

R. T. HICKS CONSULTANTS, LTD.

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February 20, 2015

Dr. Tomáš Oberding
NMOCD District 1
1625 French Drive
Hobbs, New Mexico 88240
VIA EMAIL

RECEIVED

By OCD; Dr. Oberding at 11:49 am, Feb 23, 2015

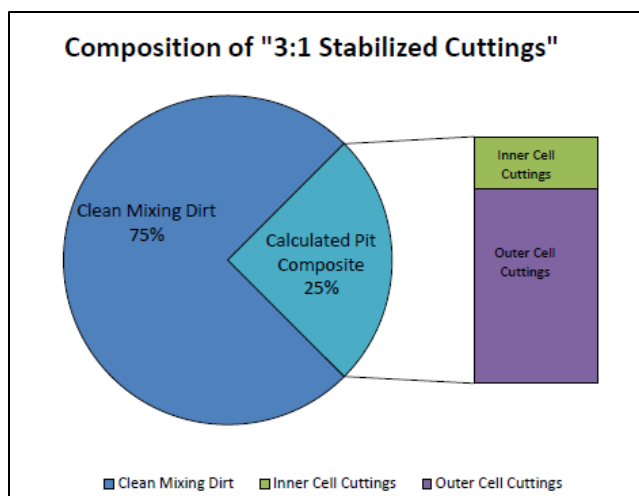
RE: Bettis 20 State Com #5H Temporary Pit, In-place Burial Notice
API #30-025-41439, Pit Permit #P1-06549
Unit M, Section 20, T24S, R33E, Lea County

Dr. Oberding:

On behalf of Murchison Oil and Gas, Inc., R. T. Hicks Consultants provides this notice to NMOCD with a copy to the State Land Office (email return receipt in lieu of US Mail per approved variance request) that closure operations at the above-referenced pit is scheduled to begin on **Tuesday, February 24, 2015**. Please note that we enclose a previously-approved variance to substitute TPH via 8015 method (GRO+DRO+MRO) in lieu of method 418.1. The closure process should require about two weeks, depending on the weather and the availability of machinery.

The "In-place Burial" closure plan for the pit was approved by NMOCD on June 6, 2014 with the C-144 temporary pit application. The rig was released August 21, 2014 and the pit was utilized during fracturing and flowback. The well was completed on September 12, 2014. In an effort to mitigate a potential for elevated hydrocarbon concentrations, Micro-Blaze[®] microbial product was applied to the surface of the pit cuttings on October 22, 2014.

On December 4, 2014, 4-point composite samples were collected from the inner horseshoe cell, outer horseshoe cell, and from the clean soil of the berms (beneath the liner) of the pit for laboratory analyses. The calculated concentration for "3:1 stabilized" material that results when the pit contents are combined with available mixing soil during the closure process did not meet in-place closure target concentrations found in Table II of 19.15.17.13 NMAC. The day after sampling, additional Micro-Blaze[®] was applied to the pit as recommended by the product representative, this time using an air sparge system to inject a mixture of water/air/product into the cuttings.



Bettis 20 St Com #5H pit

On January 29, 2015, composites from the inner and outer cells were collected again for laboratory analyses. Using the analysis of the mixing dirt from December 2014, the stabilized

cuttings were calculated by mathematically mixing 3 parts clean soil (mixing dirt) with 1 part of the weighted pit composite calculation, as depicted in the pie chart on page 1 of this notice. The pit composite consists of approximately 21% solids from the inner cell of the drilling pit and 79% of the solids from the outer cell (1:3.8 ratio), representative of the volume of cuttings in each cell. As shown in the table below, concentration limits for all Table II constituents will be met when pit contents are mechanically mixed with approximately 3 parts of clean mixing dirt from the pit during the closure process.

Bettis 20 St. Com #5H pit Sample Name	Sample Type	Sample Date	Chloride 80,000	Benzene 10	BTEX 50	GRO+ DRO 1,000	TPH 8015D 2,500
Inner Composite	4-pt field comp.	1/29/2015	170,000	ND	ND	67.2	122.2
Outer Composite	4-pt field comp.	1/29/2015	8,100	0.25	5.2	2,683	3,623
Mixing Dirt	5-pt field comp.	12/3/2014	ND	ND	ND	ND	ND
3:1 Stabilized CALCULATED (3 parts mixing dirt, 1 part weighted pit cuttings)			10,455.94	0.05	1.03	534.53	723.45

TPH 8015D = GRO+DRO+MRO

ND = Not detected at the laboratory's reporting limit

All values are mg/kg

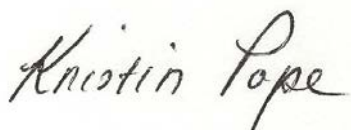
The formula used in the table to calculate the 3:1 Stabilized Cuttings is:

$$3:1 \text{ Stabilized Cuttings} = \frac{[(\text{Outer Composite} \times 0.7917) + (0.2083 \times \text{Inner Composite}) + (\text{Mixing Dirt} \times 3)]}{4}$$

Thank you for your consideration of this notice of in-place closure. I will follow-up this notice to you with a phone call today as required by the Pit Rule.

Sincerely,

R.T. Hicks Consultants



Kristin Pope

Enclosure: variance approval for email to SLO, variance approval for TPH substitution

Copy: Murchison Oil and Gas, Ed Martin via email
New Mexico State Land Office

From: [Oberding, Tomas, EMNRD](#)
To: [Kristin Pope](#)
Cc: [ccottrell@jdmii.com](#); [Randy Hicks](#); [gboans@jdmii.com](#); [Chace Walls](#); [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

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](#); [Randy Hicks](#); [gboans@jdmii.com](#); [Chace Walls](#); [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

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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