

Introduction

Encana Oil & Gas (USA) Inc. (Encana) is submitting this Form 4 Sundry Notice to request final closure status for an earthen pit associated with Evacuation Creek Com B 7602 (COGCC facility # 315471, COGCC remediation #5272). The pit was investigated, characterized and sampled by a third party consultant as authorized by Encana personnel. All samples were collected in accordance with Encana's Environmental Compliance Group's Sampling Procedures. The analytical results for the respective soil samples were within the COGCC Table 910-1 standards and are provided in Table 1 and Attachment A of this submittal. The text below provides the details of the site investigation. For a visual description of the site please refer to Figures 1 and 2 – Site Maps.

Site Investigation

October 15, 2010 – The historic pit was initially characterized and delineated by a third party consultant utilizing a PetroFlag field unit and a backhoe for excavation purposes. The field screenings were in exceedance of the COGCC Table 910-1 standards; as such, the impacted soil was treated with a bioremediation product and returned to the point of origin to be assessed at a later date.

August 4, 2011 – The impacted soil associated with the pit was reassessed utilizing a photoionization (PID) meter and the use of a trackhoe for excavation. Field screen readings were collected throughout the excavation process. There were minimal indicators of hydrocarbon impacts to the soil (e.g. soil staining, elevated field screen readings). Excavation continued until there were no indicators of hydrocarbon impacts. PID readings were collected from soil samples on the pit walls and pit bottom. A grab sample was collected and submitted to the analytical laboratory for analysis from the soil with the greatest PID reading (76.9 ppm). The excavated soil was stockpiled on location out of the path of typical pad activities while waiting for the analytical laboratory report. The excavation was fenced and left open until analytical reports confirmed that the soil was within the COGCC Table 910-1 standards. Five (5) background samples were collected from up gradient of the excavation site from a depth of approximately six (6) inches. These samples were sent the lab for analysis with respect to arsenic. The stockpiled soil was backfilled and compacted into the excavation when the analytical laboratory confirmed the soil was within the COGCC Table 910-1 standards.

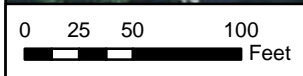
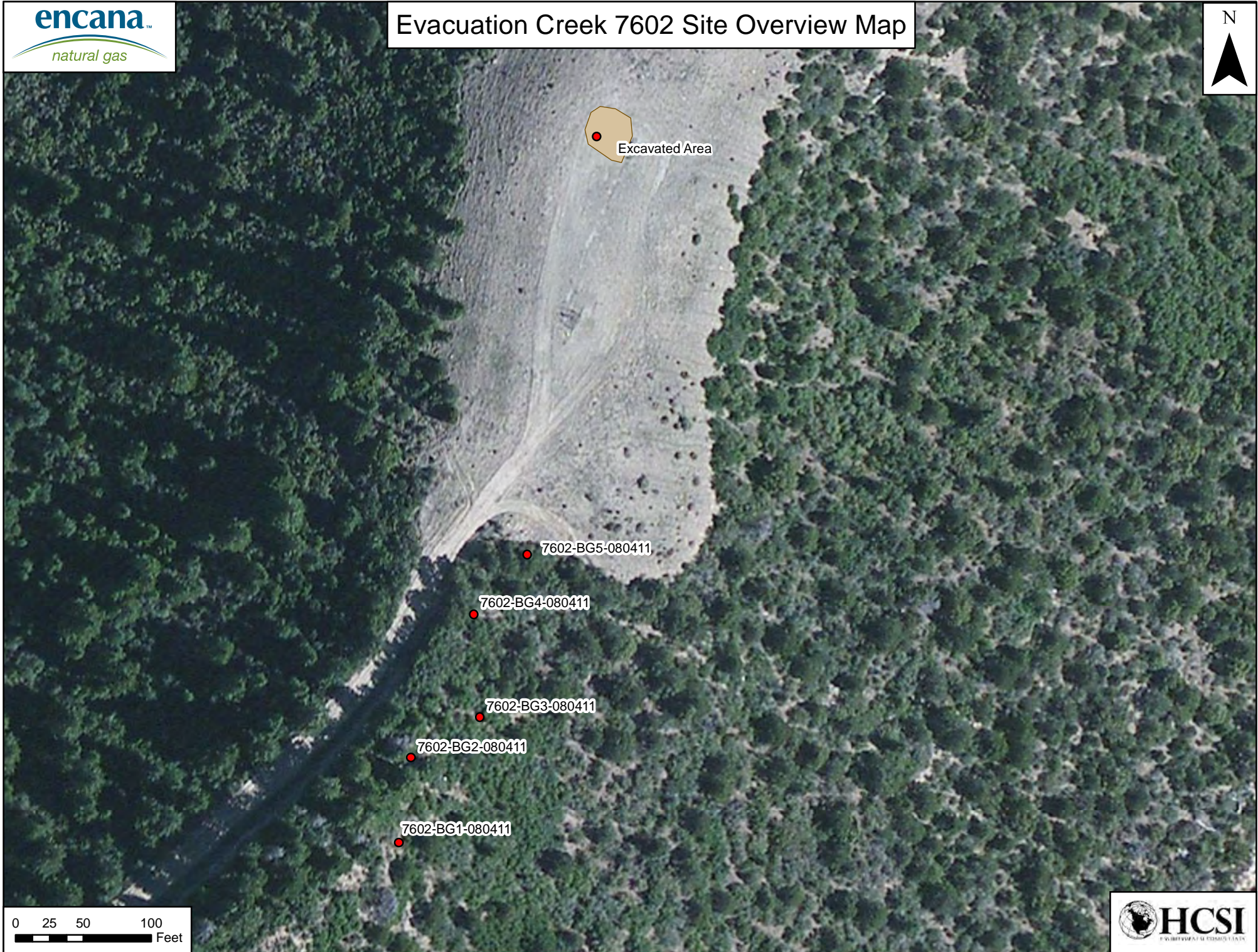
Conclusion

