

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



FOR OGCC USE ONLY

#6796

RECEIVED
12/9/2011

OGCC Employee:

☒ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No: 2 2 2 1 2 6 8

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☒ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☐ Other (describe): Pit Remediation

OGCC Operator Number: 96850

Name of Operator: Williams Production RMT Company

Address: 1058 County Road 215

City: Parachute State: CO Zip: 81635

Contact Name and Telephone:

Karolina Blaney

No: 970-683-2295

Fax: 970-285-9573

API Number: N/A

County: Garfield

Facility Name: Diamond Elk Centralized Frac Location 1

Facility Number: 421196

Well Name: Diamond Elk Centralized Frac Location 1

Well Number: GV 88-1

Location: (QtrQtr, Sec, Twp, Rng, Meridian): NWSE, Sec 1, T7S, R95W, 6th PM Latitude: 39.463653 Longitude: -107.944617

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☒ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Rangeland, Crop Land

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Vale silt loam - Silty to silty clay loam

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Cottonwood Creek lies approximately 2070 feet to the southwest

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):

☒ Soils

☐ Vegetation

☐ Groundwater

☐ Surface Water

Extent of Impact:

See attached document

How Determined:

Visual observations, field screening, and analytical analysis

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

See attached document

Describe how source is to be removed:

See attached document

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

See attached document



Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

Page 2

REMEDIATION WORKPLAN (Cont.)

OGCC Employee: _____

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

See attached document

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

See attached document

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☐ Y ☒ N If yes, describe:

See attached document

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

See attached document

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: October 15, 2011 Date Site Investigation Completed: October 15, 2011 Date Remediation Plan Submitted: N/A
Remediation Start Date: October 31, 2011 Anticipated Completion Date: November 11, 2011 Actual Completion Date: November 11, 2011

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Karolina Blaney

Signed: _____

Title: Environmental Specialist

Date: December 8, 2011

OGCC Approved: _____

Title: FOR Chris Canfield

EPS NW Region

Date: 01/26/2012

***WILLIAMS PRODUCTION RMT COMPANY
SOUTH PARACHUTE
WILLIAMS DIAMOND ELK CENTRALIZED FRAC LOCATION 1
(A.K.A. GV 88-1 FRAC PIT)***

December 2011

Prepared For:



1058 County Road 215
P.O. Box 370
Parachute, Colorado 81635

Prepared By:



744 Horizon Court, Suite 140
Grand Junction, CO 81506
Phone: 970-243-3271
Fax: 970-243-3280

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Form 27 Attachment

Introduction

The purpose of this Form 27 report– for the remediation of Williams’ Diamond Elk Centralized Frac Location 1 [COGCC Facility ID# 421196; hereinafter also referred to as Grand Valley (GV) 88-1 Pit] –is to provide detailed information and findings analysis for the potential remediation of soils within the pit due to a tear in the liner. The deficiency was discovered during routine liner inspection and maintenance and cursory review required further investigation of the sub-liner soils to determine the level of potential impact.

A Form 19 was submitted to the COGCC on November 10, 2011 and issued a spill tracking number on the same day (Spill Tracking # 2221268). Based upon inspection of the liner, it was determined that the pit liner would be removed and impacted soils below excavated until concentrations met COGCC Table 910-1 criteria.

Evacuation of Pit Contents

Remaining pit contents/sludge was removed from the pit using hydro-vac trucks and placed in a lined bermed containment to have free liquids removed via filter press.

The filter press sludge was placed into the aforementioned bermed containment cell pending either disposal or treatment options.

Pit Liner Removal

Removal of the pit liners consisted of a crew cutting the liner along the crest of the pit at an elevation adjacent to the surface of the well pad. A trackhoe bucket was utilized to grab sections of the liner for extraction and place them in a lined earthen bermed containment cell for subsequent management. Sections of liner that contained residual or trace amounts of sludge were pulled, placed into the containment cell, and allowed to dry. Liners were stored in a lined earthen bermed containment until being banded to pallets to be recycled.

Subliner Soil Investigation and Activities

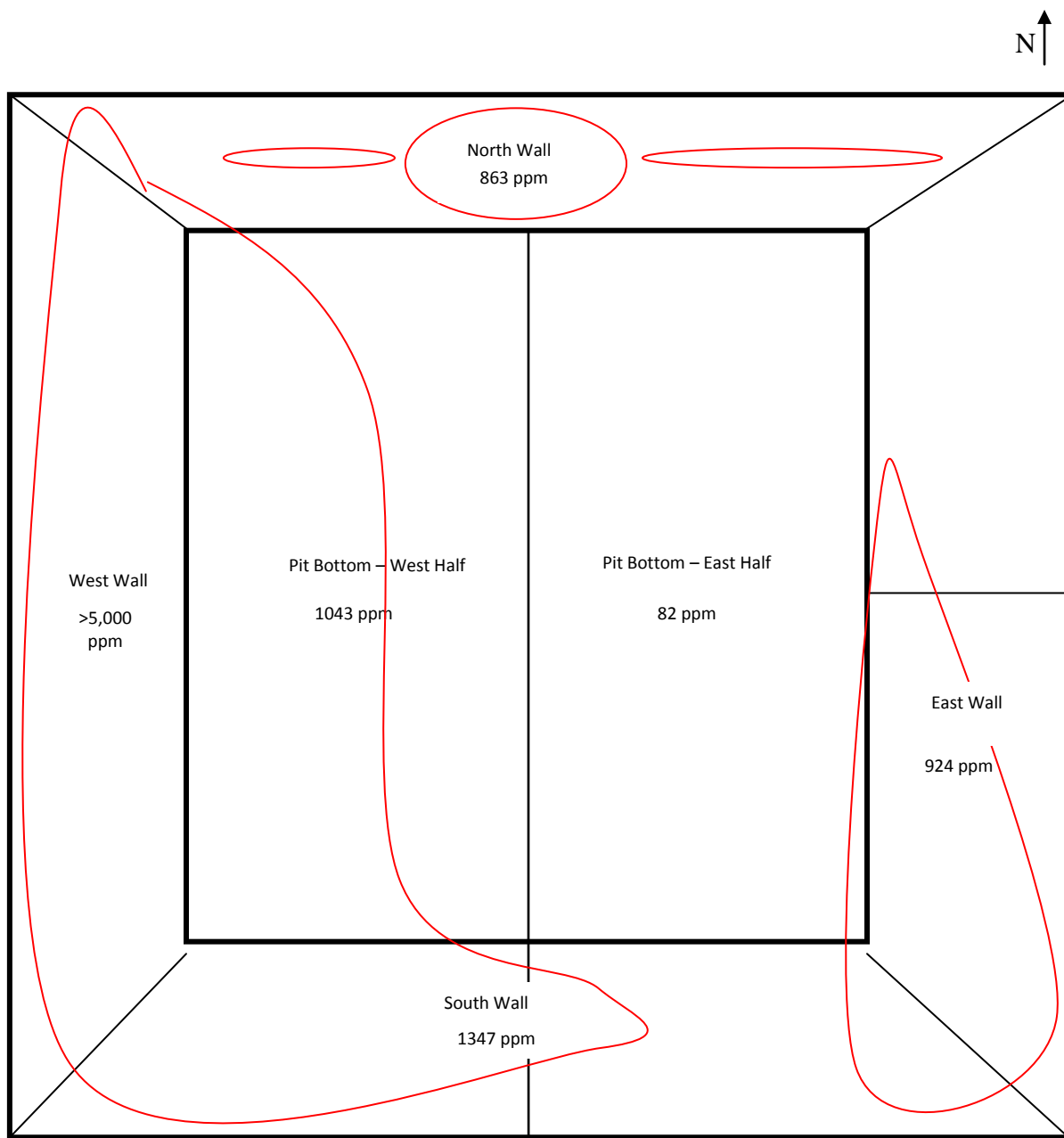
Subliner soils, examined below the pit lining, were inspected visually and through the use of specialized field screening equipment (identified below) to identify areas which may exceed standards set forth in Table 910-1 of the COGCC 900-Series Rule for hydrocarbons within the soil. Soils below the second lining system, on the south wall, were stained black and red, and contained a moderate hydrocarbon odor. These visual and olfactory observations suggest that there may have been impacts to the subliner soils.

Field screening of the pit footprint and walls was performed along the entire pit in a sectional grid pattern. The pit bottom was separated into two sections. From each of the half sections, a

five-point composite sample was collected from a depth of 0-6 inches below the surface at the lowest point of the section and analyzed utilizing a PetroFlag hydrocarbon detector (PetroFlag[®]) unit. In addition to the bottom, a five-point composite sample was collected from each of the pit walls and field screened for hydrocarbons. Grab samples were collected from each section to provide laboratory confirmation of field screen results.

Figure 1 outlines the pit sampling nomenclature and field screening results using a PetroFlag[®] unit. Figure 2 is a GIS map of the pit outlining the impacted south wall of the pit.

Figure 1
Pit Surface PetroFlag Results and Pit Sampling ID Layout



Note: All results are in mg/kg

Red arcs indicate areas that contained staining on top of the soil

Table 1: PetroFlag Hydrocarbon Screening Results at Various Depths

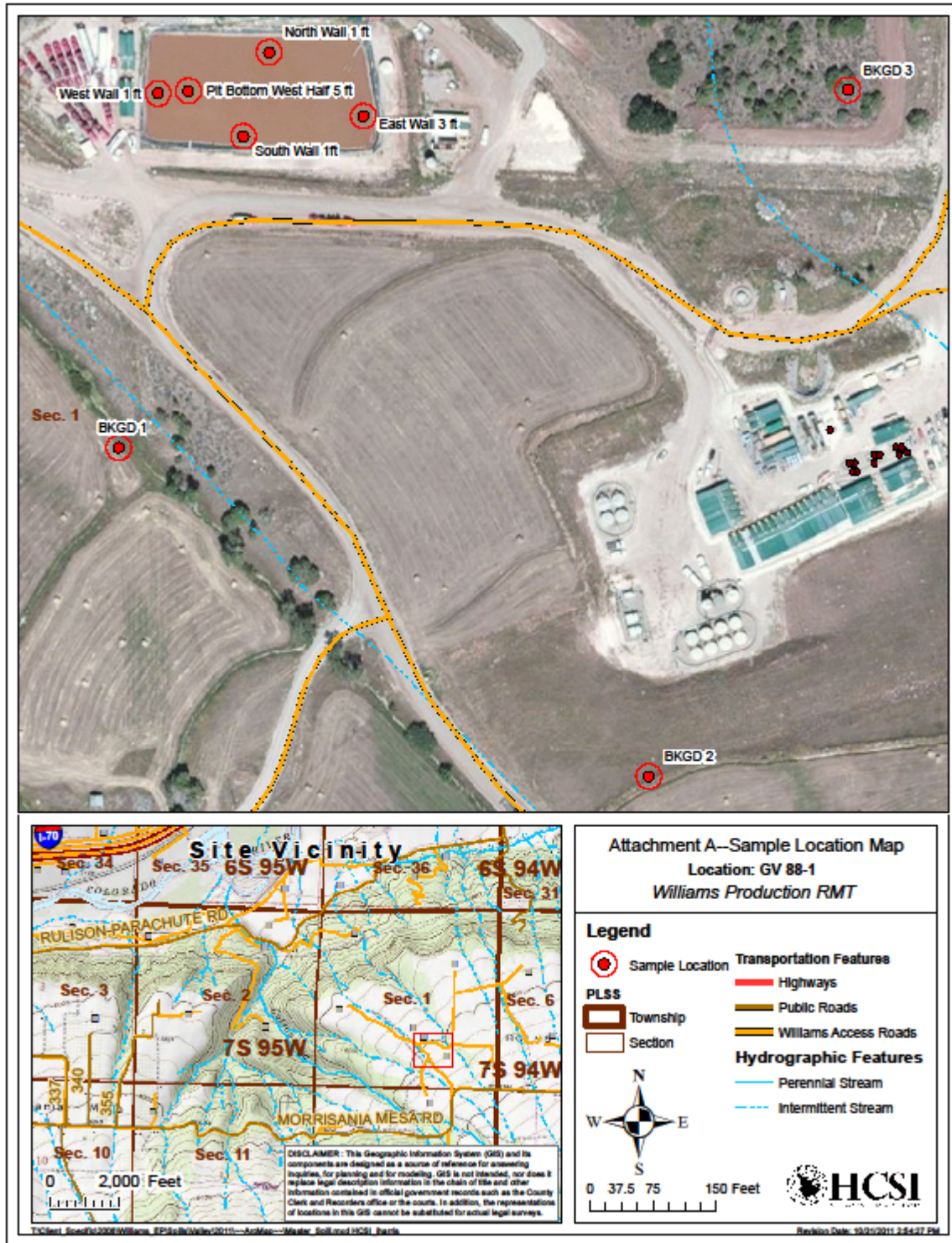
Sample ID	Results @ Surface	Results @ 1 ft	Results @ 2 ft	Results @ 5 ft
South Wall	1347	46	NS	NS
North Wall	863	94	NS	NS
West Wall	>5000	111	NS	NS
East Wall	924	10	NS	NS
Pit Bottom – West Half	1043	636	2372	352
Pit Bottom – East Half	82	NS	NS	NS

