

# R. T. HICKS CONSULTANTS, LTD.

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

September 8, 2015

Ms. Kellie Jones  
NMOCD District 1  
1625 French Drive  
Hobbs, NM 88240  
*Via E-Mail*

**RECEIVED**

*By OCD District 1 at 9:19 am, Sep 09, 2015*

RE: Temporary Pit Closure Report  
Murchison – Mogi 9 St Com #10H, API #30-025-41973, Pit Permit #P1-06561  
Unit O, Section 9, T24S, R33E, Lea County

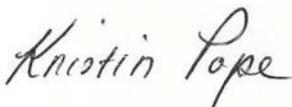
Dear Ms. Jones:

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:

<b>Requirements</b>	<b>Location in this Submission</b>
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
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	Attachment 5
Site Reclamation (photo documentation)	To follow
Updated C-144 form	Attachment 6

R.T. Hicks Consultants will notify NMOCD and provide 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  
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

April 27, 2015

Dr. Tomáš Oberding  
NMOCD District 1  
1625 French Drive  
Hobbs, NM 88240  
*VIA EMAIL*

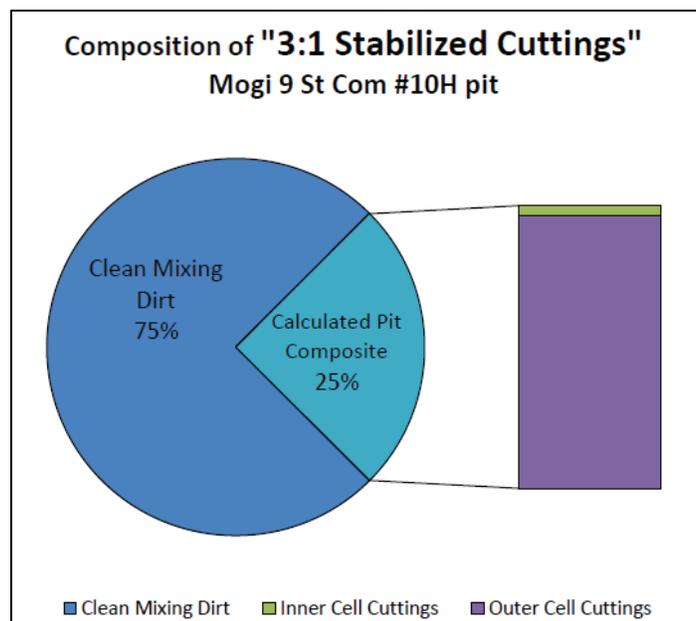
RE: Murchison – Mogi 9 State Com #10H Temporary Pit  
Extension Request/Notice of Closure  
Unit O, Section 9, T24S, R33E, API #30-025-41973, Pit Permit #P1-06561

Dear Dr. Oberding:

On behalf of Murchison Oil and Gas, R.T. Hicks Consultants respectfully requests a 14-day extension for the closure of the above-referenced temporary pit. The rig was released from the well on October 22, 2014 and the pit was then used to contain flow-back fluids to complete the well. On November 26, 2014, NMOCD approved a variance request to use the pit to contain drilling wastes from a second well (Jackson Unit #33H) that shares the same pad. The second well was completed on December 18, 2014.

The unavailability of excavation machinery caused a minor delay but the closure process is now scheduled to begin on **Thursday, April 30, 2015**. Please consider this submission a notice of closure. As notice to the surface owner, we are also providing a copy of this submission to the State Land Office (email, as approved on 1/7/2015). Closure will follow the "In-place Burial" plan that was submitted with the C-144 application and approved by NMOCD on March 4, 2015

Composite samples from the entire contents of the inner and outer cells of the pit were collected on March 4, 2015 for laboratory analyses in accordance with the Pit Rule. To simulate stabilization of drilling waste for in-place burial, our calculated value mathematically mixes 3 parts clean soil from the pit berms beneath the liner (mixing dirt) with 1 part of the weighted pit composite, as depicted in the adjacent chart. The majority of the cuttings were placed in the outer cell and so the calculated pit composite consists of 3.7% solids from the inner cell of the drilling pit and 96.3% of solids from the outer cell (1:26 ratio), obtained by measuring the



volume of cuttings in each cell after those from both wells were deposited in the pit.

On December 18, 2014, NMOCD approved a variance to substitute GRO+DRO+MRO (Method 8015D) analysis for TPH 418.1. As shown in the table below, these analyses and calculations “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 #10H pit Sample Name	Sample Type	Sample Date	Chloride 80,000	Benzene 10	BTEX 50	GRO+ DRO 1000	GRO+ DRO+MRO 2500
Inner Composite	Field comp.	3/4/2015	33,000	ND	0.277	439	1,039
Outer Composite	Field comp.	3/4/2015	30,000	0.35	7.01	3,664	4,264
Mixing Dirt	Field comp.	3/4/2015	ND	ND	ND	ND	ND
<b>3:1 Stabilized Cuttings CALCULATED *</b> (3 parts mixing dirt, 1 part weighted pit cuttings)			<b>7,527.75</b>	<b>0.08</b>	<b>1.69</b>	<b>886.17</b>	<b>1,036.17</b>

\* = [(Inner\*0.037)+(Outer\*.963)+(Mixing\*3)]/4

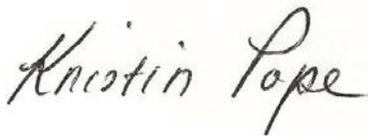
ND = Not detected at the laboratory's reporting limit

all values are mg/kg

Please consider our phone conversation on April 24, 2015 verbal notice of closure, as required by the Pit Rule. Thank you for your attention to this project.