Based on the site investigation and analytical results, the pit associated with the Evacuation Creek Com B 7602 is in compliance with the standards specified within COGCC Table 910-1. Encana respectfully requests that final closure be granted for the respective pit, COGCC remediation #5272.

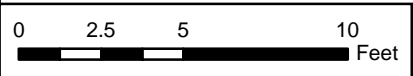
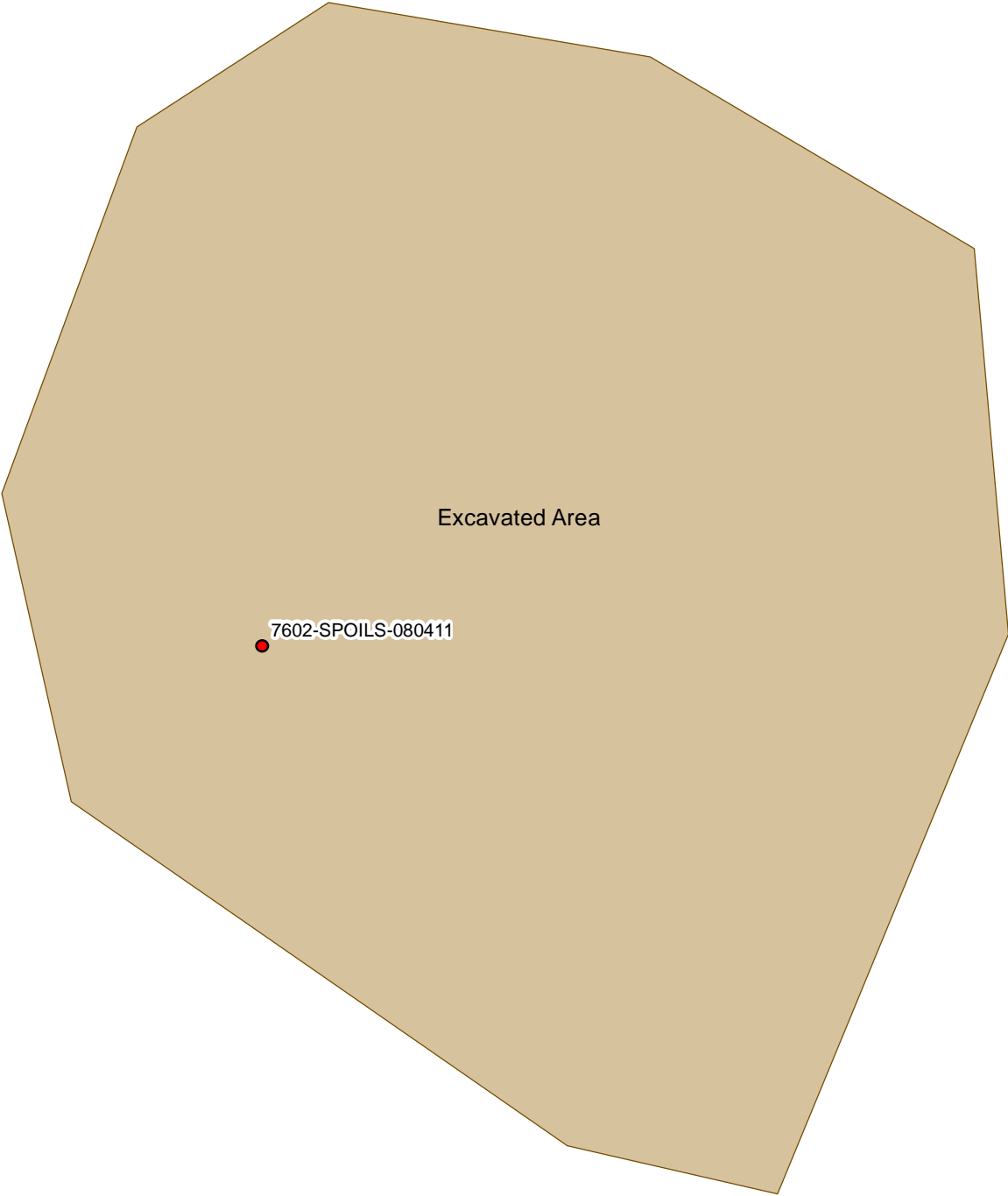
Analytical Review

Sample results indicate that the soil within the earthen pit footprint on Encana's evacuation Creek Com B 7602 well pad have exceedances of COGCC Table 910-1 allowable concentrations for arsenic (5.7 ppm). Though the arsenic concentration in the soil is above the allowable concentration identified in Table 910-1, the concentration is within the range of arsenic background values (2.6-5.8 ppm) in this area. Based on these results and footnote 1 to COGCC Table 910-1, Encana requests that the COGCC consider the higher range of background arsenic value(s) as the allowable concentration for this constituent. Please see Attachment A for the respective laboratory analytical results.

