

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

May 31, 2016

Mr. Jamie Keyes
NMOCD District 1
1625 French Drive
Hobbs, NM 88240
Via e-mail: jamie.keyes@state.nm.us

RE: Final C-141, Murchison - **Bettis 20 State Com #2H release**
API #30-025-41436, Pit Permit #P1-06545

Dear Mr. Keyes:

On behalf of Murchison Oil and Gas, R.T. Hicks Consultants submits this final C-141/closure report for the release that occurred at the above-referenced temporary pit. The release occurred on April 7, 2014 as a result of a breach of the liner during drilling due to the discharge pipe positioned too high on the side of the pit wall. The liner was immediately repaired upon discovery, as described in the initial C-141 form submitted to NMOCD the same day.

In accordance with the approved closure plan submitted with the C-144 temporary pit application, soils immediately beneath the liner were mixed with drilling solids (no more than 3:1 ratio) during the stabilization process. At the site of the release, the discharge slope was excavated until dry material was encountered at 5 feet below surface. A composite sample was collected from the 4 x 6 x 5-ft sample trench on February 9, 2015 for laboratory analysis of Pit Rule parameters. All concentrations were less than the Table I (19.15.17.13 NMAC) targets and on-site closure proceeded per the approved plan and approved closure variance. The pit closure was completed on March 11, 2016 and a final C-144 closure report was submitted to NMOCD on May 17, 2016.

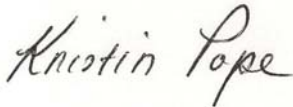


Excavation at outer discharge slope
2/9/2015

The surface will be monitored and R.T. Hicks Consultants will notify NMOCD and provide photo-documentation when re-vegetation obligations described in the Pit Rule are met. We respectfully request closure for this release.

Sincerely,

R.T. Hicks Consultants



Kristin Pope
Project Geologist

Enclosures: Final C-141 form, lab report
Copy: Murchison Oil and Gas, NM State Land Office

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	Murchison Oil & Gas, Inc.	Contact	Greg Boans
Address	7250 Dallas Parkway, Suite 1400, Plano, TX 75024	Telephone No.	(575) 628-3932
Facility Name	Bettis 20 State Com #2H	Facility Type	Temporary Drilling Pit (closed, on-site burial)
Surface Owner	State of New Mexico	Mineral Owner	API No. 30-025-41436

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	20	24S	33E	200	South	940	East	Lea

Latitude 32° 11' 47.195" N Longitude 103° 35' 19.732" W

NATURE OF RELEASE

Type of Release	Drilling Fluid	Volume of Release	unknown	Volume Recovered	unknown
Source of Release	Discharge from drilling rig into the pit	Date and Hour of Occurrence	4/7/2014	Date and Hour of Discovery	4/7/2014 12:00 pm
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Voicemail to Geoffrey Leking		
By Whom?	Kristin Pope	Date and Hour	4/8/2014 8:43 am		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

n/a

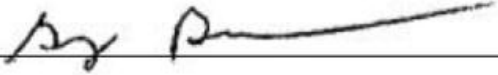
Describe Cause of Problem and Remedial Action Taken.*

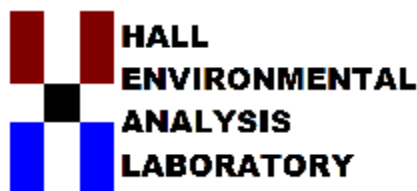
Drilling discharge pipe was discharging drilling fluid too high on side of pit wall. Impact from the fluid eroded substrate and caused a breach in the pit liner. Upon discovery, vacuum trucks removed fluid under the liner and lowered fluid level in the pit to allow repair of liner. Liner was patched and discharge pipe was extended.

Describe Area Affected and Cleanup Action Taken.*

During the pit closure process, shallow soils immediately beneath the liner were excavated and mixed with drilling solids for stabilization (not greater than 3:1 mixture). On 2/9/2015, the slope of the discharge wall was excavated until dry material was encountered at 5 ft BGS. A 5-point composite sample was collected from the 4 x 6 x 5 ft sample trench for lab analysis. All contaminant concentrations from the sample are less than those listed in Table I of 19.15.17.13 NMAC. In-place closure of the pit continued in accordance with the approved plan submitted with the C-144 application and the approved closure variance. A final C-144/closure report was submitted to NMOCD for the temporary pit on 5/17/2016 (Pit Permit #P1-06545).