Sincerely,

R.T. Hicks Consultants



Kristin Pope  
Project Geologist

Enclosures: Variance approval for email to SLO, variance approval for TPH substitution

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

**From:** [Oberding, Tomas, EMNRD](mailto:Oberding.Tomas.EMNRD)  
**To:** [Kristin Pope](mailto:Kristin.Pope)  
**Cc:** [ccottrell@jdmii.com](mailto:ccottrell@jdmii.com); [Randy Hicks](mailto:Randy.Hicks); [gboans@jdmii.com](mailto:gboans@jdmii.com); [Chace Walls](mailto:Chace.Walls); [Martin, Ed](mailto:Martin.Ed)  
**Subject:** RE: VARIANCE REQUEST: Email substitution for pit closure notices  
**Date:** Wednesday, January 07, 2015 10:13:08 AM

---

Ms. Pope,

This email is fine for OCD documentation, for the current site closure.

Mahalo

-Doc

Tomáš 'Doc' Oberding, PhD  
Senior Environmental Specialist  
New Mexico Oil Conservation Division, District 1  
Energy, Minerals and Natural Resources Department  
(575) 393-6161 ext 111  
E-Mail: [tomas.oberding@state.nm.us](mailto:tomas.oberding@state.nm.us)

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

If you have any questions or concerns, and for notification, please contact me.

---

**From:** Kristin Pope [<mailto:kristin@rthicksconsult.com>]  
**Sent:** Wednesday, December 31, 2014 1:35 PM  
**To:** Oberding, Tomas, EMNRD  
**Cc:** [ccottrell@jdmii.com](mailto:ccottrell@jdmii.com); [Randy Hicks](mailto:Randy.Hicks); [gboans@jdmii.com](mailto:gboans@jdmii.com); [Chace Walls](mailto:Chace.Walls); [Martin, Ed](mailto:Martin.Ed)  
**Subject:** VARIANCE REQUEST: Email substitution for pit closure notices

Dr. Oberding:

Please find the attached variance request for a substitution of email to SLO in lieu of temporary pit closure notices submitted via US Mail, return receipt requested. It is referenced for the Murchison – Jackson Unit #14H but I also submitted a closure report for the Jackson Unit #16H.

Please contact me with any questions about this upon your return to work. Thank you.

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

**From:** [Oberding, Tomas, EMNRD](#)  
**To:** [Kristin Pope](#)  
**Cc:** [ccottrell@jdmii.com](#); [Chace Walls](#); [gboans@jdmii.com](#); [Randy Hicks](#); [Griswold, Jim, EMNRD](#)  
**Subject:** RE: VARIANCE REQUEST: Murchison - Jackson Unit #17H  
**Date:** Thursday, December 18, 2014 8:16:05 AM

---

Aloha Ms. Pope et al,

Thank you for sending in this variance request.

After discussions, OCD approves the substitution of 8015 B, C, or D for 418.1. Hydrocarbons between C6 and C36 must be included in the results.

As 8015M appears to cover GRO+DRO+MRO- this too is an appropriate alternate methodology.

Thank you for continuing to work with the OCD.

Please let me know if you have any questions.

-Doc

Tomáš 'Doc' Oberding, PhD  
Senior Environmental Specialist  
New Mexico Oil Conservation Division, District 1  
Energy, Minerals and Natural Resources Department  
(575) 393-6161 ext 111  
E-Mail: [tomas.oberding@state.nm.us](mailto:tomas.oberding@state.nm.us)

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

If you have any questions or concerns, and for notification, please contact me.

---

**From:** Kristin Pope [<mailto:kristin@rthicksconsult.com>]  
**Sent:** Tuesday, December 16, 2014 7:51 AM  
**To:** Oberding, Tomas, EMNRD  
**Cc:** [ccottrell@jdmii.com](#); [Chace Walls](#); [gboans@jdmii.com](#); [Randy Hicks](#); [Griswold, Jim, EMNRD](#)  
**Subject:** VARIANCE REQUEST: Murchison - Jackson Unit #17H

Dr. Oberding:

Please find the attached variance request we discussed over the phone last week. During our phone call, I was mistaken on the closure deadline for this site; the closure deadline for this is January 14, 2015. Per our discussion, note that I've copied Jim Griswold on this submission.

Please let me know if we can assist NMOCD's review in any way. Thank you.

**Kristin Pope**  
**R.T. Hicks Consultants**

**From:** [Andy Freeman](#)  
**To:** ["Kristin Pope" \(kristin@rthicksconsult.com\)](mailto:kristin@rthicksconsult.com)  
**Subject:** Hydrocarbon Ranges  
**Date:** Monday, December 29, 2014 1:31:31 PM

---

Hi Kristin,

I have the hydrocarbon ranges listed below.

GRO C6-C10  
DRO C10-C28  
MRO C28-C36

Have a great New Year.

