Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM138607

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☑ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

NM OIL CONSERVATION
ARTESIA DISTRICT
JAN 10 2019

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.
MONEY GRAHAM 26S29E3229
208H
323132

2. Name of Operator
TAP ROCK OPERATING LLC
372043

RECEIVED

9. API Well No.
30-015-45603

3a. Address
602 Park Point Drive Suite 200 Golden CO 80401

3b. Phone No. *(include area code)*
(720)460-3316

10. Field and Pool, or Exploratory
PURPLE SAGE WOLFCAMP 98220

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface LOT 4 / 320 FSL / 760 FEL / LAT 32.0009927 / LONG -104.0006459

At proposed prod. zone NENE / 200 FNL / 337 FEL / LAT 32.0205887 / LONG -103.9990013

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 32 / T26S / R29E / NMP

14. Distance in miles and direction from nearest town or post office*
16 miles

12. County or Parish
EDDY

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
320 feet

16. No of acres in lease
874.57

17. Spacing Unit dedicated to this well
874.57

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
25 feet

19. Proposed Depth
9691 feet / 17150 feet

20. BLM/BIA Bond No. in file
FED: NMB001443

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
2866 feet

22. Approximate date work will start*
10/01/2018

23. Estimated duration
90 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Brian Wood / Ph: (505)466-8120	07/27/2018

Title
President

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	01/08/2019
Title: Assistant Field Manager Lands & Minerals	Office: CARLSBAD	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

APPROVED WITH CONDITIONS

KP 1-10-19.

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 01/08/2019

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Continued on page 3)

Additional Operator Remarks

Location of Well

1. SHL: LOT 4 / 320 FSL / 760 FEL / TWSP: 26S / RANGE: 29E / SECTION: 32 / LAT: 32.0009927 / LONG: -104.0006459 (TVD: 0 feet, MD: 0 feet)
   PPP: SESE / 0 FSL / 344 FEL / TWSP: 26S / RANGE: 29E / SECTION: 29 / LAT: 32.00658 / LONG: -103.999206 (TVD: 9674 feet, MD: 12054 feet)
   PPP: LOT 4 / 320 FSL / 760 FEL / TWSP: 26S / RANGE: 29E / SECTION: 32 / LAT: 32.0009927 / LONG: -104.0006459 (TVD: 0 feet, MD: 0 feet)
   BHL: NENE / 200 FNL / 337 FEL / TWSP: 26S / RANGE: 29E / SECTION: 29 / LAT: 32.0205887 / LONG: -103.9990013 (TVD: 9691 feet, MD: 17150 feet)

BLM Point of Contact

Name: Priscilla Perez
Title: Legal Instruments Examiner
Phone: 5752345934
Email: pperez@blm.gov

Approval Date: 01/08/2019

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	TAP ROCK OPERATING LLC.
LEASE NO.:	NMNM138607
WELL NAME & NO.:	208H- MONEY GRAHAM 26S29E3229
SURFACE HOLE FOOTAGE:	320'/S & 760'/E
BOTTOM HOLE FOOTAGE	200'/N & 337'/E
LOCATION:	Section. 32.,T26S.,R.29E., NMP
COUNTY:	EDDY County, New Mexico

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	○ Low	◉ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	◉ Conventional	○ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

A. Hydrogen Sulfide

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **530** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch 1st intermediate casing is:

- Cement to surface. If cement does not circulate see B.1.a, c-d above.
- Cement should tie-back at least **200** feet into previous casing string. Operator shall provide method of verification. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings , the cement on the 3rd casing string must come to surface.

3. The minimum required fill of cement behind the **7-5/8** inch 2nd intermediate casing is:

- Cement should tie-back at least **200** feet into previous casing string. Operator shall provide method of verification.

4. The minimum required fill of cement behind the **5 1/2 X 5** inch production casing is:

- Cement should tie-back at least **200** feet into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **10,000 (10M)** psi.

D. SPECIAL REQUIREMENT(S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.

In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

Well Name:

Operator shall submit a sundry to add 'Com' to the well name.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log (one log per well pad is acceptable) run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
    e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes. This test shall be performed prior to the test at full stack pressure.

g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report

01/09/2019

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Brian Wood **Signed on:** 07/27/2018

Title: President

Street Address: 37 Verano Loop

City: Santa Fe **State:** NM **Zip:** 87508

Phone: (505)466-8120

Email address: afmss@permitswest.com

Field Representative

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Application Data Report

01/09/2019

APD ID: 10400032517 **Submission Date:** 07/27/2018

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400032517 **Tie to previous NOS?** **Submission Date:** 07/27/2018

BLM Office: CARLSBAD **User:** Brian Wood **Title:** President

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM138607 **Lease Acres:** 874.57

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? YES **APD Operator:** TAP ROCK OPERATING LLC

Operator letter of designation:

Operator Info

Operator Organization Name: TAP ROCK OPERATING LLC

Operator Address: 602 Park Point Drive Suite 200

Zip: 80401

Operator PO Box:

Operator City: Golden **State:** CO

Operator Phone: (720)460-3316

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO **Mater Development Plan name:**

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** PURPLE SAGE WOLFCAMP **Pool Name:**

Is the proposed well in an area containing other mineral resources? USEABLE WATER

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** MONEY GRAHAM EAST PAD **Number:** 1

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: CONVENTIONAL GAS WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 16 Miles **Distance to nearest well:** 25 FT **Distance to lease line:** 320 FT

Reservoir well spacing assigned acres Measurement: 874.57 Acres

Well plat: Money_208H_C102_etal_072618_20180727095711.pdf

Well work start Date: 10/01/2018 **Duration:** 90 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 19642

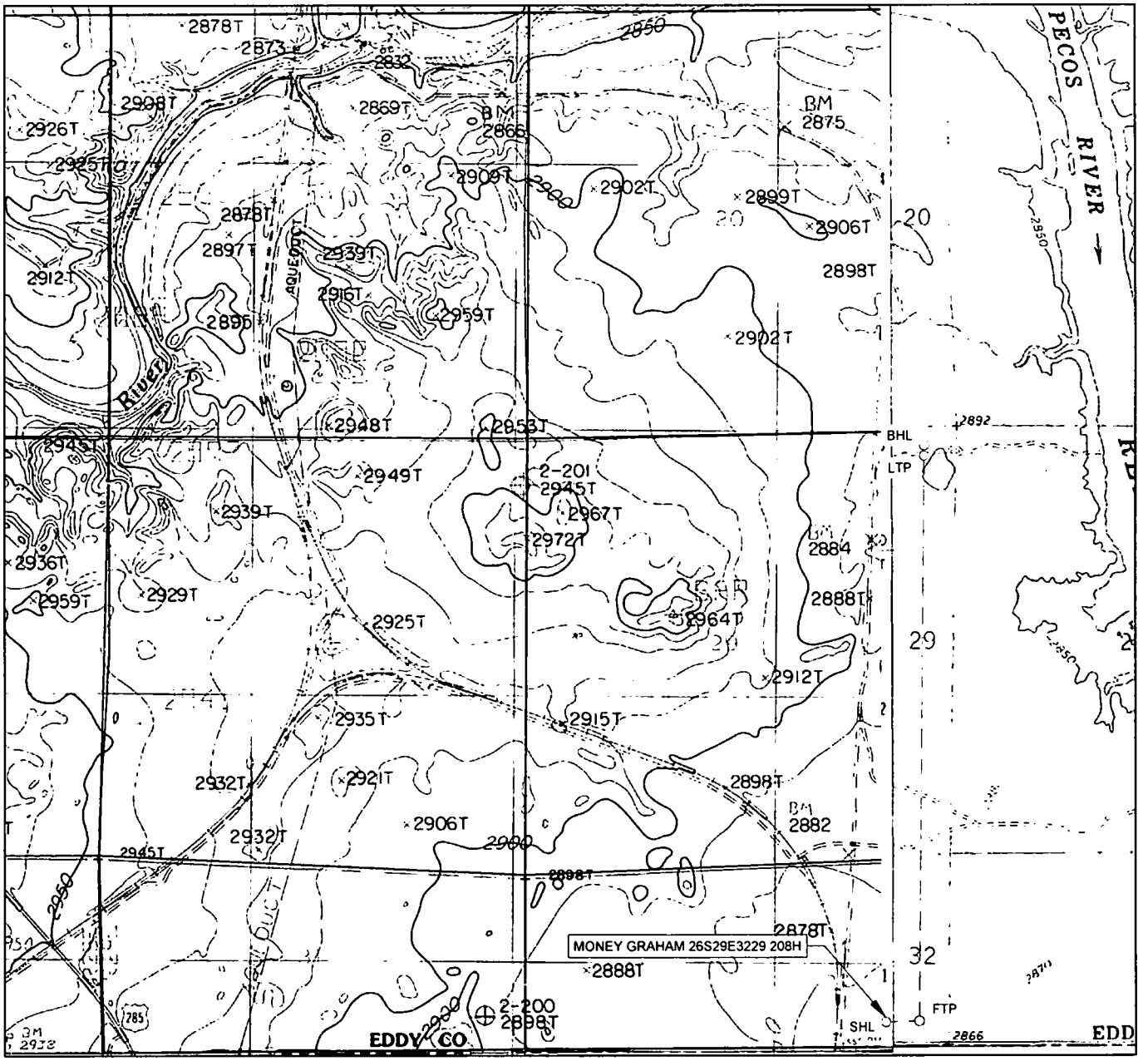
	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	320	FSL	760	FEL	26S	29E	32	Lot 4	32.0009927	-104.0006459	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	2866	0	0
KOP Leg #1	320	FSL	760	FEL	26S	29E	32	Lot 4	32.0009927	-104.0006459	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-6229	9130	9095
PPP Leg #1	320	FSL	760	FEL	26S	29E	32	Lot 4	32.0009927	-104.0006459	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	2866	0	0

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
PPP Leg #1	0	FSL	344	FEL	26S	29E	29	Aliquot SESE	32.00658	-103.999206	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 138607	-6808	12054	9674
EXIT Leg #1	200	FNL	337	FEL	26S	29E	29	Aliquot NENE	32.0205887	-103.9990013	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 138607	-6825	17150	9691
BHL Leg #1	200	FNL	337	FEL	26S	29E	29	Aliquot NENE	32.0205887	-103.9990013	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 138607	-6825	17150	9691

LOCATION & ELEVATION VERIFICATION MAP



TAP ROCK

LEASE NAME & WELL NO.: MONEY GRAHAM 26S29E3229 208H

SECTION 32 TWP 26-S RGE 29-E SURVEY N.M.P.M.
COUNTY EDDY STATE NM ELEVATION 2866'
DESCRIPTION 320' FSL & 760' FEL

LATITUDE N 32.0009927 LONGITUDE W 104.0006459

TOPOGRAPHIC MAP N

SCALE: 1" = 2000'
0' 1000' 2000'

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY TAP ROCK OPERATING, LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1983, U.S. SURVEY FEET.

TOPOGRAPHIC
1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
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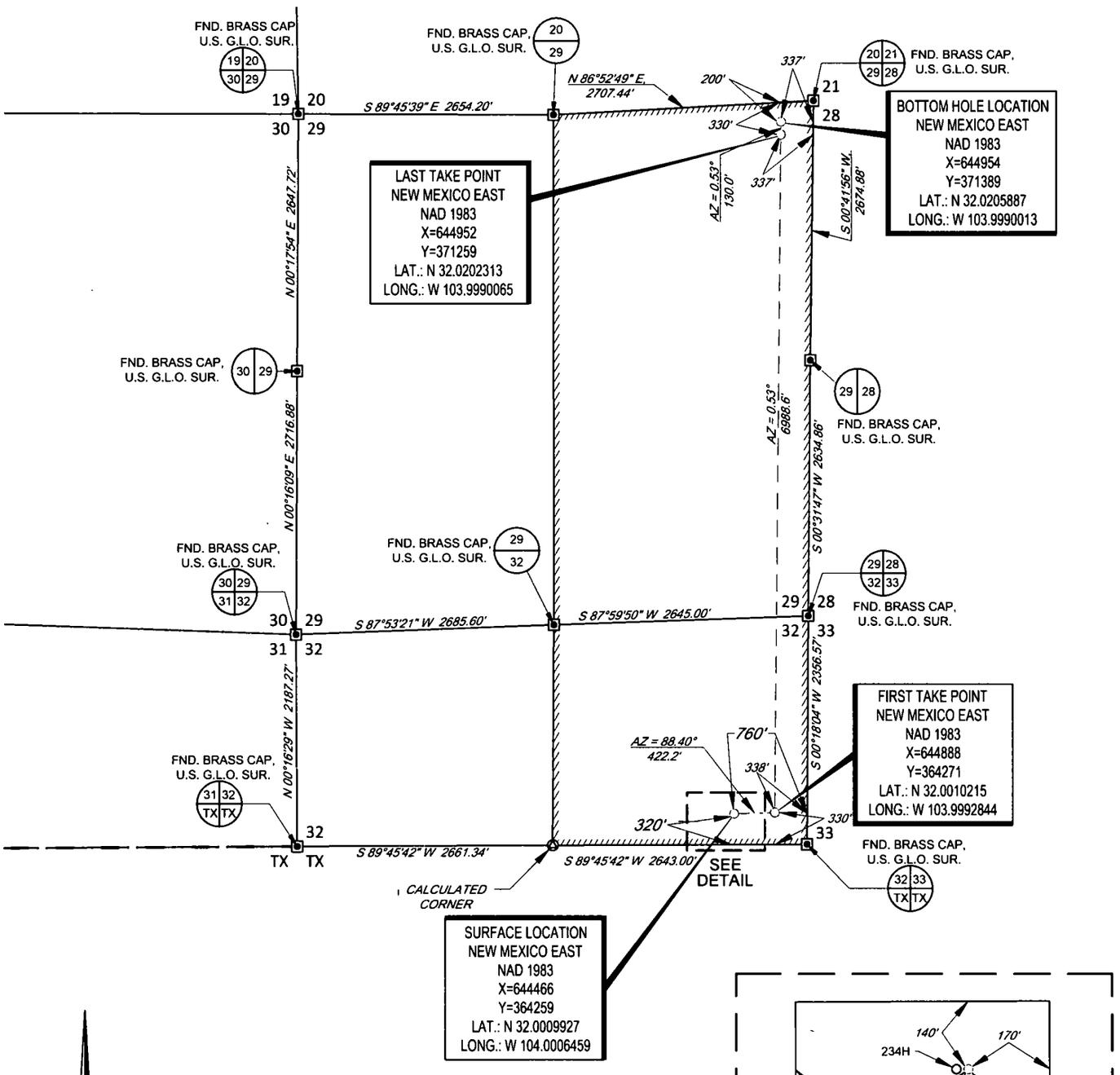
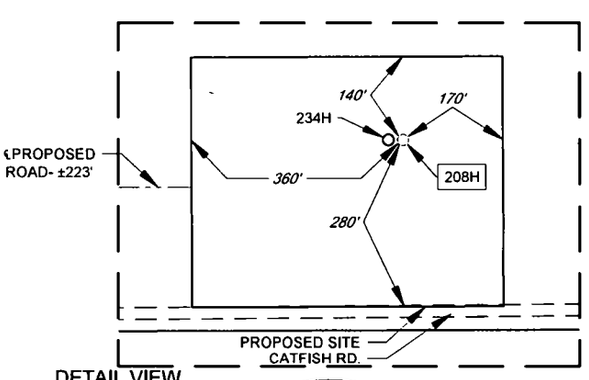
TAP ROCK

EXHIBIT 2A

SECTION 32, TOWNSHIP 26-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO





DETAIL VIEW
SCALE: 1" = 300'

LEASE NAME & WELL NO.: MONEY GRAHAM 26S29E3229 208H

SECTION 32 TWP 26-S RGE 29-E SURVEY N.M.P.M.
COUNTY EDDY STATE NM
DESCRIPTION 320' FSL & 760' FEL

DISTANCE & DIRECTION
FROM INT. OF US-285 & BLACK RIVER VILLAGE RD., GO SOUTH ON US-285 ±16.4 MILES, THENCE EAST (LEFT) ON CATFISH RD. ±1.7 MILES, THENCE NORTH (LEFT) ON LEASE RD. ±210 FEET, THENCE EAST (RIGHT) ON PROPOSED RD. ±223 FEET TO A POINT ±369 FEET SOUTHWEST OF THE LOCATION.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1983, U.S. SURVEY FEET

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STAN W. LLOYD
NEW MEXICO
19642
PROFESSIONAL SURVEYOR

Stan W. Lloyd

Stan W. Lloyd, P.S. No. 19642
MAY 8, 2018

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
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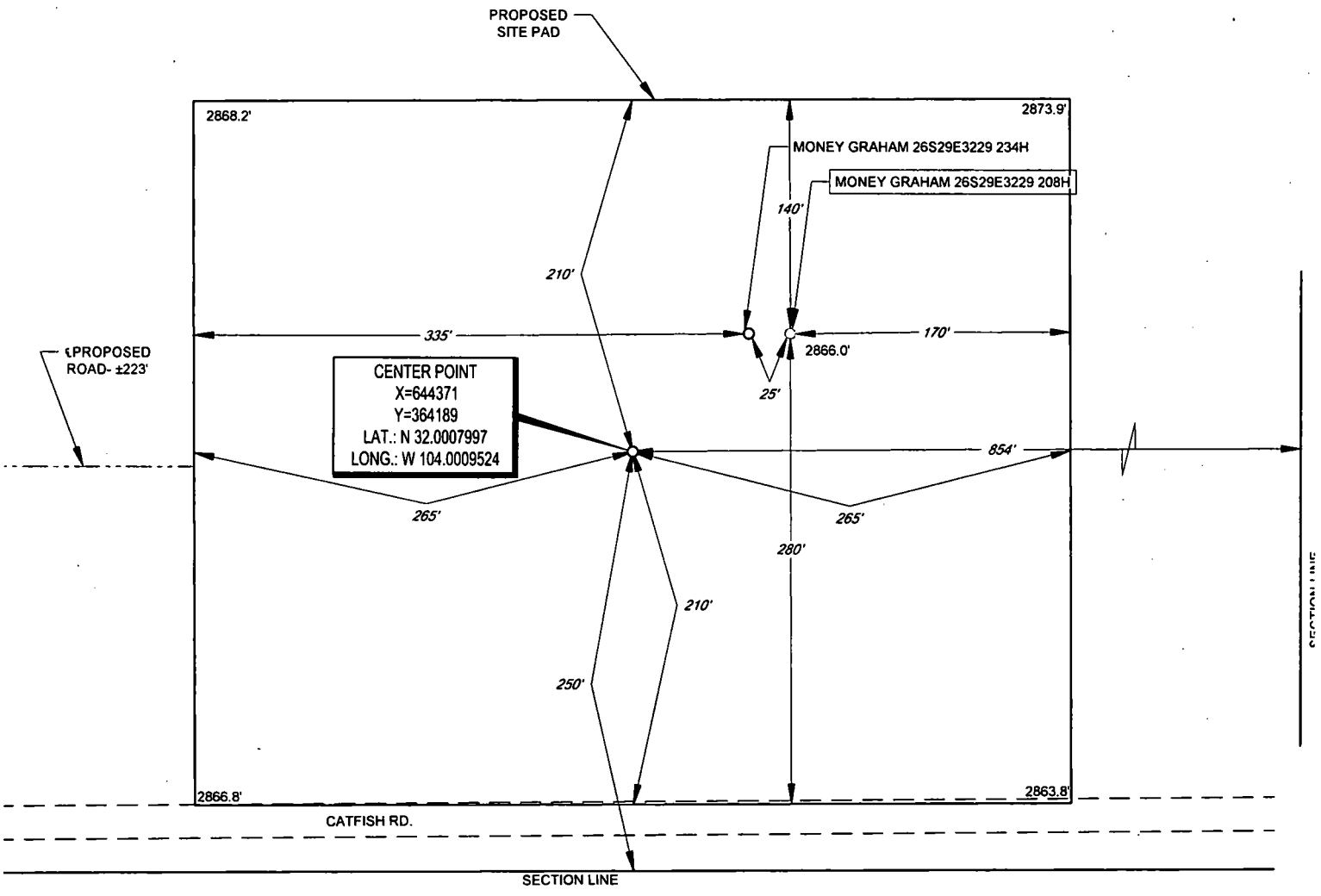
EXHIBIT 2B

TAP ROCK

SECTION 32, TOWNSHIP 26-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

DETAIL VIEW
SCALE: 1" = 100'



LEASE NAME & WELL NO.: MONEY GRAHAM 26S29E3229 208H

208H LATITUDE N 32.0009927 208H LONGITUDE W 104.0006459

CENTER POINT IS 250' FSL & 854' FEL

SCALE: 1" = 100'

0' 50' 100'

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1983, U.S. SURVEY FEET

THIS PROPOSED PAD SITE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY TAP ROCK OPERATING, LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

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ORIGINAL DOCUMENT SIZE: 8.5" X 11"

S:\SURVEY\TAPROCK\MONEY_GRAHAM_UNIT\FINAL_PRODUCTS\LO_MONEY_GRAHAM_26S29E3229_208H_REV3.DWG 5/8/2018 4:32:25 PM mlewin

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

Submit Original to Appropriate District Office

GAS CAPTURE PLAN

Date: 04/23/2018

☒ Original

Operator & OGRID No.: 372043

☐ Amended - Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Money Graham 26S29E3229 #234H		Lot 4 Sec 32 T26S R29E	320' FSL 785' FEL	+/- 3,500	21 days	Gas will be flared for ~21 days during flowback before being turned to the TB. Time est. depends on sales connect and well cleanup.
Money Graham 26S29E3229 #208H		Lot 4 Sec 32 T26S R29E	320' FSL 680' FEL	+/- 3,500	21 days	Gas will be flared for ~21 days during flowback before being turned to the TB. Time est. depends on sales connect and well cleanup.

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Lucid Energy Group, LLC and will be connected to Lucid Energy Group, LLC low/high pressure gathering system located in Eddy County, New Mexico. It will require ~15,000' of pipeline to connect the facility to low/high pressure gathering system. Tap Rock Operating, LLC provides (periodically) to Lucid Energy Group, LLC a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Tap Rock Operating, LLC and Lucid Energy Group, LLC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Lucid Energy Group, LLC's Red Hills Processing Plant located in Lea County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Gas Transporter system at that time. Based on current information, it is . Tap Rock Operating, LLC's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Drilling Plan Data Report
01/09/2019

APD ID: 10400032517 **Submission Date:** 07/27/2018

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	QUATERNARY	2866	0	0	OTHER : Caliche	USEABLE WATER,OTHER : Salt	No
2	RUSTLER ANHYDRITE	2363	503	503		OTHER : Salt	No
3	SALADO	2188	678	678	SALT	OTHER : Salt	No
4	BASE OF SALT	479	2387	2391		OTHER : Salt	No
5	BELL CANYON	24	2842	2850	SANDSTONE	NATURAL GAS,OIL	No
6	BRUSHY CANYON	-1955	4821	4844	SANDSTONE	NATURAL GAS,OIL	No
7	BONE SPRING	-3600	6466	6500	LIMESTONE	NATURAL GAS,OIL	No
8	BONE SPRING 1ST	-4525	7391	7426	SANDSTONE	NATURAL GAS,OIL	No
9	BONE SPRING 2ND	-5235	8101	8136	SANDSTONE	NATURAL GAS,OIL	No
10	BONE SPRING 3RD	-6345	9211	9247	SANDSTONE	OIL	No
11	WOLFCAMP	-6630	9496	9575	OTHER : A	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M **Rating Depth:** 13000

Equipment: A 13,000' 10,000-psi BOP stack consisting of 3 rams with 2 pipe rams, 1 blind ram, and 1 annular preventer will be used below surface casing to TD. BOP, choke manifold, co-flex hose, and speed head diagrams are attached. An accumulator will be on site. It will comply with Onshore Order 2 requirements for the BOP stack pressure rating. Rotating head will be installed as needed.

Requesting Variance? YES

Variance request: Tap Rock requests a variance to use a co-flex hose between the BOP stack and choke manifold. Co-flex hose certification is attached. Manufacturer does not require the hose to be anchored. If the specific hose is not available, then one of equal or higher rating will be used.

Testing Procedure: Pressure tests will be conducted before drilling out from under all casing strings. BOP will be inspected and operated as required by Onshore Order 2. A top drive check valve and sub equipped with a full opening valve sized to fit

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

the drill pipe and collars will be available on the rig floor in the open position. A third-party company will test the BOPs. Test pressures will be: After surface casing is set and the BOP is nippled up, pressure tests will be made to 250 psi low and 2000 psi high. Test intermediate 1 casing to 250 psi low and 3000 psi high. Test intermediate 2 casing to 250 psi low and 7500 psi high. Annular preventer will be tested to 250 psi low and 1000 psi high on the surface casing and 250 psi low and 1500 psi high on both intermediate strings. In the case of running a speed head with landing mandrel for the 1st and 2nd intermediate casing the initial, after surface casing is set, BOP test pressures will be 250 psi low and 3000 psi high with well head seals tested to 5000 psi once the first intermediate casing has been landed and cemented. BOP may then be lifted to install the C-section of the wellhead. Tap Rock will then nipple the BOP back up and pressure tests will be made to 250 psi low and 5000 psi high. Annular preventer will be tested to 250 psi low and 1500 psi high.

Choke Diagram Attachment:

Money_208H_10M_Choke_032918_20180727101148.pdf

BOP Diagram Attachment:

Money_208H_BOP_032918_20180727101211.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	530	0	528	2866		530	J-55	54.5	OTHER - BTC	1.13	1.15	DRY	1.51	DRY	1.51
2	INTERMEDIATE	8.75	7.625	NEW	API	N	0	2594	0	2580	2866		2594	P-110	29.7	OTHER - BTC	1.13	1.15	DRY	1.51	DRY	1.51
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2784	0	2777	2866		2784	J-55	40	OTHER - BTC	1.13	1.15	DRY	1.51	DRY	1.51
4	PRODUCTION	6.75	5.5	NEW	API	Y	0	8930	0	8915	2866		8930	P-110	20	OTHER - BTC	1.13	1.15	DRY	1.51	DRY	1.51
5	INTERMEDIATE	8.75	7.625	NEW	API	N	2594	9130	2580	9115			6536	P-110	29.7	OTHER - Flush	1.13	1.15	DRY	1.51	DRY	1.51
6	PRODUCTION	6.75	5.0	NEW	API	Y	8930	17149	8915	9691			8219	P-110	18	OTHER - Semi flush	1.13	1.15	DRY	1.51	DRY	1.51

Casing Attachments

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

C ing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Money_208H_Casing_Design_Assumptions_20180727101423.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Money_208H_Casing_Design_Assumptions_20180727101848.pdf

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Money_208H_Casing_Design_Assumptions_20180727101602.pdf

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Casing Attachments

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Money_208H_5.5in_Casing_Spec_20190102100805.PDF

Casing Design Assumptions and Worksheet(s):

Money_208H_Casing_Design_Assumptions_20180727102230.pdf

Casing ID: 5 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Money_208H_Casing_Design_Assumptions_20180727102037.pdf

Casing ID: 6 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Money_208H_5in_Casing_Spec_20190102100858.pdf

Casing Design Assumptions and Worksheet(s):

Money_208H_Casing_Design_Assumptions_20180727102458.pdf

Section 4 - Cement

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	530	0	0	0	0	0	None	None
SURFACE	Tail		0	530	534	1.38	14.8	737	100	Class C	5% NaCl + LCM
INTERMEDIATE	Lead		0	2594	319	2.35	11.5	750	35	TXI	fluid loss + dispersant + retarder + LCM
INTERMEDIATE	Tail		0	2594	178	1.39	13.2	247	35	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Lead		0	2784	770	1.81	13.5	1394	100	Class C	Bentonite + 1% CaCl2 + 8% NaCl + LCM
INTERMEDIATE	Tail		0	2784	252	1.38	14.8	348	100	Class C	5% NaCl + LCM
INTERMEDIATE	Lead		2594	9130	319	2.35	11.5	750	35	TXI	fluid loss + dispersant + retarder + LCM
INTERMEDIATE	Tail		2594	9130	178	1.39	13.2	247	35	TXI	Fluid Loss + Dispersant + Retarder + LCM
PRODUCTION	Lead		0	9130	0	0	0	0	0	None	None
PRODUCTION	Tail		0	9130	950	1.17	15.8	1112	10	Class H	Fluid Loss + Dispersant + Retarder + LCM
PRODUCTION	Lead		9130	17149	0	0	0	0	0	None	None
PRODUCTION	Tail		9130	17149	950	1.17	15.8	1112	10	Class H	fluid loss + dispersant + retarder + LCM

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: All necessary mud products (e. g., barite, cedar bark) for weight addition and fluid loss control will always be on site. Mud program is subject to change due to hole conditions.

Describe the mud monitoring system utilized: Electronic Pason mud monitor system complying with Onshore Order 1 will be used.

Circulating Medium Table

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	530	OTHER : Fresh water spud mud	8.3	8.3							
530	2580	OTHER : Brine water	10	10							
2580	9130	OTHER : Fresh water & cut brine	9	9							
9130	17149	OIL-BASED MUD	12.5	12.5							

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

A 2-person mud logging program will be used from 4700' MD to TD. GR will be collected through the MWD tools from 1st Intermediate casing to TD. CBL with CCL will be run as far as gravity will let it fall to TOC.

List of open and cased hole logs run in the well:

CBL,GR

Coring operation description for the well:

No core or drill stem test is planned.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6950 **Anticipated Surface Pressure:** 4817.97

Anticipated Bottom Hole Temperature(F): 160

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Money_East_Pad_H2S_Plan_20180727103635.pdf

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Money_208H_Horizontal_Plan_20180727103651.pdf

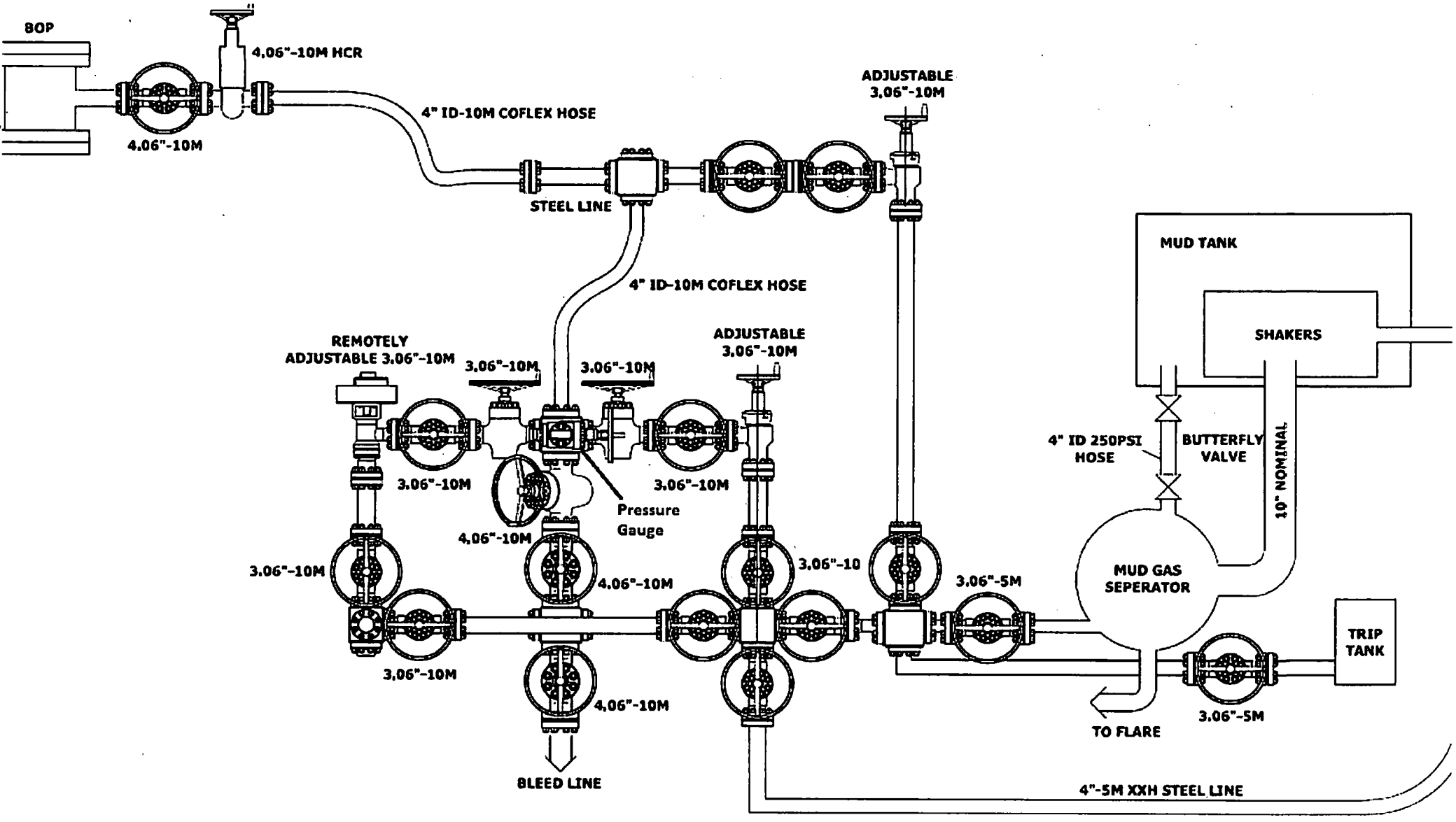
Other proposed operations facets description:

Other proposed operations facets attachment:

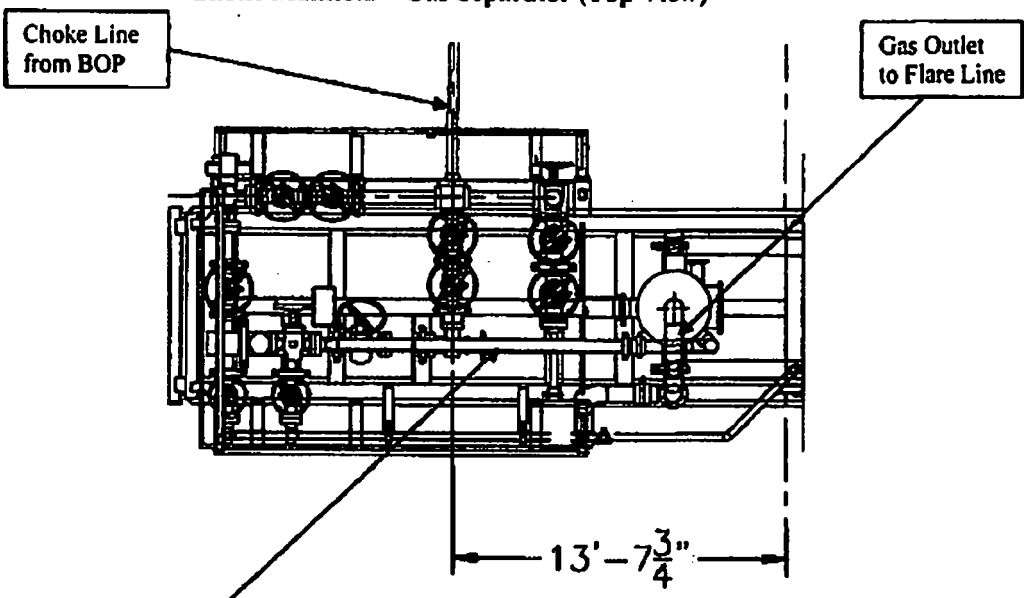
Money_208H_Speedhead_Specs_033018_20180727103712.pdf
Money_208H_Drill_Plan_010119_20190102101048.pdf

Other Variance attachment:

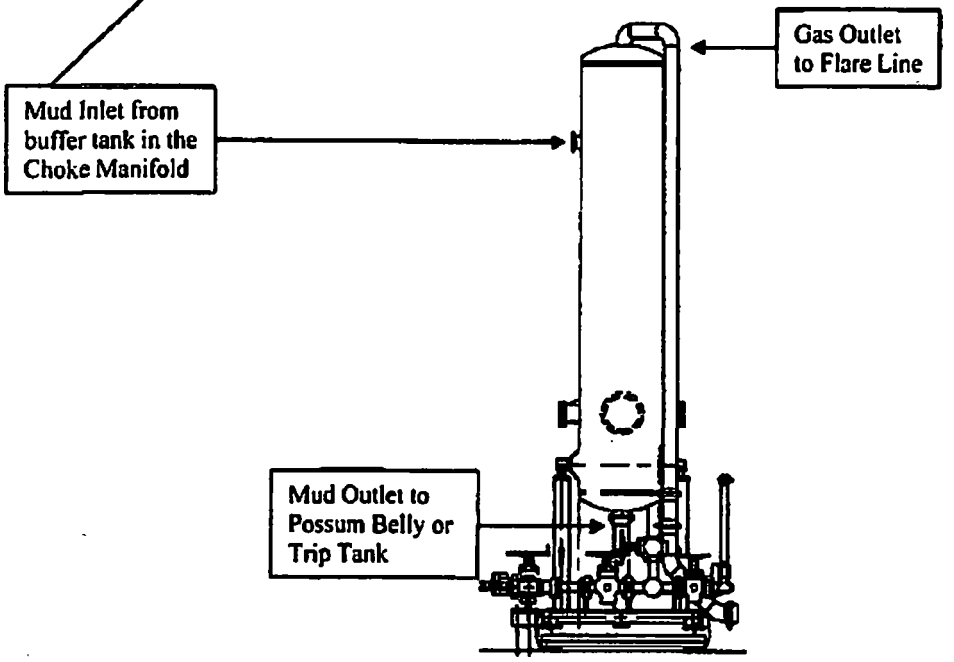
Money_208H_Casing_Variance_Request_20190102101718.pdf


BOP
4.06"-10M HCR
4.06"-10M
4" ID-10M COFLEX HOSE
ADJUSTABLE
3.06"-10M
STEEL LINE
4" ID-10M COFLEX HOSE
MUD TANK
SHAKERS
REMOTELY
ADJUSTABLE 3.06"-10M
3.06"-10M
3.06"-10M
ADJUSTABLE
3.06"-10M
4" ID 250PSI
HOSE
BUTTERFLY
VALVE
10" NOMINAL
3.06"-10M
3.06"-10M
Pressure
Gauge
4.06"-10M
3.06"-10M
4.06"-10M
3.06"-10
3.06"-5M
MUD GAS
SEPERATOR
TRIP
TANK
3.06"-10M
4.06"-10M
3.06"-5M
TO FLARE
BLEED LINE
4"-5M XXH STEEL LINE

Choke Manifold – Gas Separator (Top View)



Choke Manifold – Gas Separator (Side View)

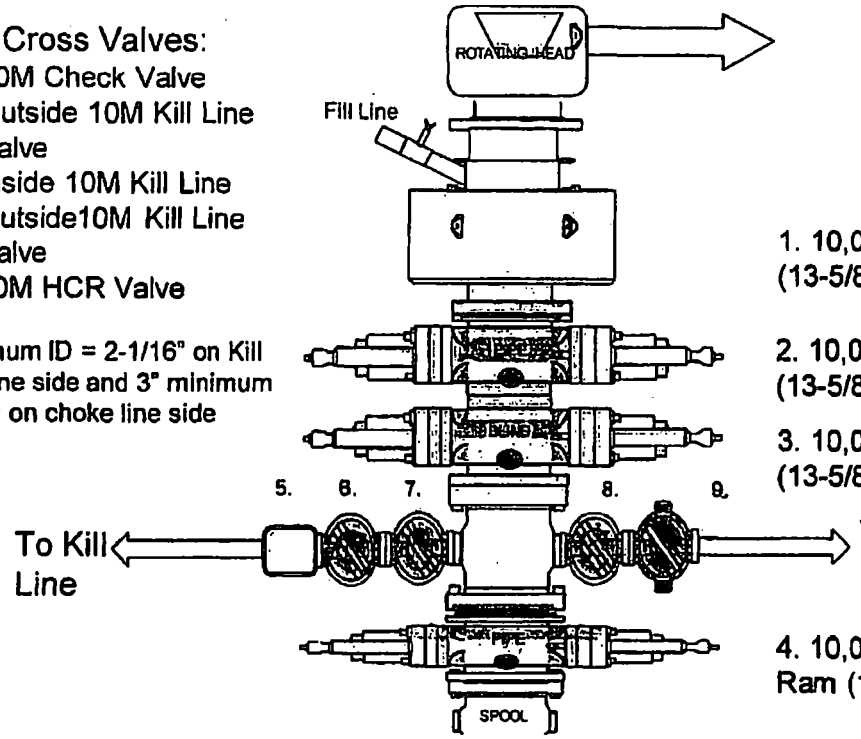


10,000 psi BOP Stack

Mud Cross Valves:

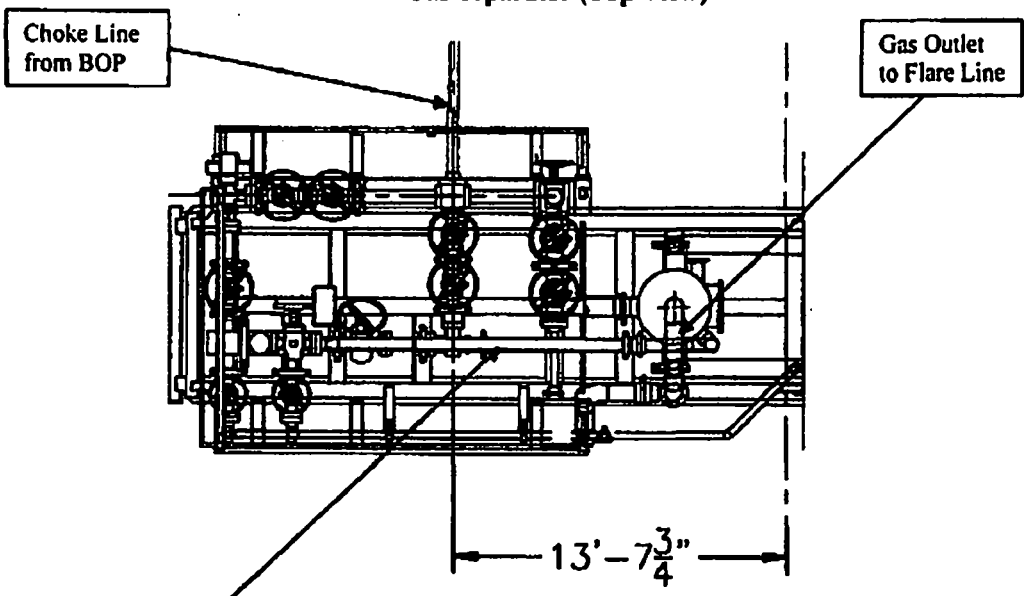
5. 10M Check Valve
6. Outside 10M Kill Line Valve
7. Inside 10M Kill Line
8. Outside10M Kill Line Valve
9. 10M HCR Valve

*Minimum ID = 2-1/16" on Kill Line side and 3" minimum ID on choke line side

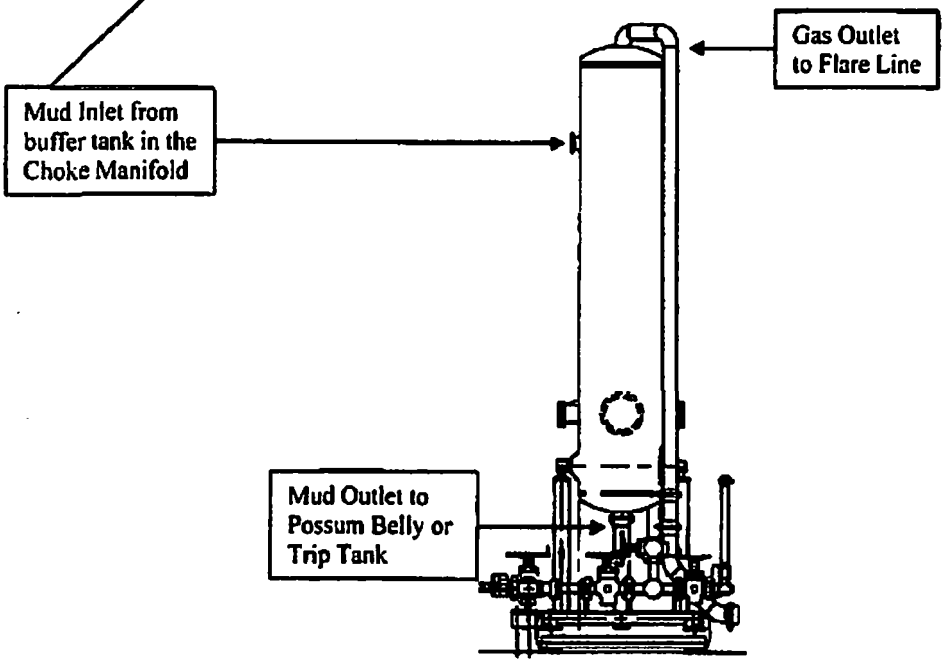


1. 10,000 psi Annular (13-5/8" ID)
2. 10,000 psi Upper Pipe Ram (13-5/8" ID)
3. 10,000 psi Blind Ram (13-5/8" ID)
4. 10,000 psi Lower Pipe Ram (13-5/8" ID)

Choke Manifold – Gas Separator (Top View)



Choke Manifold – Gas Separator (Side View)



Hydrostatic Test Certificate

ContiTech

Certificate Number	COM Order Reference	Customer Name & Address
938562	938562	HELMERICH & PAYNE DRILLING CO 1434 SOUTH BOULDER AVE TULSA, OK 74119 USA
Customer Purchase Order No:	740043386	
Project: HOW		

Test Center Address	Accepted by COM Inspection	Accepted by Client Inspection
ContiTech Oil & Marine Corp. 11535 Brittmoore Park Drive Houston, TX 77041 USA	Signed: Roger Suarez Date: 3/13/17	

We certify that the goods detailed hereon have been inspected as described below by our Quality Management System, and to the best of our knowledge are found to conform the requirements of the above referenced purchase order as issued to ContiTech Oil & Marine Corporation.