Evacuation Creek 7602 Site Overview Map



Evacuation Creek 7602 Sample Location Map



							Analytes (BDL = Below Detection Limit; NA = Not Applicable; NS = Not Sampled)																						
							Organics in Soil (mg/Kg)																						
Allowable Concentration -->							500	NA	NA	0.17	85	100	175	1000	1000	0.22	0.22	2.2	0.022	22	0.022	1000	1000	0.22	23	1000	see below	<12	(6-9)
Location Number ID	COC ID	Date:	Lab	Sampler:	Sample Matrix	Matrix Notes	TPH	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C28) High Fraction	Benzene	Toluene	EthylBenzene	Xylenes - total	Acenaphthene	Anthracene	Benzo(A)anthracene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Benzo(A)pyrene	Chrysene	Dibenzo(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Pyrene	EC (<4 mmhos/cm or 2x background)	SAR (calculation)	pH
7602	7602-BG1-080411 6IN	8/4/2011	ESC	KHR	Soil	Background 1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
7602	7602-BG2-080411 6IN	8/4/2011	ESC	KHR	Soil	Background 2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
7602	7602-BG3-080411 6IN	8/4/2011	ESC	KHR	Soil	Background 3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
7602	7602-BG4-080411 6IN	8/4/2011	ESC	KHR	Soil	Background 4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
7602	7602-BG5-080411 6IN	8/4/2011	ESC	KHR	Soil	Background 5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
7602	7602-SPOILS-080411 4FT	8/4/2011	ESC	KHR	Soil	Spoils	24.7	6.7	18	BDL	BDL	BDL	0.055	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.028	BDL	0.64	7.8	7.8

Metals in Soil (mg/kg [ppm])															
0.39	15000	15000	2 (mg/L)	NA	70	120000	23	3100	400	23	1600	390	390	23000	
Arsenic	Barium - LDNR True Total Barium	Barium - EPA Total Barium	Boron - Hot Water Soluble	Boron - EPA Total Boron	Cadmium	Chromium (II)	Chromium (VI)	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc	
5.8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
5.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
5.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
4.6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
2.6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
5.7	NS	130	NS	NS	0.28	17	BDL	32	16	0.071	19	5.8	BDL	84	



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Kate Ramsay
HRL Compliance Solutions- CO
744 Horizon Ct., Suite 140
Grand Junction, CO 81506

Report Summary

Monday August 15, 2011

Report Number: L529716

Samples Received: 08/05/11

Client Project:

Description: Pit Closure Project

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jayred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Kate Ramsay
HRL Compliance Solutions- CO
744 Horizon Ct., Suite 140
Grand Junction, CO 81506

August 15, 2011

Date Received : August 05, 2011
Description : Pit Closure Project

ESC Sample # : L529716-01

Sample ID : 7602-SPOILS-080411 4FT

Site ID : EC 7602

Collected By : Kate Ramsay
Collection Date : 08/04/11 10:45

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/11/11	1
Chromium, Trivalent	17.	2.0	mg/kg	Calc.	08/07/11	1
ORP	66.		mV	2580	08/09/11	1
pH	7.8		su	9045D	08/06/11	1
Sodium Adsorption Ratio	7.8			Calc.	08/09/11	1
Specific Conductance	680		umhos/cm	9050AMod	08/12/11	1
Mercury	0.071	0.020	mg/kg	7471	08/10/11	1
Arsenic	5.7	1.0	mg/kg	6010B	08/07/11	1
Barium	130	0.25	mg/kg	6010B	08/07/11	1
Cadmium	0.28	0.25	mg/kg	6010B	08/07/11	1
Chromium	17.	0.50	mg/kg	6010B	08/07/11	1
Copper	32.	1.0	mg/kg	6010B	08/07/11	1
Lead	16.	0.25	mg/kg	6010B	08/07/11	1
Nickel	19.	1.0	mg/kg	6010B	08/07/11	1
Selenium	5.8	1.0	mg/kg	6010B	08/07/11	1
Silver	BDL	0.50	mg/kg	6010B	08/07/11	1
Zinc	84.	1.5	mg/kg	6010B	08/07/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	08/07/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/07/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/07/11	5
Total Xylene	0.055	0.0075	mg/kg	8021/8015	08/07/11	5
TPH (GC/FID) Low Fraction	6.7	0.50	mg/kg	GRO	08/07/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	94.8		% Rec.	8021/8015	08/07/11	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	08/07/11	5
TPH (GC/FID) High Fraction	18.	4.0	mg/kg	3546/DRO	08/09/11	1
Surrogate recovery(%)						
o-Terphenyl	67.8		% Rec.	3546/DRO	08/09/11	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	08/08/11	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	08/08/11	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	08/08/11	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	08/08/11	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	08/08/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L529716-01 (PH) - 7.8@20.4c



