7.69*
	10/11/2001	3.94	0.374/ 0.366*	1.49/ 1.45*	nd (0.500)/ nd (0.500)*	nd (2.00)/ nd (2.00)*	nd (2.00)/ nd (2.00)*	3.33/ 3.62*	3.94/ 4.30*
	9/12/2002	3.36	0.191	**1.69**	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	4.40
	7/18/2003	1.22	0.0981/ nd (0.0900)	0.459/ 0.513	nd (0.500)/ nd (0.500)*	nd (2.00)/ nd (2.00)*	nd (2.00)/ nd (2.00)*	nd (2.00)/ nd (2.00)*	2.93/ nd (2.00)*
	7/30/2005	6.32	0.114/ 0.111	1.13/ 1.17	nd (0.500)/ nd (0.500)*	nd (2.00)/ nd (2.00)*	nd (2.00)/ nd (2.00)*	nd (2.00)/ nd (2.00)*	3.30/ 3.02
MW-5	6/1/2001	1.35	nd (0.0900)	nd (0.500)	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	nd (2.00)
	8/22/2001	4.71	nd (0.0900)	nd (0.500)	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	nd (2.00)
	9/12/2002	3.46	nd (0.0900)	nd (0.510)	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	nd (2.00)
	7/18/2003	1.59	nd (0.0900)	nd (0.313)	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	nd (2.00)
	7/30/2005	5.69	nd (0.0900)	**2.28**	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	nd (2.00)
Drinking Water Well	8/22/2001	not measured	nd (0.0900)	nd (0.521)	nd (0.500)	nd (2.00)	nd (2.00)	nd (2.00)	nd (2.00)

Notes: GRO - gasoline range organics
DRO - diesel range organics
"nd" - result less than the practical quantification limit (PQL) shown.
BOLD indicates exceedance of ADEC groundwater cleanup level (18 AAC 75.345)
* - results of field duplicate sample



LEGEND:

BORING LOCATION (BORING)

MONITORING WELL (MW)

Base map provided by ADOT&PF

APPROXIMATE SCALE (FEET)

0 100 200

ADOT&PF East Fork Maintenance Station
Mile 185 Parks Highway, Alaska

MONITORING WELL LOCATIONS

August 2005 31-1-11192-012

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Figure 1

SGS Environmental Services Inc.
Alaska Division
Level 2 Laboratory Data Report

Project: 31-1-11192-012, East Fork DOT

Client: Shannon & Wilson-Fairbanks

SGS Work Order: 1054579

Released by: (Signature) Stephen C. Ede

(Printed Name) Stephen C. Ede

(Title) Technical Director

(Date) 8/17/05

Contents:

Note:

Unless otherwise noted, all quality assurance/quality control criteria is in compliance with the standards set forth by the proper regulatory authority, the SGS Quality Assurance Program Plan, and the National Environmental Accreditation Conference.

This report contains a total number of 24 pages.

Case Narrative

Customer: SHANFBK **Shannon & Wilson-Fairbanks**

Project: 1054579 **31-1-11192-012, East Fork DOT**

1054579001 PS **1192EF-073005-MW1**

DRO/RRO - LCSD does not meet QC criteria possibly due to lab error.

1054579002 PS **1192EF-073005-MW2**

DRO/RRO - LCSD does not meet QC criteria possibly due to lab error.

DRO - The pattern is consistent with a weathered middle distillate.

1054579003 PS **1192EF-073005-MW4**

DRO/RRO - LCSD does not meet QC criteria possibly due to lab error.

DRO - The pattern is consistent with a weathered middle distillate.

1054579004 PS **1192EF-073005-MW5**

DRO/RRO - LCSD does not meet QC criteria possibly due to lab error.

DRO - The pattern is consistent with a weathered middle distillate.

1054579005 PS **1192EF-073005-MW14**

DRO/RRO - LCSD does not meet QC criteria possibly due to lab error.

DRO - The pattern is consistent with a weathered middle distillate.

645030 MB

RRO - MB result is greater than on half of the PQL but less than PQL.

645032 LCSD

DRO/RRO - LCSD does not meet QC criteria. Volume appeared low (.530 µL) sample possibly concentrated.

646438 LCSD

DRO/RRO - LCSD does not meet QC criteria. Volume appeared low (.530 µL) sample possibly concentrated.

1054579

Chain of Custody Record

Shannon & Wilson, Inc.