Item	Part No.	Description	Qnty	Serial Number	Work. Press.	Test Press.	Test Time (minutes)
20		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	53631	10,000 psi	15,000 psi	60
30		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	54500	10,000 psi	15,000 psi	60
40		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	56838	10,000 psi	15,000 psi	60
50		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	58489	10,000 psi	15,000 psi	60
60		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	61475	10,000 psi	15,000 psi	60
80		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	60197	10,000 psi	15,000 psi	60
90		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	39474	10,000 psi	15,000 psi	60
100		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	60887	10,000 psi	15,000 psi	60

Certificate of Conformity

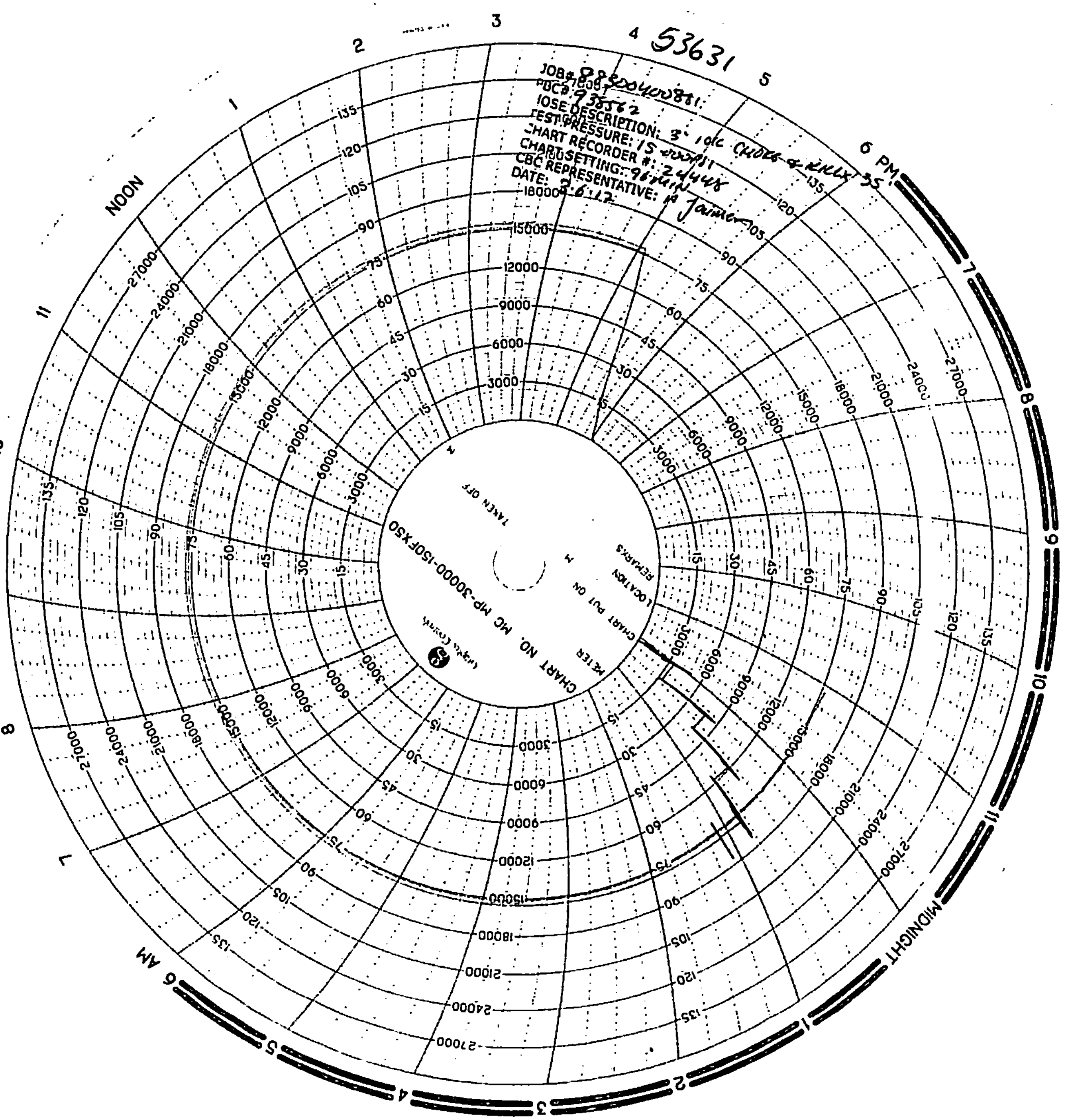
ContiTech

Certificate Number	COM Order Reference	Customer Name & Address
938562	938562	HELMERICH & PAYNE DRILLING CO 1434 SOUTH BOULDER AVE TULSA, OK 74119 USA
Customer Purchase Order No:	740043386	
Project: HOW		

Test Center Address	Accepted by COM Inspection	Accepted by Client Inspection
ContiTech Oil & Marine Corp. 11535 Brittmoore Park Drive Houston, TX 77041 USA	Roger Suarez Signed: Date: 6/13/17	

We certify that the items detailed below meet the requirements of the customer's Purchase Order referenced above, and are in conformance with the specifications given below.

Item	Part No.	Description	Qnty	Serial Number	Specifications
20		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	53631	ContiTech Standard
30		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	54500	ContiTech Standard
40		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	56838	ContiTech Standard
50		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	56489	ContiTech Standard
60		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	61475	ContiTech Standard
80		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	60197	ContiTech Standard
90		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	39474	ContiTech Standard
100		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	60887	ContiTech Standard



53631
JOB#:
PBC#:
HOSE DESCRIPTION:
TEST PRESSURE:
CHART RECORDER #:
CHART SETTING:
CBC REPRESENTATIVE:
DATE:
CHART NO. MC MP-30000-150F-X50
METER
CHART PUT ON
LOCATION
REMARKS
TAKEN OFF
NOON
6 PM
MIDNIGHT
6 AM

Hose Inspection Report

ContiTech Oil & Marine

Customer	Customer Reference #	CBC Reference #	CBC Inspector	Date of Inspection
H&P Drilling	740043386	COM938562	A. Jaimes	03/06/2017

Hose Manufacturer	Contitech Rubber Industrial

Hose Serial #	53631	**Date of Manufacture**	08/2008
Hose I.D.	3"	**Working Pressure**	10000PSI
Hose Type	Choke and Kill	**Test Pressure**	15000PSI
Manufacturing Standard	API 16C		

Connections

End A: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange	End B: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange
• No damage	• No damage
Material: Carbon Steel	**Material:** Carbon Steel
Seal Face: BX155	**Seal Face:** BX155
Length Before Hydro Test: 35'	**Length After Hydro test:** 35'

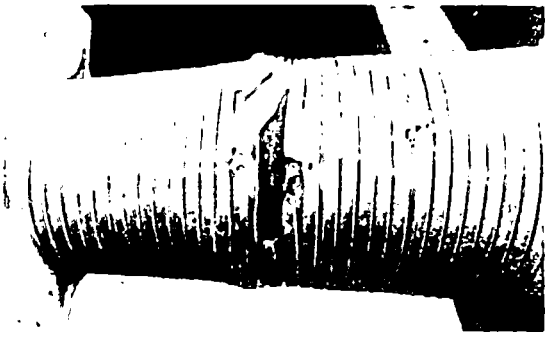
Conclusion: Hose #53631 passed the external inspection with minor damage to the hose armor. Internal borescope showed no damage to the liner. Hose #53631 passed the hydrostatic pressure test by holding a pressure of 15,000PSI for 60 minutes. **Hose #53631 is suitable for continued service.**

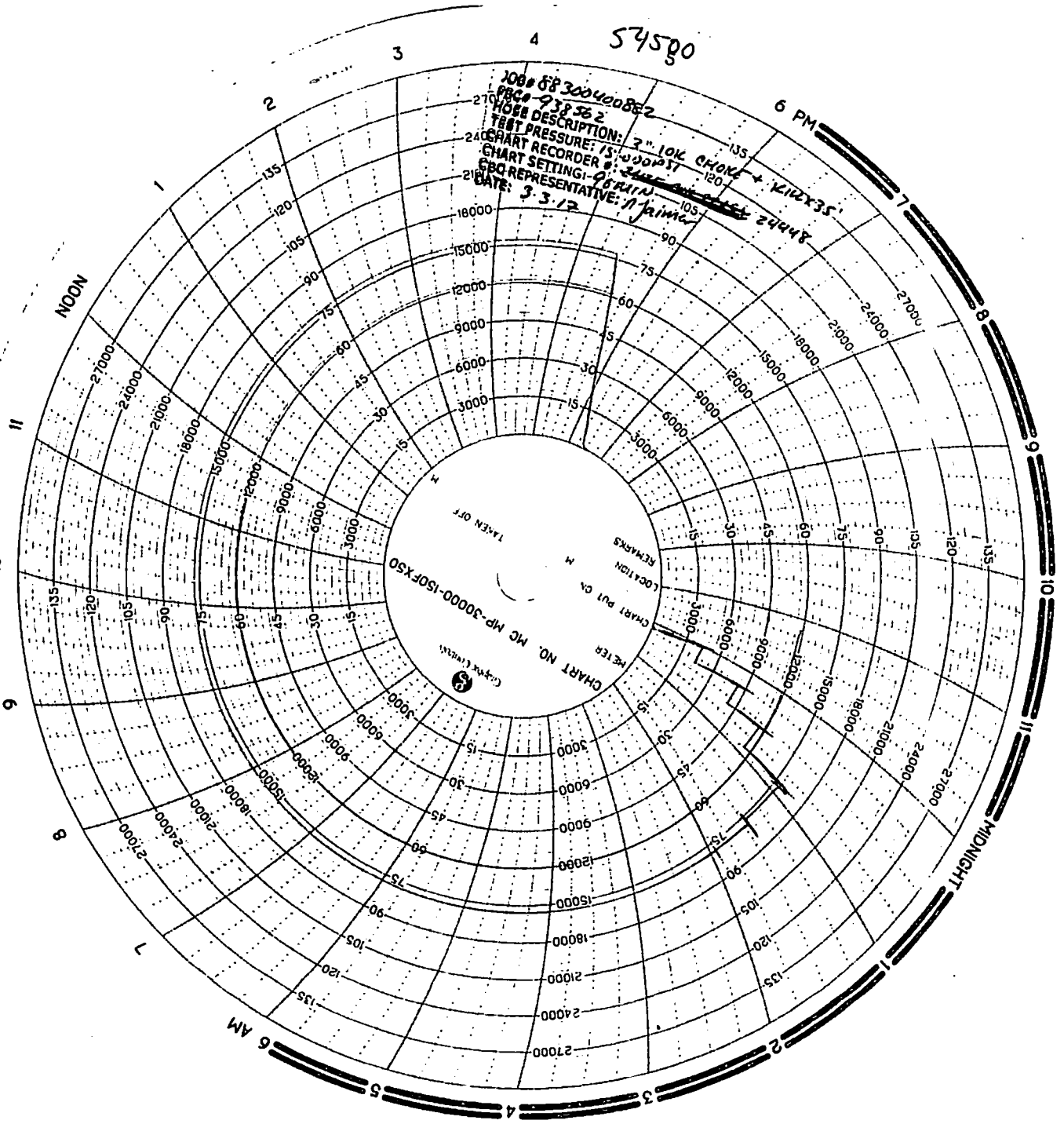
Recommendations: In general the hose should be inspected on a regular on-going basis. The frequency and degree of the inspection should as a minimum follow these guidelines:

Visual inspection: Every 3 to 6 months (or during installation/removal)
Annual: In-situ pressure test (in addition to the 3 to 6 monthly inspections)
Initial 5 years service: Major inspection
2nd Major inspection: Following subsequent 3 year life cycle
(Detailed description of test regime available upon request, QCP 206-1)

**NOTE: There are a number of critical elements in the hose that cannot be thoroughly checked through standard inspection techniques. Away from dissecting the hose body, the best way to evaluate the condition of the hose is through review of the operating conditions recorded during the hose service life, in particular maximums and peak conditions.

External Damage Post – Hydro test	
Approx. Distance from End A	3'
Width	8"
Length	3"
Depth	To hose body
Notes	Broken armor




57580
JOB# 88300420862
PBC# 938562
HOSE DESCRIPTION: 3" 10K CHOKE + KILL X35'
TEST PRESSURE: 15,000 PSI
CHART RECORDER #: 24448
CHART SETTING: 9 GRAIN
GBC REPRESENTATIVE: N Jaimes
DATE: 3.3.17
CHART NO. MC MP-30000-1SOF-X50
CHART PUT ON
LOCATION
REMARKS
TAKEN OFF
NOON
6 PM
MIDNIGHT
6 AM

Hose Inspection Report

ContiTech Oil & Marine

Customer	Customer Reference #	CBC Reference #	CBC Inspector	Date of Inspection
H&P Drilling	740043386	COM938562	A. Jaimes	03/03/2017

Hose Manufacturer	Contitech Rubber Industrial

Hose Serial #	54500	**Date of Manufacture**	01/2009
Hose I.D.	3"	**Working Pressure**	10000PSI
Hose Type	Choke and Kill	**Test Pressure**	15000PSI
Manufacturing Standard	API 16C		

Connections

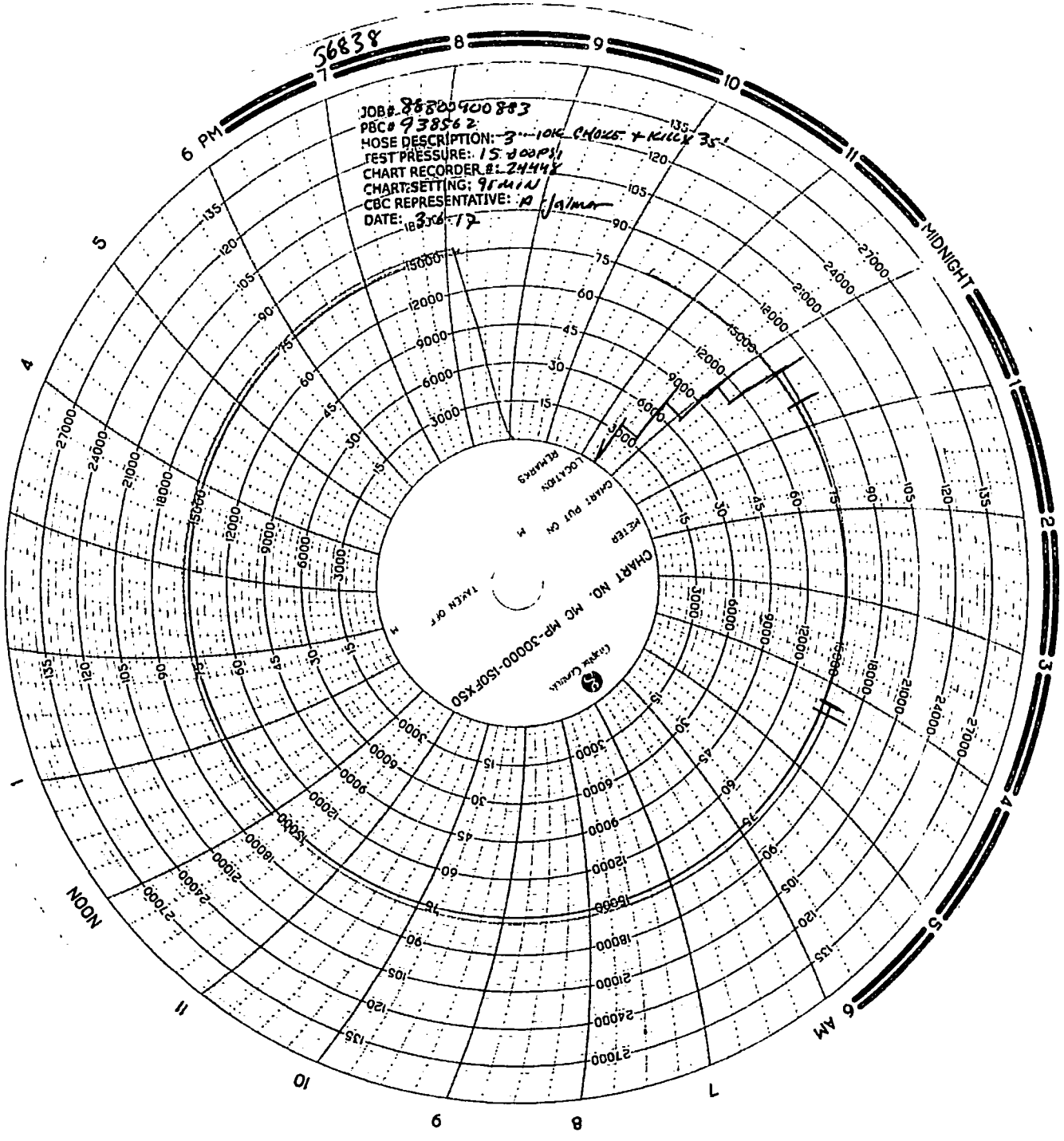
End A: 3.1/8" 5KPsi API Spec 6A Type 6BX Flange	End B: 3.1/8" 5Kpsi API Spec 6A Type 6BX Flange
• No damage	• No damage
Material: Carbon Steel	**Material:** Carbon Steel
Seal Face: BX155	**Seal Face:** BX155
Length Before Hydro Test: 35'	**Length After Hydro test:** 35'

Conclusion: Hose #54500 passed the external inspection with no notable damages to the hose armor. Internal borescope of the hose showed no damage to the liner. Hose #54500 passed the hydrostatic pressure test by holding a pressure of 15,000PSI for 60 minutes. **Hose #54500 is suitable for continued service.**

Recommendations: In general the hose should be inspected on a regular on-going basis. The frequency and degree of the inspection should as a minimum follow these guidelines:

Visual inspection: Every 3 to 6 months (or during installation/removal)
Annual: In-situ pressure test (in addition to the 3 to 6 monthly inspections)
Initial 5 years service: Major inspection
2nd Major inspection: Following subsequent 3 year life cycle
(Detailed description of test regime available upon request, QCP 206-1)

**NOTE: There are a number of critical elements in the hose that cannot be thoroughly checked through standard inspection techniques. Away from dissecting the hose body, the best way to evaluate the condition of the hose is through review of the operating conditions recorded during the hose service life, in particular maximums and peak conditions.


56838
JOB# 8880400883
PBC# 938562
HOSE DESCRIPTION: 3" 10K CHOKE + KILL 35'
TEST PRESSURE: 15,000PSI
CHART RECORDER #: 24442
CHART SETTING: 95MIN
CBC REPRESENTATIVE: A Palma
DATE: 3-6-17
CHART NO. MC MP-15000-1SOFXSO
CHART PUT ON
TAKEN OFF
LOCATION
REMARKS
6 PM
MIDNIGHT
6 AM
NOON

Hose Inspection Report

ContiTech Oil & Marine

Customer	Customer Reference #	CBC Reference #	CBC Inspector	Date of Inspection
H&P Drilling	740043386	COM938562	A. Jaimes	03/06/2017

Hose Manufacturer	Contitech Rubber Industrial

Hose Serial #	56838	**Date of Manufacture**	11/2010
Hose I.D.	3"	**Working Pressure**	10000PSI
Hose Type	Choke and Kill	**Test Pressure**	15000PSI
Manufacturing Standard	API 16C		

Connections

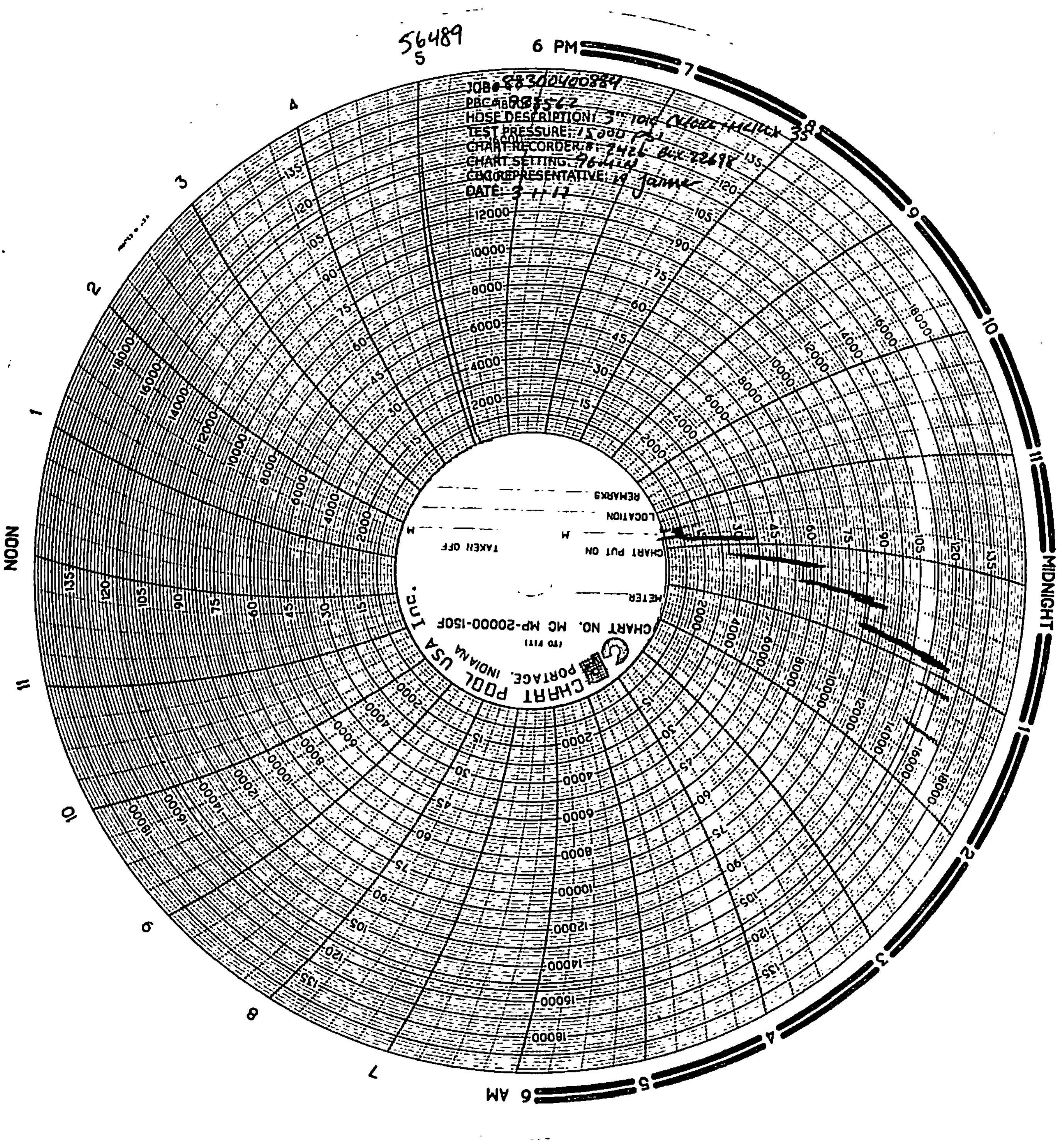
End A: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange	End B: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange
• No damage	• No damage
Material: Carbon Steel	**Material:** Carbon Steel
Seal Face: BX155	**Seal Face:** BX155
Length Before Hydro Test: 35'	**Length After Hydro test:** 35'

Conclusion: Hose #56838 passed the external inspection with no notable damage to the hose armor. Internal borescope of the hose showed no damage to the liner. Hose #56838 passed the hydrostatic pressure test by holding a pressure of 15,000PSI for 60 minutes. **Hose #56838 is suitable for continued service.**

Recommendations: In general the hose should be inspected on a regular on-going basis. The frequency and degree of the inspection should as a minimum follow these guidelines:

Visual Inspection: Every 3 to 6 months (or during installation/removal)
Annual: In-situ pressure test (in addition to the 3 to 6 monthly inspections)
Initial 5 years service: Major inspection
2nd Major inspection: Following subsequent 3 year life cycle
(Detailed description of test regime available upon request, QCP 206-1)

**NOTE: There are a number of critical elements in the hose that cannot be thoroughly checked through standard inspection techniques. Away from dissecting the hose body, the best way to evaluate the condition of the hose is through review of the operating conditions recorded during the hose service life, in particular maximums and peak conditions.


56489
6 PM
JOB#
PBC#
HOSE DESCRIPTION:
TEST PRESSURE: 15000 PSI
CHART RECORDER #:
CHART SETTING:
CBC REPRESENTATIVE:
DATE:
NOON
MIDNIGHT
6 AM
REMARKS
LOCATION
CHART PUT ON
TAKEN OFF
METER
CHART NO. MC MP-20000-150F
CHART POOL USA Inc.
PORTAGE, INDIANA

Hose Inspection Report

ContiTech Oil & Marine

Customer	Customer Reference #	CBC Reference #	CBC Inspector	Date of Inspection
H&P Drilling	740043386	COM938562	A. Jaimes	03/01/2017

Hose Manufacturer	Contitech Rubber Industrial

Hose Serial #	56489	**Date of Manufacture**	08/2010
Hose I.D.	3"	**Working Pressure**	10000PSI
Hose Type	Choke and Kill	**Test Pressure**	15000PSI
Manufacturing Standard	API 16C		

Connections

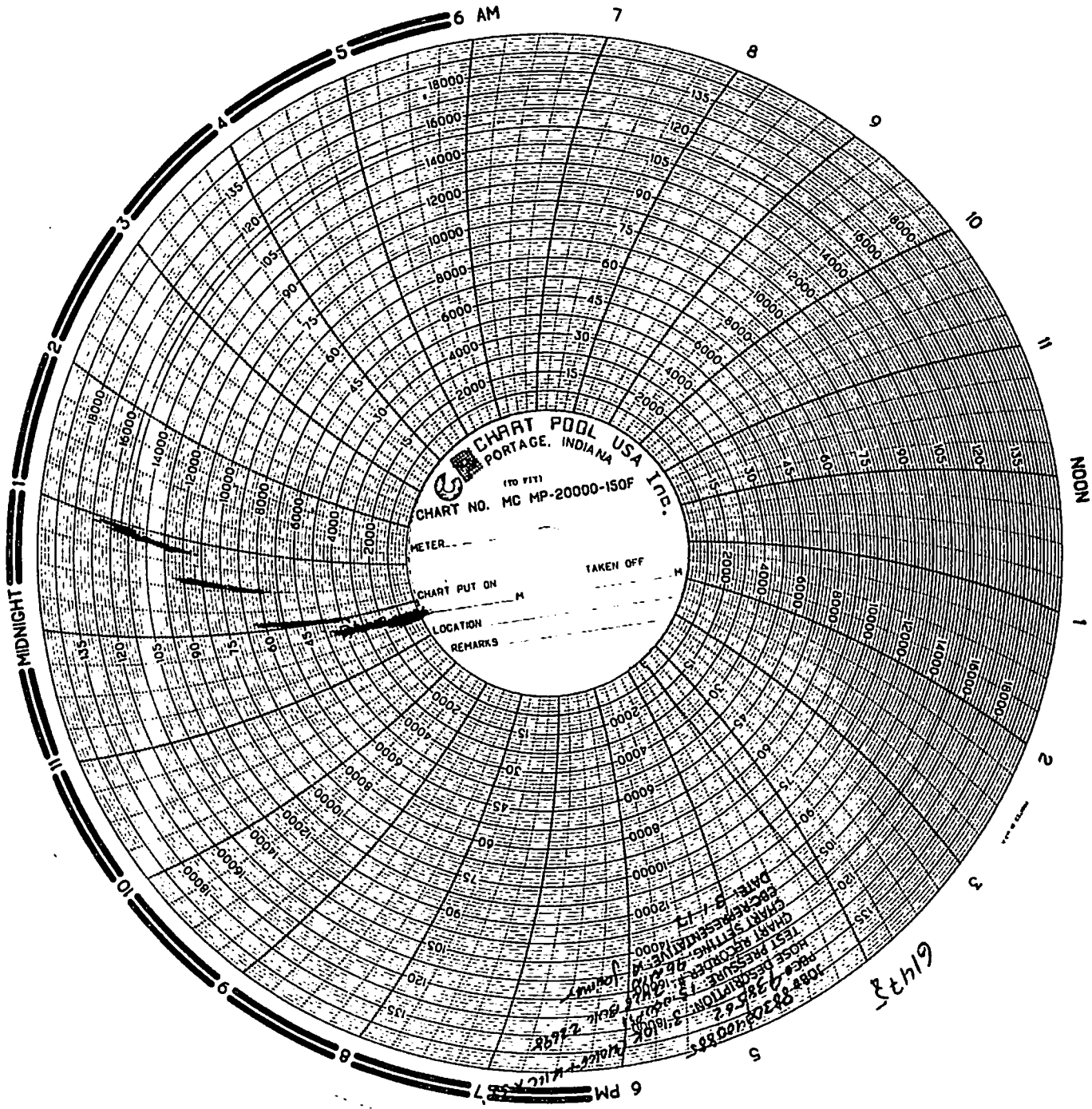
End A: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange	End B: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange
• No damage	• No damage
Material: Carbon Steel	**Material:** Carbon Steel
Seal Face: BX155	**Seal Face:** BX155
Length Before Hydro Test: 35'	**Length After Hydro test:** 35'

Conclusion: Hose #56489 passed the external inspection with no notable damage to the hose armor. Internal borescope of the hose showed no damage to the liner. Hose #56489 passed the hydrostatic pressure test by holding a pressure of 15,000PSI for 60 minutes. **Hose #56489 is suitable for continued service.**

Recommendations: In general the hose should be inspected on a regular on-going basis. The frequency and degree of the inspection should as a minimum follow these guidelines:

Visual inspection: Every 3 to 6 months (or during installation/removal)
Annual: In-situ pressure test (in addition to the 3 to 6 monthly inspections)
Initial 5 years service: Major inspection
2nd Major inspection: Following subsequent 3 year life cycle
(Detailed description of test regime available upon request, QCP 206-1)

**NOTE: There are a number of critical elements in the hose that cannot be thoroughly checked through standard inspection techniques. Away from dissecting the hose body, the best way to evaluate the condition of the hose is through review of the operating conditions recorded during the hose service life, in particular maximums and peak conditions.


6 AM
NOON
MIDNIGHT
6 PM
CHART POOL USA Inc.
PORTAGE, INDIANA
(TO FIT)
CHART NO. MC MP-20000-150F
METER
CHART PUT ON
TAKEN OFF
LOCATION
REMARKS

Hose Inspection Report **ContiTech Oil & Marine**

Customer	Customer Reference #	CBC Reference #	CBC Inspector	Date of Inspection
H&P Drilling	740043386	COM938562	A. Jaimes	03/01/2017

Hose Manufacturer	Contitech Rubber Industrial

Hose Serial #	61475	**Date of Manufacture**	01/2012
Hose I.D.	3"	**Working Pressure**	10000PSI
Hose Type	Choke and Kill	**Test Pressure**	15000PSI
Manufacturing Standard	API 16C		

Connections

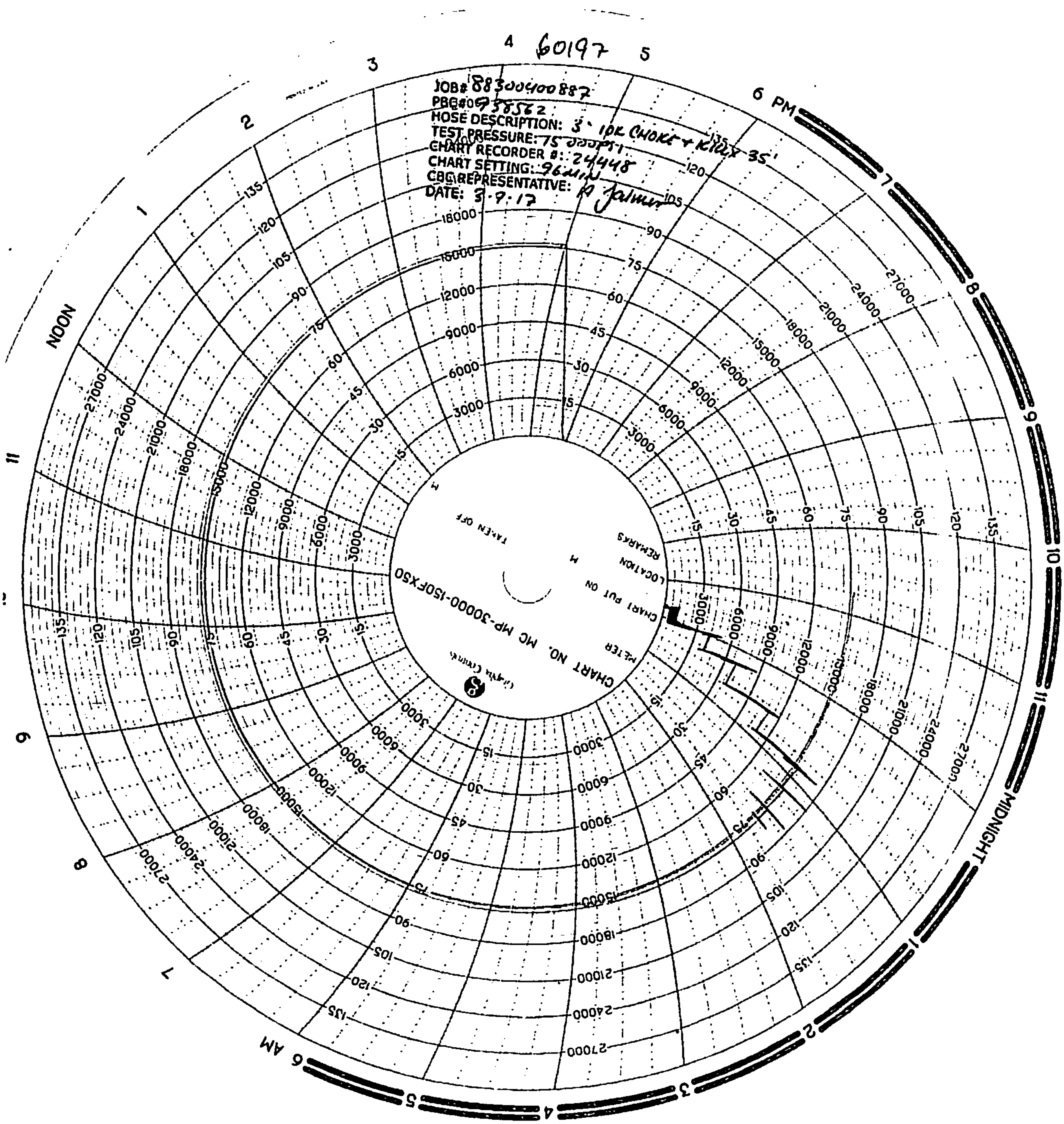
End A: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange	End B: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange
• No damage	• No damage
Material: Carbon Steel	**Material:** Carbon Steel
Seal Face: BX155	**Seal Face:** BX155
Length Before Hydro Test: 35'	**Length After Hydro test:** 35'

Conclusion: Hose #61475 passed the external inspection with no notable damage to the hose armor. Internal borescope of the hose showed no damage to the liner. Hose #61475 passed the hydrostatic pressure test by holding a pressure of 15,000PSI for 60 minutes. **Hose #61475 is suitable for continued service.**

Recommendations: In general the hose should be inspected on a regular on-going basis. The frequency and degree of the inspection should as a minimum follow these guidelines:

Visual Inspection: Every 3 to 6 months (or during installation/removal)
Annual: In-situ pressure test (in addition to the 3 to 6 monthly inspections)
Initial 5 years service: Major inspection
2nd Major inspection: Following subsequent 3 year life cycle
(Detailed description of test regime available upon request, QCP 206-1)

**NOTE: There are a number of critical elements in the hose that cannot be thoroughly checked through standard inspection techniques. Away from dissecting the hose body, the best way to evaluate the condition of the hose is through review of the operating conditions recorded during the hose service life, in particular maximums and peak conditions.


60197
JOB# 883004400887
PBG# 0938562
HOSE DESCRIPTION: 3" 10K CHOKE + KILL X 35'
TEST PRESSURE: 7500 PSI
CHART RECORDER #: 24448
CHART SETTING: 96 MIN
CBG REPRESENTATIVE: A. Jaimes
DATE: 3.7.17
CHART NO. MC MP-30000-150FX50
CHART PUT ON
LOCATION
REMARKS
TAKEN OFF
METER
NOON
MIDNIGHT
6 PM
6 AM

Hose Inspection Report

ContiTech Oil & Marine

Customer	Customer Reference #	CBC Reference #	CBC Inspector	Date of Inspection
H&P Drilling	740043386	COM938562	A. Jaimes	03/07/2017

Hose Manufacturer	Contitech Rubber Industrial

Hose Serial #	60197	**Date of Manufacture**	01/2011
Hose I.D.	3"	**Working Pressure**	10000PSI
Hose Type	Choke and Kill	**Test Pressure**	15000PSI
Manufacturing Standard	API 16C		

Connections

End A: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange	End B: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange
• No damage	• No damage
Material: Carbon Steel	**Material:** Carbon Steel
Seal Face: BX155	**Seal Face:** BX155
Length Before Hydro Test: 35'	**Length After Hydro test:** 35'

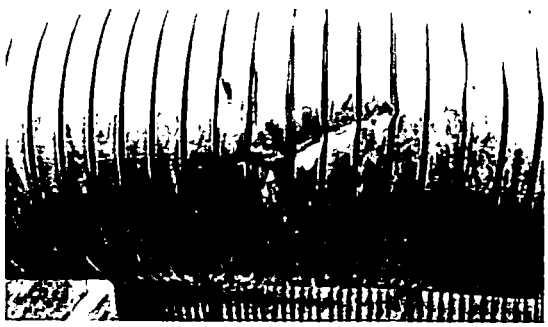
Conclusion: Hose #60197 passed the external inspection with minor damage to the hose armor. Internal borescope showed no damage to the liner. Hose #60197 passed the hydrostatic pressure test by holding a pressure of 15,000PSI for 60 minutes. **Hose #60197 is suitable for continued service.**

Recommendations: In general the hose should be inspected on a regular on-going basis. The frequency and degree of the inspection should as a minimum follow these guidelines:

Visual Inspection: Every 3 to 6 months (or during installation/removal)
Annual: In-situ pressure test (in addition to the 3 to 6 monthly inspections)
Initial 5 years service: Major inspection
2nd Major inspection: Following subsequent 3 year life cycle
(Detailed description of test regime available upon request, QCP 206-1)

**NOTE: There are a number of critical elements in the hose that cannot be thoroughly checked through standard inspection techniques. Away from dissecting the hose body, the best way to evaluate the condition of the hose is through review of the operating conditions recorded during the hose service life, in particular maximums and peak conditions.