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August 15, 2011

Date Received : August 05, 2011
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ESC Sample # : L529716-01

Sample ID : 7602-SPOILS-080411 4FT

Site ID : EC 7602

Collected By : Kate Ramsay
Collection Date : 08/04/11 10:45

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	08/08/11	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	08/08/11	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	08/08/11	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	08/08/11	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	08/08/11	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	08/08/11	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	08/08/11	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	08/08/11	1
Naphthalene	0.028	0.0060	mg/kg	8270C-SIM	08/08/11	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	08/08/11	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	08/08/11	1
1-Methylnaphthalene	0.021	0.0060	mg/kg	8270C-SIM	08/08/11	1
2-Methylnaphthalene	0.031	0.0060	mg/kg	8270C-SIM	08/08/11	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	08/08/11	1
Surrogate Recovery						
Nitrobenzene-d5	113.		% Rec.	8270C-SIM	08/08/11	1
2-Fluorobiphenyl	82.4		% Rec.	8270C-SIM	08/08/11	1
p-Terphenyl-d14	75.9		% Rec.	8270C-SIM	08/08/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 08/12/11 16:52 Revised: 08/15/11 07:40
L529716-01 (PH) - 7.8@20.4c



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REPORT OF ANALYSIS

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Grand Junction, CO 81506

August 15, 2011

Date Received : August 05, 2011
Description : Pit Closure Project
Sample ID : 7602-B61-080411 6IN
Collected By : Kate Ramsay
Collection Date : 08/04/11 11:00

ESC Sample # : L529716-02

Site ID : EC 7602

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	5.8	1.0	mg/kg	6010B	08/09/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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August 15, 2011

Date Received : August 05, 2011
Description : Pit Closure Project
Sample ID : 7602-B62-080411 6IN
Collected By : Kate Ramsay
Collection Date : 08/04/11 11:10

ESC Sample # : L529716-03

Site ID : EC 7602

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	5.5	1.0	mg/kg	6010B	08/09/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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August 15, 2011

Date Received : August 05, 2011
Description : Pit Closure Project
Sample ID : 7602-B63-080411 6IN
Collected By : Kate Ramsay
Collection Date : 08/04/11 11:20

ESC Sample # : L529716-04

Site ID : EC 7602

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	5.3	1.0	mg/kg	6010B	08/09/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Kate Ramsay
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August 15, 2011

Date Received : August 05, 2011
Description : Pit Closure Project
Sample ID : 7602-B64-080411 6IN
Collected By : Kate Ramsay
Collection Date : 08/04/11 11:30

ESC Sample # : L529716-05

Site ID : EC 7602

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	4.6	1.0	mg/kg	6010B	08/09/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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August 15, 2011

Date Received : August 05, 2011
Description : Pit Closure Project
Sample ID : 7602-B65-080411 6IN
Collected By : Kate Ramsay
Collection Date : 08/04/11 11:40

ESC Sample # : L529716-06

Site ID : EC 7602

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	2.6	1.0	mg/kg	6010B	08/09/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Summary of Remarks For Samples Printed
08/15/11 at 07:40:41

TSR Signing Reports: 358
R5 - Desired TAT

Accounting - pending credit application. TSR - pending info release authorization.

Sample: L529716-01 Account: HRLCSCO Received: 08/05/11 09:00 Due Date: 08/12/11 00:00 RPT Date: 08/12/11 16:52

Sample: L529716-02 Account: HRLCSCO Received: 08/05/11 09:00 Due Date: 08/12/11 00:00 RPT Date: 08/12/11 16:52

Sample: L529716-03 Account: HRLCSCO Received: 08/05/11 09:00 Due Date: 08/12/11 00:00 RPT Date: 08/12/11 16:52

Sample: L529716-04 Account: HRLCSCO Received: 08/05/11 09:00 Due Date: 08/12/11 00:00 RPT Date: 08/12/11 16:52

Sample: L529716-05 Account: HRLCSCO Received: 08/05/11 09:00 Due Date: 08/12/11 00:00 RPT Date: 08/12/11 16:52

Sample: L529716-06 Account: HRLCSCO Received: 08/05/11 09:00 Due Date: 08/12/11 00:00 RPT Date: 08/12/11 16:52



YOUR LAB OF CHOICE

HRL Compliance Solutions- CO
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Quality Assurance Report
Level II

