R. T. HICKS CONSULTANTS, LTD.

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

September 18, 2014

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

RE: Temporary Pit Closure Report
Jackson Mogi 9 State Com 2H, API #30-025-40976
Unit O, 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
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

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

February 7, 2014

Mr. Geoffrey Leking
NMOCD District 1
1625 French Drive
Hobbs, New Mexico 88240
Via Email

RE: Murchison – Mogi 9 State Com 2H, In-place Burial Notice
Unit O, Section 9, T24S, R33E, API #30-025-40976

Dear Mr. Leking:

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 **Wednesday, February 12, 2014**. The closure process should require about two weeks.

The "In-place Burial" closure plan for the above-referenced pit was approved on March 18, 2013 by the NMOCD, prior to the establishment of the June 2013 Pit Rule. Construction and operation of the temporary pit has been conducted to satisfy the rule under which it was approved as well as the June 2013 Rule. In conformance with the 2013 Pit Rule, a five-point composite sample that is fully representative of the solids in the pit was recovered on October 30, 2013 and stabilized with the available mixing soil at a 3:1 ratio[1]. On January 13, 2014, we submitted a modified C-144 form and closure plan to NMOCD in anticipation of closure under the 2013 Pit Rule; NMOCD approved the closure plan the next day on January 14, 2014.

As shown in the summary table below, laboratory analyses of the stabilized cuttings composite demonstrate that the concentrations of the parameters listed in Table II of 19.15.17.13 NMAC (June 2013 Pit Rule) are below the limits that allow in-place burial of the stabilized cuttings.

[1] (5) The operator shall collect, at a minimum, a five point composite of the contents of the temporary pit or drying pad/tank associated with a closed-loop system to 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 in Table II of 19.15.17.13 NMAC.

3:1 Stabilized Cuttings Composite Sample		
Constituent	Table II Limit (GW>100 ft)	10/30/2013 Sample
Chloride	80,000 mg/kg	**11,200**
TPH	2,500 mg/kg	**1,300**
GRO+DRO	1,000 mg/kg	**33.8**
BTEX	50 mg/kg	**3.86**
Benzene	10 mg/kg	**0.104**

I will follow up this notice to you with a phone call today as required by the Pit Rule. As always, we appreciate your work to keep us on schedule.

Sincerely,

R.T. Hicks Consultants

Kristin Pope

Kristin Pope

Copy: Murchison Oil and Gas

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

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:

State Land Office
Attn: Terry Warnell
P.O. Box 1148
Santa Fe, NM 87504
-1148

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

SANTA FE NM 87504
FEB 10 2014
USPS

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 5148

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-154

From: Leking, Geoffrey R, EMNRD
To: Kristin Pope
Cc: Warnell, Terry G.; ccottrell@jdmii.com; Chace Walls; Greg Boans; Randy Hicks
Subject: RE: Murchison - Mogi 9 St. Com 2H: Closure Plan/C-144 Modification
Date: Tuesday, January 14, 2014 10:54:29 AM

Kristin

The above referenced document is approved per signature today, Tuesday 01/14/2014. 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: Monday, January 13, 2014 3:51 PM
To: Leking, Geoffrey R, EMNRD
Cc: Warnell, Terry G.; ccottrell@jdmii.com; Chace Walls; Greg Boans; Randy Hicks
Subject: Murchison - Mogi 9 St. Com 2H: Closure Plan/C-144 Modification

Mr. Leking:

On behalf of Murchison Oil and Gas, the attached C-144 Permit Modification and Closure Plan for the pit at the **Mogi 9 State Com 2H** is submitted for your approval. You approved the initial C-144 pit application on 3/18/2013 under the old Pit Rule. This submission is to fulfill the requirements for closing the pit under the 2013 rule.

The deadline to complete closure is 2/13/2014 so we would like to begin closure activities as soon as possible. Upon your approval, a formal notice of closure will follow in accordance with the Pit Rule requirements.

Thank you for your attention to all of our projects.

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

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.
30-025-40976

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:
2H

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.)
		8/13/2013		

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 32.22508° Longitude W 103.57482° 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 9/18/2014