Note: All results are in mg/kg

NS = Not Sampled; previous field screening results indicate that soils were below COGCC Table 910-1 standards

Highlighted numbers indicate areas that warranted additional inspection and analysis

Figure 2: GIS Map of Sampling Locations



Field screening results are provided in Table 1 indicate that remediation was required on all of the pit walls and the western pit bottom due to TPH concentrations likely being above COGCC Table 910-1 standards.

Remediation Activities

Soil exhibiting dark stains and a hydrocarbon odor were located in the southwestern and southeastern corners, then entire length of the western wall, as well as the western half of the pit bottom. These conditions indicate a potential presence of hydrocarbon contaminants in concentrations which exceed 500 ppm, and thus initiated active remediation. Field screening results confirmed that soils on the pit walls and western pit bottom exceeded COGCC Table 910-1 for hydrocarbons. All impacted soils extended vertically approximately 1 foot on the south, north, and western wall, and 3 feet on the eastern wall where discoloration within soil was no longer present at the excavated depth and field screening results indicated that hydrocarbon concentrations were below 500 ppm. The western half of the pit bottom was excavated to a vertical maximum of 5 feet, where soil staining was no longer present and field screening results indicated hydrocarbon concentrations below 500 ppm. Per rule 910.b.(3).C, a reduced list of constituents was approved by the COGCC on November 18, 2011 via e-mail, to remove metals analysis from the confirmation sampling criteria and arsenic criteria within background samples.

- Confirmation samples, in accordance with Rule 905.b.(4), were collected from the south wall at a position that was centered vertically and horizontally. These samples were collected for confirmation of compliance with COGCC Rule 910 and Table 910-1; as well as verification of field screening analysis. Two (2) additional grab samples were collected from the base of the pit, dividing the bottom of the pit into halves, which included the low point of the base, to demonstrate compliance in accordance with Rule 905.b.(1).
- A Trimble Geo XT 2008 was used to satisfy requirements outlined in COGCC Rule 215 for collecting GPS locations of each confirmation sample location within the pit footprint.

Confirmation samples indicated that soils on all of the walls and the western half of the pit bottom, post excavation, met COGCC Table 910-1 criteria and required no additional excavation.

Sample Analysis

See attached Table 2 (additional detail provided in Appendix 1) for summary of pit bottom and southern wall raw analytical results, and Table 3 (additional detail provided in Appendix 2) which provides raw analytical results for background analytical sampling.

Background Sampling

Three samples were collected from the up-gradient undisturbed hillside surrounding the pad and analyzed for inorganic parameters of COGCC Table 910-1(i.e. SAR, EC, pH). Because of rule 910.b.(3).C, based on site specific conditions and process knowledge, the COGCC gave prior approval for a reduced list of parameters on November 18, 2011 via e-mail, which omitted 910-1 metals analysis from pit confirmation samples as well as background arsenic sampling. Refer to Table 3 and Appendix 2 for background sampling results.

Management of Stockpiled Material

The pit liner was segregated according to material and placed in a lined earthen bermed containment. Plastic lining material was placed in the south end of the containment and felt liners were placed on the north end. High Plains Services collected and compressed the liners, and bound them to pallets for transportation to be recycled.

Excavated soils from the pit walls and bottom were placed in a stockpile pending profiling for subsequent management: 1) disposal, or 2) treatment through the use of bioremediation technologies.

Analytical Data Management

See Appendix 1 for post excavated pit walls and western bottom raw analytical data and Appendix 2 for background analytical data.

Figures

Figure 3



Visual representation of the pit bottom and walls facing northeast during excavation

Summary Tables

Table 2: Post Excavation Eastern Pit Bottom and Pit Wall Analytical Results

Post Excavation of Pit Walls and Bottom	Pit Bottom – West Half @ 5 ft	South Wall @ 1 ft	North Wall	East Wall @ 3 ft	West Wall @ 1 ft
TEPH (DRO)	ND	53	19	8.1	91
TVPH (GRO)	ND	ND	ND	ND	ND
BENZENE	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
XYLENE TOTAL	ND	ND	ND	ND	ND
ACENAPHTHENE	ND	ND	ND	ND	ND
ACENAPHTHYLENE	ND	ND	ND	ND	ND
ANTHRACENE	ND	ND	ND	ND	ND
BENZO(A)ANTHRACENE	ND	ND	ND	ND	ND
BENZO(A)PYRENE	ND	ND	ND	ND	ND
BENZO(B)FLUORANTHENE	ND	ND	ND	ND	ND
BENZO(G,H,I)PERYLENE	ND	ND	ND	ND	ND
BENZO(K)FLUORANTHENE	ND	ND	ND	ND	ND
CHRYSENE	ND	ND	ND	ND	ND
DIBENZO(A,H)ANTHRACENE	ND	ND	ND	ND	ND
FLUORANTHENE	ND	ND	ND	ND	ND
FLUORENE	ND	ND	ND	ND	ND
INDENO(1,2,3-CD)PYRENE	ND	ND	ND	ND	ND
NAPHTHALENE	ND	110	ND	ND	ND
PYRENE	ND	ND	ND	ND	ND
Sodium Absorbtion Ratio (unitless)	162.5	416.7	416.6	337	356.2
Electric Conductivity (mmhos/cm)	10.17	10.11	9.08	6.81	8.17
pH (unitless)	8.67	8.58	9.24	9.22	8.92

Note: all results are in, mg/kg = milligram per kilogram, unless noted

Table 3: Background Analytical Data

	Sodium Absorption Ratio (unitless)	Electro Conductivity (mmhos/cm)	pH (unitless)
BKGD 3	0.5	0.43	8.48

All results are in, mg/kg = milligram per kilogram, unless noted otherwise

Appendix 1: Pit Walls and Western Pit Bottom Raw Analytical Data



30-Nov-2011

Kris Rowe
HRL Compliance Solutions
744 Horizon Ct. Suite 140
Grand Junction, CO 81506

Re: **Williams GV 88-1 Production Pit 1/3/11**

Work Order: **1111234**
Revision: **1**

Dear Kris,

ALS Environmental received 8 samples on 05-Nov-2011 10:30 AM for the analyses presented in the following report.

This is a REVISED REPORT. The Case Narrative provides information discussing the reason for issuing a revised report. The total number of pages in this revision is 41.

If you have any questions regarding these test results, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Alex Csaszar

Ann Preston
Project Manager



Certificate No: IL100452

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: HRL Compliance Solutions
Project: Williams GV 88-1 Production Pit 1/3/11
Work Order: 1111234

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1111234-01	East Wall 3 ft	Soil		11/3/2011 09:05	11/5/2011 10:30	<input type="checkbox"/>
1111234-02	South Wall 1 ft	Soil		11/3/2011 09:15	11/5/2011 10:30	<input type="checkbox"/>
1111234-03	West Wall 1 ft	Soil		11/3/2011 09:25	11/5/2011 10:30	<input type="checkbox"/>
1111234-04	North Wall 1 ft	Soil		11/3/2011 09:35	11/5/2011 10:30	<input type="checkbox"/>
1111234-05	Pit Bottom West Half 5 ft	Soil		11/4/2011 09:45	11/5/2011 10:30	<input type="checkbox"/>
1111234-06	BKGD 1	Soil		11/3/2011 10:15	11/5/2011 10:30	<input type="checkbox"/>
1111234-07	BKGD 2	Soil		11/3/2011 10:20	11/5/2011 10:30	<input type="checkbox"/>
1111234-08	BKGD 3	Soil		11/3/2011 10:25	11/5/2011 10:30	<input type="checkbox"/>

Client: HRL Compliance Solutions
Project: Williams GV 88-1 Production Pit 1/3/11
Work Order: 1111234

Case Narrative

Batch 37225 MS/MSD data for Metals is not related to this project's samples.

Batch 37239 sample East Wall 3 ft MS/MSD recoveries for Hexavalent Chromium were below control limits. The corresponding reporting limit in the parent sample may be biased low for this compound.

Revised report was issued per client's request. Analytical needs changed on 8 locations.

Client: HRL Compliance Solutions
Project: Williams GV 88-1 Production Pit 1/3/11
WorkOrder: 1111234

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
SD	Serial Dilution
TDL	Target Detection Limit

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
µg/Kg-dry as noted	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight
s.u.	Standard Units