External Damage Post – Hydro test	
Approx. Distance from End A	6'
Width	1"
Length	1"
Depth	On armor
Notes	Crack on armor



Customer	Customer Reference #	CBC Reference #	CBC Inspector	Date of Inspection
H&P Drilling	740043386	COM938562	A. Jaimes	03/07/2017

External Damage Post – Hydro test	
Approx. Distance from End A	20'
Width	1"
Length	1"
Depth	On armor
Notes	Crack on armor

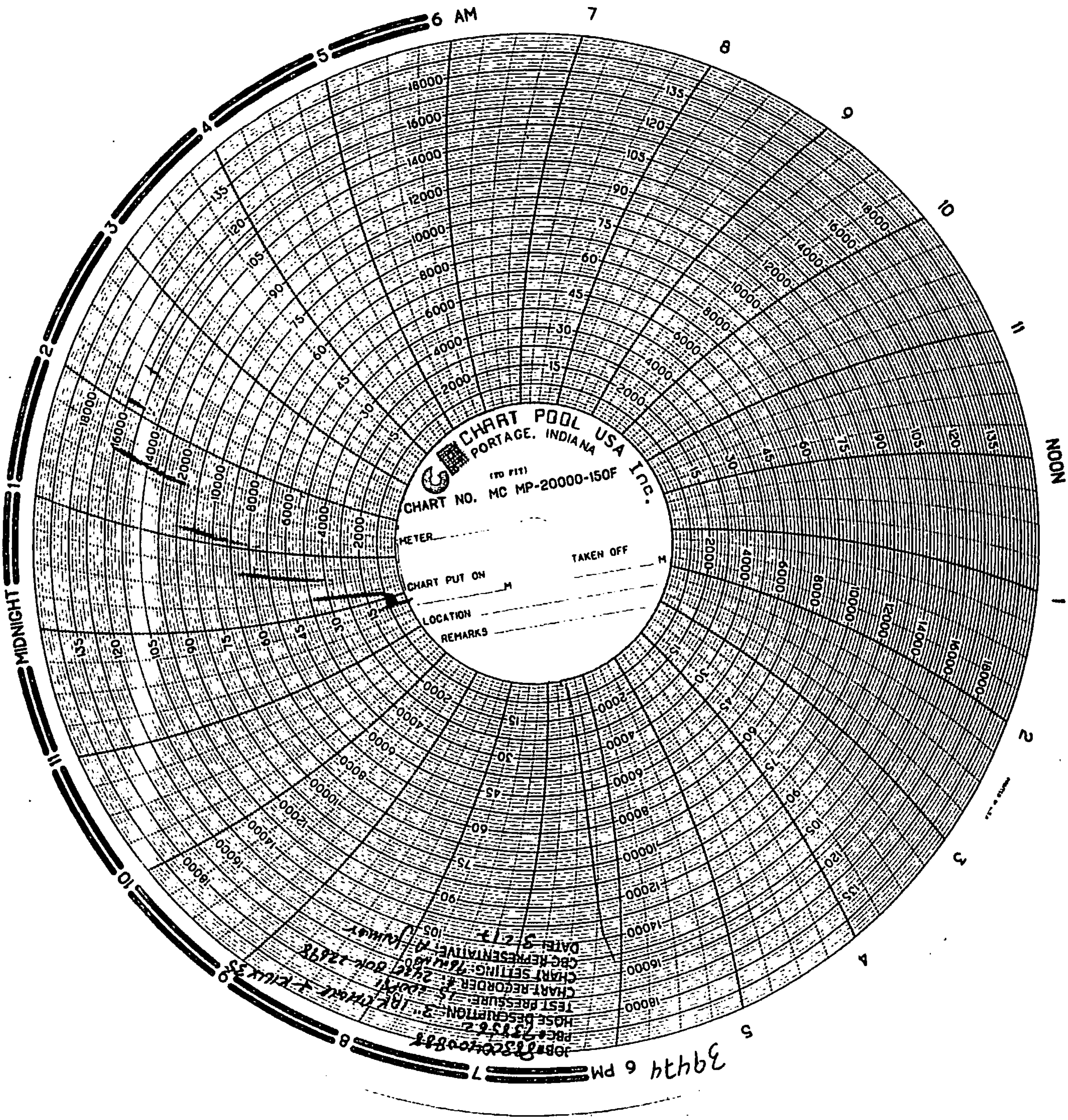


CHART POOL USA Inc.
PORTAGE, INDIANA
(TO FIT)
CHART NO. MC MP-20000-150F
METER
CHART PUT ON
M
TAKEN OFF
M
LOCATION
REMARKS
6 AM
7
8
9
10
11
NOON
1
2
3
4
5
6 PM
7
8
9
10
11
MIDNIGHT
1
2
3
4
5
JOB#
PBC#
HOSE DESCRIPTION:
TEST PRESSURE:
CHART RECORDER #:
CHART SETTING:
CBC REPRESENTATIVE:
DATE:

Hose Inspection Report

ContiTech Oil & Marine

Customer	Customer Reference #	CBC Reference #	CBC Inspector	Date of Inspection
H&P Drilling	740043386	COM938562	A. Jaimes	03/02/2017

Hose Manufacturer	Contitech Rubber Industrial

Hose Serial #	39474	**Date of Manufacture**	08/2003
Hose I.D.	3"	**Working Pressure**	10000PSI
Hose Type	Choke and Kill	**Test Pressure**	15000PSI
Manufacturing Standard	API 16C		

Connections

End A: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange	**End B:** 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange
• No damage	• No damage
Material: Carbon Steel	**Material:** Carbon Steel
Seal Face: BX155	**Seal Face:** BX155
Length Before Hydro Test: 35'	**Length After Hydro test:** 35'

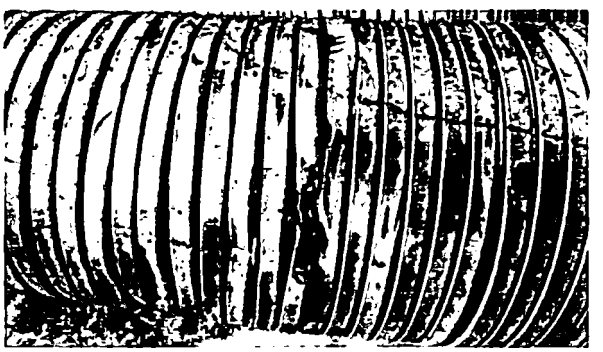
Conclusion: Hose #39474 passed the external inspection with minor damage to the hose armor. Internal borescope showed no damage to the liner. Hose #39474 passed the hydrostatic pressure test by holding a pressure of 15,000PSI for 60 minutes. **Hose #39474 is suitable for continued service.**

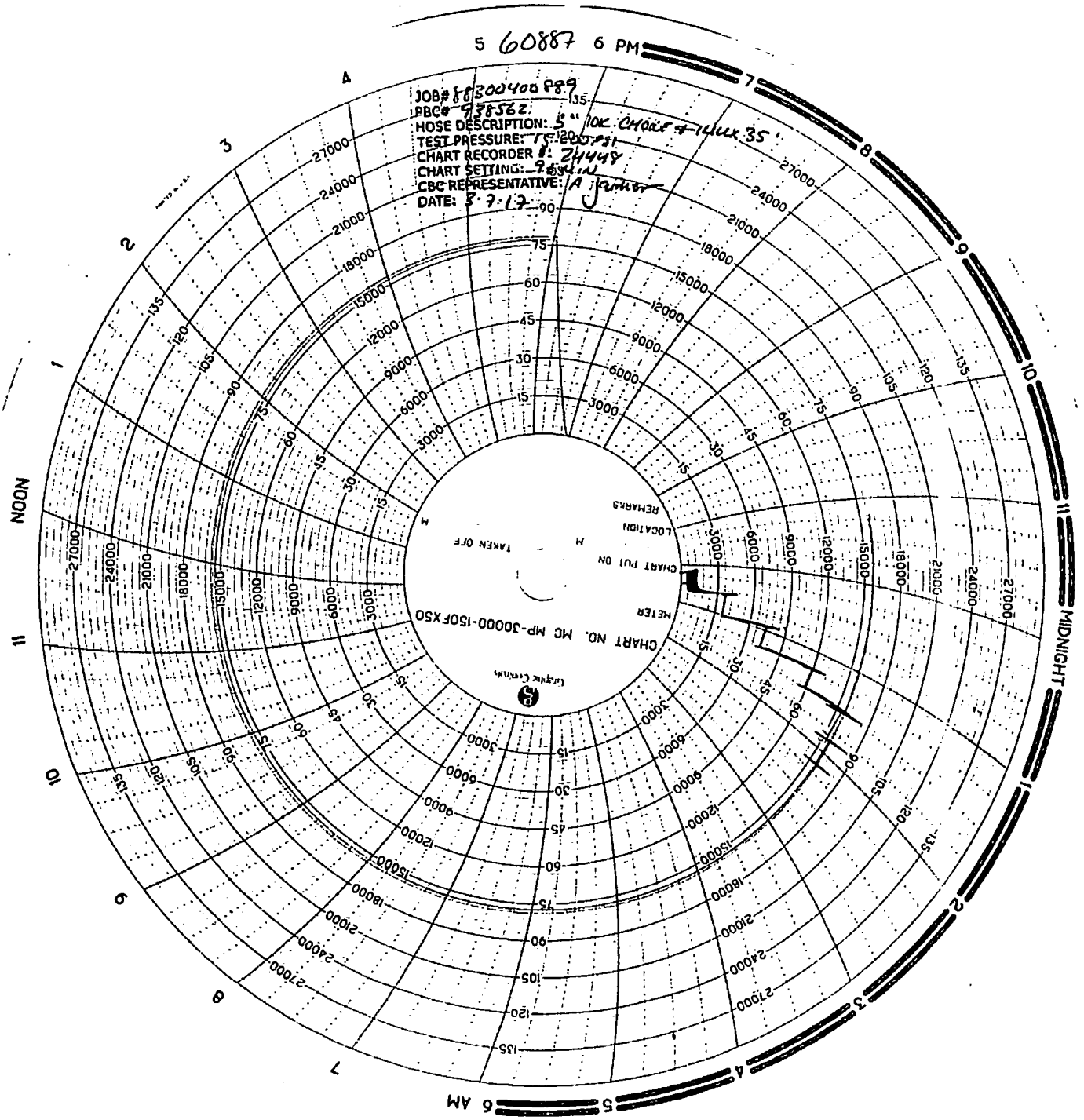
Recommendations: In general the hose should be inspected on a regular on-going basis. The frequency and degree of the inspection should as a minimum follow these guidelines:

Visual inspection: Every 3 to 6 months (or during installation/removal)
Annual: In-situ pressure test (in addition to the 3 to 6 monthly inspections)
Initial 5 years service: Major inspection
2nd Major inspection: Following subsequent 3 year life cycle
(Detailed description of test regime available upon request, QCP 206-1)

**NOTE: There are a number of critical elements in the hose that cannot be thoroughly checked through standard inspection techniques. Away from dissecting the hose body, the best way to evaluate the condition of the hose is through review of the operating conditions recorded during the hose service life, in particular maximums and peak conditions.

External Damage Post – Hydro test	
Approx. Distance from End A	15'
Width	1"
Length	1"
Depth	To hose body
Notes	Cracked armor




5 60887 6 PM
JOB# 88300400 P89
PBC# 938562
HOSE DESCRIPTION: 5" 10K CHOKE & KILL X 35'
TEST PRESSURE: 15,000 PSI
CHART RECORDER #: ZH448
CHART SETTING: 9 AM
CBC REPRESENTATIVE: A Jamison
DATE: 3-7-17
NOON
MIDNIGHT
6 AM
CHART NO. MC MP-30000-150FX50
METER
CHART PUT ON
LOCATION
REMARKS
TAKEN OFF

Hose Inspection Report

ContiTech Oil & Marine

Customer	Customer Reference #	CBC Reference #	CBC Inspector	Date of Inspection
H&P Drilling	740043386	COM938562	A. Jaimes	03/07/2017

Hose Manufacturer	Contitech Rubber Industrial

Hose Serial #	60887	**Date of Manufacture**	10/2011
Hose I.D.	3"	**Working Pressure**	10000PSI
Hose Type	Choke and Kill	**Test Pressure**	15000PSI
Manufacturing Standard	API 16C		

Connections

End A: 4.1/16" 5Kpsi API Spec 6A Type 6BX Flange	**End B:** 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange
• No damage	• No damage
Material: Carbon Steel	**Material:** Carbon Steel
Seal Face: BX155	**Seal Face:** BX155
Length Before Hydro Test: 35'	**Length After Hydro test:** 35'

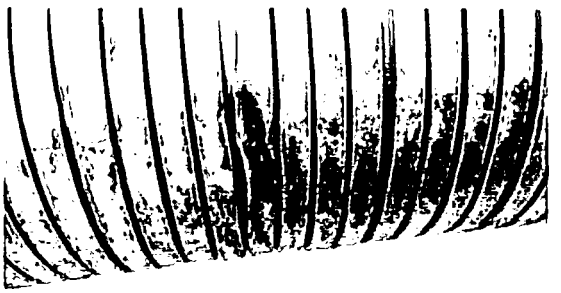
Conclusion: Hose #60887 passed the external inspection with minimal damage to the hose armor. Internal borescope showed no damage to the liner. Hose #60887 passed the hydrostatic pressure test by holding a pressure of 15,000PSI for 60 minutes. **Hose #60887 is suitable for continued service.**

Recommendations: In general the hose should be inspected on a regular on-going basis. The frequency and degree of the inspection should as a minimum follow these guidelines:

Visual inspection: Every 3 to 6 months (or during installation/removal)
Annual: In-situ pressure test (in addition to the 3 to 6 monthly inspections)
Initial 5 years service: Major inspection
2nd Major inspection: Following subsequent 3 year life cycle
(Detailed description of test regime available upon request, QCP 206-1)

**NOTE: There are a number of critical elements in the hose that cannot be thoroughly checked through standard inspection techniques. Away from dissecting the hose body, the best way to evaluate the condition of the hose is through review of the operating conditions recorded during the hose service life, in particular maximums and peak conditions.

External Damage Post – Hydro test	
Approx. Distance from End A	10'
Width	1"
Length	1"
Depth	To hose body
Notes	Crack on armor

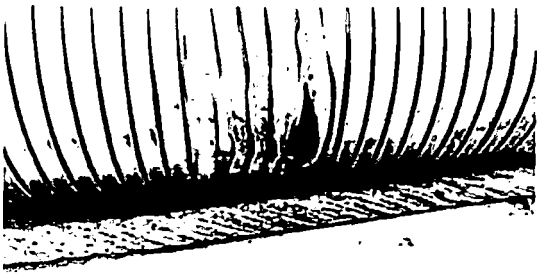


Hose Inspection Report

ContiTech Oil & Marine

Customer	Customer Reference #	CBC Reference #	CBC Inspector	Date of Inspection
H&P Drilling	740043386	COM938562	A. Jaimes	03/07/2017

External Damage Post – Hydro test	
Approx. Distance from End A	4'
Width	4"
Length	4"
Depth	To hose body
Notes	Rubber exposed



5.5", 20#, P-110, TXP connection (modified buttress connection that provides a torque rating of nearly 24000ft-lbs)

TXP® BTC

SHARE EXPORT DATA PRINT

Outside Diameter	5.500 in.	Min. Wall Thickness	87 5%
Wall Thickness	0.361 in.	Drift	API Standard
Grade	P110	Type	Casing
		Connection OD Option	REGULAR

Clear Filters
Compare
Request Info

CONNECTION INFORMATION
- Blanking Dimensions
- Connection's Page
- Brochure
- Datasheet Manual

PIPE BODY DATA

GEOMETRY

Nominal OD	5.500 in.	Nominal Weight	20 lbs/ft	Drift	4.653 in.
Nominal ID	4.778 in.	Wall Thickness	0.361 in.	Plain End Weight	19.83 lbs/ft
OD Tolerance	API				

PERFORMANCE

Body Yield Strength	641 x1000 lbs	Internal Yield	12640 psi	SMYS	110000 psi
Collapse	11100 psi				

CONNECTION DATA

GEOMETRY

Connection OD	6.100 in.	Coupling Length	9.450 in.	Connection ID	4.766 in.
Make-up Loss	4.204 in.	Threads per in	5	Connection OD Option	REGULAR

PERFORMANCE

Tension Efficiency	100.0 %	Joint Yield Strength	641.000 x1000 lbs	Internal Pressure Capacity [1]	12640.000 psi
Compression Efficiency	100 %	Compression Strength	641.000 x1000 lbs	Max. Allowable Bending	92 °/100 ft
External Pressure Capacity	11100.000 psi				

MAKE-UP TORQUES

Minimum	11270 ft-lbs	Optimum	12520 ft-lbs	Maximum	13770 ft-lbs

OPERATION LIMIT TORQUES

Operating Torque	21500 ft-lbs	Yield Torque	23900 ft-lbs

Wedge 521®

Printed on: 05/22/2018

Outside Diameter	5.000 in.	**Min. Wall Thickness**	87.5%	(*) Grade P110-IC	
Wall Thickness	0.362 in.	**Connection OD Option**	REGULAR	COUPLING	PIPE BODY
Grade	P110-IC*	**Drift**	API Standard	Body White 1st Band - 2nd Band - 3rd Band -	1st Band White 2nd Band Pale Green 3rd Band - 4th Band -
		Type	Casing		

GEOMETRY

Nominal OD	5.000 in.	Nominal Weight	18.00 lbs/ft	Drift	4.151 in.
Nominal ID	4.276 in.	Wall Thickness	0.362 in.	Plain End Weight	17.95 lbs/ft
OD Tolerance	API				

PERFORMANCE

Body Yield Strength	580 x1000 lbs	Internal Yield	13940 psi	SMYS	110000 psi
Collapse	14840 psi				

GEOMETRY

Connection OD	5.359 in.	Connection ID	4.226 in.	Make-up Loss	3.620 in.
Threads per in	3.36	Connection OD Option	REGULAR		

PERFORMANCE

Tension Efficiency	73.8 %	Joint Yield Strength	428.040 x1000 lbs	Internal Pressure Capacity	13940.000 psi
Compression Efficiency	88.7 %	Compression Strength	514.460 x1000 lbs	Max. Allowable Bending	74.5 °/100 ft
External Pressure Capacity	14840.000 psi				

MAKE-UP TORQUES

Minimum	6100 ft-lbs	Optimum	7300 ft-lbs	Maximum	10700 ft-lbs

OPERATION LIMIT TORQUES

Operating Torque	17300 ft-lbs	Yield Torque	26000 ft-lbs

Notes

This connection is fully interchangeable with:

Wedge 521® - 5 in. - 13 / 15 lbs/ft

Connections with Dopeless® Technology are fully compatible with the same connection in its Standard version

For further information on concepts indicated in this datasheet, download the Datasheet Manual from www.tenaris.com

Casing Design Assumptions

- Gas gravity 0.7
- Pore pressure gradient .468 psi/ft above the Wolfcamp, .676 psi/ft Wolfcamp and below
- .676 psi/ft fracture gradient above the Wolfcamp, .832 psi/ft Wolfcamp and below.
- 60°F average surface temperature and 1.5°/100ft temperature gradient
- Cementing loads based on slurries listed in Cement table, and post cement static loading
- Strings landed at neutral weight
- Gas kicks assumed at each casing shoe
- External pressure calculated with fluid gradients and pore pressure
- Production string load tested with completion fluid density and rate
- Tubing leak tested in production scenario

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TAP ROCK

Hydrogen Sulfide Drilling

Operations Plan

Tap Rock Resources

1 H2S safety instructions to the following:

- Characteristics of H2S
- Physical effects and hazards
- Principal and operation of H2S detectors, warning system and briefing areas
- Evacuation procedures, routes and first aid
- Proper use of safety equipment & life support systems
- Essential personnel meeting medical evaluation criteria will receive additional training on the proper use of 30min pressure demand air packs

2 H2S Detection and Alarm Systems:

- H2S sensor/detectors to be located on the drilling rig floor, in the base of the sub structure / cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may be placed as deemed necessary
- An audio alarm system will be installed on the derrick floor and in the doghouse

3 Windsocks and / Wind Streamers:

- Windsocks at mud pit area should be high enough to be visible
- Windsock on the rig floor and / top of doghouse should be high enough to be visible

4 Condition Flags and Signs:

- Warning sign on access road to location
- Flags to be displayed on sign at entrance to location
    - Green Flag – Normal Safe Operation Condition
    - Yellow Flag – Potential Pressure and Danger
    - Red Flag – Danger (H2S present in dangerous concentrations) Only H2S trained personnel admitted on location

5 Well Control Equipment:

- See Drilling Operations Plan Schematics

6 Communication:

- While working under masks chalkboards will be used for communications
- Hand signals will be used where chalk board is inappropriate
- Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.

7 Drilling Stem Testing:

- No DST cores are planned at this time

8 Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubulars good and other mechanical equipment

9 If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary

11 Emergency Contacts

Emergency Contacts		
Carlsbad Police Department	575.887.7551	911
Carlsbad Medical Center	575.887.4100	911
Eddy County Fire Service	575.628.5450	911
Eddy County Sherriff	575.887.7551	911
Lea County Fire Service	575.391.2983	911
Lea County Sherriff	575.396.3611	911
Jal Police Department	575.395.2121	911
Jal Fire Department	575.395.2221	911
Tap Rock - Doug Sproul - Drilling	303-653-3518	

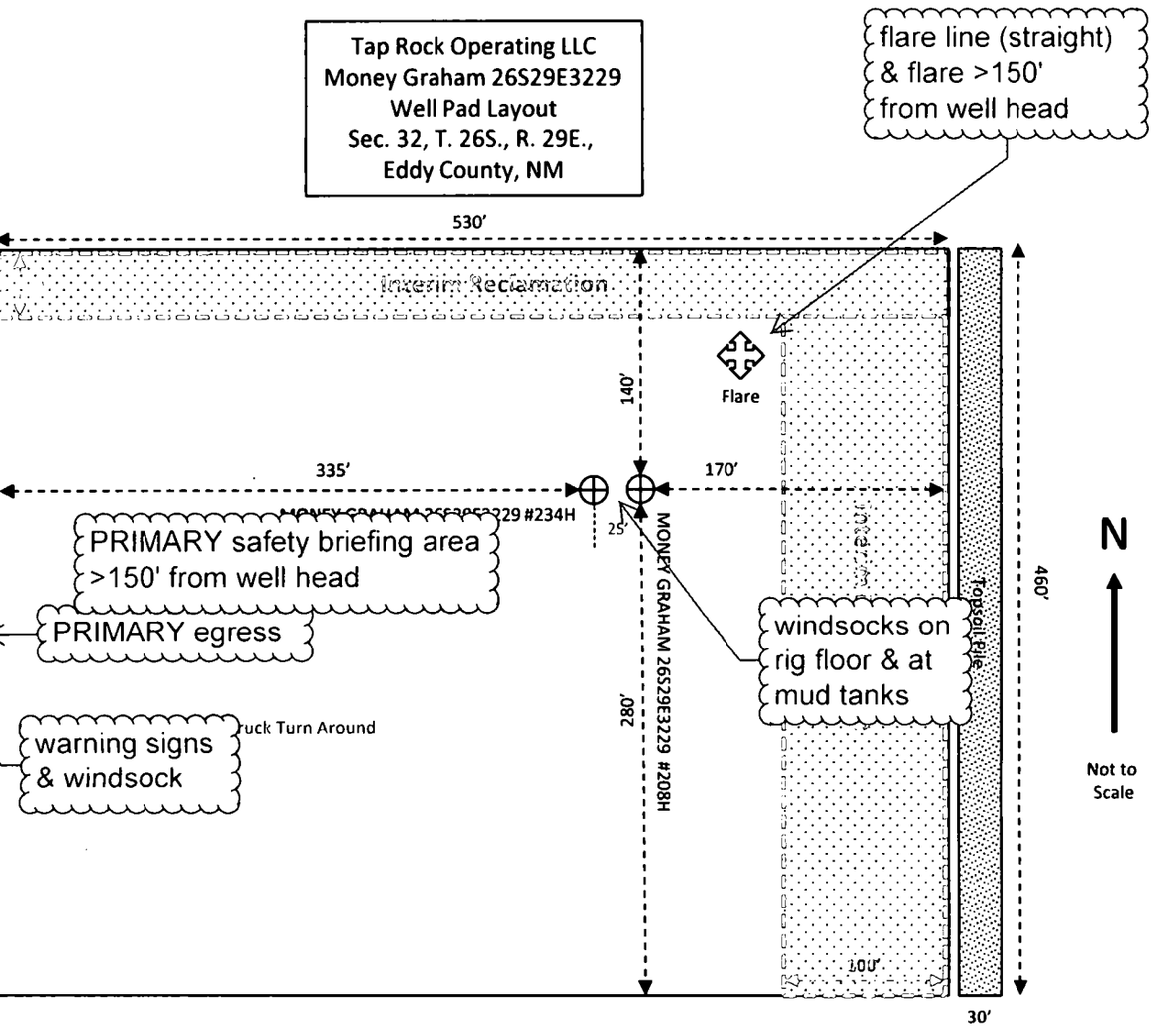


FIGURE 1

Production Layout & Interim Reclamation Diagram

Tap Rock Operating, LLC

Money Grahm East Pad
#124H, #208H, & #234H
H2S Contingency Plan:
Radius Map

Section 32, Township 26S, Range 29E
Eddy County, New Mexico

Surface Hole Location

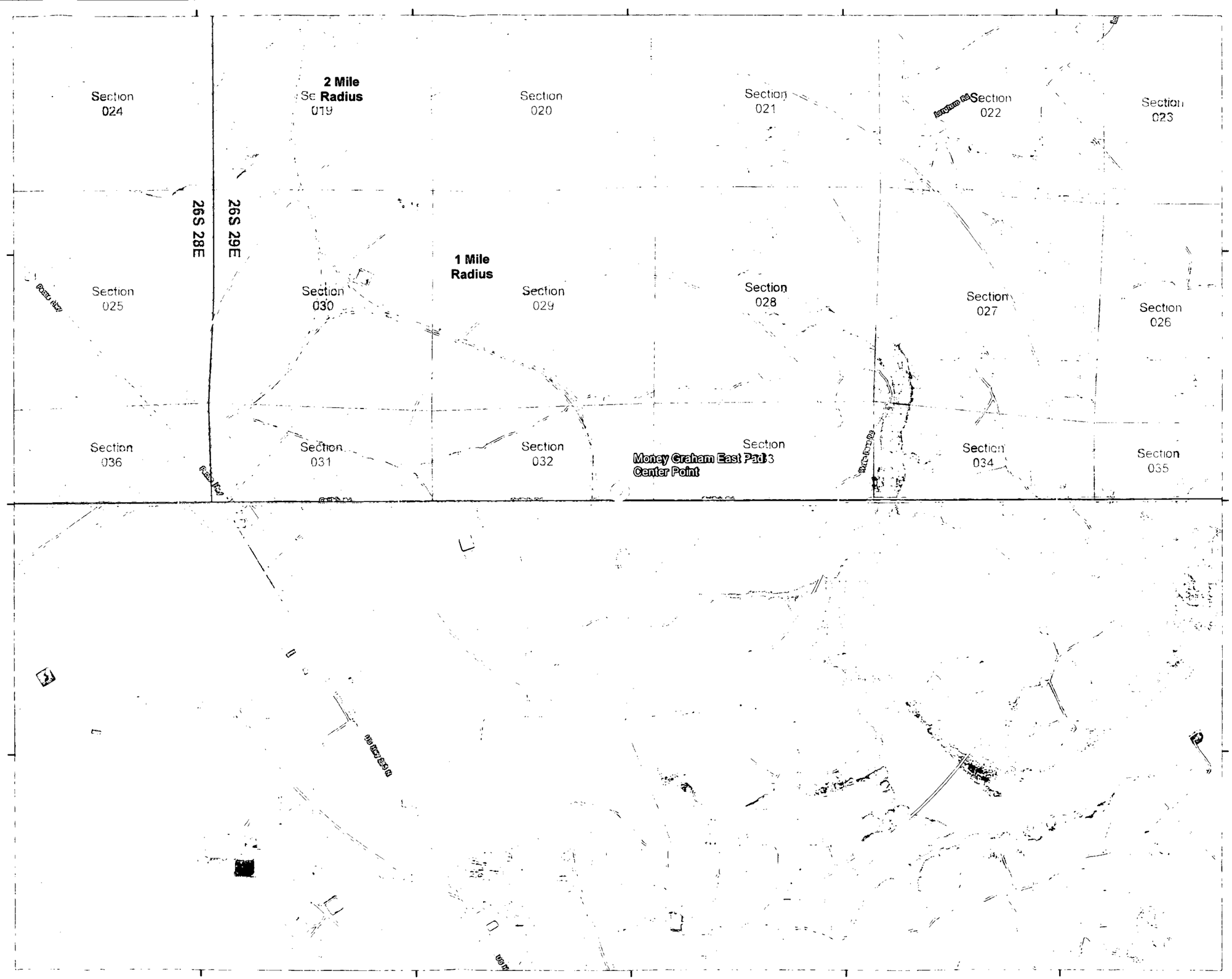
1:27,000

0 0.25 0.5 1

Miles

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

Prepared by Permits West, Inc., July 26, 2018
for Tap Rock Operating, LLC



Company: Tap Rock Operating
Site: Money Graham 26S29E3229
Well: Money Graham 26S29E3229 208H
Project: Eddy County, New Mexico (NAD 83)
Rig: H&P 422

MS Directional

Azimuths to Grid North
True North: -0.18°
Magnetic North: 6.93°

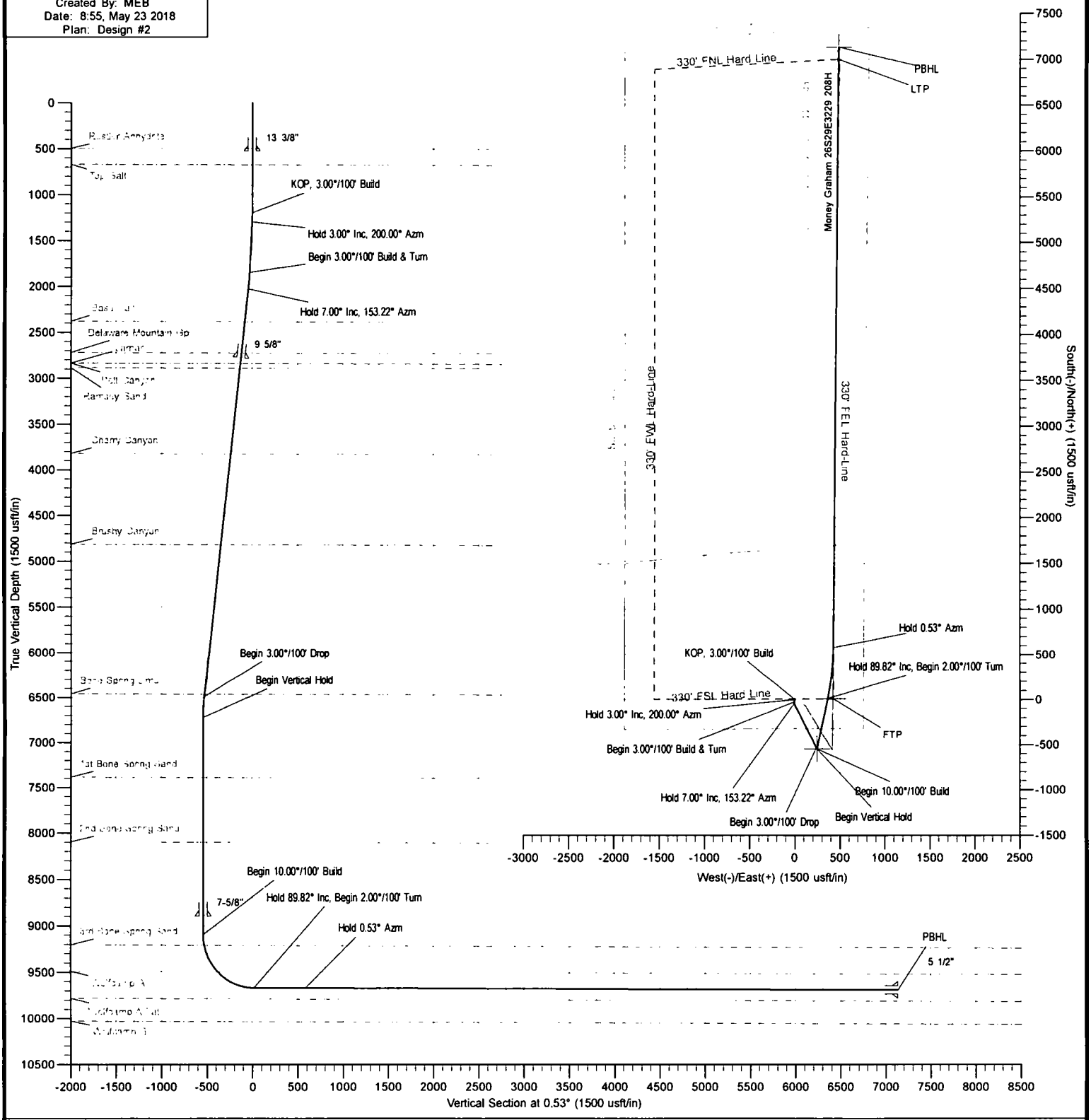
Magnetic Field
Strength: 47693.8snT
Dip Angle: 59.71°
Date: 7/1/2018
Model: BGGM2018

US State Plane 1983
New Mexico Eastern Zone

Created By: MEB
Date: 8:55, May 23 2018
Plan: Design #2

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	KOP, 3.00°/100' Build
1300.00	3.00	200.00	1299.95	-2.46	-0.90	-2.47	2.62	Hold 3.00° Inc, 200.00° Azm
1850.80	3.00	200.00	1850.00	-29.55	-10.75	-29.65	31.44	Begin 3.00°/100' Build & Turn
2030.96	7.00	153.22	2029.50	-43.79	-7.42	-43.86	46.54	Hold 7.00° Inc, 153.22° Azm
6527.78	7.00	153.22	6492.80	-533.05	239.48	-530.81	594.56	Begin 3.00°/100' Drop
6761.11	0.00	0.00	6725.55	-545.76	245.89	-543.46	608.80	Begin Vertical Hold
9130.11	0.00	0.00	9094.55	-545.76	245.89	-543.46	608.80	Begin 10.00°/100' Build
10028.26	89.82	12.00	9667.50	12.87	364.63	16.24	1179.91	Hold 89.82° Inc, Begin 2.00°/100' Turn
10601.74	89.82	0.53	9669.36	581.97	427.11	585.89	1753.38	Hold 0.53° Azm
17150.12	89.82	0.53	9690.50	7130.04	487.74	7134.25	8301.73	PBHL



Company: Tap Rock Operating
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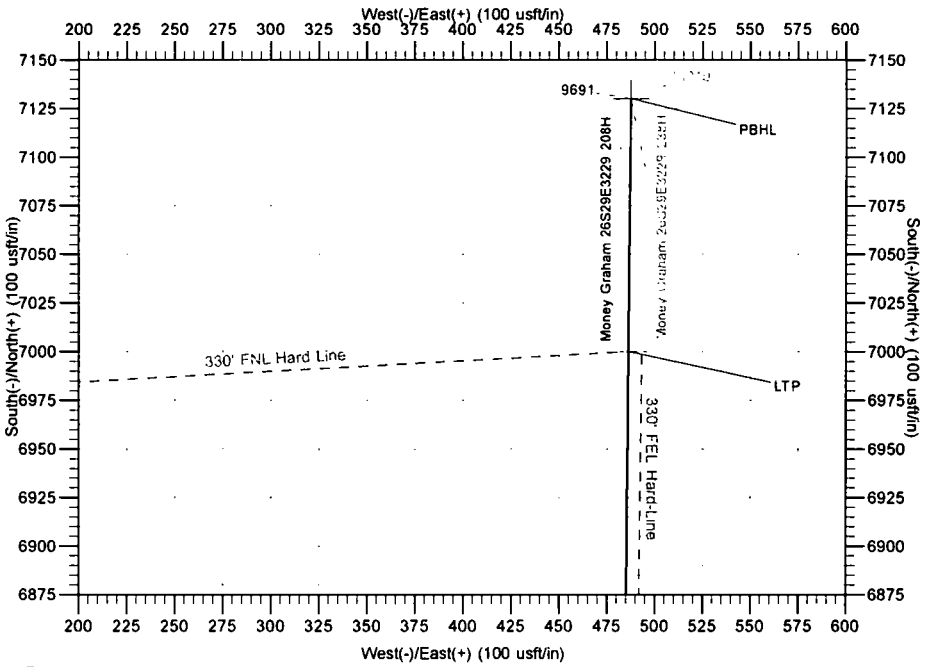
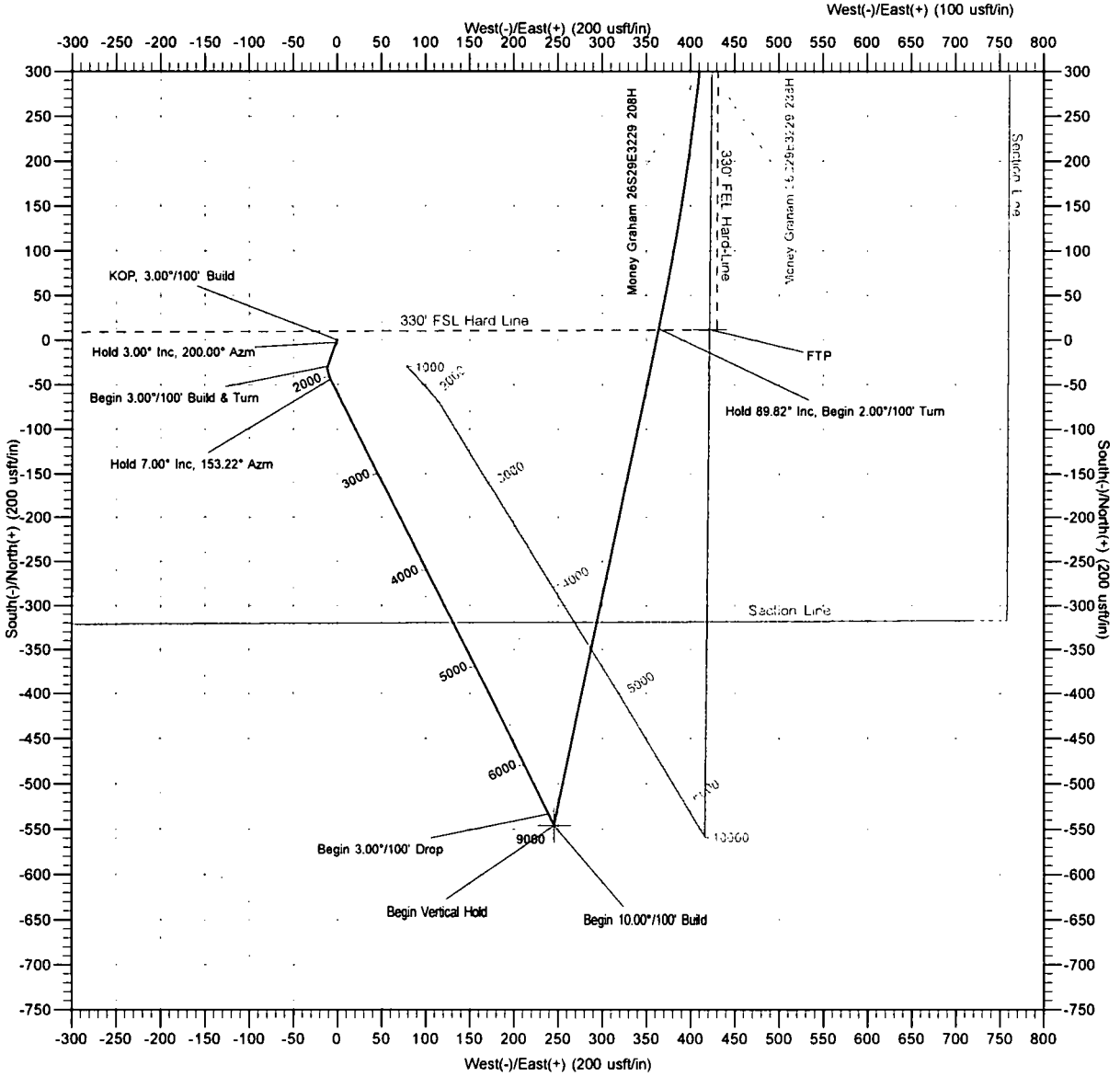
MS Directional





Tap Rock Operating

Eddy County, New Mexico (NAD 83)
Money Graham 26S29E3229
Money Graham 26S29E3229 208H

Wellbore #1

Plan: Design #2

Standard Planning Report

23 May, 2018

MS Directional

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Company:	Tap Rock Operating	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Project:	Eddy County, New Mexico (NAD 83)	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site:	Money Graham 26S29E3229	**North Reference:**	Grid
Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Project	Eddy County, New Mexico (NAD 83)		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Well	Money Graham 26S29E3229 208H				
Well Position	**+N/-S**	-0.24 usft	**Northing:**	364,259.31 usft	**Latitude:** 32° 0' 3.574 N
	+E/-W	-79.89 usft	**Easting:**	644,465.79 usft	**Longitude:** 104° 0' 2.325 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:** 2,866.00 usft

Wellbore Wellbore #1

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	BGGM2018	7/1/2018	7.11	59.71	47,694

Design Design #2

Audit Notes:

Version:	**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.00	0.00	0.00	0.53

Plan Survey Tool Program **Date** 5/23/2018

	Depth From (usft)	**Depth To (usft)**	**Survey (Wellbore)**	**Tool Name**	**Remarks**
1	0.00	17,150.12	Design #2 (Wellbore #1)	MWD	
				OWSG MWD - Standard	

Plan Sections

Measured Depth (usft)	**Inclination (°)**	**Azimuth (°)**	**Vertical Depth (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Dogleg Rate (°/100usft)**	**Build Rate (°/100usft)**	**Turn Rate (°/100usft)**	**TFO (°)**	**Target**
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.00	3.00	200.00	1,299.95	-2.46	-0.90	3.00	3.00	0.00	200.00	
1,850.80	3.00	200.00	1,850.00	-29.55	-10.75	0.00	0.00	0.00	0.00	
2,030.96	7.00	153.22	2,029.50	-43.79	-7.42	3.00	2.22	-25.96	-70.53	
6,527.78	7.00	153.22	6,492.80	-533.05	239.48	0.00	0.00	0.00	0.00	
6,761.11	0.00	0.00	6,725.55	-545.76	245.89	3.00	-3.00	0.00	180.00	
9,130.11	0.00	0.00	9,094.55	-545.76	245.89	0.00	0.00	0.00	0.00	Vert v2 - Money Gr
10,028.26	89.82	12.00	9,667.51	12.87	364.63	10.00	10.00	0.00	12.00	
10,601.74	89.82	0.53	9,669.36	581.97	427.11	2.00	0.00	-2.00	-90.02	
17,150.12	89.82	0.53	9,690.50	7,130.04	487.74	0.00	0.00	0.00	0.00	PBHL v2 - Money C

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
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Site:	Money Graham 26S29E3229	**North Reference:**	Grid
Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
502.50	0.00	0.00	502.50	0.00	0.00	0.00	0.00	0.00	0.00
Rustler Anhydrite									
527.50	0.00	0.00	527.50	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8"									
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
677.50	0.00	0.00	677.50	0.00	0.00	0.00	0.00	0.00	0.00
Top Salt									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 3.00°/100' Build									
1,300.00	3.00	200.00	1,299.95	-2.46	-0.90	-2.47	3.00	3.00	0.00
Hold 3.00° Inc, 200.00° Azm									
1,400.00	3.00	200.00	1,399.82	-7.38	-2.69	-7.40	0.00	0.00	0.00
1,500.00	3.00	200.00	1,499.68	-12.30	-4.48	-12.34	0.00	0.00	0.00
1,600.00	3.00	200.00	1,599.54	-17.21	-6.27	-17.27	0.00	0.00	0.00
1,700.00	3.00	200.00	1,699.41	-22.13	-8.06	-22.20	0.00	0.00	0.00
1,800.00	3.00	200.00	1,799.27	-27.05	-9.85	-27.14	0.00	0.00	0.00
1,850.80	3.00	200.00	1,850.00	-29.55	-10.75	-29.65	0.00	0.00	0.00
Begin 3.00°/100' Build & Turn									
1,900.00	3.76	178.26	1,899.12	-32.37	-11.15	-32.47	3.00	1.54	-44.19
2,000.00	6.16	156.73	1,998.74	-40.58	-8.93	-40.66	3.00	2.40	-21.53
2,030.96	7.00	153.22	2,029.50	-43.79	-7.42	-43.86	3.00	2.71	-11.32
Hold 7.00° Inc, 153.22° Azm									
2,100.00	7.00	153.22	2,098.02	-51.30	-3.63	-51.33	0.00	0.00	0.00
2,200.00	7.00	153.22	2,197.28	-62.18	1.86	-62.16	0.00	0.00	0.00
2,300.00	7.00	153.22	2,296.53	-73.06	7.35	-72.99	0.00	0.00	0.00
2,391.36	7.00	153.22	2,387.21	-83.00	12.37	-82.88	0.00	0.00	0.00
Base Salt									
2,400.00	7.00	153.22	2,395.79	-83.94	12.84	-83.82	0.00	0.00	0.00
2,500.00	7.00	153.22	2,495.04	-94.82	18.33	-94.65	0.00	0.00	0.00
2,600.00	7.00	153.22	2,594.30	-105.70	23.82	-105.48	0.00	0.00	0.00
2,700.00	7.00	153.22	2,693.55	-116.58	29.31	-116.31	0.00	0.00	0.00
2,733.78	7.00	153.22	2,727.08	-120.26	31.17	-119.96	0.00	0.00	0.00
Delaware Mountain Gp									
2,783.78	7.00	153.22	2,776.71	-125.70	33.91	-125.38	0.00	0.00	0.00
9 5/8"									
2,800.00	7.00	153.22	2,792.81	-127.46	34.81	-127.13	0.00	0.00	0.00
2,849.60	7.00	153.22	2,842.04	-132.86	37.53	-132.51	0.00	0.00	0.00
Bell Canyon - Lamar									
2,899.96	7.00	153.22	2,892.02	-138.34	40.29	-137.96	0.00	0.00	0.00
Ramsey Sand									
2,900.00	7.00	153.22	2,892.06	-138.34	40.30	-137.96	0.00	0.00	0.00