400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

11500 Olive Blvd., Suite 276
St. Louis, MO 63141
(314) 872-8170

2055 Hill Road
Fairbanks, AK 99707
(907) 479-0600

5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907) 561-2120

Page 1 of 1
Laboratory CTE
Attn: SUNNY

Analysis Parameters/Sample Container Description
(include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled 2005	Comp.	Grab	AK101 / 8021 BTEX	AK102 DRO					Total Number of Containers	Remarks/Matrix
1192EF-073005-MW1	1 A-C	11:20	7-30		X	X	X					5	water
1192EF-073005-MW2	2	10:30	7-30		X	X	X					5	
1192EF-073005-MW4	3	12:00	7-30		X	X	X					5	
1192EF-073005-MW5	4	9:00	7-30		X	X	X					5	
1192EF-073005-MW14	5	12:30	7-30		X	X	X					5	
Trip Blank SC 8-1-05	6 A-C											3	

Project Information		Sample Receipt	
Project Number:	31-1-11192-012	Total Number of Containers	28
Project Name:	EAST FORK DOT	COC Seals/Intact? Y/N/NA	NA
Contact:	MARK Lockwood	Received Good Cond./Cold	Yes
Ongoing Project?	Yes ☐ No ☐	Delivery Method:	hand
Sampler:	MS	(attach shipping bill, if any)	

Instructions	
Requested Turn Around Time:	STANDARD
Special Instructions:	

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature:	Signature:	Signature:
Time: 3:44p	Time: 1640	Time:
Printed Name: MARK LOCKWOOD	Printed Name: Sunny Castleberry	Printed Name:
Date: 8-1-05	Date: 8-1-05	Date:
Company: SKW FBX	Company: SGS	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature:	Signature:	Signature:
Time: 3:44pm	Time:	Time: 0900
Printed Name: Jesse Atkins	Printed Name:	Printed Name: Danny Johnson
Date: 8-1-05	Date:	Date: 8-2-05
Company: SGS	Company:	Company: SGS

Distribution: White - w/shipment - returned to Shannon & Wilson w/ Laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

3

F-19-91/UR

1054579

SGS

SAMPLE RECEIPT FORM

SGS WO#:

Yes	No	NA		
X			Are samples **RUSH**, priority, or *w/n 72 hrs.* of **hold time**?	**Due Date:** 8-15-05
X			If yes have you done *e-mail notification*?	**Received Date:** 8-1-05
	X		Are samples *within 24 hrs.* of **hold time** or **due date**?	**Received Time:** 1544
		X	If yes, have you *spoken with* Supervisor?	Is **date/time conversion** necessary? NO
		X	Archiving bottles – if req., are they properly marked?	# of hours to AK Local Time: NA
	X		Are there any **problems**? PM Notified?	**Thermometer ID:** IDOT6 A
X			Were samples preserved correctly and pH verified?	
		X	If this is for PWS, provide **PWSID.**	
		X	Will courier charges apply?	
			Method of payment?	
X			Data package required? (Level: 1 / 2 / 3 / 4)	
			Notes:	
	X		Is this a DoD project? (USACE, Navy, AFCEE)	

Cooler ID	Temp Blank	Cooler Temp
1	2.6 °C	1.9 °C
2	°C	°C
	°C	°C
	°C	°C
	°C	°C

*Temperature readings include thermometer correction factors

Delivery method (circle all that apply): Client / Alert Courier / UPS / FedEx / USPS / AA Goldstreak / NAC / ERA / PenAir / Carlile Lynden / SGS / Other:

Airbill #

Additional Sample Remarks: (√ *if applicable*)

- Extra Sample Volume?
- X Limited Sample Volume? 1-5 DRO lowvol
- Field preserved for volatiles?
- Field-filtered for dissolved?
- Lab-filtered for dissolved?
- Ref Lab required?
- Foreign Soil?

This section must be filled out for DoD projects (USACE, Navy, AFCEE)

Yes	No		
		Is received temperature 4 ± 2°C?	
		Exceptions:	Samples/Analyses Affected:
		Rad Screen performed?	
		Result:	
		Was there an airbill? *(Note # above in the right hand column)*	
		Was cooler sealed with custody seals?	
		# / where:	
		Were seal(s) intact upon arrival?	
		Was there a COC with cooler?	
		Was the COC filled out properly?	
		Did the COC indicate COE / AFCEE / Navy project?	
		Did the COC and samples correspond?	
		Were all sample packed to prevent breakage?	
		Packing material:	
		Were all samples unbroken and clearly labeled?	
		Were all samples sealed in separate plastic bags?	
		Were all VOCs free of headspace and/or MeOH preserved?	
		Were correct container / sample sizes submitted?	
		Is sample condition good?	
		Was copy of CoC, SRF, and custody seals given to PM to fax?	