ALS Group USA, Corp

Date: 30-Nov-11

Client: HRL Compliance Solutions

Project: Williams GV 88-1 Production Pit 1/3/11

Work Order: 1111234

Sample ID: East Wall 3 ft

Lab ID: 1111234-01

Collection Date: 11/3/2011 09:05 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	8.1		SW8015M		Prep Date: 11/7/2011	Analyst: RM
			4.7	mg/Kg-dry	1	11/8/2011 03:09 AM
Surr: 4-Terphenyl-d14	80.7		39-115	%REC	1	11/8/2011 03:09 AM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015			Analyst: JD
			5.7	mg/Kg-dry	100	11/7/2011 11:57 AM
Surr: Toluene-d8	99.5		50-150	%REC	100	11/7/2011 11:57 AM
SUBCONTRACTED ANALYSES						
Subcontracted Analyses	Rcvd 11/10/11		SUBCONTRACT			Analyst: A&LGL
			as noted		1	11/10/2011
SEMI-VOLATILE ORGANIC COMPOUNDS						
SW8270					Prep Date: 11/7/2011	Analyst: JJ
Acenaphthene	ND		34	µg/Kg-dry	1	11/8/2011 10:18 AM
Anthracene	ND		34	µg/Kg-dry	1	11/8/2011 10:18 AM
Benzo(a)anthracene	ND		34	µg/Kg-dry	1	11/8/2011 10:18 AM
Benzo(a)pyrene	ND		34	µg/Kg-dry	1	11/8/2011 10:18 AM
Benzo(b)fluoranthene	ND		34	µg/Kg-dry	1	11/8/2011 10:18 AM
Benzo(g,h,i)perylene	ND		34	µg/Kg-dry	1	11/8/2011 10:18 AM
Benzo(k)fluoranthene	ND		34	µg/Kg-dry	1	11/8/2011 10:18 AM
Chrysene	ND		34	µg/Kg-dry	1	11/8/2011 10:18 AM
Dibenzo(a,h)anthracene	ND		34	µg/Kg-dry	1	11/8/2011 10:18 AM
Fluoranthene	ND		34	µg/Kg-dry	1	11/8/2011 10:18 AM
Fluorene	ND		34	µg/Kg-dry	1	11/8/2011 10:18 AM
Indeno(1,2,3-cd)pyrene	ND		34	µg/Kg-dry	1	11/8/2011 10:18 AM
Naphthalene	ND		34	µg/Kg-dry	1	11/8/2011 10:18 AM
Pyrene	ND		34	µg/Kg-dry	1	11/8/2011 10:18 AM
Surr: 2,4,6-Tribromophenol	92.0		34-140	%REC	1	11/8/2011 10:18 AM
Surr: 2-Fluorobiphenyl	55.3		12-100	%REC	1	11/8/2011 10:18 AM
Surr: 2-Fluorophenol	71.9		33-117	%REC	1	11/8/2011 10:18 AM
Surr: 4-Terphenyl-d14	94.2		25-137	%REC	1	11/8/2011 10:18 AM
Surr: Nitrobenzene-d5	58.1		37-107	%REC	1	11/8/2011 10:18 AM
Surr: Phenol-d6	65.2		40-106	%REC	1	11/8/2011 10:18 AM
VOLATILE ORGANIC COMPOUNDS						
SW8260						Analyst: BG
Benzene	ND		110	µg/Kg-dry	100	11/8/2011 09:47 AM
Ethylbenzene	ND		230	µg/Kg-dry	100	11/8/2011 09:47 AM
m,p-Xylene	ND		230	µg/Kg-dry	100	11/8/2011 09:47 AM
o-Xylene	ND		110	µg/Kg-dry	100	11/8/2011 09:47 AM
Toluene	ND		170	µg/Kg-dry	100	11/8/2011 09:47 AM
Xylenes, Total	ND		340	µg/Kg-dry	100	11/8/2011 09:47 AM
Surr: 1,2-Dichloroethane-d4	96.8		70-120	%REC	100	11/8/2011 09:47 AM
Surr: 4-Bromofluorobenzene	99.4		75-120	%REC	100	11/8/2011 09:47 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

ALS Group USA, Corp

Date: 30-Nov-11

Client: HRL Compliance Solutions

Project: Williams GV 88-1 Production Pit 1/3/11

Work Order: 1111234

Sample ID: East Wall 3 ft

Lab ID: 1111234-01

Collection Date: 11/3/2011 09:05 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: Dibromofluoromethane	97.6		85-115	%REC	100	11/8/2011 09:47 AM
Surr: Toluene-d8	96.8		85-115	%REC	100	11/8/2011 09:47 AM
MOISTURE			A2540 G			Analyst: CG
Moisture	12		0.050	% of sample	1	11/7/2011 05:15 PM
PH			SW9045D			Analyst: JJG
pH	9.22			s.u.	1	11/7/2011 10:05 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

ALS Group USA, Corp

Date: 30-Nov-11

Client: HRL Compliance Solutions
Project: Williams GV 88-1 Production Pit 1/3/11
Sample ID: South Wall 1 ft
Collection Date: 11/3/2011 09:15 AM

Work Order: 1111234
Lab ID: 1111234-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	53		SW8015M		Prep Date: 11/7/2011	Analyst: RM
Surr: 4-Terphenyl-d14	63.3		39-115	%REC	1	11/8/2011 03:31 AM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015			Analyst: JD
Surr: Toluene-d8	92.9		50-150	%REC	100	11/7/2011 12:22 PM
SUBCONTRACTED ANALYSES						
Subcontracted Analyses	Rcvd 11/10/11		SUBCONTRACT	as noted	1	Analyst: A&LGL
SEMI-VOLATILE ORGANIC COMPOUNDS						
SW8270					Prep Date: 11/7/2011	Analyst: JJ
Acenaphthene	ND		36	µg/Kg-dry	1	11/8/2011 10:51 AM
Anthracene	ND		36	µg/Kg-dry	1	11/8/2011 10:51 AM
Benzo(a)anthracene	ND		36	µg/Kg-dry	1	11/8/2011 10:51 AM
Benzo(a)pyrene	ND		36	µg/Kg-dry	1	11/8/2011 10:51 AM
Benzo(b)fluoranthene	ND		36	µg/Kg-dry	1	11/8/2011 10:51 AM
Benzo(g,h,i)perylene	ND		36	µg/Kg-dry	1	11/8/2011 10:51 AM
Benzo(k)fluoranthene	ND		36	µg/Kg-dry	1	11/8/2011 10:51 AM
Chrysene	ND		36	µg/Kg-dry	1	11/8/2011 10:51 AM
Dibenzo(a,h)anthracene	ND		36	µg/Kg-dry	1	11/8/2011 10:51 AM
Fluoranthene	ND		36	µg/Kg-dry	1	11/8/2011 10:51 AM
Fluorene	ND		36	µg/Kg-dry	1	11/8/2011 10:51 AM
Indeno(1,2,3-cd)pyrene	ND		36	µg/Kg-dry	1	11/8/2011 10:51 AM
Naphthalene	110		36	µg/Kg-dry	1	11/8/2011 10:51 AM
Pyrene	ND		36	µg/Kg-dry	1	11/8/2011 10:51 AM
Surr: 2,4,6-Tribromophenol	102		34-140	%REC	1	11/8/2011 10:51 AM
Surr: 2-Fluorobiphenyl	62.7		12-100	%REC	1	11/8/2011 10:51 AM
Surr: 2-Fluorophenol	75.4		33-117	%REC	1	11/8/2011 10:51 AM
Surr: 4-Terphenyl-d14	99.6		25-137	%REC	1	11/8/2011 10:51 AM
Surr: Nitrobenzene-d5	59.1		37-107	%REC	1	11/8/2011 10:51 AM
Surr: Phenol-d6	68.4		40-106	%REC	1	11/8/2011 10:51 AM
VOLATILE ORGANIC COMPOUNDS						
SW8260						Analyst: BG
Benzene	ND		120	µg/Kg-dry	100	11/8/2011 10:13 AM
Ethylbenzene	ND		240	µg/Kg-dry	100	11/8/2011 10:13 AM
m,p-Xylene	ND		240	µg/Kg-dry	100	11/8/2011 10:13 AM
o-Xylene	ND		120	µg/Kg-dry	100	11/8/2011 10:13 AM
Toluene	ND		180	µg/Kg-dry	100	11/8/2011 10:13 AM
Xylenes, Total	ND		360	µg/Kg-dry	100	11/8/2011 10:13 AM
Surr: 1,2-Dichloroethane-d4	96.6		70-120	%REC	100	11/8/2011 10:13 AM
Surr: 4-Bromofluorobenzene	99.4		75-120	%REC	100	11/8/2011 10:13 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

ALS Group USA, Corp

Date: 30-Nov-11

Client: HRL Compliance Solutions

Project: Williams GV 88-1 Production Pit 1/3/11

Work Order: 1111234

Sample ID: South Wall 1 ft

Lab ID: 1111234-02

Collection Date: 11/3/2011 09:15 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: Dibromofluoromethane	97.1		85-115	%REC	100	11/8/2011 10:13 AM
Surr: Toluene-d8	96.8		85-115	%REC	100	11/8/2011 10:13 AM
MOISTURE			A2540 G			Analyst: CG
Moisture	17		0.050	% of sample	1	11/7/2011 05:15 PM
PH			SW9045D			Analyst: JJG
pH	8.58			s.u.	1	11/7/2011 10:05 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

ALS Group USA, Corp

Date: 30-Nov-11

Client: HRL Compliance Solutions
Project: Williams GV 88-1 Production Pit 1/3/11
Sample ID: West Wall 1 ft
Collection Date: 11/3/2011 09:25 AM

Work Order: 1111234
Lab ID: 1111234-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	91		SW8015M		Prep Date: 11/7/2011	Analyst: RM
Surr: 4-Terphenyl-d14	86.7		5.1	mg/Kg-dry	1	11/8/2011 03:31 AM
			39-115	%REC	1	11/8/2011 03:31 AM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015			Analyst: JD
Surr: Toluene-d8	106		6.2	mg/Kg-dry	100	11/7/2011 12:47 PM
			50-150	%REC	100	11/7/2011 12:47 PM
SUBCONTRACTED ANALYSES						
Subcontracted Analyses	Rcvd 11/10/11		SUBCONTRACT			Analyst: A&LGL
			as noted		1	11/10/2011
SEMI-VOLATILE ORGANIC COMPOUNDS						
SW8270					Prep Date: 11/7/2011	Analyst: JJ
Acenaphthene	ND		37	µg/Kg-dry	1	11/8/2011 11:23 AM
Anthracene	ND		37	µg/Kg-dry	1	11/8/2011 11:23 AM
Benzo(a)anthracene	ND		37	µg/Kg-dry	1	11/8/2011 11:23 AM
Benzo(a)pyrene	ND		37	µg/Kg-dry	1	11/8/2011 11:23 AM
Benzo(b)fluoranthene	ND		37	µg/Kg-dry	1	11/8/2011 11:23 AM
Benzo(g,h,i)perylene	ND		37	µg/Kg-dry	1	11/8/2011 11:23 AM
Benzo(k)fluoranthene	ND		37	µg/Kg-dry	1	11/8/2011 11:23 AM
Chrysene	ND		37	µg/Kg-dry	1	11/8/2011 11:23 AM
Dibenzo(a,h)anthracene	ND		37	µg/Kg-dry	1	11/8/2011 11:23 AM
Fluoranthene	ND		37	µg/Kg-dry	1	11/8/2011 11:23 AM
Fluorene	ND		37	µg/Kg-dry	1	11/8/2011 11:23 AM
Indeno(1,2,3-cd)pyrene	ND		37	µg/Kg-dry	1	11/8/2011 11:23 AM
Naphthalene	ND		37	µg/Kg-dry	1	11/8/2011 11:23 AM
Pyrene	ND		37	µg/Kg-dry	1	11/8/2011 11:23 AM
Surr: 2,4,6-Tribromophenol	115		34-140	%REC	1	11/8/2011 11:23 AM
Surr: 2-Fluorobiphenyl	57.8		12-100	%REC	1	11/8/2011 11:23 AM
Surr: 2-Fluorophenol	67.6		33-117	%REC	1	11/8/2011 11:23 AM
Surr: 4-Terphenyl-d14	90.3		25-137	%REC	1	11/8/2011 11:23 AM
Surr: Nitrobenzene-d5	51.8		37-107	%REC	1	11/8/2011 11:23 AM
Surr: Phenol-d6	63.4		40-106	%REC	1	11/8/2011 11:23 AM
VOLATILE ORGANIC COMPOUNDS						
SW8260						Analyst: BG
Benzene	ND		120	µg/Kg-dry	100	11/8/2011 01:39 PM
Ethylbenzene	ND		250	µg/Kg-dry	100	11/8/2011 01:39 PM
m,p-Xylene	ND		250	µg/Kg-dry	100	11/8/2011 01:39 PM
o-Xylene	ND		120	µg/Kg-dry	100	11/8/2011 01:39 PM
Toluene	ND		190	µg/Kg-dry	100	11/8/2011 01:39 PM
Xylenes, Total	ND		370	µg/Kg-dry	100	11/8/2011 01:39 PM
Surr: 1,2-Dichloroethane-d4	99.6		70-120	%REC	100	11/8/2011 01:39 PM
Surr: 4-Bromofluorobenzene	92.8		75-120	%REC	100	11/8/2011 01:39 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

