R. T. HICKS CONSULTANTS, LTD.

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

November 19, 2014

Dr. Tomáš Oberding
NMOCD District 1
1625 French Drive
Hobbs, NM 88240
Via E-Mail

RE: Temporary Pit Closure Report
Murchison - Mogi 9 State Com #3H, API #30-025-41070
Unit N, Section 9, T24S, R33E, Lea County

Dear Dr. Oberding:

On behalf of Murchison Oil and Gas, R.T. Hicks Consultants submits this closure report for the above-referenced temporary pit in accordance with the approved C-144 closure plan. This report includes the following information listed in Part 21 of the C-144 form:

Requirements	Location in this Submission
Proof of Closure Notice (to surface owner and Division)	Attachment 1
Proof of Deed Notice (on-site closure on private land only)	Not applicable; State Land (no deed)
Plot Plan, C-105 form (for on-site closures and temporary pits)	Attachment 2
Confirmation Sampling Analytical Results	Not applicable; on-site closure
Waste Material Sampling Analytical Results (required for on-site closure)	Attachment 3
Disposal Facility Name and Permit Number	Not applicable; on-site closure
Soil Backfilling and Cover Installation	Attachment 4
Re-vegetation Application Rates and Seeding Technique (to be seeded at a later date)	Attachment 5
Site Reclamation (photo documentation)	To follow
Updated C-144 form	Attachment 6

The former pit area is scheduled to be seeded next week. NMOCD will be notified and provided photo-documentation when re-vegetation obligations described in subsection H of 19.15.17.13 NMAC are met.

Sincerely,
R.T. Hicks Consultants

Kristin Pope

Kristin Pope
Project Geologist

Copy: Murchison Oil and Gas
NM State Land Office, Ed Martin

ATTACHMENT 1

R. T. HICKS CONSULTANTS, LTD.

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

July 8, 2014

Mr. Tomas Oberding
NMOCD District 1
1625 French Drive
Hobbs, New Mexico 88240
VIA EMAIL

RE: Mogi 9 State Com 3H Temporary Pit, In-place Burial Notice
Unit N, Section 9, T24S, R33E, API #30-025-41070

Dear Mr. Oberding:

On behalf of Murchison Oil and Gas, R. T. Hicks Consultants is providing this notice to NMOCD with a copy to the State Land Office (certified, return receipt request) that closure operations at the above- referenced pit will begin on **Monday, July 14, 2014**. Depending on the availability of machinery, the closure process should require about two weeks. The "In-place Burial" closure plan for the pit was submitted on August 14, 2013 with the C-144 temporary pit application and NMOCD approved the plan on August 22, 2013. The rig was released from the Mogi 9 St. Com 3H well on October 30, 2013.

As outlined in emails from Hicks Consultants to NMOCD (1/28/2014, 3/2/2014), the Mogi 9 St. Com 5H well was drilled on the same location and cuttings from this well were placed in the 3H pit. After the 5H well was drilled and hydraulic fracturing and flow-back were completed, composite samples from the cuttings of the inner and outer cells of the pit were collected on June 4, 2014 for laboratory analyses. As shown in the table below, these samples meet criteria from Table II of 19.15.17.13 NMAC for every constituent *except* GRO+DRO in the outer cell. Obviously, when the inner cell solids are combined with the outer cell's solids, then stabilized with no more than 3 parts clean, dry dirt, the buried solids will meet the criteria.

A request was made of the laboratory to composite the inner and outer cell samples in a 1:1.4 ratio (inner:outer) to formulate a "Pit Composite" sample that is representative of the volume of pit cuttings in each cell. A miscommunication between the laboratory and Hicks Consultants caused a delay in this sample's composition and analysis, resulting in a report that indicates the EPA's holding time recommendations have been exceeded. Thus, the sample analyzed was maintained in a closed jar under refrigeration for longer than allowed by protocol.

The summary table demonstrates a calculated value for the "Pit Composite" sample that is based on the individual components', the inner and outer cells, analyses. Although holding time was exceeded on "Lab Pit Composite" sample, a comparison of the calculated and measured values indicates agreeable precision. Both of these methods for the *unstabilized* Pit Composite demonstrate that concentrations of the Table II parameters will meet the limits that allow in-place burial of the stabilized cuttings, created by mixing available on-site material (mixing dirt)

with the pit contents in a ratio not to exceed 3:1. We are certain that these results "demonstrate that, after the waste is solidified or stabilized with soil or other non-waste material at a ratio of no more than 3:1 soil or other non-waste material to waste, the concentration of any contaminant in the stabilized waste is not higher than the parameters listed in Table II of 19.15.17.13 NMAC."

Mogi 9 St. Com 3H/5H pit Sample Name	**Sample Type**	**Sample Date**	**Chloride** *80,000*	**Benzene** *10*	**BTEX** *50*	**GRO+ DRO** *1000*	**TPH 418.1** *2500*
Inner Composite	Field comp.	6/4/2014	8,100	0	0	74	92
Outer Composite	Field comp.	6/4/2014	52,000	0.43	8.83	1,120	140
1:1.4 PIT COMPOSITE CALCULATED *(inner cell:outer cell)*			*33708.33*	*0.25*	*5.15*	*684.17*	*120.00*
Lab Pit Composite (1:1.4)	Lab comp.; hold time exceeded	6/4/2014	27,000	0.31	4.61	195	120
Mixing Dirt	composite	6/19/2014	48	0	0	0	0

On April 25, 2014, NMOCD granted an extension for the closure of this pit, creating a deadline of July 30, 2014. I will follow up this notice to you with a phone call today as required by the Pit Rule.

Sincerely,

R.T. Hicks Consultants

Kristin Pope

Kristin Pope

Copy: Murchison Oil and Gas

Ed Martin, State Land Office
New Mexico State Land Office
PO Box 1148
Santa Fe, NM 87504-1148
CERTIFIED MAIL – RETURN RECIEPT REQUEST

MOGI 3H/5H Closure Notice #5

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ed Martin
State Land Office
P.O. Box 1148
Santa Fe, NM 87504

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent
☐ Addressee

B. Received by *(Printed Name)*

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

NEW MEXICO OIL CONSERVATION DIVISION
SANTA FE, NEW MEXICO
JUL 14 2014
87501

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 7008 0150 0001 8844 6978

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

From: Leking, Geoffrey R, EMNRD
To: Kristin Pope
Cc: ccottrell@jdmii.com; Warnell, Terry G.; Greg Boans; Chace Walls; Randy Hicks
Subject: RE: Extension Request: Murchison - Mogi 9 St. Com 3H pit closure
Date: Friday, April 25, 2014 7:14:22 AM

Kristin

The requested three month extension for closure of the Murchison Mogi 9 State Com 3H drilling pit is approved. Please contact me if you have any questions. Thank you.

