

State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80205 Phone: (303) 894-2100 Fax: (303) 894-2109



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Document Number:

400512189

Date Received:

SUNDRY NOTICE

Submit a signed original. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full in Comments or provide as an attachment. Identify Well by API Number; identify Oil and Gas Location by Location ID Number; identify other Facility by Facility ID Number.

OGCC Operator Number:	100185	Contact Name	Chris Hines
Name of Operator:	ENCANA OIL & GAS (USA) INC	Phone:	(970) 285-2653
Address:	370 17TH ST STE 1700	Fax:	()
City:	DENVER	State:	CO
Zip:	80202-5632	Email:	chris.hines@encana.com

Complete the Attachment
Checklist

OP OGCC

API Number :	05-04500	OGCC Facility ID Number:	335822
Well/Facility Name:	N. PARACHUTE-65S95W	Well/Facility Number:	28NWNW
Location QtrQtr:	NWNW	Section:	28
Township:	5S	Range:	95W
Meridian:	6	County:	GARFIELD
Field Name:	GRAND VALLEY	Federal, Indian or State Lease Number:	

Survey Plat		
Directional Survey		
Srvc Eqpmt Diagram		
Technical Info Page		
Other		

CHANGE OF LOCATION OR AS BUILT GPS REPORT

☐ Change of Location * ☐ As-Built GPS Location Report ☐ As-Built GPS Location Report with Survey

* Well location change requires new plat. A substantive surface location change may require new Form 2A.

SURFACE LOCATION GPS DATA Data must be provided for Change of Surface Location and As Built Reports.

Latitude _____ PDOP Reading _____ Date of Measurement _____
Longitude _____ GPS Instrument Operator's Name _____

LOCATION CHANGE (all measurements in Feet)

Well will be: _____ (Vertical, Directional, Horizontal)

Change of **Surface** Footage **From** Exterior Section Lines:

Change of **Surface** Footage **To** Exterior Section Lines:

Current **Surface** Location **From** QtrQtr NWNW Sec 28

New **Surface** Location **To** QtrQtr _____ Sec _____

Change of **Top of Productive Zone** Footage **From** Exterior Section Lines:

Change of **Top of Productive Zone** Footage **To** Exterior Section Lines:

Current **Top of Productive Zone** Location **From** Sec _____

New **Top of Productive Zone** Location **To** Sec _____

Change of **Bottomhole** Footage **From** Exterior Section Lines:

Change of **Bottomhole** Footage **To** Exterior Section Lines:

Current **Bottomhole** Location Sec _____ Twp _____

New **Bottomhole** Location Sec _____ Twp _____

Is location in High Density Area? _____

Distance, in feet, to nearest building _____, public road: _____, above ground utility: _____, railroad: _____,

property line: _____, lease line: _____, well in same formation: _____

Ground Elevation _____ feet Surface owner consultation date _____

FNL/FSL		FEL/FWL	
1258	FNL	722	FWL
Twp 5S	Range 95W	Meridian 6	
Twp	Range	Meridian	
			**
			**
			** attach deviated drilling plan

OTHER CHANGES

☐ **REMOVE FROM SURFACE BOND** Signed surface use agreement is a required attachment

☐ **CHANGE OF WELL, FACILITY OR OIL & GAS LOCATION NAME OR NUMBER**

From: Name N. PARACHUTE-65S95W Number 28NWNW Effective Date: _____

To: Name _____ Number _____

☐ **ABANDON PERMIT: Permit can only be abandoned if the permitted operation has NOT been conducted. Field inspection will be conducted to verify site status.**

☐ WELL: Abandon Application for Permit-to-Drill (Form2) – Well API Number _____ has not been drilled.

☐ PIT: Abandon Earthen Pit Permit (Form 15) – COGCC Pit Facility ID Number _____ has not been constructed (Permitted and constructed pit requires closure per Rule 905)

☐ CENTRALIZED E&P WASTE MANAGEMENT FACILITY: Abandon Centralized E&P Waste Management Facility Permit (Form 28) – Facility ID Number _____ has not been constructed (Constructed facility requires closure per Rule 908)

OIL & GAS LOCATION ID Number: _____

☐ Abandon Oil & Gas Location Assessment (Form 2A) – Location has not been constructed and site will not be used in the future.

☐ Keep Oil & Gas Location Assessment (Form 2A) active until expiration date. This site will be used in the future.

Surface disturbance from Oil and Gas Operations must be reclaimed per Rule 1003 and Rule 1004.

☐ **REQUEST FOR CONFIDENTIAL STATUS**

☐ **DIGITAL WELL LOG UPLOAD**

☐ **DOCUMENTS SUBMITTED** Purpose of Submission: _____

RECLAMATION

INTERIM RECLAMATION

☐ Interim Reclamation will commence approximately _____

Per Rule 1003.e.(3) operator shall submit Sundry Notice reporting interim reclamation is complete and site is ready for inspection when vegetation reaches 80% coverage.

☐ Interim reclamation complete, site ready for inspection.

Per Rule 1003.e(3) describe interim reclamation procedure in Comments below or provide as an attachment and attach required location photographs.