ALS Group USA, Corp

Date: 30-Nov-11

Client: HRL Compliance Solutions

Project: Williams GV 88-1 Production Pit 1/3/11

Work Order: 1111234

Sample ID: West Wall 1 ft

Lab ID: 1111234-03

Collection Date: 11/3/2011 09:25 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: Dibromofluoromethane	98.9		85-115	%REC	100	11/8/2011 01:39 PM
Surr: Toluene-d8	96.3		85-115	%REC	100	11/8/2011 01:39 PM
MOISTURE			A2540 G			Analyst: CG
Moisture	19		0.050	% of sample	1	11/7/2011 05:15 PM
PH			SW9045D			Analyst: JJG
pH	8.92			s.u.	1	11/7/2011 10:05 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

ALS Group USA, Corp

Date: 30-Nov-11

Client: HRL Compliance Solutions
Project: Williams GV 88-1 Production Pit 1/3/11
Sample ID: North Wall 1 ft
Collection Date: 11/3/2011 09:35 AM

Work Order: 1111234
Lab ID: 1111234-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	19		SW8015M		Prep Date: 11/7/2011	Analyst: RM
			5.0	mg/Kg-dry	1	11/8/2011 03:53 AM
Surr: 4-Terphenyl-d14	62.6		39-115	%REC	1	11/8/2011 03:53 AM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015			Analyst: JD
			6.1	mg/Kg-dry	100	11/7/2011 01:12 PM
Surr: Toluene-d8	103		50-150	%REC	100	11/7/2011 01:12 PM
SUBCONTRACTED ANALYSES						
Subcontracted Analyses	Rcvd 11/10/11		SUBCONTRACT			Analyst: A&LGL
			as noted		1	11/10/2011
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW8270		Prep Date: 11/7/2011	Analyst: JJ
Acenaphthene	ND		36	µg/Kg-dry	1	11/8/2011 11:55 AM
Anthracene	ND		36	µg/Kg-dry	1	11/8/2011 11:55 AM
Benzo(a)anthracene	ND		36	µg/Kg-dry	1	11/8/2011 11:55 AM
Benzo(a)pyrene	ND		36	µg/Kg-dry	1	11/8/2011 11:55 AM
Benzo(b)fluoranthene	ND		36	µg/Kg-dry	1	11/8/2011 11:55 AM
Benzo(g,h,i)perylene	ND		36	µg/Kg-dry	1	11/8/2011 11:55 AM
Benzo(k)fluoranthene	ND		36	µg/Kg-dry	1	11/8/2011 11:55 AM
Chrysene	ND		36	µg/Kg-dry	1	11/8/2011 11:55 AM
Dibenzo(a,h)anthracene	ND		36	µg/Kg-dry	1	11/8/2011 11:55 AM
Fluoranthene	ND		36	µg/Kg-dry	1	11/8/2011 11:55 AM
Fluorene	ND		36	µg/Kg-dry	1	11/8/2011 11:55 AM
Indeno(1,2,3-cd)pyrene	ND		36	µg/Kg-dry	1	11/8/2011 11:55 AM
Naphthalene	ND		36	µg/Kg-dry	1	11/8/2011 11:55 AM
Pyrene	ND		36	µg/Kg-dry	1	11/8/2011 11:55 AM
Surr: 2,4,6-Tribromophenol	101		34-140	%REC	1	11/8/2011 11:55 AM
Surr: 2-Fluorobiphenyl	53.8		12-100	%REC	1	11/8/2011 11:55 AM
Surr: 2-Fluorophenol	70.5		33-117	%REC	1	11/8/2011 11:55 AM
Surr: 4-Terphenyl-d14	91.5		25-137	%REC	1	11/8/2011 11:55 AM
Surr: Nitrobenzene-d5	54.7		37-107	%REC	1	11/8/2011 11:55 AM
Surr: Phenol-d6	63.2		40-106	%REC	1	11/8/2011 11:55 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260			Analyst: BG
Benzene	ND		120	µg/Kg-dry	100	11/8/2011 02:04 PM
Ethylbenzene	ND		240	µg/Kg-dry	100	11/8/2011 02:04 PM
m,p-Xylene	ND		240	µg/Kg-dry	100	11/8/2011 02:04 PM
o-Xylene	ND		120	µg/Kg-dry	100	11/8/2011 02:04 PM
Toluene	ND		180	µg/Kg-dry	100	11/8/2011 02:04 PM
Xylenes, Total	ND		370	µg/Kg-dry	100	11/8/2011 02:04 PM
Surr: 1,2-Dichloroethane-d4	99.1		70-120	%REC	100	11/8/2011 02:04 PM
Surr: 4-Bromofluorobenzene	90.6		75-120	%REC	100	11/8/2011 02:04 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

ALS Group USA, Corp

Date: 30-Nov-11

Client: HRL Compliance Solutions

Project: Williams GV 88-1 Production Pit 1/3/11

Work Order: 1111234

Sample ID: North Wall 1 ft

Lab ID: 1111234-04

Collection Date: 11/3/2011 09:35 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: Dibromofluoromethane	98.9		85-115	%REC	100	11/8/2011 02:04 PM
Surr: Toluene-d8	98.7		85-115	%REC	100	11/8/2011 02:04 PM
MOISTURE			A2540 G			Analyst: CG
Moisture	18		0.050	% of sample	1	11/7/2011 05:15 PM
PH			SW9045D			Analyst: JJG
pH	9.24			s.u.	1	11/7/2011 10:05 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

ALS Group USA, Corp

Date: 30-Nov-11

Client: HRL Compliance Solutions

Project: Williams GV 88-1 Production Pit 1/3/11

Sample ID: Pit Bottom West Half 5 ft

Collection Date: 11/4/2011 09:45 AM

Work Order: 1111234

Lab ID: 1111234-05

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep Date: 11/7/2011	Analyst: RM
DRO (C10-C28)	ND		5.0	mg/Kg-dry	1	11/8/2011 03:53 AM
Surr: 4-Terphenyl-d14	82.4		39-115	%REC	1	11/8/2011 03:53 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015			Analyst: JD
GRO (C6-C10)	ND		6.1	mg/Kg-dry	100	11/7/2011 01:37 PM
Surr: Toluene-d8	101		50-150	%REC	100	11/7/2011 01:37 PM
SUBCONTRACTED ANALYSES						
Subcontracted Analyses	Rcvd 11/10/11		SUBCONTRACT			Analyst: A&LGL
			as noted		1	11/10/2011
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW8270		Prep Date: 11/7/2011	Analyst: JJ
Acenaphthene	ND		36	µg/Kg-dry	1	11/8/2011 12:28 PM
Anthracene	ND		36	µg/Kg-dry	1	11/8/2011 12:28 PM
Benzo(a)anthracene	ND		36	µg/Kg-dry	1	11/8/2011 12:28 PM
Benzo(a)pyrene	ND		36	µg/Kg-dry	1	11/8/2011 12:28 PM
Benzo(b)fluoranthene	ND		36	µg/Kg-dry	1	11/8/2011 12:28 PM
Benzo(g,h,i)perylene	ND		36	µg/Kg-dry	1	11/8/2011 12:28 PM
Benzo(k)fluoranthene	ND		36	µg/Kg-dry	1	11/8/2011 12:28 PM
Chrysene	ND		36	µg/Kg-dry	1	11/8/2011 12:28 PM
Dibenzo(a,h)anthracene	ND		36	µg/Kg-dry	1	11/8/2011 12:28 PM
Fluoranthene	ND		36	µg/Kg-dry	1	11/8/2011 12:28 PM
Fluorene	ND		36	µg/Kg-dry	1	11/8/2011 12:28 PM
Indeno(1,2,3-cd)pyrene	ND		36	µg/Kg-dry	1	11/8/2011 12:28 PM
Naphthalene	ND		36	µg/Kg-dry	1	11/8/2011 12:28 PM
Pyrene	ND		36	µg/Kg-dry	1	11/8/2011 12:28 PM
Surr: 2,4,6-Tribromophenol	92.5		34-140	%REC	1	11/8/2011 12:28 PM
Surr: 2-Fluorobiphenyl	55.3		12-100	%REC	1	11/8/2011 12:28 PM
Surr: 2-Fluorophenol	77.1		33-117	%REC	1	11/8/2011 12:28 PM
Surr: 4-Terphenyl-d14	91.2		25-137	%REC	1	11/8/2011 12:28 PM
Surr: Nitrobenzene-d5	59.5		37-107	%REC	1	11/8/2011 12:28 PM
Surr: Phenol-d6	67.7		40-106	%REC	1	11/8/2011 12:28 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260			Analyst: BG
Benzene	ND		120	µg/Kg-dry	100	11/8/2011 02:28 PM
Ethylbenzene	ND		240	µg/Kg-dry	100	11/8/2011 02:28 PM
m,p-Xylene	ND		240	µg/Kg-dry	100	11/8/2011 02:28 PM
o-Xylene	ND		120	µg/Kg-dry	100	11/8/2011 02:28 PM
Toluene	ND		180	µg/Kg-dry	100	11/8/2011 02:28 PM
Xylenes, Total	ND		360	µg/Kg-dry	100	11/8/2011 02:28 PM
Surr: 1,2-Dichloroethane-d4	99.5		70-120	%REC	100	11/8/2011 02:28 PM
Surr: 4-Bromofluorobenzene	95.9		75-120	%REC	100	11/8/2011 02:28 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

ALS Group USA, Corp

Date: 30-Nov-11

Client: HRL Compliance Solutions

Project: Williams GV 88-1 Production Pit 1/3/11

Work Order: 1111234

Sample ID: Pit Bottom West Half 5 ft

Lab ID: 1111234-05

Collection Date: 11/4/2011 09:45 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: Dibromofluoromethane	99.1		85-115	%REC	100	11/8/2011 02:28 PM
Surr: Toluene-d8	93.7		85-115	%REC	100	11/8/2011 02:28 PM
MOISTURE			A2540 G			Analyst: CG
Moisture	18		0.050	% of sample	1	11/7/2011 05:15 PM
PH			SW9045D			Analyst: JJG
pH	8.67			s.u.	1	11/7/2011 10:05 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

Report Number: F11312-0567

Account Number: 91000

A & L GREAT LAKES LABORATORIES, INC.

3505 Conestoga Drive • Fort Wayne, Indiana 46808-4413 • Phone 260-483-4759 • Fax 260-483-5274

www.algreatlakes.com • lab@algreatlakes.com



QUALITY ANALYSES FOR INFORMED DECISIONS

TO: ALS LABORATORY GROUP
3352 128TH AVE
HOLLAND, MI 49424-9263

RE: PROJ. 1111234

DATE RECEIVED: 11/08/2011

DATE REPORTED: 11/10/2011

PAGE: 1

P.O. NUMBER: 20-122011177

ATTN: ANN PRESTON

REPORT OF ANALYSIS

LAB NO.	SAMPLE ID	ANALYSIS	RESULT	UNIT	METHOD
79835	01C	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	6.81	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	21	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	6	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	6830	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	337.3	-	USDA Handbook 60
79836	02C	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	10.11	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	46	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	3	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	10823	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	416.7	-	USDA Handbook 60
79837	03C	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	8.17	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	38	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	4	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	8656	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	356.2	-	USDA Handbook 60
79838	04C	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	9.08	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	32	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	6	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	9818	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	416.6	-	USDA Handbook 60

Report Number: F11312-0567

Account Number: 91000

A & L GREAT LAKES LABORATORIES, INC.