This section must be filled if problems are found.

Yes	No	
		Was client notified of problems?
		Individual contacted:
		Via: Phone / Fax / Email (*circle one*)
		Date/Time:
		Reason for contact:
		Change Order Required?
		SGS Contact:

Notes: 6°C → bubble > 6mm. TripBlank put on chain by Sunny Castleberry. SC 8-1-05

Completed by (sign): Sunny Castleberry **(print):** Sunny Castleberry

Login proof (check one): waived ____ required ____ performed by: ____

SGS

SGS WO#: 1054578[illegible]

SAMPLE RECEIPT FORM FOR TRANSFERS
From
FAIRBANKS, ALASKA OR HONOLULU, HAWAII
To
ANCHORAGE, AK

TO BE COMPLETED IN ANCHORAGE UPON ARRIVAL FROM FAIRBANKS OR HAWAII. NOTES RECORDED BELOW ARE ACTIONS NEEDED UPON ARRIVAL IN ANCHORAGE.

Notes: _____

Receipt Date / Time: 8-2-05 0800

~~**Is Sample Date/Time Conversion Necessary?** Yes _____ No ✓~~

Number of Hours From Alaska Local Time: —

Foreign Soil? Yes _____ No —

Delivery method to Anchorage (*circle all that apply*):

Alert Courier / UPS / FedEx / USPS / AA Goldstreak / NAC / ERA / PenAir / Carlile / (Lynden) / SGS

Other: _____

Airbill # _____

COOLER AND TEMP BLANK READINGS*

Cooler ID	Temp Blank (°C)	Cooler (°C)	Cooler ID	Temp Blank (°C)	Cooler (°C)
4	2.0	3.9			

CUSTODY SEALS INTACT: (YES) / NO

 # / WHERE: Landfront, Lanback

COMPLETED BY: JW

**Temperature readings include thermometer correction factors.*

1054579

SGS

SAMPLE RECEIPT FORM (page 2) SGS WO#:

#	Container ID	Matrix	Test	QC	TB	Container Volume: 1 L	500 mL	250 mL	125 mL	60 mL	40 mL	8oz (250 mL)	4oz (125 mL)	Other	Container Type: AG	CG	HDPE	Nalgene	Cubie	Coli	Septa	Other	Preservative: None	HCl	HNO_3	H_2SO_4	MeOH	$Na_2S_2O_3$	NaOH	Other
1-5	A-C	1	GRO/BTEX								15				X						X			X						
	D-E	1	DRO-low vol			~~10~~ 8.5			10						X									X						
6	A-C	1	GRO/BTEX								3				X						X			X						

Bottle Totals	10					18			

9

Completed by: Sunny Castleberry Date: 8-1-05

SGS Environmental

CUSTODY SEAL

Signature: Sunny Castleberry

Date/Time: 8-1-05 1640

SGS Environmental

CUSTODY SEAL

Signature: Sunny Castleberry

Date/Time: 8-1-05 1640

SGS Environmental

CUSTODY SEAL

Signature: Sunny Castleberry

Date/Time: 8-1-05 1640

Signature: Sunny Castleberry

Date/Time: 8-1-05 1640

SGS Environmental

CUSTODY SEAL

Signature: Sunny Castleberry

Date/Time: 8-1-05 1640

SGS Environmental

CUSTODY SEAL

Signature: Sunny Castleberry

Date/Time: 8-1-05 1640

SGS Environmental

CUSTODY SEAL

Signature: Sunny Castleberry

Date/Time: 8-1-05 1640

SGS Environmental

CUSTODY SEAL

SGS

Laboratory Analysis Report

200 W. Potter Drive
Anchorage, AK 99518-1605
Tel: (907) 562-2343
Fax: (907) 561-5301
Web: http://www.us.sgs.com

Mark Lockwood
Shannon & Wilson-Fairbanks
2355 Hill Rd
Fairbanks, AK 99709

Work Order:	1054579
	31-1-11192-012, East Fork DOT
Client:	Shannon & Wilson-Fairbanks
Report Date:	August 15, 2005

Released by: Stephen C. Ede

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by SGS. A copy of our Quality Control Manual that outlines this program is available at your request. The laboratory ADEC certification numbers are AK971-05 (DW), UST-005 (CS) and AK00971 (Micro).

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS Quality Assurance Program Plan and the National Environmental Laboratory Accreditation Conference.