Field inspection will be conducted to document Rule 1003.e. compliance

FINAL RECLAMATION

☐ Final Reclamation will commence approximately _____

Per Rule 1004.c.(4) operator shall submit Sundry Notice reporting final reclamation is complete and site is ready for inspection when vegetation reaches 80% coverage.

☐ Final reclamation complete, site ready for inspection. Per Rule 1004.c(4) describe final reclamation procedure in Comments below or provide as an attachment.

Field inspection will be conducted to document Rule 1004.c. compliance

Comments:

ENGINEERING AND ENVIRONMENTAL WORK

☐ NOTICE OF CONTINUED TEMPORARILY ABANDONED STATUS

Indicate why the well is temporarily abandoned and describe future plans for utilization in the COMMENTS box below or provide as an attachment, as required by Rule 319.b.(3).

Date well temporarily abandoned _____ Has Production Equipment been removed from site? _____

Mechanical Integrity Test (MIT) required if shut in longer than 2 years. Date of last MIT _____

☐ SPUD DATE: _____

TECHNICAL ENGINEERING AND ENVIRONMENTAL WORK

Details of work must be described in full in the COMMENTS below or provided as an attachment.

☐ NOTICE OF INTENT Approximate Start Date _____

☒ REPORT OF WORK DONE Date Work Completed 10/03/2013

- | | | |
|---|---|--|
| <input type="checkbox"/> Intent to Recomplete (Form 2 also required) | <input type="checkbox"/> Request to Vent or Flare | <input type="checkbox"/> E&P Waste Mangement Plan |
| <input type="checkbox"/> Change Drilling Plan | <input type="checkbox"/> Repair Well | <input type="checkbox"/> Beneficial Reuse of E&P Waste |
| <input type="checkbox"/> Gross Interval Change | <input type="checkbox"/> Rule 502 variance requested. Must provide detailed info regarding request. | |
| <input checked="" type="checkbox"/> Other <u>RoWC and NFA Request</u> | <input type="checkbox"/> Status Update/Change of Remediation Plans for Spills and Releases | |

COMMENTS:

This Form 4 is being submitted as a Report of Work Completed (RoWC) and request for issuance of a letter of No Further Action (NFA) for Spill #2145650. See attached documentation.

Attention: Carlos Lujan

H2S REPORTING

Data Fields in this section are intended to document Sample and Location Data associated with the collection of a Gas Sample that is submitted for Laboratory Analysis.

Gas Analysis Report must be attached.

H2S Concentration: _____ in ppm (parts per million) Date of Measurement or Sample Collection _____

Description of Sample Point:

Absolute Open Flow Potential _____ in CFPD (cubic feet per day)

Description of Release Potential and Duration (If flow is not open to the atmosphere, identify the duration in which the container or pipeline would likely be opened for servicing operations.):

Distance to nearest occupied residence, school, church, park, school bus stop, place of business, or other areas where the public could reasonably be expected to frequent: _____

Distance to nearest Federal, State, County, or municipal road or highway owned and principally maintained for public use: _____

COMMENTS:

--

Best Management Practices

No BMP/COA Type

Description

--	--

Operator Comments:

This Form 4 is being submitted as a Report of Work Completed (RoWC) and request for issuance of a letter of No Further Action (NFA) for Spill #2145650. See attached documentation.

Attention: Carlos Lujan

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

Signed: _____ Print Name: Chris Hines

Title: Environmental Field
Coord

Email: chris.hines@encana.com

Date: _____

Based on the information provided herein, this Sundry Notice (Form 4) complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: _____

Date: _____

CONDITIONS OF APPROVAL, IF ANY:

COA Type

Description

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General Comments

User Group

Comment

Comment Date

--	--	--

Total: 0 comment(s)

Attachment Check List

Att Doc Num

Name

400512204	FORM 4 SUBMITTED
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Total Attach: 1 Files

**D28 Well Pad (Location ID: 335822)
Pipeline Release (Spill #: 2145650)
Form 4 (Report of Work Completed)**

Encana Oil & Gas (USA) Inc. (Encana) is submitting this Form 4 (Sundry Notice) as a Report of Work Completed to document response efforts to the D28 (Location ID: 335822) flowline release in Encana's North Parachute Ranch area of operations (Grand Valley Field). A Form 19 (Spill Report) was submitted on July 26, 2013 (Spill #: 2145650).

REPORT OF WORK COMPLETED

In response to this release, on June 28, 2013, LTE personnel collected soil samples to characterize impacts resulting from the release. The soil samples were logged by an LTE geologist who inspected the soil for the presence or absence of petroleum hydrocarbon odor and/or staining. The soil was characterized by visually inspecting the soil samples and field screening the soil headspace using a photo-ionization detector (PID) to monitor for the presence of volatile organic vapors (VOC's). Soil samples were submitted for laboratory analysis conducted in accordance with COGCC Rule 910. Laboratory results identified constituent levels above the allowable limits in Table 910-1 for total petroleum hydrocarbon (TPH), sodium adsorption ratio (SAR), and arsenic (19). These impacts were addressed in the following ways:

- The spill occurred entirely within the pad footprint. The potential effects to revegetation efforts resulting from the SAR exceedence (13) will be mitigated during reclamation efforts, by burying working surface beneath a minimum of three feet (3') of native fill and topsoil.
- The arsenic value (19) is well within the range of background values for the area (2 to 75 ppm). See attached background summary table. Encana requests that these background values be considered as an alternative limit to the arsenic concentration identified in COGCC Table 910-1.
- In response to the elevated TPH results (877, 2850, and 4767 ppm), on LTE personnel completed the following activities:
 - August 21 - assessed the potential for subsurface impacts at the site by potholing using a hydro-vacuum truck and hand auger. The hydro-vacuum truck was used to reach sample depths. LTE personnel collected a sample using a hand auger to reach undisturbed soil for sample collection. All vertical clearance samples were below the Table 910-1 allowable limits for the analyzed organic constituents.
 - October 3 - confirmation soil samples were collected from the surface in areas where TPH exceedances were identified in the initial impact assessment. Surface clearance samples were below the Table 910-1 allowable limits for the analyzed organic constituents.

Sample locations are depicted in the attached Site Diagram. Laboratory reports are attached and summarized in the Laboratory Results Summary Table.

REQUEST FOR NO FURTHER ACTION

This Sundry Notice is also being submitted to request issuance of a letter of No Further Action (NFA) for the COGCC Spill Tracking Number 2145650. If the information provided is satisfactory, please provide a letter of NFA and closure documentation for this incident.


ATTACHMENTS

Topographic Location Map

Site Diagram

Laboratory Results Summary Tables (Spill Characterization and Area Background

Laboratory Reports – Flowline Investigation (Background Lab Reports available upon request)



North Parachute Ranch

Garfield County, Colorado

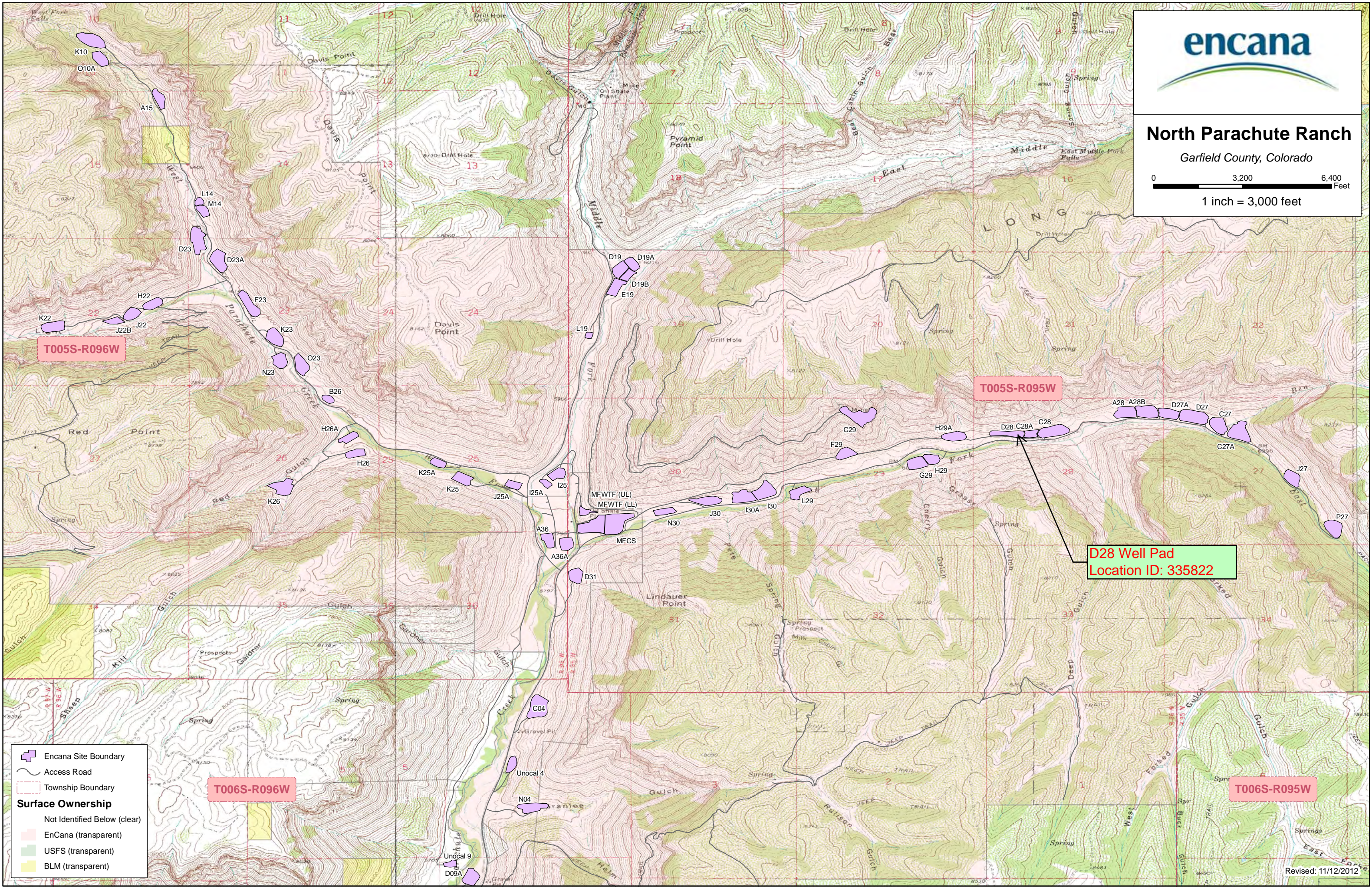
0


3,200


6,400


Feet

1 inch = 3,000 feet





 Encana Site Boundary


 Access Road


 Township Boundary

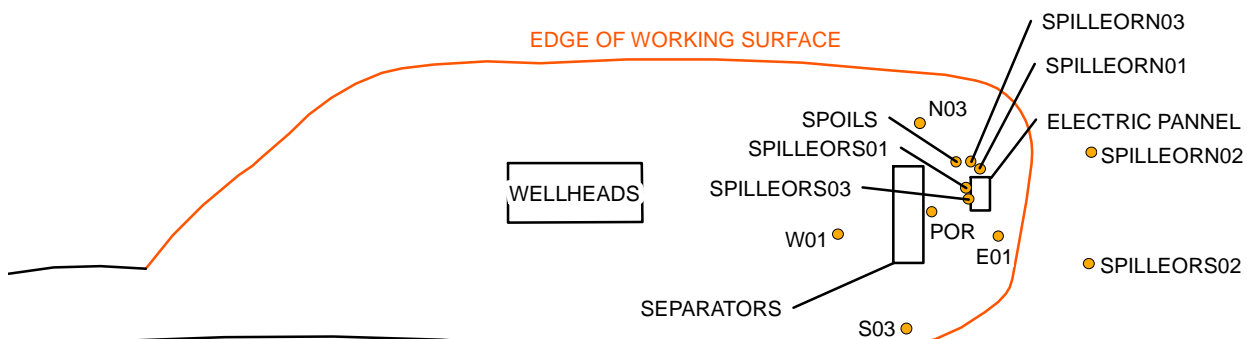
Surface Ownership

 Not Identified Below (clear)

 EnCana (transparent)

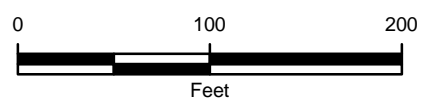
 USFS (transparent)

 BLM (transparent)



LEGEND

● SAMPLE



SITE DIAGRAM
D28
GARFIELD COUNTY, COLORADO

ENCANA OIL & GAS (USA) INC.



Location	Sample Date:	Sample Matrix	Matrix Notes	Allowable Concentration -->	Organic Compounds in Soil (mg/kg [ppm])																	Inorganics in Soil			Metals in Soil (mg/kg [ppm])													
				500	TPH (total volatile and extractable petroleum hydrocarbons)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C36) 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, C,D)pyrene	Naphthalene	Pyrene	EC (<4 mmhos/cm or 2x background)	SAR (calculation)	pH	Arsenic	Barium - EPA Total Barium	Cadmium	Chromium (III)	Chromium (VI)	Copper	Lead (inorganic)	Mercury	Nickel (soluble salts)	Selenium	Silver
D28	06/28/13	Spill	Pipeline release [stockpile]	877				47	830	0.023	0.39	0.0068	0.45	0.021	BDL	BDL	0.013	BDL	0.013	BDL	BDL	0.063	BDL	0.17	0.021	3.1	13	8	19	4000	0.28	21	BDL	25	18	BDL	16	1.8
D28	06/28/13	Spill	Pipeline release EOR South	2850	250	2600	BDL	BDL	BDL	1.2																												
D28	06/28/13	Spill	Pipeline release EOR North	4767	67	4700	BDL	BDL	BDL	0.24																												
D28	06/28/13	Spill	Pipeline release EOR North 2	140	BDL	140	BDL	BDL	BDL																													
D28	06/28/13	Spill	Pipeline release EOR South 2	120	BDL	120	BDL	BDL	BDL																													
D28	08/21/13	Spill	EOR W01 [5']	76	BDL	76	BDL	BDL	BDL	0.009																												
D28	08/21/13	Spill	EOR W01 [10']	14	BDL	14	BDL	BDL	BDL																													
D28	08/21/13	Spill	EOR N03 [5']	170	BDL	170	BDL	BDL	BDL	0.016																												
D28	08/21/13	Spill	EOR N03 [10']	8.1	BDL	8.1	BDL	BDL	BDL																													
D28	08/21/13	Spill	EOR E01 [5']	4.6	BDL	4.6	BDL	BDL	BDL																													
D28	08/21/13	Spill	EOR E01 [8']	5.3	BDL	5.3	BDL	BDL	BDL																													
D28	08/21/13	Spill	EOR S03 [5']	BDL	BDL	BDL	BDL	BDL	BDL																													
D28	08/21/13	Spill	EOR S03 [10']	11	BDL	11	BDL	BDL	BDL																													
D28	08/21/13	Spill	POR [5']	33	BDL	33	BDL	BDL	BDL																													
D28	08/21/13	Spill	POR [10']	14	BDL	14	0.0052	BDL	BDL	0.014																												
D28	10/03/13	Spill	resample ECR North 03	210		210																																
D28	10/03/13	Spill	resample ECR South 03	57		57																																

