



ANALYTICAL SUMMARY REPORT

January 22, 2016

EOG Resources Inc
600 17th St Ste 1000 N
Denver, CO 80202

Work Order: C16010235

Project Name: Simb1-6 SWD 12-31-15 Spill

Energy Laboratories, Inc. Casper WY received the following 2 samples for EOG Resources Inc on 1/11/2016 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C16010235-001	A	01/04/16 14:10	01/11/16	Soil	Metals, Saturated Paste Cancelled Sample Conductivity Ultrasonic Extraction Methanol Extraction for Volatiles Diesel Range Organics Gasoline Range Organics pH, Saturated Paste Saturated Paste Sodium Adsorption Ratio Services Provided by Lab
C16010235-002	B	01/04/16 14:30	01/11/16	Soil	Same As Above

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Radiochemistry analyses were performed at Energy Laboratories, Inc., 2325 Kerzell Lane, Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:



Trust our People. Trust our Data.
www.energylab.com

Billings, MT 800.735.4489 • Casper, WY 888.235.0515
College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

CLIENT: EOG Resources Inc
Project: Simb1-6 SWD 12-31-15 Spill
Work Order: C16010235

Report Date: 01/22/16

CASE NARRATIVE

BRANCH LABORATORY SUBCONTRACT ANALYSIS

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.



LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

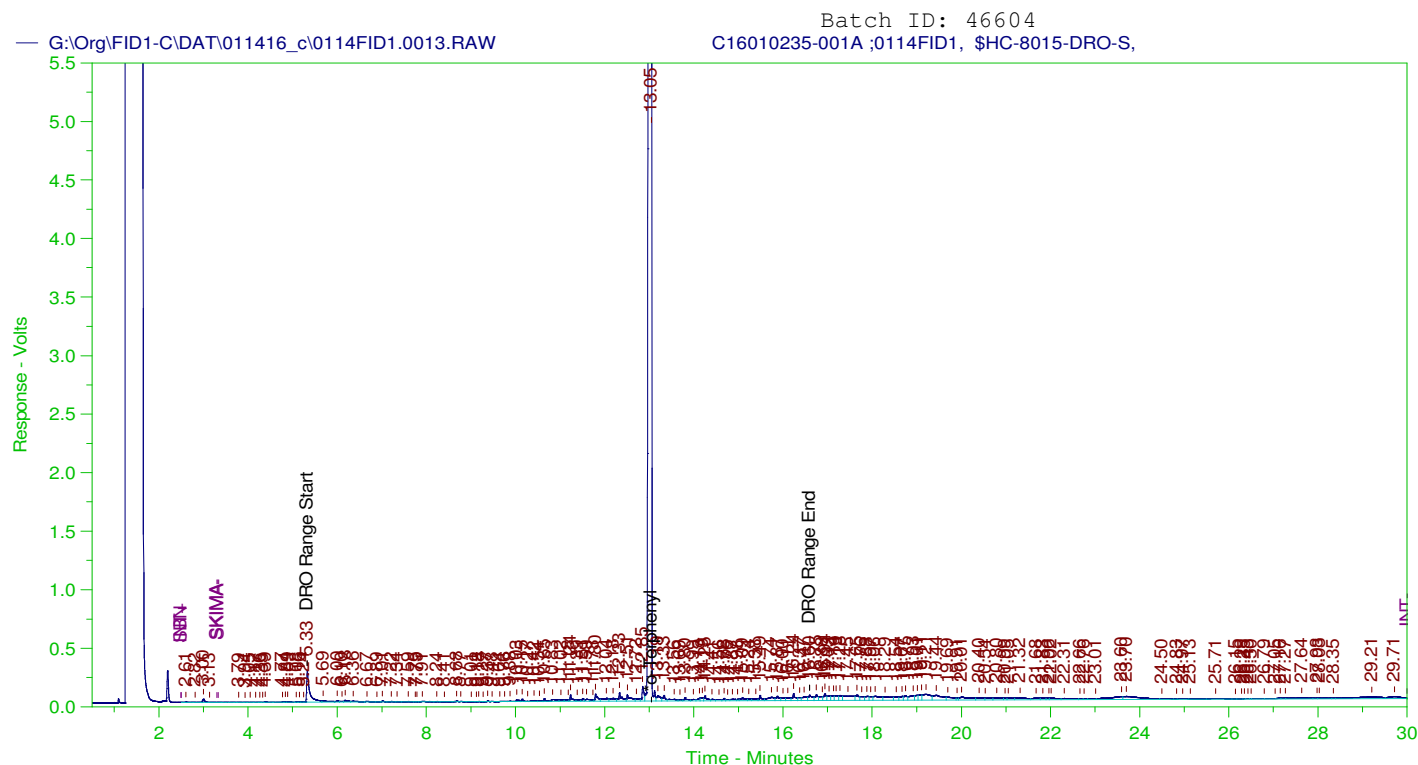
Client: EOG Resources Inc
Project: Simb1-6 SWD 12-31-15 Spill
Lab ID: C16010235-001
Client Sample ID: A