Thanks

andy

**From:** [Oberding, Tomas, EMNRD](#)  
**To:** [Kristin Pope](#); [Martin, Ed](#)  
**Cc:** [gboans@jdmii.com](mailto:gboans@jdmii.com); [Chace Walls](#); [Randy Hicks](#)  
**Subject:** RE: VARIANCE REQUEST: Murchison - Mogi 9 St. Com #10H  
**Date:** Wednesday, November 26, 2014 9:42:13 AM

---

Aloha Ms. Pope et al,

Thank you for the discussion this morning and keeping us updated of the situation.

Based on the situation the OCD approves the variance request.

Please keep us informed.

Have a wonderful and safe Thanksgiving everyone!

See you in December.

Cheers

-Doc

Tomáš 'Doc' Oberding, PhD  
Senior Environmental Specialist – New Mexico Oil Conservation Division  
Energy, Minerals and Natural Resources Department  
1625 N. French Dr.  
Hobbs, NM 88240  
(O): (575) 393-6161 ext 111  
(C): 575-370-3180  
(F): (575) 393-0720  
E-Mail: [tomas.oberding@state.nm.us](mailto:tomas.oberding@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/>

---

**From:** Kristin Pope [mailto:kristin@rthicksconsult.com]  
**Sent:** Wednesday, November 26, 2014 9:29 AM  
**To:** Oberding, Tomas, EMNRD; Martin, Ed  
**Cc:** gboans@jdmii.com; Chace Walls; Randy Hicks  
**Subject:** VARIANCE REQUEST: Murchison - Mogi 9 St. Com #10H

Dr. Oberding:

As we discussed this morning, please find the attached variance request for the transfer of solids and fluids from Murchison – Jackson Unit 33H well (API#30-025-42076) to the Mogi 9 St. Co 10H pit (API#30-025-41973, pit permit P1- #06561).

As shown on the enclosed map, these wells will share the location pad and will only be 150 ft apart. Jackson Unit 33H is scheduled to spud tomorrow and the Mogi 10H pit is ready to accept the cuttings. I apologize for the late submission of this request. Since the wells shared the same pad, I overlooked the fact that the wells locations were two different units on State Land. I left an voicemail this morning for Ed Martin at SLO regarding this request. Thank for your attention to this and all of our projects.

**From:** [Martin, Ed](#)  
**To:** [Kristin Pope](#); [tomas.oberding@state.nm.us](mailto:tomas.oberding@state.nm.us)  
**Cc:** [ccottrell@jdmii.com](mailto:ccottrell@jdmii.com); [gboans@jdmii.com](mailto:gboans@jdmii.com); [Randy Hicks](#); [Chace Walls](#)  
**Subject:** RE: CLOSURE NOTICE: Murchison - Mogi 9 St Com #10H temporary pit  
**Date:** Monday, April 27, 2015 11:05:00 AM

---

Receipt acknowledged. Thanks.

Ed Martin  
New Mexico State Land Office  
Oil & Gas Manager  
Oil, Gas, and Minerals Division  
Phone: 505-827-5746  
Fax: 505-827-4739

---

**From:** Kristin Pope [<mailto:kristin@rthicksconsult.com>]  
**Sent:** Monday, April 27, 2015 10:58 AM  
**To:** [tomas.oberding@state.nm.us](mailto:tomas.oberding@state.nm.us)  
**Cc:** Martin, Ed; [ccottrell@jdmii.com](mailto:ccottrell@jdmii.com); [gboans@jdmii.com](mailto:gboans@jdmii.com); [Randy Hicks](#); [Chace Walls](#)  
**Subject:** CLOSURE NOTICE: Murchison - Mogi 9 St Com #10H temporary pit

Dr. Oberding:

On behalf of Murchison, please find the attached notice of in-place closure of the **Mogi 9 St Com #10H** temporary pit which is scheduled to begin on **Thursday, April 30, 2015**. Thank you for discussing this with me last week. I will consider our conversation verbal notice as required by the Pit Rule; however, please don't hesitate to contact me with any questions regarding this submission. As I explained, we are also asking for a 14-day extension. Please note that per previous approval from NMOCD and State Land Office to do so, I have copied SLO in this email and will *not* mail a copy (certified, return receipt request) of this notice to SLO.

Thank you.

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

---

This email has been scanned by the Symantec Email Security.cloud service.  
For more information please visit <http://www.symanteccloud.com>

---

## ***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	<b>State of New Mexico</b> <b>Energy, Minerals and Natural Resources</b>  <b>Oil Conservation Division</b> <b>1220 South St. Francis Dr.</b> <b>Santa Fe, NM 87505</b>	<b>Form C-105</b> Revised August 1, 2011  1. WELL API NO. 30-025-41973  2. Type of Lease <input checked="" type="checkbox"/> STATE <input type="checkbox"/> FEE <input type="checkbox"/> FED/INDIAN  3. State Oil & Gas Lease No.
--	---	--

**WELL COMPLETION OR RECOMPLETION REPORT AND LOG**

4. Reason for filing:  <input type="checkbox"/> <b>COMPLETION REPORT</b> (Fill in boxes #1 through #31 for State and Fee wells only)  <input checked="" type="checkbox"/> <b>C-144 CLOSURE ATTACHMENT</b> (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:  #10H
---	---

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
<b>Surface:</b>										
<b>BH:</b>										

13. Date Spudded	14. Date T.D. Reached	15. Date Rig Released 10/22/2014	16. Date Completed (Ready to Produce)	17. Elevations (DF and RKB, RT, GR, etc.)
------------------	-----------------------	-------------------------------------	---------------------------------------	---