If you have any questions regarding this report or if we can be of any other assistance, please call your SGS Project Manager at (907) 562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

PQL	Practical Quantitation Limit (reporting limit).
U	Indicates the analyte was analyzed for but not detected.
F	Indicates value that is greater than or equal to the MDL.
J	The quantitation is an estimation.
ND	Indicates the analyte is not detected.
B	Indicates the analyte is found in a blank associated with the sample.
*	The analyte has exceeded allowable regulatory or control limits.
GT	Greater Than
D	The analyte concentration is the result of a dilution.
LT	Less Than
!	Surrogate out of control limits.
Q	QC parameter out of acceptance range.
M	A matrix effect was present.
JL	The analyte was positively identified, but the quantitation is a low estimation.
E	The analyte result is above the calibrated range.

Note: Soil samples are reported on a dry weight basis unless otherwise specified.

SGS

SGS Ref.#	1054579001	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/15/2005 11:43
Project Name/#	31-1-11192-012, East Fork DOT	**Collected Date/Time**	07/30/2005 11:20
Client Sample ID	1192EF-073005-MW1	**Received Date/Time**	08/02/2005 9:00
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

DRO/RRO - LCSD does not meet QC criteria possibly due to lab error.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Diesel Range Organics	0.417 U	0.417	mg/L	AK102 SV	D		08/04/05	08/10/05	MCM
Surrogates									
5a Androstane <surr>	64.8		%	AK102 SV	D	50-150	08/04/05	08/10/05	MCM
Volatile Fuels Department									
Gasoline Range Organics	90.0 U	90.0	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
Benzene	0.500 U	0.500	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
Toluene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
Ethylbenzene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
P & M -Xylene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
o-Xylene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
Surrogates									
1,4-Difluorobenzene <surr>	99.1		%	AK101 8021B	A	74-120	08/11/05	08/12/05	MML
4-Bromofluorobenzene <surr>	89.9		%	AK101 8021B	A	50-150	08/11/05	08/12/05	MML

SGS

SGS Ref.#	1054579002	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/15/2005 11:43
Project Name/#	31-1-11192-012, East Fork DOT	**Collected Date/Time**	07/30/2005 10:30
Client Sample ID	1192EF-073005-MW2	**Received Date/Time**	08/02/2005 9:00
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

DRO/RRO - LCSD does not meet QC criteria possibly due to lab error.

DRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Diesel Range Organics	1.05	0.417	mg/L	AK102 SV	D		08/04/05	08/10/05	MCM
Surrogates									
5a Androstane <surr>	59.6		%	AK102 SV	D	50-150	08/04/05	08/10/05	MCM
Volatile Fuels Department									
Gasoline Range Organics	90.0 U	90.0	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
Benzene	0.500 U	0.500	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
Toluene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
Ethylbenzene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
P & M -Xylene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
o-Xylene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
Surrogates									
1,4-Difluorobenzene <surr>	98.6		%	AK101 8021B	A	74-120	08/11/05	08/12/05	MML
4-Bromofluorobenzene <surr>	87.4		%	AK101 8021B	A	50-150	08/11/05	08/12/05	MML

SGS

SGS Ref.#	1054579003	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/15/2005 11:43
Project Name/#	31-1-11192-012, East Fork DOT	**Collected Date/Time**	07/30/2005 12:00
Client Sample ID	1192EF-073005-MW4	**Received Date/Time**	08/02/2005 9:00
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

DRO/RRO - LCSD does not meet QC criteria possibly due to lab error.

DRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Diesel Range Organics	1.13	0.417	mg/L	AK102 SV	D		08/04/05	08/10/05	MCM
Surrogates									
5a Androstane <surr>	77.3		%	AK102 SV	D	50-150	08/04/05	08/10/05	MCM
Volatile Fuels Department									
Gasoline Range Organics	114	90.0	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
Benzene	0.500 U	0.500	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
Toluene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
Ethylbenzene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
P & M -Xylene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
o-Xylene	3.30	2.00	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
Surrogates									
1,4-Difluorobenzene <surr>	95.4		%	AK101 8021B	A	74-120	08/11/05	08/12/05	MML
4-Bromofluorobenzene <surr>	98.7		%	AK101 8021B	A	50-150	08/11/05	08/12/05	MML

SGS

SGS Ref.#	1054579004	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/15/2005 11:43
Project Name/#	31-1-11192-012, East Fork DOT	**Collected Date/Time**	07/30/2005 9:00
Client Sample ID	1192EF-073005-MW5	**Received Date/Time**	08/02/2005 9:00
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

DRO/RRO - LCSD does not meet QC criteria possibly due to lab error.

DRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Diesel Range Organics	2.28	0.400	mg/L	AK102 SV	D		08/04/05	08/10/05	MCM
Surrogates									
5a Androstane <surr>	76.6		%	AK102 SV	D	50-150	08/04/05	08/10/05	MCM
Volatile Fuels Department									
Gasoline Range Organics	90.0 U	90.0	ug/L	AK101 8021B	A		08/11/05	08/11/05	MML
Benzene	0.500 U	0.500	ug/L	AK101 8021B	A		08/11/05	08/11/05	MML
Toluene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/11/05	MML
Ethylbenzene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/11/05	MML
P & M -Xylene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/11/05	MML
o-Xylene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/11/05	MML
Surrogates									
1,4-Difluorobenzene <surr>	100		%	AK101 8021B	A	74-120	08/11/05	08/11/05	MML
4-Bromofluorobenzene <surr>	85.1		%	AK101 8021B	A	50-150	08/11/05	08/11/05	MML

SGS

SGS Ref.#	1054579005	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/15/2005 11:43
Project Name/#	31-1-11192-012, East Fork DOT	**Collected Date/Time**	07/30/2005 12:30
Client Sample ID	1192EF-073005-MW14	**Received Date/Time**	08/02/2005 9:00
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

DRO/RRO - LCSD does not meet QC criteria possibly due to lab error.

DRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Diesel Range Organics	1.17	0.417	mg/L	AK102 SV	D		08/04/05	08/10/05	MCM
Surrogates									
5a Androstane <surr>	72.4		%	AK102 SV	D	50-150	08/04/05	08/10/05	MCM
Volatile Fuels Department									
Gasoline Range Organics	111	90.0	ug/L	AK101 8021B	B		08/12/05	08/12/05	MML
Benzene	0.500 U	0.500	ug/L	AK101 8021B	B		08/12/05	08/12/05	MML
Toluene	2.00 U	2.00	ug/L	AK101 8021B	B		08/12/05	08/12/05	MML
Ethylbenzene	2.00 U	2.00	ug/L	AK101 8021B	B		08/12/05	08/12/05	MML
P & M -Xylene	2.00 U	2.00	ug/L	AK101 8021B	B		08/12/05	08/12/05	MML
o-Xylene	3.02	2.00	ug/L	AK101 8021B	B		08/12/05	08/12/05	MML
Surrogates									
1,4-Difluorobenzene <surr>	98.4		%	AK101 8021B	B	74-120	08/12/05	08/12/05	MML
4-Bromofluorobenzene <surr>	97		%	AK101 8021B	B	50-150	08/12/05	08/12/05	MML

SGS

SGS Ref.#	1054579006	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/15/2005 11:43
Project Name/#	31-1-11192-012, East Fork DOT	**Collected Date/Time**	07/30/2005 9:00
Client Sample ID	Trip Blank	**Received Date/Time**	08/02/2005 9:00
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	90.0 U	90.0	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
Benzene	0.500 U	0.500	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
Toluene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
Ethylbenzene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
P & M -Xylene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
o-Xylene	2.00 U	2.00	ug/L	AK101 8021B	A		08/11/05	08/12/05	MML
Surrogates									
1,4-Difluorobenzene <surr>	98.6		%	AK101 8021B	A	74-120	08/11/05	08/12/05	MML
4-Bromofluorobenzene <surr>	85.9		%	AK101 8021B	A	50-150	08/11/05	08/12/05	MML

SGS

CT&E Ref.#	647703	Method Blank	**Printed Date/Time**		08/16/2005 15:29
Client Name	Shannon & Wilson-Fairbanks		**Prep**	**Batch**	VXX14095
Project Name/#	31-1-11192-012, East Fork DOT			**Method**	SW5030B
Matrix	Water (Surface, Eff., Ground)			**Date**	08/11/2005

QC results affect the following production samples:

1054579001, 1054579002, 1054579003, 1054579004, 1054579006

Sample Remarks:

Parameter	Results	Reporting/Control Limit	Units	Analysis Date
Volatile Fuels Department				
Gasoline Range Organics	90.0 U	90.0	ug/L	08/11/05
Benzene	0.500 U	0.500	ug/L	08/11/05
Toluene	2.00 U	2.00	ug/L	08/11/05
Ethylbenzene	2.00 U	2.00	ug/L	08/11/05
P & M -Xylene	2.00 U	2.00	ug/L	08/11/05
o-Xylene	2.00 U	2.00	ug/L	08/11/05
Surrogates				
1,4-Difluorobenzene <surr>	99.4	74-120	%	08/11/05
4-Bromofluorobenzene <surr>	85.2	50-150	%	08/11/05