E-mail Address kristin@rthicksconsult.com

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well and not later than 60 days after completion of closure. When submitted as a completion report, this shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, items 11, 12 and 26-31 shall be reported for each zone.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico		Northwestern New Mexico	
T. Anhy_____	T. Canyon_____	T. Ojo Alamo_____	T. Penn A"_____
T. Salt_____	T. Strawn_____	T. Kirtland _____	T. Penn. "B"_____
B. Salt_____	T. Atoka_____	T. Fruitland_____	T. Penn. "C"_____
T. Yates_____	T. Miss_____	T. Pictured Cliffs_____	T. Penn. "D"_____
T. 7 Rivers_____	T. Devonian_____	T. Cliff House_____	T. Leadville_____
T. Queen_____	T. Silurian_____	T. Menefee_____	T. Madison_____
T. Grayburg_____	T. Montoya_____	T. Point Lookout_____	T. Elbert_____
T. San Andres_____	T. Simpson_____	T. Mancos_____	T. McCracken_____
T. Glorieta_____	T. McKee_____	T. Gallup_____	T. Ignacio Otzte_____
T. Paddock_____	T. Ellenburger_____	Base Greenhorn_____	T.Granite _____
T. Blinebry_____	T. Gr. Wash_____	T. Dakota_____	
T.Tubb_____	T. Delaware Sand_____	T. Morrison_____	
T. Drinkard_____	T. Bone Springs_____	T.Todilto_____	
T. Abo_____	T._____	T. Entrada_____	
T. Wolfcamp_____	T._____	T. Wingate_____	
T. Penn_____	T._____	T. Chinle_____	
T. Cisco (Bough C)_____	T._____	T. Permian_____	

OIL OR GAS SANDS OR ZONES

No. 1, from……..……..….to……. No. 3, from……to…….……

No. 2, from……to.…… No. 4, from……to…….

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

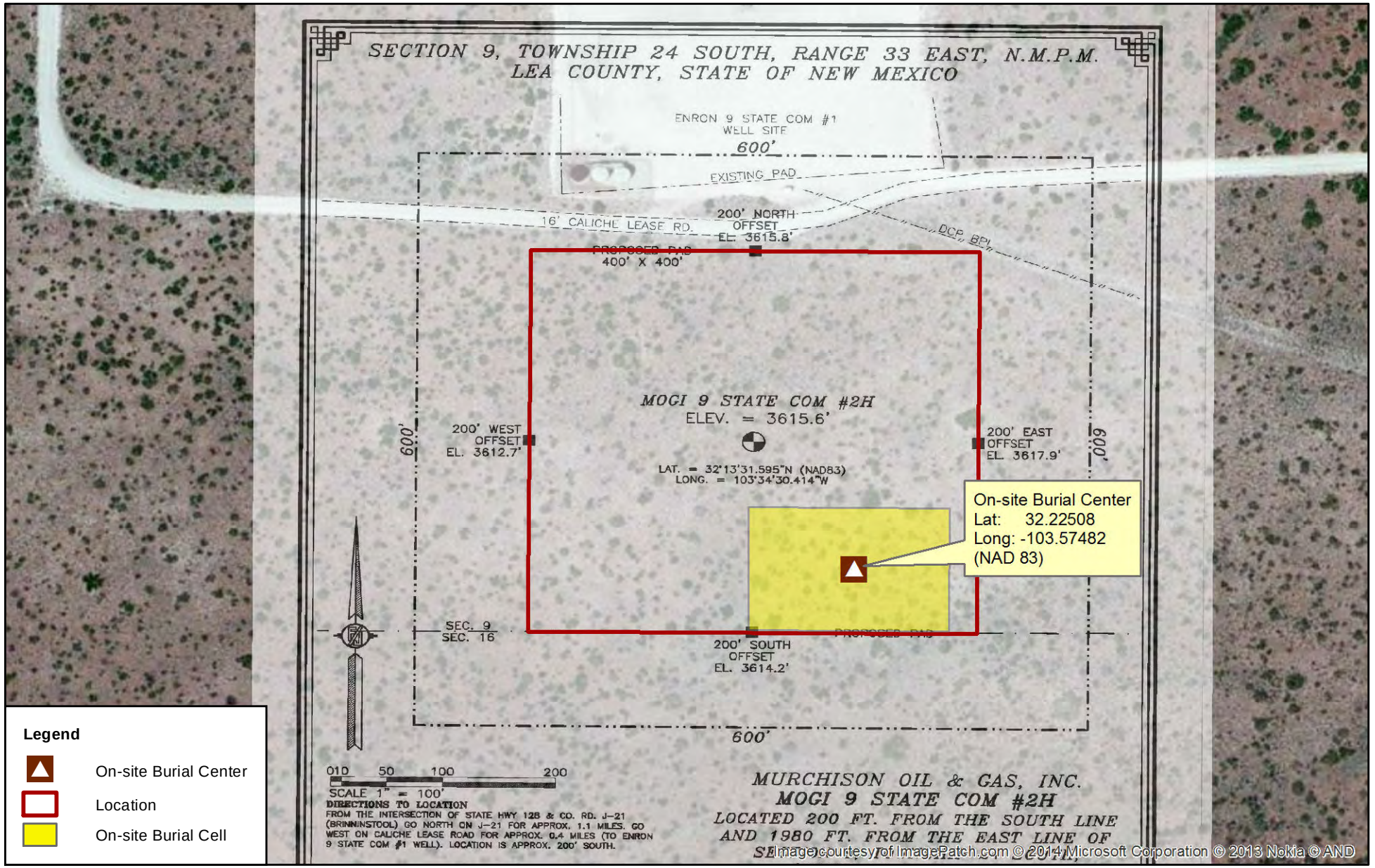
No. 1, from…….to……feet……

No. 2, from…….to……feet……

No. 3, from…….to……feet……

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness In Feet	Lithology		From	To	Thickness In Feet	Lithology