Report Date: 01/22/16
Collection Date: 01/04/16 14:10
Date Received: 01/11/16
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
SATURATED PASTE EXTRACT							
Conductivity, sat. paste	0.93	mmhos/cm		0.01		ASAM10-3	01/20/16 14:02 / eli-b
pH, sat. paste	7.7	s.u.		0.1		ASAM10-3.2	01/20/16 14:02 / eli-b
Calcium, sat. paste	3.22	meq/L		0.05		SW6010B	01/21/16 13:12 / eli-b
Magnesium, sat. paste	1.79	meq/L		0.08		SW6010B	01/21/16 13:12 / eli-b
Sodium, sat. paste	3.14	meq/L		0.04		SW6010B	01/21/16 13:12 / eli-b
Sodium Adsorption Ratio (SAR)	2.0	unitless		0.1		USDA20B	01/22/16 08:52 / smm
ORGANIC CHARACTERISTICS							
Diesel Range Organics (DRO)	ND	mg/kg		10		SW8015B	01/14/16 22:21 / bah
Total Extractable Hydrocarbons	11	mg/kg		10		SW8015B	01/14/16 22:21 / bah
Surr: o-Terphenyl	87.0	%REC		32-106		SW8015B	01/14/16 22:21 / bah
Gasoline Range Organics (GRO)	ND	mg/kg		4.0		SW8015B	01/15/16 21:38 / jlr
Total Purgeable Hydrocarbons	ND	mg/kg		4.0		SW8015B	01/15/16 21:38 / jlr
Surr: Trifluorotoluene	117	%REC		53.8-137		SW8015B	01/15/16 21:38 / jlr

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



DIESEL RANGE ORGANICS CHROMATOGRAM

Sample Name: C16010235-001A ;0114FID1, \$HC-8015-DRO-S,
Raw File: G:\Org\FID1-C\DAT\011416_c\0114FID1.0013.RAW
Date & Time Acquired: 1/14/2016 22:21:45
Method File: G:\Org\FID1-C\Methods\FID1_BASE_CAL_122115_R1.met
Calibration File: \\cafle\organics\Org\FID1-C\Cals\FID1_122115_R1.CAL
Sample Weight: 30.2 Dilution: 1 S.A.: 1

Mean RF for Hydrocarbon Range Calculations: 69425
Rt range for Diesel Range Organics (C10 to C28): 5.21 to 16.72
Rt range for Oil Range Organics (C28 to C40+): 16.58 to End Time

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	13.046	66.225	57.258	86.46

DRO Area:9620865	DRO AMOUNT: 4.588717
TEH Area:2.228068E+07	TEH AMOUNT: 10.62688
Oil Area:1.259721E+07	OIL AMOUNT: 6.008298



LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

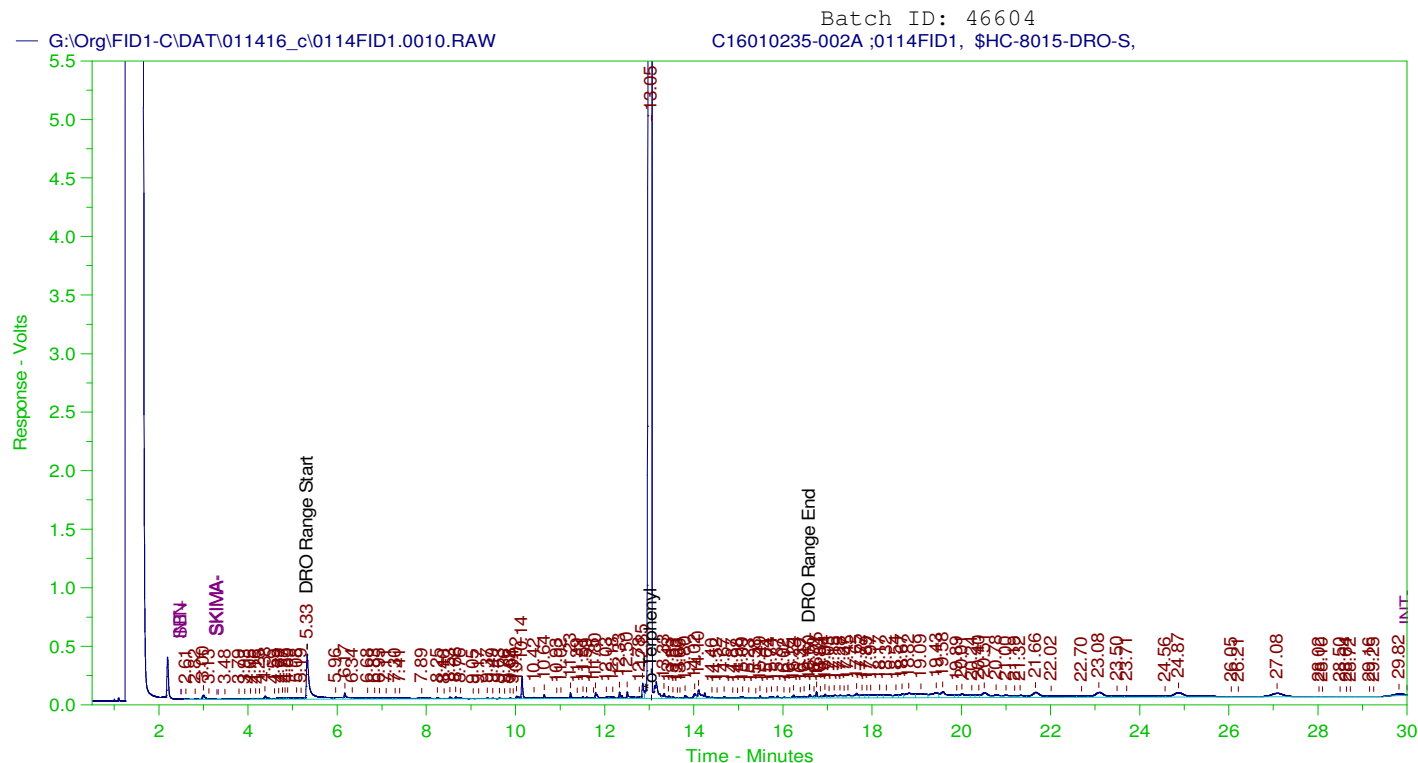
Client: EOG Resources Inc
Project: Simb1-6 SWD 12-31-15 Spill
Lab ID: C16010235-002
Client Sample ID: B