3505 Conestoga Drive • Fort Wayne, Indiana 46808-4413 • Phone 260-483-4759 • Fax 260-483-5274

www.algreatlakes.com • lab@algreatlakes.com



QUALITY ANALYSES FOR INFORMED DECISIONS

TO: ALS LABORATORY GROUP
3352 128TH AVE
HOLLAND, MI 49424-9263

RE: PROJ. 1111234

DATE RECEIVED: 11/08/2011

DATE REPORTED: 11/10/2011

PAGE: 2

P.O. NUMBER: 20-122011177

ATTN: ANN PRESTON

REPORT OF ANALYSIS

LAB NO.	SAMPLE ID	ANALYSIS	RESULT	UNIT	METHOD
79839	05C	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	10.17	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	147	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	95	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	10323	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	162.5	-	USDA Handbook 60
79840	08B	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	0.43	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	73	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	9	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	17	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	0.5	-	USDA Handbook 60

ALS Group USA, Corp

Date: 30-Nov-11

Client: HRL Compliance Solutions

Work Order: 1111234

Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **37209**

Instrument ID **GC8**

Method: **SW8015M**

MBLK		Sample ID: DBLKS1-37209-37209				Units: mg/Kg		Analysis Date: 11/8/2011 02:47 AM		
Client ID:		Run ID: GC8_111107A				SeqNo: 1812184		Prep Date: 11/7/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	4.2								
Surr: 4-Terphenyl-d14	1.444	0	1.667	0	86.6	39-115	0			

LCS		Sample ID: DLCSS1-37209-37209				Units: mg/Kg		Analysis Date: 11/8/2011 01:41 AM		
Client ID:		Run ID: GC8_111107A				SeqNo: 1815060		Prep Date: 11/7/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	162.3	4.2	166.7	0	97.4	60-130	0			
Surr: 4-Terphenyl-d14	1.238	0	1.667	0	74.3	39-115	0			

LCSD		Sample ID: DLCSDS1-37209-37209				Units: mg/Kg		Analysis Date: 11/8/2011 02:03 AM		
Client ID:		Run ID: GC8_111107A				SeqNo: 1815057		Prep Date: 11/7/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	154.9	4.2	166.7	0	93	60-130	162.3	4.62	30	
Surr: 4-Terphenyl-d14	1.223	0	1.667	0	73.4	39-115	1.238	1.25	30	

MS		Sample ID: 1111215-10B MS				Units: mg/Kg		Analysis Date: 11/8/2011 02:03 AM		
Client ID:		Run ID: GC8_111107A				SeqNo: 1815061		Prep Date: 11/7/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	416.9	12	468.8	12.9	86.2	60-130	0			
Surr: 4-Terphenyl-d14	3.269	0	4.688	0	69.7	39-115	0			

MSD		Sample ID: 1111215-10B MSD				Units: mg/Kg		Analysis Date: 11/8/2011 02:25 AM		
Client ID:		Run ID: GC8_111107A				SeqNo: 1815058		Prep Date: 11/7/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	445.6	12	490	12.9	88.3	60-130	416.9	6.66	30	
Surr: 4-Terphenyl-d14	3.406	0	4.9	0	69.5	39-115	3.269	4.08	30	

The following samples were analyzed in this batch:

1111234-01B	1111234-02B	1111234-03B
1111234-04B	1111234-05B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

QC Page: 1 of 18

Client: HRL Compliance Solutions
Work Order: 1111234
Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **R97378** Instrument ID **GC10** Method: **SW8015**

MBLK		Sample ID: MBLK-R97378-R97378				Units: µg/L		Analysis Date: 11/7/2011 10:41 AM		
Client ID:		Run ID: GC10_111107A				SeqNo: 1810987		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	200								
<i>Surr: Toluene-d8</i>	<i>94.51</i>	<i>0</i>	<i>100</i>	<i>0</i>	<i>94.5</i>	<i>70-130</i>	<i>0</i>			

LCS		Sample ID: LCS-R97378-R97378				Units: µg/L		Analysis Date: 11/7/2011 09:27 AM		
Client ID:		Run ID: GC10_111107A				SeqNo: 1810985		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	25950	200	25000	0	104	70-130	0			
<i>Surr: Toluene-d8</i>	<i>90.91</i>	<i>0</i>	<i>100</i>	<i>0</i>	<i>90.9</i>	<i>70-130</i>	<i>0</i>			

LCSD		Sample ID: LCSD-R97378-R97378				Units: µg/L		Analysis Date: 11/7/2011 09:52 AM		
Client ID:		Run ID: GC10_111107A				SeqNo: 1810986		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	24720	200	25000	0	98.9	70-130	25950	4.84	30	
<i>Surr: Toluene-d8</i>	<i>91.33</i>	<i>0</i>	<i>100</i>	<i>0</i>	<i>91.3</i>	<i>70-130</i>	<i>90.91</i>	<i>0.461</i>	<i>30</i>	

MS		Sample ID: 1111233-01A MS				Units: µg/L		Analysis Date: 11/7/2011 06:35 PM		
Client ID:		Run ID: GC10_111107A				SeqNo: 1810997		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	22310	200	25000	0	89.2	70-130	0			
<i>Surr: Toluene-d8</i>	<i>92.46</i>	<i>0</i>	<i>100</i>	<i>0</i>	<i>92.5</i>	<i>70-130</i>	<i>0</i>			

MSD		Sample ID: 1111233-01A MSD				Units: µg/L		Analysis Date: 11/7/2011 06:59 PM		
Client ID:		Run ID: GC10_111107A				SeqNo: 1810998		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	21200	200	25000	0	84.8	70-130	22310	5.11	30	
<i>Surr: Toluene-d8</i>	<i>93.87</i>	<i>0</i>	<i>100</i>	<i>0</i>	<i>93.9</i>	<i>70-130</i>	<i>92.46</i>	<i>1.51</i>	<i>30</i>	

The following samples were analyzed in this batch:

1111234-01A	1111234-02A	1111234-03A
1111234-04A	1111234-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

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Client: HRL Compliance Solutions
Work Order: 1111234
Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **37240** Instrument ID **HG1** Method: **SW7471**

MBLK		Sample ID: MBLK-37240-37240				Units: mg/Kg		Analysis Date: 11/8/2011 03:23 PM		
Client ID:		Run ID: HG1_111108A				SeqNo: 1812086		Prep Date: 11/8/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury ND 0.020

LCS		Sample ID: LCS-37240-37240				Units: mg/Kg		Analysis Date: 11/8/2011 03:25 PM		
Client ID:		Run ID: HG1_111108A				SeqNo: 1812087		Prep Date: 11/8/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1742 0.020 0.1665 0 105 80-120 0

LCSD		Sample ID: LCSD-37240-37240				Units: mg/Kg		Analysis Date: 11/8/2011 03:27 PM		
Client ID:		Run ID: HG1_111108A				SeqNo: 1812088		Prep Date: 11/8/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1758 0.020 0.1665 0 106 80-120 0.1742 0.952 20

MS		Sample ID: 1111234-05BMS				Units: mg/Kg		Analysis Date: 11/9/2011 12:47 PM		
Client ID: Pit Bottom West Half 5 ft		Run ID: HG1_111109A				SeqNo: 1813179		Prep Date: 11/8/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.2085 0.020 0.1685 0.03054 106 75-125 0

MSD		Sample ID: 1111234-05BMSD				Units: mg/Kg		Analysis Date: 11/9/2011 12:49 PM		
Client ID: Pit Bottom West Half 5 ft		Run ID: HG1_111109A				SeqNo: 1813180		Prep Date: 11/8/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.19 0.018 0.1518 0.03054 105 75-125 0.2085 9.27 35

The following samples were analyzed in this batch:

1111234-01B	1111234-02B	1111234-03B
1111234-04B	1111234-05B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

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Client: HRL Compliance Solutions
Work Order: 1111234
Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **37225** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK		Sample ID: MBLK-37225-37225				Units: mg/Kg		Analysis Date: 11/8/2011 12:06 AM		
Client ID:		Run ID: ICPMS1_111107A				SeqNo: 1811304		Prep Date: 11/7/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.10								
Chromium	0.00688	0.25								J
Copper	ND	0.25								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.25								
Silver	ND	0.25								
Zinc	0.0675	0.50								J

LCS		Sample ID: LCS-37225-37225				Units: mg/Kg		Analysis Date: 11/8/2011 12:33 AM		
Client ID:		Run ID: ICPMS1_111107A				SeqNo: 1811307		Prep Date: 11/7/2011		DF: 2
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.746	0.50	5	0	94.9	80-120	0			
Barium	4.978	0.50	5	0	99.6	80-120	0			
Cadmium	5.185	0.20	5	0	104	80-120	0			
Chromium	4.977	0.50	5	0	99.5	80-120	0			
Copper	5.072	0.50	5	0	101	80-120	0			
Nickel	5.002	0.50	5	0	100	80-120	0			
Selenium	4.489	0.50	5	0	89.8	80-120	0			
Silver	4.706	0.50	5	0	94.1	80-120	0			
Zinc	4.718	1.0	5	0	94.4	80-120	0			

LCS		Sample ID: LCS-37225-37225				Units: mg/Kg		Analysis Date: 11/8/2011 12:08 PM		
Client ID:		Run ID: ICPMS1_111107A				SeqNo: 1811899		Prep Date: 11/7/2011		DF: 2
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	4.947	0.50	5	0	98.9	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

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Client: HRL Compliance Solutions
Work Order: 1111234
Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **37225** Instrument ID **ICPMS1** Method: **SW6020A**

LCSD		Sample ID: LCSD-37225-37225				Units: mg/Kg		Analysis Date: 11/8/2011 12:38 AM		
Client ID:		Run ID: ICPMS1_111107A				SeqNo: 1811308		Prep Date: 11/7/2011		DF: 2
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.795	0.50	5	0	95.9	80-120	4.746	1.03	20	
Barium	5.038	0.50	5	0	101	80-120	4.978	1.2	20	
Cadmium	5.253	0.20	5	0	105	80-120	5.185	1.3	20	
Chromium	5.092	0.50	5	0	102	80-120	4.977	2.28	20	
Copper	5.246	0.50	5	0	105	80-120	5.072	3.37	20	
Nickel	5.017	0.50	5	0	100	80-120	5.002	0.299	20	
Selenium	4.537	0.50	5	0	90.7	80-120	4.489	1.06	20	
Silver	4.752	0.50	5	0	95	80-120	4.706	0.973	20	
Zinc	4.803	1.0	5	0	96.1	80-120	4.718	1.79	20	

LCSD		Sample ID: LCSD-37225-37225				Units: mg/Kg		Analysis Date: 11/8/2011 12:13 PM		
Client ID:		Run ID: ICPMS1_111107A				SeqNo: 1811900		Prep Date: 11/7/2011		DF: 2
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	5.014	0.50	5	0	100	80-120	5.026	0.239	20	

MS		Sample ID: 1111164-03BMS				Units: mg/Kg		Analysis Date: 11/8/2011 01:15 AM		
Client ID:		Run ID: ICPMS1_111107A				SeqNo: 1811313		Prep Date: 11/7/2011		DF: 4
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	16.42	1.4	6.906	10.63	83.7	80-120	0			
Barium	111.6	1.4	6.906	107.9	53.3	80-120	0			SO
Cadmium	7.97	0.55	6.906	1.231	97.6	80-120	0			
Chromium	39.23	1.4	6.906	34.26	71.9	80-120	0			SO
Copper	16.4	1.4	6.906	10.57	84.4	80-120	0			
Nickel	17.89	1.4	6.906	13.01	70.6	80-120	0			S
Selenium	7.102	1.4	6.906	1.179	85.8	80-120	0			
Silver	5.856	1.4	6.906	0.1915	82	80-120	0			
Zinc	97.65	2.8	6.906	97.38	3.95	80-120	0			SO

MS		Sample ID: 1111164-03BMS				Units: mg/Kg		Analysis Date: 11/8/2011 12:23 PM		
Client ID:		Run ID: ICPMS1_111107A				SeqNo: 1811902		Prep Date: 11/7/2011		DF: 4
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	33.73	1.4	6.906	27.84	85.2	80-120	0			O