N
W E
S

0 50 100
Feet

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 & Gas
Mogi 9 State Com #2H

Plate 1
C-105 form

August 2014

ATTACHMENT 3

Waste Material Sampling Analytical Results

On October 30, 2013, an eight-point composite sample was collected from the temporary pit location and stabilized in a 3:1 ratio using clean material from the berms of the pit (below the liner). The stabilized composite sample was submitted to Cardinal Laboratories in Hobbs, New Mexico for BTEX (8260B), GRO/GRO (8015M), TPH (418.1), and Chloride (SM4500) analyses.

The table below depicts the samples collected from the cuttings in this pit and their concentrations of the parameters listed in Table II of 19.15.17.13 NMAC (June 2013 Pit Rule). These analyses demonstrate that this site meets the criteria for in-place closure.

3:1 Stabilized Cuttings Composite Sample		
Constituent	Table II Limit (GW>100 ft)	10/30/2013 Sample
Chloride	80,000 mg/kg	**11,200**
TPH	2,500 mg/kg	**1,300**
GRO+DRO	1,000 mg/kg	**33.8**
BTEX	50 mg/kg	**3.86**
Benzene	10 mg/kg	**0.104**

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

November 22, 2013

KRISTIN POPE

R T HICKS CONSULTANTS

901 RIO GRANDE BLVD SUITE F-142

ALBUQUERQUE, NM 87104

RE: MOGI 9 STATE COM 2H PIT

Enclosed are the results of analyses for samples received by the laboratory on 11/01/13 12:27.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS 901 RIO GRANDE BLVD SUITE F-142 ALBUQUERQUE NM, 87104	Project: MOGI 9 STATE COM 2H PIT Project Number: NONE GIVEN Project Manager: KRISTIN POPE Fax To: NONE	Reported: 22-Nov-13 13:43

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
STABILIZED CUTTINGS 3:1	H302675-01	Soil	30-Oct-13 14:30	01-Nov-13 12:27

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS 901 RIO GRANDE BLVD SUITE F-142 ALBUQUERQUE NM, 87104	Project: MOGI 9 STATE COM 2H PIT Project Number: NONE GIVEN Project Manager: KRISTIN POPE Fax To: NONE	Reported: 22-Nov-13 13:43

STABILIZED CUTTINGS 3:1

H302675-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**11200**		16.0	mg/kg	4	3110407	AP	04-Nov-13	4500-Cl-B	
Organic Compounds										
TPH 418.1	**1300**		100	mg/kg	10	3112206	CK	14-Nov-13	418.1	SUB-SS
Volatile Organic Compounds by EPA Method 8021										**S-04**
Benzene*	**0.104**		0.050	mg/kg	50	3110502	MS	07-Nov-13	8021B	
Toluene*	**0.478**		0.050	mg/kg	50	3110502	MS	07-Nov-13	8021B	
Ethylbenzene*	**0.602**		0.050	mg/kg	50	3110502	MS	07-Nov-13	8021B	
Total Xylenes*	**2.68**		0.150	mg/kg	50	3110502	MS	07-Nov-13	8021B	
Total BTEX	**3.86**		0.300	mg/kg	50	3110502	MS	07-Nov-13	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			*162 %*	*89.4-126*		*3110502*	MS	*07-Nov-13*	*8021B*	
Petroleum Hydrocarbons by GC FID										
GRO C6-C10	ND		10.0	mg/kg	1	3110105	MS	01-Nov-13	8015B	
DRO >C10-C28	**33.8**		10.0	mg/kg	1	3110105	MS	01-Nov-13	8015B	
EXT DRO >C28-C35	ND		10.0	mg/kg	1	3110105	MS	01-Nov-13	8015B	
Surrogate: 1-Chlorooctane			*90.6 %*	*65.2-140*		*3110105*	MS	*01-Nov-13*	*8015B*	
Surrogate: 1-Chlorooctadecane			*99.5 %*	*63.6-154*		*3110105*	MS	*01-Nov-13*	*8015B*	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS 901 RIO GRANDE BLVD SUITE F-142 ALBUQUERQUE NM, 87104	Project: MOGI 9 STATE COM 2H PIT Project Number: NONE GIVEN Project Manager: KRISTIN POPE Fax To: NONE	Reported: 22-Nov-13 13:43