Geoffrey Leking
Environmental Specialist
NMOCD-Hobbs
1625 N. French Drive
Hobbs, NM 88240
Office: (575) 393-6161 Ext. 113
Cell: (575) 399-2990
email: geoffreyr.leking@state.nm.us

From: Kristin Pope [mailto:kristin@rthicksconsult.com]
Sent: Thursday, April 24, 2014 1:10 PM
To: Leking, Geoffrey R, EMNRD
Cc: ccottrell@jdmii.com; Warnell, Terry G.; Greg Boans; Chace Walls; Randy Hicks
Subject: Extension Request: Murchison - Mogi 9 St. Com 3H pit closure

Mr. Leking:

Please find the attached extension request for the closure of the **Mogi 9 State Com 3H** temporary pit. This pit was also used to store the cuttings from the Mogi 5H well. Frac was recently completed and we sampled it yesterday. Thank you.

Kristin Pope
R.T. Hicks Consultants
Carlsbad Field Office
575.302.6755

R. T. HICKS CONSULTANTS, LTD.

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

April 24, 2014

Mr. Geoffrey Leking
NMOCD District 1
1625 French Drive
Hobbs, NM 88240
VIA EMAIL

RE: Murchison – Mogi 9 State Com 3H Temporary Pit
Extension Request for Closure
Unit N, Section 9, T24S, R33E, API #30-025-41070

Dear Mr. Leking:

On behalf of Murchison Oil and Gas, R.T. Hicks Consultants respectfully requests a 3-month extension for the closure of the above-referenced temporary pit. The rig was released from the Mogi 9 St. Com 3H well on 10/30/2013. As described in an email from Hicks Consultants to NMOCD on 1/28/2014, this pit was also used for the storage of cuttings from the Mogi 9 St. Com 5H well which was drilled on the same location. The Mogi 9 St. Com 5H spudded on 3/3/2014 and the rig was released on 4/4/2014; hydraulic fracturing commenced soon after.

We request this extension because changes in the drilling schedule caused the Mogi 9 St. Com 5H to be spudded at a date later than initially anticipated. We sampled the pit contents for closure criteria yesterday on 4/23/2014 and plan to proceed with the closure process without delay.

Thank you for your consideration of this request.

Sincerely,

R.T. Hicks Consultants

Kristin Pope

Kristin Pope
Project Geologist

Copy: Murchison Oil and Gas

NM State Land Office, Terry Warnell

ATTACHMENT 2

Submit To Appropriate District Office
Two Copies
District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Rd., 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-105
Revised August 1, 2011

1. WELL API NO.
30-025-41070

2. Type of Lease
☒ STATE ☐ FEE ☐ FED/INDIAN

3. State Oil & Gas Lease No.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

4. Reason for filing:

☐ **COMPLETION REPORT** (Fill in boxes #1 through #31 for State and Fee wells only)

☒ **C-144 CLOSURE ATTACHMENT** (Fill in boxes #1 through #9, #15 Date Rig Released and #32 and/or #33; attach this and the plat to the C-144 closure report in accordance with 19.15.17.13.K NMAC)

5. Lease Name or Unit Agreement Name
Mogi 9 State Com

6. Well Number:
#3H

7. Type of Completion:
☒ NEW WELL ☐ WORKOVER ☐ DEEPENING ☐ PLUGBACK ☐ DIFFERENT RESERVOIR ☐ OTHER _____

8. Name of Operator
MURCHISON OIL & GAS, INC.

9. OGRID
15363

10. Address of Operator

11. Pool name or Wildcat

12. Location	Unit Ltr	Section	Township	Range	Lot	Feet from the	N/S Line	Feet from the	E/W Line	County
Surface:										
BH:										

13. Date Spudded	14. Date T.D. Reached	15. Date Rig Released	16. Date Completed (Ready to Produce)	17. Elevations (DF and RKB, RT, GR, etc.)
		10/30/2013		

18. Total Measured Depth of Well	19. Plug Back Measured Depth	20. Was Directional Survey Made?	21. Type Electric and Other Logs Run

22. Producing Interval(s), of this completion - Top, Bottom, Name

23. **CASING RECORD** (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET

26. Perforation record (interval, size, and number)

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED

28. **PRODUCTION**

Date First Production	Production Method *(Flowing, gas lift, pumping - Size and type pump)*	Well Status *(Prod. or Shut-in)*

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl	Gas - MCF	Water - Bbl.	Gas - Oil Ratio