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

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Client: HRL Compliance Solutions
Work Order: 1111234
Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **37225** Instrument ID **ICPMS1** Method: **SW6020A**

MSD		Sample ID: 1111164-03BMSD				Units: mg/Kg		Analysis Date: 11/8/2011 01:20 AM		
Client ID:		Run ID: ICPMS1_111107A				SeqNo: 1811314		Prep Date: 11/7/2011		DF: 4
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	17.52	1.3	6.748	10.63	102	80-120	16.42	6.5	25	
Barium	114.3	1.3	6.748	107.9	94.6	80-120	111.6	2.39	25	O
Cadmium	8.024	0.54	6.748	1.231	101	80-120	7.97	0.684	25	
Chromium	38.79	1.3	6.748	34.26	67.1	80-120	39.23	1.13	25	SO
Copper	15.85	1.3	6.748	10.57	78.2	80-120	16.4	3.4	25	S
Nickel	18.89	1.3	6.748	13.01	87.1	80-120	17.89	5.43	25	
Selenium	6.937	1.3	6.748	1.179	85.3	80-120	7.102	2.36	25	
Silver	5.717	1.3	6.748	0.1915	81.9	80-120	5.856	2.42	25	
Zinc	98.6	2.7	6.748	97.38	18	80-120	97.65	0.963	25	SO

MSD		Sample ID: 1111164-03BMSD				Units: mg/Kg		Analysis Date: 11/8/2011 12:29 PM		
Client ID:		Run ID: ICPMS1_111107A				SeqNo: 1811903		Prep Date: 11/7/2011		DF: 4
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	32.79	1.3	6.748	27.84	73.4	80-120	33.73	2.81	25	SO

The following samples were analyzed in this batch:

1111234-01B	1111234-02B	1111234-03B
1111234-04B	1111234-05B	1111234-06A
1111234-07A	1111234-08A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

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Client: HRL Compliance Solutions
Work Order: 1111234
Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **37208** Instrument ID **SVMS6** Method: **SW8270**

MBLK		Sample ID: SBLKS1-37208-37208				Units: µg/Kg		Analysis Date: 11/8/2011 10:25 AM		
Client ID:		Run ID: SVMS6_111108A				SeqNo: 1811687		Prep Date: 11/7/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	30								
Anthracene	ND	30								
Benzo(a)anthracene	ND	30								
Benzo(a)pyrene	ND	30								
Benzo(b)fluoranthene	ND	30								
Benzo(g,h,i)perylene	ND	30								
Benzo(k)fluoranthene	ND	30								
Chrysene	ND	30								
Dibenzo(a,h)anthracene	ND	30								
Fluoranthene	ND	30								
Fluorene	ND	30								
Indeno(1,2,3-cd)pyrene	ND	30								
Naphthalene	ND	30								
Pyrene	ND	30								
<i>Surr: 2,4,6-Tribromophenol</i>	1392	0	1667	0	83.5	34-140		0		
<i>Surr: 2-Fluorobiphenyl</i>	1217	0	1667	0	73	12-100		0		
<i>Surr: 2-Fluorophenol</i>	1751	0	1667	0	105	33-117		0		
<i>Surr: 4-Terphenyl-d14</i>	1754	0	1667	0	105	25-137		0		
<i>Surr: Nitrobenzene-d5</i>	1261	0	1667	0	75.7	37-107		0		
<i>Surr: Phenol-d6</i>	1345	0	1667	0	80.7	40-106		0		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: HRL Compliance Solutions
Work Order: 1111234
Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **37208** Instrument ID **SVMS6** Method: **SW8270**

LCS		Sample ID: SLCSS1-37208-37208				Units: µg/Kg		Analysis Date: 11/8/2011 09:32 AM		
Client ID:		Run ID: SVMS6_111108A				SeqNo: 1811685		Prep Date: 11/7/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1204	30	1333	0	90.3	45-110	0			
Anthracene	1314	30	1333	0	98.5	55-105	0			
Benzo(a)anthracene	1332	30	1333	0	99.9	50-110	0			
Benzo(a)pyrene	1327	30	1333	0	99.5	50-110	0			
Benzo(b)fluoranthene	1260	30	1333	0	94.5	45-115	0			
Benzo(g,h,i)perylene	1390	30	1333	0	104	40-125	0			
Benzo(k)fluoranthene	1203	30	1333	0	90.2	45-115	0			
Chrysene	1267	30	1333	0	95	55-110	0			
Dibenzo(a,h)anthracene	1324	30	1333	0	99.3	40-125	0			
Fluoranthene	1366	30	1333	0	102	55-115	0			
Fluorene	1310	30	1333	0	98.3	50-110	0			
Indeno(1,2,3-cd)pyrene	1374	30	1333	0	103	40-120	0			
Naphthalene	1152	30	1333	0	86.4	40-105	0			
Pyrene	1374	30	1333	0	103	45-125	0			
Surr: 2,4,6-Tribromophenol	1484	0	1667	0	89	34-140	0			
Surr: 2-Fluorobiphenyl	1248	0	1667	0	74.9	12-100	0			
Surr: 2-Fluorophenol	1566	0	1667	0	94	33-117	0			
Surr: 4-Terphenyl-d14	1647	0	1667	0	98.8	25-137	0			
Surr: Nitrobenzene-d5	1359	0	1667	0	81.5	37-107	0			
Surr: Phenol-d6	1367	0	1667	0	82	40-106	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: HRL Compliance Solutions
Work Order: 1111234
Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **37208** Instrument ID **SVMS6** Method: **SW8270**

LCSD		Sample ID: SLCSDS1-37208-37208				Units: µg/Kg		Analysis Date: 11/8/2011 09:59 AM		
Client ID:		Run ID: SVMS6_111108A				SeqNo: 1811686		Prep Date: 11/7/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1180	30	1333	0	88.5	45-110	1204	2.01	25	
Anthracene	1254	30	1333	0	94.1	55-105	1314	4.62	25	
Benzo(a)anthracene	1287	30	1333	0	96.6	50-110	1332	3.41	25	
Benzo(a)pyrene	1278	30	1333	0	95.9	50-110	1327	3.74	25	
Benzo(b)fluoranthene	1293	30	1333	0	97	45-115	1260	2.56	25	
Benzo(g,h,i)perylene	1289	30	1333	0	96.7	40-125	1390	7.56	25	
Benzo(k)fluoranthene	1257	30	1333	0	94.3	45-115	1203	4.42	25	
Chrysene	1251	30	1333	0	93.8	55-110	1267	1.3	25	
Dibenzo(a,h)anthracene	1234	30	1333	0	92.6	40-125	1324	7.04	25	
Fluoranthene	1288	30	1333	0	96.6	55-115	1366	5.83	25	
Fluorene	1266	30	1333	0	95	50-110	1310	3.44	25	
Indeno(1,2,3-cd)pyrene	1292	30	1333	0	96.9	40-120	1374	6.15	25	
Naphthalene	1135	30	1333	0	85.1	40-105	1152	1.54	25	
Pyrene	1325	30	1333	0	99.4	45-125	1374	3.61	25	
Surr: 2,4,6-Tribromophenol	1480	0	1667	0	88.8	34-140	1484	0.247	40	
Surr: 2-Fluorobiphenyl	1232	0	1667	0	73.9	12-100	1248	1.26	40	
Surr: 2-Fluorophenol	1532	0	1667	0	91.9	33-117	1566	2.19	40	
Surr: 4-Terphenyl-d14	1584	0	1667	0	95.1	25-137	1647	3.88	40	
Surr: Nitrobenzene-d5	1258	0	1667	0	75.5	37-107	1359	7.72	40	
Surr: Phenol-d6	1305	0	1667	0	78.3	40-106	1367	4.67	40	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

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Client: HRL Compliance Solutions
Work Order: 1111234
Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **37208** Instrument ID **SVMS6** Method: **SW8270**

MS				Sample ID: 1111215-10B MS			Units: µg/Kg		Analysis Date: 11/8/2011 08:41 AM	
Client ID:				Run ID: SVMS4_111108A			SeqNo: 1811725		Prep Date: 11/7/2011	
							DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	3538	89	3951	0	89.6	45-110	0			
Anthracene	3646	89	3951	0	92.3	55-105	0			
Benzo(a)anthracene	3950	89	3951	0	100	50-110	0			
Benzo(a)pyrene	3800	89	3951	0	96.2	50-110	0			
Benzo(b)fluoranthene	3669	89	3951	0	92.9	45-115	0			
Benzo(g,h,i)perylene	3978	89	3951	0	101	40-125	0			
Benzo(k)fluoranthene	3944	89	3951	0	99.8	45-115	0			
Chrysene	3658	89	3951	0	92.6	55-110	0			
Dibenzo(a,h)anthracene	3763	89	3951	0	95.3	40-125	0			
Fluoranthene	3713	89	3951	0	94	55-115	0			
Fluorene	3616	89	3951	0	91.5	50-110	0			
Indeno(1,2,3-cd)pyrene	3805	89	3951	0	96.3	40-120	0			
Naphthalene	2961	89	3951	0	75	40-105	0			
Pyrene	3989	89	3951	0	101	45-125	0			
Surr: 2,4,6-Tribromophenol	4873	0	4938	0	98.7	34-140	0			
Surr: 2-Fluorobiphenyl	3826	0	4938	0	77.5	12-100	0			
Surr: 2-Fluorophenol	3654	0	4938	0	74	33-117	0			
Surr: 4-Terphenyl-d14	4769	0	4938	0	96.6	25-137	0			
Surr: Nitrobenzene-d5	3330	0	4938	0	67.4	37-107	0			
Surr: Phenol-d6	3808	0	4938	0	77.1	40-106	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: HRL Compliance Solutions
Work Order: 1111234
Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **37208** Instrument ID **SVMS6** Method: **SW8270**

MSD				Sample ID: 1111215-10B MSD			Units: µg/Kg		Analysis Date: 11/8/2011 09:13 AM		
Client ID:			Run ID: SVMS4_111108A			SeqNo: 1811726		Prep Date: 11/7/2011		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	3287	89	3947	0	83.3	45-110	3538	7.35	30		
Anthracene	3425	89	3947	0	86.8	55-105	3646	6.26	30		
Benzo(a)anthracene	3644	89	3947	0	92.3	50-110	3950	8.05	30		
Benzo(a)pyrene	3521	89	3947	0	89.2	50-110	3800	7.64	30		
Benzo(b)fluoranthene	3500	89	3947	0	88.7	45-115	3669	4.72	30		
Benzo(g,h,i)perylene	3510	89	3947	0	88.9	40-125	3978	12.5	30		
Benzo(k)fluoranthene	3546	89	3947	0	89.9	45-115	3944	10.6	30		
Chrysene	3294	89	3947	0	83.5	55-110	3658	10.5	30		
Dibenzo(a,h)anthracene	3409	89	3947	0	86.4	40-125	3763	9.86	30		
Fluoranthene	3707	89	3947	0	93.9	55-115	3713	0.142	30		
Fluorene	3366	89	3947	0	85.3	50-110	3616	7.16	30		
Indeno(1,2,3-cd)pyrene	3418	89	3947	0	86.6	40-120	3805	10.7	30		
Naphthalene	2799	89	3947	0	70.9	40-105	2961	5.61	30		
Pyrene	3724	89	3947	0	94.4	45-125	3989	6.87	30		
Surr: 2,4,6-Tribromophenol	4617	0	4934	0	93.6	34-140	4873	5.39	40		
Surr: 2-Fluorobiphenyl	3523	0	4934	0	71.4	12-100	3826	8.26	40		
Surr: 2-Fluorophenol	3438	0	4934	0	69.7	33-117	3654	6.1	40		
Surr: 4-Terphenyl-d14	4468	0	4934	0	90.6	25-137	4769	6.52	40		
Surr: Nitrobenzene-d5	3281	0	4934	0	66.5	37-107	3330	1.49	40		
Surr: Phenol-d6	3509	0	4934	0	71.1	40-106	3808	8.18	40		