Location	Sample Date:	Sample Matrix	Matrix Notes	Allowable Concentration -->	Metals i
					Arsenic
					0.39
C29	10/11/12	Background	Oil Shale 2		75
C29	10/11/12	Background	Oil Shale 2 rerun		75
C29	10/11/12	Background	Oil Shale 1		66
C29	10/11/12	Background	Oil Shale 1 rerun		66
H15	12/29/11	Background	N		59
Long Ridge	10/11/12	Background	Oil Shale 1		57
Long Ridge	10/11/12	Background	Oil Shale 1 rerun		57
Long Ridge	10/11/12	Background	Oil Shale 2		55
Long Ridge	10/11/12	Background	Oil Shale 2 rerun		55
H15	12/29/11	Background	SE		52
K26	05/31/11	Background	SW		43
A28B	08/12/10	Background	N		39
C29	11/05/09	Background	pulled from NNE side of pad		34.9
C28	10/12/10	Background	NE		34
P25	09/01/11	Background	NE		32
P27	07/07/11	Background	SE		32
L19	08/31/11	Background	NW		31
D27	02/08/12	Background	N2		30
N30	03/24/10	Background			29.1
K22	11/10/10	Background	E		28
RetortPile	11/05/09	Background	man camp pad on retort pile - sa		27.4
H26	11/10/10	Background	SSW		27
K26	05/31/11	Background	W		27
P27	07/07/11	Background	N		27
A15	04/02/13	Background	monitoring well South [40-42']		26
C27A	06/28/10	Background	NE		26
H26A	08/26/11	Background	N		26
P25	09/01/11	Background	E		26
RetortPile	11/05/09	Background	stormwater BMP - sample pulled		25.3
A15	04/02/13	Background	monitoring well South [80-82']		25
C04	04/14/11	Background	N		25
C04	04/14/11	Background	E		25
P27	07/07/11	Background	E		25
K25A	06/29/10	Background	NW background		24.7
C28A	06/28/10	Background			24.2
B26	08/26/11	Background	NNE		24
C28	10/12/10	Background	Nec		24
D23	06/29/10	Background	SW		24
E19	03/26/08	Background			24
H26	11/10/10	Background	S		24
P27	07/07/11	Background	NE		24
C28	10/12/10	Background	E		23
E09	11/02/10	Background	N		23
P25	09/01/11	Background	N		23
D19	07/29/09	Background			22.8
B26	08/26/11	Background	N		22
E09	11/02/10	Background	S		22
L19	08/31/11	Background	W		22
N04	05/13/11	Background	NW		22
K25A	06/29/10	Background	NE background		21.6
I30A	06/15/10	Background	W cut slope		21
C27	11/24/09	Background			20.7
Long Ridge	10/16/09	Background	pulled from scree shoot behind c		20.7
A15	04/03/13	Background	monitoring well North 1 [60-62']		20
A15	04/04/13	Background	monitoring well North [60-62']		20
C28	10/12/10	Background	N		20
D27	02/08/12	Background	NE		20
F23	08/29/11	Background	NE		20

Location	Sample Date:	Sample Matrix	Matrix Notes	Allowable Concentration -->	Metals i
					Arsenic
G29	06/29/10	Background	SE		20
H26A	08/26/11	Background	W		20
H26A	08/26/11	Background	SE		20
C28	03/24/10	Background			19.3
A15	05/17/11	Background	N		19
A15	04/04/13	Background	monitoring well South1 [80-82']		19
A28	12/01/10	Background	SW		19
B26	08/26/11	Background	NE		19
D27	02/08/12	Background	NE		19
H15	12/29/11	Background	NE		19
H26	11/10/10	Background	SW		19
H26	11/10/10	Background	SSE		19
I30	03/24/10	Background			18.6
A15	05/17/11	Background	S		18
A15	04/04/13	Background	monitoring well North [85']		18
D27	02/08/12	Background	N2		18
H26A	08/26/11	Background	NW		18
H26A	08/26/11	Background	SW		18
P25	09/01/11	Background	SE		18
C28MF	07/29/09	Background			17.9
A28	07/16/09	Background			17.6
G29	06/29/10	Background	SW		17.4
J22	07/17/09	Background			17.4
D28	08/05/09	Background			17.2
D27	02/08/12	Background	N2		17
E09	11/02/10	Background	E		17
I30A	03/24/10	Background			16.9
A15	05/17/11	Background	NW		16
A15	04/04/13	Background	monitoring well South [50-52']		16
A28B	08/12/10	Background	NE		16
A36A	08/31/11	Background	NE		16
C28	10/12/10	Background	SE		16
D27	02/08/12	Background	NE		16
D27	02/08/12	Background	N1		16
F23	08/29/11	Background	N		16
H15	12/29/11	Background	E		16
H29A	07/23/13	Background	S		16
J25A	09/26/11	Background	Monitoring well install 20-21'		16
J30	07/19/11	Background	E		16
M14	04/10/13	Background	SVE SE [20-22']		16
D23	06/29/10	Background	NW		15.7
Unocal 4	10/31/09	Background	irrigation ditch background - 6" p		15.2
A15	05/17/11	Background	E		15
A36A	08/31/11	Background	SE		15
A36A	08/31/11	Background	S		15
D19B	03/25/10	Background			15
E09	11/02/10	Background	Ec		15
F23	08/29/11	Background	SE		15
H29A	07/23/13	Background	N		15
K22	11/10/10	Background	W		15
K26	05/31/11	Background	N		15
L19	08/31/11	Background	N		15
K22	07/22/09	Background			14.5
A15	04/04/13	Background	monitoring well North [30-32']		14
B26	08/26/11	Background	E		14
D19A	03/25/10	Background			14
D27	02/08/12	Background	NE		14
D27	02/08/12	Background	N1		14

Location	Sample Date:	Sample Matrix	Matrix Notes	Allowable Concentration -->	Metals i
					Arsenic
D27	02/08/12	Background	N1		14
D27	02/08/12	Background	N1		14
D27	02/08/12	Background	N2		14
D27	02/08/12	Background	N3		14
D27	02/08/12	Background	NW		14
F23	08/29/11	Background	E		14
H29A	07/23/13	Background	S		14
H29A	07/23/13	Background	S 2		14
J30	07/19/11	Background	NW		14
K26	05/31/11	Background	S		14
K26	05/31/11	Background	SE		14
C04	02/22/11	Background	N		13.6
J25A	07/22/09	Background			13.5
C04	02/22/11	Background	SE		13.4
A36A	08/31/11	Background	SW		13
D27	02/08/12	Background	NE		13
D31	04/30/12	Background	E		13
E09	11/02/10	Background	SE		13
F23	08/29/11	Background	NW		13
K22	11/10/10	Background	SW		13
K22	11/10/10	Background	N		13
L19	08/31/11	Background	SW		13
M14	04/11/13	Background	SVE SW [30-32']		13
C27A	06/28/10	Background	SE		12.7
E19	07/14/09	Background			12.6
Unocal 4	10/31/09	Background	ROW background - 6" p/l rupture		12.5
C04	11/05/09	Background	6" depth taken from surface on W		12.1
A28B	08/12/10	Background	NW		12
A36A	08/31/11	Background	E		12
B26	08/26/11	Background	SE		12
D27	02/08/12	Background	N3		12
D27	02/08/12	Background	N3		12
D27	02/08/12	Background	NW		12
H29A	07/23/13	Background	N		12
H29A	07/23/13	Background	N		12
H29A	07/23/13	Background	N		12
H29A	07/23/13	Background	W		12
H29A	07/23/13	Background	W		12
NSF	10/08/12	Background			12
P25	09/01/11	Background	ESE		12
C04	02/22/11	Background	NE		11.7
C04	02/22/11	Background	E		11.5
A15	05/17/11	Background	NE		11
D27	02/08/12	Background	NW		11
D31	04/30/12	Background	E		11
D31	04/30/12	Background	E		11
D31	04/30/12	Background	E		11
H29A	07/23/13	Background	E		11
H29A	07/23/13	Background	E		11
H29A	07/23/13	Background	E		11
H29A	07/23/13	Background	W		11
H29A	07/23/13	Background	W		11
H29A	07/23/13	Background	S		11
H29A	07/23/13	Background	S 2		11
I30A	06/15/10	Background	Cut slope east		11
J30	07/19/11	Background	N		11
D09A	08/06/09	Background			10.4
D27	02/08/12	Background	N1		10

Location	Sample Date:	Sample Matrix	Matrix Notes	Allowable Concentration -->	Metals i
					Arsenic
D31	04/30/12	Background	E		10
H29A	07/23/13	Background	W		10
H29A	07/23/13	Background	S 2		10
J30	07/19/11	Background	NE		10
A28	12/01/10	Background	S		9.9
I30A	06/15/10	Background	Cut slope middle		9.9
A28B	06/28/10	Background			9.8
D27	02/08/12	Background	N3		9.8
H29A	07/23/13	Background	N		9.8
H15	12/29/11	Background	S		9.7
D27	02/08/12	Background	N3		9.6
H29A	07/23/13	Background	E		9.6
H29A	07/23/13	Background	S 2		9.6
H29A	07/23/13	Background	S		9.4
D27	02/08/12	Background	N2		9.3
H17 (Unocal 1	02/24/11	Background	NW		9.3
H29A	07/23/13	Background	E		9.3
L19	08/31/11	Background	S		9.3
C04	04/14/11	Background	SW		9.2
H29A	07/23/13	Background	S		9.2
N04	07/16/09	Background			9.2
A15	04/03/13	Background	monitoring well North 1 [40-42']		9
A28	12/01/10	Background	NE		9
D31	04/30/12	Background	SW		8.8
D31	04/30/12	Background	SE		8.6
D27	02/08/12	Background	NW		8.5
D31	04/30/12	Background	SW		8.5
D31	04/30/12	Background	SW		8.5
D31	04/30/12	Background	SE		8.3
D31	04/30/12	Background	SE		8.2
D31	04/30/12	Background	N		8.1
D31	04/30/12	Background	SW		8.1
D31	04/30/12	Background	SE		8
D31	04/30/12	Background	SW		8
D31	04/30/12	Background	N		7.8
H29A	07/23/13	Background	S 2		7.8
M14	04/09/13	Background	SVE 02 [10'-12'] SVES 02		7.8
N04	05/13/11	Background	N		7.8
D31	04/30/12	Background	SE		7.7
H26	11/10/10	Background	SE		7.7
D31	04/30/12	Background	N		7.5
D31	04/30/12	Background	N		7.4
D27	02/08/12	Background	NW		7.3
H17 (Unocal 1	02/24/11	Background	SE		7.2
D31	04/30/12	Background	N		7
H17 (Unocal 1	02/24/11	Background	S		6.7
N04	05/13/11	Background	NE		6.6
A28	12/01/10	Background	N		6.4
C04	04/14/11	Background	SE		5.1
M14	04/11/13	Background	SVE E [10-12']		5.1
H17 (Unocal 1	02/24/11	Background	NE		4.8
N04	05/13/11	Background	W		3.8
G30	08/08/13	Background	BG		3.3
M14	04/11/13	Background	SVE N [25-27']		2