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3110407 - 1:4 DI Water										
Blank (3110407-BLK1)				Prepared & Analyzed: 04-Nov-13						
Chloride	ND	16.0	mg/kg							
LCS (3110407-BS1)				Prepared & Analyzed: 04-Nov-13						
Chloride	400	16.0	mg/kg	400		100	80-120			
LCS Dup (3110407-BSD1)				Prepared & Analyzed: 04-Nov-13						
Chloride	400	16.0	mg/kg	400		100	80-120	0.00	20	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS 901 RIO GRANDE BLVD SUITE F-142 ALBUQUERQUE NM, 87104	Project: MOGI 9 STATE COM 2H PIT Project Number: NONE GIVEN Project Manager: KRISTIN POPE Fax To: NONE	Reported: 22-Nov-13 13:43

Organic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3112206 - Solvent Extraction										
Blank (3112206-BLK1)				Prepared & Analyzed: 14-Nov-13						
TPH 418.1	ND	10.0	mg/kg							
LCS (3112206-BS1)				Prepared & Analyzed: 14-Nov-13						
TPH 418.1	72.0		mg/L	82.0		87.8	80-120			
LCS Dup (3112206-BSD1)				Prepared & Analyzed: 14-Nov-13						
TPH 418.1	76.0		mg/L	82.0		92.7	80-120	5.41	20	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS 901 RIO GRANDE BLVD SUITE F-142 ALBUQUERQUE NM, 87104	Project: MOGI 9 STATE COM 2H PIT Project Number: NONE GIVEN Project Manager: KRISTIN POPE Fax To: NONE	Reported: 22-Nov-13 13:43

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3110502 - Volatiles										
Blank (3110502-BLK1)				Prepared: 05-Nov-13 Analyzed: 07-Nov-13						
Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	*0.0543*		mg/kg	*0.0500*		*109*	*89.4-126*			
LCS (3110502-BS1)				Prepared: 05-Nov-13 Analyzed: 07-Nov-13						
Benzene	2.20	0.050	mg/kg	2.00		110	76.4-135			
Toluene	2.24	0.050	mg/kg	2.00		112	80.2-135			
Ethylbenzene	2.28	0.050	mg/kg	2.00		114	78.5-133			
Total Xylenes	6.83	0.150	mg/kg	6.00		114	80.1-135			
Surrogate: 4-Bromofluorobenzene (PID)	*0.0546*		mg/kg	*0.0500*		*109*	*89.4-126*			
LCS Dup (3110502-BSD1)				Prepared: 05-Nov-13 Analyzed: 07-Nov-13						
Benzene	2.06	0.050	mg/kg	2.00		103	76.4-135	6.58	16.4	
Toluene	2.08	0.050	mg/kg	2.00		104	80.2-135	7.60	16.6	
Ethylbenzene	2.11	0.050	mg/kg	2.00		105	78.5-133	7.83	16.1	
Total Xylenes	6.28	0.150	mg/kg	6.00		105	80.1-135	8.29	15.8	
Surrogate: 4-Bromofluorobenzene (PID)	*0.0545*		mg/kg	*0.0500*		*109*	*89.4-126*			

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS 901 RIO GRANDE BLVD SUITE F-142 ALBUQUERQUE NM, 87104	Project: MOGI 9 STATE COM 2H PIT Project Number: NONE GIVEN Project Manager: KRISTIN POPE Fax To: NONE	Reported: 22-Nov-13 13:43

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3110105 - General Prep - Organics										
Blank (3110105-BLK1)				Prepared & Analyzed: 01-Nov-13						
GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C35	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	*43.9*		mg/kg	*50.0*		*87.8*	*65.2-140*			
Surrogate: 1-Chlorooctadecane	*46.4*		mg/kg	*50.0*		*92.8*	*63.6-154*			
LCS (3110105-BS1)				Prepared & Analyzed: 01-Nov-13						
GRO C6-C10	175	10.0	mg/kg	200		87.6	66.4-124			
DRO >C10-C28	165	10.0	mg/kg	200		82.6	61.6-132			
Total TPH C6-C28	340	10.0	mg/kg	400		85.1	69.7-122			
Surrogate: 1-Chlorooctane	*42.1*		mg/kg	*50.0*		*84.2*	*65.2-140*			
Surrogate: 1-Chlorooctadecane	*46.0*		mg/kg	*50.0*		*92.0*	*63.6-154*			
LCS Dup (3110105-BSD1)				Prepared & Analyzed: 01-Nov-13						
GRO C6-C10	190	10.0	mg/kg	200		95.2	66.4-124	8.35	23.4	
DRO >C10-C28	183	10.0	mg/kg	200		91.3	61.6-132	10.0	23.1	
Total TPH C6-C28	373	10.0	mg/kg	400		93.3	69.7-122	9.18	20.6	
Surrogate: 1-Chlorooctane	*46.6*		mg/kg	*50.0*		*93.1*	*65.2-140*			
Surrogate: 1-Chlorooctadecane	*51.3*		mg/kg	*50.0*		*103*	*63.6-154*			