L529716

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August 15, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
pH	4.20	su			WG549255	08/06/11 16:38
Arsenic	< 1	mg/kg			WG549328	08/07/11 14:50
Barium	< .25	mg/kg			WG549328	08/07/11 14:50
Cadmium	< .25	mg/kg			WG549328	08/07/11 14:50
Chromium	< .5	mg/kg			WG549328	08/07/11 14:50
Copper	< 1	mg/kg			WG549328	08/07/11 14:50
Lead	< .25	mg/kg			WG549328	08/07/11 14:50
Nickel	< 1	mg/kg			WG549328	08/07/11 14:50
Selenium	< 1	mg/kg			WG549328	08/07/11 14:50
Silver	< .5	mg/kg			WG549328	08/07/11 14:50
Zinc	< 1.5	mg/kg			WG549328	08/07/11 14:50
Benzene	< .0005	mg/kg			WG549329	08/07/11 02:01
Ethylbenzene	< .0005	mg/kg			WG549329	08/07/11 02:01
Toluene	< .005	mg/kg			WG549329	08/07/11 02:01
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG549329	08/07/11 02:01
Total Xylene	< .0015	mg/kg			WG549329	08/07/11 02:01
a,a,a-Trifluorotoluene(FID)		% Rec.	94.82	59-128	WG549329	08/07/11 02:01
a,a,a-Trifluorotoluene(PID)		% Rec.	100.8	54-144	WG549329	08/07/11 02:01
1-Methylnaphthalene	< .006	mg/kg			WG549403	08/08/11 10:08
2-Chloronaphthalene	< .006	mg/kg			WG549403	08/08/11 10:08
2-Methylnaphthalene	< .006	mg/kg			WG549403	08/08/11 10:08
Acenaphthene	< .006	mg/kg			WG549403	08/08/11 10:08
Acenaphthylene	< .006	mg/kg			WG549403	08/08/11 10:08
Anthracene	< .006	mg/kg			WG549403	08/08/11 10:08
Benzo(a)anthracene	< .006	mg/kg			WG549403	08/08/11 10:08
Benzo(a)pyrene	< .006	mg/kg			WG549403	08/08/11 10:08
Benzo(b)fluoranthene	< .006	mg/kg			WG549403	08/08/11 10:08
Benzo(g,h,i)perylene	< .006	mg/kg			WG549403	08/08/11 10:08
Benzo(k)fluoranthene	< .006	mg/kg			WG549403	08/08/11 10:08
Chrysene	< .006	mg/kg			WG549403	08/08/11 10:08
Dibenz(a,h)anthracene	< .006	mg/kg			WG549403	08/08/11 10:08
Fluoranthene	< .006	mg/kg			WG549403	08/08/11 10:08
Fluorene	< .006	mg/kg			WG549403	08/08/11 10:08
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG549403	08/08/11 10:08
Naphthalene	< .006	mg/kg			WG549403	08/08/11 10:08
Phenanthrene	< .006	mg/kg			WG549403	08/08/11 10:08
Pyrene	< .006	mg/kg			WG549403	08/08/11 10:08
2-Fluorobiphenyl		% Rec.	70.00	34-129	WG549403	08/08/11 10:08
Nitrobenzene-d5		% Rec.	67.18	14-141	WG549403	08/08/11 10:08
p-Terphenyl-d14		% Rec.	73.05	25-139	WG549403	08/08/11 10:08
TPH (GC/FID) High Fraction	< 4	ppm			WG549414	08/08/11 21:49
o-Terphenyl		% Rec.	81.61	50-150	WG549414	08/08/11 21:49
Arsenic	< 1	mg/kg			WG549335	08/09/11 19:04
Mercury	< .02	mg/kg			WG549430	08/10/11 21:22
Chromium, Hexavalent	< 2	mg/kg			WG549723	08/11/11 16:26

* Performance of this Analyte is outside of established criteria.

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Analyte	Result	Laboratory Blank Units % Rec	Limit	Batch	Date Analyzed
Specific Conductance	2.60	umhos/cm		WG549960	08/12/11 16:17

Analyte	Units	Duplicate Result Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	8.00 8.00	0	1	L529243-03	WG549255
pH	su	7.80 7.80	0	1	L529716-01	WG549255
Arsenic	mg/kg	5.00 5.00	0.401	20	L529770-01	WG549328
Barium	mg/kg	150. 145.	5.37	20	L529770-01	WG549328
Cadmium	mg/kg	0 0.0609	NA	20	L529770-01	WG549328
Chromium	mg/kg	11.0 11.0	3.70	20	L529770-01	WG549328
Copper	mg/kg	11.0 10.4	5.61	20	L529770-01	WG549328
Lead	mg/kg	8.60 8.52	0.818	20	L529770-01	WG549328
Nickel	mg/kg	9.50 9.11	4.19	20	L529770-01	WG549328
Selenium	mg/kg	4.70 4.76	1.27	20	L529770-01	WG549328
Silver	mg/kg	0 0	0	20	L529770-01	WG549328
Zinc	mg/kg	41.0 41.2	1.22	20	L529770-01	WG549328
ORP	mV	0 0	0	20	L529342-06	WG549261
ORP	mV	65.0 62.0	4.72	20	L529565-08	WG549261
Arsenic	mg/kg	1.50 2.10	36.0*	20	L529705-01	WG549335
Mercury	mg/kg	0 0	0	20	L529705-01	WG549430
Chromium,Hexavalent	mg/kg	0 0	0	20	L530132-05	WG549723
Chromium,Hexavalent	mg/kg	0 0	0	20	L529565-01	WG549723
Specific Conductance	umhos/cm	1700 1700	0	20	L530029-01	WG549960