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Chris McKisson / Rob Fishburn (LT Env)
EnCana Oil & Gas Inc. - CO
143 Diamond Avenue
Parachute, CO 81635

Report Summary

Tuesday July 16, 2013

Report Number: L644655


Samples Received: 07/02/13

Client Project: PIPELINE RELEASE D28

Description: D28

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:


Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-IN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
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REPORT OF ANALYSIS

Chris McKisson / Rob Fishburn (LT E
EnCana Oil & Gas Inc. - CO
143 Diamond Avenue
Parachute, CO 81635

July 16, 2013

Date Received : July 02, 2013
Description : D28

ESC Sample # : L644655-01

Sample ID : 062813-D28 SPOILS

Site ID :

Collected By : Ryan Zernis
Collection Date : 06/28/13 11:42

Project # : PIPELINE RELEASE D28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/09/13	1
Chromium, Trivalent	21.	2.0	mg/kg	Calc.	07/12/13	1
ORP	220		mV	2580 B-2011	07/08/13	1
pH	8.0		su	9045D	07/09/13	1
Sodium Adsorption Ratio	13.			Calc.	07/05/13	1
Specific Conductance	3100		umhos/cm	9050AMod	07/05/13	1
Mercury	BDL	0.020	mg/kg	7471	07/05/13	1
Arsenic	19.	1.0	mg/kg	6010B	07/12/13	1
Barium	4000	0.25	mg/kg	6010B	07/12/13	1
Cadmium	0.28	0.25	mg/kg	6010B	07/12/13	1
Chromium	21.	0.50	mg/kg	6010B	07/12/13	1
Copper	25.	1.0	mg/kg	6010B	07/12/13	1
Lead	18.	1.2	mg/kg	6010B	07/12/13	5
Nickel	16.	1.0	mg/kg	6010B	07/12/13	1
Selenium	1.8	1.0	mg/kg	6010B	07/12/13	1
Silver	BDL	0.50	mg/kg	6010B	07/12/13	1
Zinc	51.	1.5	mg/kg	6010B	07/12/13	1
Benzene	0.023	0.0025	mg/kg	8021/8015	07/06/13	5
Toluene	0.39	0.025	mg/kg	8021/8015	07/06/13	5
Ethylbenzene	0.0068	0.0025	mg/kg	8021/8015	07/06/13	5
Total Xylene	0.45	0.0075	mg/kg	8021/8015	07/06/13	5
TPH (GC/FID) Low Fraction	47.	0.50	mg/kg	GRO	07/06/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.5		% Rec.	8021/8015	07/06/13	5
a,a,a-Trifluorotoluene(PID)	94.7		% Rec.	8021/8015	07/06/13	5
TPH (GC/FID) High Fraction	830	20.	mg/kg	8015D/DRO	07/08/13	5
Surrogate recovery(%)						
o-Terphenyl	100.		% Rec.	8015D/DRO	07/08/13	5
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/12/13	1
Acenaphthene	0.021	0.0060	mg/kg	8270C-SIM	07/12/13	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/12/13	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/12/13	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/12/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L644655-01 (PH) - 8.0@22.3c



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EnCana Oil & Gas Inc. - CO
143 Diamond Avenue
Parachute, CO 81635

July 16, 2013

Date Received : July 02, 2013
Description : D28

Sample ID : 062813-D28 SPOILS

Collected By : Ryan Zernis
Collection Date : 06/28/13 11:42

ESC Sample # : L644655-01

Site ID :