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API - *(Corr.)*

29. Disposition of Gas *(Sold, used for fuel, vented, etc.)*

30. Test Witnessed By

31. List Attachments

32. If a temporary pit was used at the well, attach a plat with the location of the temporary pit.
PLATE 1 ATTACHED

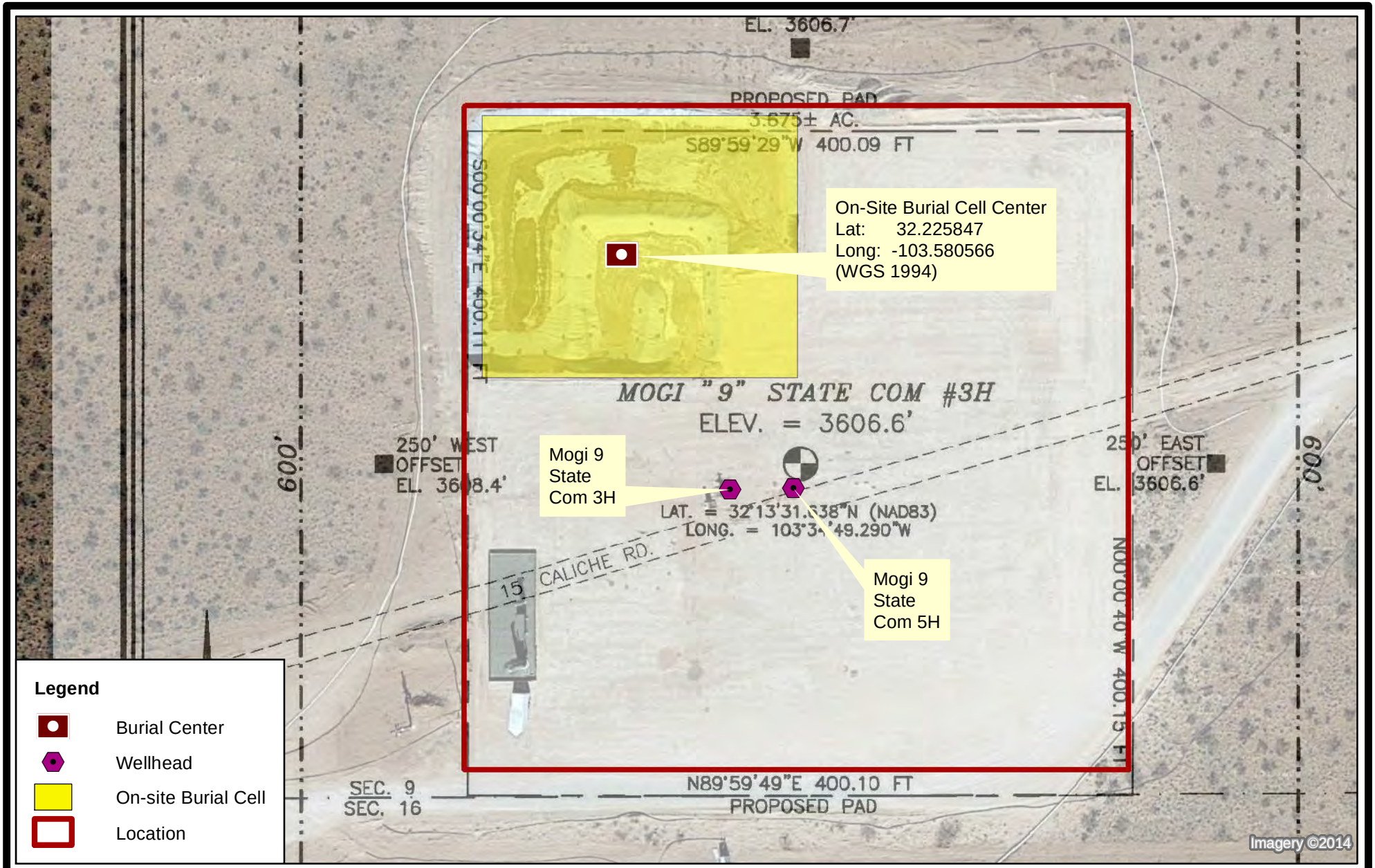
33. If an on-site burial was used at the well, report the exact location of the on-site burial:

Latitude N 32.225847° Longitude W 103.580566° NAD 1927 **1983**

I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature Kristin Pope Printed Name KRISTIN POPE Title PROJECT GEOLOGIST, AGENT FOR MURCHISON Date 11/19/2014

E-mail Address kristin@rthicksconsult.com



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	On-site Burial Location of Temporary Pit in relation to well pad	Plate 1 C-105 form
	Murchison Oil and Gas, Inc. Mogi "9" State Com #3H	November 2014

ATTACHMENT 3

Waste Material Sampling Analytical Results

The Mogi 9 St. Com 3H temporary pit held cuttings from both the #3H well and the #5H well. Once the #5H was completed, composite samples from the cuttings of the inner and outer cells of the pit were collected by Hicks Consultants on June 4, 2014 for analyses at Hall Environmental Analysis Laboratory in Albuquerque for BTEX (8260B), GRO/DRO (8015M), TPH (418.1), and Chloride (SM4500). As shown in the table below, these samples meet criteria from Table II of 19.15.17.13 NMAC for every constituent except GRO+DRO in the outer cell.

The laboratory was requested to composite the inner and outer cell samples in a 1:1.4 ratio (inner cell to outer cell) to formulate a "Pit Composite" sample that is representative of the volume of cuttings in each cell. A miscommunication caused a delay in this sample's composition and analysis, resulting in a report that indicates the EPA's holding time recommendations have been exceeded.

Based on the inner to outer ratio of cuttings in each cell, a calculated value for the "Pit Composite" sample was presented in the Closure Notice. Although holding time was exceeded on "Lab Pit Composite" sample, a comparison of the calculated and measured values indicates agreeable precision. Both of these methods for the *unstabilized* Pit Composite demonstrate that concentrations of the Table II parameters meet Table II limits for stabilized cuttings, created by mixing available on-site material (mixing dirt) with the pit contents in a ratio not to exceed 3:1.

Mogi 9 St. Com 3H/5H pit Sample Name	**Sample Type**	**Sample Date**	**Chloride** *80,000*	**Benzene** *10*	**BTEX** *50*	**GRO+ DRO** *1000*	**TPH 418.1** *2500*
Inner Composite	Field comp.	6/4/2014	8,100	0	0	74	92
Outer Composite	Field comp.	6/4/2014	52,000	0.43	8.83	1,120	140
1:1.4 PIT COMPOSITE CALCULATED *(inner cell:outer cell)*			*33708.33*	*0.25*	*5.15*	*684.17*	*120.00*
Lab Pit Composite (1:1.4)	Lab comp.; hold time exceeded	6/4/2014	27,000	0.31	4.61	195	120
Mixing Dirt	composite	6/19/2014	48	0	0	0	0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

June 25, 2014

Kristin Pope

R.T. Hicks Consultants, LTD
901 Rio Grande Blvd. NW
Suite F-142
Albuquerque, NM 87104
TEL: (505) 266-5004
FAX (505) 266-0745

RE: Murchison-Mogi 9 St. Com 3/5H OrderNo.: 1406964

Dear Kristin Pope:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/6/2014 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 qualifers 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,