Batch VFC7258
Method AK101 8021B
Instrument HP 5890 Series II PID+FID VDA

SGS

SGS Ref.#	647704 Lab Control Sample	**Printed Date/Time**	08/16/2005 15:29
		Prep Batch	VXX14095
Client Name	Shannon & Wilson-Fairbanks	**Method**	SW5030B
Project Name/#	31-1-11192-012, East Fork DOT	**Date**	08/11/2005
Matrix	Water (Surface, Eff., Ground)		

QC results affect the following production samples:

1054579001, 1054579002, 1054579003, 1054579004, 1054579006

Sample Remarks:

LCS

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Gasoline Range Organics	LCS	383	86	(60-120)			448 ug/L	08/11/2005
Benzene	LCS	20.3	94	(79-115)			21.5 ug/L	08/11/2005
Toluene	LCS	70.2	96	(85-117)			72.9 ug/L	08/11/2005
Ethylbenzene	LCS	11.9	99	(81-120)			12.1 ug/L	08/11/2005
P & M -Xylene	LCS	45.7	97	(87-119)			47.1 ug/L	08/11/2005
o-Xylene	LCS	15.6	98	(85-114)			16 ug/L	08/11/2005
Surrogates								
1,4-Difluorobenzene <surr>	LCS		100	(74-120)			50 ug/L	08/11/2005
4-Bromofluorobenzene <surr>	LCS		89	(50-150)			50 ug/L	08/11/2005

Batch	VFC7258
Method	AK101 8021B
Instrument	HP 5890 Series II PID+FID VDA

SGS

SGS Ref.#	647705	Matrix Spike	**Printed Date/Time**		08/16/2005 15:29
	647706	Matrix Spike Duplicate	**Prep**	**Batch**	VXX14095
				Method	Volatile Fuels Extraction (W)
				Date	08/11/2005
Original	1054772002				
Matrix	Water (Surface, Eff., Ground)				

QC results affect the following production samples:

1054579001, 1054579002, 1054579003, 1054579004, 1054579006

Sample Remarks:

MS

MSD

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department									
Gasoline Range Organics	MS	90.0 U	344	77	(60-120)			448	ug/L 08/11/2005
	MSD		321	72		7	(< 20)	448	ug/L 08/11/2005
Benzene	MS	0.500 U	19.1	89	(79-115)			21.5	ug/L 08/11/2005
	MSD		19	88		1	(< 20)	21.5	ug/L 08/11/2005
Toluene	MS	2.00 U	66.9	92	(85-117)			72.9	ug/L 08/11/2005
	MSD		66.9	92		0	(< 20)	72.9	ug/L 08/11/2005
Ethylbenzene	MS	2.00 U	11.2	92	(81-120)			12.1	ug/L 08/11/2005
	MSD		11.1	92		0	(< 20)	12.1	ug/L 08/11/2005
P & M -Xylene	MS	2.00 U	43.3	92	(87-119)			47.1	ug/L 08/11/2005
	MSD		43.3	92		0	(< 20)	47.1	ug/L 08/11/2005
o-Xylene	MS	2.00 U	14.8	93	(85-114)			16	ug/L 08/11/2005
	MSD		15	94		1	(< 20)	16	ug/L 08/11/2005
Surrogates									
1,4-Difluorobenzene <surr>	MS		50.5	101	(74-120)			50	ug/L 08/11/2005
	MSD		49.6	99		2		50	ug/L 08/11/2005
4-Bromofluorobenzene <surr>	MS		43.6	87	(50-150)			50	ug/L 08/11/2005
	MSD		43.8	88		0		50	ug/L 08/11/2005

Batch VFC7258
Method AK101 8021B
Instrument HP 5890 Series II PID+FID VDA

SGS

CT&E Ref.#	648102 Method Blank	**Printed Date/Time**	08/16/2005 15:29
Client Name	Shannon & Wilson-Fairbanks	**Prep Batch**	VXX14108
Project Name/#	31-1-11192-012, East Fork DOT	**Method**	SW5030B
Matrix	Water (Surface, Eff., Ground)	**Date**	08/12/2005

QC results affect the following production samples:

1054579005

Sample Remarks:

Parameter	Results	Reporting/Control Limit	Units	Analysis Date
Volatile Fuels Department				
Gasoline Range Organics	90.0 U	90.0	ug/L	08/12/05
Benzene	0.500 U	0.500	ug/L	08/12/05
Toluene	2.00 U	2.00	ug/L	08/12/05
Ethylbenzene	2.00 U	2.00	ug/L	08/12/05
P & M -Xylene	2.00 U	2.00	ug/L	08/12/05
o-Xylene	2.00 U	2.00	ug/L	08/12/05
Surrogates				
1,4-Difluorobenzene <surr>	97.5	74-120	%	08/12/05
4-Bromofluorobenzene <surr>	84.1	50-150	%	08/12/05

