

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: Ritchie Exploration Inc

ADDRESS: PO Box 783188

Wichita, KS 67278

FACILITY: ANDERSON #1

LOCATION: NE1/4, SW1/4, S20, T3S, R52W

NEAR ANTON, CO 80801

ATTN: A. Scott Ritchie III, Pres

COG840011

PERMIT NUMBER

001-A

DISCHARGE NUMBER

MONITORING PERIOD

MM/DD/YYYY

07/01/2014

MM/DD/YYYY

07/31/2014

DMR Mailing ZIP CODE:

67278


MINOR

Discharge to Unnamed Drainage

External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
pH	SAMPLE MEASUREMENT	*****	*****	*****	7.78	*****	7.86	SU			
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	6.5 MINIMUM	*****	9 MAXIMUM	SU		Monthly	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	*****	*****	*****	*****	12.0	12.0	mg/L			
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	30 30DA AVG	45 DAILY MX	mg/L		Monthly	GRAB
Arsenic, total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****	<25	<25	ug/L			
00978 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 30DA AVG	Req. Mon. DAILY MX	ug/L		Monthly	GRAB
Selenium, total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****	<50	<50	ug/L			
00981 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 30DA AVG	Req. Mon. DAILY MX	ug/L		Monthly	GRAB
Beryllium, total recoverable [as Be]	SAMPLE MEASUREMENT	*****	*****	*****	*****	<10	<10	ug/L			
00998 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 30DA AVG	Req. Mon. DAILY MX	ug/L		Monthly	GRAB
Nickel, total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****	<30	<30	ug/L			
01074 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 30DA AVG	Req. Mon. DAILY MX	ug/L		Monthly	GRAB
Zinc, total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****	<30	<30	ug/L			
01094 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 30DA AVG	Req. Mon. DAILY MX	ug/L		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE	DATE
John Mienbuegel Production Manager TYPED OR PRINTED			316-691-9500	8-27-2014
			AREA Code NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

Oil and grease - see D.24, pg 14.

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NEAR ANTON, CO 80801

ATTN: A. Scott Ritchie III, Pres


COG840011	001-A
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DMR Mailing ZIP CODE: 67278
MINOR

Discharge to Unnamed Drainage
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Cadmium, total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****	<10	<10	ug/L			
01113 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 30DA AVG	Req. Mon. DAILY MX	ug/L		Monthly	GRAB
Lead, total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****	<50	<50	ug/L			
01114 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 30DA AVG	Req. Mon. DAILY MX	ug/L		Monthly	GRAB
Copper, total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****	<10	<10	ug/L			
01119 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 30DA AVG	Req. Mon. DAILY MX	ug/L		Monthly	GRAB
Oil and grease	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	NM				
03582 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	10 INST MAX	mg/L		Contingent	GRAB
Chromium, trivalent total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****	<10	<10	ug/L			
04262 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 30DA AVG	Req. Mon. DAILY MX	ug/L		Monthly	GRAB
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	10.62	13.99		*****	*****	*****	*****			
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	21 30DA AVG	Req. Mon. DAILY MX	gal/min	*****	*****	*****	*****		Monthly	INSTAN
Solids, total dissolved	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	2820	mg/L			
70295 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	3500 MX 7D AV	mg/L		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER John Weinberger Production Manager TYPED OR PRINTED	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT 	TELEPHONE	DATE
			316-6919500	8-27-2014
			AREA Code	NUMBER
				MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

Oil and grease - see D.24, pg 14.

NM = Not measured, see attachment 1

DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: Ritchie Exploration Inc

ADDRESS: PO BOX 783188
Wichita, KS 67278

FACILITY: ANDERSON #1

LOCATION: NE1/4, SW1/4, S20, T3S, R52W
NEAR ANTON, CO 80801

ATTN: A. Scott Ritchie III, Pres

COG840011	001-A
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DMR Mailing ZIP CODE: 67278


MINOR

Discharge to Unnamed Drainage

External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Chromium, hexavalent tot recoverable 78247 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	<10	<10	ug/L			
	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 30DA AVG	Req. Mon. DAILY MX	ug/L		Monthly	GRAB
Oil and grease visual 84066 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	N	0	*****	*****	*****	*****			
	PERMIT REQUIREMENT	*****	Req. Mon. INST MAX	Y=1;N=0	*****	*****	*****	*****		Monthly	VISUAL

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		TELEPHONE	DATE
John Steinberger Production Manager TYPED OR PRINTED				316-691-9500	8-27-2014
		AREA Code	NUMBER	MM/DD/YYYY	

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

Oil and grease - see D.24, pg 14.