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				25. TUBING RECORD			
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	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 ( <i>Flowing, gas lift, pumping - Size and type pump</i> )	Well Status ( <i>Prod. or Shut-in</i> )
-----------------------	--	---

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 - ( <i>Corr.</i> )

29. Disposition of Gas ( <i>Sold, used for fuel, vented, etc.</i> )	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 I ATTACHED

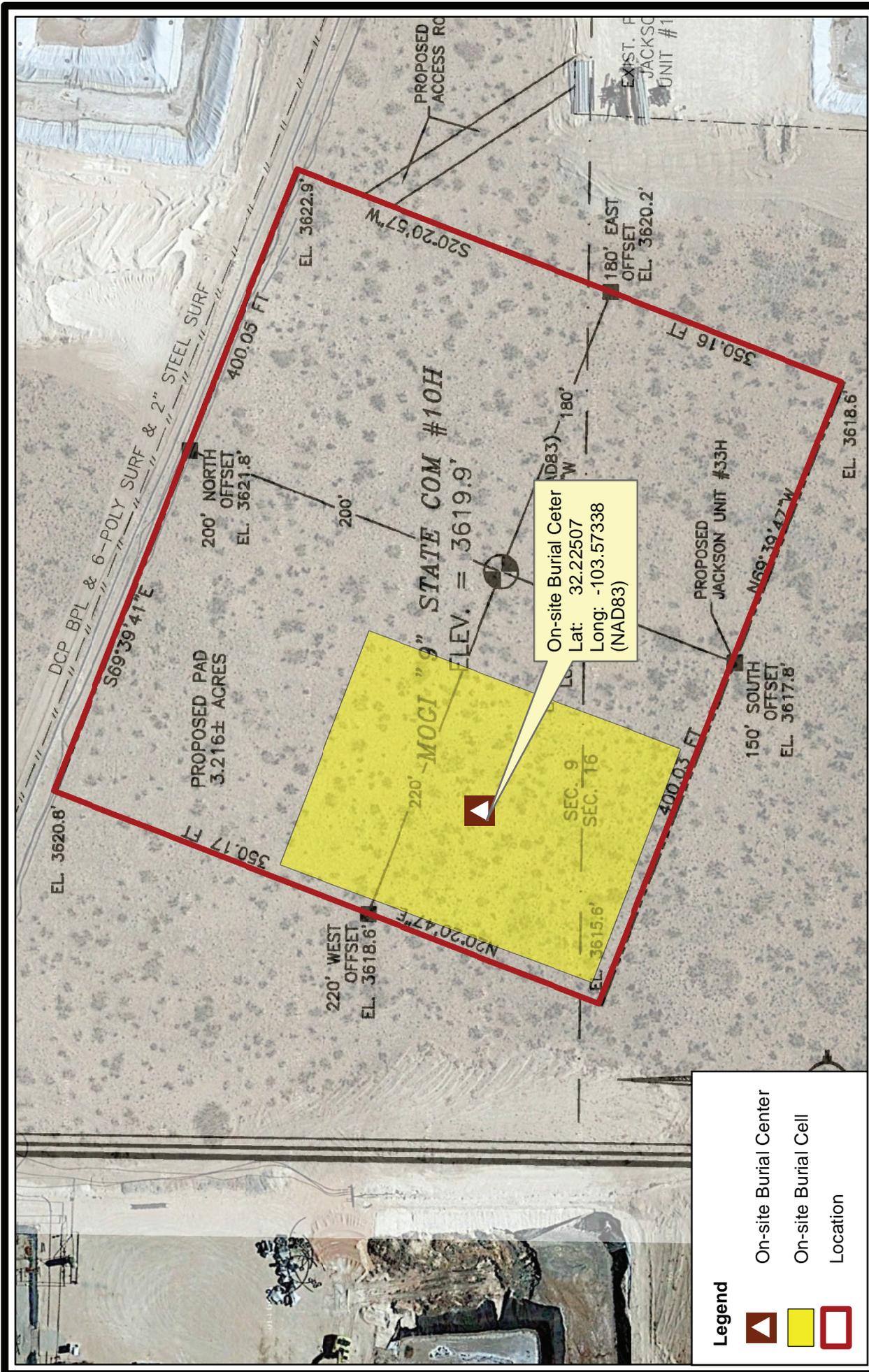
33. If an on-site burial was used at the well, report the exact location of the on-site burial:

Latitude N 32.22507°      Longitude W 103.57338°      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*

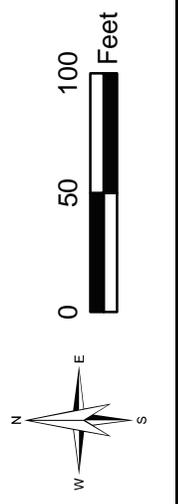
Signature	Printed Name	Title	Date
	KRISTIN POPE	AGENT FOR MURCHISON	9/8/2015

E-mail Address kristin@rthicksconsult.com



**Legend**

-  On-site Burial Center
-  On-site Burial Cell
-  Location



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  
 Murchison Oil and Gas, Inc.  
 Mogi 9 State Com 10H

Plate 1  
 C-105 form  
 Sept 2015

## ***ATTACHMENT 3***

---

## Waste Material Sampling Analytical Results

The Mogi 9 State Com #10H temporary pit held cuttings from both the #10H well and the Jackson Unit #33H well. After the #33H was completed, four-point composite samples of the pit solids from the inner and outer cells respectively and from the berms of the pit below the liner were collected in accordance with the Pit Rule on March 4, 2015. Hall Environmental Analysis Laboratory in Albuquerque provided analyses of BTEX (8021B), GRO+DRO (8015D), TPH (8015D), and Chloride (300.0) for each component sample.