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Company:	Tap Rock Operating	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Project:	Eddy County, New Mexico (NAD 83)	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site:	Money Graham 26S29E3229	**North Reference:**	Grid
Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,000.00	7.00	153.22	2,991.31	-149.22	45.79	-148.79	0.00	0.00	0.00
3,100.00	7.00	153.22	3,090.57	-160.10	51.28	-159.62	0.00	0.00	0.00
3,200.00	7.00	153.22	3,189.82	-170.98	56.77	-170.45	0.00	0.00	0.00
3,300.00	7.00	153.22	3,289.08	-181.86	62.26	-181.28	0.00	0.00	0.00
3,400.00	7.00	153.22	3,388.33	-192.74	67.75	-192.11	0.00	0.00	0.00
3,500.00	7.00	153.22	3,487.59	-203.62	73.24	-202.94	0.00	0.00	0.00
3,600.00	7.00	153.22	3,586.84	-214.50	78.73	-213.76	0.00	0.00	0.00
3,700.00	7.00	153.22	3,686.10	-225.38	84.22	-224.59	0.00	0.00	0.00
3,800.00	7.00	153.22	3,785.35	-236.26	89.71	-235.42	0.00	0.00	0.00
3,841.62	7.00	153.22	3,826.66	-240.79	92.00	-239.93	0.00	0.00	0.00
Cherry Canyon									
3,900.00	7.00	153.22	3,884.61	-247.14	95.20	-246.25	0.00	0.00	0.00
4,000.00	7.00	153.22	3,983.86	-258.02	100.69	-257.08	0.00	0.00	0.00
4,100.00	7.00	153.22	4,083.12	-268.90	106.18	-267.91	0.00	0.00	0.00
4,200.00	7.00	153.22	4,182.37	-279.78	111.67	-278.74	0.00	0.00	0.00
4,300.00	7.00	153.22	4,281.62	-290.66	117.16	-289.57	0.00	0.00	0.00
4,400.00	7.00	153.22	4,380.88	-301.54	122.65	-300.40	0.00	0.00	0.00
4,500.00	7.00	153.22	4,480.13	-312.42	128.14	-311.22	0.00	0.00	0.00
4,600.00	7.00	153.22	4,579.39	-323.30	133.63	-322.05	0.00	0.00	0.00
4,700.00	7.00	153.22	4,678.64	-334.18	139.13	-332.88	0.00	0.00	0.00
4,800.00	7.00	153.22	4,777.90	-345.06	144.62	-343.71	0.00	0.00	0.00
4,843.71	7.00	153.22	4,821.28	-349.82	147.02	-348.44	0.00	0.00	0.00
Brushy Canyon									
4,900.00	7.00	153.22	4,877.15	-355.94	150.11	-354.54	0.00	0.00	0.00
5,000.00	7.00	153.22	4,976.41	-366.82	155.60	-365.37	0.00	0.00	0.00
5,100.00	7.00	153.22	5,075.66	-377.70	161.09	-376.20	0.00	0.00	0.00
5,200.00	7.00	153.22	5,174.92	-388.58	166.58	-387.03	0.00	0.00	0.00
5,300.00	7.00	153.22	5,274.17	-399.46	172.07	-397.85	0.00	0.00	0.00
5,400.00	7.00	153.22	5,373.43	-410.34	177.56	-408.68	0.00	0.00	0.00
5,500.00	7.00	153.22	5,472.68	-421.22	183.05	-419.51	0.00	0.00	0.00
5,600.00	7.00	153.22	5,571.93	-432.10	188.54	-430.34	0.00	0.00	0.00
5,700.00	7.00	153.22	5,671.19	-442.98	194.03	-441.17	0.00	0.00	0.00
5,800.00	7.00	153.22	5,770.44	-453.86	199.52	-452.00	0.00	0.00	0.00
5,900.00	7.00	153.22	5,869.70	-464.74	205.01	-462.83	0.00	0.00	0.00
6,000.00	7.00	153.22	5,968.95	-475.62	210.50	-473.66	0.00	0.00	0.00
6,100.00	7.00	153.22	6,068.21	-486.50	215.99	-484.49	0.00	0.00	0.00
6,200.00	7.00	153.22	6,167.46	-497.38	221.48	-495.31	0.00	0.00	0.00
6,300.00	7.00	153.22	6,266.72	-508.26	226.97	-506.14	0.00	0.00	0.00
6,400.00	7.00	153.22	6,365.97	-519.14	232.46	-516.97	0.00	0.00	0.00
6,500.00	7.00	153.22	6,465.23	-530.02	237.95	-527.80	0.00	0.00	0.00
6,500.43	7.00	153.22	6,465.66	-530.07	237.98	-527.85	0.00	0.00	0.00
Bone Spring Lime									
6,527.78	7.00	153.22	6,492.80	-533.05	239.48	-530.81	0.00	0.00	0.00
Begin 3.00°/100' Drop									
6,600.00	4.83	153.22	6,564.63	-539.69	242.83	-537.42	3.00	-3.00	0.00
6,700.00	1.83	153.22	6,664.45	-544.88	245.45	-542.59	3.00	-3.00	0.00
6,761.11	0.00	0.00	6,725.55	-545.76	245.89	-543.46	3.00	-3.00	0.00
Begin Vertical Hold									
6,800.00	0.00	0.00	6,764.44	-545.76	245.89	-543.46	0.00	0.00	0.00
6,900.00	0.00	0.00	6,864.44	-545.76	245.89	-543.46	0.00	0.00	0.00
7,000.00	0.00	0.00	6,964.44	-545.76	245.89	-543.46	0.00	0.00	0.00
7,100.00	0.00	0.00	7,064.44	-545.76	245.89	-543.46	0.00	0.00	0.00
7,200.00	0.00	0.00	7,164.44	-545.76	245.89	-543.46	0.00	0.00	0.00
7,300.00	0.00	0.00	7,264.44	-545.76	245.89	-543.46	0.00	0.00	0.00

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Company:	Tap Rock Operating	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Project:	Eddy County, New Mexico (NAD 83)	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site:	Money Graham 26S29E3229	**North Reference:**	Grid
Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,400.00	0.00	0.00	7,364.44	-545.76	245.89	-543.46	0.00	0.00	0.00
7,426.16	0.00	0.00	7,390.60	-545.76	245.89	-543.46	0.00	0.00	0.00
1st Bone Spring Sand									
7,500.00	0.00	0.00	7,464.44	-545.76	245.89	-543.46	0.00	0.00	0.00
7,600.00	0.00	0.00	7,564.44	-545.76	245.89	-543.46	0.00	0.00	0.00
7,700.00	0.00	0.00	7,664.44	-545.76	245.89	-543.46	0.00	0.00	0.00
7,800.00	0.00	0.00	7,764.44	-545.76	245.89	-543.46	0.00	0.00	0.00
7,900.00	0.00	0.00	7,864.44	-545.76	245.89	-543.46	0.00	0.00	0.00
8,000.00	0.00	0.00	7,964.44	-545.76	245.89	-543.46	0.00	0.00	0.00
8,100.00	0.00	0.00	8,064.44	-545.76	245.89	-543.46	0.00	0.00	0.00
8,136.16	0.00	0.00	8,100.60	-545.76	245.89	-543.46	0.00	0.00	0.00
2nd Bone Spring Sand									
8,200.00	0.00	0.00	8,164.44	-545.76	245.89	-543.46	0.00	0.00	0.00
8,300.00	0.00	0.00	8,264.44	-545.76	245.89	-543.46	0.00	0.00	0.00
8,400.00	0.00	0.00	8,364.44	-545.76	245.89	-543.46	0.00	0.00	0.00
8,500.00	0.00	0.00	8,464.44	-545.76	245.89	-543.46	0.00	0.00	0.00
8,600.00	0.00	0.00	8,564.44	-545.76	245.89	-543.46	0.00	0.00	0.00
8,700.00	0.00	0.00	8,664.44	-545.76	245.89	-543.46	0.00	0.00	0.00
8,800.00	0.00	0.00	8,764.44	-545.76	245.89	-543.46	0.00	0.00	0.00
8,900.00	0.00	0.00	8,864.44	-545.76	245.89	-543.46	0.00	0.00	0.00
8,930.11	0.00	0.00	8,894.55	-545.76	245.89	-543.46	0.00	0.00	0.00
7-5/8"									
9,000.00	0.00	0.00	8,964.44	-545.76	245.89	-543.46	0.00	0.00	0.00
9,100.00	0.00	0.00	9,064.44	-545.76	245.89	-543.46	0.00	0.00	0.00
9,130.11	0.00	0.00	9,094.55	-545.76	245.89	-543.46	0.00	0.00	0.00
Begin 10.00°/100' Build									
9,150.00	1.99	12.00	9,114.44	-545.42	245.96	-543.12	10.00	10.00	0.00
9,200.00	6.99	12.00	9,164.27	-541.59	246.78	-539.29	10.00	10.00	0.00
9,247.01	11.69	12.00	9,210.64	-534.13	248.36	-531.81	10.00	10.00	0.00
3rd Bone Spring Sand									
9,250.00	11.99	12.00	9,213.57	-533.53	248.49	-531.21	10.00	10.00	0.00
9,300.00	16.99	12.00	9,261.96	-521.30	251.09	-518.95	10.00	10.00	0.00
9,350.00	21.99	12.00	9,309.08	-504.99	254.56	-502.61	10.00	10.00	0.00
9,400.00	26.99	12.00	9,354.57	-484.72	258.87	-482.31	10.00	10.00	0.00
9,450.00	31.99	12.00	9,398.08	-460.65	263.98	-458.19	10.00	10.00	0.00
9,500.00	36.99	12.00	9,439.28	-432.97	269.87	-430.45	10.00	10.00	0.00
9,550.00	41.99	12.00	9,477.85	-401.88	276.48	-399.30	10.00	10.00	0.00
9,575.14	44.50	12.00	9,496.17	-385.03	280.06	-382.42	10.00	10.00	0.00
Wolfcamp A									
9,600.00	46.99	12.00	9,513.51	-367.62	283.76	-364.97	10.00	10.00	0.00
9,650.00	51.99	12.00	9,545.98	-330.44	291.66	-327.73	10.00	10.00	0.00
9,700.00	56.99	12.00	9,575.01	-290.65	300.12	-287.86	10.00	10.00	0.00
9,750.00	61.99	12.00	9,600.39	-248.52	309.07	-245.65	10.00	10.00	0.00
9,800.00	66.99	12.00	9,621.92	-204.40	318.45	-201.44	10.00	10.00	0.00
9,850.00	71.99	12.00	9,639.43	-158.61	328.18	-155.56	10.00	10.00	0.00
9,900.00	76.99	12.00	9,652.80	-111.50	338.20	-108.36	10.00	10.00	0.00
9,950.00	81.99	12.00	9,661.92	-63.42	348.42	-60.20	10.00	10.00	0.00
10,000.00	86.99	12.00	9,666.72	-14.76	358.76	-11.44	10.00	10.00	0.00
10,028.26	89.82	12.00	9,667.51	12.87	364.63	16.24	10.00	10.00	0.00
Hold 89.82° Inc, Begin 2.00°/100' Turn									
10,100.00	89.81	10.57	9,667.74	83.22	378.67	86.72	2.00	0.00	-2.00
10,200.00	89.81	8.57	9,668.06	181.83	395.28	185.47	2.00	0.00	-2.00
10,300.00	89.81	6.57	9,668.39	280.95	408.45	284.72	2.00	0.00	-2.00

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Company:	Tap Rock Operating	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Project:	Eddy County, New Mexico (NAD 83)	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site:	Money Graham 26S29E3229	**North Reference:**	Grid
Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,400.00	89.81	4.57	9,668.71	380.47	418.15	384.32	2.00	0.00	-2.00
10,500.00	89.81	2.57	9,669.03	480.27	424.36	484.18	2.00	0.00	-2.00
10,601.74	89.82	0.53	9,669.36	581.97	427.11	585.89	2.00	0.00	-2.00
Hold 0.53° Azm									
10,700.00	89.82	0.53	9,669.68	680.23	428.02	684.16	0.00	0.00	0.00
10,800.00	89.82	0.53	9,670.00	780.22	428.95	784.16	0.00	0.00	0.00
10,900.00	89.82	0.53	9,670.33	880.22	429.87	884.16	0.00	0.00	0.00
11,000.00	89.82	0.53	9,670.65	980.21	430.80	984.16	0.00	0.00	0.00
11,100.00	89.82	0.53	9,670.97	1,080.21	431.73	1,084.15	0.00	0.00	0.00
11,200.00	89.82	0.53	9,671.29	1,180.20	432.65	1,184.15	0.00	0.00	0.00
11,300.00	89.82	0.53	9,671.62	1,280.20	433.58	1,284.15	0.00	0.00	0.00
11,400.00	89.82	0.53	9,671.94	1,380.19	434.50	1,384.15	0.00	0.00	0.00
11,500.00	89.82	0.53	9,672.26	1,480.19	435.43	1,484.15	0.00	0.00	0.00
11,600.00	89.82	0.53	9,672.58	1,580.18	436.35	1,584.15	0.00	0.00	0.00
11,700.00	89.82	0.53	9,672.91	1,680.18	437.28	1,684.15	0.00	0.00	0.00
11,800.00	89.82	0.53	9,673.23	1,780.17	438.21	1,784.15	0.00	0.00	0.00
11,900.00	89.82	0.53	9,673.55	1,880.17	439.13	1,884.15	0.00	0.00	0.00
12,000.00	89.82	0.53	9,673.88	1,980.16	440.06	1,984.15	0.00	0.00	0.00
12,100.00	89.82	0.53	9,674.20	2,080.16	440.98	2,084.15	0.00	0.00	0.00
12,200.00	89.82	0.53	9,674.52	2,180.15	441.91	2,184.15	0.00	0.00	0.00
12,300.00	89.82	0.53	9,674.84	2,280.15	442.83	2,284.15	0.00	0.00	0.00
12,400.00	89.82	0.53	9,675.17	2,380.14	443.76	2,384.15	0.00	0.00	0.00
12,500.00	89.82	0.53	9,675.49	2,480.14	444.69	2,484.15	0.00	0.00	0.00
12,600.00	89.82	0.53	9,675.81	2,580.14	445.61	2,584.15	0.00	0.00	0.00
12,700.00	89.82	0.53	9,676.14	2,680.13	446.54	2,684.15	0.00	0.00	0.00
12,800.00	89.82	0.53	9,676.46	2,780.13	447.46	2,784.15	0.00	0.00	0.00
12,900.00	89.82	0.53	9,676.78	2,880.12	448.39	2,884.15	0.00	0.00	0.00
13,000.00	89.82	0.53	9,677.10	2,980.12	449.32	2,984.14	0.00	0.00	0.00
13,100.00	89.82	0.53	9,677.43	3,080.11	450.24	3,084.14	0.00	0.00	0.00
13,200.00	89.82	0.53	9,677.75	3,180.11	451.17	3,184.14	0.00	0.00	0.00
13,300.00	89.82	0.53	9,678.07	3,280.10	452.09	3,284.14	0.00	0.00	0.00
13,400.00	89.82	0.53	9,678.40	3,380.10	453.02	3,384.14	0.00	0.00	0.00
13,500.00	89.82	0.53	9,678.72	3,480.09	453.94	3,484.14	0.00	0.00	0.00
13,600.00	89.82	0.53	9,679.04	3,580.09	454.87	3,584.14	0.00	0.00	0.00
13,700.00	89.82	0.53	9,679.36	3,680.08	455.80	3,684.14	0.00	0.00	0.00
13,800.00	89.82	0.53	9,679.69	3,780.08	456.72	3,784.14	0.00	0.00	0.00
13,900.00	89.82	0.53	9,680.01	3,880.07	457.65	3,884.14	0.00	0.00	0.00
14,000.00	89.82	0.53	9,680.33	3,980.07	458.57	3,984.14	0.00	0.00	0.00
14,100.00	89.82	0.53	9,680.65	4,080.06	459.50	4,084.14	0.00	0.00	0.00
14,200.00	89.82	0.53	9,680.98	4,180.06	460.42	4,184.14	0.00	0.00	0.00
14,300.00	89.82	0.53	9,681.30	4,280.05	461.35	4,284.14	0.00	0.00	0.00
14,400.00	89.82	0.53	9,681.62	4,380.05	462.28	4,384.14	0.00	0.00	0.00
14,500.00	89.82	0.53	9,681.95	4,480.04	463.20	4,484.14	0.00	0.00	0.00
14,600.00	89.82	0.53	9,682.27	4,580.04	464.13	4,584.14	0.00	0.00	0.00
14,700.00	89.82	0.53	9,682.59	4,680.03	465.05	4,684.14	0.00	0.00	0.00
14,800.00	89.82	0.53	9,682.91	4,780.03	465.98	4,784.14	0.00	0.00	0.00
14,900.00	89.82	0.53	9,683.24	4,880.02	466.91	4,884.13	0.00	0.00	0.00
15,000.00	89.82	0.53	9,683.56	4,980.02	467.83	4,984.13	0.00	0.00	0.00
15,100.00	89.82	0.53	9,683.88	5,080.02	468.76	5,084.13	0.00	0.00	0.00
15,200.00	89.82	0.53	9,684.21	5,180.01	469.68	5,184.13	0.00	0.00	0.00
15,300.00	89.82	0.53	9,684.53	5,280.01	470.61	5,284.13	0.00	0.00	0.00
15,400.00	89.82	0.53	9,684.85	5,380.00	471.53	5,384.13	0.00	0.00	0.00
15,500.00	89.82	0.53	9,685.17	5,480.00	472.46	5,484.13	0.00	0.00	0.00
15,600.00	89.82	0.53	9,685.50	5,579.99	473.39	5,584.13	0.00	0.00	0.00

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Company:	Tap Rock Operating	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Project:	Eddy County, New Mexico (NAD 83)	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site:	Money Graham 26S29E3229	**North Reference:**	Grid
Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,700.00	89.82	0.53	9,685.82	5,679.99	474.31	5,684.13	0.00	0.00	0.00
15,800.00	89.82	0.53	9,686.14	5,779.98	475.24	5,784.13	0.00	0.00	0.00
15,900.00	89.82	0.53	9,686.46	5,879.98	476.16	5,884.13	0.00	0.00	0.00
16,000.00	89.82	0.53	9,686.79	5,979.97	477.09	5,984.13	0.00	0.00	0.00
16,100.00	89.82	0.53	9,687.11	6,079.97	478.02	6,084.13	0.00	0.00	0.00
16,200.00	89.82	0.53	9,687.43	6,179.96	478.94	6,184.13	0.00	0.00	0.00
16,300.00	89.82	0.53	9,687.76	6,279.96	479.87	6,284.13	0.00	0.00	0.00
16,400.00	89.82	0.53	9,688.08	6,379.95	480.79	6,384.13	0.00	0.00	0.00
16,500.00	89.82	0.53	9,688.40	6,479.95	481.72	6,484.13	0.00	0.00	0.00
16,600.00	89.82	0.53	9,688.72	6,579.94	482.64	6,584.13	0.00	0.00	0.00
16,700.00	89.82	0.53	9,689.05	6,679.94	483.57	6,684.13	0.00	0.00	0.00
16,800.00	89.82	0.53	9,689.37	6,779.93	484.50	6,784.12	0.00	0.00	0.00
16,900.00	89.82	0.53	9,689.69	6,879.93	485.42	6,884.12	0.00	0.00	0.00
17,000.00	89.82	0.53	9,690.02	6,979.92	486.35	6,984.12	0.00	0.00	0.00
17,100.00	89.82	0.53	9,690.34	7,079.92	487.27	7,084.12	0.00	0.00	0.00
17,150.12	89.82	0.53	9,690.50	7,130.04	487.74	7,134.24	0.00	0.00	0.00
PBHL - 5 1/2"									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Vert v2 - Money Grah - plan hits target center - Point	0.00	0.00	9,094.55	-545.76	245.89	363,713.55	644,711.69	31° 59' 58.165 N	103° 59' 59.489 W
FTP v2 - Money Grah - plan misses target center by 56.38usft at 10038.41usft MD (9667.54 TVD, 22.80 N, 366.72 E) - Point	0.00	0.00	9,667.50	11.77	422.01	364,271.08	644,887.81	32° 0' 3.677 N	103° 59' 57.424 W
LTP v2 - Money Grah - plan hits target center - Point	0.00	0.00	9,690.08	7,000.03	486.54	371,259.34	644,952.33	32° 1' 12.833 N	103° 59' 56.423 W
PBHL v2 - Money Gra - plan hits target center - Point	0.00	0.00	9,690.50	7,130.04	487.74	371,389.35	644,953.53	32° 1' 14.119 N	103° 59' 56.405 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
527.50	527.50	13 3/8"	13-3/8	17-1/2
2,783.78	2,776.71	9 5/8"	9-5/8	12-1/4
8,930.11	8,894.55	7-5/8"	7-5/8	8-3/4
17,150.12	9,690.50	5 1/2"	5-1/2	6-3/4

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Company:	Tap Rock Operating	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Project:	Eddy County, New Mexico (NAD 83)	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site:	Money Graham 26S29E3229	**North Reference:**	Grid
Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
502.50	502.50	Rustler Anhydrite		0.20	0.53
677.50	677.50	Top Salt		0.20	0.53
2,391.36	2,387.21	Base Salt		0.20	0.53
2,733.78	2,727.08	Delaware Mountain Gp		0.20	0.53
2,849.60	2,842.04	Bell Canyon		0.20	0.53
2,849.60	2,842.04	Lamar		0.20	0.53
2,899.96	2,892.02	Ramsey Sand		0.20	0.53
3,841.62	3,826.66	Cherry Canyon		0.20	0.53
4,843.71	4,821.28	Brushy Canyon		0.20	0.53
6,500.43	6,465.66	Bone Spring Lime		0.20	0.53
7,426.16	7,390.60	1st Bone Spring Sand		0.20	0.53
8,136.16	8,100.60	2nd Bone Spring Sand		0.20	0.53
9,247.01	9,210.64	3rd Bone Spring Sand		0.20	0.53
9,575.14	9,496.17	Wolfcamp A		0.20	0.53

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,200.00	1,200.00	0.00	0.00	KOP, 3.00°/100' Build
1,300.00	1,299.95	-2.46	-0.90	Hold 3.00° Inc, 200.00° Azm
1,850.80	1,850.00	-29.55	-10.75	Begin 3.00°/100' Build & Turn
2,030.96	2,029.50	-43.79	-7.42	Hold 7.00° Inc, 153.22° Azm
6,527.78	6,492.80	-533.05	239.48	Begin 3.00°/100' Drop
6,761.11	6,725.55	-545.76	245.89	Begin Vertical Hold
9,130.11	9,094.55	-545.76	245.89	Begin 10.00°/100' Build
10,028.26	9,667.51	12.87	364.63	Hold 89.82° Inc, Begin 2.00°/100' Turn
10,601.74	9,669.36	581.97	427.11	Hold 0.53° Azm
17,150.12	9,690.50	7,130.04	487.74	PBHL

Tap Rock Operating

Eddy County, New Mexico (NAD 83)
Money Graham 26S29E3229
Money Graham 26S29E3229 208H

Wellbore #1
Design #2

Anticollision Report

23 May, 2018

MS Directional

Company:	Tap Rock Operating	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Project:	Eddy County, New Mexico (NAD 83)	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Reference Site:	Money Graham 26S29E3229	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.14 Conroe Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Reference	Design #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00usft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 u	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	3.00 Sigma	**Casing Method:**	Not applied

Survey Tool Program **Date** 5/23/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	17,150.12	Design #2 (Wellbore #1)	MWD	OWSG MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Money Graham 26S29E3229						
Money Graham 26S29E3229 238H - Wellbore #1 - Desig	1,116.33	1,117.33	85.38	74.05	7.535	CC
Money Graham 26S29E3229 238H - Wellbore #1 - Desig	9,300.00	9,304.02	169.82	70.42	1.708	ES, SF
Sidewinder						
Sidewinder 2H - Wellbore #1 - Surveys	6,921.67	10,790.14	2,215.08	2,021.64	11.451	CC, ES
Sidewinder 2H - Wellbore #1 - Surveys	7,000.00	10,793.09	2,216.46	2,022.70	11.439	SF

Offset Design: Money Graham 26S29E3229 - Money Graham 26S29E3229 238H - Wellbore #1 - Design #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD **Rule Assigned:** **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	1.00	1.00	0.00	0.00	110.47	-29.86	79.98	85.38				
100.00	100.00	101.00	101.00	0.20	0.20	110.47	-29.86	79.98	85.38	84.98	0.40	213.124	
200.00	200.00	201.00	201.00	0.74	0.74	110.47	-29.86	79.98	85.38	83.90	1.48	57.842	
300.00	300.00	301.00	301.00	1.27	1.28	110.47	-29.86	79.98	85.38	82.82	2.55	33.462	
400.00	400.00	401.00	401.00	1.81	1.82	110.47	-29.86	79.98	85.38	81.75	3.63	23.540	
500.00	500.00	501.00	501.00	2.35	2.35	110.47	-29.86	79.98	85.38	80.67	4.70	18.156	
600.00	600.00	601.00	601.00	2.89	2.89	110.47	-29.86	79.98	85.38	79.60	5.78	14.777	
700.00	700.00	701.00	701.00	3.42	3.43	110.47	-29.86	79.98	85.38	78.52	6.85	12.458	
800.00	800.00	801.00	801.00	3.96	3.97	110.47	-29.86	79.98	85.38	77.45	7.93	10.768	
900.00	900.00	901.00	901.00	4.50	4.50	110.47	-29.86	79.98	85.38	76.37	9.00	9.482	
1,000.00	1,000.00	1,001.00	1,001.00	5.04	5.04	110.47	-29.86	79.98	85.38	75.30	10.08	8.470	
1,100.00	1,100.00	1,101.00	1,101.00	5.57	5.58	110.47	-29.86	79.98	85.38	74.22	11.15	7.654	
1,116.33	1,116.33	1,117.33	1,117.33	5.66	5.67	110.47	-29.86	79.98	85.38	74.05	11.33	7.535	CC
1,200.00	1,200.00	1,200.00	1,200.00	6.11	6.11	110.47	-29.86	79.98	85.38	73.16	12.22	6.985	
1,300.00	1,299.95	1,297.08	1,297.04	6.62	6.61	109.51	-31.70	81.63	87.64	74.42	13.23	6.627	
1,400.00	1,399.82	1,396.82	1,396.64	7.12	7.11	107.80	-35.57	85.12	92.32	78.11	14.21	6.496	
1,500.00	1,499.68	1,496.67	1,496.36	7.62	7.61	106.26	-39.46	88.62	97.07	81.86	15.21	6.381	
1,600.00	1,599.54	1,596.53	1,596.08	8.12	8.13	104.87	-43.34	92.12	101.89	85.67	16.23	6.279	
1,700.00	1,699.41	1,696.38	1,695.79	8.64	8.64	103.61	-47.22	95.62	106.76	89.51	17.25	6.189	
1,800.00	1,799.27	1,796.24	1,795.51	9.15	9.16	102.45	-51.11	99.11	111.68	93.40	18.28	6.108	
1,850.80	1,850.00	1,846.96	1,846.17	9.42	9.43	101.90	-53.08	100.89	114.20	95.39	18.81	6.071	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Tap Rock Operating	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Project:	Eddy County, New Mexico (NAD 83)	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Reference Site:	Money Graham 26S29E3229	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.14 Conroe Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design: Money Graham 26S29E3229 - Money Graham 26S29E3229 238H - Wellbore #1 - Design #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,900.00	1,899.12	1,896.11	1,895.25	9.67	9.69	101.25	-54.99	102.61	116.09	96.76	19.32	6.007	
2,000.00	1,998.74	1,995.99	1,995.00	10.20	10.21	99.04	-58.88	106.11	116.58	96.20	20.37	5.722	
2,030.96	2,029.50	2,026.89	2,025.85	10.37	10.38	98.09	-60.08	107.19	115.85	95.15	20.70	5.596	
2,100.00	2,098.02	2,095.74	2,094.61	10.74	10.74	95.78	-62.76	109.60	113.89	92.46	21.44	5.313	
2,200.00	2,197.28	2,194.29	2,192.99	11.28	11.27	92.49	-67.03	113.26	111.63	89.13	22.49	4.962	
2,250.30	2,247.21	2,243.23	2,241.75	11.55	11.53	91.46	-70.49	115.72	111.32	88.29	23.03	4.835	
2,300.00	2,296.53	2,291.65	2,289.86	11.83	11.80	91.01	-75.02	118.68	111.61	88.06	23.55	4.740	
2,400.00	2,395.79	2,390.87	2,388.14	12.38	12.35	91.34	-86.58	125.83	113.35	88.71	24.63	4.601	
2,500.00	2,495.04	2,490.85	2,487.15	12.94	12.92	91.80	-98.42	133.13	115.19	89.45	25.74	4.475	
2,600.00	2,594.30	2,590.83	2,586.16	13.51	13.49	92.24	-110.26	140.43	117.05	90.19	26.86	4.357	
2,700.00	2,693.55	2,690.81	2,685.16	14.08	14.07	92.67	-122.11	147.72	118.91	90.92	27.99	4.249	
2,800.00	2,792.81	2,790.78	2,784.17	14.65	14.65	93.09	-133.95	155.02	120.78	91.66	29.12	4.148	
2,900.00	2,892.06	2,890.76	2,883.17	15.23	15.24	93.49	-145.79	162.32	122.65	92.40	30.25	4.054	
3,000.00	2,991.31	2,990.74	2,982.18	15.81	15.83	93.89	-157.63	169.62	124.53	93.14	31.39	3.967	
3,100.00	3,090.57	3,090.72	3,081.19	16.39	16.43	94.27	-169.48	176.91	126.41	93.88	32.54	3.885	
3,200.00	3,189.82	3,190.70	3,180.19	16.98	17.03	94.64	-181.32	184.21	128.30	94.62	33.68	3.809	
3,300.00	3,289.08	3,290.68	3,279.20	17.57	17.63	95.00	-193.16	191.51	130.20	95.36	34.83	3.738	
3,400.00	3,388.33	3,390.66	3,378.21	18.16	18.23	95.34	-205.00	198.81	132.10	96.11	35.99	3.671	
3,500.00	3,487.59	3,490.64	3,477.21	18.75	18.83	95.68	-216.85	206.10	134.01	96.86	37.14	3.608	
3,600.00	3,586.84	3,590.61	3,576.22	19.34	19.44	96.01	-228.69	213.40	135.92	97.62	38.30	3.549	
3,700.00	3,686.10	3,690.59	3,675.23	19.93	20.05	96.33	-240.53	220.70	137.83	98.37	39.46	3.493	
3,800.00	3,785.35	3,790.57	3,774.23	20.53	20.66	96.64	-252.37	228.00	139.75	99.13	40.62	3.441	
3,900.00	3,884.61	3,890.55	3,873.24	21.12	21.27	96.95	-264.21	235.30	141.67	99.89	41.78	3.391	
4,000.00	3,983.86	3,990.53	3,972.24	21.72	21.88	97.24	-276.06	242.59	143.60	100.66	42.94	3.344	
4,100.00	4,083.12	4,090.51	4,071.25	22.32	22.50	97.53	-287.90	249.89	145.53	101.42	44.11	3.300	
4,200.00	4,182.37	4,190.49	4,170.26	22.92	23.11	97.81	-299.74	257.19	147.46	102.19	45.27	3.257	
4,300.00	4,281.62	4,290.47	4,269.26	23.52	23.73	98.08	-311.58	264.49	149.40	102.97	46.43	3.217	
4,400.00	4,380.88	4,390.44	4,368.27	24.12	24.35	98.35	-323.43	271.78	151.34	103.74	47.60	3.179	
4,500.00	4,480.13	4,490.42	4,467.28	24.72	24.97	98.61	-335.27	279.08	153.28	104.52	48.77	3.143	
4,600.00	4,579.39	4,590.40	4,566.28	25.32	25.59	98.86	-347.11	286.38	155.23	105.30	49.93	3.109	
4,700.00	4,678.64	4,690.38	4,665.29	25.92	26.21	99.11	-358.95	293.68	157.18	106.08	51.10	3.076	
4,800.00	4,777.90	4,790.36	4,764.29	26.53	26.83	99.35	-370.79	300.97	159.13	106.87	52.26	3.045	
4,900.00	4,877.15	4,890.34	4,863.30	27.13	27.45	99.58	-382.64	308.27	161.09	107.66	53.43	3.015	
5,000.00	4,976.41	4,990.32	4,962.31	27.73	28.07	99.81	-394.48	315.57	163.05	108.45	54.60	2.986	
5,100.00	5,075.66	5,090.30	5,061.31	28.34	28.69	100.03	-406.32	322.87	165.01	109.24	55.77	2.959	
5,200.00	5,174.92	5,190.27	5,160.32	28.94	29.32	100.25	-418.16	330.16	166.97	110.04	56.93	2.933	
5,300.00	5,274.17	5,290.25	5,259.33	29.55	29.94	100.46	-430.01	337.46	168.93	110.83	58.10	2.908	
5,400.00	5,373.43	5,390.23	5,358.33	30.15	30.57	100.67	-441.85	344.76	170.90	111.63	59.27	2.883	
5,500.00	5,472.68	5,490.21	5,457.34	30.76	31.19	100.87	-453.69	352.06	172.87	112.43	60.44	2.860	
5,600.00	5,571.93	5,590.19	5,556.35	31.37	31.82	101.07	-465.53	359.35	174.84	113.24	61.61	2.838	
5,700.00	5,671.19	5,690.17	5,655.35	31.97	32.44	101.27	-477.38	366.65	176.82	114.05	62.77	2.817	
5,800.00	5,770.44	5,790.15	5,754.36	32.58	33.07	101.46	-489.22	373.95	178.79	114.85	63.94	2.796	
5,900.00	5,869.70	5,890.13	5,853.36	33.19	33.70	101.64	-501.06	381.25	180.77	115.66	65.11	2.776	
6,000.00	5,968.95	5,990.10	5,952.37	33.80	34.32	101.83	-512.90	388.55	182.75	116.48	66.28	2.757	
6,100.00	6,068.21	6,090.08	6,051.38	34.40	34.95	102.00	-524.74	395.84	184.73	117.29	67.44	2.739	
6,200.00	6,167.46	6,190.06	6,150.38	35.01	35.58	102.18	-536.59	403.14	186.72	118.11	68.61	2.721	
6,300.00	6,266.72	6,293.52	6,252.92	35.62	36.22	102.31	-548.28	410.34	188.27	118.44	69.83	2.696	
6,400.00	6,365.97	6,400.71	6,359.71	36.23	36.84	101.42	-556.03	415.12	186.49	115.38	71.10	2.623	
6,500.00	6,465.23	6,507.13	6,466.08	36.84	37.37	99.10	-558.67	416.75	181.07	108.72	72.35	2.503	
6,527.78	6,492.80	6,534.85	6,493.80	37.01	37.50	98.22	-558.67	416.75	179.11	106.39	72.72	2.463	
6,600.00	6,564.63	6,606.69	6,565.63	37.44	37.83	96.23	-558.67	416.75	174.95	101.30	73.64	2.376	
6,700.00	6,664.45	6,706.51	6,665.45	37.99	38.28	94.60	-558.67	416.75	171.85	97.06	74.79	2.298	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Tap Rock Operating	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Project:	Eddy County, New Mexico (NAD 83)	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Reference Site:	Money Graham 26S29E3229	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.14 Conroe Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design: Money Graham 26S29E3229 - Money Graham 26S29E3229 238H - Wellbore #1 - Design #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,761.11	6,725.55	6,767.61	6,726.55	38.29	38.57	94.32	-558.67	416.75	171.34	95.94	75.40	2.272	
6,800.00	6,764.44	6,806.50	6,765.44	38.47	38.75	94.32	-558.67	416.75	171.34	95.57	75.77	2.261	
6,900.00	6,864.44	6,906.50	6,865.44	38.93	39.21	94.32	-558.67	416.75	171.34	94.64	76.71	2.234	
7,000.00	6,964.44	7,006.50	6,965.44	39.39	39.67	94.32	-558.67	416.75	171.34	93.69	77.65	2.207	
7,100.00	7,064.44	7,106.50	7,065.44	39.86	40.14	94.32	-558.67	416.75	171.34	92.75	78.59	2.180	
7,200.00	7,164.44	7,206.50	7,165.44	40.33	40.61	94.32	-558.67	416.75	171.34	91.80	79.54	2.154	
7,300.00	7,264.44	7,306.50	7,265.44	40.80	41.08	94.32	-558.67	416.75	171.34	90.85	80.50	2.129	
7,400.00	7,364.44	7,406.50	7,365.44	41.27	41.55	94.32	-558.67	416.75	171.34	89.89	81.45	2.104	
7,500.00	7,464.44	7,506.50	7,465.44	41.74	42.02	94.32	-558.67	416.75	171.34	88.93	82.41	2.079	
7,600.00	7,564.44	7,606.50	7,565.44	42.21	42.50	94.32	-558.67	416.75	171.34	87.97	83.37	2.055	
7,700.00	7,664.44	7,706.50	7,665.44	42.69	42.98	94.32	-558.67	416.75	171.34	87.01	84.34	2.032	
7,800.00	7,764.44	7,806.50	7,765.44	43.17	43.45	94.32	-558.67	416.75	171.34	86.04	85.30	2.009	
7,900.00	7,864.44	7,906.50	7,865.44	43.65	43.93	94.32	-558.67	416.75	171.34	85.07	86.27	1.986	
8,000.00	7,964.44	8,006.50	7,965.44	44.13	44.41	94.32	-558.67	416.75	171.34	84.10	87.24	1.964	
8,100.00	8,064.44	8,106.50	8,065.44	44.61	44.90	94.32	-558.67	416.75	171.34	83.13	88.22	1.942	
8,200.00	8,164.44	8,206.50	8,165.44	45.09	45.38	94.32	-558.67	416.75	171.34	82.15	89.19	1.921	
8,300.00	8,264.44	8,306.50	8,265.44	45.57	45.86	94.32	-558.67	416.75	171.34	81.17	90.17	1.900	
8,400.00	8,364.44	8,406.50	8,365.44	46.06	46.35	94.32	-558.67	416.75	171.34	80.19	91.15	1.880	
8,500.00	8,464.44	8,506.50	8,465.44	46.54	46.84	94.32	-558.67	416.75	171.34	79.21	92.14	1.860	
8,600.00	8,564.44	8,606.50	8,565.44	47.03	47.32	94.32	-558.67	416.75	171.34	78.22	93.12	1.840	
8,700.00	8,664.44	8,706.50	8,665.44	47.52	47.81	94.32	-558.67	416.75	171.34	77.23	94.11	1.821	
8,800.00	8,764.44	8,806.50	8,765.44	48.01	48.30	94.32	-558.67	416.75	171.34	76.25	95.10	1.802	
8,900.00	8,864.44	8,906.50	8,865.44	48.50	48.79	94.32	-558.67	416.75	171.34	75.25	96.09	1.783	
9,000.00	8,964.44	9,006.50	8,965.44	48.99	49.29	94.32	-558.67	416.75	171.34	74.26	97.08	1.765	
9,100.00	9,064.44	9,106.50	9,065.44	49.48	49.78	94.32	-558.67	416.75	171.34	73.27	98.07	1.747	
9,130.11	9,094.55	9,136.61	9,095.55	49.63	49.93	94.32	-558.67	416.75	171.34	72.97	98.37	1.742	
9,150.00	9,114.44	9,156.49	9,115.44	49.73	50.03	94.44	-558.67	416.75	171.30	72.73	98.56	1.738	
9,200.00	9,164.27	9,206.32	9,165.27	49.96	50.27	95.74	-558.67	416.75	170.83	71.86	98.96	1.726	
9,250.00	9,213.57	9,255.62	9,214.57	50.17	50.52	98.50	-558.67	416.75	170.12	70.88	99.24	1.714	
9,292.62	9,254.89	9,296.95	9,255.89	50.33	50.72	102.00	-558.67	416.75	169.81	70.43	99.38	1.709	
9,300.00	9,261.96	9,304.02	9,262.96	50.36	50.76	102.71	-558.67	416.75	169.82	70.42	99.40	1.708	ES, SF
9,350.00	9,309.08	9,351.14	9,310.08	50.53	50.99	108.31	-558.67	416.75	170.84	71.40	99.44	1.718	
9,400.00	9,354.57	9,396.63	9,355.57	50.68	51.21	115.10	-558.67	416.75	174.34	74.94	99.40	1.754	
9,450.00	9,398.08	9,440.13	9,399.08	50.80	51.43	122.68	-558.67	416.75	181.50	82.17	99.34	1.827	
9,500.00	9,439.28	9,481.33	9,440.28	50.91	51.64	130.56	-558.67	416.75	193.32	93.99	99.34	1.946	
9,550.00	9,477.85	9,519.91	9,478.85	50.99	51.83	138.18	-558.67	416.75	210.38	110.93	99.45	2.116	
9,600.00	9,513.51	9,555.57	9,514.51	51.06	52.00	145.16	-558.67	416.75	232.78	133.12	99.66	2.336	
9,650.00	9,545.98	9,588.04	9,546.98	51.12	52.17	151.27	-558.67	416.75	260.26	160.30	99.95	2.604	
9,700.00	9,575.01	9,617.07	9,576.01	51.16	52.31	156.48	-558.67	416.75	292.30	192.02	100.28	2.915	
9,750.00	9,600.39	9,642.45	9,601.39	51.19	52.44	160.85	-558.67	416.75	328.30	227.70	100.60	3.263	
9,800.00	9,621.92	9,663.97	9,622.92	51.21	52.54	164.49	-558.67	416.75	367.65	266.75	100.90	3.644	
9,850.00	9,639.43	9,681.49	9,640.43	51.24	52.63	167.52	-558.67	416.75	409.75	308.59	101.16	4.051	
9,900.00	9,652.80	9,694.86	9,653.80	51.27	52.70	170.04	-558.67	416.75	454.02	352.64	101.37	4.479	
9,950.00	9,661.92	9,703.97	9,662.92	51.32	52.74	172.14	-558.67	416.75	499.94	398.39	101.55	4.923	
10,000.00	9,666.72	9,708.77	9,667.72	51.39	52.77	173.91	-558.67	416.75	546.99	445.31	101.68	5.379	
10,028.26	9,667.51	9,709.56	9,668.51	51.44	52.77	174.79	-558.67	416.75	573.91	472.17	101.74	5.641	
10,100.00	9,667.74	9,709.79	9,668.74	51.63	52.77	176.60	-558.67	416.75	643.02	541.16	101.86	6.313	
10,200.00	9,668.06	9,710.12	9,669.06	52.03	52.77	178.34	-558.67	416.75	740.81	638.82	101.98	7.264	
10,300.00	9,668.39	9,710.44	9,669.39	52.56	52.78	179.43	-558.67	416.75	839.66	737.59	102.07	8.226	
10,400.00	9,668.71	9,710.77	9,669.71	53.19	52.78	-179.91	-558.67	416.75	939.14	837.02	102.12	9.196	
10,500.00	9,669.03	9,711.09	9,670.03	53.91	52.78	-179.58	-558.67	416.75	1,038.97	936.81	102.16	10.170	
10,600.00	9,669.36	9,711.41	9,670.36	54.72	52.78	-179.48	-558.67	416.75	1,138.95	1,036.77	102.18	11.146	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Tap Rock Operating	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Project:	Eddy County, New Mexico (NAD 83)	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Reference Site:	Money Graham 26S29E3229	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.14 Conroe Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design: Money Graham 26S29E3229 - Money Graham 26S29E3229 238H - Wellbore #1 - Design #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,601.74	9,669.36	9,711.42	9,670.36	54.73	52.78	-179.48	-558.67	416.75	1,140.68	1,038.50	102.18	11.163	
10,700.00	9,669.68	11,921.29	10,894.61	55.61	61.43	178.57	675.41	428.14	1,223.94	1,158.28	65.66	18.639	
10,800.00	9,670.00	12,021.29	10,895.01	56.59	62.33	178.60	775.41	429.07	1,224.01	1,157.30	66.71	18.348	
10,900.00	9,670.33	12,121.29	10,895.40	57.66	63.32	178.63	875.40	429.99	1,224.08	1,156.26	67.82	18.049	
11,000.00	9,670.65	12,221.29	10,895.79	58.80	64.39	178.66	975.40	430.91	1,224.15	1,155.16	69.00	17.743	
11,100.00	9,670.97	12,321.29	10,896.19	60.03	65.54	178.69	1,075.39	431.83	1,224.22	1,154.00	70.23	17.432	
11,200.00	9,671.29	12,421.29	10,896.58	61.32	66.75	178.72	1,175.39	432.76	1,224.30	1,152.78	71.52	17.119	
11,300.00	9,671.62	12,521.29	10,896.97	62.69	68.03	178.75	1,275.38	433.68	1,224.37	1,151.51	72.86	16.804	
11,400.00	9,671.94	12,621.29	10,897.37	64.12	69.37	178.79	1,375.38	434.60	1,224.44	1,150.18	74.25	16.490	
11,500.00	9,672.26	12,721.29	10,897.76	65.61	70.78	178.82	1,475.37	435.53	1,224.51	1,148.81	75.69	16.177	
11,600.00	9,672.58	12,821.29	10,898.15	67.16	72.24	178.85	1,575.37	436.45	1,224.58	1,147.40	77.18	15.867	
11,700.00	9,672.91	12,921.29	10,898.55	68.76	73.75	178.88	1,675.36	437.37	1,224.65	1,145.94	78.71	15.560	
11,800.00	9,673.23	13,021.29	10,898.94	70.42	75.32	178.91	1,775.36	438.30	1,224.72	1,144.45	80.27	15.257	
11,900.00	9,673.55	13,121.29	10,899.33	72.11	76.93	178.94	1,875.35	439.22	1,224.79	1,142.91	81.88	14.959	
12,000.00	9,673.88	13,221.29	10,899.73	73.85	78.59	178.97	1,975.35	440.14	1,224.86	1,141.34	83.52	14.666	
12,100.00	9,674.20	13,321.29	10,900.12	75.63	80.28	179.00	2,075.34	441.07	1,224.93	1,139.74	85.19	14.379	
12,200.00	9,674.52	13,421.29	10,900.51	77.45	82.02	179.03	2,175.34	441.99	1,225.00	1,138.10	86.90	14.097	
12,300.00	9,674.84	13,521.29	10,900.91	79.31	83.79	179.06	2,275.33	442.91	1,225.07	1,136.44	88.63	13.822	
12,400.00	9,675.17	13,621.29	10,901.30	81.19	85.60	179.09	2,375.33	443.84	1,225.14	1,134.75	90.39	13.554	
12,500.00	9,675.49	13,721.29	10,901.69	83.11	87.44	179.12	2,475.32	444.76	1,225.21	1,133.03	92.18	13.291	
12,600.00	9,675.81	13,821.29	10,902.09	85.06	89.31	179.15	2,575.32	445.68	1,225.28	1,131.29	93.99	13.036	
12,700.00	9,676.14	13,921.29	10,902.48	87.03	91.21	179.18	2,675.31	446.61	1,225.35	1,129.52	95.83	12.787	
12,800.00	9,676.46	14,021.29	10,902.87	89.02	93.14	179.21	2,775.31	447.53	1,225.42	1,127.73	97.69	12.544	
12,900.00	9,676.78	14,121.29	10,903.27	91.04	95.09	179.24	2,875.30	448.45	1,225.49	1,125.92	99.57	12.308	
13,000.00	9,677.10	14,221.29	10,903.66	93.08	97.06	179.27	2,975.30	449.38	1,225.56	1,124.09	101.47	12.078	
13,100.00	9,677.43	14,321.29	10,904.05	95.14	99.06	179.30	3,075.29	450.30	1,225.63	1,122.25	103.39	11.855	
13,200.00	9,677.75	14,421.29	10,904.45	97.22	101.07	179.33	3,175.28	451.22	1,225.71	1,120.38	105.32	11.637	
13,300.00	9,678.07	14,521.29	10,904.84	99.32	103.11	179.36	3,275.28	452.15	1,225.78	1,118.50	107.28	11.426	
13,400.00	9,678.40	14,621.29	10,905.23	101.44	105.17	179.39	3,375.27	453.07	1,225.85	1,116.60	109.24	11.221	
13,500.00	9,678.72	14,721.29	10,905.63	103.57	107.24	179.42	3,475.27	453.99	1,225.92	1,114.69	111.23	11.022	
13,600.00	9,679.04	14,821.29	10,906.02	105.71	109.33	179.45	3,575.26	454.92	1,225.99	1,112.76	113.22	10.828	
13,700.00	9,679.36	14,921.29	10,906.41	107.87	111.43	179.48	3,675.26	455.84	1,226.06	1,110.82	115.24	10.640	
13,800.00	9,679.69	15,021.29	10,906.81	110.04	113.55	179.51	3,775.25	456.76	1,226.13	1,108.87	117.26	10.457	
13,900.00	9,680.01	15,121.29	10,907.20	112.23	115.68	179.54	3,875.25	457.69	1,226.20	1,106.90	119.29	10.279	
14,000.00	9,680.33	15,221.29	10,907.59	114.42	117.83	179.57	3,975.24	458.61	1,226.27	1,104.93	121.34	10.106	
14,100.00	9,680.65	15,321.29	10,907.99	116.63	119.99	179.61	4,075.24	459.53	1,226.34	1,102.94	123.40	9.938	
14,200.00	9,680.98	15,421.29	10,908.38	118.85	122.16	179.64	4,175.23	460.46	1,226.41	1,100.94	125.47	9.775	
14,300.00	9,681.30	15,521.29	10,908.77	121.07	124.34	179.67	4,275.23	461.38	1,226.48	1,098.94	127.55	9.616	
14,400.00	9,681.62	15,621.29	10,909.16	123.31	126.53	179.70	4,375.22	462.30	1,226.55	1,096.92	129.63	9.462	
14,500.00	9,681.95	15,721.29	10,909.56	125.55	128.74	179.73	4,475.22	463.23	1,226.62	1,094.89	131.73	9.312	
14,600.00	9,682.27	15,821.29	10,909.95	127.81	130.95	179.76	4,575.21	464.15	1,226.69	1,092.86	133.84	9.166	
14,700.00	9,682.59	15,921.29	10,910.34	130.07	133.17	179.79	4,675.21	465.07	1,226.76	1,090.81	135.95	9.024	
14,800.00	9,682.91	16,021.29	10,910.74	132.34	135.40	179.82	4,775.20	466.00	1,226.83	1,088.76	138.07	8.886	
14,900.00	9,683.24	16,121.29	10,911.13	134.61	137.63	179.85	4,875.20	466.92	1,226.90	1,086.71	140.20	8.751	
15,000.00	9,683.56	16,221.29	10,911.52	136.89	139.88	179.88	4,975.19	467.84	1,226.97	1,084.64	142.33	8.620	
15,100.00	9,683.88	16,321.29	10,911.92	139.18	142.13	179.91	5,075.19	468.76	1,227.05	1,082.57	144.48	8.493	
15,200.00	9,684.21	16,421.29	10,912.31	141.48	144.39	179.94	5,175.18	469.69	1,227.12	1,080.49	146.62	8.369	
15,300.00	9,684.53	16,521.29	10,912.70	143.78	146.66	179.97	5,275.18	470.61	1,227.19	1,078.41	148.78	8.248	
15,400.00	9,684.85	16,621.29	10,913.10	146.08	148.93	180.00	5,375.17	471.53	1,227.26	1,076.32	150.94	8.131	
15,500.00	9,685.17	16,721.29	10,913.49	148.39	151.21	-179.97	5,475.17	472.46	1,227.33	1,074.22	153.11	8.016	
15,600.00	9,685.50	16,821.29	10,913.88	150.71	153.50	-179.94	5,575.16	473.38	1,227.40	1,072.12	155.28	7.904	
15,700.00	9,685.82	16,921.29	10,914.28	153.03	155.79	-179.91	5,675.16	474.30	1,227.47	1,070.01	157.46	7.796	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Tap Rock Operating	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Project:	Eddy County, New Mexico (NAD 83)	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Reference Site:	Money Graham 26S29E3229	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.14 Conroe Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design: Money Graham 26S29E3229 - Money Graham 26S29E3229 238H - Wellbore #1 - Design #1