John Caldwell

Supervisor

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1406964**
Date Reported: **6/25/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Client Sample ID: Lab Pit Composite
Project: Murchison-Mogi 9 St. Com 3/5H
Collection Date: 6/4/2014
Lab ID: 1406964-001
Matrix: SOIL
Received Date: 6/6/2014 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	130	10	H	mg/Kg	1	6/24/2014 5:42:23 PM	13809
Motor Oil Range Organics (MRO)	ND	50	H	mg/Kg	1	6/24/2014 5:42:23 PM	13809
Surr: DNOP	89.7	57.9-140	H	%REC	1	6/24/2014 5:42:23 PM	13809
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	65	50	H	mg/Kg	10	6/23/2014 3:30:30 PM	13815
Surr: BFB	104	80-120	H	%REC	10	6/23/2014 3:30:30 PM	13815
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	0.31	0.25	H	mg/Kg	10	6/23/2014 3:30:30 PM	13815
Toluene	1.4	0.50	H	mg/Kg	10	6/23/2014 3:30:30 PM	13815
Ethylbenzene	0.60	0.50	H	mg/Kg	10	6/23/2014 3:30:30 PM	13815
Xylenes, Total	2.3	1.0	H	mg/Kg	10	6/23/2014 3:30:30 PM	13815
Surr: 4-Bromofluorobenzene	102	80-120	H	%REC	10	6/23/2014 3:30:30 PM	13815
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	27000	750		mg/Kg	500	6/20/2014 2:54:19 PM	13810
EPA METHOD 418.1: TPH						Analyst: **BCN**	
Petroleum Hydrocarbons, TR	120	20	H	mg/Kg	1	6/23/2014	13804

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 greater than 2.
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#: **1406964**

25-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison-Mogi 9 St. Com 3/5H

Sample ID	**MB-13810**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**13810**	RunNo:	**19436**					
Prep Date:	**6/20/2014**	Analysis Date:	**6/20/2014**	SeqNo:	**562237**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-13810**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**13810**	RunNo:	**19436**					
Prep Date:	**6/20/2014**	Analysis Date:	**6/20/2014**	SeqNo:	**562238**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.1	90	110			

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 greater than 2.
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#: **1406964**

25-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison-Mogi 9 St. Com 3/5H

Sample ID	**MB-13804**	SampType:	**MBLK**		TestCode:	**EPA Method 418.1: TPH**				
Client ID:	**PBS**	Batch ID:	**13804**		RunNo:	**19397**				
Prep Date:	**6/20/2014**	Analysis Date:	**6/20/2014**		SeqNo:	**561304**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20								

Sample ID	**LCS-13804**	SampType:	**LCS**		TestCode:	**EPA Method 418.1: TPH**				
Client ID:	**LCSS**	Batch ID:	**13804**		RunNo:	**19397**				
Prep Date:	**6/20/2014**	Analysis Date:	**6/20/2014**		SeqNo:	**561305**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	99	20	100.0	0	99.3	80	120			

Sample ID	**LCSD-13804**	SampType:	**LCSD**		TestCode:	**EPA Method 418.1: TPH**				
Client ID:	**LCSS02**	Batch ID:	**13804**		RunNo:	**19397**				
Prep Date:	**6/20/2014**	Analysis Date:	**6/20/2014**		SeqNo:	**561306**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	99	20	100.0	0	99.3	80	120	0	20	

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 greater than 2.
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#: **1406964**

25-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison-Mogi 9 St. Com 3/5H

Sample ID	**MB-13859**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**13859**		RunNo:	**19466**				
Prep Date:	**6/24/2014**	Analysis Date:	**6/24/2014**		SeqNo:	**563203**	Units:	**%REC**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.6		10.00		96.4	57.9	140			

Sample ID	**LCS-13859**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**13859**		RunNo:	**19466**				
Prep Date:	**6/24/2014**	Analysis Date:	**6/24/2014**		SeqNo:	**563204**	Units:	**%REC**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.6	57.9	140			

Sample ID	**MB-13809**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**13809**		RunNo:	**19464**				
Prep Date:	**6/20/2014**	Analysis Date:	**6/24/2014**		SeqNo:	**563212**	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	8.1		10.00		81.1	57.9	140			

Sample ID	**LCS-13809**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**13809**		RunNo:	**19464**				
Prep Date:	**6/20/2014**	Analysis Date:	**6/24/2014**		SeqNo:	**563213**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.5	68.6	130			
Surr: DNOP	3.8		5.000		76.7	57.9	140			

Sample ID	**MB-13880**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**13880**		RunNo:	**19466**				
Prep Date:	**6/25/2014**	Analysis Date:	**6/25/2014**		SeqNo:	**563896**	Units:	**%REC**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.4		10.00		84.2	57.9	140			

Sample ID	**LCS-13880**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**13880**		RunNo:	**19466**				
Prep Date:	**6/25/2014**	Analysis Date:	**6/25/2014**		SeqNo:	**563897**	Units:	**%REC**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.1		5.000		82.5	57.9	140			

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1406964**

25-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison-Mogi 9 St. Com 3/5H

Sample ID **MB-13820 MK**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **R19437**	RunNo: **19437**
Prep Date:	Analysis Date: **6/23/2014**	SeqNo: **562664** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	970		1000		97.1	80	120			

Sample ID **LCS-13820 MK**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R19437**	RunNo: **19437**
Prep Date:	Analysis Date: **6/23/2014**	SeqNo: **562665** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	980		1000		98.2	80	120			

Sample ID **MB-13815**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **13815**	RunNo: **19437**
Prep Date: **6/20/2014**	Analysis Date: **6/23/2014**	SeqNo: **562675** 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	920		1000		91.8	80	120			

Sample ID **LCS-13815**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **13815**	RunNo: **19437**
Prep Date: **6/20/2014**	Analysis Date: **6/23/2014**	SeqNo: **562676** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	92.6	71.7	134			
Surr: BFB	990		1000		99.4	80	120			

Sample ID **LCSD-13815**	SampType: **LCSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS02**	Batch ID: **13815**	RunNo: **19437**
Prep Date: **6/20/2014**	Analysis Date: **6/23/2014**	SeqNo: **562677** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	910							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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1406964**