Analyte	Units	Laboratory Control Sample Known Val Result	% Rec	Limit	Batch
pH	su	9.04 8.90	98.5	98-101	WG549255
Arsenic	mg/kg	192 179.	93.2	78.6-120.8	WG549328
Barium	mg/kg	420 414.	98.6	78.8-121.4	WG549328
Cadmium	mg/kg	70.1 71.8	102.	78.5-121.5	WG549328
Chromium	mg/kg	168 175.	104.	80.4-120.2	WG549328
Copper	mg/kg	122 128.	105.	81.6-119.7	WG549328
Lead	mg/kg	113 111.	98.2	77.3-122.1	WG549328
Nickel	mg/kg	74.1 74.2	100.	78.8-121.2	WG549328
Selenium	mg/kg	176 179.	102.	75.6-125.0	WG549328
Silver	mg/kg	115 104.	90.4	66-133.9	WG549328
Zinc	mg/kg	437 450.	103.	78.5-121.7	WG549328
Benzene	mg/kg	.05 0.0503	101.	76-113	WG549329
Ethylbenzene	mg/kg	.05 0.0527	105.	78-115	WG549329
Toluene	mg/kg	.05 0.0525	105.	76-114	WG549329
Total Xylene	mg/kg	.15 0.161	107.	81-118	WG549329

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
a,a,a-Trifluorotoluene(FID)				94.54	59-128	
a,a,a-Trifluorotoluene(PID)				100.5	54-144	
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.44	99.0	67-135	WG549329
a,a,a-Trifluorotoluene(FID)				104.7	59-128	WG549329
a,a,a-Trifluorotoluene(PID)				113.9	54-144	WG549329
1-Methylnaphthalene	mg/kg	.033	0.0266	80.8	48-113	WG549403
2-Chloronaphthalene	mg/kg	.033	0.0258	78.1	51-114	WG549403
2-Methylnaphthalene	mg/kg	.033	0.0254	77.1	44-109	WG549403
Acenaphthene	mg/kg	.033	0.0275	83.4	52-108	WG549403
Acenaphthylene	mg/kg	.033	0.0272	82.4	51-110	WG549403
Anthracene	mg/kg	.033	0.0266	80.6	58-120	WG549403
Benzo(a)anthracene	mg/kg	.033	0.0272	82.5	54-110	WG549403
Benzo(a)pyrene	mg/kg	.033	0.0263	79.7	56-118	WG549403
Benzo(b)fluoranthene	mg/kg	.033	0.0265	80.3	55-114	WG549403
Benzo(g,h,i)perylene	mg/kg	.033	0.0287	87.1	48-130	WG549403
Benzo(k)fluoranthene	mg/kg	.033	0.0278	84.1	55-122	WG549403
Chrysene	mg/kg	.033	0.0283	85.9	57-118	WG549403
Dibenz(a,h)anthracene	mg/kg	.033	0.0277	84.0	53-122	WG549403
Fluoranthene	mg/kg	.033	0.0256	77.7	58-118	WG549403
Fluorene	mg/kg	.033	0.0266	80.6	54-109	WG549403
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0286	86.6	51-125	WG549403
Naphthalene	mg/kg	.033	0.0254	77.0	45-105	WG549403
Phenanthrene	mg/kg	.033	0.0272	82.5	53-114	WG549403
Pyrene	mg/kg	.033	0.0287	86.9	53-121	WG549403
2-Fluorobiphenyl				68.46	34-129	WG549403
Nitrobenzene-d5				60.99	14-141	WG549403
p-Terphenyl-d14				67.05	25-139	WG549403
TPH (GC/FID) High Fraction	ppm	60	47.0	78.4	50-150	WG549414
o-Terphenyl				69.79	50-150	WG549414
ORP	mV	229	220.	96.1	95.6-104.37	WG549261
Arsenic	mg/kg	192	191.	99.5	78.6-120.8	WG549335
Mercury	mg/kg	8.77	10.1	115.	71.6-127.7	WG549430
Chromium,Hexavalent	mg/kg	132	105.	79.5	50-150	WG549723
Specific Conductance	umhos/cm	427	430.	101.	85-115	WG549960

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
pH	su	8.90	8.90	98.0	98-101	0	20	WG549255
Benzene	mg/kg	0.0510	0.0503	102.	76-113	1.32	20	WG549329
Ethylbenzene	mg/kg	0.0530	0.0527	106.	78-115	0.540	20	WG549329
Toluene	mg/kg	0.0526	0.0525	105.	76-114	0.120	20	WG549329
Total Xylene	mg/kg	0.159	0.161	106.	81-118	0.970	20	WG549329

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Analyte	Laboratory Control Sample Duplicate				Limit	RPD	Limit	Batch
	Units	Result	Ref	%Rec				
a,a,a-Trifluorotoluene(FID)				95.34	59-128			
a,a,a-Trifluorotoluene(PID)				101.1	54-144			
TPH (GC/FID) Low Fraction	mg/kg	6.16	5.44	112.	67-135	12.4	20	WG549329
a,a,a-Trifluorotoluene(FID)				106.6	59-128			WG549329
a,a,a-Trifluorotoluene(PID)				115.3	54-144			WG549329
1-Methylnaphthalene	mg/kg	0.0237	0.0266	72.0	48-113	11.8	24	WG549403
2-Chloronaphthalene	mg/kg	0.0236	0.0258	72.0	51-114	8.63	24	WG549403
2-Methylnaphthalene	mg/kg	0.0237	0.0254	72.0	44-109	7.13	24	WG549403
Acenaphthene	mg/kg	0.0250	0.0275	76.0	52-108	9.78	22	WG549403
Acenaphthylene	mg/kg	0.0248	0.0272	75.0	51-110	9.32	21	WG549403
Anthracene	mg/kg	0.0271	0.0266	82.0	58-120	1.73	20	WG549403
Benzo(a)anthracene	mg/kg	0.0266	0.0272	80.0	54-110	2.49	22	WG549403
Benzo(a)pyrene	mg/kg	0.0257	0.0263	78.0	56-118	2.32	21	WG549403
Benzo(b)fluoranthene	mg/kg	0.0269	0.0265	81.0	55-114	1.37	20	WG549403
Benzo(g,h,i)perylene	mg/kg	0.0282	0.0287	86.0	48-130	1.77	20	WG549403
Benzo(k)fluoranthene	mg/kg	0.0265	0.0278	80.0	55-122	4.82	25	WG549403
Chrysene	mg/kg	0.0273	0.0283	83.0	57-118	3.83	20	WG549403
Dibenz(a,h)anthracene	mg/kg	0.0270	0.0277	82.0	53-122	2.68	20	WG549403
Fluoranthene	mg/kg	0.0254	0.0256	77.0	58-118	0.778	20	WG549403
Fluorene	mg/kg	0.0248	0.0266	75.0	54-109	7.20	20	WG549403
Indeno(1,2,3-cd)pyrene	mg/kg	0.0273	0.0286	83.0	51-125	4.60	21	WG549403
Naphthalene	mg/kg	0.0242	0.0254	73.0	45-105	5.00	24	WG549403
Phenanthrene	mg/kg	0.0243	0.0272	74.0	53-114	11.3	20	WG549403
Pyrene	mg/kg	0.0279	0.0287	84.0	53-121	2.85	20	WG549403
2-Fluorobiphenyl				68.89	34-129			WG549403
Nitrobenzene-d5				58.46	14-141			WG549403
p-Terphenyl-d14				68.62	25-139			WG549403
TPH (GC/FID) High Fraction	ppm	49.8	47.0	83.0	50-150	5.65	25	WG549414
o-Terphenyl				73.63	50-150			WG549414
ORP	mV	220.	220.	96.0	95.6-104.37	0	20	WG549261
Chromium, Hexavalent	mg/kg	101.	105.	76.0	50-150	3.88	20	WG549723
Specific Conductance	umhos/	420.	430.	98.0	85-115	2.35	20	WG549960

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Arsenic	mg/kg	54.0	5.00	50	98.0	75-125	L529770-01	WG549328
Barium	mg/kg	194.	145.	50	98.0	75-125	L529770-01	WG549328
Cadmium	mg/kg	52.3	0.0609	50	104.	75-125	L529770-01	WG549328
Chromium	mg/kg	58.8	11.0	50	95.6	75-125	L529770-01	WG549328
Copper	mg/kg	61.2	10.4	50	102.	75-125	L529770-01	WG549328
Lead	mg/kg	59.2	8.52	50	101.	75-125	L529770-01	WG549328
Nickel	mg/kg	56.5	9.11	50	94.8	75-125	L529770-01	WG549328
Selenium	mg/kg	50.2	4.76	50	90.9	75-125	L529770-01	WG549328
Silver	mg/kg	49.6	0	50	99.2	75-125	L529770-01	WG549328
Zinc	mg/kg	86.7	41.2	50	91.0	75-125	L529770-01	WG549328

Benzene mg/kg 0.174 0 .05 69.7 32-137 L529644-01 WG549329

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Ethylbenzene	mg/kg	0.169	0	.05	67.8	10-150	L529644-01	WG549329
Toluene	mg/kg	0.175	0	.05	70.1	20-142	L529644-01	WG549329
Total Xylene	mg/kg	0.489	0	.15	65.2	16-141	L529644-01	WG549329
a,a,a-Trifluorotoluene(FID)					96.84	59-128		WG549329
a,a,a-Trifluorotoluene(PID)					103.5	54-144		WG549329
TPH (GC/FID) Low Fraction	mg/kg	18.9	0	5.5	68.9	55-109	L529644-01	WG549329
a,a,a-Trifluorotoluene(FID)					100.9	59-128		WG549329
a,a,a-Trifluorotoluene(PID)					110.0	54-144		WG549329
TPH (GC/FID) High Fraction	ppm	33.2	0	60	55.3	50-150	L529421-03	WG549414
o-Terphenyl					50.35	50-150		WG549414
Benzo(a)anthracene	mg/kg	0.0528	0.0220	.033	93.2	31-142	L529631-01	WG549403
Benzo(a)pyrene	mg/kg	0.0301	0	.033	91.2	26-152	L529631-01	WG549403
Benzo(b)fluoranthene	mg/kg	0.0321	0	.033	97.1	10-188	L529631-01	WG549403
Benzo(g,h,i)perylene	mg/kg	0.0329	0	.033	99.7	10-176	L529631-01	WG549403
Benzo(k)fluoranthene	mg/kg	0.0272	0	.033	82.5	22-163	L529631-01	WG549403
Chrysene	mg/kg	0.0845	0.0150	.033	211.*	26-146	L529631-01	WG549403
Dibenz(a,h)anthracene	mg/kg	0.0304	0	.033	92.0	10-160	L529631-01	WG549403
Fluoranthene	mg/kg	0.109	0.0760	.033	100.	23-160	L529631-01	WG549403
Indeno(1,2,3-cd)pyrene	mg/kg	0.0312	0	.033	94.5	10-157	L529631-01	WG549403
p-Terphenyl-d14					133.5	25-139		WG549403
Arsenic	mg/kg	46.7	2.10	50	89.2	75-125	L529705-01	WG549335
Mercury	mg/kg	0.281	0	.25	112.	70-130	L529705-01	WG549430
Chromium,Hexavalent	mg/kg	18.4	0	20	92.0	50-150	L529565-02	WG549723