Project # : PIPELINE RELEASE D28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	0.013	0.0060	mg/kg	8270C-SIM	07/12/13	1
Benzo(g,h,i)perylene	0.0068	0.0060	mg/kg	8270C-SIM	07/12/13	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/12/13	1
Chrysene	0.013	0.0060	mg/kg	8270C-SIM	07/12/13	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/12/13	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/12/13	1
Fluorene	0.063	0.0060	mg/kg	8270C-SIM	07/12/13	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/12/13	1
Naphthalene	0.17	0.020	mg/kg	8270C-SIM	07/12/13	1
Phenanthrene	0.064	0.0060	mg/kg	8270C-SIM	07/12/13	1
Pyrene	0.021	0.0060	mg/kg	8270C-SIM	07/12/13	1
1-Methylnaphthalene	0.30	0.020	mg/kg	8270C-SIM	07/12/13	1
2-Methylnaphthalene	0.42	0.020	mg/kg	8270C-SIM	07/12/13	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/12/13	1
Surrogate Recovery						
Nitrobenzene-d5	104.		% Rec.	8270C-SIM	07/12/13	1
2-Fluorobiphenyl	92.7		% Rec.	8270C-SIM	07/12/13	1
p-Terphenyl-d14	141.		% Rec.	8270C-SIM	07/12/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 07/15/13 11:52 Revised: 07/16/13 08:39
L644655-01 (PH) - 8.0@22.3c



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REPORT OF ANALYSIS

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EnCana Oil & Gas Inc. - CO
143 Diamond Avenue
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July 16, 2013

Date Received : July 02, 2013
Description : D28
Sample ID : 062813-D28 SPILL EOR S01 6 IN
Collected By : Ryan Zernis
Collection Date : 06/28/13 11:56

ESC Sample # : L644655-02

Site ID :

Project # : PIPELINE RELEASE D28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.12	mg/kg	8021/8015	07/06/13	250
Toluene	BDL	1.2	mg/kg	8021/8015	07/06/13	250
Ethylbenzene	BDL	0.12	mg/kg	8021/8015	07/06/13	250
Total Xylene	1.2	0.38	mg/kg	8021/8015	07/06/13	250
TPH (GC/FID) Low Fraction	250	25.	mg/kg	GRO	07/06/13	250
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.9		% Rec.	8021/8015	07/06/13	250
a,a,a-Trifluorotoluene(PID)	96.8		% Rec.	8021/8015	07/06/13	250
TPH (GC/FID) High Fraction	2600	100	mg/kg	8015D/DRO	07/08/13	25
Surrogate recovery(%)						
o-Terphenyl	237.		% Rec.	8015D/DRO	07/08/13	25

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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July 16, 2013

Date Received : July 02, 2013
Description : D28
Sample ID : 062813-D28 SPILL EOR N01 6 IN
Collected By : Ryan Zernis
Collection Date : 06/28/13 12:05

ESC Sample # : L644655-03

Site ID :

Project # : PIPELINE RELEASE D28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.025	mg/kg	8021/8015	07/06/13	50
Toluene	BDL	0.25	mg/kg	8021/8015	07/06/13	50
Ethylbenzene	BDL	0.025	mg/kg	8021/8015	07/06/13	50
Total Xylene	0.24	0.075	mg/kg	8021/8015	07/06/13	50
TPH (GC/FID) Low Fraction	67.	5.0	mg/kg	GRO	07/06/13	50
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	98.5		% Rec.	8021/8015	07/06/13	50
a,a,a-Trifluorotoluene(PID)	97.6		% Rec.	8021/8015	07/06/13	50
TPH (GC/FID) High Fraction	4700	100	mg/kg	8015D/DRO	07/08/13	25
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	8015D/DRO	07/08/13	25

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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July 16, 2013

Date Received : July 02, 2013
Description : D28
Sample ID : 062813-D28 SPILL EOR N02 6 IN
Collected By : Ryan Zernis
Collection Date : 06/28/13 12:23

ESC Sample # : L644655-04

Site ID :

Project # : PIPELINE RELEASE D28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/06/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/06/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/06/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/06/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/06/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.0		% Rec.	8021/8015	07/06/13	5
a,a,a-Trifluorotoluene(PID)	96.7		% Rec.	8021/8015	07/06/13	5
TPH (GC/FID) High Fraction	140	40.	mg/kg	8015D/DRO	07/08/13	10
Surrogate recovery(%)						
o-Terphenyl	112.		% Rec.	8015D/DRO	07/08/13	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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July 16, 2013

Date Received : July 02, 2013
Description : D28
Sample ID : 062813-D28 SPILL EOR S02 6 IN
Collected By : Ryan Zernis
Collection Date : 06/28/13 12:16

ESC Sample # : L644655-05

Site ID :

Project # : PIPELINE RELEASE D28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/06/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/06/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/06/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/06/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/06/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.0		% Rec.	8021/8015	07/06/13	5
a,a,a-Trifluorotoluene(PID)	96.5		% Rec.	8021/8015	07/06/13	5
TPH (GC/FID) High Fraction	120	40.	mg/kg	8015D/DRO	07/08/13	10
Surrogate recovery(%)						
o-Terphenyl	112.		% Rec.	8015D/DRO	07/08/13	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L644655-01	WG670714	SAMP	Benzo(k)fluoranthene	R2741801	L1
	WG670714	SAMP	p-Terphenyl-d14	R2741801	J1
L644655-02	WG670708	SAMP	o-Terphenyl	R2737644	J7
L644655-03	WG670708	SAMP	o-Terphenyl	R2737644	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
L1	(ESC) The associated batch LCS exceeded the upper control limit, which indicates a high bias; The sample analyte was "not detected" and is therefore unaffected.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.