25-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison-Mogi 9 St. Com 3/5H

Sample ID **MB-13820 MK**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **R19437**	RunNo: **19437**
Prep Date:	Analysis Date: **6/23/2014**	SeqNo: **562691** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		115	80	120			

Sample ID **LCS-13820 MK**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **R19437**	RunNo: **19437**
Prep Date:	Analysis Date: **6/23/2014**	SeqNo: **562692** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		99.7	80	120			

Sample ID **MB-13815**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **13815**	RunNo: **19437**
Prep Date: **6/20/2014**	Analysis Date: **6/23/2014**	SeqNo: **562708** 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	1.0		1.000		104	80	120			

Sample ID **LCS-13815**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **13815**	RunNo: **19437**
Prep Date: **6/20/2014**	Analysis Date: **6/23/2014**	SeqNo: **562709** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.050	1.000	0	95.8	80	120			
Toluene	0.94	0.050	1.000	0	93.8	80	120			
Ethylbenzene	0.94	0.050	1.000	0	93.8	80	120			
Xylenes, Total	3.0	0.10	3.000	0	98.6	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		111	80	120			

Sample ID **LCSD-13815**	SampType: **LCSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS02**	Batch ID: **13815**	RunNo: **19437**
Prep Date: **6/20/2014**	Analysis Date: **6/23/2014**	SeqNo: **562710** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.050	1.000	0	97.7	80	120	1.96	20	
Toluene	0.95	0.050	1.000	0	95.4	80	120	1.78	20	
Ethylbenzene	0.96	0.050	1.000	0	95.7	80	120	1.97	20	
Xylenes, Total	3.0	0.10	3.000	0	100	80	120	1.73	20	

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1406964**

25-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison-Mogi 9 St. Com 3/5H

Sample ID **LCSD-13815**	SampType: **LCSD**			TestCode: **EPA Method 8021B: Volatiles**						
Client ID: **LCSS02**	Batch ID: **13815**			RunNo: **19437**						
Prep Date: **6/20/2014**	Analysis Date: **6/23/2014**			SeqNo: **562710**		Units: **mg/Kg**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120	0		

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 greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: RT HICKS | Work Order Number: 1406964 | RcptNo: 1

Received by/date: AT 06/06/14

Logged By: **Lindsay Mangin** **6/6/2014 10:00:00 AM**

Completed By: **Lindsay Mangin** **6/20/2014 9:13:10 AM**

Reviewed By:

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?	Client		

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 ☐
	Approved by client.		
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 ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
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 ☐	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	8.6	Good	Not Present			

Chain of Custody Record

Client: R. T. Hicks Consultants	☒ Standard ☐ Rush
Mailing Address: 901 Rio Grande Blvd NW, Albuquerque, NM 87104	Project Name: Murchison - Mogi 9 St. Com 3/5H
Phone #: (505) 266-5004	Project #:
email or Fax#: R@rthicksconsult.com	Project Manager: Kristin Pope
QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)	Sampler: Kristin Pope
Accreditation: ☐ NELAP ☐ Other	On Ice: ☒ Yes ☐ No
☐ EDD (Type)	Sample Temperature: 8.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1406962	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel) +MRO	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F^-,Cl^-,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)		± 100 grams		Air Bubbles (Y or N)
			Lab Pit Composite	Composite in Lab		-001	X		X	X				X							
			1 part "Inner" + 1.4 parts "Outer" "Lab Pit Composite"																		
			DO NOT MIX VIGOROUSLY																		

Date	Time	Relinquished by:	Received by:	Date	Time
6/5/14	345	Kristin Pope	Randall Hall	6/5/14	345
6/6/14	10am	Randall Hall			

Remarks: Email results to R@..., kristin@rthicksconsult.com

Please composite in lab using samples from different COC, same site (project).

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

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

June 13, 2014

Kristin Pope

R.T. Hicks Consultants, LTD
901 Rio Grande Blvd. NW
Suite F-142
Albuquerque, NM 87104
TEL: (505) 266-5004
FAX (505) 266-0745

RE: Murchison - Mogi 9 St. Com 3/5 H pit OrderNo.: 1406353

Dear Kristin Pope:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/6/2014 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 qualifers 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1406353**
Date Reported: **6/13/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Client Sample ID: Inner Comp. (3H only)
Project: Murchison - Mogi 9 St. Com 3/5 H pit
Collection Date: 6/4/2014 4:10:00 PM
Lab ID: 1406353-001 **Matrix:** SOIL
Received Date: 6/6/2014 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	74	20		mg/Kg	1	6/12/2014 10:09:20 AM	13578
Motor Oil Range Organics (MRO)	ND	100		mg/Kg	1	6/12/2014 10:09:20 AM	13578
Surr: DNOP	80.2	57.9-140		%REC	1	6/12/2014 10:09:20 AM	13578
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/11/2014 10:49:09 PM	13586
Surr: BFB	101	80-120		%REC	1	6/11/2014 10:49:09 PM	13586
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.050		mg/Kg	1	6/11/2014 10:49:09 PM	13586
Toluene	ND	0.050		mg/Kg	1	6/11/2014 10:49:09 PM	13586
Ethylbenzene	ND	0.050		mg/Kg	1	6/11/2014 10:49:09 PM	13586
Xylenes, Total	ND	0.099		mg/Kg	1	6/11/2014 10:49:09 PM	13586
Surr: 4-Bromofluorobenzene	107	80-120		%REC	1	6/11/2014 10:49:09 PM	13586
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	8100	750		mg/Kg	500	6/10/2014 3:21:23 PM	13604
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	92	20		mg/Kg	1	6/11/2014 12:00:00 PM	13571