Attachment 1
DMR for permit COG840011
Ritchie Exploration, Anderson #1

A sample for oil and grease was not collected since there was no visual evidence of oil and grease .

AND ANDERSON Lse. In Washington County, Colorado -JULY-2014

Anderson Lse					
7/29	7/2	7/10	7/16	7/23*	7/29
6:00am	6:00am	6:00am	6:00am	6:00am	6:00am
4.69/4.00	4.62/4.00	4.75/4.01	7.66/7.00	4.73/4.00	4.69/4.00
1.72/10.01	7.58/7.01	9.68/10.00	9.70/10.01	7.49/7.01	9.72/10.01
n/d	8:00am	8:00am	8:00am	8:00am	8:00am
n/d	9:00am	9:00am	9:00am	9:00am	9:00am
n/d	7.8	7.86	7.82	7.78	7.82
n/d	9.08	13.99	11.41	8.78	9.85

Samples due fourth week of each month.

* indicates date of sample process and delivered to lab.



07/31/14

Received

SEP 03 2014

Technical Report for

Water Quality Control

Ritchie Exploration, Inc.

Anderson Lease

Accutest Job Number: D60037

Sampling Date: 07/23/14

Report to:

Ritchie Exploration, Inc.
PO Box 783188
Wichita, KS 67278-3188
john@ritchie-exp.com; palisadestech@gmail.com
ATTN: John Niernberger

Total number of pages in report: 32



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

Table of Contents

Sections:

1

2

3

4

5

6

7

8

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	4
Section 3: Summary of Hits	6
Section 4: Sample Results	7
4.1: D60037-1: ANDERSON LSE. WASH CO COLO	8
4.2: D60037-1A: ANDERSON LSE. WASH CO COLO	10
Section 5: Misc. Forms	11
5.1: Chain of Custody	12
Section 6: GC Volatiles - QC Data Summaries	13
6.1: Method Blank Summary	14
6.2: Blank Spike Summary	15
6.3: Matrix Spike/Matrix Spike Duplicate Summary	16
Section 7: Metals Analysis - QC Data Summaries	17
7.1: Prep QC MP13526: As,Be,Cd,Cr,Cu,Pb,Ni,Se,Zn	18
Section 8: General Chemistry - QC Data Summaries	28
8.1: Method Blank and Spike Results Summary	29
8.2: Duplicate Results Summary	30
8.3: Matrix Spike Results Summary	31
8.4: Matrix Spike Duplicate Results Summary	32



Sample Summary

Ritchie Exploration, Inc.
Anderson Lease

Job No: D60037

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D60037-1	07/23/14	08:00 ET	07/23/14	AQ	Water	ANDERSON LSE. WASH CO COLO
D60037-1A	07/23/14	08:00 ET	07/23/14	AQ	Water	ANDERSON LSE. WASH CO COLO



CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Ritchie Exploration, Inc.

Job No D60037

Site: Anderson Lease

Report Date 7/31/2014 2:57:41 PM

On 07/23/2014, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 0.4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D60037 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GC By Method SW846 8021B

Matrix AQ	Batch ID: GTA1273
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59998-1MS, D59998-1MSD were used as the QC samples indicated.
- D60037-1: The pH of the sample was >2 at time of analysis.

Metals By Method SW846 6010C

Matrix AQ	Batch ID: MP13526
------------------	--------------------------

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D60036-1AMS, D60036-1AMSD, D60036-1ASDL were used as the QC samples for the metals analysis.
- The serial dilution RPD(s) for Cadmium, Chromium, Copper, Nickel, Zinc are outside control limits for sample MP13526-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Wet Chemistry By Method SM 2540C-2011

Matrix AQ	Batch ID: GN25761
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59997-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM 2540D-2011

Matrix AQ	Batch ID: GN25762
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D60069-1DUP were used as the QC samples for the Solids, Total Suspended analysis.

Thursday, July 31, 2014

Page 1 of 2

Wet Chemistry By Method SM 3500CR B-2011

Matrix AQ

Batch ID: GN25711

2

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59882-1FDUP, D59994-1AMS, D59994-1AMSD were used as the QC samples for the Chromium, Hexavalent analysis.
- D60037-1 for Chromium, Hexavalent: Sample preserved within 24hrs. to extend the hold time.