Offset Site Error: 0.00 usft
Offset Well Error: 0.00 usft

Survey Program: 0-MWD

Rule Assigned:

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,800.00	9,686.14	17,021.29	10,914.67	155.36	158.08	-179.88	5,775.15	475.23	1,227.54	1,067.90	159.64	7.690	
15,900.00	9,686.46	17,121.29	10,915.06	157.69	160.39	-179.85	5,875.15	476.15	1,227.61	1,065.78	161.83	7.586	
16,000.00	9,686.79	17,221.29	10,915.46	160.02	162.69	-179.82	5,975.14	477.07	1,227.68	1,063.66	164.02	7.485	
16,100.00	9,687.11	17,321.29	10,915.85	162.36	165.00	-179.79	6,075.14	478.00	1,227.75	1,061.54	166.21	7.387	
16,200.00	9,687.43	17,421.29	10,916.24	164.70	167.32	-179.76	6,175.13	478.92	1,227.82	1,059.41	168.41	7.291	
16,300.00	9,687.76	17,521.29	10,916.64	167.05	169.64	-179.73	6,275.13	479.84	1,227.89	1,057.27	170.62	7.197	
16,400.00	9,688.08	17,621.29	10,917.03	169.40	171.96	-179.70	6,375.12	480.77	1,227.96	1,055.14	172.83	7.105	
16,500.00	9,688.40	17,721.29	10,917.42	171.75	174.29	-179.67	6,475.12	481.69	1,228.03	1,052.99	175.04	7.016	
16,600.00	9,688.72	17,821.29	10,917.82	174.10	176.62	-179.64	6,575.11	482.61	1,228.10	1,050.85	177.25	6.928	
16,700.00	9,689.05	17,921.29	10,918.21	176.46	178.96	-179.61	6,675.11	483.54	1,228.17	1,048.70	179.47	6.843	
16,800.00	9,689.37	18,021.29	10,918.60	178.82	181.30	-179.58	6,775.10	484.46	1,228.24	1,046.55	181.70	6.760	
16,900.00	9,689.69	18,121.29	10,919.00	181.19	183.64	-179.55	6,875.10	485.38	1,228.31	1,044.39	183.92	6.678	
17,000.00	9,690.02	18,221.29	10,919.39	183.56	185.98	-179.52	6,975.09	486.31	1,228.38	1,042.23	186.15	6.599	
17,100.00	9,690.34	18,321.29	10,919.78	185.93	188.33	-179.49	7,075.09	487.23	1,228.46	1,040.07	188.38	6.521	
17,150.12	9,690.50	18,371.41	10,919.98	187.11	189.51	-179.47	7,125.21	487.69	1,228.49	1,038.99	189.50	6.483	

Company:	Tap Rock Operating	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Project:	Eddy County, New Mexico (NAD 83)	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Reference Site:	Money Graham 26S29E3229	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.14 Conroe Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design: Sidewinder - Sidewinder 2H - Wellbore #1 - Surveys

Offset Site Error: 0.00 usft

Survey Program: 6370-MWD+IGRF

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	10,491.00	6,992.82	0.00	145.03	-8.39	1,644.68	-242.51	7,071.52				
100.00	100.00	10,491.00	6,992.82	0.20	145.03	-8.39	1,644.68	-242.51	6,974.36	6,914.45	59.91	116.406	
200.00	200.00	10,491.00	6,992.82	0.74	145.03	-8.39	1,644.68	-242.51	6,877.28	6,817.09	60.19	114.254	
300.00	300.00	10,491.00	6,992.82	1.27	145.03	-8.39	1,644.68	-242.51	6,780.29	6,719.80	60.50	112.080	
400.00	400.00	10,491.00	6,992.82	1.81	145.03	-8.39	1,644.68	-242.51	6,683.39	6,622.57	60.82	109.887	
500.00	500.00	10,491.00	6,992.82	2.35	145.03	-8.39	1,644.68	-242.51	6,586.58	6,525.41	61.17	107.676	
600.00	600.00	10,491.00	6,992.82	2.89	145.03	-8.39	1,644.68	-242.51	6,489.87	6,428.32	61.54	105.449	
700.00	700.00	10,491.00	6,992.82	3.42	145.03	-8.39	1,644.68	-242.51	6,393.26	6,331.31	61.94	103.210	
800.00	800.00	10,491.00	6,992.82	3.96	145.03	-8.39	1,644.68	-242.51	6,296.75	6,234.38	62.37	100.959	
900.00	900.00	10,491.00	6,992.82	4.50	145.03	-8.39	1,644.68	-242.51	6,200.35	6,137.53	62.82	98.700	
1,000.00	1,000.00	10,491.00	6,992.82	5.04	145.03	-8.39	1,644.68	-242.51	6,104.07	6,040.78	63.30	96.435	
1,100.00	1,100.00	10,491.00	6,992.82	5.57	145.03	-8.39	1,644.68	-242.51	6,007.92	5,944.11	63.80	94.166	
1,200.00	1,200.00	10,491.00	6,992.82	6.11	145.03	-8.39	1,644.68	-242.51	5,911.89	5,847.55	64.33	91.896	
1,300.00	1,299.95	10,491.00	6,992.82	6.62	145.03	-8.35	1,644.68	-242.51	5,816.69	5,751.78	64.91	89.616	
1,400.00	1,399.82	10,491.00	6,992.82	7.12	145.03	-8.26	1,644.68	-242.51	5,722.42	5,656.87	65.55	87.300	
1,500.00	1,499.68	10,491.00	6,992.82	7.62	145.03	-8.18	1,644.68	-242.51	5,628.35	5,562.10	66.24	84.964	
1,600.00	1,599.54	10,491.00	6,992.82	8.12	145.03	-8.09	1,644.68	-242.51	5,534.48	5,467.51	66.97	82.637	
1,700.00	1,699.41	10,491.00	6,992.82	8.64	145.03	-8.01	1,644.68	-242.51	5,440.83	5,373.09	67.74	80.320	
1,800.00	1,799.27	10,491.00	6,992.82	9.15	145.03	-7.92	1,644.68	-242.51	5,347.42	5,278.87	68.54	78.016	
1,850.80	1,850.00	10,491.00	6,992.82	9.42	145.03	-7.88	1,644.68	-242.51	5,300.05	5,231.09	68.96	76.852	
1,900.00	1,899.12	10,491.00	6,992.82	9.67	145.03	-7.85	1,644.68	-242.51	5,254.41	5,185.02	69.38	75.729	
2,000.00	1,998.74	10,491.00	6,992.82	10.20	145.03	-7.89	1,644.68	-242.51	5,162.97	5,092.65	70.31	73.429	
2,030.96	2,029.50	10,491.00	6,992.82	10.37	145.03	-7.93	1,644.68	-242.51	5,135.06	5,064.45	70.61	72.724	
2,100.00	2,098.02	10,491.00	6,992.82	10.74	145.03	-8.02	1,644.68	-242.51	5,073.16	5,001.82	71.34	71.115	
2,200.00	2,197.28	10,491.00	6,992.82	11.28	145.03	-8.15	1,644.68	-242.51	4,983.82	4,911.38	72.44	68.800	
2,300.00	2,296.53	10,491.00	6,992.82	11.83	145.03	-8.28	1,644.68	-242.51	4,894.90	4,821.31	73.59	66.512	
2,400.00	2,395.79	10,497.90	6,993.09	12.38	145.30	-8.18	1,644.98	-235.63	4,806.42	4,731.50	74.92	64.157	
2,500.00	2,495.04	10,505.82	6,993.39	12.94	145.61	-8.05	1,645.33	-227.72	4,718.37	4,642.06	76.31	61.828	
2,600.00	2,594.30	10,513.76	6,993.70	13.51	145.91	-7.92	1,645.68	-219.79	4,630.80	4,553.02	77.77	59.541	
2,700.00	2,693.55	10,521.72	6,994.01	14.08	146.22	-7.79	1,646.03	-211.84	4,543.72	4,464.42	79.30	57.299	
2,800.00	2,792.81	10,529.71	6,994.32	14.65	146.53	-7.66	1,646.38	-203.87	4,457.17	4,376.28	80.89	55.102	
2,900.00	2,892.06	10,537.72	6,994.64	15.23	146.84	-7.54	1,646.74	-195.87	4,371.18	4,288.63	82.55	52.952	
3,000.00	2,991.31	10,545.76	6,994.95	15.81	147.15	-7.41	1,647.10	-187.85	4,285.78	4,201.49	84.28	50.850	
3,100.00	3,090.57	10,553.82	6,995.27	16.39	147.46	-7.29	1,647.46	-179.80	4,201.00	4,114.91	86.09	48.798	
3,200.00	3,189.82	10,561.90	6,995.59	16.98	147.78	-7.16	1,647.82	-171.73	4,116.90	4,028.92	87.98	46.795	
3,300.00	3,289.08	10,570.01	6,995.92	17.57	148.09	-7.04	1,648.19	-163.64	4,033.50	3,943.55	89.94	44.845	
3,400.00	3,388.33	10,578.14	6,996.24	18.16	148.40	-6.91	1,648.55	-155.52	3,950.85	3,858.85	92.00	42.946	
3,500.00	3,487.59	10,584.00	6,996.47	18.75	148.63	-6.86	1,648.82	-149.68	3,869.00	3,774.91	94.09	41.121	
3,600.00	3,586.84	10,584.00	6,996.47	19.34	148.63	-6.99	1,648.82	-149.68	3,788.02	3,691.87	96.15	39.396	
3,700.00	3,686.10	10,598.31	6,997.06	19.93	149.18	-6.68	1,649.47	-135.39	3,707.93	3,609.33	98.60	37.606	
3,800.00	3,785.35	10,604.74	6,997.33	20.53	149.43	-6.61	1,649.77	-128.98	3,628.82	3,527.84	100.98	35.936	
3,900.00	3,884.61	10,611.26	6,997.61	21.12	149.68	-6.54	1,650.07	-122.46	3,550.75	3,447.29	103.46	34.320	
4,000.00	3,983.86	10,617.89	6,997.90	21.72	149.94	-6.47	1,650.37	-115.85	3,473.79	3,367.75	106.04	32.758	
4,100.00	4,083.12	10,624.62	6,998.20	22.32	150.20	-6.40	1,650.69	-109.14	3,398.01	3,289.28	108.73	31.251	
4,200.00	4,182.37	10,631.45	6,998.51	22.92	150.46	-6.32	1,651.01	-102.32	3,323.49	3,211.97	111.52	29.800	
4,300.00	4,281.62	10,638.39	6,998.82	23.52	150.73	-6.25	1,651.34	-95.40	3,250.32	3,135.89	114.43	28.405	
4,400.00	4,380.88	10,645.44	6,999.15	24.12	151.01	-6.17	1,651.67	-88.36	3,178.59	3,061.16	117.44	27.067	
4,500.00	4,480.13	10,652.60	6,999.49	24.72	151.28	-6.08	1,652.01	-81.22	3,108.40	2,987.85	120.55	25.784	
4,600.00	4,579.39	10,659.88	6,999.84	25.32	151.56	-6.00	1,652.36	-73.95	3,039.86	2,916.08	123.78	24.559	
4,700.00	4,678.64	10,677.00	7,000.69	25.92	152.23	-5.63	1,653.19	-56.87	2,973.10	2,845.74	127.36	23.344	
4,800.00	4,777.90	10,677.00	7,000.69	26.53	152.23	-5.76	1,653.19	-56.87	2,908.17	2,777.58	130.60	22.268	
4,900.00	4,877.15	10,677.00	7,000.69	27.13	152.23	-5.88	1,653.19	-56.87	2,845.29	2,711.37	133.92	21.247	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Tap Rock Operating	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Project:	Eddy County, New Mexico (NAD 83)	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Reference Site:	Money Graham 26S29E3229	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.14 Conroe Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design: Sidewinder - Sidewinder 2H - Wellbore #1 - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 6370-MWD+IGRF — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.00	4,976.41	10,677.00	7,000.69	27.73	152.23	-6.00	1,653.19	-56.87	2,784.57	2,647.26	137.31	20.280	
5,100.00	5,075.66	10,694.24	7,001.55	28.34	152.89	-5.64	1,654.09	-39.68	2,726.08	2,584.82	141.26	19.298	
5,200.00	5,174.92	10,700.35	7,001.84	28.94	153.13	-5.60	1,654.44	-33.59	2,670.08	2,525.11	144.96	18.419	
5,300.00	5,274.17	10,706.32	7,002.12	29.55	153.36	-5.55	1,654.79	-27.63	2,616.67	2,467.97	148.70	17.597	
5,400.00	5,373.43	10,712.17	7,002.39	30.15	153.58	-5.51	1,655.15	-21.80	2,566.03	2,413.56	152.47	16.830	
5,500.00	5,472.68	10,717.89	7,002.65	30.76	153.80	-5.48	1,655.52	-16.10	2,518.32	2,362.09	156.24	16.119	
5,600.00	5,571.93	10,723.49	7,002.90	31.37	154.02	-5.45	1,655.89	-10.52	2,473.72	2,313.74	159.98	15.462	
5,700.00	5,671.19	10,728.97	7,003.15	31.97	154.23	-5.42	1,656.26	-5.05	2,432.39	2,268.71	163.68	14.861	
5,800.00	5,770.44	10,734.34	7,003.38	32.58	154.44	-5.39	1,656.64	0.30	2,394.50	2,227.20	167.30	14.312	
5,900.00	5,869.70	10,739.60	7,003.60	33.19	154.64	-5.37	1,657.02	5.54	2,360.23	2,189.41	170.82	13.817	
6,000.00	5,968.95	10,744.76	7,003.82	33.80	154.84	-5.35	1,657.40	10.68	2,329.73	2,155.54	174.19	13.375	
6,100.00	6,068.21	10,749.81	7,004.03	34.40	155.04	-5.34	1,657.79	15.71	2,303.15	2,125.76	177.39	12.984	
6,200.00	6,167.46	10,770.00	7,004.83	35.01	155.82	-4.92	1,659.43	35.82	2,280.71	2,099.77	180.95	12.604	
6,300.00	6,266.72	10,770.00	7,004.83	35.62	155.82	-5.04	1,659.43	35.82	2,262.33	2,078.80	183.53	12.327	
6,400.00	6,365.97	10,770.00	7,004.83	36.23	155.82	-5.16	1,659.43	35.82	2,248.24	2,062.40	185.84	12.098	
6,500.00	6,465.23	10,770.00	7,004.83	36.84	155.82	-5.27	1,659.43	35.82	2,238.54	2,050.69	187.85	11.917	
6,527.78	6,492.80	10,770.00	7,004.83	37.01	155.82	-5.31	1,659.43	35.82	2,236.63	2,048.28	188.36	11.874	
6,600.00	6,564.63	10,775.79	7,005.05	37.44	156.04	-5.23	1,659.93	41.58	2,232.00	2,042.22	189.78	11.761	
6,700.00	6,664.45	10,781.52	7,005.28	37.99	156.26	-5.13	1,660.42	47.29	2,225.22	2,033.85	191.36	11.628	
6,761.11	6,725.55	10,784.14	7,005.38	38.29	156.36	-5.08	1,660.64	49.89	2,220.88	2,028.76	192.12	11.560	
6,800.00	6,764.44	10,785.58	7,005.43	38.47	156.42	-5.04	1,660.76	51.33	2,218.41	2,025.89	192.52	11.523	
6,900.00	6,864.44	10,789.32	7,005.58	38.93	156.56	-4.94	1,661.08	55.05	2,215.18	2,021.87	193.31	11.459	
6,921.67	6,886.11	10,790.14	7,005.61	39.03	156.59	-4.92	1,661.15	55.86	2,215.08	2,021.64	193.43	11.451	CC, ES
7,000.00	6,964.44	10,793.09	7,005.73	39.39	156.71	-4.85	1,661.41	58.80	2,216.46	2,022.70	193.76	11.439	SF
7,100.00	7,064.44	10,796.88	7,005.88	39.86	156.85	-4.75	1,661.73	62.58	2,222.23	2,028.37	193.86	11.463	
7,200.00	7,164.44	10,800.70	7,006.03	40.33	157.00	-4.65	1,662.06	66.38	2,232.47	2,038.84	193.63	11.530	
7,300.00	7,264.44	10,804.55	7,006.18	40.80	157.15	-4.55	1,662.39	70.21	2,247.10	2,054.03	193.07	11.639	
7,400.00	7,364.44	10,808.43	7,006.33	41.27	157.30	-4.45	1,662.72	74.07	2,266.06	2,073.84	192.21	11.789	
7,500.00	7,464.44	10,812.33	7,006.49	41.74	157.45	-4.35	1,663.06	77.96	2,289.22	2,098.15	191.07	11.981	
7,600.00	7,564.44	10,816.27	7,006.65	42.21	157.60	-4.25	1,663.40	81.88	2,316.46	2,126.79	189.67	12.213	
7,700.00	7,664.44	10,820.23	7,006.81	42.69	157.75	-4.14	1,663.74	85.82	2,347.64	2,159.60	188.05	12.484	
7,800.00	7,764.44	10,824.22	7,006.97	43.17	157.91	-4.04	1,664.09	89.80	2,382.61	2,196.39	186.22	12.794	
7,900.00	7,864.44	10,828.25	7,007.13	43.65	158.06	-3.94	1,664.43	93.80	2,421.20	2,236.97	184.23	13.142	
8,000.00	7,964.44	10,832.30	7,007.30	44.13	158.22	-3.83	1,664.78	97.84	2,463.24	2,281.14	182.11	13.526	
8,100.00	8,064.44	10,836.38	7,007.46	44.61	158.38	-3.73	1,665.14	101.90	2,508.56	2,328.68	179.88	13.946	
8,200.00	8,164.44	10,840.50	7,007.63	45.09	158.53	-3.62	1,665.49	106.00	2,556.98	2,379.42	177.57	14.400	
8,300.00	8,264.44	10,844.64	7,007.80	45.57	158.69	-3.51	1,665.85	110.12	2,608.33	2,433.13	175.20	14.887	
8,400.00	8,364.44	10,848.82	7,007.97	46.06	158.85	-3.41	1,666.22	114.28	2,662.45	2,489.64	172.81	15.407	
8,500.00	8,464.44	10,853.03	7,008.15	46.54	159.02	-3.30	1,666.58	118.47	2,719.15	2,548.75	170.41	15.957	
8,600.00	8,564.44	10,857.27	7,008.32	47.03	159.18	-3.19	1,666.95	122.69	2,778.30	2,610.29	168.01	16.537	
8,700.00	8,664.44	10,861.54	7,008.50	47.52	159.35	-3.08	1,667.32	126.94	2,839.72	2,674.09	165.64	17.144	
8,800.00	8,764.44	10,867.05	7,008.73	48.01	159.56	-2.93	1,667.80	132.43	2,903.29	2,739.95	163.34	17.775	
8,900.00	8,864.44	10,873.44	7,009.01	48.50	159.80	-2.77	1,668.36	138.78	2,968.86	2,807.75	161.11	18.427	
9,000.00	8,964.44	10,880.16	7,009.31	48.99	160.06	-2.60	1,668.94	145.47	3,036.29	2,877.34	158.95	19.102	
9,100.00	9,064.44	10,887.24	7,009.63	49.48	160.34	-2.41	1,669.56	152.52	3,105.47	2,948.62	156.86	19.798	
9,130.11	9,094.55	10,889.45	7,009.73	49.63	160.42	-2.36	1,669.75	154.72	3,126.63	2,970.39	156.24	20.011	
9,150.00	9,114.44	10,891.08	7,009.81	49.73	160.48	-2.32	1,669.89	156.35	3,140.44	2,984.61	155.83	20.153	
9,200.00	9,164.27	10,896.71	7,010.07	49.96	160.70	-2.20	1,670.38	161.95	3,173.28	3,018.50	154.79	20.501	
9,250.00	9,213.57	10,904.54	7,010.45	50.17	161.00	-2.05	1,671.07	169.73	3,203.28	3,049.57	153.71	20.840	
9,300.00	9,261.96	10,914.58	7,010.95	50.36	161.39	-1.86	1,671.94	179.73	3,230.28	3,077.66	152.62	21.166	
9,350.00	9,309.08	10,926.85	7,011.58	50.53	161.86	-1.65	1,673.01	191.93	3,254.15	3,102.64	151.51	21.478	
9,400.00	9,354.57	10,941.32	7,012.36	50.68	162.42	-1.39	1,674.27	206.33	3,274.75	3,124.37	150.38	21.776	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Tap Rock Operating	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Project:	Eddy County, New Mexico (NAD 83)	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Reference Site:	Money Graham 26S29E3229	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.14 Conroe Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design: Sidewinder - Sidewinder 2H - Wellbore #1 - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 6370-MWD+IGRF — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,450.00	9,398.08	10,957.94	7,013.30	50.80	163.06	-1.10	1,675.71	222.86	3,291.98	3,142.74	149.25	22.057	
9,500.00	9,439.28	10,972.74	7,014.16	50.91	163.63	-0.88	1,676.99	237.58	3,305.76	3,157.76	148.00	22.337	
9,550.00	9,477.85	10,989.12	7,015.12	50.99	164.26	-0.62	1,678.38	253.86	3,316.01	3,169.28	146.73	22.600	
9,600.00	9,513.51	11,006.56	7,016.17	51.06	164.93	-0.35	1,679.85	271.22	3,322.67	3,177.23	145.44	22.846	
9,650.00	9,545.98	11,024.92	7,017.29	51.12	165.64	-0.06	1,681.36	289.48	3,325.70	3,181.58	144.12	23.075	
9,700.00	9,575.01	11,044.01	7,018.47	51.16	166.38	0.24	1,682.91	308.47	3,325.09	3,182.30	142.79	23.286	
9,750.00	9,600.39	11,063.66	7,019.71	51.19	167.13	0.56	1,684.48	328.01	3,320.82	3,179.37	141.45	23.477	
9,800.00	9,621.92	11,071.30	7,020.18	51.21	167.43	0.52	1,685.11	335.61	3,312.96	3,173.16	139.79	23.699	
9,850.00	9,639.43	11,084.24	7,020.98	51.24	167.93	0.63	1,686.16	348.48	3,301.50	3,163.24	138.27	23.878	
9,900.00	9,652.80	11,097.32	7,021.79	51.27	168.43	0.74	1,687.22	361.50	3,286.52	3,149.76	136.76	24.032	
9,950.00	9,661.92	11,110.46	7,022.61	51.32	168.94	0.86	1,688.30	374.57	3,268.07	3,132.80	135.27	24.160	
10,000.00	9,666.72	11,123.55	7,023.41	51.39	169.44	0.97	1,689.38	387.59	3,246.23	3,112.42	133.81	24.260	
10,028.26	9,667.51	11,130.90	7,023.86	51.44	169.72	1.03	1,689.99	394.90	3,232.43	3,099.42	133.01	24.302	
10,100.00	9,667.74	11,149.26	7,024.99	51.63	170.43	1.23	1,691.52	413.16	3,196.54	3,065.61	130.93	24.415	
10,200.00	9,668.06	11,174.04	7,026.50	52.03	171.39	1.61	1,693.59	437.81	3,148.13	3,020.23	127.89	24.615	
10,300.00	9,668.39	11,195.44	7,027.80	52.56	172.21	2.05	1,695.38	459.09	3,101.81	2,977.13	124.68	24.879	
10,400.00	9,668.71	11,200.00	7,028.08	53.19	172.39	1.98	1,695.76	463.63	3,057.83	2,936.80	121.03	25.264	
10,500.00	9,669.03	11,200.00	7,028.08	53.91	172.39	1.85	1,695.76	463.63	3,016.46	2,899.18	117.28	25.720	
10,600.00	9,669.36	11,200.00	7,028.08	54.72	172.39	1.88	1,695.76	463.63	2,977.85	2,864.29	113.56	26.223	
10,601.74	9,669.36	11,200.00	7,028.08	54.73	172.39	1.88	1,695.76	463.63	2,977.21	2,863.71	113.50	26.232	
10,700.00	9,669.68	11,200.00	7,028.08	55.61	172.39	2.01	1,695.76	463.63	2,942.15	2,832.22	109.92	26.766	
10,800.00	9,670.00	11,200.00	7,028.08	56.59	172.39	2.17	1,695.76	463.63	2,909.44	2,803.02	106.42	27.338	
10,900.00	9,670.33	11,200.00	7,028.08	57.66	172.39	2.37	1,695.76	463.63	2,879.84	2,776.72	103.12	27.928	
11,000.00	9,670.65	11,200.00	7,028.08	58.80	172.39	2.63	1,695.76	463.63	2,853.43	2,753.38	100.06	28.518	
11,100.00	9,670.97	11,200.00	7,028.08	60.03	172.39	2.97	1,695.76	463.63	2,830.32	2,733.00	97.32	29.084	
11,200.00	9,671.29	11,200.00	7,028.08	61.32	172.39	3.44	1,695.76	463.63	2,810.57	2,715.61	94.96	29.598	
11,300.00	9,671.62	11,200.00	7,028.08	62.69	172.39	4.14	1,695.76	463.63	2,794.27	2,701.21	93.06	30.026	
11,400.00	9,671.94	11,200.00	7,028.08	64.12	172.39	5.27	1,695.76	463.63	2,781.47	2,689.76	91.70	30.331	
11,500.00	9,672.26	11,200.00	7,028.08	65.61	172.39	7.45	1,695.76	463.63	2,772.22	2,681.27	90.95	30.481	
11,600.00	9,672.58	11,200.00	7,028.08	67.16	172.39	13.28	1,695.76	463.63	2,766.55	2,675.69	90.86	30.448	
11,700.00	9,672.91	11,200.00	7,028.08	68.76	172.39	59.41	1,695.76	463.63	2,764.49	2,673.02	91.47	30.222	
11,706.90	9,672.93	11,200.00	7,028.08	68.88	172.39	71.73	1,695.76	463.63	2,764.48	2,672.94	91.54	30.199	
11,800.00	9,673.23	11,200.00	7,028.08	70.42	172.39	163.24	1,695.76	463.63	2,766.05	2,673.26	92.79	29.810	
11,900.00	9,673.55	11,200.00	7,028.08	72.11	172.39	172.43	1,695.76	463.63	2,771.22	2,676.43	94.79	29.235	
12,000.00	9,673.88	11,200.00	7,028.08	73.85	172.39	175.26	1,695.76	463.63	2,779.98	2,682.56	97.42	28.536	
12,100.00	9,674.20	11,200.00	7,028.08	75.63	172.39	176.63	1,695.76	463.63	2,792.29	2,691.69	100.60	27.756	
12,200.00	9,674.52	11,200.00	7,028.08	77.45	172.39	177.43	1,695.76	463.63	2,808.12	2,703.88	104.24	26.938	
12,300.00	9,674.84	11,200.00	7,028.08	79.31	172.39	177.96	1,695.76	463.63	2,827.39	2,719.14	108.25	26.119	
12,400.00	9,675.17	11,200.00	7,028.08	81.19	172.39	178.34	1,695.76	463.63	2,850.05	2,737.51	112.53	25.326	
12,500.00	9,675.49	11,200.00	7,028.08	83.11	172.39	178.62	1,695.76	463.63	2,876.00	2,758.99	117.01	24.579	
12,600.00	9,675.81	11,200.00	7,028.08	85.06	172.39	178.83	1,695.76	463.63	2,905.17	2,783.57	121.60	23.891	
12,700.00	9,676.14	11,200.00	7,028.08	87.03	172.39	179.01	1,695.76	463.63	2,937.45	2,811.20	126.25	23.267	
12,800.00	9,676.46	11,200.00	7,028.08	89.02	172.39	179.15	1,695.76	463.63	2,972.75	2,841.85	130.90	22.710	
12,900.00	9,676.78	11,200.00	7,028.08	91.04	172.39	179.26	1,695.76	463.63	3,010.96	2,875.44	135.51	22.219	
13,000.00	9,677.10	11,200.00	7,028.08	93.08	172.39	179.36	1,695.76	463.63	3,051.96	2,911.91	140.05	21.792	
13,100.00	9,677.43	11,200.00	7,028.08	95.14	172.39	179.45	1,695.76	463.63	3,095.66	2,951.17	144.48	21.425	
13,200.00	9,677.75	11,200.00	7,028.08	97.22	172.39	179.52	1,695.76	463.63	3,141.93	2,993.13	148.80	21.115	
13,300.00	9,678.07	11,200.00	7,028.08	99.32	172.39	179.58	1,695.76	463.63	3,190.66	3,037.69	152.97	20.858	
13,400.00	9,678.40	11,200.00	7,028.08	101.44	172.39	179.64	1,695.76	463.63	3,241.75	3,084.75	157.00	20.648	
13,500.00	9,678.72	11,200.00	7,028.08	103.57	172.39	179.69	1,695.76	463.63	3,295.08	3,134.21	160.87	20.483	
13,600.00	9,679.04	11,200.00	7,028.08	105.71	172.39	179.73	1,695.76	463.63	3,350.55	3,185.97	164.58	20.358	
13,700.00	9,679.36	11,200.00	7,028.08	107.87	172.39	179.77	1,695.76	463.63	3,408.05	3,239.92	168.14	20.270	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Tap Rock Operating	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Project:	Eddy County, New Mexico (NAD 83)	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Reference Site:	Money Graham 26S29E3229	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.14 Conroe Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design: Sidewinder - Sidewinder 2H - Wellbore #1 - Surveys — **Offset Site Error:** 0.00 usft

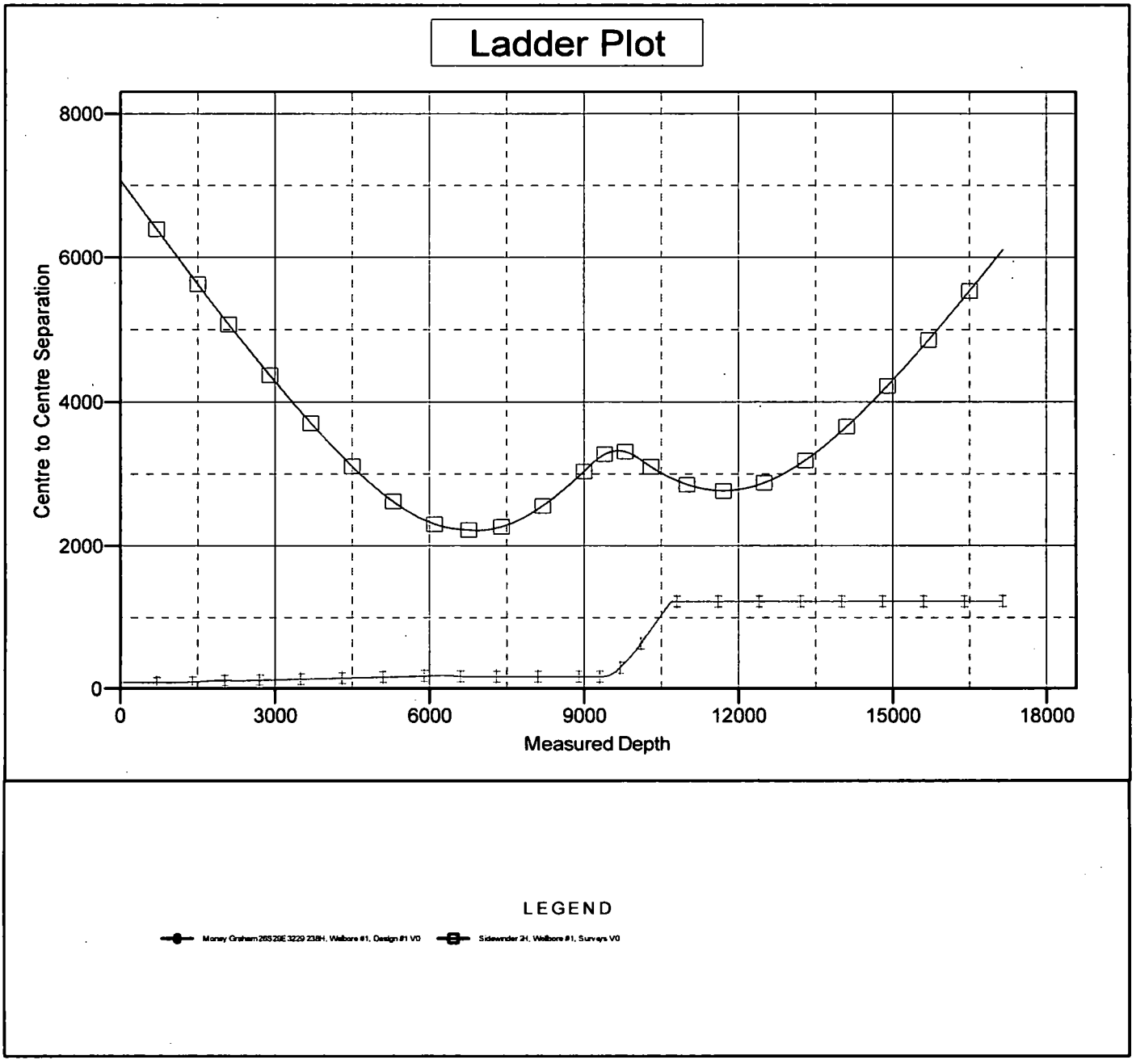
Survey Program: 6370-MWD+IGRF — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,800.00	9,679.69	11,200.00	7,028.08	110.04	172.39	179.81	1,695.76	463.63	3,467.48	3,295.96	171.53	20.215	
13,900.00	9,680.01	11,200.00	7,028.08	112.23	172.39	179.84	1,695.76	463.63	3,528.75	3,353.99	174.76	20.192	
14,000.00	9,680.33	11,200.00	7,028.08	114.42	172.39	179.87	1,695.76	463.63	3,591.75	3,413.91	177.84	20.197	
14,100.00	9,680.65	11,200.00	7,028.08	116.63	172.39	179.90	1,695.76	463.63	3,656.41	3,475.64	180.77	20.227	
14,200.00	9,680.98	11,200.00	7,028.08	118.85	172.39	179.93	1,695.76	463.63	3,722.62	3,539.07	183.55	20.281	
14,300.00	9,681.30	11,200.00	7,028.08	121.07	172.39	179.95	1,695.76	463.63	3,790.32	3,604.13	186.19	20.357	
14,400.00	9,681.62	11,200.00	7,028.08	123.31	172.39	179.97	1,695.76	463.63	3,859.42	3,670.72	188.70	20.453	
14,500.00	9,681.95	11,200.00	7,028.08	125.55	172.39	179.99	1,695.76	463.63	3,929.86	3,738.78	191.08	20.566	
14,600.00	9,682.27	11,200.00	7,028.08	127.81	172.39	-179.99	1,695.76	463.63	4,001.55	3,808.21	193.34	20.697	
14,700.00	9,682.59	11,200.00	7,028.08	130.07	172.39	-179.97	1,695.76	463.63	4,074.44	3,878.95	195.48	20.843	
14,800.00	9,682.91	11,200.00	7,028.08	132.34	172.39	-179.96	1,695.76	463.63	4,148.45	3,950.94	197.51	21.003	
14,900.00	9,683.24	11,200.00	7,028.08	134.61	172.39	-179.94	1,695.76	463.63	4,223.54	4,024.10	199.44	21.177	
15,000.00	9,683.56	11,200.00	7,028.08	136.89	172.39	-179.93	1,695.76	463.63	4,299.64	4,098.37	201.27	21.363	
15,100.00	9,683.88	11,200.00	7,028.08	139.18	172.39	-179.91	1,695.76	463.63	4,376.70	4,173.70	203.00	21.560	
15,200.00	9,684.21	11,200.00	7,028.08	141.48	172.39	-179.90	1,695.76	463.63	4,454.67	4,250.02	204.65	21.767	
15,300.00	9,684.53	11,200.00	7,028.08	143.78	172.39	-179.89	1,695.76	463.63	4,533.51	4,327.30	206.22	21.984	
15,400.00	9,684.85	11,200.00	7,028.08	146.08	172.39	-179.88	1,695.76	463.63	4,613.17	4,405.47	207.70	22.211	
15,500.00	9,685.17	11,200.00	7,028.08	148.39	172.39	-179.87	1,695.76	463.63	4,693.61	4,484.50	209.11	22.445	
15,600.00	9,685.50	11,200.00	7,028.08	150.71	172.39	-179.86	1,695.76	463.63	4,774.79	4,564.33	210.46	22.688	
15,700.00	9,685.82	11,200.00	7,028.08	153.03	172.39	-179.85	1,695.76	463.63	4,856.67	4,644.94	211.73	22.938	
15,800.00	9,686.14	11,200.00	7,028.08	155.36	172.39	-179.84	1,695.76	463.63	4,939.21	4,726.27	212.95	23.194	
15,900.00	9,686.46	11,200.00	7,028.08	157.69	172.39	-179.83	1,695.76	463.63	5,022.40	4,808.29	214.11	23.458	
16,000.00	9,686.79	11,200.00	7,028.08	160.02	172.39	-179.82	1,695.76	463.63	5,106.18	4,890.97	215.21	23.727	
16,100.00	9,687.11	11,200.00	7,028.08	162.36	172.39	-179.81	1,695.76	463.63	5,190.54	4,974.28	216.26	24.001	
16,200.00	9,687.43	11,200.00	7,028.08	164.70	172.39	-179.80	1,695.76	463.63	5,275.44	5,058.18	217.27	24.281	
16,300.00	9,687.76	11,200.00	7,028.08	167.05	172.39	-179.80	1,695.76	463.63	5,360.87	5,142.65	218.22	24.566	
16,400.00	9,688.08	11,200.00	7,028.08	169.40	172.39	-179.79	1,695.76	463.63	5,446.79	5,227.65	219.14	24.855	
16,500.00	9,688.40	11,200.00	7,028.08	171.75	172.39	-179.78	1,695.76	463.63	5,533.19	5,313.17	220.02	25.149	
16,600.00	9,688.72	11,200.00	7,028.08	174.10	172.39	-179.78	1,695.76	463.63	5,620.04	5,399.18	220.85	25.447	
16,700.00	9,689.05	11,200.00	7,028.08	176.46	172.39	-179.77	1,695.76	463.63	5,707.31	5,485.66	221.65	25.749	
16,800.00	9,689.37	11,200.00	7,028.08	178.82	172.39	-179.76	1,695.76	463.63	5,795.00	5,572.58	222.42	26.054	
16,900.00	9,689.69	11,200.00	7,028.08	181.19	172.39	-179.76	1,695.76	463.63	5,883.08	5,659.92	223.16	26.363	
17,000.00	9,690.02	11,200.00	7,028.08	183.56	172.39	-179.75	1,695.76	463.63	5,971.54	5,747.67	223.87	26.674	
17,100.00	9,690.34	11,200.00	7,028.08	185.93	172.39	-179.75	1,695.76	463.63	6,060.35	5,835.81	224.55	26.989	
17,150.12	9,690.50	11,200.00	7,028.08	187.11	172.39	-179.75	1,695.76	463.63	6,105.00	5,880.13	224.88	27.148	