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 greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Client Sample ID: Outer Comp. (3H + 5H)
Project: Murchison - Mogi 9 St. Com 3/5 H pit
Collection Date: 6/4/2014 3:45:00 PM
Lab ID: 1406353-002
Matrix: SOIL
Received Date: 6/6/2014 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	1000	20		mg/Kg	1	6/12/2014 12:22:56 PM	13578
Motor Oil Range Organics (MRO)	190	100		mg/Kg	1	6/12/2014 12:22:56 PM	13578
Surr: DNOP	111	57.9-140		%REC	1	6/12/2014 12:22:56 PM	13578
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	120	25		mg/Kg	5	6/11/2014 11:19:17 PM	13586
Surr: BFB	142	80-120	S	%REC	5	6/11/2014 11:19:17 PM	13586
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	0.43	0.25		mg/Kg	5	6/11/2014 11:19:17 PM	13586
Toluene	2.9	0.25		mg/Kg	5	6/11/2014 11:19:17 PM	13586
Ethylbenzene	1.0	0.25		mg/Kg	5	6/11/2014 11:19:17 PM	13586
Xylenes, Total	4.5	0.50		mg/Kg	5	6/11/2014 11:19:17 PM	13586
Surr: 4-Bromofluorobenzene	120	80-120	S	%REC	5	6/11/2014 11:19:17 PM	13586
EPA METHOD 300.0: ANIONS						Analyst: **SRM**	
Chloride	52000	3000		mg/Kg	2E	6/11/2014 3:11:46 PM	13604
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	140	20		mg/Kg	1	6/11/2014 12:00:00 PM	13571

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 greater than 2.
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#: **1406353**

13-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Mogi 9 St. Com 3/5 H pit

Sample ID	**MB-13604**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**13604**	RunNo:	**19180**					
Prep Date:	**6/10/2014**	Analysis Date:	**6/10/2014**	SeqNo:	**554470**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-13604**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**13604**	RunNo:	**19180**					
Prep Date:	**6/10/2014**	Analysis Date:	**6/10/2014**	SeqNo:	**554471**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.0	90	110			

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 greater than 2.
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#: **1406353**

13-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Mogi 9 St. Com 3/5 H pit

Sample ID	**MB-13571**	SampType:	**MBLK**		TestCode:	**EPA Method 418.1: TPH**				
Client ID:	**PBS**	Batch ID:	**13571**		RunNo:	**19175**				
Prep Date:	**6/6/2014**	Analysis Date:	**6/11/2014**		SeqNo:	**554453**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20								

Sample ID	**LCS-13571**	SampType:	**LCS**		TestCode:	**EPA Method 418.1: TPH**				
Client ID:	**LCSS**	Batch ID:	**13571**		RunNo:	**19175**				
Prep Date:	**6/6/2014**	Analysis Date:	**6/11/2014**		SeqNo:	**554454**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	92	20	100.0	0	91.5	80	120			

Sample ID	**LCSD-13571**	SampType:	**LCSD**		TestCode:	**EPA Method 418.1: TPH**				
Client ID:	**LCSS02**	Batch ID:	**13571**		RunNo:	**19175**				
Prep Date:	**6/6/2014**	Analysis Date:	**6/11/2014**		SeqNo:	**554455**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	96	20	100.0	0	95.7	80	120	4.44	20	

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 greater than 2.
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#: **1406353**

13-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Mogi 9 St. Com 3/5 H pit

Sample ID **MB-13578**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **13578**	RunNo: **19152**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **553568** 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	12		10.00		116	57.9	140			

Sample ID **LCS-13578**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **13578**	RunNo: **19152**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **553571** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	107	60.8	145			
Surr: DNOP	4.8		5.000		95.5	57.9	140			

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 greater than 2.
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#: **1406353**

13-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Mogi 9 St. Com 3/5 H pit

Sample ID **MB-13586**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554130** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	25								
Surr: BFB	4500		5000		89.2	80	120			

Sample ID **LCS-13586**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554131** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	120	25	125.0	0	92.8	71.7	134			
Surr: BFB	4900		5000		98.7	80	120			

Sample ID **LCSD-13586**	SampType: **LCSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS02**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554132** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	110	25	125.0	0	88.4	71.7	134	4.85	20	
Surr: BFB	4900		5000		97.2	80	120	0	0	

Sample ID **MB-13607**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **13607**	RunNo: **19201**
Prep Date: **6/10/2014**	Analysis Date: **6/11/2014**	SeqNo: **555180** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	900		1000		89.9	80	120			

Sample ID **LCS-13607**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **13607**	RunNo: **19201**
Prep Date: **6/10/2014**	Analysis Date: **6/11/2014**	SeqNo: **555181** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	940		1000		94.1	80	120			

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1406353**

13-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Mogi 9 St. Com 3/5 H pit

Sample ID **MB-13586**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554155** 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	1.1		1.000		106	80	120			

Sample ID **LCS-13586**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554156** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.7	0.25	5.000	0	94.7	80	120			
Toluene	4.6	0.25	5.000	0	92.8	80	120			
Ethylbenzene	4.7	0.25	5.000	0	94.2	80	120			
Xylenes, Total	15	0.50	15.00	0	98.8	80	120			
Surr: 4-Bromofluorobenzene	5.5		5.000		109	80	120			

Sample ID **LCSD-13586**	SampType: **LCSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS02**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554157** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.7	0.25	5.000	0	94.0	80	120	0.731	20	
Toluene	4.6	0.25	5.000	0	91.5	80	120	1.42	20	
Ethylbenzene	4.7	0.25	5.000	0	93.4	80	120	0.768	20	
Xylenes, Total	15	0.50	15.00	0	98.3	80	120	0.555	20	
Surr: 4-Bromofluorobenzene	5.6		5.000		113	80	120	0		

Sample ID **MB-13607**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **13607**	RunNo: **19201**
Prep Date: **6/10/2014**	Analysis Date: **6/11/2014**	SeqNo: **555210** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID **LCS-13607**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **13607**	RunNo: **19201**
Prep Date: **6/10/2014**	Analysis Date: **6/11/2014**	SeqNo: **555211** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1406353**

13-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Mogi 9 St. Com 3/5 H pit

Sample ID	**LCS-13607**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**
Client ID:	**LCSS**	Batch ID:	**13607**	RunNo:	**19201**
Prep Date:	**6/10/2014**	Analysis Date:	**6/11/2014**	SeqNo:	**555211** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		114	80	120			

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 greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: RT HICKS | Work Order Number: 1406353 | RcptNo: 1

Received by/date: AT 06/06/14

Logged By: **Michelle Garcia** 6/6/2014 10:00:00 AM Michelle Garcia

Completed By: **Michelle Garcia** 6/6/2014 4:24:18 PM Michelle Garcia

Reviewed By: 06/09/14

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?	Client		

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 ☐	Not required
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	8.6	Good	Not Present			

Chain-of-Custody Record

Client: R.T. Hicks Consultants

Mailing Address: 901 Rio Grande Blvd NW
Albuquerque, NM 87104

Phone #: (505) 266-5004

email or Fax#: R@rthicksconsult.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Murchison – Mogi 9 S4 Com 3/5 H pit

Project #:

Project Manager: Kristin Pope

Sampler: "

On Ice: ☒ Yes ☐ No

Sample Temperature: 8.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1406353	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F^-, Cl^-, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)		100 grams		Air Bubbles (Y or N)
6/4/14	1610	soil	Inner Comp. (3H only)	2 glass	Ice	-001	X		X	X				X					X		
"	1545	"	Outer Comp. (3H + 5H)	"	"	-002	X		X	X				X					X		

Date	Time	Relinquished by:	Received by:	Date	Time
6/5/14	345	Kristin Pope			
6/6/14	1030			6/6/14	1000

Remarks: Email to R@rthicksconsult.com, kristin @ "

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

ATTACHMENT 4

SOIL BACKFILLING & COVER INSTALLATION

In accordance with the requirements listed in paragraph D of 19.15.17.13 NMAC, the operator employed the following steps for in-place burial of the waste material from the temporary pit:

1. Siting criteria and operations of the pit complied with the C-144 application and the Pit Rule under which it was submitted to the NMOCD on August 14, 2013 and approved on August 22, 2013. The rig was released on October 30, 2013. Spudded on March 3, 2014, the Mogi 9 State Com #5H well was then drilled on the same location and the #3H pit was used to store cuttings from that well. This rig was released on April 4, 2014 and fluids in the pit were removed to be recycled for the drilling of other wells while the cuttings were allowed to dry.

2. On April 25, 2014, NMOCD granted a 3-month extension for the closure of this pit, creating a deadline of July 30, 2014.

3. In June 2014, samples from the inner and outer cells and clean soil from the berms of the pit below the liner were recovered from the pit. These samples were analyzed for Chloride, TPH, GRO, DRO, MRO, Benzene, and BTEX at Hall Environmental Analysis Laboratory of Albuquerque, New Mexico. The results, as noted in the subsequent closure notice and Attachment 3 of this report, demonstrated that the stabilized pit contents would not exceed the parameter limits listed in Table II of the Pit Rule.

4. A closure notice was submitted to the NMOCD, District 1 office in Hobbs and to the State Land Office on July 8, 2014. Verbal notice in the form of a phone call to NMOCD was placed on the same day.

5. On July 14, 2014, closure activities commenced and stabilization of the pit contents was achieved by mixing the pit contents with the dry soil beneath the liner of the pit and the dividing berms. Stabilization continued until complete on July 23, 2014. A paint filter test was performed by R.T. Hicks Consultants that confirmed that the process was complete and that the stabilized cuttings were located at least 4 feet below grade.

6. Having achieved all applicable stabilization requirements associated with in-place burial, a geomembrane liner was installed to completely cover the stabilized cuttings on July 24, 2014. The pit contents and liner were shaped to shed infiltrating water, slightly higher in the center.

7. Once the geomembrane cover was in place, approximately 4 feet or more of non-waste containing, uncontaminated, earthen material and the reserved topsoil were replaced to their relative positions in accordance with Subsection (3) of Paragraph H of 19.15.17.13 NMAC. The soil cover consists of at least four feet of compacted, non-waste containing, earthen material. The uppermost topsoil is equal to the background thickness at least one foot. The surface was contoured to blend with the surrounding topography and to prevent erosion and the ponding of water over the on-site closure. This work was completed on August 6, 2014.

Removing liner 7/14/2014

Stabilized cuttings 4 feet below surrounding grade 7/24/2014

Paint filter test on stabilized cuttings 7/23/2014

Installing geomembrane cover 7/24/2014

ATTACHMENT 5

RE-VEGETATION PROCEDURES

At the time of this report, there are no roads or surface drainage features nearby that require restoration or preservation.

1. The topsoil of the on-site burial area will be seeded using a seed drill pulled by a tractor that prepares the seedbed in the same pass using discs. The seed furrows will be oriented perpendicular to the prevailing westerly wind to minimize erosion.

2. Approximately 48 pounds of a seed mixture consisting of 50% BLM #2 seed blend and 50% Homesteader's Choice blend will be applied to approximately 1 acre of disturbance in accordance with the supplier's instructions to the former temporary pit area. Species constituents of each blend are listed below and are appropriate for the soil type and conditions at this site. Note that Plains Bristlegrass, a majority component of the BLM #2 assortment, is currently unavailable from the supplier so appropriate substitute species approved by the BLM will be used.

BLM #2	***Homesteader's Choice***
Sideoats Grama	Blue Grama
Little Bluestem	Buffalograss
Sand Dropseed	Sideoats Grama
Indian Ricegrass	Western Wheatgrass
Plains Coreopsis	Sand Dropseed

3. The seed will be applied during the next scheduled seeding (mid-late November 2014) and the seeded area will be monitored for growth. The operator will repeat seeding until a successful vegetative cover is achieved as outlined in Subsection (5) of Paragraph H of 19.15.17.13 NMAC.

4. After seeding, a steel plate marking the site as an in-place pit closure will be placed on the surface at the center of the former pit location in accordance with Subsection (3) of Paragraph F of 19.15.17.13 NMAC.

5. If conditions are not favorable for the establishment of vegetation, such as periods of drought, the operator may request that the division allow a delay in additional seeding until soil moisture conditions become favorable. The operator will notify the division and provide photo-documentation when it successful re-vegetation is achieved.