**Sampling Pit Contents 3/4/2015**

As shown in the table below, “3:1 stabilized cuttings” concentrations were calculated by mathematically mixing 1 part weighted pit composite (as calculated by measuring the volume of cuttings in each cell) with 3 parts non-waste mixing material. Laboratory analyses of the component samples and the calculation of the “3:1 Stabilized Cuttings” concentrations “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 #10H pit Sample Name	Sample Type	Sample Date	Chloride 80,000	Benzene 10	BTEX 50	GRO+DRO 1000	GRO+DRO+MRO 2500
Inner Composite	Field comp.	3/4/2015	33,000	ND	0.277	439	1,039
Outer Composite	Field comp.	3/4/2015	30,000	0.35	7.01	3,664	4,264
Mixing Dirt	Field comp.	3/4/2015	ND	ND	ND	ND	ND
<b>3:1 Stabilized Cuttings CALCULATED *</b> (3 parts mixing dirt, 1 part weighted pit cuttings)			<b>7,527.75</b>	<b>0.08</b>	<b>1.69</b>	<b>886.17</b>	<b>1,036.17</b>

\* = [(Inner\*0.037)+(Outer\*.963)+(Mixing\*3)]/4

ND = Not detected at the laboratory's reporting limit

all values are mg/kg



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

March 17, 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: Mogi 9 St. Com #10H pit

OrderNo.: 1503281

Dear Kristin Pope:

Hall Environmental Analysis Laboratory received 3 sample(s) on 3/6/2015 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](http://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 white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1503281

Date Reported: 3/17/2015

CLIENT: R.T. Hicks Consultants, LTD

Client Sample ID: 4-pt Outer Comp

Project: Mogi 9 St. Com #10H pit

Collection Date: 3/4/2015 1:00:00 PM

Lab ID: 1503281-001

Matrix: SOIL

Received Date: 3/6/2015 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	3600	63		mg/Kg	5	3/11/2015 9:40:05 AM	18038
Motor Oil Range Organics (MRO)	600	320		mg/Kg	5	3/11/2015 9:40:05 AM	18038
Surr: DNOP	143	63.5-128	S	%REC	5	3/11/2015 9:40:05 AM	18038
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	64	5.0		mg/Kg	1	3/11/2015 12:40:41 AM	18043
Surr: BFB	213	80-120	S	%REC	1	3/11/2015 12:40:41 AM	18043
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	0.35	0.050		mg/Kg	1	3/11/2015 12:40:41 AM	18043
Toluene	2.3	0.050		mg/Kg	1	3/11/2015 12:40:41 AM	18043
Ethylbenzene	0.86	0.050		mg/Kg	1	3/11/2015 12:40:41 AM	18043
Xylenes, Total	3.5	0.10		mg/Kg	1	3/11/2015 12:40:41 AM	18043
Surr: 4-Bromofluorobenzene	127	80-120	S	%REC	1	3/11/2015 12:40:41 AM	18043
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	30000	750		mg/Kg	500	3/10/2015 4:49:20 PM	18067

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		

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1503281

Date Reported: 3/17/2015

CLIENT: R.T. Hicks Consultants, LTD

Client Sample ID: 4-pt Inner Comp

Project: Mogi 9 St. Com #10H pit

Collection Date: 3/4/2015 1:30:00 PM

Lab ID: 1503281-002

Matrix: SOIL

Received Date: 3/6/2015 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	430	14		mg/Kg	1	3/10/2015 8:27:55 PM	18038
Motor Oil Range Organics (MRO)	600	72		mg/Kg	1	3/10/2015 8:27:55 PM	18038
Surr: DNOP	88.3	63.5-128		%REC	1	3/10/2015 8:27:55 PM	18038
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	9.0	5.0		mg/Kg	1	3/11/2015 1:09:21 AM	18043
Surr: BFB	118	80-120		%REC	1	3/11/2015 1:09:21 AM	18043
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.050		mg/Kg	1	3/11/2015 1:09:21 AM	18043
Toluene	ND	0.050		mg/Kg	1	3/11/2015 1:09:21 AM	18043
Ethylbenzene	0.057	0.050		mg/Kg	1	3/11/2015 1:09:21 AM	18043
Xylenes, Total	0.22	0.099		mg/Kg	1	3/11/2015 1:09:21 AM	18043
Surr: 4-Bromofluorobenzene	116	80-120		%REC	1	3/11/2015 1:09:21 AM	18043
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	33000	1500		mg/Kg	1E	3/16/2015 11:42:49 AM	18067