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

SUB-SS	Analysis subcontracted to SunStar Laboratories, Inc.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	RT Hicks Consultants
Project Manager:	Kristin Pope
Address:	
City:	State: Zip:
Phone #:	Fax #:
Project #:	Project Owner: Murchison
Project Name:	MOGI 9 St. Com 2H pit
Project Location:	Lea County
Sampler Name:	K. Pope

BILL TO

P.O. #:	
Company:	RT Hicks
Attn:	Randy Hicks
Address:	
City:	
State: Zip:	
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER: Cuttings	PRESERV: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	Chloride 300.1	TPH 418.1	BTEX 8021B or 8260B	Benzene 8021B or 8015m	GRO + DRO 8015 m	MRO
H302675																				
1	Stabilized Cuttings 3:1	C	2						X		X		10.30.13	1430	1	1	1	1	1	1

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Kristin Pope	Date: 11.1.13 Time: 1127	Received By: Jodi Henson	
Relinquished By:	Date: Time:	Received By:	

Delivered By: (Circle One) Sampler - UPS - Bus - Other: 3.2°C

Sample Condition: Cool: Yes / No; Intact: Yes / No

CHECKED BY: (Initials) SH

Phone Result:	☐ Yes	☐ No	Add'l Phone #:
Fax Result:	☐ Yes	☐ No	Add'l Fax #:

REMARKS:
NM Pit Rule
email to R@rthicksconsult.com
Kristin @ "

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

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 March 17, 2013 and approved on March 18, 2013. After the rig was released on August 13, 2013, fluid contents in the pit were removed to be recycled for the drilling of other wells while the cuttings were allowed to dry.

2. On October 30, 2013, prior to the initiation of closure activities, composite 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 were mixed in a ratio of 3 parts clean soil to 1 part cuttings and were analyzed for Chloride, TPH, GRO, DRO, MRO, Benzene, and BTEX at Cardinal Laboratories in Hobbs, New Mexico. The results, as noted in the subsequent closure notice, demonstrate that the stabilized pit contents would not exceed the parameter limits listed in Table II of the new Pit Rule (June 2013).

3. On January 13, 2014, R.T. Hicks Consultants submitted a modified C-144 form and closure plan to NMOCD for approval to close the pit under the June 2013 Pit Rule. NMOCD granted approval the next day.

4. On January 28, 2014, an extension for closure was requested to allow NMOCD to consider a request to reclaim suitable pit liner for use as the geomembrane cover during closure and to install the geomembrane cover over only the stabilized cuttings and not the dividing berms of the pit. NMOCD granted the extension on February 5, 2014.

5. A closure notice was submitted to the NMOCD, District 1 office in Hobbs and to the State Land Office on February 7, 2014. Verbal notice in the form of a phone call to NMOCD was placed on the same day.

6. On February 12, 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, while keeping the clean soil of the divider berms relatively intact. On March 14, 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.

While communication with NMOCD continued regarding the placement of the geomembrane cover over only the stabilized cuttings of the pit, NMOCD granted a second extension on March 26, 2014.

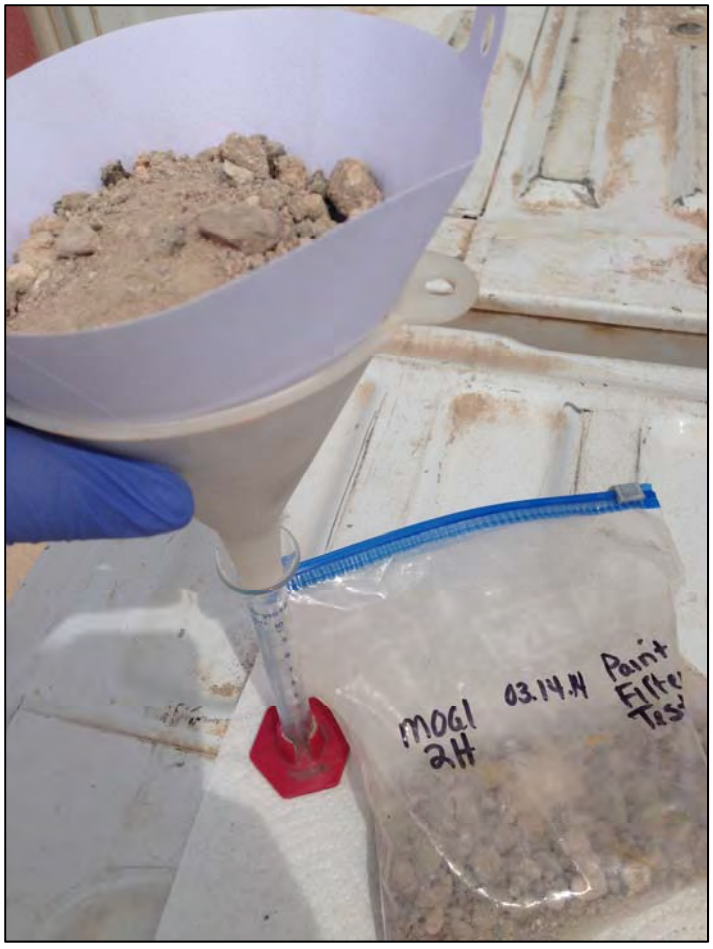
7. A field visit with Murchison, Hicks Consultants, and NMOCD was held on May 21, 2014 to discuss, among other issues, the placement of the geomembrane cover over pit cuttings only. Following the meeting, NMOCD issued a directive on June 20, 2014 to cover the footprint of the entire pit with liner material. The interior berms were then broken down to achieve a floor of the excavation that was sloped in a manner that would shed infiltrated water.

8. After having achieved all applicable stabilization, depth, and slope requirements associated with in-place burial, a new geomembrane liner was installed to completely cover the stabilized cuttings on June 26, 2014.

9. Once the geomembrane cover was in place, 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 July 6, 2014.

Mixing cuttings 2-19-2014

Stabilized Cuttings 4+ feet deep 6-23-2014



Paint Filter Test on Stabilized Cuttings 3-14-2014

Liner Installation Complete 6-26-2014

From: Leking, Geoffrey R, EMNRD
To: Randall Hicks
Cc: "Greg Boans"; "Chace Walls"; kristin@rthicksconsult.com; "Cindy Cottrell"; Martin, Ed, EMNRD
Subject: RE: Murchison Mogi 2H and Jackson 11H Extension Request
Date: Wednesday, March 26, 2014 1:16:39 PM

Randy

The extension requests are granted. The maximum of 90 days may be taken, but the OCD may require the company to begin and complete closure activities prior to the end of full 90 days. 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: Randall Hicks [mailto:r@rthicksconsult.com]
Sent: Friday, March 21, 2014 3:34 PM
To: Leking, Geoffrey R, EMNRD
Cc: 'Greg Boans'; 'Chace Walls'; kristin@rthicksconsult.com; 'Cindy Cottrell'; Martin, Ed, EMNRD
Subject: RE: Murchison Mogi 2H and Jackson 11H Extension Request

Geoff

Murchison respectfully requests an extension of time to close the pits at the Mogi 2H and Jackson 11H, both of which are required to be closed on 3/27/14. We ask for this extension to provide OCD with additional time to evaluate our proposed closure protocol with respect to

- the Pit Rule
- the approved closure plans
- the fluid dynamics of unsaturated flow and
- the net environmental benefit of various approaches

Pits approved under 2013 Pit Rule are just now undergoing closure, as you well know. As we move through the process in the field, we are encountering many challenges and questions regarding how the Rule should be applied. The closure protocol outlined in our 3/18/14 email (see below) raises one such challenge/question for operators and OCD. While we feel confident that OCD's evaluation of the three parameters listed above will agree with ours, but we are uncertain how you could conduct the required evaluation in such a short time,

given your current workload.

In the absence of your approval to extend the time period for closure, Murchison will proceed with closure to meet the regulatory deadline.

Randall Hicks
RT Hicks Consultants
Office: 505-266-5004
Cell: 505-238-9515

From: Randall Hicks [mailto:r@rthicksconsult.com]
Sent: Tuesday, March 18, 2014 5:05 PM
To: 'Leking, Geoffrey R, EMNRD'; 'Martin, Ed, EMNRD'
Cc: 'Greg Boans'; 'Chace Walls'; 'kristin@rthicksconsult.com'; 'Cindy Cottrell'
Subject: RE: Murchison - Pit Closures - minimizing surface area of geomembrane cover

Geoff and Ed

The Mogi 9 State 2H pit closure deadline is 3/27/14. We propose to meet this deadline unless OCD provides evidence of a flaw in our interpretation of the Rule or the logic of how we plan to install the geomembrane cover. The attached photographs from our Thursday visit to the Mogi 9 State 2H pit and associated text describe the placement of the geomembrane liner. We believe the photographs clearly demonstrate that placing a geomembrane cover over the stabilized cuttings as proposed will work significantly better than covering the entire footprint of the former pit. The Pit Rule states [emphasis added]:

> (8) Upon achieving all applicable waste stabilization in the temporary pit or transfer of stabilized wastes to the temporary pit or burial trench, the operator shall:
> (a) fold the outer edges of the trench liner …
> (b) install a geomembrane cover over the waste material in the lined trench or temporary pit; the operator shall install the geomembrane cover in a manner that prevents the collection of infiltration water in the lined trench or temporary pit and on the geomembrane cover after the soil cover is in place; the geomembrane cover shall consist of a 20-mil string reinforced LLDPE liner or equivalent cover that the appropriate division district office approves; the geomembrane cover shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions; cover compatibility shall comply with EPA SW-846 Method 9090A;
> (c) cover the pit/trench with non-waste containing, uncontaminated, earthen materials and construct a soil cover prescribed by the division in Paragraph (3) of Subsection H of 19.15.17.13 NMAC.

This method of closure is fully consistent with the Pit Rule, provides an excellent means of preventing the collection of infiltrated water on the geomembrane cover and reduces the cost of closure versus covering the entire footprint – clean soil and all. Until OCD approves the Yates Petroleum closure plan for the Atoka Bank 2H closure plan (transmitted via e-mail to OCD on 1/25/14), Murchison will use new, welded 20-mil LLDPE liner. Given the slopes that we can achieve for the stabilized solids, recycled liner that is sewn together to

form a continuous sheet will perform admirably – but we can discuss that another day, as it is part of the Yates Atoka closure plan, not a Murchison plan.

You should see this pit in person – the contractor did a great job.

Randall Hicks
RT Hicks Consultants
Office: 505-266-5004
Cell: 505-238-9515

From: Randall Hicks [mailto:r@rthicksconsult.com]
Sent: Sunday, March 02, 2014 8:35 PM
To: 'Leking, Geoffrey R, EMNRD'; 'Martin, Ed, EMNRD'
Cc: 'Greg Boans'; 'Chace Walls'; kristin@rthicksconsult.com; 'Cindy Cottrell'
Subject: RE: Murchison - Pit Closures - minimizing surface area of geomembrane cover

Geoff

Before OCD makes a final policy decision regarding the proposed closure method, please come a take a look at stabilized solids in the Mogi 2H pit. I believe you will see that the methodology is

1. consistent with the approved closure plan
2. fully compliant with the mandates of the Pit Rule
3. a better environmental solution because
    a. the cover will not extend over clean dirt
    b. we can create a significantly better slope of the geomembrane cover

After a tour with Kristin, take a week to think about it and give me a call with any questions. OCD has extended the closure time to the end of March.

Randall T. Hicks
505-266-5004 (office)
505-238-9515 (cell and best number to use)

From: Leking, Geoffrey R, EMNRD [mailto:GeoffreyR.Leking@state.nm.us]
Sent: Wednesday, February 26, 2014 3:55 PM
To: Randall Hicks; Martin, Ed, EMNRD
Cc: 'Greg Boans'; 'Chace Walls'; kristin@rthicksconsult.com; 'Cindy Cottrell'
Subject: RE: Murchison - Pit Closures - minimizing surface area of geomembrane cover

Randy

Let's just do the whole pit area on this one until we have more time to look at the configuration of the waste, geomembrane etc. Thanks.

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: Randall Hicks [mailto:r@rthicksconsult.com]
Sent: Thursday, February 20, 2014 2:26 PM
To: Leking, Geoffrey R, EMNRD; Martin, Ed, EMNRD
Cc: 'Greg Boans'; 'Chace Walls'; kristin@rthicksconsult.com; 'Cindy Cottrell'
Subject: RE: Murchison - Pit Closures - minimizing surface area of geomembrane cover

Geoff and Ed

No action is required on your part unless OCD finds a regulatory or technical flaw with the proposed closure protocol for the Mogi 2H pit. Ed, you get this note because the Pit Rule is relatively new and operators and OCD need to work together to be sure we are all interpreting the rule in the same way – and you were the expert witness for OCD.

Murchison will not install the geomembrane or soil cover over the stabilized waste at the Mogi 2H pit until we speak to Geoff 2-3 days prior to placing the liner.

Here is the proposed closure protocol in summary:

1. use new 20-mil, string reinforced LLDPE liner for the geomembrane cover over the stabilized solids in the pit
2. minimize the surface area of stabilized cuttings/solids
3. used welded liner seams to construct a continuous sheet of geomembrane to cover the stabilized solids

The portion of the Rule relating to the geomembrane cover for the closure of temporary pits is presented below with emphasis in highlight.

> **(b)** install a geomembrane cover over the waste material in the lined trench or temporary pit; the operator shall install the
> geomembrane cover in a manner that prevents the collection of infiltration water in the lined trench or temporary pit and on the geomembrane cover
> after the soil cover is in place; the geomembrane cover shall consist of a 20-mil string reinforced LLDPE liner or equivalent cover that the
> appropriate division district office approves; the geomembrane cover shall be composed of an impervious, synthetic material that is resistant to
> petroleum hydrocarbons, salts and acidic and alkaline solutions; cover compatibility shall comply with EPA SW-846 Method 9090A;

For the most recent closure by Murchison (Jackson 24H), the geomembrane cover was placed over the entire footprint of the former pit, as the entire footprint held the stabilized

waste. For the Mogi 2H pit, we have instructed the contractors to minimize the surface area of stabilized cuttings/solids. The attached contractor instructions are modified from the January 25 revised closure plan to OCD for the Yates Atoka Bank BDJ State Com 2H permit.

The principal environmental benefit of minimizing the surface area of stabilized waste is the ability to create a relatively steep slope on the geomembrane cover of about 3H:1V (we will not be measuring this slope in the field as it is a contractor instruction, not a closure requirement). Obviously covering clean dirt with geomembrane (the sides and berms of the pit exposed after cutting and removing the liner at the mud line and did not contact the stabilized cuttings) is not required by the Rule and is consistent with the general environmental standard of reducing the use of material (Reduce-Reuse-Recycle is the slogan I remember).

Again, no action is required on your part unless you find a regulatory or technical flaw in this process. This closure protocol is consistent with the approved plans for Murchison temporary pits.

Thanks for reading this!

Randall T. Hicks
505-266-5004 (office)
505-238-9515 (cell and best number to use)

From: Leking, Geoffrey R, EMNRD
To: "Kristin Pope" (kristin@rthicksconsult.com)
Cc: Randall Hicks (r@rthicksconsult.com)
Subject: Jackson Unit #11H
Date: Friday, June 20, 2014 3:40:35 PM

Kristin

Please close this location by covering the entire pit with the geomembrane. Maybe the "horseshoe covering" can be used on future closures. Please contact me if you have any further 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: Leking, Geoffrey R, EMNRD
To: Kristin Pope
Cc: ccottrell@jdmii.com; Warnell, Terry G.; Randy Hicks; Chace Walls; Greg Boans
Subject: RE: Murchison - Extension Requests for Closure of Temporary Pits
Date: Wednesday, February 05, 2014 2:21:59 PM

Kristin

Per our discussion of this afternoon, please go ahead with the closures of the Jackson Unit 11H and Mogi 9 State Com 2H following the currently approved C-144 closure plans. An extension of 6 weeks from the current deadline of 2/13/14 to the new deadline of 3/27/14 is granted. 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: Tuesday, January 28, 2014 2:50 PM
To: Leking, Geoffrey R, EMNRD
Cc: ccottrell@jdmii.com; Warnell, Terry G.; Randy Hicks; Chace Walls; Greg Boans
Subject: Murchison - Extension Requests for Closure of Temporary Pits

Mr. Leking,

Per our phone discussion today, please find the attached letters requesting an extension for closure of the Murchison **Jackson Unit 11H** and **Mogi 9 St. Com 2H** temporary pits.
We hope this will allow OCD time to review RT Hicks' recently-submitted modified closure plan (Yates Atoka Bank BDJ St. Com 2H) that calls for the use recycled pit liner as the geomembrane cover.

I will mail hard copies tomorrow. Thank you for your consideration.

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

ATTACHMENT 5

RE-VEGETATION PROCEDURES

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

1. On August 1, 2014, Morgan Tools of Artesia 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. Note that Plains Bristlegrass, a majority component of the BLM #2 assortment, was unavailable so appropriate substitute species approved by the BLM were 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 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.

4. 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.

Tractor pulling seed drill across site 8-1-2014

Steel marker plate placed on surface of on-site burial

Backfilled and seeded surface with identification plate 8-19-2014

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

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 2H
API Number: 30-025-40976 OCD Permit Number: P1-05709
U/L or Qtr/Qtr O Section 9 Township 24S Range 33E County: Lea
Center of Proposed Design: Latitude 32° 13' 31.595" N Longitude 103° 34' 30.414" 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: 21,146 bbl Dimensions: L 152 x W 151 x D 6-9 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; Aerial 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: January 13, 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: [signature] **Approval Date:** 01/14/2014

Title: Environmental Specialist **OCD Permit Number:** P1-05709

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:** July 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 (In-place burial)
- ☑ Waste Material Sampling Analytical Results (required for on-site closure)
- ☐ Disposal Facility Name and Permit Number n/a (In-place burial)
- ☑ Soil Backfilling and Cover Installation
- ☑ Re-vegetation Application Rates and Seeding Technique
- ☐ Site Reclamation (Photo Documentation) to follow

On-site Closure Location: Latitude N 32.22401° Longitude W -103.57584° 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: September 18, 2014

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