ATTACHMENT 6

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

HOBBS OCD
AUG 22 2013
RECEIVED

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
Revised June 6, 2013

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.
For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

Type of action:
- ☐ Below grade tank registration
- ☒ Permit of a pit or proposed alternative method
- ☑ Closure of a pit, below-grade tank, or proposed alternative method
- ☒ Modification to an existing permit/or registration
- ☐ Closure plan only submitted for an existing permitted or non-permitted pit, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, below-grade tank or alternative request

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.
Operator: Murchison Oil & Gas, Inc. OGRID #: 15363
Address: 1100 Mira Vista Blvd., Plano, TX 75093-4698
Facility or well name: Mogi 9 State Com 3H
API Number: 30-025-41070 OCD Permit Number: P1 05937
U/L or Qtr/Qtr N Section 9 Township 24S Range 33E County: Lea
Center of Proposed Design: Latitude 32°13'31.638" N Longitude 103°34'49.290" W NAD: ☐1927 ☒ 1983
Surface Owner: ☐ Federal ☒ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
☒ **Pit:** Subsection F, G or J of 19.15.17.11 NMAC
Temporary: ☒ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A ☐ Multi-Well Fluid Management Low Chloride Drilling Fluid ☐ yes ☒ no
☒ Lined ☐ Unlined Liner type: Thickness 20 mil ☒ LLDPE ☐ HDPE ☐ PVC ☐ Other
☒ String-Reinforced
Liner Seams: ☒ Welded ☐ Factory ☐ Other Volume: 23,712 bbl Dimensions: L 150 x W 170 x D 6-10 ft

3.
☐ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: bbl Type of fluid:
Tank Construction material:
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other
Liner type: Thickness mil ☐ HDPE ☐ PVC ☐ Other

4.
☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

5.
Fencing: Subsection D of 19.15.17.11 NMAC *(Applies to permanent pits, temporary pits, and below-grade tanks)*
☐ Chain link, six feet in height, two strands of barbed wire at top *(Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)*
☒ Four foot height, four strands of barbed wire evenly spaced between one and four feet
☐ Alternate. Please specify

6.

Netting: Subsection E of 19.15.17.11 NMAC *(Applies to permanent pits and permanent open top tanks)*

☐ Screen ☐ Netting ☐ Other_____

☐ Monthly inspections (If netting or screening is not physically feasible)

7.

Signs: Subsection C of 19.15.17.11 NMAC

☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☒ Signed in compliance with 19.15.16.8 NMAC

8.

Variances and Exceptions:

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

Please check a box if one or more of the following is requested, if not leave blank:

☐ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.

☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

9.

Siting Criteria (regarding permitting): 19.15.17.10 NMAC

Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. **Siting criteria does not apply to drying pads or above-grade tanks.**

General siting

Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank. - ☐ NM Office of the State Engineer - iWATERS database search; ☐ USGS; ☐ Data obtained from nearby wells	☐ Yes ☐ No ☒ NA
Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit . NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells **See Figures 1 & 2**	☐ Yes ☒ No ☐ NA
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. **(Does not apply to below grade tanks) See Figure 5** - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No
Within the area overlying a subsurface mine. **(Does not apply to below grade tanks) See Figure** 7 - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☒ No
Within an unstable area. **(Does not apply to below grade tanks) See Figure 8** - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☒ No
Within a 100-year floodplain. **(Does not apply to below grade tanks) See Figure 9** - FEMA map	☐ Yes ☒ No

Below Grade Tanks

Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No

Temporary Pit using Low Chloride Drilling Fluid (maximum chloride content 15,000 mg/liter)

Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.) - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application. NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No

Within 100 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Temporary Pit Non-low chloride drilling fluid	
Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). **See Figure 3** - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image. **See Figure 4**	☐ Yes ☒ No
Within 500 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application; - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site **See Figures 1 & 2**	☐ Yes ☒ No
Within 300 feet of a wetland. **See Figure 6** - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Permanent Pit or Multi-Well Fluid Management Pit	
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No

10.

Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
☒ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
☒ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
☒ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
☒ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
☒ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

11.

Multi-Well Fluid Management Pit Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
☐ A List of wells with approved application for permit to drill associated with the pit.
☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
☐ Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.

Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including H_2S, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

13.

Proposed Closure: 19.15.17.13 NMAC

Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

Type: ☒ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Multi-well Fluid Management Pit ☐ Alternative

Proposed Closure Method:
- ☐ Waste Excavation and Removal
- ☐ Waste Removal (Closed-loop systems only)
- ☒ On-site Closure Method (Only for temporary pits and closed-loop systems)
  - ☒ In-place Burial ☐ On-site Trench Burial
- ☐ Alternative Closure Method

14.

Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15.

Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC

Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 25 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No ☐ NA
Ground water is between 25-50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☒ Yes ☐ No ☐ NA
Within 100 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Acrial photo; Satellite image	☐ Yes ☒ No
Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	

adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☒ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☒ No

16.
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☒ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☒ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection E of 19.15.17.13 NMAC
- ☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K of 19.15.17.11 NMAC
- ☒ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☒ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☒ Waste Material Sampling Plan - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
- ☒ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☒ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☒ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

17.
Operator Application Certification:

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Greg Boans Title: Production Superintendent

Signature: [signature] Date: August 14, 2013

e-mail address: gboans@jdmii.com Telephone: (575) 361-4962

18.
OCD Approval: ☒ Permit Application (including closure plan) ☐ Closure Plan (only) ☐ OCD Conditions (see attachment)

OCD Representative Signature: Jeffrey Jelinek Environmental Specialist **Approval Date:** 8/22/13

Title: **OCD Permit Number:** P1-05937

19.
Closure Report (required within 60 days of closure completion): 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

☑ **Closure Completion Date:** August 6, 2014

20.
Closure Method:

☐ Waste Excavation and Removal ☑ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)
☐ If different from approved plan, please explain.

21.
Closure Report Attachment Checklist: ***Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.***

- ☑ Proof of Closure Notice (surface owner and division)
- ☐ Proof of Deed Notice (required for on-site closure for private land only) n/a (State Land)
- ☑ Plot Plan (for on-site closures and temporary pits)
- ☐ Confirmation Sampling Analytical Results (if applicable) n/a (on-site closure)
- ☑ Waste Material Sampling Analytical Results (required for on-site closure)
- ☐ Disposal Facility Name and Permit Number n/a (on-site closure)
- ☑ Soil Backfilling and Cover Installation
- ☑ Re-vegetation Application Rates and Seeding Technique
- ☐ Site Reclamation (Photo Documentation) to follow

On-site Closure Location: Latitude N 32.225847° Longitude W 103.580566° NAD: ☐ 1927 ☑ 1983

22.

Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): Kristin Pope Title: Agent for Murchison Oil and Gas, Inc.

Signature: Kristin Pope Date: November 19, 2014

e-mail address: kristin@rthicksconsult.com Telephone: (575) 302-6755