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	

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1503281

Date Reported: 3/17/2015

CLIENT: R.T. Hicks Consultants, LTD

Client Sample ID: 5-pt Mixing Dirt

Project: Mogi 9 St. Com #10H pit

Collection Date: 3/4/2015 1:03:00 PM

Lab ID: 1503281-003

Matrix: SOIL

Received Date: 3/6/2015 10:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/10/2015 8:49:20 PM	18038
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/10/2015 8:49:20 PM	18038
Surr: DNOP	105	63.5-128		%REC	1	3/10/2015 8:49:20 PM	18038
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/11/2015 1:37:59 AM	18043
Surr: BFB	92.9	80-120		%REC	1	3/11/2015 1:37:59 AM	18043
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.050		mg/Kg	1	3/11/2015 1:37:59 AM	18043
Toluene	ND	0.050		mg/Kg	1	3/11/2015 1:37:59 AM	18043
Ethylbenzene	ND	0.050		mg/Kg	1	3/11/2015 1:37:59 AM	18043
Xylenes, Total	ND	0.10		mg/Kg	1	3/11/2015 1:37:59 AM	18043
Surr: 4-Bromofluorobenzene	108	80-120		%REC	1	3/11/2015 1:37:59 AM	18043
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	ND	30		mg/Kg	20	3/10/2015 5:26:33 PM	18067

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#: 1503281

17-Mar-15

**Client:** R.T. Hicks Consultants, LTD

**Project:** Mogi 9 St. Com #10H pit

Sample ID	<b>MB-18067</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 300.0: Anions</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>18067</b>	RunNo:	<b>24749</b>					
Prep Date:	<b>3/10/2015</b>	Analysis Date:	<b>3/10/2015</b>	SeqNo:	<b>729148</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	<b>LCS-18067</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 300.0: Anions</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>18067</b>	RunNo:	<b>24749</b>					
Prep Date:	<b>3/10/2015</b>	Analysis Date:	<b>3/10/2015</b>	SeqNo:	<b>729149</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.0	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#: 1503281

17-Mar-15

**Client:** R.T. Hicks Consultants, LTD

**Project:** Mogi 9 St. Com #10H pit

Sample ID	<b>MB-18038</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>18038</b>	RunNo:	<b>24711</b>					
Prep Date:	<b>3/9/2015</b>	Analysis Date:	<b>3/10/2015</b>	SeqNo:	<b>728323</b>	Units:	<b>mg/Kg</b>			
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	8.4		10.00		84.2	63.5	128			

Sample ID	<b>LCS-18038</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>18038</b>	RunNo:	<b>24711</b>					
Prep Date:	<b>3/9/2015</b>	Analysis Date:	<b>3/10/2015</b>	SeqNo:	<b>728325</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	90.9	67.8	130			
Surr: DNOP	4.5		5.000		89.3	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#: 1503281

17-Mar-15

**Client:** R.T. Hicks Consultants, LTD

**Project:** Mogi 9 St. Com #10H pit

Sample ID	<b>MB-18044</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>18044</b>	RunNo:	<b>24730</b>					
Prep Date:	<b>3/9/2015</b>	Analysis Date:	<b>3/10/2015</b>	SeqNo:	<b>728732</b>	Units:	<b>%REC</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	900		1000		89.5	80	120			

Sample ID	<b>LCS-18044</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>18044</b>	RunNo:	<b>24730</b>					
Prep Date:	<b>3/9/2015</b>	Analysis Date:	<b>3/10/2015</b>	SeqNo:	<b>728733</b>	Units:	<b>%REC</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		108	80	120			

Sample ID	<b>MB-18043</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>18043</b>	RunNo:	<b>24730</b>					
Prep Date:	<b>3/9/2015</b>	Analysis Date:	<b>3/10/2015</b>	SeqNo:	<b>728754</b>	Units:	<b>mg/Kg</b>			
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		90.8	80	120			

Sample ID	<b>LCS-18043</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>18043</b>	RunNo:	<b>24730</b>					
Prep Date:	<b>3/9/2015</b>	Analysis Date:	<b>3/10/2015</b>	SeqNo:	<b>728755</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	105	64	130			
Surr: BFB	980		1000		97.5	80	120			

Sample ID	<b>LCSD-18043</b>	SampType:	<b>LCSD</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>LCSS02</b>	Batch ID:	<b>18043</b>	RunNo:	<b>24730</b>					
Prep Date:	<b>3/9/2015</b>	Analysis Date:	<b>3/10/2015</b>	SeqNo:	<b>728756</b>	Units:	<b>%REC</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	990							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#: 1503281

17-Mar-15

**Client:** R.T. Hicks Consultants, LTD

**Project:** Mogi 9 St. Com #10H pit

Sample ID <b>MB-18044</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>18044</b>		RunNo: <b>24730</b>							
Prep Date: <b>3/9/2015</b>	Analysis Date: <b>3/10/2015</b>		SeqNo: <b>728766</b>				Units: <b>%REC</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID <b>LCS-18044</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>18044</b>		RunNo: <b>24730</b>							
Prep Date: <b>3/9/2015</b>	Analysis Date: <b>3/10/2015</b>		SeqNo: <b>728767</b>				Units: <b>%REC</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		112	80	120			

Sample ID <b>MB-18043</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>18043</b>		RunNo: <b>24730</b>							
Prep Date: <b>3/9/2015</b>	Analysis Date: <b>3/10/2015</b>		SeqNo: <b>728781</b>				Units: <b>mg/Kg</b>			
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		103	80	120			

Sample ID <b>LCS-18043</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>18043</b>		RunNo: <b>24730</b>							
Prep Date: <b>3/9/2015</b>	Analysis Date: <b>3/10/2015</b>		SeqNo: <b>728782</b>				Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	111	76.6	128			
Toluene	1.1	0.050	1.000	0	109	75	124			
Ethylbenzene	1.1	0.050	1.000	0	109	79.5	126			
Xylenes, Total	3.2	0.10	3.000	0	108	78.8	124			
Surr: 4-Bromofluorobenzene	1.1		1.000		112	80	120			