Report Date: 01/22/16
Collection Date: 01/04/16 14:30
Date Received: 01/11/16
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
SATURATED PASTE EXTRACT							
Conductivity, sat. paste	13.7	mmhos/cm		0.01		ASAM10-3	01/20/16 14:02 / eli-b
pH, sat. paste	7.3	s.u.		0.1		ASAM10-3.2	01/20/16 14:02 / eli-b
Calcium, sat. paste	21.4	meq/L	D	0.08		SW6010B	01/21/16 13:22 / eli-b
Magnesium, sat. paste	4.30	meq/L		0.08		SW6010B	01/21/16 13:22 / eli-b
Sodium, sat. paste	197	meq/L	D	0.2		SW6010B	01/21/16 13:22 / eli-b
Sodium Adsorption Ratio (SAR)	54.9	unitless		0.1		USDA20B	01/22/16 08:52 / smm
ORGANIC CHARACTERISTICS							
Diesel Range Organics (DRO)	ND	mg/kg		10		SW8015B	01/14/16 20:03 / bah
Total Extractable Hydrocarbons	ND	mg/kg		10		SW8015B	01/14/16 20:03 / bah
Surr: o-Terphenyl	95.0	%REC		32-106		SW8015B	01/14/16 20:03 / bah
Gasoline Range Organics (GRO)	ND	mg/kg		4.0		SW8015B	01/15/16 22:15 / jlr
Total Purgeable Hydrocarbons	ND	mg/kg		4.0		SW8015B	01/15/16 22:15 / jlr
Surr: Trifluorotoluene	117	%REC		53.8-137		SW8015B	01/15/16 22:15 / jlr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



DIESEL RANGE ORGANICS CHROMATOGRAM

Sample Name: C16010235-002A ;0114FID1, \$HC-8015-DRO-S,
Raw File: G:\Org\FID1-C\DAT\011416_c\0114FID1.0010.RAW
Date & Time Acquired: 1/14/2016 20:03:51
Method File: G:\Org\FID1-C\Methods\FID1_BASE_CAL_122115_R1.met
Calibration File: \\cafle\organics\Org\FID1-C\Cals\FID1_122115_R1.CAL
Sample Weight: 31.6 Dilution: 1 S.A.: 1

Mean RF for Hydrocarbon Range Calculations: 69425
Rt range for Diesel Range Organics (C10 to C28): 5.21 to 16.72
Rt range for Oil Range Organics (C28 to C40+): 16.58 to End Time

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	13.05	63.291	59.986	94.78	-

DRO Area:7593662 DRO AMOUNT: 3.461372
TEH Area:1.939769E+07 TEH AMOUNT: 8.841929
Oil Area:1.086299E+07 OIL AMOUNT: 4.951611



Trust our People. Trust our Data.
www.energylab.com

Billings, MT 800.735.4489 • Casper, WY 888.235.0515
College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: EOG Resources Inc

Report Date: 01/22/16

Project: Simb1-6 SWD 12-31-15 Spill

Work Order: C16010235

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASAM10-3									Batch: B_R255293	
Lab ID: B16010995-005A DUP	Sample Duplicate					Run: SUB-B255293			01/20/16 14:02	
Conductivity, sat. paste		0.710	mmhos/cm	0.10				1.4	30	
Lab ID: LCS-1601201402	Laboratory Control Sample					Run: SUB-B255293			01/20/16 14:02	
Conductivity, sat. paste		12.5	mmhos/cm	0.10	92	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



Trust our People. Trust our Data.
www.energylab.com

Billings, MT 800.735.4489 • Casper, WY 888.235.0515
College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: EOG Resources Inc

Report Date: 01/22/16

Project: Simb1-6 SWD 12-31-15 Spill

Work Order: C16010235

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASAM10-3.2									Batch: B_R255293	
Lab ID: B16010995-005A DUP	Sample Duplicate					Run: SUB-B255293			01/20/16 14:02	
pH, sat. paste		7.30	s.u.	0.10				1.4	10	
Lab ID: LCS-1601201402	Laboratory Control Sample					Run: SUB-B255293			01/20/16 14:02	
pH, sat. paste		7.10	s.u.	0.10	100	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Casper, WY Branch