Wet Chemistry By Method SM4500HB+-2011/9040C

Matrix AQ

Batch ID: GN25717

- D60037-1 for pH: Analysis performed past the required 15 minutes from collection time/holding time.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Thursday, July 31, 2014

Page 2 of 2

Summary of Hits

Page 1 of 1

Job Number: D60037
Account: Ritchie Exploration, Inc.
Project: Anderson Lease
Collected: 07/23/14



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D60037-1	ANDERSON LSE. WASH CO COLO					
Benzene ^a		0.00032 J	0.0010	0.00020	mg/l	SW846 8021B
Ethylbenzene ^a		0.0011 J	0.0020	0.0010	mg/l	SW846 8021B
Xylenes (total) ^a		0.0041	0.0020	0.0020	mg/l	SW846 8021B
Solids, Total Dissolved		2820	10		mg/l	SM 2540C-2011
Solids, Total Suspended		12.0	5.0		mg/l	SM 2540D-2011
pH ^b		9.03			su	SM4500HB + -2011/9040C

D60037-1A ANDERSON LSE. WASH CO COLO

No hits reported in this sample.

(a) The pH of the sample was > 2 at time of analysis.

(b) Analysis performed past the required 15 minutes from collection time/holding time.

Sample Results

Report of Analysis

Report of Analysis

Page 1 of 1

Client Sample ID: ANDERSON LSE. WASH CO COLO
 Lab Sample ID: D60037-1
 Matrix: AQ - Water
 Method: SW846 8021B
 Project: Anderson Lease

Date Sampled: 07/23/14
 Date Received: 07/23/14
 Percent Solids: n/a

4.1
4

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	TA22815.D	1	07/30/14	EP	n/a	n/a	GTA1273
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.00032	0.0010	0.00020	mg/l	J
108-88-3	Toluene	ND	0.0020	0.0010	mg/l	
100-41-4	Ethylbenzene	0.0011	0.0020	0.0010	mg/l	J
1330-20-7	Xylenes (total)	0.0041	0.0020	0.0020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	95%		60-140%

(a) The pH of the sample was > 2 at time of analysis.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: ANDERSON LSE. WASH CO COLO

Lab Sample ID: D60037-1

Matrix: AQ - Water

Project: Anderson Lease

Date Sampled: 07/23/14

Date Received: 07/23/14

Percent Solids: n/a

4.1
4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent ^a	< 0.010	0.010	mg/l	1	07/24/14 08:40	JD	SM 3500CR B-2011
Solids, Total Dissolved	2820	10	mg/l	1	07/29/14	JD	SM 2540C-2011
Solids, Total Suspended	12.0	5.0	mg/l	1	07/29/14	BF	SM 2540D-2011
pH ^b	9.03		su	1	07/24/14 15:15	JB	SM4500HB+-2011/9040C

(a) Sample preserved within 24hrs. to extend the hold time.

(b) Analysis performed past the required 15 minutes from collection time/holding time.

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID: ANDERSON LSE. WASH CO COLO

Lab Sample ID: D60037-1A

Matrix: AQ - Water

Project: Anderson Lease

Date Sampled: 07/23/14

Date Received: 07/23/14

Percent Solids: n/a

4.2
4

Total Recoverable Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 25	25	ug/l	1	07/25/14	07/28/14 KV	SW846 6010C ¹	SW846 3010A ³
Beryllium	< 10	10	ug/l	1	07/25/14	07/28/14 KV	SW846 6010C ¹	SW846 3010A ³
Cadmium	< 10	10	ug/l	1	07/25/14	07/28/14 KV	SW846 6010C ¹	SW846 3010A ³
Chromium	< 10	10	ug/l	1	07/25/14	07/28/14 KV	SW846 6010C ¹	SW846 3010A ³
Copper	< 10	10	ug/l	1	07/25/14	07/29/14 KV	SW846 6010C ²	SW846 3010A ³
Lead	< 50	50	ug/l	1	07/25/14	07/28/14 KV	SW846 6010C ¹	SW846 3010A ³
Nickel	< 30	30	ug/l	1	07/25/14	07/28/14 KV	SW846 6010C ¹	SW846 3010A ³
Selenium	< 50	50	ug/l	1	07/25/14	07/28/14 KV	SW846 6010C ¹	SW846 3010A ³
Zinc	< 30	30	ug/l	1	07/25/14	07/28/14 KV	SW846 6010C ¹	SW846 3010A ³