Sample ID <b>LCSD-18043</b>	SampType: <b>LCSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS02</b>	Batch ID: <b>18043</b>		RunNo: <b>24730</b>							
Prep Date: <b>3/9/2015</b>	Analysis Date: <b>3/10/2015</b>		SeqNo: <b>728783</b>				Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	107	76.6	128	3.68	20	
Toluene	1.1	0.050	1.000	0	105	75	124	3.09	20	
Ethylbenzene	1.1	0.050	1.000	0	107	79.5	126	2.53	20	
Xylenes, Total	3.2	0.10	3.000	0	106	78.8	124	1.71	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 Not In Range
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1503281

17-Mar-15

**Client:** R.T. Hicks Consultants, LTD

**Project:** Mogi 9 St. Com #10H pit

Sample ID	<b>LCSD-18043</b>	SampType:	<b>LCSD</b>	TestCode:	<b>EPA Method 8021B: Volatiles</b>					
Client ID:	<b>LCSS02</b>	Batch ID:	<b>18043</b>	RunNo:	<b>24730</b>					
Prep Date:	<b>3/9/2015</b>	Analysis Date:	<b>3/10/2015</b>	SeqNo:	<b>728783</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		111	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: 1503281

RcptNo: 1

Received by/date: AT 03/06/15

Logged By: **Anne Thorne** 3/6/2015 10:45:00 AM *Anne Thorne*

Completed By: **Anne Thorne** 3/6/2015 *Anne Thorne*

Reviewed By: *[Signature]* 03/06/15

**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? 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
- 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? Yes  No   
(Note discrepancies on chain of custody)
- 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? Yes  No   
(If no, notify customer for authorization.)

# 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	1.2	Good	Not Present			

# Chain-of-Custody Record

Client: R.T. Hicks Consultants

Mailing Address: 901 Rio Grande Blvd NW Suite F-142, Albuquerque, 87104  
 Phone #: (505) 266-8004  
 Email or Fax#: R@rthicksconsult.com

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

Accreditation:  NELAP  Other

EDD (Type)

Project Manager: Kristin Pope

Sampler: K. Pope

On Ice:  Yes  No

Sample Temperature: 1.2

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
4/15	1300	soil	4-pt Outer Comp.	8 x 0.2	ice	1503281
4/15	1330	"	4-pt Inner Comp.	1 glass	"	-001
4/15	1303	"	5-pt Mixing Dict	1 glass	"	-003

Date: 4/15 Time: 1338

Relinquished by: Kristin Pope

Date: 4/15 Time: 1000

Relinquished by: M. S. Stepp

Turn-Around Time:

Standard  Rush

Project Name:

Mogj 9 St. Cam # 10A pit

Project #:

# HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

Analysis Request	Results
BTEX + MTBE + TMBs (8021)	X
BTEX + MTBE + TPH (Gas only)	X
TPH 8015B (GRO / DRO / MRO)	X
TPH (Method 418.1)	
EDB (Method 504.1)	
PAH's (8310 or 8270 SIMS)	
RCRA 8 Metals	X
Anions (Cl <sup>-</sup> , NO <sub>2</sub> <sup>-</sup> , PO <sub>4</sub> <sup>3-</sup> , SO <sub>4</sub> <sup>2-</sup> )	X
8081 Pesticides / 8082 PCB's	
8260B (VOA)	
8270 (Semi-VOA)	X
Air Bubbles (Y or N)	X

Remarks: Email to

kristin@rthicksconsult.com,

R@"

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 29, 2014 and approved on September 4, 2014. The rig was released on October 22, 2014. A variance was approved on November 26, 2014 to use the pit to store cuttings from an additional well that shared the same location. After the rig was released from the Jackson Unit #33H well, fluids in the pit were removed to be recycled for the drilling of other wells while the cuttings were allowed to dry.
2. On March 4, 2015, prior to the initiation of closure activities, samples of the inner and outer cells and clean soil from the berms of the pit below the liner were recovered from the pit. These component samples were analyzed for Chloride, TPH, GRO, DRO, MRO, Benzene, and BTEX at Hall Environmental Analysis Laboratory of Albuquerque, New Mexico. The resultant calculations of 3:1 stabilized cuttings, as noted in the subsequent closure notice and Attachment 3 of this report, demonstrated that the stabilized pit contents would not exceed the concentration limits of the parameters listed in Table II of the Pit Rule.
3. A closure notice was submitted to the NMOCD, District 1 office in Hobbs and to the State Land Office (via email) on April 27, 2015. Verbal notice in the form of a phone call to NMOCD was placed on April 24, 2015.
4. On April 30, 2015, 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. Summer rains delayed the completion of this closure. On August 13, 2015, 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.
5. Following inspection, having achieved all applicable stabilization requirements associated with in-place burial, a geomembrane liner was installed to completely cover the stabilized cuttings on August 18, 2015. The pit contents and liner were shaped to shed infiltrating water, slightly higher in the center.

**Closure Letter Attachment 4**  
**Murchison – Mogi 9 St Com #10H (Jackson Unit #33H)**  
**API #30-025-41973**

6. 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 19, 2015.