The following samples were analyzed in this batch:

1111234-01B	1111234-02B	1111234-03B
1111234-04B	1111234-05B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: HRL Compliance Solutions
 Work Order: 1111234
 Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **R97364B** Instrument ID **VMS5** Method: **SW8260**

MBLK		Sample ID: VBLKW2-111107-R97364B				Units: µg/L		Analysis Date: 11/8/2011 01:33 AM		
Client ID:		Run ID: VMS5_111107B				SeqNo: 1810682		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Ethylbenzene	ND	1.0								
m,p-Xylene	ND	2.0								
o-Xylene	ND	1.0								
Toluene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 1,2-Dichloroethane-d4	96.95	0	100	0	97	70-120	0			
Surr: 4-Bromofluorobenzene	95.6	0	100	0	95.6	75-120	0			
Surr: Dibromofluoromethane	99.86	0	100	0	99.9	85-115	0			
Surr: Toluene-d8	98.6	0	100	0	98.6	85-120	0			

LCS		Sample ID: VLCSW2-111107-R97364B				Units: µg/L		Analysis Date: 11/8/2011 12:14 PM		
Client ID:		Run ID: VMS5_111107B				SeqNo: 1810683		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.46	1.0	20	0	107	80-120	0			
Ethylbenzene	20.09	1.0	20	0	100	75-125	0			
m,p-Xylene	41.36	2.0	40	0	103	75-130	0			
o-Xylene	20.26	1.0	20	0	101	80-120	0			
Toluene	20.92	1.0	20	0	105	75-120	0			
Xylenes, Total	61.62	3.0	60	0	103	75-130	0			
Surr: 1,2-Dichloroethane-d4	95.07	0	100	0	95.1	70-120	0			
Surr: 4-Bromofluorobenzene	101.6	0	100	0	102	75-120	0			
Surr: Dibromofluoromethane	100.7	0	100	0	101	85-115	0			
Surr: Toluene-d8	98.21	0	100	0	98.2	85-120	0			

LCSD		Sample ID: VLCSDW2-111107-R97364B				Units: µg/L		Analysis Date: 11/8/2011 12:40 PM		
Client ID:		Run ID: VMS5_111107B				SeqNo: 1810685		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.62	1.0	20	0	108	80-120	21.46	0.743	30	
Ethylbenzene	20.29	1.0	20	0	101	75-125	20.09	0.991	30	
m,p-Xylene	41.85	2.0	40	0	105	75-130	41.36	1.18	30	
o-Xylene	20.69	1.0	20	0	103	80-120	20.26	2.1	30	
Toluene	21.23	1.0	20	0	106	75-120	20.92	1.47	30	
Xylenes, Total	62.54	3.0	60	0	104	75-130	61.62	1.48	30	
Surr: 1,2-Dichloroethane-d4	94.39	0	100	0	94.4	70-120	95.07	0.718	30	
Surr: 4-Bromofluorobenzene	103.1	0	100	0	103	75-120	101.6	1.45	30	
Surr: Dibromofluoromethane	99.68	0	100	0	99.7	85-115	100.7	0.988	30	
Surr: Toluene-d8	100.1	0	100	0	100	85-120	98.21	1.88	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: HRL Compliance Solutions
 Work Order: 1111234
 Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **R97364B** Instrument ID **VMS5** Method: **SW8260**

MS Sample ID: 11101015-03A MS				Units: µg/L			Analysis Date: 11/8/2011 10:39 AM			
Client ID:		Run ID: VMS5_111107B		SeqNo: 1811522		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.81	1.0	20	0	114	80-120	0			
Ethylbenzene	21.28	1.0	20	0	106	75-125	0			
m,p-Xylene	43.68	2.0	40	0	109	75-130	0			
o-Xylene	21.36	1.0	20	0	107	80-120	0			
Toluene	22.41	1.0	20	0	112	75-120	0			
Xylenes, Total	65.04	3.0	60	0	108	75-130	0			
Surr: 1,2-Dichloroethane-d4	93.79	0	100	0	93.8	70-120	0			
Surr: 4-Bromofluorobenzene	101.7	0	100	0	102	75-120	0			
Surr: Dibromofluoromethane	99.48	0	100	0	99.5	85-115	0			
Surr: Toluene-d8	99.05	0	100	0	99	85-120	0			

MSD Sample ID: 11101015-03A MSD				Units: µg/L			Analysis Date: 11/8/2011 11:05 AM			
Client ID:		Run ID: VMS5_111107B		SeqNo: 1811523		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.97	1.0	20	0	110	80-120	22.81	3.75	30	
Ethylbenzene	20.55	1.0	20	0	103	75-125	21.28	3.49	30	
m,p-Xylene	42.38	2.0	40	0	106	75-130	43.68	3.02	30	
o-Xylene	20.85	1.0	20	0	104	80-120	21.36	2.42	30	
Toluene	21.59	1.0	20	0	108	75-120	22.41	3.73	30	
Xylenes, Total	63.23	3.0	60	0	105	75-130	65.04	2.82	30	
Surr: 1,2-Dichloroethane-d4	94.03	0	100	0	94	70-120	93.79	0.256	30	
Surr: 4-Bromofluorobenzene	101.4	0	100	0	101	75-120	101.7	0.374	30	
Surr: Dibromofluoromethane	99.44	0	100	0	99.4	85-115	99.48	0.0402	30	
Surr: Toluene-d8	99.87	0	100	0	99.9	85-120	99.05	0.824	30	

The following samples were analyzed in this batch:

1111234-01A 1111234-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: HRL Compliance Solutions
Work Order: 1111234
Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **R97385** Instrument ID **VMS9** Method: **SW8260**

MBLK		Sample ID: VBLKW1-111108-R97385				Units: µg/L		Analysis Date: 11/8/2011 12:02 PM		
Client ID:		Run ID: VMS9_111108A				SeqNo: 1812116		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Ethylbenzene	ND	1.0								
m,p-Xylene	ND	2.0								
o-Xylene	ND	1.0								
Toluene	ND	1.0								
Xylenes, Total	ND	3.0								
<i>Surr: 1,2-Dichloroethane-d4</i>	98.19	0	100	0	98.2	70-120	0			
<i>Surr: 4-Bromofluorobenzene</i>	98.52	0	100	0	98.5	75-120	0			
<i>Surr: Dibromofluoromethane</i>	99.32	0	100	0	99.3	85-115	0			
<i>Surr: Toluene-d8</i>	99.37	0	100	0	99.4	85-120	0			

LCS		Sample ID: VLCSW1-111108-R97385				Units: µg/L		Analysis Date: 11/8/2011 10:50 AM		
Client ID:		Run ID: VMS9_111108A				SeqNo: 1811346		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.69	1.0	20	0	108	80-120	0			
Ethylbenzene	21.41	1.0	20	0	107	75-125	0			
m,p-Xylene	42.59	2.0	40	0	106	75-130	0			
o-Xylene	21.53	1.0	20	0	108	80-120	0			
Toluene	22.06	1.0	20	0	110	75-120	0			
Xylenes, Total	64.12	3.0	60	0	107	75-130	0			
<i>Surr: 1,2-Dichloroethane-d4</i>	98.42	0	100	0	98.4	70-120	0			
<i>Surr: 4-Bromofluorobenzene</i>	101.9	0	100	0	102	75-120	0			
<i>Surr: Dibromofluoromethane</i>	100.8	0	100	0	101	85-115	0			
<i>Surr: Toluene-d8</i>	98.73	0	100	0	98.7	85-120	0			

LCSD		Sample ID: VLCSW1-111108-R97385				Units: µg/L		Analysis Date: 11/8/2011 11:14 AM		
Client ID:		Run ID: VMS9_111108A				SeqNo: 1811474		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.73	1.0	20	0	104	80-120	21.69	4.53	30	
Ethylbenzene	20.28	1.0	20	0	101	75-125	21.41	5.42	30	
m,p-Xylene	40.09	2.0	40	0	100	75-130	42.59	6.05	30	
o-Xylene	20.64	1.0	20	0	103	80-120	21.53	4.22	30	
Toluene	20.78	1.0	20	0	104	75-120	22.06	5.98	30	
Xylenes, Total	60.73	3.0	60	0	101	75-130	64.12	5.43	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	99.09	0	100	0	99.1	70-120	98.42	0.678	30	
<i>Surr: 4-Bromofluorobenzene</i>	102.2	0	100	0	102	75-120	101.9	0.265	30	
<i>Surr: Dibromofluoromethane</i>	100.8	0	100	0	101	85-115	100.8	0.0397	30	
<i>Surr: Toluene-d8</i>	97.67	0	100	0	97.7	85-120	98.73	1.08	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: HRL Compliance Solutions
 Work Order: 1111234
 Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **R97385** Instrument ID **VMS9** Method: **SW8260**

MS Sample ID: 1110814-25A MS				Units: µg/L			Analysis Date: 11/8/2011 08:33 PM			
Client ID:		Run ID: VMS9_111108A		SeqNo: 1812271		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	41.68	1.0	20	21.19	102	80-120	0			
Ethylbenzene	18.04	1.0	20	0	90.2	75-125	0			
m,p-Xylene	34.34	2.0	40	0	85.8	75-130	0			
o-Xylene	18.03	1.0	20	0	90.2	80-120	0			
Toluene	18.02	1.0	20	0	90.1	75-120	0			
Xylenes, Total	52.37	3.0	60	0	87.3	75-130	0			
Surr: 1,2-Dichloroethane-d4	102.1	0	100	0	102	70-120	0			
Surr: 4-Bromofluorobenzene	101.3	0	100	0	101	75-120	0			
Surr: Dibromofluoromethane	103.9	0	100	0	104	85-115	0			
Surr: Toluene-d8	91.17	0	100	0	91.2	85-120	0			

MSD Sample ID: 1110814-25A MSD				Units: µg/L			Analysis Date: 11/8/2011 08:58 PM			
Client ID:		Run ID: VMS9_111108A		SeqNo: 1812272		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	41.61	1.0	20	21.19	102	80-120	41.68	0.168	30	
Ethylbenzene	18.12	1.0	20	0	90.6	75-125	18.04	0.442	30	
m,p-Xylene	34.54	2.0	40	0	86.4	75-130	34.34	0.581	30	
o-Xylene	18.19	1.0	20	0	91	80-120	18.03	0.883	30	
Toluene	18.24	1.0	20	0	91.2	75-120	18.02	1.21	30	
Xylenes, Total	52.73	3.0	60	0	87.9	75-130	52.37	0.685	30	
Surr: 1,2-Dichloroethane-d4	101.7	0	100	0	102	70-120	102.1	0.383	30	
Surr: 4-Bromofluorobenzene	100.2	0	100	0	100	75-120	101.3	1.1	30	
Surr: Dibromofluoromethane	103.5	0	100	0	104	85-115	103.9	0.405	30	
Surr: Toluene-d8	92.12	0	100	0	92.1	85-120	91.17	1.04	30	

The following samples were analyzed in this batch:

1111234-03A 1111234-04A 1111234-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: HRL Compliance Solutions
Work Order: 1111234
Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **37239** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-37239-37239				Units: mg/Kg		Analysis Date: 11/8/2011 12:10 PM		
Client ID:		Run ID: WETCHEM_111108H				SeqNo: 1811799		Prep Date: 11/7/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 0.50

LCS		Sample ID: LCS-37239-37239				Units: mg/Kg		Analysis Date: 11/8/2011 12:10 PM		
Client ID:		Run ID: WETCHEM_111108H				SeqNo: 1811797		Prep Date: 11/7/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 2.024 0.50 2 0 101 75-110 0