Client: EOG Resources Inc

Report Date: 01/22/16

Project: Simb1-6 SWD 12-31-15 Spill

Work Order: C16010235

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6010B										Batch: B_96351
Lab ID: LCS-96351	3	Laboratory Control Sample			Run: SUB-B255335					01/21/16 12:44
Calcium, sat. paste		81.1	meq/L	0.083	103	70	130			
Magnesium, sat. paste		52.2	meq/L	0.082	105	70	130			
Sodium, sat. paste		115	meq/L	0.21	110	70	130			
Lab ID: C16010236-001A	3	Sample Matrix Spike			Run: SUB-B255335					01/21/16 12:51
Calcium, sat. paste		56.6	meq/L	0.083	108	70	130			
Magnesium, sat. paste		82.2	meq/L	0.082	99	70	130			
Sodium, sat. paste		43.6	meq/L	0.21	99	70	130			
Lab ID: B16010995-005A DUP	3	Sample Duplicate			Run: SUB-B255335					01/21/16 12:54
Calcium, sat. paste		5.18	meq/L	0.050				1.2	30	
Magnesium, sat. paste		0.975	meq/L	0.082				2.0	30	
Sodium, sat. paste		0.419	meq/L	0.043				0.6	30	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Casper, WY Branch

Client: EOG Resources Inc

Report Date: 01/22/16

Project: Simb1-6 SWD 12-31-15 Spill

Work Order: C16010235

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8015B										Batch: 46604
Lab ID: MB-46604	3	Method Blank				Run: FID1-C_160114A				01/14/16 14:41
Diesel Range Organics (DRO)		ND	mg/kg	10						
Total Extractable Hydrocarbons		ND	mg/kg	10						
Surr: o-Terphenyl				0.67	79	56	147			
Lab ID: LCS-46604	3	Laboratory Control Sample				Run: FID1-C_160114A				01/14/16 15:28
Diesel Range Organics (DRO)		534	mg/kg	10	80	58.7	106			
Total Extractable Hydrocarbons		541	mg/kg	10	81	60	109			
Surr: o-Terphenyl				0.67	89	56	147			
Lab ID: LCSD-46604	3	Laboratory Control Sample Duplicate				Run: FID1-C_160114A				01/14/16 16:14
Diesel Range Organics (DRO)		547	mg/kg	10	82	58.7	106	2.2	20	
Total Extractable Hydrocarbons		553	mg/kg	10	83	60	109	2.3	20	
Surr: o-Terphenyl				0.67	101	56	147			
Lab ID: C16010235-001AMS	3	Sample Matrix Spike				Run: FID1-C_160114A				01/14/16 23:07
Diesel Range Organics (DRO)		541	mg/kg	10	84	60	140			
Total Extractable Hydrocarbons		549	mg/kg	10	83	60	140			
Surr: o-Terphenyl				0.67	104	32	106			
Lab ID: C16010235-001AMSD	3	Sample Matrix Spike Duplicate				Run: FID1-C_160114A				01/14/16 23:53
Diesel Range Organics (DRO)		525	mg/kg	10	83	60	140	2.9	20	
Total Extractable Hydrocarbons		533	mg/kg	10	83	60	140	2.8	20	
Surr: o-Terphenyl				0.67	102	32	106	0.0	30	
Method: SW8015B										Batch: 46610
Lab ID: LCS-46610	3	Laboratory Control Sample				Run: PIDELCD1-C_160115A				01/15/16 17:19
Gasoline Range Organics (GRO)		18.4	mg/kg	2.0	92	70	130			
Total Purgeable Hydrocarbons		22.6	mg/kg	2.0	113	54.2	133			
Surr: Trifluorotoluene				0.40	111	53.8	137			
Lab ID: LCSD-46610	3	Laboratory Control Sample Duplicate				Run: PIDELCD1-C_160115A				01/15/16 17:56
Gasoline Range Organics (GRO)		18.8	mg/kg	2.0	94	70	130	2.1	20	
Total Purgeable Hydrocarbons		22.9	mg/kg	2.0	115	54.2	133	1.6	20	
Surr: Trifluorotoluene				0.40	113	53.8	137			
Lab ID: MB-46610	3	Method Blank				Run: PIDELCD1-C_160115A				01/15/16 18:33
Gasoline Range Organics (GRO)		ND	mg/kg	2.0						
Total Purgeable Hydrocarbons		ND	mg/kg	2.0						
Surr: Trifluorotoluene				0.40	96	53.8	137			
Lab ID: C16010236-004AMS	2	Sample Matrix Spike				Run: PIDELCD1-C_160115A				01/16/16 02:32
Total Purgeable Hydrocarbons		20.3	mg/kg	4.0	101	22.4	153			
Surr: Trifluorotoluene				0.80	113	53.8	137			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Casper, WY Branch

Client: EOG Resources Inc

Report Date: 01/22/16

Project: Simb1-6 SWD 12-31-15 Spill

Work Order: C16010235

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8015B								Analytical Run: R208251		
Lab ID: CCV_0114FID102r 2 Continuing Calibration Verification Standard								01/14/16 13:55		
Total Extractable Hydrocarbons		685	mg/kg	10	103	85	115			
Surr: o-Terphenyl				0.67	113	56	147			
Lab ID: CCV_0114FID112r 2 Continuing Calibration Verification Standard								01/14/16 21:35		
Total Extractable Hydrocarbons		700	mg/kg	10	105	85	115			
Surr: o-Terphenyl				0.67	115	56	147			
Method: SW8015B								Analytical Run: R208253		
Lab ID: CCV_0115HP102r 2 Continuing Calibration Verification Standard								01/15/16 14:14		
Total Purgeable Hydrocarbons		22.1	mg/kg	2.0	111	85	115			
Surr: Trifluorotoluene				0.40	102	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



Work Order Receipt Checklist

EOG Resources Inc

C16010235

Login completed by: Dorian Quis

Date Received: 1/11/2016

Reviewed by: Kathy Hamre

Received by: res

Reviewed Date: 1/12/2016

Carrier name: NDA

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all 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? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	0.9°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)									
Company Name: EOG Resources, Inc.		Project Name, PWS, Permit, Etc. Jim 1-6 SWD 12-31-15 spill		Sample Origin State: CO		EPA/State Compliance: Yes <input type="radio"/> No <input checked="" type="radio"/>			
Report Mail Address (Required): 600 17th Street, Suite 1000N Denver, CO 80202		Contact Name: Jessica Marten		Phone/Fax: (303) 262-2862		Cell: (303) 358-9263		Sampler: (Please Print) Theo Federer	
<input checked="" type="checkbox"/> No Hard Copy Email: jessica_marten@eogresources.com		Invoice Contact & Phone: Jessica Marten		(303) 262-2862		Purchase Order:		Quote/Bottle Order:	
Invoice Address (Required): 600 17th Street, Suite 1000N Denver, CO 80202		Special Report/Formats: <input checked="" type="checkbox"/> DW <input type="checkbox"/> POTWW/WWTP State: _____ Other: _____		<input checked="" type="checkbox"/> EDD/EDT (Electronic Data) Format: _____ <input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC		Shipped by: R.F.N. Cooler ID(s): C-50 Receipt Temp (110°F): 0.9 °C On Ice: 0 N Custody Seal On Bottle: Y N On Cooler: Y N Intact: Y N Signature Match: Y N		LABORATORY USE ONLY	
SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)		Collection Date		Collection Time		Matrix		Number of Containers Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water	
1 A 2:10 pm		1-4-16		2:10 pm		S		Electrical Conductivity (EC)	
2 B 2:30 pm		1-4-16		2:30 pm		S		Sodium Adsorption Ratio (SAR)	
3 C 2:45 pm		1-4-16		2:45 pm		S		pH	
4 D 2:45 pm		1-4-16		2:45 pm		S		Petroleum Contamination Parameter Analysis	
5								Total Petroleum Hydrocarbons (TPH)	
6								TCLP-Metals	
7								SEE ATTACHED	
8								Standard Turnaround (TAT)	
9								Contact ELI prior to RUSH samples and for charges and scheduling - See Instruction Page	
10								Comments:	
Custody Record MUST be Signed		Relinquished by (print): Theo Federer		Date/Time: 1-6-16		Signature: Theo Federer		Received by (print): Jessica Marten	
Sample Disposal: _____		Return to Client: _____		Date/Time: _____		Signature: _____		Received by Laboratory: _____	
Lab Disposal: _____		Date/Time: _____		Date/Time: _____		Date/Time: _____		Date/Time: _____	

This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.