(1) Instrument QC Batch: MA5029

(2) Instrument QC Batch: MA5039

(3) Prep QC Batch: MP13526

RL = Reporting Limit

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Mountain States
4036 Youngfield Street Wheat Ridge, Co 80033
TEL. 303-425-6021 877-737-4521
FAX 303-425-6021

ACCUTEST LABORATORIES						Accutest Laboratories Mountain States 4036 Youngfield Street • Wheat Ridge, Co. 80033 TEL. 303-425-6021 877-737-4521 FAX 303-425-6021							FED-EX Tracking #		Bottle Order Control #								
Client / Reporting Information						Project Information							Requested Analysis (see TEST CODE sheet)							Matrix Codes			
Company Name Ridge Exploration Inc.						Project Name Anderson Lc. 4th back mostly																	
Street Address P.O. Box 283188						Street:																	
City State Zip Wichita KS 67228-3188						Billing Information (If different from Report to) Company Name																	
Project Contact John Nienberger - jn@ridge-exp.com						Project#							Street Address										
Phone # Fax # 316-681-9500 316-681-9550						Client PO#							City State Zip										
Sample(s) Name(s) CD Thomas 2205419550						Project Manager							Altitude							PO#			
Field ID / Point of Collection Anderson Lc. Wash Co Colo.						Collection						Number of preserved bottles						LAB USE ONLY					
						MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NH3	NH4OH	HNO3	H2SO4	HNO2			None	Dilution	MEDIA	ENCORE
Accession Sample #						Date Deliverable Information						Comments / Special Instructions											
Turnaround Time (Business days) <input type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> Std. 5 Business Days (By Contract only) <input type="checkbox"/> 5 Day FE SH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY						Approved By (Accutest PM): / Date: _____ _____						<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> Commercial "B" + Narrative <input type="checkbox"/> FULLT1 (Level 3+4) Commercial "A" = Results Only Commercial "B" = Results + QC Summary						<input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format <input type="checkbox"/> PDF					
Emergency & Rush TJA data available VIA Lablink						Sample Custody must be documented below each time samples change possession, including courier delivery.																	
Relinquished to Sampler: [Signature]						Received By: 1						Relinquished By: 2						Received By: 2					
Relinquished by Sampler: 3						Received By: 3						Relinquished By: 4						Received By: 4					
Relinquished by: 5						Received By: 5						Custody Seal: Intact <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact						Preserved where applicable <input checked="" type="checkbox"/>					

5.1

D60037: Chain of Custody
Page 1 of 1

GC Volatiles

9

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D60037
Account: RITEKSW Ritchie Exploration, Inc.
Project: Anderson Lease

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1273-MB	TA22806.D	1	07/30/14	EP	n/a	n/a	GTA1273

The QC reported here applies to the following samples:

Method: SW846 8021B

D60037-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	88% 60-140%

6.1.1

6

Blank Spike Summary

Page 1 of 1

Job Number: D60037

Account: RITEKSW Ritchie Exploration, Inc.

Project: Anderson Lease

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1273-BS	TA22807.D	1	07/30/14	EP	n/a	n/a	GTA1273

The QC reported here applies to the following samples:

Method: SW846 8021B

D60037-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	27.2	26.1	96	70-130
100-41-4	Ethylbenzene	45.6	44.6	98	70-130
108-88-3	Toluene	212	198	94	70-130
1330-20-7	Xylenes (total)	216	220	102	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	107%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D60037
Account: RITEKSW Ritchie Exploration, Inc.
Project: Anderson Lease

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D59998-1MS	TA22809.D	1	07/30/14	EP	n/a	n/a	GTA1273
D59998-1MSD	TA22810.D	1	07/30/14	EP	n/a	n/a	GTA1273
D59998-1	TA22808.D	1	07/30/14	EP	n/a	n/a	GTA1273

The QC reported here applies to the following samples:

Method: SW846 8021B

D60037-1

CAS No.	Compound	D59998-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		27.2	26.6	98	27.2	26.2	96	2	55-133/30
100-41-4	Ethylbenzene	ND		45.6	45.5	100	45.6	45.3	99	0	63-130/30
108-88-3	Toluene	ND		212	201	95	212	200	95	0	70-130/30
1330-20-7	Xylenes (total)	ND		216	224	104	216	223	103	0	64-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D59998-1	Limits
120-82-1	1,2,4-Trichlorobenzene	97%	95%	90%	60-140%

* = Outside of Control Limits.