LCSD		Sample ID: LCSD-37239-37239				Units: mg/Kg		Analysis Date: 11/8/2011 12:10 PM		
Client ID:		Run ID: WETCHEM_111108H				SeqNo: 1811798		Prep Date: 11/7/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 2.024 0.50 2 0 101 75-110 2.024 0 20

MS		Sample ID: 1111234-01B MS				Units: mg/Kg		Analysis Date: 11/8/2011 12:10 PM		
Client ID: East Wall 3 ft		Run ID: WETCHEM_111108H				SeqNo: 1811790		Prep Date: 11/7/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 0.4881 0.50 1.984 0 24.6 60-130 0 JS

MSD		Sample ID: 1111234-01B MSD				Units: mg/Kg		Analysis Date: 11/8/2011 12:10 PM		
Client ID: East Wall 3 ft		Run ID: WETCHEM_111108H				SeqNo: 1811791		Prep Date: 11/7/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 0.3333 0.49 1.961 0 17 60-130 0.4881 0 30 JS

The following samples were analyzed in this batch:

1111234-01B	1111234-02B	1111234-03B
1111234-04B	1111234-05B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

QC Page: 16 of 18

Client: HRL Compliance Solutions
Work Order: 1111234
Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **R97369** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-R97369-R97369				Units: s.u.		Analysis Date: 11/7/2011 10:05 AM		
Client ID:		Run ID: WETCHEM_1111070		SeqNo: 1810755		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	4.38	0	4.4	0	99.5	90-110	0			

DUP		Sample ID: 1111234-05B DUP				Units: s.u.		Analysis Date: 11/7/2011 10:05 AM		
Client ID: Pit Bottom West Half 5 ft		Run ID: WETCHEM_1111070		SeqNo: 1810761		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.67	0	0	0	0	0-0	8.67	0	20	

The following samples were analyzed in this batch:

1111234-01B	1111234-02B	1111234-03B
1111234-04B	1111234-05B	1111234-08A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: HRL Compliance Solutions
Work Order: 1111234
Project: Williams GV 88-1 Production Pit 1/3/11

QC BATCH REPORT

Batch ID: **R97392** Instrument ID **MOIST** Method: **A2540 G**

MBLK	Sample ID: WBLKS1-R97392					Units: % of sample			Analysis Date: 11/7/2011 05:15 PM		
Client ID:	Run ID: MOIST_111107B				SeqNo: 1811573		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture ND 0.050

LCS	Sample ID: LCS-R97392					Units: % of sample			Analysis Date: 11/7/2011 05:15 PM		
Client ID:	Run ID: MOIST_111107B				SeqNo: 1811572		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 100 0.050 100 0 100 99.5-100.5 0

DUP	Sample ID: 1111192-07BDUP					Units: % of sample			Analysis Date: 11/7/2011 05:15 PM		
Client ID:	Run ID: MOIST_111107B				SeqNo: 1811556		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 10.86 0.050 0 0 0 0-0 10.92 0.551 20

DUP	Sample ID: 1111192-13BDUP					Units: % of sample			Analysis Date: 11/7/2011 05:15 PM		
Client ID:	Run ID: MOIST_111107B				SeqNo: 1811563		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 11.69 0.050 0 0 0 0-0 11.72 0.256 20

The following samples were analyzed in this batch:

1111234-01B	1111234-02B	1111234-03B
1111234-04B	1111234-05B	1111234-06A
1111234-07A	1111234-08A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Chain-of-Custody

WORKORDER
#

111234

Form 202r

PAGE

1 of 1

DISPOSAL



By Lab or Return to Client

[illegible]

*Time Zone (Circle): EST CST **MST** PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: <u>24 Hour</u> turnaround for TVPH, BTEX, TEPH, and Semi Vols. <u>Standard</u> turnaround for Metals, SAR, EC, pH and Arsenic. <div style="text-align: center; font-size: 2em; margin-top: 20px;">2.2²</div>	QC PACKAGE (check below)	
	X	LEVEL II (Standard QC)
		LEVEL III (Std QC + forms)
		LEVEL IV (Std QC + forms + raw data)
Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035		

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Dan Pinegar	11/4/2011	5:00 PM
RECEIVED BY		JOSEPH R. RYAN	11/5/11	1030
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

**Subcontractor:**A & L Great Lakes Agricultural La
3505 Conestoga Dr

TEL: (260) 483-4759

FAX: (260) 483-5274

Ft. Wayne, IN 46808

Acct #: 91000

CHAIN-OF-CUSTODY RECORDDate: **07-Nov-11**COC ID: **3288**Due Da **11-Nov-11**

Page 1 of 1

Environmental

Salesperson

Debbie Fazio

Customer Information		Project Information		Parameter/Method Request for Analysis											
Purchase Order	20-122011177	Project Name	1111234	A	Subcontracted Analyses (SUBCONTRACT)										
Work Order		Project Number		B											
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C											
Send Report To	Ann Preston	Inv Attn	Accounts Payable	D											
Address	3352 128th Avenue	Address	3352 128th Avenue	E											
				F											
City/State/Zip	Holland, Michigan 49424-9263	City/State/Zip	Holland, Michigan 49424-9263	G											
Phone	(616) 399-6070	Phone	(616) 399-6070	H											
Fax	(616) 399-6185	Fax	(616) 399-6185	I											
eMail Address	ann.preston@alsglobal.com	eMail CC		J											
Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J		
1111234-01C	Soil	3/Nov/2011 9:05	(1) MISC	X											
1111234-02C	Soil	3/Nov/2011 9:15	(1) MISC	X											
1111234-03C	Soil	3/Nov/2011 9:25	(1) MISC	X											
1111234-04C	Soil	3/Nov/2011 9:35	(1) MISC	X											
1111234-05C	Soil	4/Nov/2011 9:45	(1) MISC	X											
1111234-08B	Soil	3/Nov/2011 10:25	(1) MISC	X											

Comments:Please analyze for SAR-EC. Email results to Ann Preston.

Relinquished by:

Date/Time

Received by:

Date/Time

Cooler IDs

Report/QC Level

Std

Relinquished by:

Date/Time

Received by:

Date/Time

Sample Receipt Checklist

Client Name: HRL

Date/Time Received: 05-Nov-11 10:30

Work Order: 1111234

Received by: JR

Checklist completed by Joseph Ribar 05-Nov-11
eSignature Date

Reviewed by: Ann Preston 06-Nov-11
eSignature Date

Matrices: soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>2.2 c</u>		
Cooler(s)/Kit(s):			
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			
Login Notes:			

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

Revision: 1

FedEx *NEW Package*
Express *US Airbill*

FedEx
Tracking
Number

8769 1479 7271

0200 Form
ID No.

FedEx Retrieval Copy

fedex.com 1800.GoFedEx 1800.463.3339

1 From
Date 11-4-11 Sender's FedEx Account Number _____
Sender's Name DAN P. WAGNER Phone 712-333-3771
Company USC
Address 794 HUNTER C. ST. 140
City BRANDS BLVD State GA ZIP 30506

2 Your Internal Billing Reference

3 To
Recipient's Name SAMPLE RESEARCH Phone (410) 304 6011
Company 445 BROAD
Address 5232 12TH AVE Dept./Floor/Suite/Room _____
Address 1100000000 City MD State MD ZIP 21114
Use this line for the HOLD location address or for continuation of your shipping address.



8769 1479 7271

4 Express Package Service

* To most locations.

NOTE: Service order has changed. Please select carefully.

☒ **NO BUSINESS DAYS**

☐ **FedEx First Overnight**
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ **FedEx Priority Overnight**
Next business morning. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ **FedEx Standard Overnight**
Next business afternoon. Saturday Delivery NOT available.

☒ **2 BUSINESS DAYS**

☐ **NEW FedEx 2Day A.M.**
Second business morning. Saturday Delivery NOT available.

☐ **FedEx 2Day**
Second business afternoon. Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ **FedEx Express Saver**
Third business day. Saturday Delivery NOT available.

5 Packaging * Declared value limit \$500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☐ Other

6 Special Handling and Delivery Signature Options

☒ **SATURDAY DELIVERY**

☐ **No Signature Required**
Packages may be left without obtaining a signature for delivery.

☐ **Direct Signature**
Someone at recipient's address may sign for delivery. Fee applies.

☐ **Indirect Signature**
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?

☐ **No** ☐ **Yes**
As per attached Shipper's Declaration.

☐ **Yes**
Shipper's Declaration not required.

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

☐ **Cargo Aircraft Only**

7 Payment Bill to:

Enter FedEx Acct. No. or Credit Card No. below.

Obtain recip. Acct. No. ☐

☐ **Sender** Acct. No. in Section 1 will be billed. ☐ **Recipient** ☐ **Third Party** ☐ **Credit Card** ☐ **Cash/Check**

Total Packages

Total Weight

Credit Card Auth.

Your liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

612

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CUSTODY SEAL

DATE 11-4-11

SIGNATURE [Signature]

QEC

Quality Environmental Containers
800-255-3950 • 304-255-3900

fedex.com 1800.GoFedEx 1800.463.3339

Appendix 2: Background Raw Analytical Data

ALS Group USA, Corp

Date: 30-Nov-11

Client: HRL Compliance Solutions

Project: Williams GV 88-1 Production Pit 1/3/11

Work Order: 1111234

Sample ID: BKGD 1

Lab ID: 1111234-06

Collection Date: 11/3/2011 10:15 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
MOISTURE			A2540 G			Analyst: CG
Moisture	21		0.050	% of sample	1	11/7/2011 05:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

ALS Group USA, Corp

Date: 30-Nov-11

Client: HRL Compliance Solutions

Project: Williams GV 88-1 Production Pit 1/3/11

Work Order: 1111234

Sample ID: BKGD 2

Lab ID: 1111234-07

Collection Date: 11/3/2011 10:20 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
MOISTURE			A2540 G			Analyst: CG
Moisture	20		0.050	% of sample	1	11/7/2011 05:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

ALS Group USA, Corp

Date: 30-Nov-11

Client: HRL Compliance Solutions
Project: Williams GV 88-1 Production Pit 1/3/11
Sample ID: BKGD 3
Collection Date: 11/3/2011 10:25 AM

Work Order: 1111234
Lab ID: 1111234-08
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SUBCONTRACTED ANALYSES			SUBCONTRACT			Analyst: A&LGL
Subcontracted Analyses	Rcvd 11/10/11			as noted	1	11/10/2011
MOISTURE			A2540 G			Analyst: CG
Moisture	18		0.050	% of sample	1	11/7/2011 05:15 PM
PH			SW9045D			Analyst: JJG
pH	8.48			s.u.	1	11/7/2011 10:05 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Report Number: F11312-0567

Account Number: 91000

A & L GREAT LAKES LABORATORIES, INC.

3505 Conestoga Drive • Fort Wayne, Indiana 46808-4413 • Phone 260-483-4759 • Fax 260-483-5274

www.algreatlakes.com • lab@algreatlakes.com



QUALITY ANALYSES FOR INFORMED DECISIONS

TO: ALS LABORATORY GROUP
3352 128TH AVE
HOLLAND, MI 49424-9263

RE: PROJ. 1111234

DATE RECEIVED: 11/08/2011

DATE REPORTED: 11/10/2011

PAGE: 2

P.O. NUMBER: 20-122011177

ATTN: ANN PRESTON

REPORT OF ANALYSIS

LAB NO.	SAMPLE ID	ANALYSIS	RESULT	UNIT	METHOD
79839	05C	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	10.17	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	147	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	95	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	10323	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	162.5	-	USDA Handbook 60
79840	08B	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	0.43	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	73	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	9	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	17	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	0.5	-	USDA Handbook 60