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Arsenic	mg/kg	51.8	54.0	93.6	75-125	4.16	20	L529770-01	WG549328
Barium	mg/kg	196.	194.	102.	75-125	1.03	20	L529770-01	WG549328
Cadmium	mg/kg	49.9	52.3	99.7	75-125	4.70	20	L529770-01	WG549328
Chromium	mg/kg	60.3	58.8	98.6	75-125	2.52	20	L529770-01	WG549328
Copper	mg/kg	60.4	61.2	100.	75-125	1.32	20	L529770-01	WG549328
Lead	mg/kg	56.7	59.2	96.4	75-125	4.31	20	L529770-01	WG549328
Nickel	mg/kg	57.4	56.5	96.6	75-125	1.58	20	L529770-01	WG549328
Selenium	mg/kg	49.1	50.2	88.7	75-125	2.22	20	L529770-01	WG549328
Silver	mg/kg	49.8	49.6	99.6	75-125	0.402	20	L529770-01	WG549328
Zinc	mg/kg	88.8	86.7	95.2	75-125	2.39	20	L529770-01	WG549328
Benzene	mg/kg	0.192	0.174	76.9	32-137	9.82	39	L529644-01	WG549329
Ethylbenzene	mg/kg	0.182	0.169	72.8	10-150	7.13	44	L529644-01	WG549329
Toluene	mg/kg	0.190	0.175	76.0	20-142	8.09	42	L529644-01	WG549329
Total Xylene	mg/kg	0.537	0.489	71.6	16-141	9.31	46	L529644-01	WG549329
a,a,a-Trifluorotoluene(FID)				95.31	59-128				WG549329
a,a,a-Trifluorotoluene(PID)				100.2	54-144				WG549329
TPH (GC/FID) Low Fraction	mg/kg	18.0	18.9	65.5	55-109	5.06	20	L529644-01	WG549329
a,a,a-Trifluorotoluene(FID)				100.3	59-128				WG549329
a,a,a-Trifluorotoluene(PID)				110.3	54-144				WG549329

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) High Fraction	ppm	37.7	33.2	62.8	50-150	12.8	25	L529421-03	WG549414
o-Terphenyl				52.01	50-150				WG549414
Benzo(a)anthracene	mg/kg	0.0494	0.0528	82.9	31-142	6.66	31	L529631-01	WG549403
Benzo(a)pyrene	mg/kg	0.0300	0.0301	91.0	26-152	0.291	32	L529631-01	WG549403
Benzo(b)fluoranthene	mg/kg	0.0320	0.0321	97.1	10-188	0.0620	33	L529631-01	WG549403
Benzo(g,h,i)perylene	mg/kg	0.0312	0.0329	94.5	10-176	5.37	30	L529631-01	WG549403
Benzo(k)fluoranthene	mg/kg	0.0290	0.0272	87.8	22-163	6.22	29	L529631-01	WG549403
Chrysene	mg/kg	0.0621	0.0845	143.	26-146	30.5*	30	L529631-01	WG549403
Dibenz(a,h)anthracene	mg/kg	0.0302	0.0304	91.4	10-160	0.605	39	L529631-01	WG549403
Fluoranthene	mg/kg	0.0831	0.109	21.7*	23-160	27.1*	22	L529631-01	WG549403
Indeno(1,2,3-cd)pyrene	mg/kg	0.0310	0.0312	93.9	10-157	0.659	40	L529631-01	WG549403
p-Terphenyl-d14				155.3*	25-139				WG549403
Arsenic	mg/kg	46.2	46.7	88.2	75-125	1.08	20	L529705-01	WG549335
Mercury	mg/kg	0.283	0.281	113.	70-130	0.709	20	L529705-01	WG549430
Chromium,Hexavalent	mg/kg	17.8	18.4	89.0	50-150	3.31	20	L529565-02	WG549723

Batch number /Run number / Sample number cross reference

WG549255: R1806130: L529716-01
WG549328: R1806790: L529716-01
WG549329: R1806990: L529716-01
WG549403: R1807191: L529716-01
WG549414: R1807651: L529716-01
WG549422: R1808332: L529716-01
WG549261: R1808690: L529716-01
WG549335: R1809292: L529716-02 03 04 05 06
WG549430: R1810632: L529716-01
WG549723: R1811810: L529716-01
WG549960: R1812733: L529716-01

* * Calculations are performed prior to rounding of reported values.

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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.