Metals Analysis

QC Data Summaries

7

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D60037
Account: RITEKSW - Ritchie Exploration, Inc.
Project: Anderson Lease

QC Batch ID: MP13526
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 07/25/14

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	11	41		
Antimony	30	2.1	19		
Arsenic	25	3.8	5.6	-1.1	<25
Barium	10	.2	1.4		
Beryllium	10	.9	1.2	0.10	<10
Boron	50	.8	6.6		
Cadmium	10	.2	.36	0.20	<10
Calcium	400	2.4	41		
Chromium	10	.3	.4	-0.10	<10
Cobalt	5.0	.5	.57		
Copper	10	.8	1.9	-0.50	<10
Iron	70	1.5	9.5		
Lead	50	2.1	21	0.30	<50
Lithium	5.0	.4	2.7		
Magnesium	200	6.8	19		
Manganese	5.0	.5	.46		
Molybdenum	10	.4	.84		
Nickel	30	.5	.87	0.30	<30
Phosphorus	100	15	20		
Potassium	1000	99	270		
Selenium	50	7.1	11	-0.10	<50
Silicon	50	4.7	5.2		
Silver	30	.3	.6		
Sodium	400	7.3	170		
Strontium	5.0	.01	.12		
Thallium	10	1.8	4		
Tin	50	12	16		
Titanium	10	.1	2.1		
Uranium	50	2.9	5.5		
Vanadium	10	.4	.4		
Zinc	30	.4	3.2	1.4	<30

Associated samples MP13526: D60037-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D60037
Account: RITEKSW - Ritchie Exploration, Inc.
Project: Anderson Lease

QC Batch ID: MP13526
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 07/25/14

Metal	RL	IDL	MDL	MB	raw	final
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(anr) Analyte not requested

7.1.1

7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D60037
Account: RITEKSW - Ritchie Exploration, Inc.
Project: Anderson Lease

QC Batch ID: MP13526
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 07/25/14

Metal	D60036-1A Original MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	0.0	1120	1000	112.0 75-125
Barium	anr			
Beryllium	0.0	484	500	96.8 75-125
Boron	anr			
Cadmium	0.30	528	500	105.5 75-125
Calcium	anr			
Chromium	0.50	503	500	100.5 75-125
Cobalt	anr			
Copper	4.1	571	500	113.4 75-125
Iron	anr			
Lead	0.0	1000	1000	100.0 75-125
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	0.80	478	500	95.4 75-125
Phosphorus				
Potassium	anr			
Selenium	0.0	1130	1000	113.0 75-125
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium				
Vanadium	anr			
Zinc	3.6	547	500	108.7 75-125

Associated samples MP13526: D60037-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D60037
 Account: RITEKSW - Ritchie Exploration, Inc.
 Project: Anderson Lease

QC Batch ID: MP13526
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 07/25/14

	D60036-1A	Spikelot	QC
Metal	Original MS	ICPALL2 % Rec	Limits

(N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

7.1.2

7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D60037
Account: RITEKSW - Ritchie Exploration, Inc.
Project: Anderson Lease

QC Batch ID: MP13526
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 07/25/14

Metal	D60036-1A Original MSD		Spikelot ICPALL2 % Rec		MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	0.0	1140	1000	114.0	1.8	20
Barium	anr					
Beryllium	0.0	491	500	98.2	1.4	20
Boron	anr					
Cadmium	0.30	530	500	105.9	0.4	20
Calcium	anr					
Chromium	0.50	508	500	101.5	1.0	20
Cobalt	anr					
Copper	4.1	575	500	114.2	0.7	20
Iron	anr					
Lead	0.0	1010	1000	101.0	1.0	20
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	0.80	484	500	96.6	1.2	20
Phosphorus						
Potassium	anr					
Selenium	0.0	1140	1000	114.0	0.9	20
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Thallium	anr					
Tin						
Titanium						
Uranium						
Vanadium	anr					
Zinc	3.6	554	500	110.1	1.3	20

Associated samples MP13526: D60037-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D60037
 Account: RITEKSW - Ritchie Exploration, Inc.
 Project: Anderson Lease

QC Batch ID: MP13526
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 07/25/14

	D60036-1A	Spikelot	MSD	QC
Metal	Original MSD	ICPALL2 % Rec	RPD	Limit

(N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

7.1.2

7

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D60037
Account: RITEKSW - Ritchie Exploration, Inc.
Project: Anderson Lease

QC Batch ID: MP13526
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 07/25/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	1100	1000	110.0	80-120
Barium	anr			
Beryllium	501	500	100.2	80-120
Boron	anr			
Cadmium	518	500	103.6	80-120
Calcium	anr			
Chromium	518	500	103.6	80-120
Cobalt	anr			
Copper	484	500	96.8	80-120
Iron	anr			
Lead	1040	1000	104.0	80-120
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	493	500	98.6	80-120
Phosphorus				
Potassium	anr			
Selenium	1130	1000	113.0	80-120
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium				
Vanadium	anr			
Zinc	526	500	105.2	80-120

Associated samples MP13526: D60037-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D60037
Account: RITEKSW - Ritchie Exploration, Inc.
Project: Anderson Lease

QC Batch ID: MP13526
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 07/25/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
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(anr) Analyte not requested

7.1.3

7

SERIAL DILUTION RESULTS SUMMARY

Login Number: D60037
Account: RITEKSW - Ritchie Exploration, Inc.
Project: Anderson Lease

QC Batch ID: MP13526
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 07/25/14

Metal	D60036-1A Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	0.00	0.00	NC	0-10
Barium	anr			
Beryllium	0.00	0.00	NC	0-10
Boron	anr			
Cadmium	0.300	0.00	100.0(a)	0-10
Calcium	anr			
Chromium	0.500	0.00	100.0(a)	0-10
Cobalt	anr			
Copper	4.10	0.00	100.0(a)	0-10
Iron	anr			
Lead	0.00	13.5	NC	0-10
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	0.800	4.50	462.5(a)	0-10
Phosphorus				
Potassium	anr			
Selenium	0.00	0.00	NC	0-10
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium				
Vanadium	anr			
Zinc	3.60	3.00	16.7 (a)	0-10

Associated samples MP13526: D60037-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D60037
 Account: RITEKSW - Ritchie Exploration, Inc.
 Project: Anderson Lease

QC Batch ID: MP13526
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 07/25/14

	D60036-1A	QC
Metal	Original SDL 1:5 %DIF	Limits

(anr) Analyte not requested
 (a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

7.1.4
 7

General Chemistry

QC Data Summaries



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Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D60037
Account: RITEKSW - Ritchie Exploration, Inc.
Project: Anderson Lease

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN25711	0.010	0.0	mg/l	0.1	0.10	102.0	90-110%
Solids, Total Dissolved	GN25761	10	0.0	mg/l	400	399	99.8	90-110%
Solids, Total Suspended	GN25762	5.0	0.0	mg/l	300	288	96.0	90-110%
pH	GN25717			su	8.00	7.95	99.4	99.1-100.9%

Associated Samples:

Batch GN25711: D60037-1
Batch GN25717: D60037-1
Batch GN25761: D60037-1
Batch GN25762: D60037-1
(*) Outside of QC limits

8.1
8

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D60037
Account: RITEKSW - Ritchie Exploration, Inc.
Project: Anderson Lease

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN25711	D59882-1F	mg/l	0.028	0.028	0.0	0-20%
Solids, Total Dissolved	GN25761	D59997-1	mg/l	568	584	2.8	0-20%
Solids, Total Suspended	GN25762	D60069-1	mg/l	56.7	60.0	5.7	0-20%

Associated Samples:
Batch GN25711: D60037-1
Batch GN25761: D60037-1
Batch GN25762: D60037-1
(*) Outside of QC limits

8.2
8

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D60037
Account: RITEKSW - Ritchie Exploration, Inc.
Project: Anderson Lease

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN25711	D59994-1A	mg/l	0.0	0.1	0.098	97.0	85-115%

Associated Samples:
Batch GN25711: D60037-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

8.3
8

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D60037
Account: RITEKSW - Ritchie Exploration, Inc.
Project: Anderson Lease

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chromium, Hexavalent	GN25711	D59994-1A	mg/l	0.0	0.1	0.091	7.4	20%

Associated Samples:
Batch GN25711: D60037-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

8.4
8