Paint Filter Test on Stabilized Cuttings 8/13/2015



Stabilized cuttings staged for cap liner 8/13/2015



Geomembrane liner over stabilized cuttings 8/18/2015

***ATTACHMENT 5***

---

## RE-VEGETATION PROCEDURES

There were no roads or surface drainage features nearby that required restoration or preservation.

1. On September 3, 2015, Storm Construction seeded the topsoil of the on-site burial area using a seed drill pulled by a tractor that prepared the seedbed in the same pass using discs. The seed furrows were oriented perpendicular to the prevailing western 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 was 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.

**BLM #2**

Sideoats Grama  
Plains Bristlegrass  
Sand Dropseed  
Little Bluestem  
Plains Coreopsis

**Homesteader's Choice**

Blue Grama  
Buffalograss  
Sideoats Grama  
Western Wheatgrass  
Sand Dropseed

3. A steel plate marking the site as an in-place pit closure has been 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.
4. The seeded area will be monitored for growth and 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.
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.

Closure Letter Attachment 5  
Murchison – Mogi 9 St Com #10H (Jackson Unit #33H)  
API #30-025-41973

Seed	Grade	Purity	Moist	Discount	Green A	Price
Barl/rye	New Selects	16.47%	87.00%	20.00%	87.00%	06.15
GR						
Adrian Greys	New Selects	8.04%	77.00%	8.00%	83.00%	06.15
Traps						
Hayes Phragmites	Mix	16.59%	84.00%	12.00%	86.00%	05.15
rye						
Red Topseed	Traps	4.00%	72.00%	30.00%	87.00%	06.15
Traps						
Killington	Traps	19.60%	87.00%	8.00%	86.00%	06.15
Traps						
Green Top	1.2%					
Wood Seed	0.1%					
Non Selects	22.74%					
Traps						
Total Seed Purity						25

Homesteader's Choice seed mix 9/3/2015

Seed	Grade	Purity	Moist	Discount	Green A	Price
Barl/rye	New Selects	16.47%	87.00%	20.00%	87.00%	06.15
GR						
Adrian Greys	New Selects	8.04%	77.00%	8.00%	83.00%	06.15
Traps						
Hayes Phragmites	Mix	16.59%	84.00%	12.00%	86.00%	05.15
rye						
Red Topseed	Traps	4.00%	72.00%	30.00%	87.00%	06.15
Traps						
Killington	Traps	19.60%	87.00%	8.00%	86.00%	06.15
Traps						
Green Top	1.2%					
Wood Seed	0.1%					
Non Selects	22.74%					
Traps						
Total Seed Purity						25

BLM #2 seed mix 9/3/2015

## ***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

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

HOBBS OCD

AUG 29 2014

RECEIVED

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 #10H  
API Number: 30-025-41973 OCD Permit Number: P1-06561  
U/L or Qtr/Qtr O Section 9 Township 24S Range 33E County: Lea  
Center of Proposed Design: Latitude 32° 13' 30.098" N Longitude 103° 34' 24.302" 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 \_\_\_\_\_

SEP 08 2014

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)

HOBBS OGD

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

AUG 29 2014

RECEIVED

8. **Variations 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

<p>Within 100 feet of a wetland.</p> <ul style="list-style-type: none"> <li>- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p><b><u>Temporary Pit Non-low chloride drilling fluid</u></b></p>	
<p>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</p> <ul style="list-style-type: none"> <li>- Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</p> <ul style="list-style-type: none"> <li>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image. See Figure 4</li> </ul>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>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;</p> <ul style="list-style-type: none"> <li>- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site See Figures 1 &amp; 2</li> </ul>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>Within 300 feet of a wetland. See Figure 6</p> <ul style="list-style-type: none"> <li>- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p><b><u>Permanent Pit or Multi-Well Fluid Management Pit</u></b></p>	
<p>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).</p> <ul style="list-style-type: none"> <li>- Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</p> <ul style="list-style-type: none"> <li>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>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.</p> <ul style="list-style-type: none"> <li>- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 500 feet of a wetland.</p> <ul style="list-style-type: none"> <li>- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> 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: \_\_\_\_\_

HOBBS OCD

AUG 29 2014

RECEIVED Oil Conservation Division

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<sub>2</sub>S, 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

HOBBS OCD

AUG 29 2014

13.

**Proposed Closure:** 19.15.17.13 NMAC

RECEIVED

*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.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> NA |
| Ground water is between 25-50 feet below the bottom of the buried waste<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> NA |
| Ground water is more than 100 feet below the bottom of the buried waste.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> 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).<br>- Topographic map; Visual inspection (certification) of the proposed site                        | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                |
| Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.<br>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.<br>- NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                |
| Written confirmation or verification from the municipality; Written approval obtained from the municipality   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                |
| Within 300 feet of a wetland.<br>US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                |
| Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                |

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

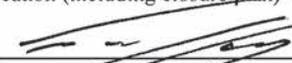
17. **Operator Application Certification:**  
 I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Greg Boans Title: Production Superintendent

Signature:  Date: August 29, 2014

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:  Approval Date: 09-04-14

Title: Environmental Specialist OCD Permit Number: PI-06561

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 19, 2015

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 32.22507° Longitude W 103.57338° NAD:  1927  1983

**HOBBS OCD**  
**AUG 29 2014**  
**RECEIVED**

**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: September 8, 2015  
e-mail address: kristin@rthicksconsult.com Telephone: 575-302-6755

HOBBSD

AUG 29 2014

RECEIVED