Company:	Tap Rock Operating	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Project:	Eddy County, New Mexico (NAD 83)	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Reference Site:	Money Graham 26S29E3229	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.14 Conroe Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 2892.50usft (H&P 422)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Money Graham 26S29E3229 208H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.18°



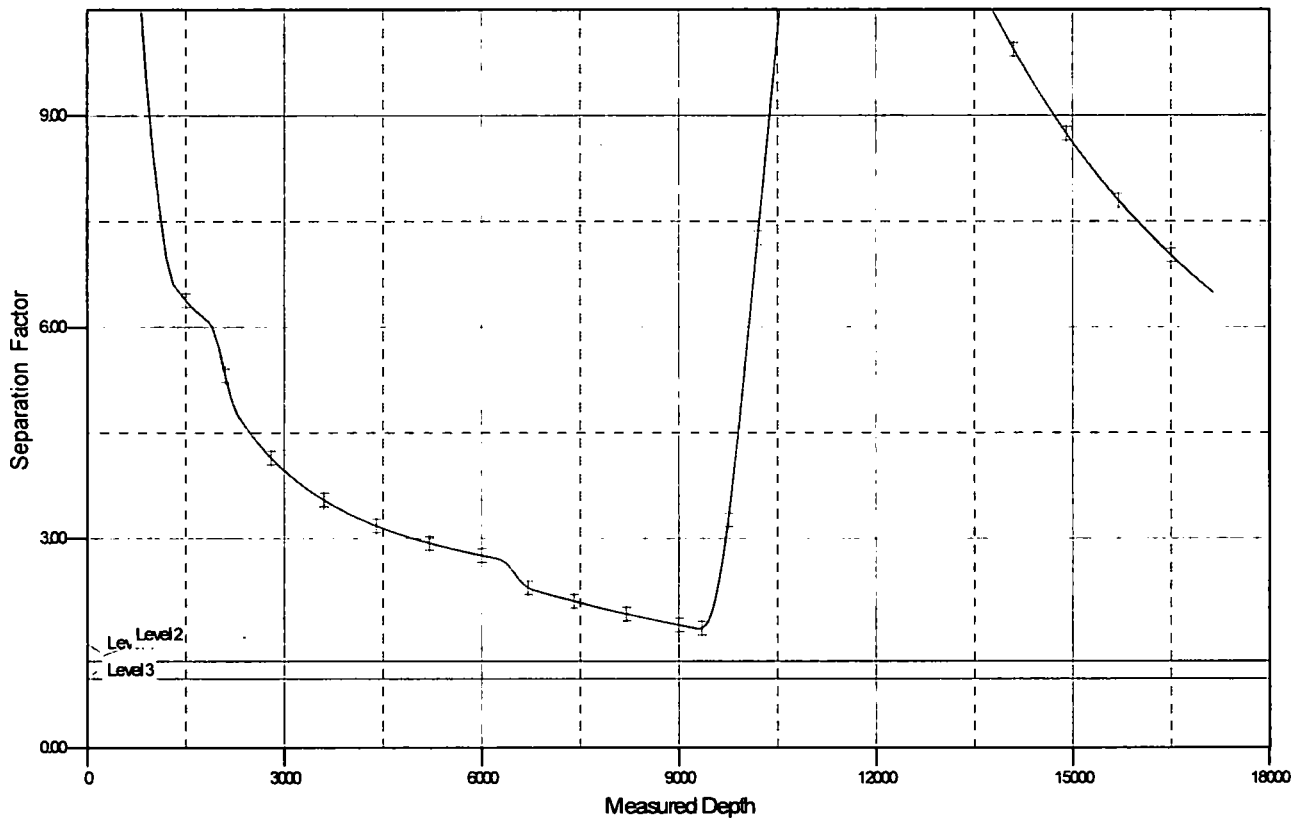
CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Tap Rock Operating	**Local Co-ordinate Reference:**	Well Money Graham 26S29E3229 208H
Project:	Eddy County, New Mexico (NAD 83)	**TVD Reference:**	WELL @ 2892.50usft (H&P 422)
Reference Site:	Money Graham 26S29E3229	**MD Reference:**	WELL @ 2892.50usft (H&P 422)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Money Graham 26S29E3229 208H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.14 Conroe Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 2892.50usft (H&P 422)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Money Graham 26S29E3229 208H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.18°

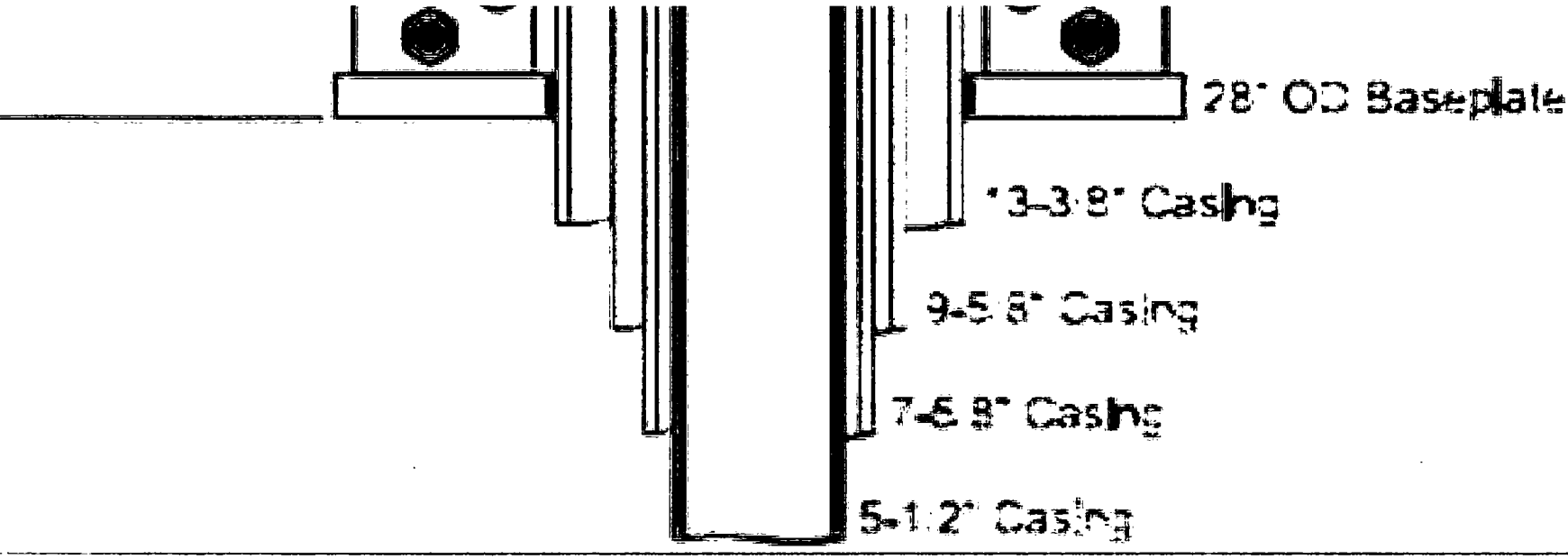
Separation Factor Plot



LEGEND

Money Graham 26S 29E 3229 208H, Wellbore #1, Design #1 V0 — Sidewinder 2H, Wellbore #1, Surveys V0

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation


28" OD Baseplate
13-3/8" Casing
9-5/8" Casing
7-5/8" Casing
5-1/2" Casing

Tenaris

Casing and Tubing Performance Data

Choose pipe size, wall thickness and steel grade to view API connection options and performance data.

Size | Wall | Grade | Connection | Unit

Pipe Body Data

GEOMETRY					
Nominal OD	13.375 in	Wall Thickness	0.380 in	API Drift Diameter	12.459 in
Nominal Weight	54.50 lbs/ft	Nominal ID	12.615 in	Alternate Drift Diameter	n.a.
Plain End Weight	52.79 lbs/ft	Nominal Cross Section	15.513 sq in		
PERFORMANCE					
Steel Grade	J55	Minimum Yield	55,000 psi	Minimum Ultimate	75,000 psi
Body Yield Strength	853,000 lbs	Internal Yield Pressure	2,730 psi	Collapse Pressure	1,130 psi

Connection Data

GEOMETRY					
Regular OD	14.375 in	Threads Per Inch	5	Make-Up Thread Turns	1
PERFORMANCE					
Steel Grade	J55	Minimum Yield	55,000 psi	Minimum Ultimate	75,000 psi
Joint Strength	909,000 lbs	Internal Pressure Resistance	2,730 psi		

TenarisHydril Premium Connections

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Casing and Tubing Performance Data

Choose pipe size, wall thickness and steel grade to view API connection options and performance data.

Size | Wall | Grade | Connection | Unit

Pipe Body Data

GEOMETRY					
Nominal OD	9.625 in	Wall Thickness	0.395 in	API Drift Diameter	8.679 in
Nominal Weight	40.00 lbs/ft	Nominal ID	8.835 in	Alternate Drift Diameter	8.75 in
Plain End Weight	38.97 lbs/ft	Nominal Cross Section	11.454 sq in		
PERFORMANCE					
Steel Grade	J55	Minimum Yield	55,000 psi	Minimum Ultimate	75,000 psi
Body Yield Strength	630,000 lbs	Internal Yield Pressure	3,950 psi	Collapse Pressure	2,570 psi

Connection Data

GEOMETRY					
Regular OD	10.625 in	Threads Per Inch	5	Make-Up Thread Turns	1
PERFORMANCE					
Steel Grade	J55	Minimum Yield	55,000 psi	Minimum Ultimate	75,000 psi
Joint Strength	714,000 lbs	Internal Pressure Resistance	3,950 psi		

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Casing and Tubing Performance Data

PIPE BODY DATA

GEOMETRY

Outside Diameter	7.625 in	Wall Thickness	0.375 in	API Drift Diameter	6.750 in
Nominal Weight	29.70 lbs/ft	Nominal ID	6.875 in	Alternative Drift Diameter	n.a.
Plain End Weight	29.06 lbs/ft	Nominal cross section	8.541 in		

PERFORMANCE

Steel Grade	P110	Minimum Yield	110,000 psi	Minimum Ultimate	125,000 psi
Tension Yield	940,000 in	Internal Pressure Yield	9,470 psi	Collapse Pressure	5,350 psi
Available Seamless	Yes	Available Welded	Yes		

CONNECTION DATA

TYPE: BTC

GEOMETRY

Coupling Reg OD	8.500 in	Threads per in	5	Thread turns make up	1

PERFORMANCE

Steel Grade	P110	Coupling Min Yield	110,000 psi	Coupling Min Ultimate	125,000 psi
Joint Strength	960,000 lbs			Internal Pressure Resistance	9,470 psi

Wedge 513®

Printed on: 01/30/2018

Outside Diameter	7.625 in.	Min. Wall Thickness	87.5%	(*) Grade P110	
Wall Thickness	0.375 in.	Connection OD Option	REGULAR	COUPLING	PIPE BODY
Grade	P110*	Drift	API Standard	Body: White 1st Band: - 2nd Band: -	1st Band: White 2nd Band: - 3rd Band: -
		Type	Casing	3rd Band: -	4th Band: -

GEOMETRY

Nominal OD	7.625 in.	Nominal Weight	29.70 lbs/ft	Drift	6.75 in.
Nominal ID	6.875 in.	Wall Thickness	0.375 in.	Plain End Weight	29.06 lbs/ft
OD Tolerance	API				

PERFORMANCE

Body Yield Strength	940 x1000 lbs	Internal Yield	9470 psi	SMYS	110000 psi
Collapse	5350 psi				

GEOMETRY

Connection OD	7.625 in.	Connection ID	6.800 in.	Make-up Loss	4.420 in.
Threads per in	3.29	Connection OD Option	REGULAR		

PERFORMANCE

Tension Efficiency	60.0 %	Joint Yield Strength	564.000 x1000 lbs	Internal Pressure Capacity	9470.000 psi
Compression Efficiency	75.2 %	Compression Strength	706.880 x1000 lbs	Max. Allowable Bending	39.6 °/100 ft
External Pressure Capacity	5350.000 psi				

MAKE-UP TORQUES

Minimum	9000 ft-lbs	Optimum	10800 ft-lbs	Maximum	15800 ft-lbs

OPERATION LIMIT TORQUES

Operating Torque	47000 ft-lbs	Yield Torque	70000 ft-lbs

Notes

This connection is fully interchangeable with:

Wedge 523® - 7.625 in. - 29.7 lbs/ft

Connections with Dopeless® Technology are fully compatible with the same connection in its Standard version

For further information on concepts indicated in this datasheet, download the Datasheet Manual from www.tenaris.com

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Casing and Tubing Performance Data

PIPE BODY DATA

GEOMETRY

Outside Diameter	7.000 in	Wall Thickness	0.408 in	API Drift Diameter	6.059 in
Nominal Weight	29.00 lbs/ft	Nominal ID	6.184 in	Alternative Drift Diameter	6.125 in
Plain End Weight	28.75 lbs/ft	Nominal cross section	8.449 in		

PERFORMANCE

Steel Grade	P110	Minimum Yield	110,000 psi	Minimum Ultimate	125,000 psi
Tension Yield	929,000 in	Internal Pressure Yield	11,220 psi	Collapse Pressure	8,530 psi
Available Seamless	Yes	Available Welded	Yes		

CONNECTION DATA

TYPE: BTC

GEOMETRY

Coupling Reg OD	7.656 in	Threads per in	5	Thread turns make up	1

PERFORMANCE

Steel Grade	P110	Coupling Min Yield	110,000 psi	Coupling Min Ultimate	125,000 psi
Joint Strength	955,000 lbs			Internal Pressure Resistance	11,220 psi

5.5", 20#, P-110, TXP connection (modified buttress connection that provides a torque rating of nearly 24000ft-lbs)

TXP® BTC

SHARE EXPORT DATA PRINT

Outside Diameter	5.500 in	Min. Wall Thickness	87.5%		
Wall Thickness	0.361 in	Drift	API Standard		
Grade	P110	Type	Casing		
		Connection OD Option	REGULAR		

Clear Filters
Compare
Request Info

CONNECTION INFORMATION
- Blanking Dimensions
- Connection's Page
- Brochure
- Datasheet Manual

PIPE BODY DATA

GEOMETRY

Nominal OD	5.500 in	Nominal Weight	20 lbs/ft	Drift	4.653 in.
Nominal ID	4.778 in	Wall Thickness	0.361 in	Plain End Weight	19.83 lbs/ft
OD Tolerance	API				

PERFORMANCE

Body Yield Strength	641 x1000 lbs	Internal Yield	12640 psi	SMYS	110000 psi
Collapse	11100 psi				

CONNECTION DATA

GEOMETRY

Connection OD	6.100 in	Coupling Length	9.450 in	Connection ID	4.766 in
Make-up Loss	4.204 in	Threads per in	5	Connection OD Option	REGULAR

PERFORMANCE

Tension Efficiency	100.0 %	Joint Yield Strength	641.000 x1000 lbs	Internal Pressure Capacity [1]	12640.000 psi
Compression Efficiency	100 %	Compression Strength	641.000 x1000 lbs	Max. Allowable Bending	92 °/100 ft
External Pressure Capacity	11100.000 psi				

MAKE-UP TORQUES

Minimum	11270 ft-lbs	Optimum	12520 ft-lbs	Maximum	13770 ft-lbs

OPERATION LIMIT TORQUES

Operating Torque	21500 ft-lbs	Yield Torque	23900 ft-lbs

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Casing and Tubing Performance Data

PIPE BODY DATA

GEOMETRY

Outside Diameter	4.500 in	Wall Thickness	0.290 in	API Drift Diameter	3.795 in
Nominal Weight	13.50 lbs/ft	Nominal ID	3.920 in	Alternative Drift Diameter	n.a.
Plain End Weight	13.05 lbs/ft	Nominal cross section	3.836 in		

PERFORMANCE

Steel Grade	P110	Minimum Yield	110,000 psi	Minimum Ultimate	125,000 psi
Tension Yield	422,000 in	Internal Pressure Yield	12,410 psi	Collapse Pressure	10,690 psi
Available Seamless	Yes	Available Welded	Yes		

CONNECTION DATA

TYPE: BTC

GEOMETRY

Coupling Reg OD	5.000 in	Threads per in	5	Thread turns make up	0.5

PERFORMANCE

Steel Grade	P110	Coupling Min Yield	110,000 psi	Coupling Min Ultimate	125,000 psi
Joint Strength	443,000 lbs			Internal Pressure Resistance	12,410 psi

DRILLING PROGRAM

1. ESTIMATED TOPS

Formation Name	MD'	TVD'	Bearing
Quaternary caliche	0	0	water/salt
Rustler anhydrite	503	503	salt
Salado salt (top salt)	678	678	salt
Base salt	2391	2387	salt
Bell Canyon sandstone	2850	2842	hydrocarbons
Brushy Canyon sandstone	4844	4821	hydrocarbons
Bone Spring limestone	6500	6466	hydrocarbons
1st Bone Spring sandstone	7426	7391	hydrocarbons
2nd Bone Spring sandstone	8136	8101	hydrocarbons
(KOP	**9129**	**9096**	**hydrocarbons)**
3rd Bone Spring sandstone	9247	9211	hydrocarbons
Wolfcamp A **(Goal)**	9575	9496	hydrocarbons
TD	**171450**	**9691**	--

2. NOTABLE ZONES

Wolfcamp A is the goal. Hole will extend north of the last perforation point to allow for pump installation. All perforations will be ≥330' from the dedication perimeter.. Depth to water was not reported but OSE estimated ground water depth is 45'.

3. PRESSURE CONTROL

A 13,000' 10,000-psi BOP stack consisting of 3 rams with 2 pipe rams, 1 blind ram, and 1 annular preventer will be used below surface casing to TD. BOP, choke manifold, co-flex hose, and speed head diagrams are attached.

An accumulator will be on site. It will comply with Onshore Order 2 requirements for the BOP stack pressure rating. Rotating head will be installed as needed.

Pressure tests will be conducted before drilling out from under all casing strings. BOP will be inspected and operated as required by Onshore Order 2. A top drive check valve

and sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position.

A third-party company will test the BOPs. Test pressures will be:

After surface casing is set and the BOP is nippled up, pressure tests will be made to 250 psi low and 2000 psi high.

Test intermediate 1 casing to 250 psi low and 3000 psi high.

Test intermediate 2 casing to 250 psi low and 7500 psi high.

Annular preventer will be tested to 250 psi low and 1000 psi high on the surface casing and 250 psi low and 1500 psi high on both intermediate strings.

In the case of running a speed head with landing mandrel for the 1st and 2nd intermediate casing the initial, after surface casing is set, BOP test pressures will be 250 psi low and 3000 psi high with well head seals tested to 5000 psi once the first intermediate casing has been landed and cemented. BOP may then be lifted to install the C-section of the wellhead. Tap Rock will then nipple the BOP back up and pressure tests will be made to 250 psi low and 5000 psi high. Annular preventer will be tested to 250 psi low and 1500 psi high.

Tap Rock requests a variance to use a co-flex hose between the BOP stack and choke manifold. Co-flex hose certification is attached. Manufacturer does not require the hose to be anchored. If the specific hose is not available, then one of equal or higher rating will be used.

4. CASING & CEMENT

All casing will be API and new. See attached casing assumption worksheet.

Hole O. D.	Set MD'	Set TVD'	Casing O. D.	Weight (lb/ft)	Grade	Joint	Collapse	Burst	Tension
17.5"	0 - 530	0 - 530	13.375" surface	54.5	J-55	BTC	1.13	1.15	1.51
12.25"	0 - 2780	0 - 2777	9.625" inter. 1	40.0	J-55	BTC	1.13	1.15	1.51
8.75"	0 - 2580	0 – 2580	7.625" inter. 2 top	29.7	P-110	BTC	1.13	1.15	1.51
8.75"	2580 – 9130	2580 – 9115	7.625" inter. 2 bottom	29.7	P-110	flush	1.13	1.15	1.51
6.75"	0 – 8930	0 – 8915	5.5" product. top	20.0	P-110	BTC	1.13	1.15	1.51
6.75"	8930– 17149	8915 – 9691	**5" product. bottom**	18.0	P-110	**semi-flush**	1.13	1.15	1.51

Tap Rock requests a variance to run 7-5/8" BTC inside 9-5/8" BTC, Tap Rock is requesting a variance to be less than the 0.422" standoff regulation per Onshore Order No. 2.

Name	Type	Sacks	Yield	Cu. Ft.	Weight	Blend
Surface	Tail	534	1.38	737	14.8	Class C + 5% NaCl + LCM
TOC = GL		100% Excess			Centralizers per Onshore Order 2 III. B. 1f	
Intermediate 1	Lead	770	1.81	1394	13.5	Class C + bentonite + 1% $CaCl_2$ + 8% NaCl + LCM
	Tail	252	1.38	348	14.8	Class C + 5% NaCl + LCM
TOC = GL		100% Excess			2 on btm jt, 1 on 2nd jt, 1 every 4th jt to GL	
Intermediate 2	Lead	319	2.35	750	11.5	TXI + fluid loss + dispersant + retarder + LCM
	Tail	178	1.39	247	13.2	TXI + fluid loss + dispersant + retarder + LCM
TOC = 1780		35% Excess			2 on btm jt, 1 on 2nd jt, 1 every other jt to top of tail cement (500' above TOC)	
Production	Tail	950	1.17	1112	15.8	Class H + fluid loss + dispersant + retarder + LCM
TOC = 8130'		10% Excess			2 on btm jt, 1 on 2nd jt, 1 every third jt to top of curve	

5. MUD PROGRAM

Electronic Pason mud monitor system complying with Onshore Order 1 will be used. All necessary mud products (e. g., barite, cedar bark) for weight addition and fluid loss control will always be on site. Mud program is subject to change due to hole conditions. A closed loop system will be used.

Casing	Hole Size	Type	Interval (MD)	lb/gal	Viscosity	Fluid Loss
Surface	17.5"	FW spud mud	0-530	8.3	28	NC
Inter. 1	12.25"	Brine water	530 - 2580	10.0	30-32	NC
Inter. 2	8.75"	FW & cut brine	2580 - 9130	9.0	30-32	NC
Production	6.75"	OBM	9130 - 17149	12.50	15-20	<10

6. CORES, TESTS, & LOGS

No core or drill stem test is planned.

A 2-person mud logging program will be used from ≈4700' MD to TD.

GR will be collected through the MWD tools from 1st Intermediate casing to TD. CBL with CCL will be run as far as gravity will let it fall to TOC.

7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is ≈6,950 psi. Expected bottom hole temperature is ≈160° F.

Tap Rock does not anticipate that there will be enough H_2S from the surface to the Bone Spring to meet the BLM's Onshore Order 6 requirements for the submission of an "H_2S Drilling Operation Plan" or "Public Protection Plan" for drilling and completing this well. Tap Rock has an H_2S safety package on all wells and an "H_2S Drilling Operations Plan" is attached. Adequate flare lines will be installed off the mud/gas separator where gas may be safely flared. All personnel will be familiar with all aspects of safe operation of equipment being used.

8. OTHER INFORMATION

Anticipated spud date is upon approval. It is expected it will take ≈3 months to drill and complete the well.

Money Graham 208H Casing Variance Request

Tap Rock requests a variance to run 7-5/8" BTC inside 9-5/8" BTC, Tap Rock is requesting a variance to be less than the 0.422" standoff regulation per Onshore Order No. 2.

APD ID: 10400032517 **Submission Date:** 07/27/2018

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Money_East_Pad_Road_MAP1_20180727103757.pdf

Existing Road Purpose: ACCESS **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

Money_East_Pad_Road_Map_Plat_MAP2_20181106144620.pdf

New road type: RESOURCE

Length: 487.7 Feet **Width (ft.):** 30

Max slope (%): 0 **Max grade (%):** 1

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: Crowned and ditched

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Access surfacing type: OTHER

Access topsoil source: ONSITE

Access surfacing type description: Caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: Grader

Access other construction information: Approximately 223.11' of new road will be built between the existing lease road, west of the location, and the proposed well pad.

Access miscellaneous information:

Number of access turnouts: **Access turnout map:**

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: Crowned and ditched

Road Drainage Control Structures (DCS) description: None

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

Money_East_Pad_1mi_well_Map_v1_072518_MAP3_20180727104137.pdf

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: Production facilities will be located on a separate central tank battery (CTB) site, pending an on-site with BLM. The CTB will be requested through a sundry notice after an onsite has been conducted.

Production Facilities map:

Money_East_Pad_Production_Facilities_FIG1_110118_20181106144822.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Water source use type: DUST CONTROL, INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING

Water source type: GW WELL

Describe type:

Source longitude:

Source latitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: PRIVATE

Water source volume (barrels): 18000

Source volume (acre-feet): 2.3200758

Source volume (gal): 756000

Water source and transportation map:

Money_East_Pad_Water_Gravel_Map_v1_072518_MAP4_20180727104353.pdf

Water source comments: This well will be drilled using a combination of water mud systems. Water will be trucked from a the Seventy-Six Water Station located on private land approximately 11.5 miles north of Orla, Texas.
New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Section 6 - Construction Materials

Construction Materials description: NM One Call (811) will be notified before construction starts. Topsoil will be removed and stockpiled on the east side of the pad. A berm will be installed on the north side of the pad. Caliche will be sourced from BMB/SWC Ranches caliche pit located on private land approximately 1.5 miles west of Orla, Texas.
Construction Materials source location attachment:

Money_East_Pad_Construction_Methods_FIG1_110118_20181106144858.pdf

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drill cuttings, mud, salts, and other chemicals

Amount of waste: 1000 barrels

Waste disposal frequency : Daily

Safe containment description: Steel tanks

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE
Disposal type description:

Disposal location description: 5.25 miles north of Orla in Reeves County, Texas

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location Steel tanks on pad

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Money_East_Pad_Well_Site_Layout_FIG1_110118_20181106144923.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:** MONEY GRAHAM EAST PAD

Multiple Well Pad Number: 1

Recontouring attachment:

Money_East_Pad_Recontour_Plat_FIG2_20180727104718.pdf

Money_East_Pad_Interim_Rec_FIG1_110118_20181102085124.pdf

Drainage/Erosion control construction: Crowned and ditched

Drainage/Erosion control reclamation: Harrowed on the contour

Well pad proposed disturbance (acres): 5.6
Road proposed disturbance (acres): 0.33
Powerline proposed disturbance (acres): 0
Pipeline proposed disturbance (acres): 0
Other proposed disturbance (acres): 3.32
Total proposed disturbance: 9.25

Well pad interim reclamation (acres): 1.45
Road interim reclamation (acres): 0
Powerline interim reclamation (acres): 0
Pipeline interim reclamation (acres): 0
Other interim reclamation (acres): 0
Total interim reclamation: 1.45

Well pad long term disturbance (acres): 4.15
Road long term disturbance (acres): 0.33
Powerline long term disturbance (acres): 0
Pipeline long term disturbance (acres): 0
Other long term disturbance (acres): 3.32
Total long term disturbance: 7.8

Disturbance Comments:

Reconstruction method: Areas of the pad site not required for operations will be reclaimed.

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Topsoil redistribution: The original topsoil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography, and the area will be seeded with an approved BLM mixture to re-establish vegetation.
Soil treatment: None

Existing Vegetation at the well pad:

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road:

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline:

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances:

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type: **Seed source:**

Seed name:

Source name: **Source address:**

Source phone:

Seed cultivar:

Seed use location:

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Seed Summary	
Seed Type	**Pounds/Acre**

Total pounds/Acre:

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: **Last Name:**

Phone: **Email:**

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: To BLM standards

Weed treatment plan attachment:

Monitoring plan description: To BLM standards

Monitoring plan attachment:

Success standards: To BLM satisfaction

Pit closure description: None

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Fee Owner: Allar Company **Fee Owner Address:** PO Box 1567 Graham TX 76450

Phone: (214)316-0771 **Email:**

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: To be provided

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Disturbance type: OTHER

Describe: Central Tank Battery

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Fee Owner: Allar Company **Fee Owner Address:** PO Box 1567 Graham TX

Phone: (214)316-0771 **Email:**

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: To be provided

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Fee Owner: Allar Company **Fee Owner Address:** PO Box 1567 Graham TX 76450

Phone: (214)316-0771 **Email:**

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: To be provided

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: TAP ROCK OPERATING LLC

Well Name: MONEY GRAHAM 26S29E3229 **Well Number:** 208H

Fee Owner: Allar Company **Fee Owner Address:** PO Box 1567 Graham TX 76450

Phone: (214)316-0771 **Email:**

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: To be provided

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Section 12 - Other Information

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: An onsite inspection was held on December 7, 2017 with Vance Wolf.

Other SUPO Attachment

Money_East_Pad_SUPO_110618_20181106145832.pdf

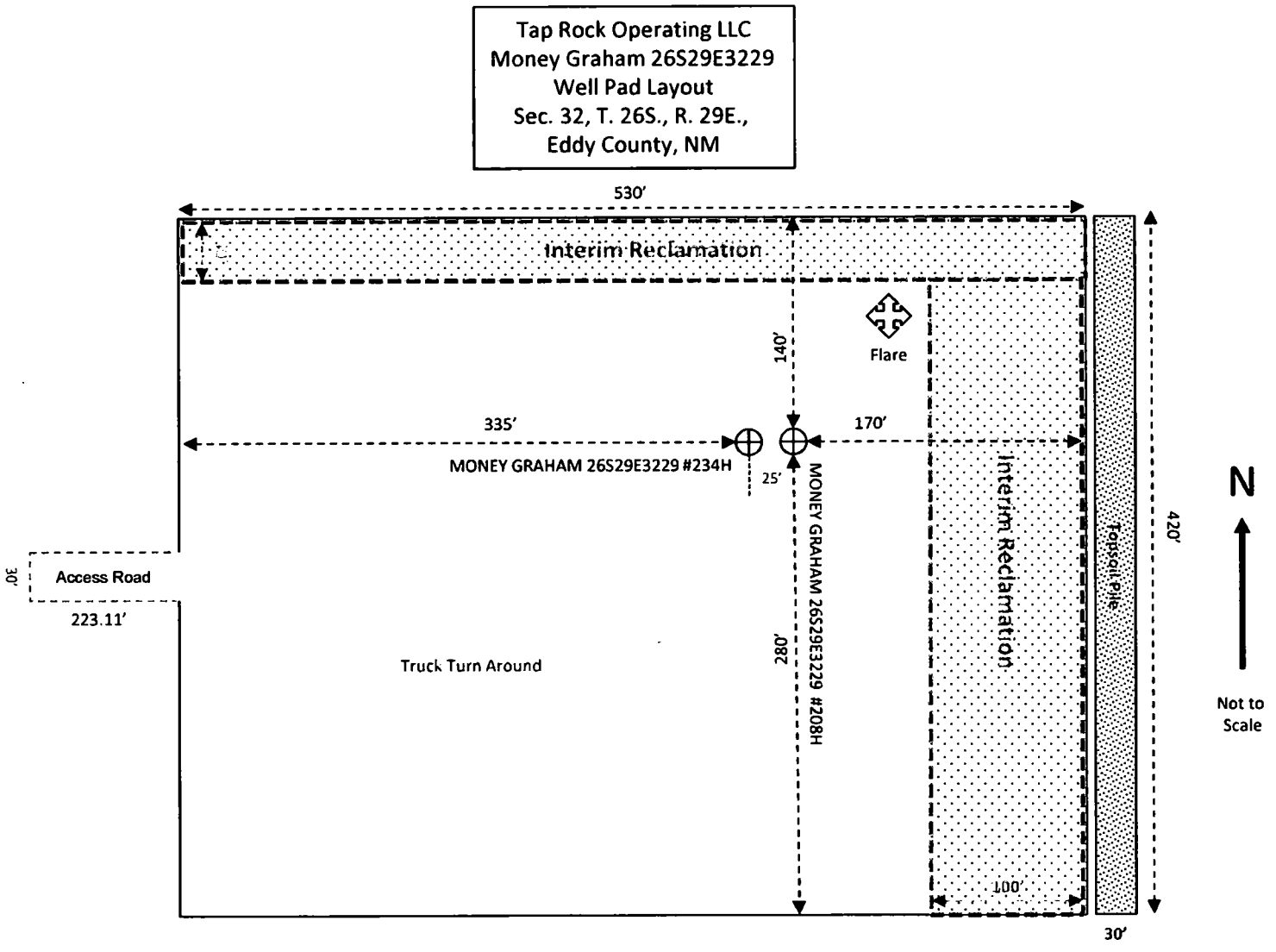


FIGURE 1

Production Layout & Interim Reclamation Diagram

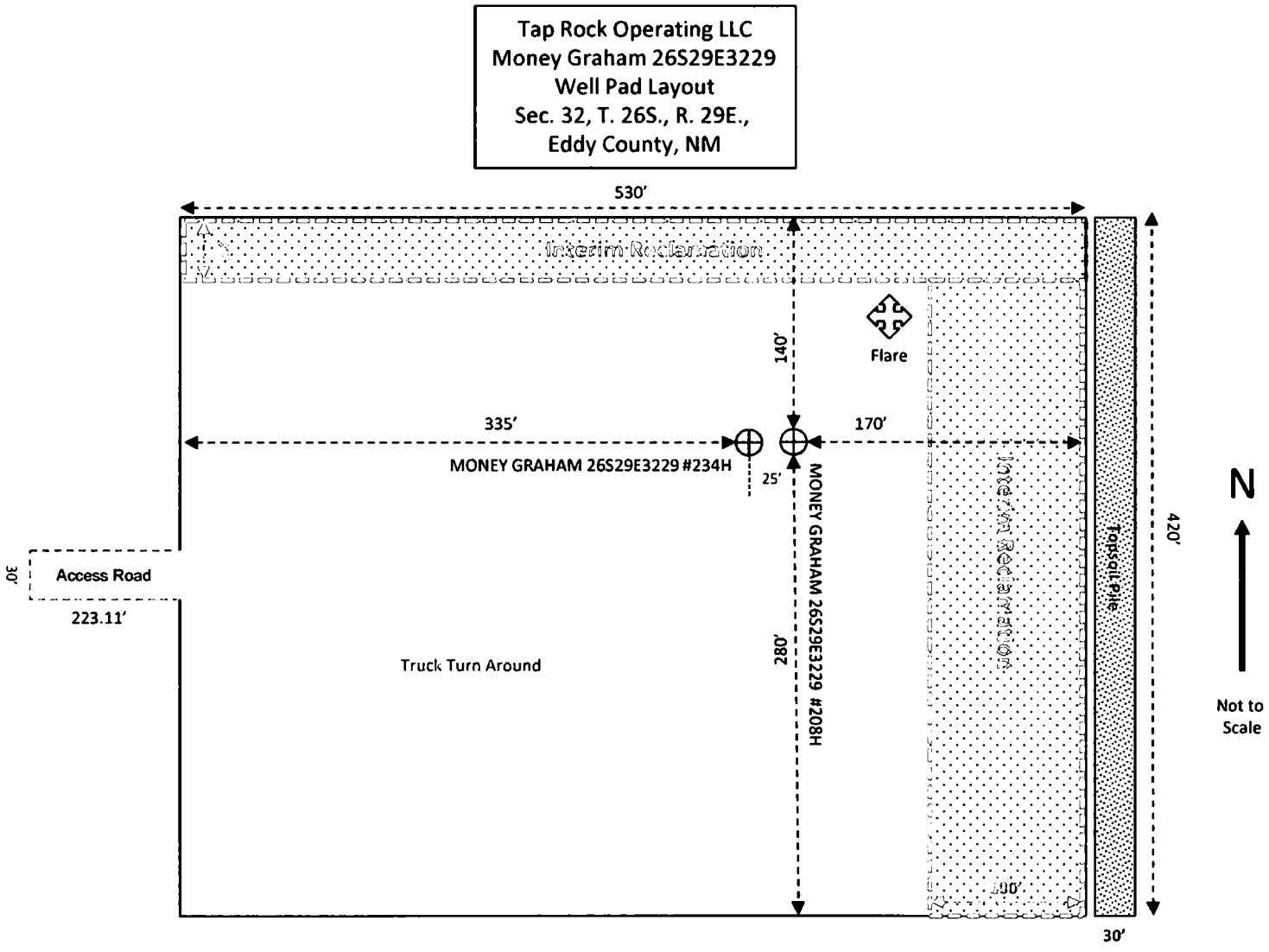


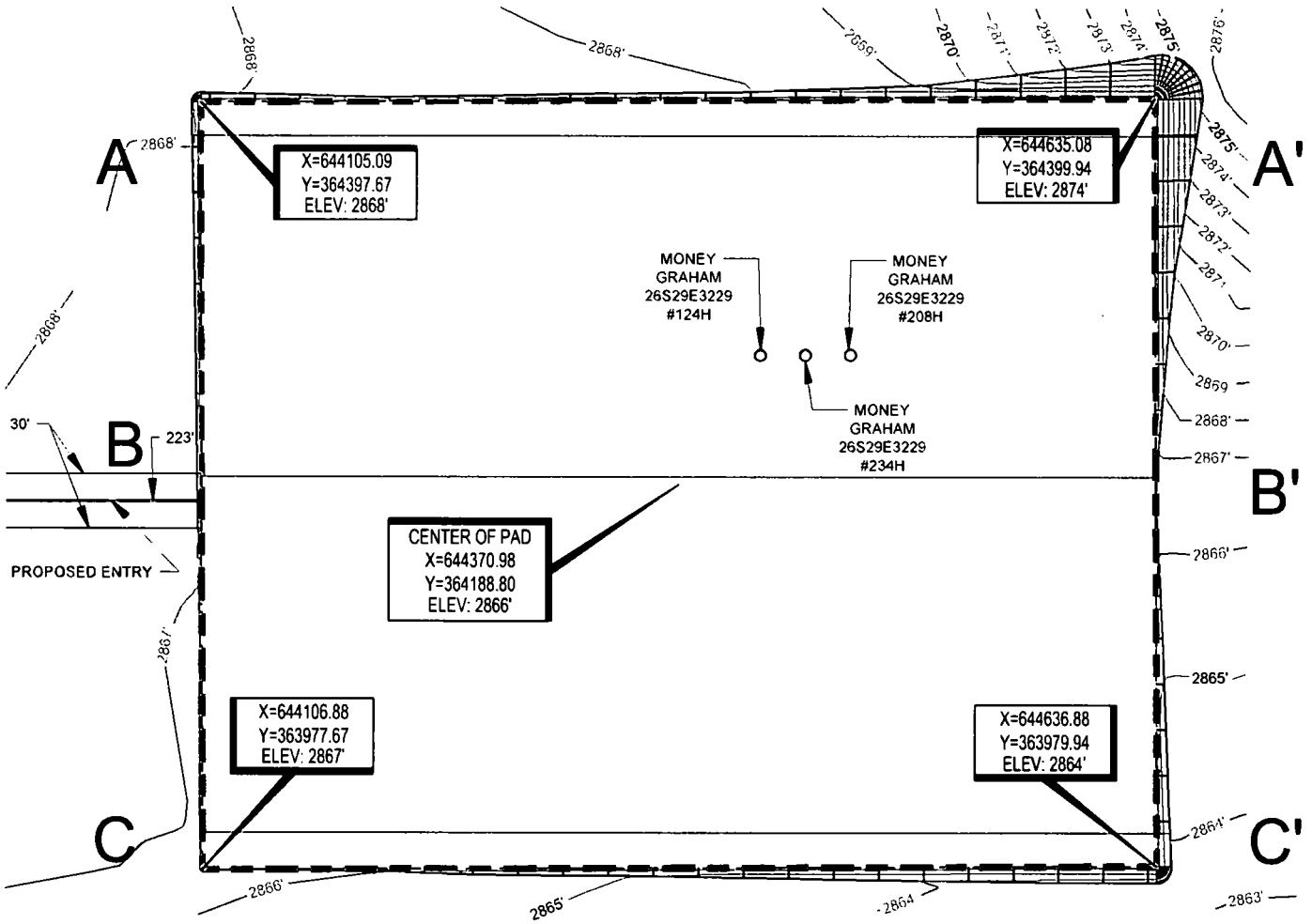
FIGURE 1

Production Layout & Interim Reclamation Diagram

EXHIBIT "A"

SECTION 32, TOWNSHIP 26-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

SCALE: 1" = 100'
0' 50' 100'



NOTE: 1' CONTOUR INTERVALS

STAN W. LLOYD
NEW MEXICO
19642
PROFESSIONAL SURVEYOR

TAP ROCK

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Stan W. Lloyd
Stan W. Lloyd, P.S. No. 19642
MAY 30, 2018

MONEY GRAHAM 26S29E3229 PAD SITE	REVISION:	
	AMD	03/05/18
	AMD	05/30/18
DATE: 12/27/17		
FILE: CD_MONEY_GRAHAM_26S29E3229_PAD_SITE_REV2		
DRAWN BY: EAH		
SHEET: 1 OF 3		

NOTES:
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Figure 2-1

S:\SURVEY\TAPROCK\MONEY_GRAHAM_UNIT\FINAL_PRODUCTS\CD_MONEY_GRAHAM_26S29E3229_PAD_SITE_REV2.DWG 5/31/2018 11:15:39 AM adisabella