Batch VFC7263
Method AK101 8021B
Instrument HP 5890 Series II PID+FID VDA

SGS

SGS Ref.#	648103 Lab Control Sample	**Printed Date/Time**	08/16/2005 15:29
		Prep Batch	VXX14108
Client Name	Shannon & Wilson-Fairbanks	**Method**	SW5030B
Project Name/#	31-1-11192-012, East Fork DOT	**Date**	08/12/2005
Matrix	Water (Surface, Eff., Ground)		

QC results affect the following production samples:

1054579005

Sample Remarks:

LCS

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Gasoline Range Organics	LCS	370	83	(60-120)			448 ug/L	08/12/2005
Benzene	LCS	20.1	94	(79-115)			21.5 ug/L	08/12/2005
Toluene	LCS	70.2	96	(85-117)			72.9 ug/L	08/12/2005
Ethylbenzene	LCS	11.9	98	(81-120)			12.1 ug/L	08/12/2005
P & M -Xylene	LCS	45.6	97	(87-119)			47.1 ug/L	08/12/2005
o-Xylene	LCS	15.7	98	(85-114)			16 ug/L	08/12/2005
Surrogates								
1,4-Difluorobenzene <surr>	LCS		100	(74-120)			50 ug/L	08/12/2005
4-Bromofluorobenzene <surr>	LCS		87	(50-150)			50 ug/L	08/12/2005

Batch	VFC7263
Method	AK101 8021B
Instrument	HP 5890 Series II PID+FID VDA

SGS

SGS Ref.#	648104	Matrix Spike	**Printed Date/Time**		08/16/2005 15:29
	648105	Matrix Spike Duplicate	**Prep**	**Batch**	VXX14108
				Method	Volatile Fuels Extraction (W)
				Date	08/12/2005
Original	1054937008				
Matrix	Water (Surface, Eff., Ground)				

QC results affect the following production samples:

1054579005

Sample Remarks:

MS

MSD

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department									
Gasoline Range Organics	MS	90.0 U	324	72	(60-120)			448	ug/L 08/12/2005
	MSD		365	82		12	(< 20)	448	ug/L 08/12/2005
Benzene	MS	0.500 U	18	84	(79-115)			21.5	ug/L 08/12/2005
	MSD		20.1	93		11	(< 20)	21.5	ug/L 08/12/2005
Toluene	MS	2.00 U	63.2	87	(85-117)			72.9	ug/L 08/12/2005
	MSD		70.4	97		11	(< 20)	72.9	ug/L 08/12/2005
Ethylbenzene	MS	2.00 U	10.6	88	(81-120)			12.1	ug/L 08/12/2005
	MSD		11.8	98		11	(< 20)	12.1	ug/L 08/12/2005
P & M -Xylene	MS	2.00 U	40.9	87*	(87-119)			47.1	ug/L 08/12/2005
	MSD		45.6	97		11	(< 20)	47.1	ug/L 08/12/2005
o-Xylene	MS	2.00 U	14.1	88	(85-114)			16	ug/L 08/12/2005
	MSD		15.6	98		11	(< 20)	16	ug/L 08/12/2005
Surrogates									
1,4-Difluorobenzene <surr>	MS		49.7	99	(74-120)			50	ug/L 08/12/2005
	MSD		49.8	100		0		50	ug/L 08/12/2005
4-Bromofluorobenzene <surr>	MS		44.2	89	(50-150)			50	ug/L 08/12/2005
	MSD		44	88		1		50	ug/L 08/12/2005

Batch VFC7263
Method AK101 8021B
Instrument HP 5890 Series II PID+FID VDA

SGS

CT&E Ref.#	645030 Method Blank	**Printed Date/Time**	08/16/2005 15:29
Client Name	Shannon & Wilson-Fairbanks	**Prep Batch**	XXX15497
Project Name/#	31-1-11192-012, East Fork DOT	**Method**	SW3510C
Matrix	Water (Surface, Eff., Ground)	**Date**	08/04/2005

QC results affect the following production samples:

1054579003

Sample Remarks:

RRO - MB result is greater than on half of the PQL but less than PQL.