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 		<u>OIL CONSERVATION DIVISION</u>	
Printed Name: Greg Boans		Approved by Environmental Specialist:	
Title: Production Superintendent	Approval Date:	Expiration Date:	
E-mail Address: gboans@jdmii.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 5/31/2016	Phone: (575) 628-3932		



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

February 20, 2015

Kristin Pope

R.T. Hicks Consultants, LTD

901 Rio Grande Blvd. NW

Suite F-142

Albuquerque, NM 87104

TEL: (575) 302-6755

FAX (505) 266-0745

RE: Bettis #2H Release

OrderNo.: 1502613

Dear Kristin Pope:

Hall Environmental Analysis Laboratory received 1 sample(s) on 2/13/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1502613**

Date Reported: **2/20/2015**

CLIENT: R.T. Hicks Consultants, LTD

Client Sample ID: 5-pt Comp @ 5'

Project: Bettis #2H Release

Collection Date: 2/9/2015 1:40:00 PM

Lab ID: 1502613-001

Matrix: SOIL

Received Date: 2/13/2015 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS				Analyst: JME			
Diesel Range Organics (DRO)	ND	12		mg/Kg	1	2/17/2015 7:24:03 PM	17747
Motor Oil Range Organics (MRO)	ND	59		mg/Kg	1	2/17/2015 7:24:03 PM	17747
Surr: DNOP	88.7	63.5-128		%REC	1	2/17/2015 7:24:03 PM	17747
EPA METHOD 8015D: GASOLINE RANGE				Analyst: NSB			
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/17/2015 12:38:02 PM	17762
Surr: BFB	89.2	80-120		%REC	1	2/17/2015 12:38:02 PM	17762
EPA METHOD 8021B: VOLATILES				Analyst: NSB			
Benzene	ND	0.050		mg/Kg	1	2/17/2015 12:38:02 PM	17762
Toluene	ND	0.050		mg/Kg	1	2/17/2015 12:38:02 PM	17762
Ethylbenzene	ND	0.050		mg/Kg	1	2/17/2015 12:38:02 PM	17762
Xylenes, Total	ND	0.10		mg/Kg	1	2/17/2015 12:38:02 PM	17762
Surr: 4-Bromofluorobenzene	96.6	80-120		%REC	1	2/17/2015 12:38:02 PM	17762
EPA METHOD 300.0: ANIONS				Analyst: LGT			
Chloride	3600	750		mg/Kg	500	2/18/2015 6:50:04 PM	17780

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502613

20-Feb-15

Client: R.T. Hicks Consultants, LTD

Project: Bettis #2H Release

Sample ID	MB-17780		SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	17780		RunNo:	24367				
Prep Date:	2/17/2015		Analysis Date:	2/17/2015		SeqNo:	718067		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-17780		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 17780		RunNo: 24367					
Prep Date:	2/17/2015		Analysis Date: 2/17/2015		SeqNo: 718068		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.0	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502613

20-Feb-15

Client: R.T. Hicks Consultants, LTD

Project: Bettis #2H Release

Sample ID	MB-17747		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 17747		RunNo: 24338					
Prep Date:	2/13/2015		Analysis Date: 2/17/2015		SeqNo: 717363		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	13		10.00		127	63.5	128			

Sample ID	LCS-17747		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 17747		RunNo: 24338					
Prep Date:	2/13/2015		Analysis Date: 2/17/2015		SeqNo: 717371		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	64	10	50.00	0	129	67.8	130			
Surr: DNOP	6.2		5.000		125	63.5	128			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502613

20-Feb-15

Client: R.T. Hicks Consultants, LTD

Project: Bettis #2H Release

Sample ID	MB-17762		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 17762		RunNo: 24348					
Prep Date:	2/16/2015		Analysis Date: 2/17/2015		SeqNo: 717850		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	910		1000		90.7	80	120			