TOP OF PAD ELEVATION: 2866.5015
CUT SLOPE: 33.33% 3.000:1 18.43°
FILL SLOPE: 33.33% 3.000:1 18.43°
BALANCE TOLERANCE (C.Y.): 0.00
CUT SWELL FACTOR: 1.00
FILL SHRINK FACTOR: 1.00

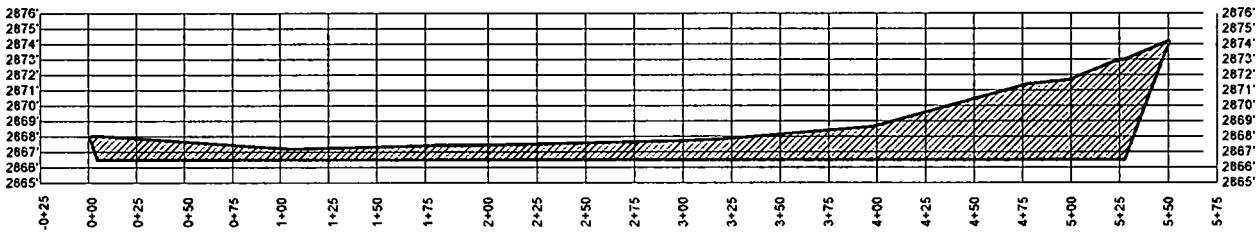
PAD EARTHWORK VOLUMES
CUT : 121,138.7 C.F., 4,486.62 C.Y.
FILL: 121,138.8 C.F., 4,486.62 C.Y.
AREA: 233625.8 SQ.FT., 5.363 ACRES

EXHIBIT "A"

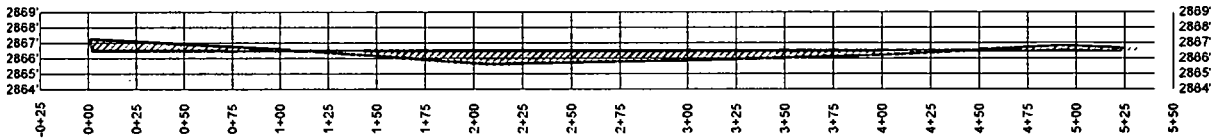
SECTION 32, TOWNSHIP 26-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

TAP ROCK

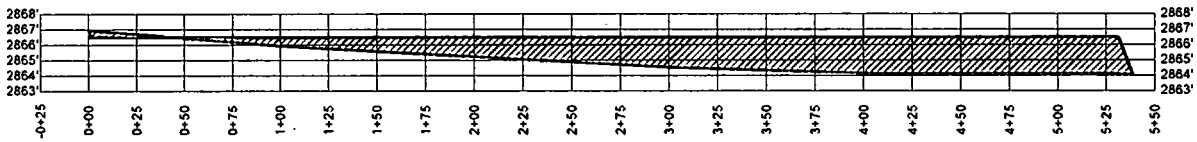
A-A'



B-B'



C-C'



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Horizontal Scale = 1:100
Vertical Scale = 1:5

MONEY GRAHAM 26S29E3229 PAD SITE	REVISION: INT	DATE
DATE: 10/03/17		
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Figure 2-2

STAN W. LLOYD
NEW MEXICO
19642
PROFESSIONAL SURVEYOR

Stan W. Lloyd

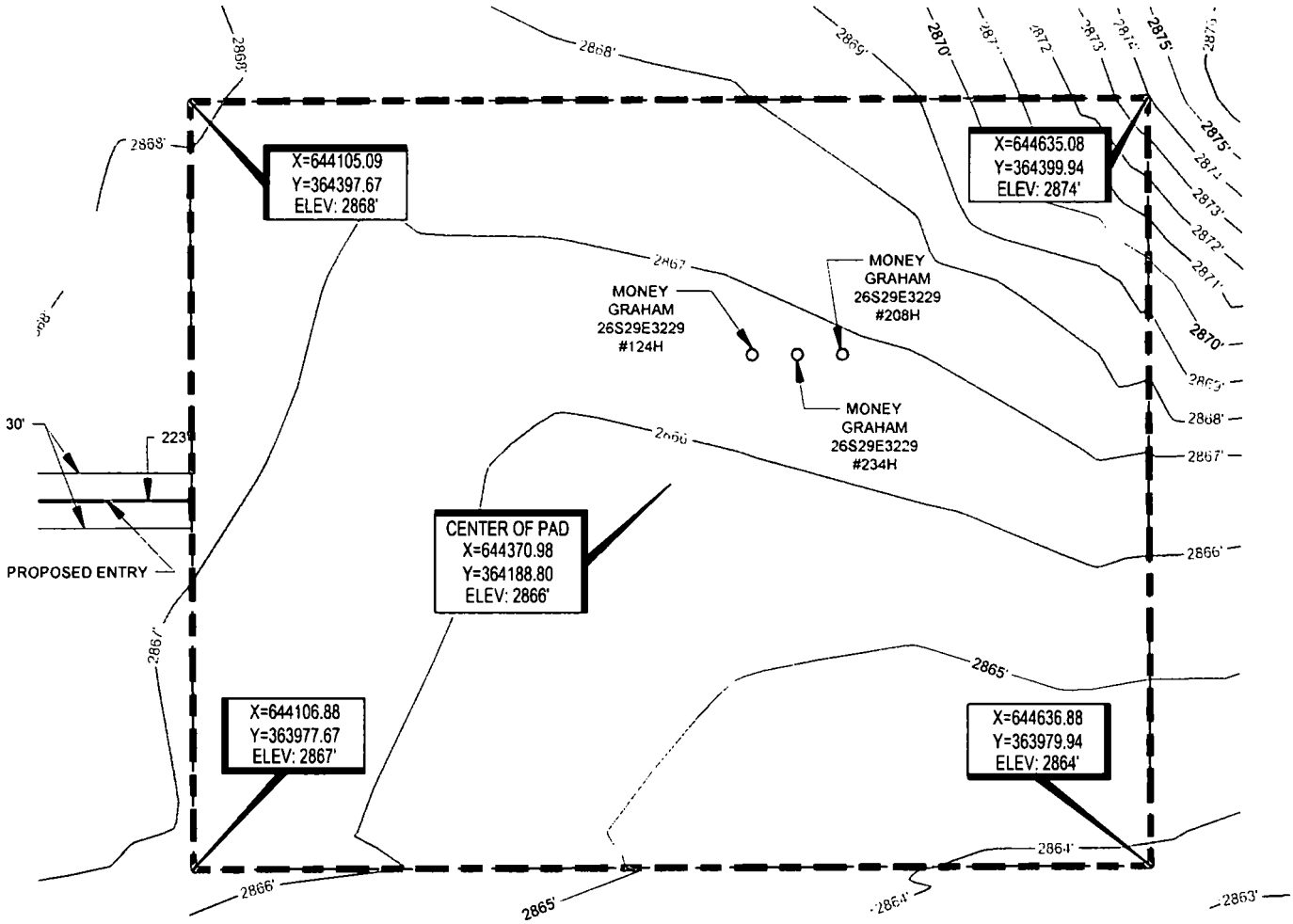
Stan W. Lloyd, P.S. No. 19642
MAY 30, 2018

S:\SURVEY\TAPROCK\MONEY_GRAHAM_UNIT\FINAL_PRODUCTS\CD_MONEY_GRAHAM_26S29E3229_PAD_SITE_REV2.DWG 5/31/2018 11:15:39 AM adisabella

EXHIBIT "A"

SECTION 32, TOWNSHIP 26-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

SCALE: 1" = 100'
0' 50' 100'



NOTE: 1' CONTOUR INTERVALS

STAN W. LLOYD
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Stan W. Lloyd

Stan W. Lloyd, P.S. No. 19642
MAY 30, 2018

TAP ROCK

MONEY GRAHAM 26S29E3229 PAD SITE	REVISION:	
	AMD	03/05/18
	AMD	05/30/18
DATE: 12/27/17		
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Figure 2-3

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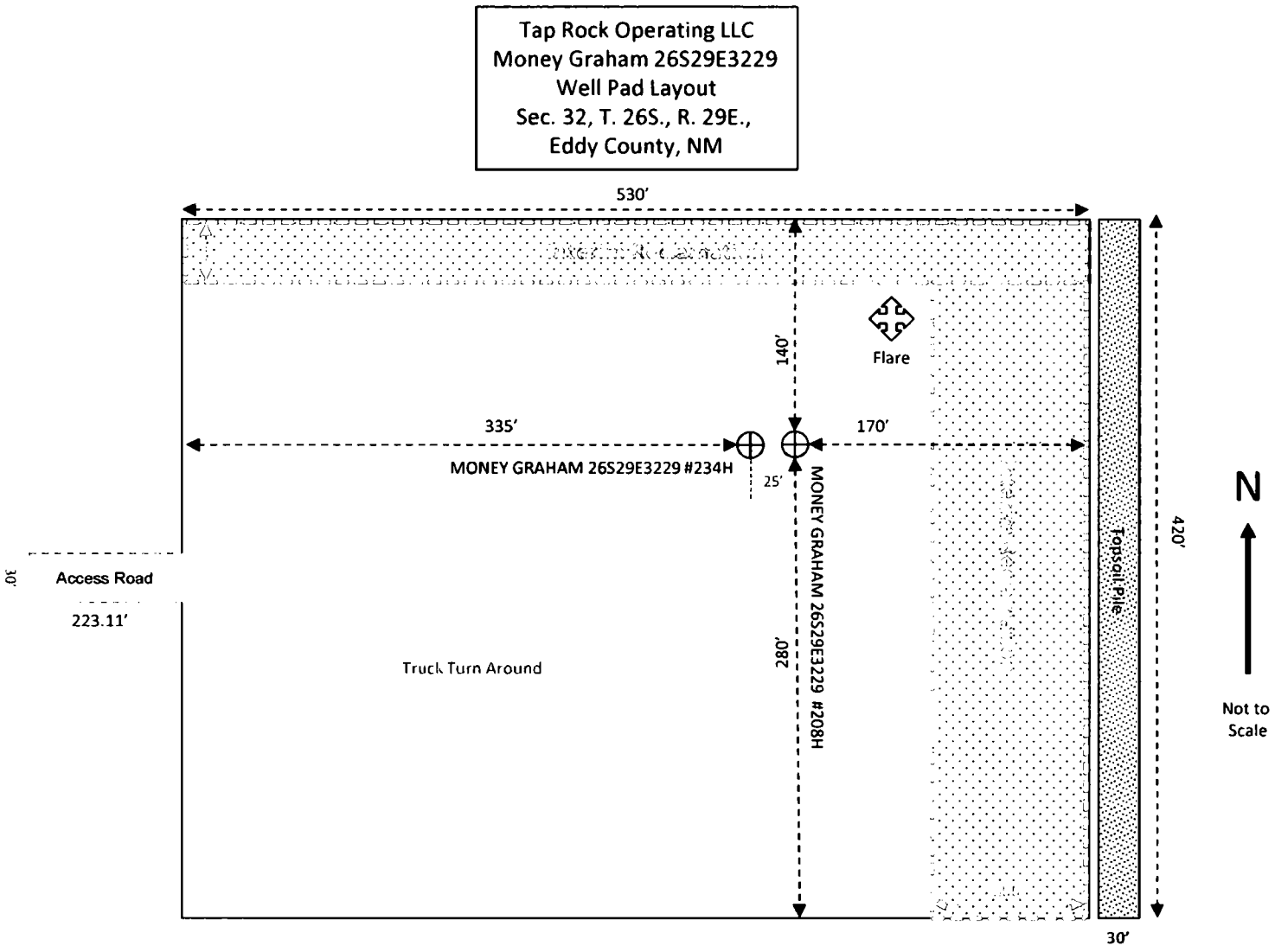


FIGURE 1

Production Layout & Interim Reclamation Diagram

SURFACE USE PLAN OF OPERATIONS

1. ROAD DIRECTIONS & DESCRIPTIONS (See Maps 1 & 2)

From the intersection of US Highway 285 and Catfish Road (CR 726), go east for 1.7 miles. Turn north on unmarked lease road for 230 feet, then turn east on proposed lease road and continue 223 feet to the proposed well pad.

2. ROAD TO BE BUILT OR UPGRADED (See Map 2)

Approximately **223.11'** of new road will be built between the existing lease road, west of the location, and the proposed well pad.

3. EXISTING WELLS (See Map 3)

Existing oil, gas, SWD, and P & A wells are within a mile. No water or injection well is within a mile.

4. PROPOSED PRODUCTION FACILITIES (See Figure 1)

Production facilities will be located on a central tank battery (CTB) site located north of the proposed well pad but is pending an on-site with BLM.

5. WATER SUPPLY (See Map 4)

This well will be drilled using a combination of water mud systems. Water will be trucked from a the Seventy-Six Water Station located on private land approximately 11.5 miles north of Orla, Texas.

6. CONSTRUCTION MATERIALS & METHODS (See Figures 1 & 2, Map 4)

NM One Call (811) will be notified before construction starts. Topsoil will be removed and stockpiled on the east side of the pad. A berm will be installed on the north side of the pad. Caliche will be sourced from BMB/SWC Ranches caliche pit located on private land approximately 1.5 miles west of Orla, Texas.

7. WASTE DISPOSAL

A closed loop drilling system will be used. All trash will be placed in a portable trash cage. It will be hauled to the Eddy County landfill. There will be no trash burning. Contents (drill cuttings, mud, salts, and other chemicals) of the mud tanks will be hauled to a disposal site located on private land approximately 5.25 miles north of Orla in Reeves County, Texas. Human waste will be disposed of in chemical toilets and hauled to the Carlsbad wastewater treatment plant.

8. ANCILLARY FACILITIES

There will be no airstrip or camp. Camper trailers will be on location for the company man, tool pusher, or mud logger.

9. WELL SITE LAYOUT (See Figures 1 & 3)

See attached rig diagram for depictions of the well pad, trash cage, access onto the location, parking, living facilities, and rig orientation.

10. RECLAMATION (See Figures 1 & 2)

Areas of the pad site not required for operations will be reclaimed. The original topsoil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography, and the area will be seeded with an approved BLM mixture to re-establish vegetation.

Disturbance:

30' x 223.11' well pad access road = 0.15 acres
+ 420' x 530' pad = 5.11 acres
Short-term = 5.26 acres

Short-term = 5.26 acres
– Interim pad reclamation = 1.35 acres
Long-term = 3.91 acres
(0.15 ac road + 03.76 ac well pad)

11. SURFACE OWNER (See Map 3)

All construction will be on private land owned by the Allar Company PO BOX 1567, Graham, TX 76450

12. OTHER INFORMATION

- The vegetation cover is generally sparse consisting of mesquite, yucca, shinnery oak, sandsage and perennial native range grass. The topsoil is sandy in nature. Wildlife in the area is also sparse consisting of deer, coyotes, rabbits, rodents, reptiles, dove and quail.
- Project site is located about 1 mile east of the main body of the Pecos River as it enters the Red Bluff Reservoir.
- There are no dwellings within one mile of the proposed well site.
- Cultural Resources Examination – Proposed well pad was inspected by Lone Mountain Archeological Services on October 31, 2017. It was determined that the proposed action will have be no significant impacts on cultural resources.

CERTIFICATION

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U. S. C. 1001 for the filing of false statements. Executed this 6th day of November, 2018.

Mike Deutsch, Consultant
Permits West, Inc.
37 Verano Loop, Santa Fe, NM 87508
(505) 466-8120

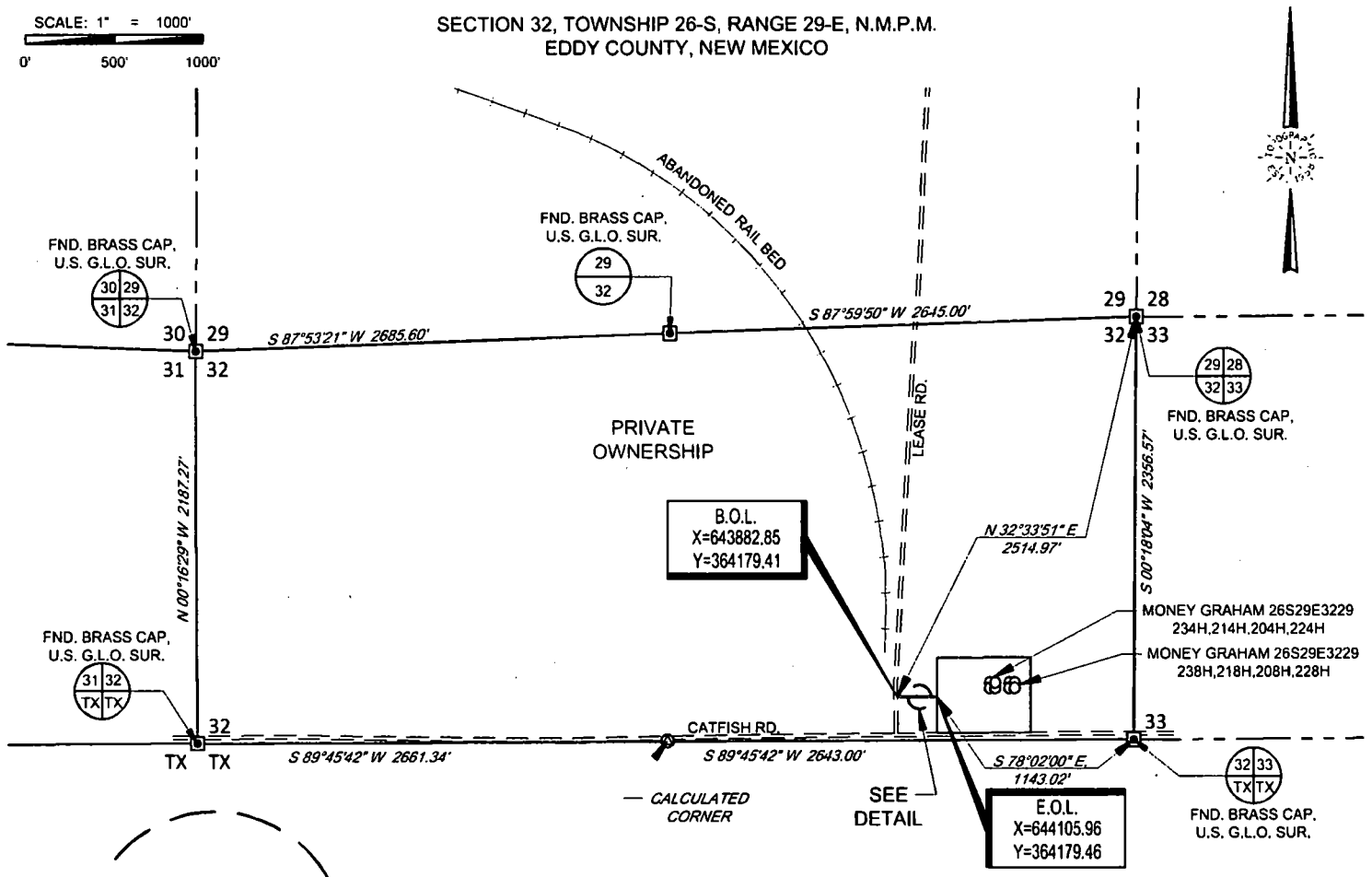
Field representative will be:

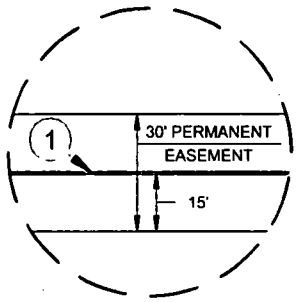
Doug Sproul
Tap Rock Operating, LLC
602 Park Point Dr., Suite 200, Golden CO 80401
Phone: (720) 772-5090

SCALE: 1" = 1000'

0' 500' 1000'

SECTION 32, TOWNSHIP 26-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO





DETAIL VIEW
SCALE: 1" = 50'

LINE TABLE

LINE	BEARING	DISTANCE
1	N 89°59'19" E	223.11'

LEGEND

- SURVEY/SECTION LINE
- SURVEYED BASELINE
- TRACT BORDER
- ROAD WAY
- RAILROAD
- MONUMENT
- CALCULATED CORNER

MONEY GRAHAM 26S29E3229 ROAD EASEMENT

Being a proposed road easement being 30 feet in width, 15 feet left, and 15 feet right of the above platted centerline total line footage containing 223.11 feet or 13.52 rods, containing 0.15 acres more or less.

Michael Blake Brown, P.S. No. 18329
DECEMBER 19, 2017

TAP ROCK

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY

1400 EVERMAN PARKWAY, Sto. 148 • FT. WORTH, TEXAS 76140
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MONEY GRAHAM 26S29E3229 ROAD EASEMENT	REVISION: INT	DATE
DATE: 12/19/17		
FILE: EP_MONEY_GRAHAM_26S29E3229_ROAD		
DRAWN BY: EAH		
SHEET: 1 OF 1		

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4. B.O.L. = BEGINNING OF LINE
5. E.O.L.= END OF LINE

S:\SURVEY\TAPROCK\MONEY_GRAHAM_UNIT\FINAL_PRODUCTS\EP_MONEY_GRAHAM_26S29E3229_ROAD.DWG 12/20/2017 2:10:23 PM ccaston

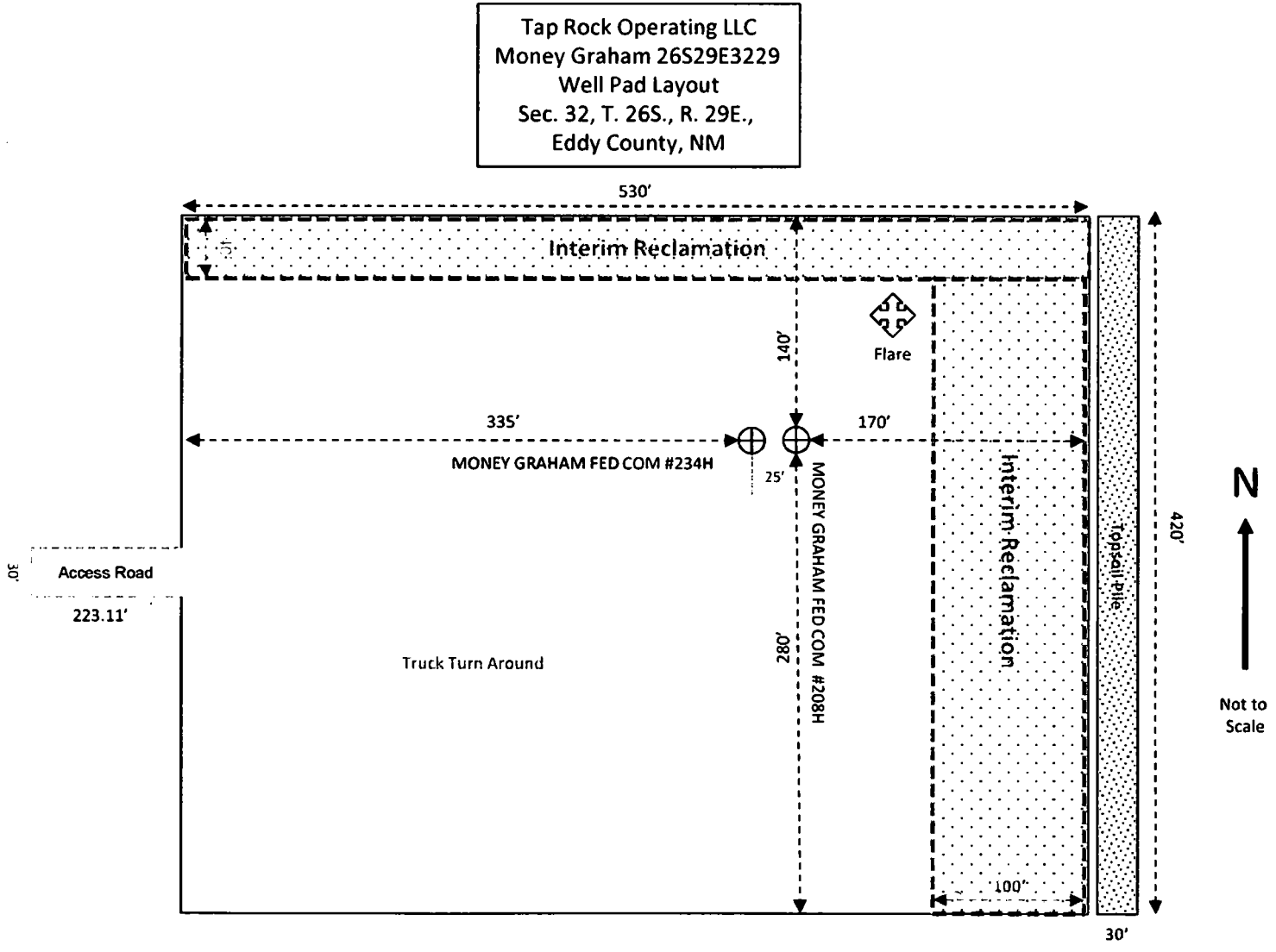

FIGURE 1

Production Layout & Interim Reclamation Diagram

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EDDY COUNTY, NEW MEXICO

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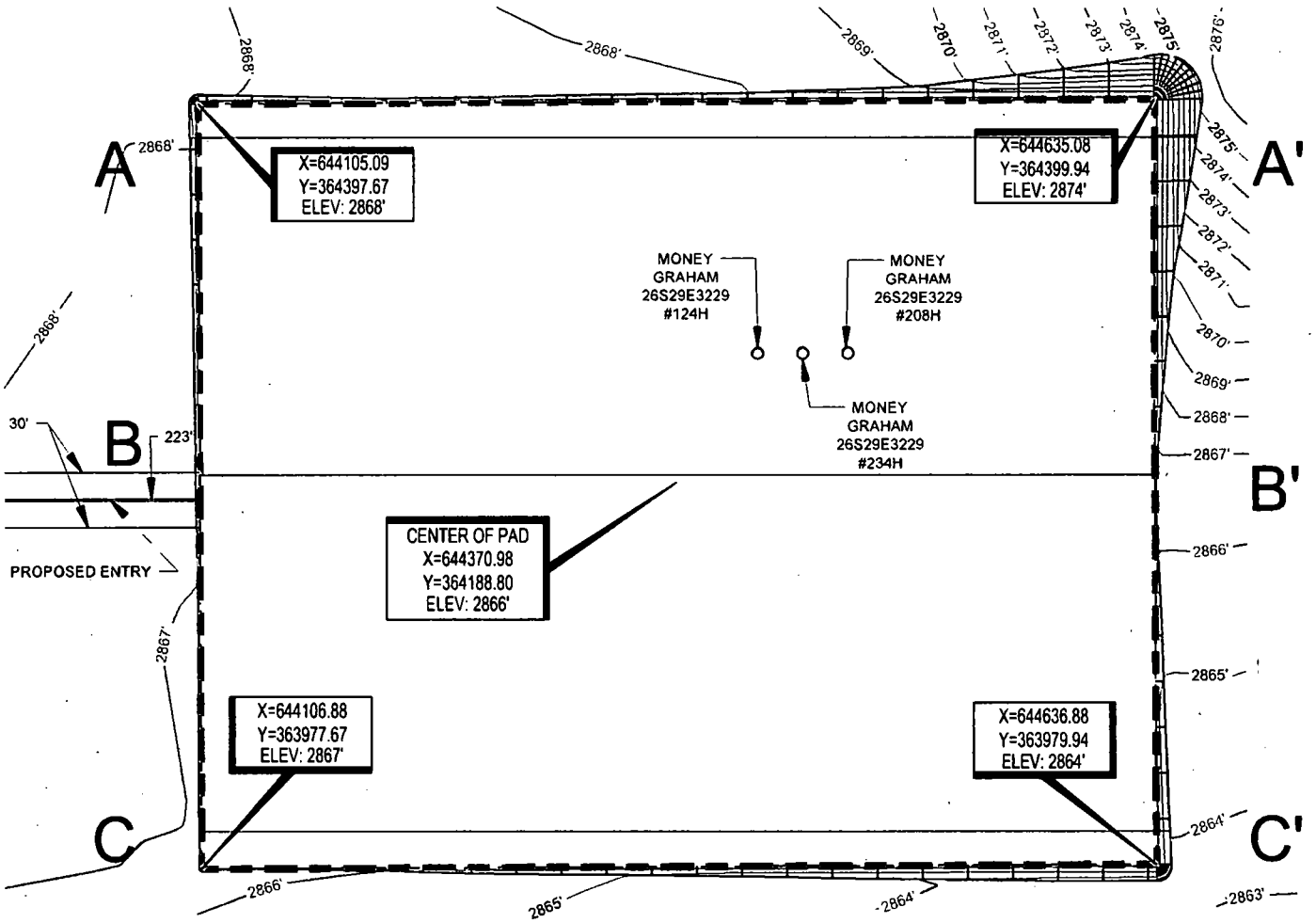
0' 50' 100'



NOTE: 1' CONTOUR INTERVALS

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Stan W. Lloyd

Stan W. Lloyd, P.S. No. 19642
MAY 30, 2018

TAP ROCK

MONEY GRAHAM 26S29E3229 PAD SITE	REVISION:	
	AMD	03/05/18
	AMD	05/30/18
DATE: 12/27/17		
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SHEET: 1 OF 3		

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Figure 2-1

S:\SURVEY\TAPROCK\MONEY_GRAHAM_UNIT\FINAL_PRODUCTS\CD_MONEY_GRAHAM_26S29E3229_PAD_SITE_REV2.DWG 5/31/2018 11:15:36 AM acisabella

TOP OF PAD ELEVATION: 2866.5015
CUT SLOPE: 33.33% 3.000:1 18.43°
FILL SLOPE: 33.33% 3.000:1 18.43°
BALANCE TOLERANCE (C.Y.): 0.00
CUT SWELL FACTOR: 1.00
FILL SHRINK FACTOR: 1.00

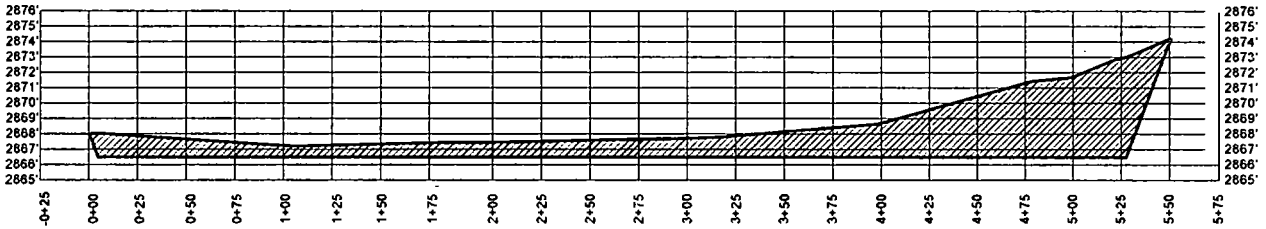
PAD EARTHWORK VOLUMES
CUT : 121,138.7 C.F., 4,486.62 C.Y.
FILL: 121,138.8 C.F., 4,486.62 C.Y.
AREA: 233625.8 SQ.FT., 5.363 ACRES

EXHIBIT "A"

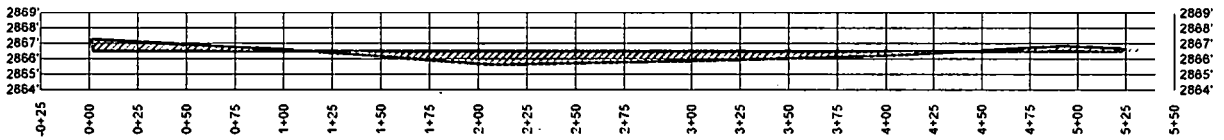
SECTION 32, TOWNSHIP 26-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

TAP ROCK

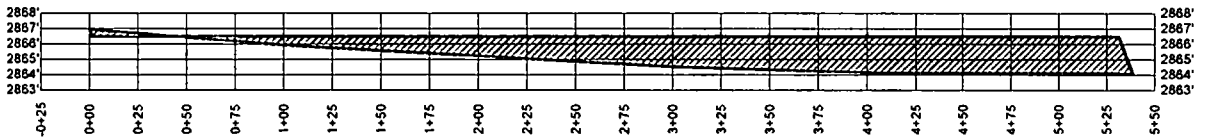
A-A'



B-B'



C-C'



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2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

Horizontal Scale = 1:100
Vertical Scale = 1:5

MONEY GRAHAM 26S29E3229 PAD SITE	REVISION: INT	DATE
DATE: 10/03/17		
FILE: CD_MONEY_GRAHAM_26S29E3229_PAD_SITE_REV2		
DRAWN BY: EAH		
SHEET : 2 OF 3		

NOTES:
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Figure 2-2

STAN W. LLOYD
NEW MEXICO
19642
PROFESSIONAL SURVEYOR

Stan W. Lloyd

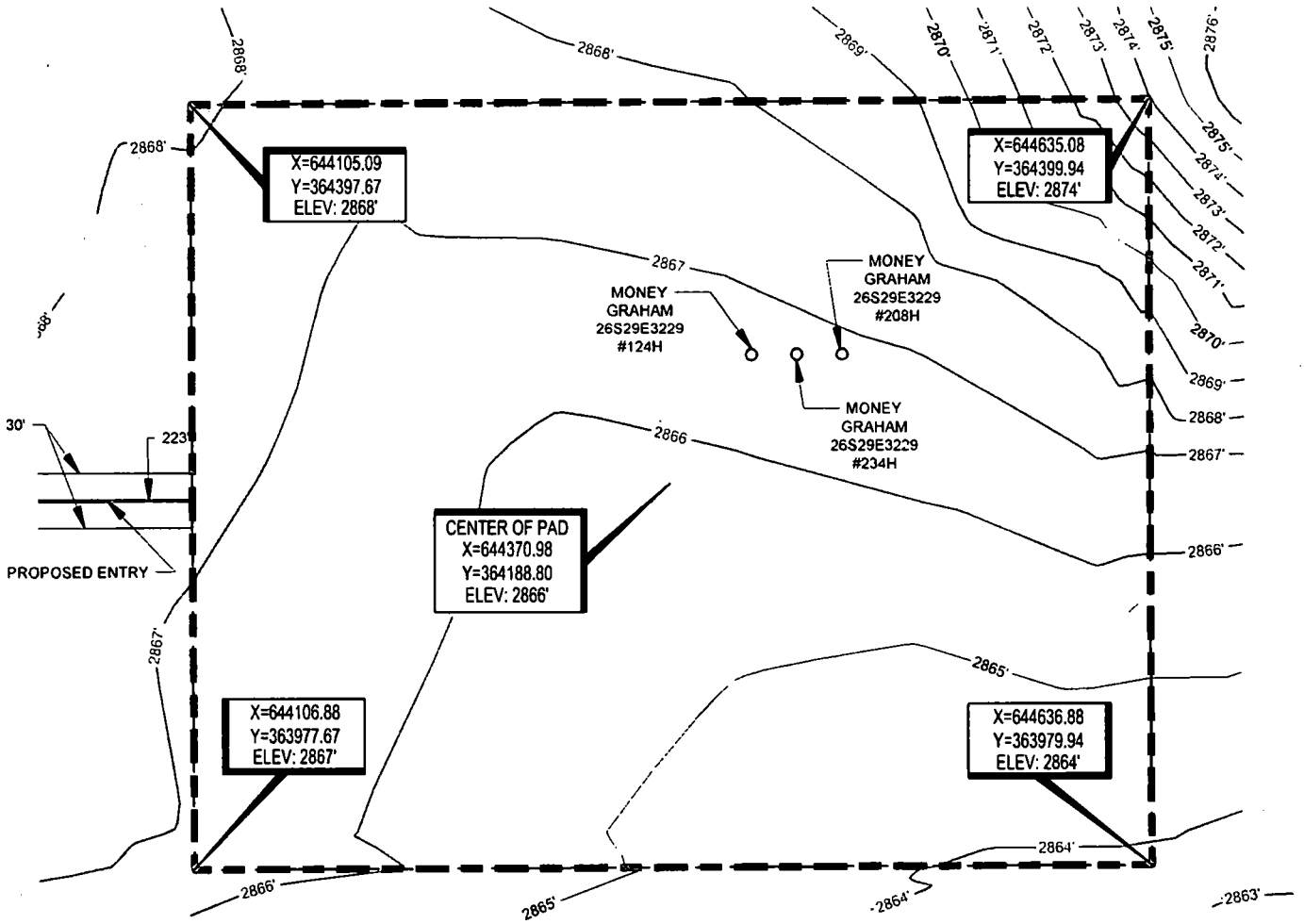
Stan W. Lloyd, P.S. No. 19642
MAY 30, 2018

S:\SURVEY\TAPROCK\MONEY_GRAHAM_UNIT\FINAL_PRODUCTS\CD_MONEY_GRAHAM_26S29E3229_PAD_SITE_REV2.DWG 5/31/2018 11:15:36 AM adrsabella

EXHIBIT "A"

SECTION 32, TOWNSHIP 26-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

SCALE: 1" = 100'
0' 50' 100'



NOTE: 1' CONTOUR INTERVALS

STAN W. LLOYD
NEW MEXICO
19642
PROFESSIONAL SURVEYOR

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
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WWW.TOPOGRAPHIC.COM

Stan W. Lloyd

Stan W. Lloyd, P.S. No. 19642
MAY 30, 2018

TAP ROCK

MONEY GRAHAM 26S29E3229 PAD SITE	REVISION:	
	AMD	03/05/18
	AMD	05/30/18
DATE: 12/27/17		
FILE: CD_MONEY_GRAHAM_26S29E3229_PAD_SITE_REV2		
DRAWN BY: EAH		
SHEET: 3 OF 3		

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Figure 2-3

S:\SURVEY\TAPROCK\MONEY_GRAHAM_UNIT\FINAL_PRODUCTS\CD_MONEY_GRAHAM_26S29E3229_PAD_SITE_REV2.DWG 5/31/2018 11:15:40 AM aoisabella

Rig Layout Diagram

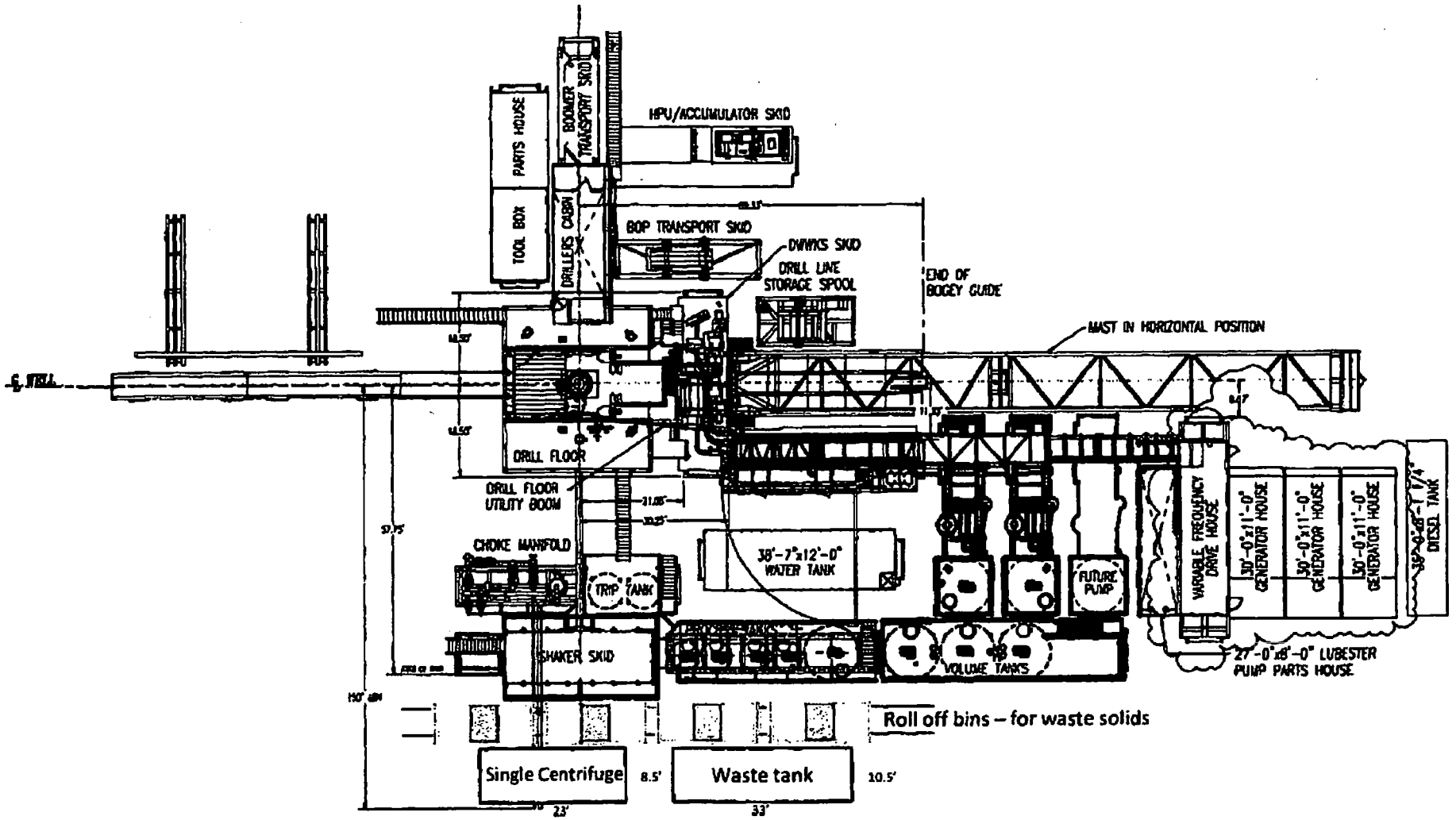


Figure 3

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Info Data Report

01/09/2019

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001443

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

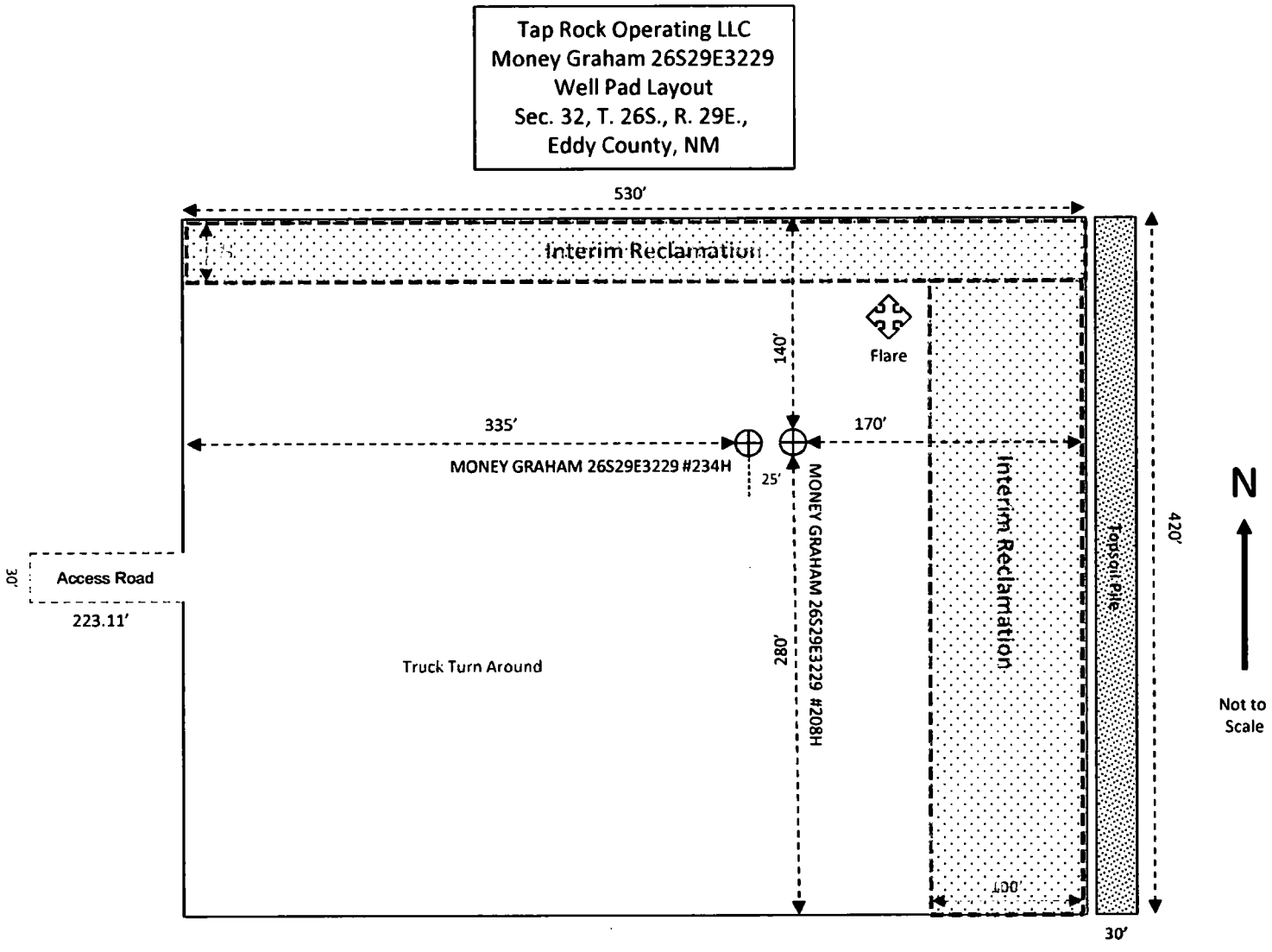


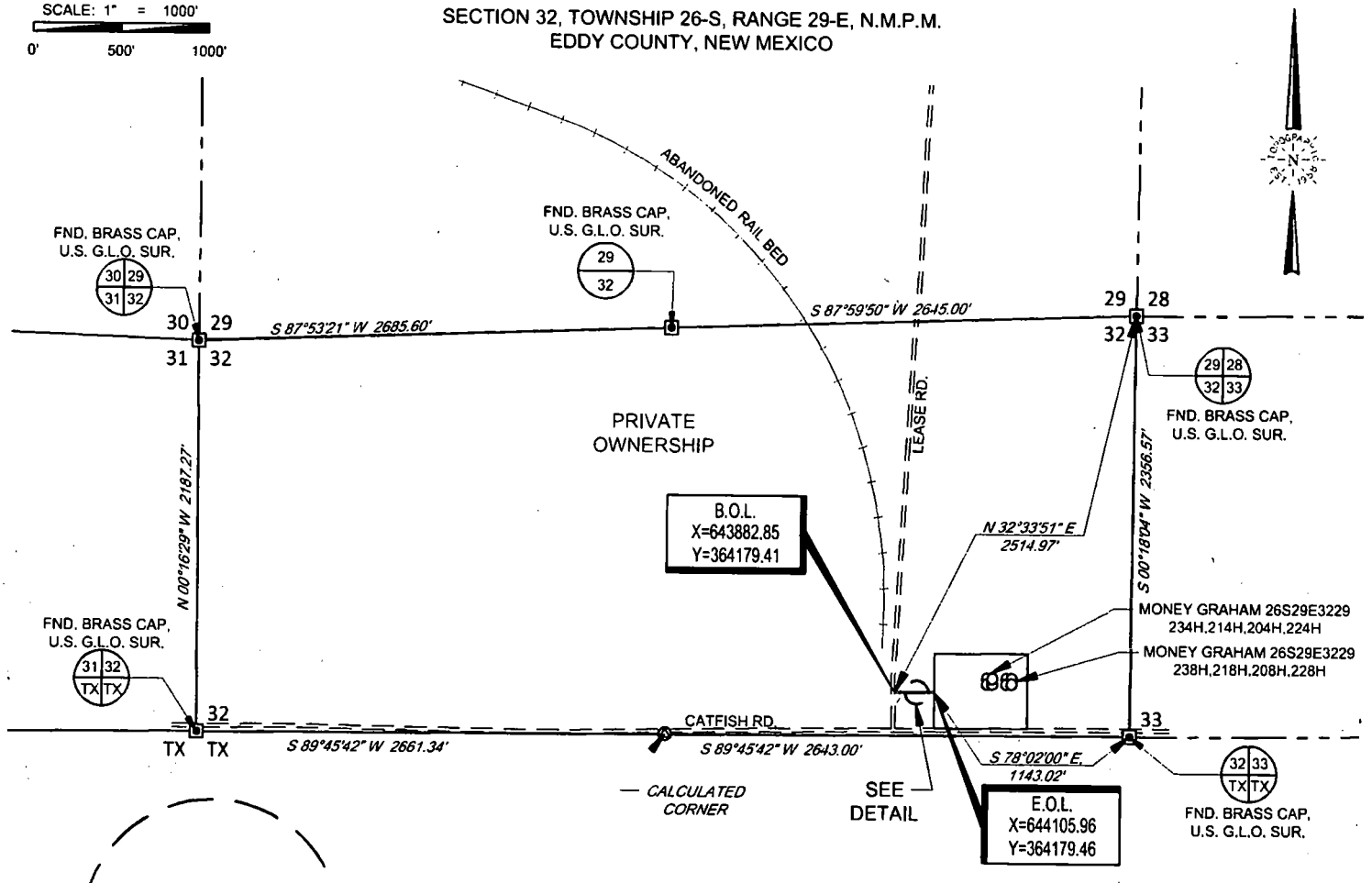
FIGURE 1

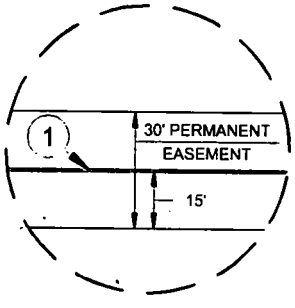
Production Layout & Interim Reclamation Diagram

SCALE: 1" = 1000'

0' 500' 1000'

SECTION 32, TOWNSHIP 26-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO





DETAIL VIEW
SCALE: 1" = 50'

LINE TABLE

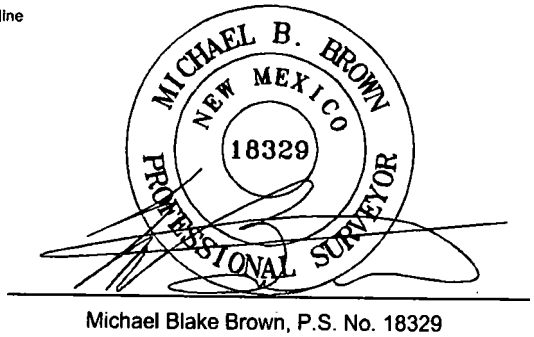
LINE	BEARING	DISTANCE
1	N 89°59'19" E	223.11'

LEGEND

- SURVEY/SECTION LINE
- SURVEYED BASELINE
- TRACT BORDER
- ROAD WAY
- RAILROAD
- MONUMENT
- CALCULATED CORNER

MONEY GRAHAM 26S29E3229 ROAD EASEMENT

Being a proposed road easement being 30 feet in width, 15 feet left, and 15 feet right of the above platted centerline total line footage containing 223.11 feet or 13.52 rods, containing 0.15 acres more or less.



Michael Blake Brown, P.S. No. 18329
DECEMBER 19, 2017

TAP ROCK

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MONEY GRAHAM 26S29E3229 ROAD EASEMENT	REVISION: INT	DATE
DATE: 12/19/17		
FILE: EP_MONEY_GRAHAM_26S29E3229_ROAD		
DRAWN BY: EAH		
SHEET: 1 OF 1		

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4. B.O.L. = BEGINNING OF LINE
5. E.O.L.= END OF LINE

Map 2-2

S:\SURVEY\TAPROCK\MONEY_GRAHAM_UNIT\FINAL_PRODUCTS\EP_MONEY_GRAHAM_26S29E3229_ROAD.DWG 12/20/2017 2:10:23 PM ccaston

Tap Rock Operating LLC

Proposed Money Graham 26S29E3229
East Well Pad
Well Vicinity & Lease Map

Section 32, Township 26S, Range 29E
Eddy County, New Mexico

⊙ Proposed SHL

N

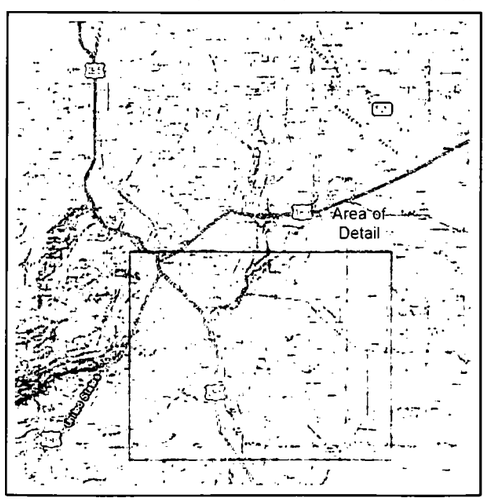
1:200,000

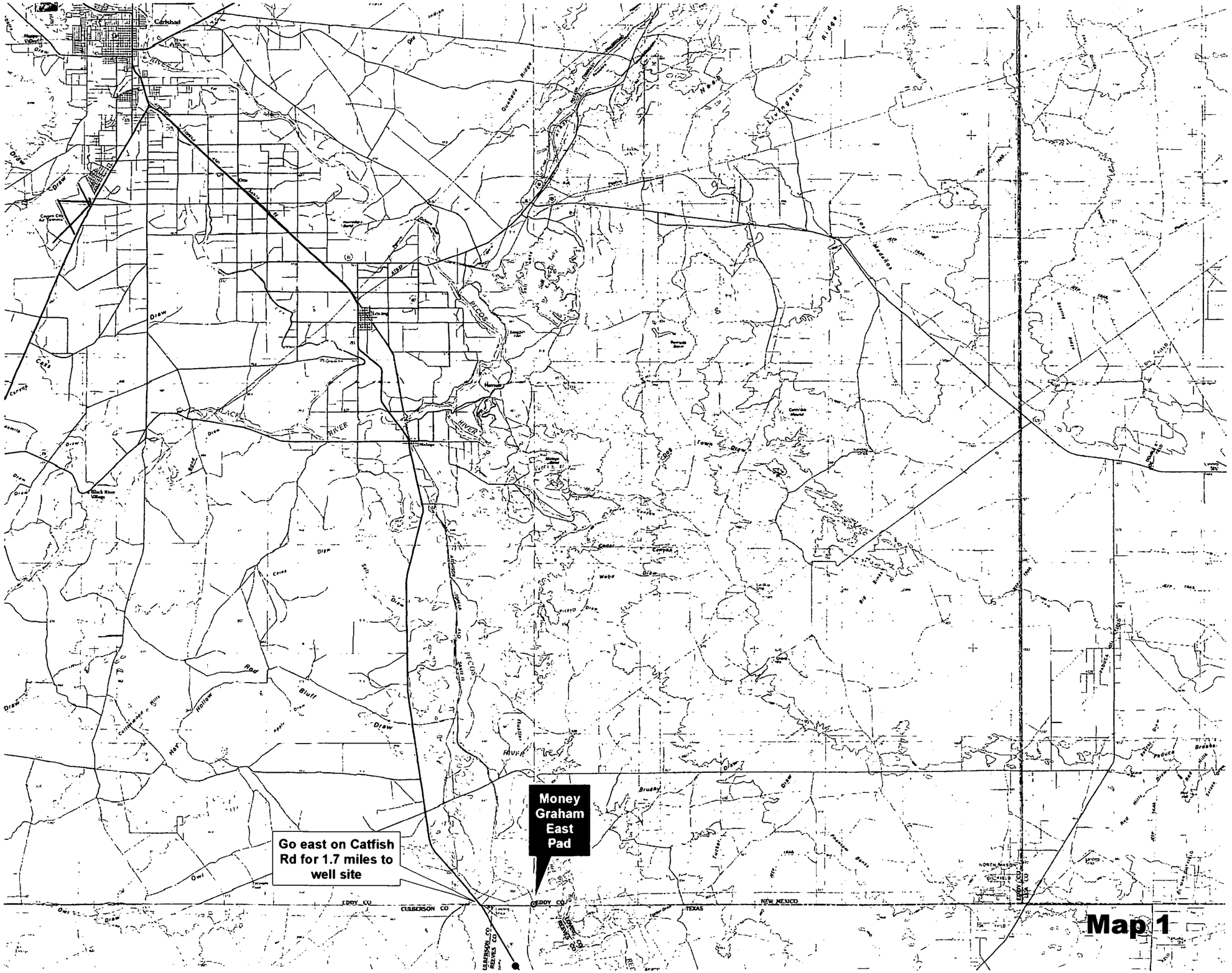
0 1.25 2.5 5
Miles

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., July 25, 2018
for Tap Rock Operating





Tap Rock Operating, LLC

Proposed Money Graham Fed Com
East Well Pad
Plan of Development Map

Section 32, Township 26S, Range 29E
Eddy County, New Mexico

- ○ Proposed SHL
- ▽ Proposed BHL
- – – Proposed Wellbore

N

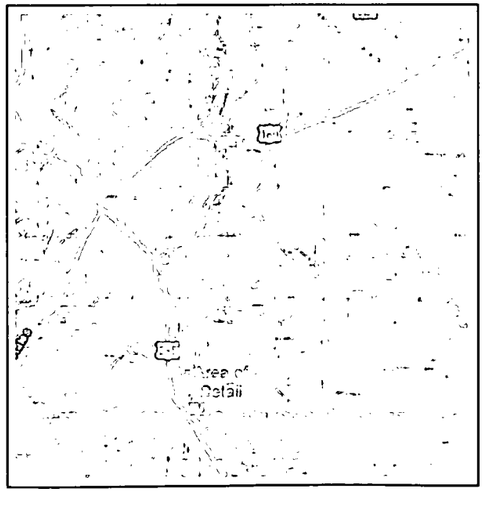
1:9,500

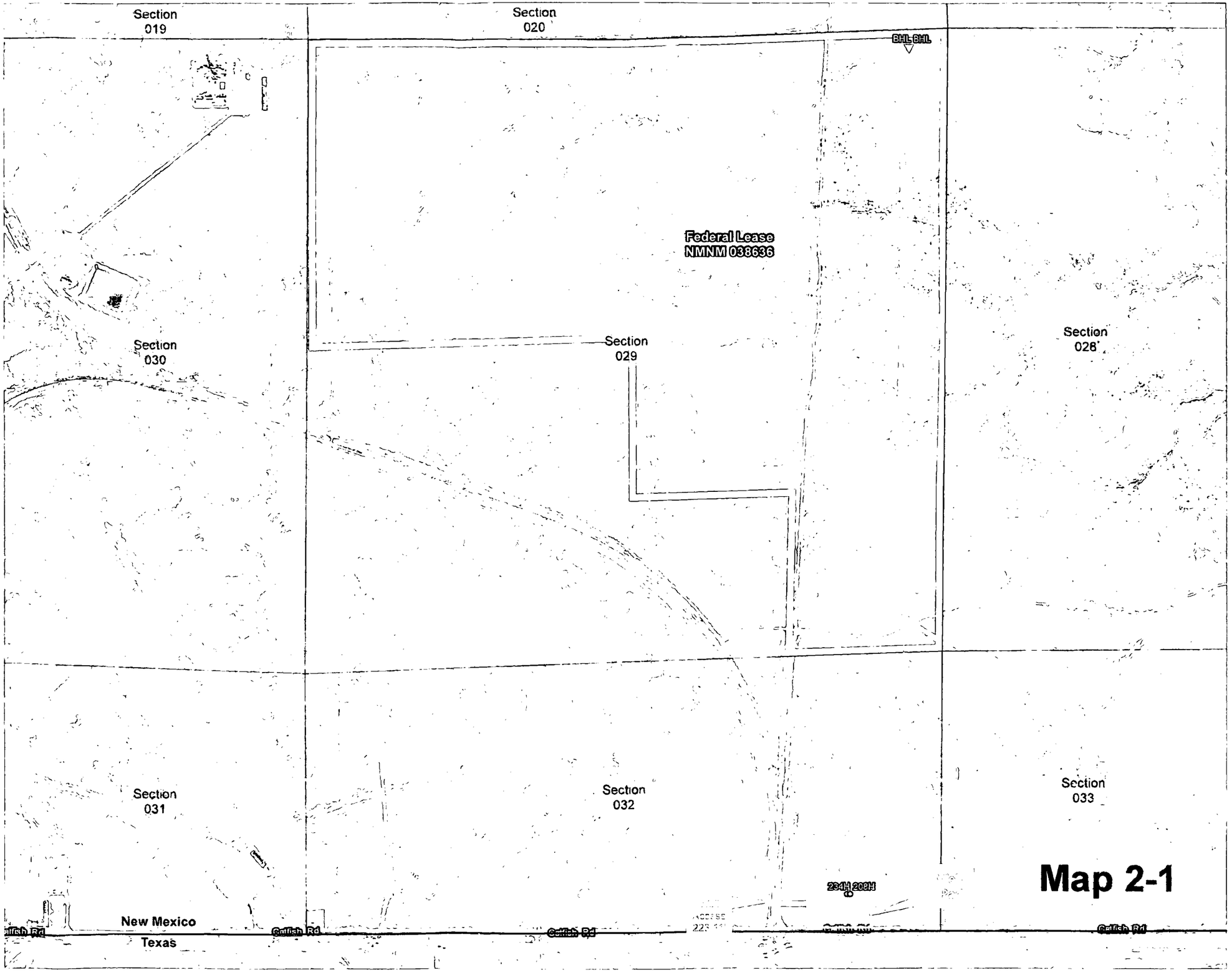
0 250 500 1,000
Feet

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., November 6, 2018
for Tap Rock Operating, LLC





Map 2-1

Tap Rock Operating LLC

Proposed Money Graham 26S29E3229 East Well Pad
Well Vicinity & Lease Map

Section 32, Township 26S, Range 29E
Eddy County, New Mexico

- Oil - Active
- Oil - New
- Oil - TA
- Oil - P&A
- Gas - Active
- Gas - New
- Gas - P&A
- SWD - Active
- Proposed SHL
- Proposed BHL
- Proposed Wellbore
- BLM
- STATE
- PRIVATE

N

1:24,000

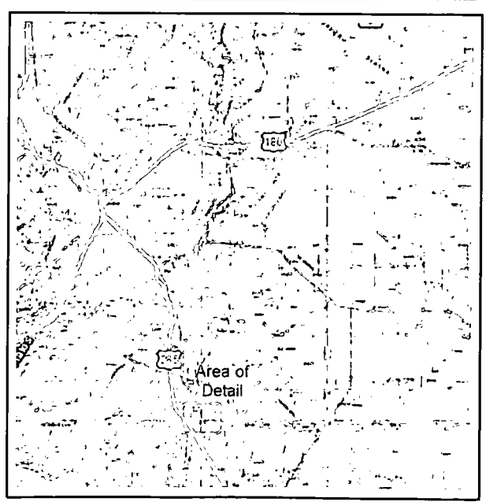
0 625 1,250 2,500

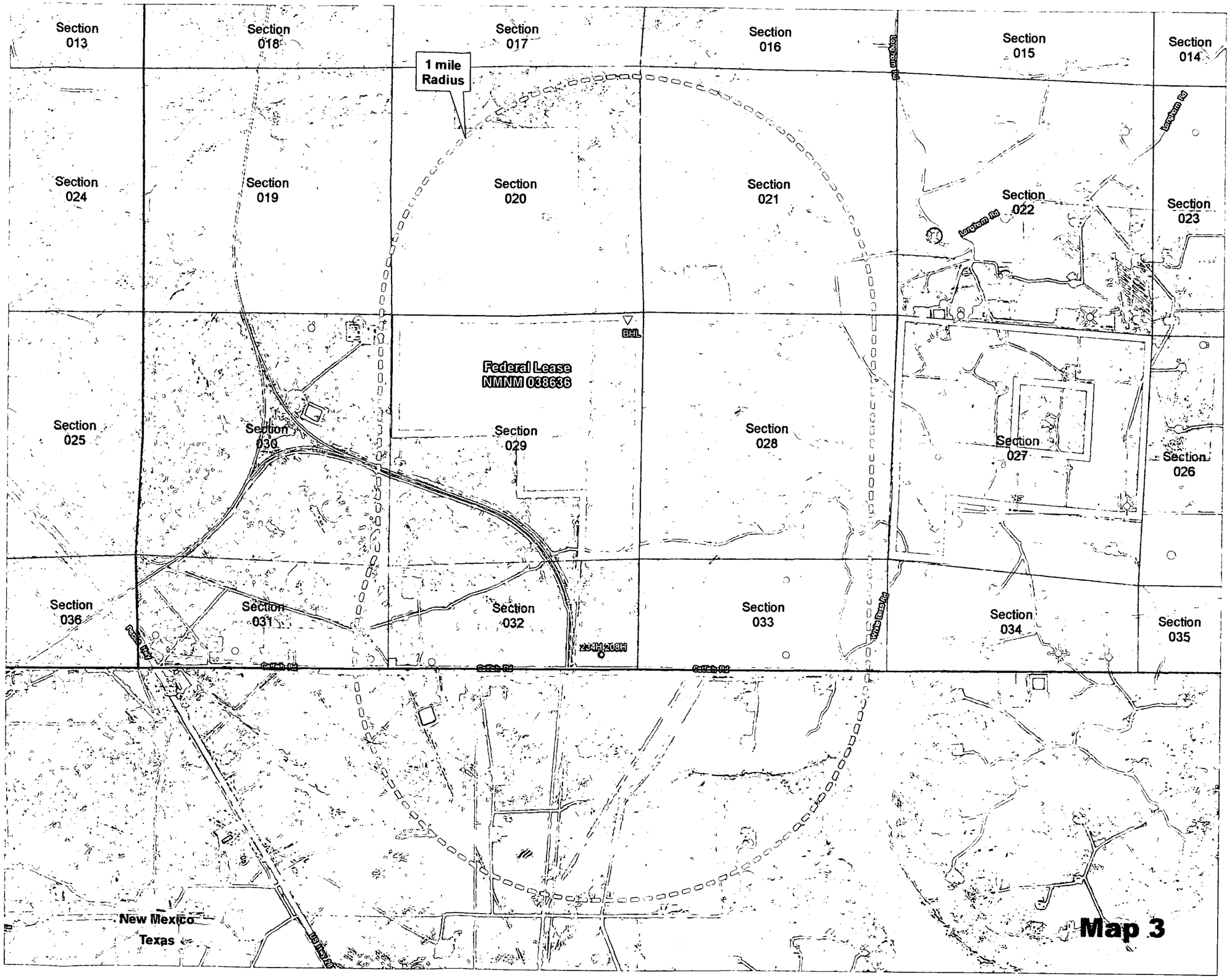
Feet

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., July 25, 2018
for Tap Rock Operating





Tap Rock Operating LLC

Proposed Money Graham 26S29E3229
East Well Pad
Well Vicinity & Lease Map

Section 32, Township 26S, Range 29E
Eddy County, New Mexico

● Water Source ⊙ Proposed SHL
Gravel Source

N

1:80,000

0 0.25 0.5 1
Miles

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

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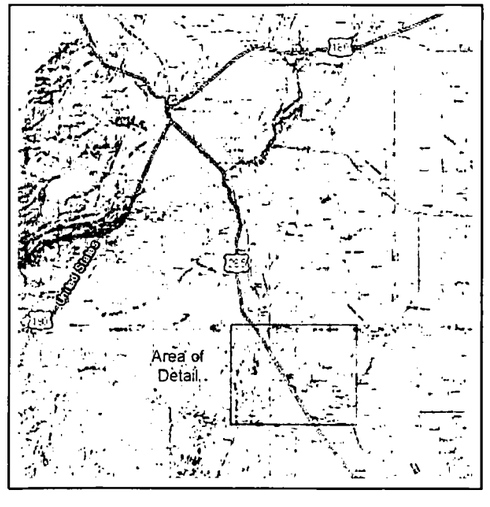
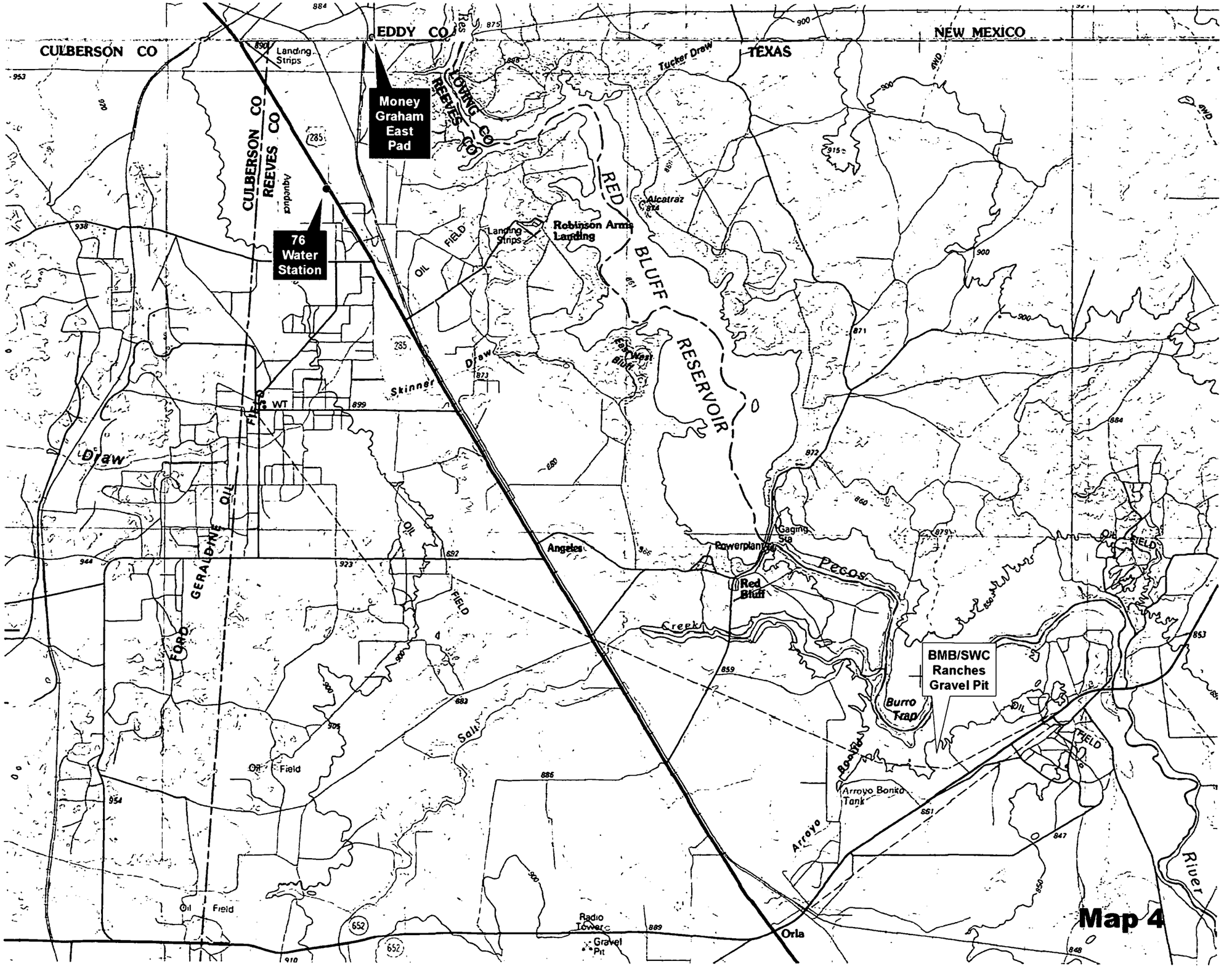
for Tap Rock Operating





Tap Rock Operating LLC

Proposed Money Graham 26S29E3229 East Well Pad
Well Vicinity & Lease Map

Section 32, Township 26S, Range 29E
Eddy County, New Mexico

● Water Source ⊙ Proposed SHL
Gravel Source

N

1:80,000

0 0.25 0.5 1
Miles

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

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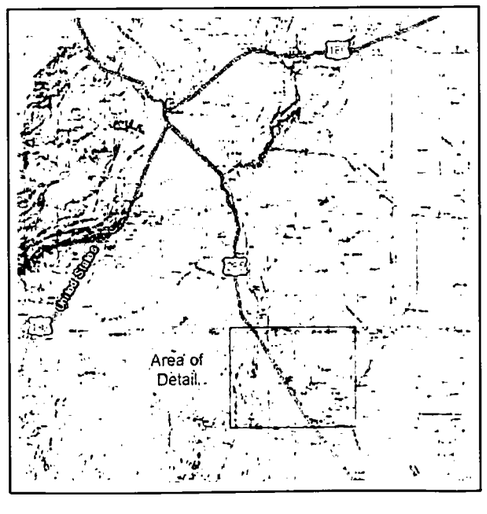

Money Graham East Pad

76 Water Station

BMB/SWC Ranches Gravel Pit

Map 4

Tap Rock Operating LLC

Proposed Money Graham 26S29E3229
East Well Pad
Well Vicinity & Lease Map

Section 32, Township 26S, Range 29E
Eddy County, New Mexico

- Oil - Active
- Oil - New
- Oil - TA
- Oil - P&A
- Gas - Active
- Gas - New
- Gas - P&A
- SWD - Active
- Proposed SHL
- Proposed BHL
- Proposed Wellbore
- BLM
- STATE
- PRIVATE

N

1:24,000

0 625 1,250 2,500

Feet

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

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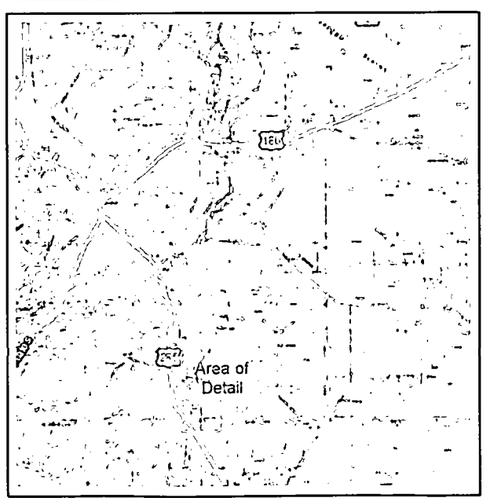
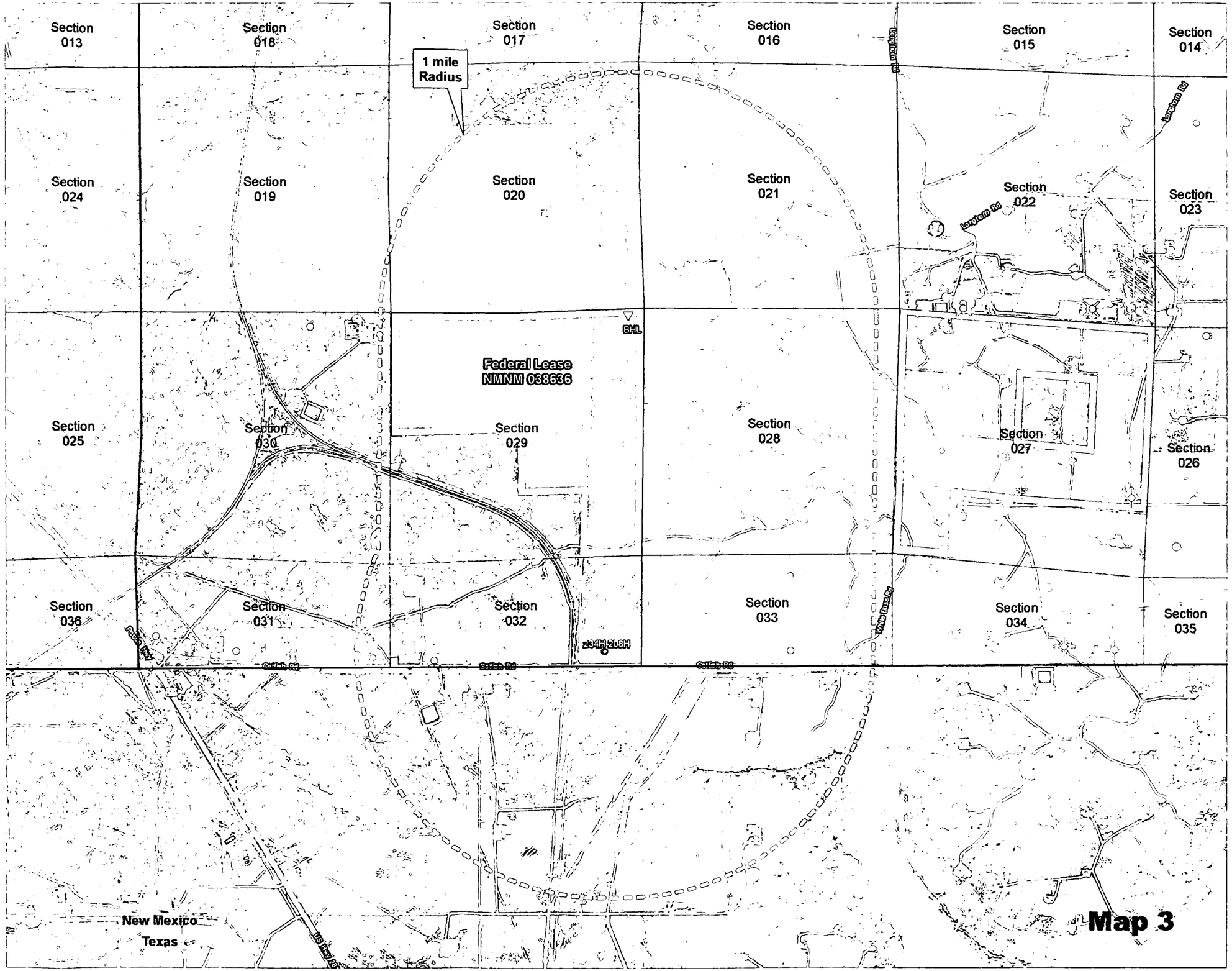
for Tap Rock Operating





Tap Rock Operating LLC

Proposed Money Graham 26S29E3229
East Well Pad
Well Vicinity & Lease Map

Section 32, Township 26S, Range 29E
Eddy County, New Mexico

⊙ Proposed SHL

N

1:200,000

0 1.25 2.5 5

Miles

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

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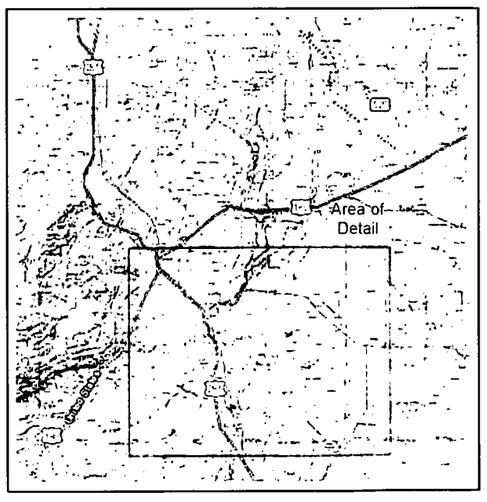

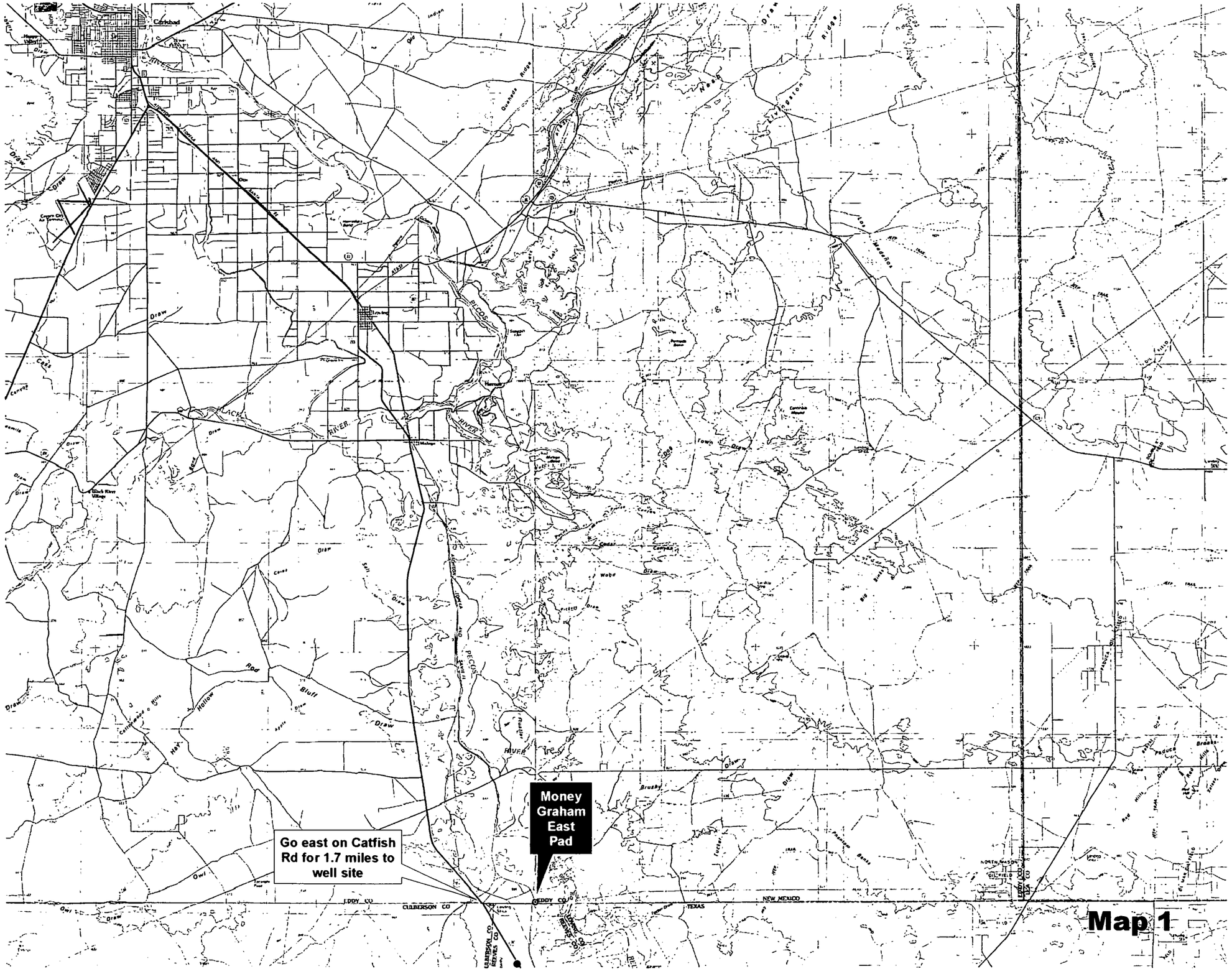

Tap Rock Operating, LLC

Proposed Money Graham Fed Com
East Well Pad
Plan of Development Map

Section 32, Township 26S, Range 29E
Eddy County, New Mexico

- ○ Proposed SHL
- ▽ Proposed BHL
- – – Proposed Wellbore

N

1:9,500

0 250 500 1,000

Feet

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

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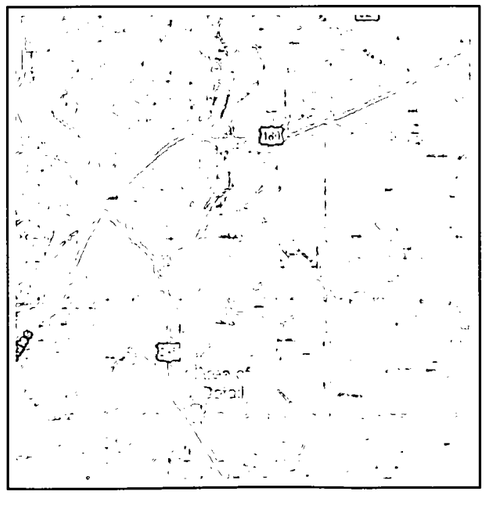
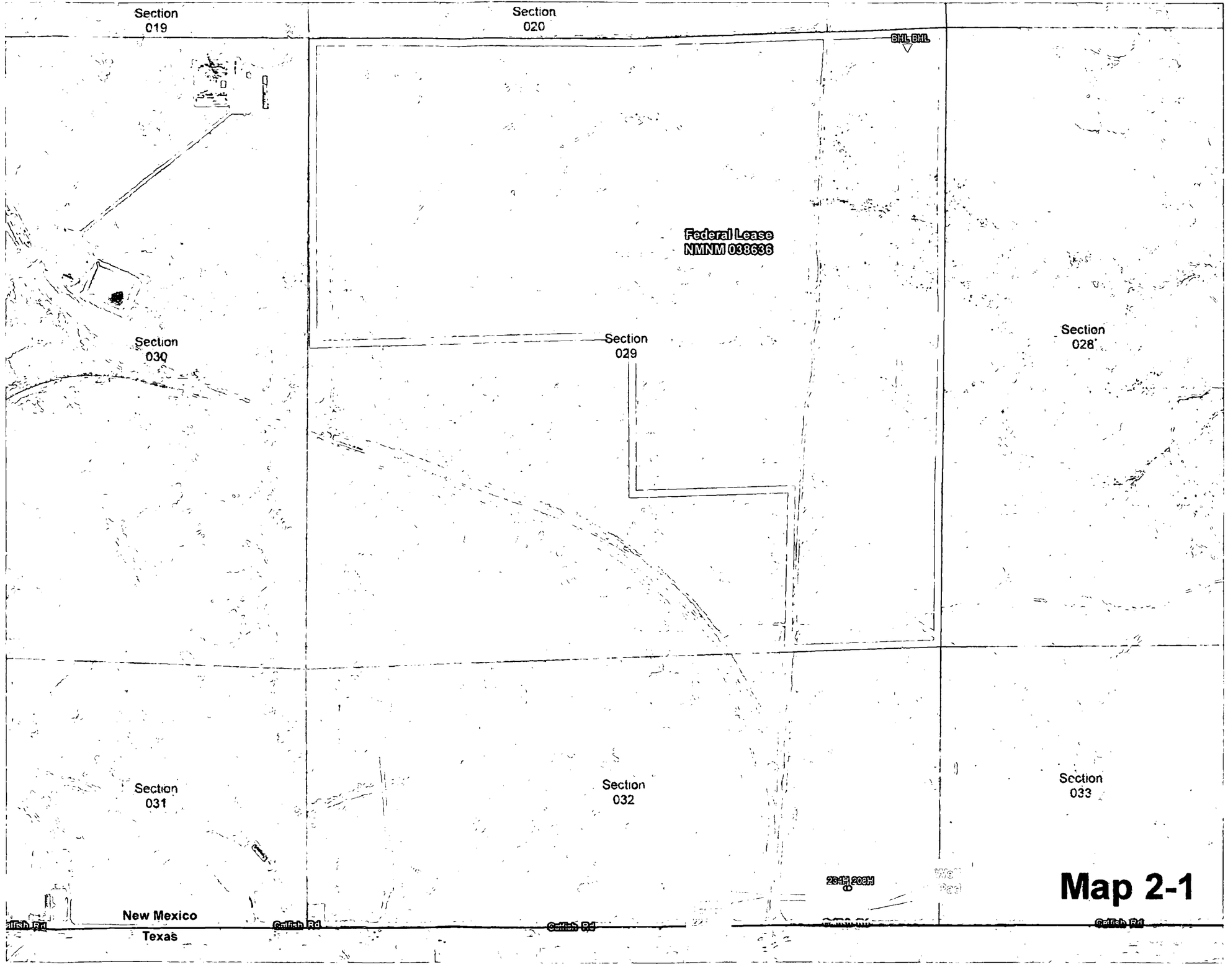
for Tap Rock Operating, LLC





Map 2-1