Parameter	Results	Reporting/Control Limit	Units	Analysis Date
Semivolatile Organic Fuels Department				
Diesel Range Organics	0.300 U	0.300	mg/L	08/06/05
Residual Range Organics	0.316F	0.500	mg/L	08/06/05
Surrogates				
5a Androstane <surr>	83.9	60-120	%	08/06/05
n-Triacontane-d62 <surr>	97	60-120	%	08/06/05

Batch XFC6701
Method AK102/103
Instrument HP 5890 Series II FID SV D F

SGS

SGS Ref.#	645031	Lab Control Sample	**Printed Date/Time**	08/16/2005	15:29
	645032	Lab Control Sample Duplicate	**Prep Batch**	XXX15497	
Client Name	Shannon & Wilson-Fairbanks		**Method**	SW3510C	
Project Name/#	31-1-11192-012, East Fork DOT		**Date**	08/04/2005	
Matrix	Water (Surface, Eff., Ground)				

QC results affect the following production samples:

1054579003

Sample Remarks:

LCS

LCSD DRO/RRO - LCSD does not meet QC criteria. Volume appeared low (.530 µL) sample possibly concentrated.

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Semivolatile Organic Fuels Department								
Diesel Range Organics	LCS	0.833	83	(75-125)			1 mg/L	08/06/2005
	LCSD	1.22	122		37 *	(< 20)	1 mg/L	08/06/2005
Residual Range Organics	LCS	1.01	101	(60-120)			1 mg/L	08/06/2005
	LCSD	1.57	157 *		44 *	(< 20)	1 mg/L	08/06/2005
Surrogates								
5a Androstane <surr>	LCS		85	(60-120)			0.1 mg/L	08/06/2005
	LCSD		125 *		99		0.2 mg/L	08/06/2005
n-Triacontane-d62 <surr>	LCS		77	(60-120)			0.1 mg/L	08/06/2005
	LCSD		120		102		0.2 mg/L	08/06/2005

Batch	XFC6701
Method	AK102/103
Instrument	HP 5890 Series II FID SV D F

SGS

CT&E Ref.#	646436 Method Blank	**Printed Date/Time**	08/16/2005 15:29
Client Name	Shannon & Wilson-Fairbanks	**Prep Batch**	XXX15529
Project Name/#	31-1-11192-012, East Fork DOT	**Method**	SW3510C
Matrix	Water (Surface, Eff., Ground)	**Date**	08/04/2005

QC results affect the following production samples:

1054579001, 1054579002, 1054579003, 1054579004, 1054579005

Sample Remarks:

Parameter	Results	Reporting/Control Limit	Units	Analysis Date
Semivolatile Organic Fuels Department				
Diesel Range Organics	0.0157F	0.0500	mg/L	08/10/05
Residual Range Organics	0.220	* 0.125	mg/L	08/10/05
Surrogates				
5a Androstane <surr>	75.8	60-120	%	08/10/05
n-Triacontane-d62 <surr>	94.7	60-120	%	08/10/05

Batch XFC6706
Method AK102/103 SV
Instrument HP 5890 Series II FID SV C F

SGS

SGS Ref.#	646437	Lab Control Sample	**Printed Date/Time**	08/16/2005	15:29
	646438	Lab Control Sample Duplicate	**Prep Batch**	XXX15529	
Client Name	Shannon & Wilson-Fairbanks		**Method**	SW3510C	
Project Name/#	31-1-11192-012, East Fork DOT		**Date**	08/04/2005	
Matrix	Water (Surface, Eff., Ground)				

QC results affect the following production samples:

1054579001, 1054579002, 1054579003, 1054579004, 1054579005

Sample Remarks:

LCS

LCSD DRO/RRO - LCSD does not meet QC criteria. Volume appeared low (.530 µL) sample possibly concentrated.

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Semivolatile Organic Fuels Department								
Diesel Range Organics	LCS	0.851	85	(75-125)			1 mg/L	08/10/2005
	LCSD	1.42	142 *		50 *	(< 20)	1 mg/L	08/10/2005
Residual Range Organics	LCS	1.12	112	(60-120)			1 mg/L	08/10/2005
	LCSD	1.75	175 *		44 *	(< 20)	1 mg/L	08/10/2005
Surrogates								
5a Androstane <surr>	LCS		85	(60-120)			0.1 mg/L	08/10/2005
	LCSD		285 *		108		0.1 mg/L	08/10/2005
n-Triacontane-d62 <surr>	LCS		77	(60-120)			0.1 mg/L	08/10/2005
	LCSD		265 *		110		0.1 mg/L	08/10/2005

Batch	XFC6706
Method	AK102/103 SV
Instrument	HP 5890 Series II FID SV C F