Sample ID	LCS-17762		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 17762		RunNo: 24348					
Prep Date:	2/16/2015		Analysis Date: 2/17/2015		SeqNo: 717851		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	64	130			
Surr: BFB	970		1000		96.5	80	120			

Sample ID	LCSD-17762		SampType: LCSD		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS02		Batch ID: 17762		RunNo: 24348					
Prep Date:	2/16/2015		Analysis Date: 2/17/2015		SeqNo: 717852		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	970							0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502613

20-Feb-15

Client: R.T. Hicks Consultants, LTD

Project: Bettis #2H Release

Sample ID	MB-17762		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 17762		RunNo: 24348					
Prep Date:	2/16/2015		Analysis Date: 2/17/2015		SeqNo: 717868		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.99		1.000		99.0	80	120			

Sample ID	LCS-17762		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 17762		RunNo: 24348					
Prep Date:	2/16/2015		Analysis Date: 2/17/2015		SeqNo: 717869		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	108	80	120			
Toluene	1.0	0.050	1.000	0	104	80	120			
Ethylbenzene	1.0	0.050	1.000	0	105	80	120			
Xylenes, Total	3.1	0.10	3.000	0	103	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID	LCSD-17762		SampType: LCSD		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS02		Batch ID: 17762		RunNo: 24348					
Prep Date:	2/16/2015		Analysis Date: 2/17/2015		SeqNo: 717870		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	108	80	120	0.228	20	
Toluene	1.1	0.050	1.000	0	108	80	120	3.04	20	
Ethylbenzene	1.1	0.050	1.000	0	107	80	120	1.50	20	
Xylenes, Total	3.1	0.10	3.000	0	104	80	120	1.61	20	
Surr: 4-Bromofluorobenzene	1.1		1.000		105	80	120	0		

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: RT HICKS

Work Order Number: 1502613

RcptNo: 1

Received by/date:

Ag 02/13/15

Logged By: Ashley Gallegos

2/13/2015 9:00:00 AM

Ag

Completed By: Ashley Gallegos

2/13/2015 9:32:39 AM

Ag

Reviewed By:

CS 02/13/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.4	Good	Yes			

Chain-of-Custody Record

Client: R.T. Hicks Consultants

Mailing Address:

Albuquerque, NM

Phone #: 505-266-5004

email or Fax#: R@rthicksconsult.com

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Project Manager:

Kristin Pope

Sampler: Kristin Pope

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.4

Date Time Matrix Sample Request ID

1/15 1340 soil 5-pt. comp. @ 5'

Container Type and #

1 glass ice

HEAL No.

1502413

-001

TPH 8015B (GRO / DRO / MRO)

☒

BTEX + MTBE + TMB's (8021)

☒

PAH's (8310 or 8270 SIMS)

RCRA 8 Metals

8081 Pesticides / 8082 PCB's

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8260B (VOA)

8270 (Semi-VOA)

Air Bubbles (Y or N)

100 grams, if possible

☒

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

Bettis #2H release

Project #:

Albuquerque, NM

Phone #: 505-266-5004

email or Fax#: R@rthicksconsult.com

Kristin Pope

Sampler: Kristin Pope

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.4

Date Time Matrix Sample Request ID

1/15 1340 soil 5-pt. comp. @ 5'

Container Type and #

1 glass ice

HEAL No.

1502413

-001

TPH 8015B (GRO / DRO / MRO)

☒

BTEX + MTBE + TMB's (8021)

☒

PAH's (8310 or 8270 SIMS)

RCRA 8 Metals

8081 Pesticides / 8082 PCB's

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8260B (VOA)

8270 (Semi-VOA)

Air Bubbles (Y or N)

100 grams, if possible

☒

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Remarks:

Email to kristin@rthicksconsult.com, R@

Received by: AMM

Date: 02/13/15 Time: 0900

Relinquished by:

Kristin Pope

Date: 1/15 Time: 1000

Relinquished by: