

RECEIVED

MAY 03 2019

FORM APPROVED  
OMB No. 1004-0137  
Expires: January 31, 2018UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
DISTRICT II-ARTESIA O.C.D.

## APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM137445
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No. NMNM136754
2. Name of Operator MATADOR PRODUCTION COMPANY		8. Lease Name and Well No. DR. SCRIVNER FED COM 227H 325622
3a. Address 5400 LBJ Freeway, Suite 1500 Dallas TX 75240	3b. Phone No. (include area code) (972)371-5200	9. API Well No. 30-015-45960
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NESE / 2169 FSL / 573 FEL / LAT 32.2456248 / LONG -104.0341777 At proposed prod. zone NWSW / 1650 FSL / 240 FWL / LAT 32.244175 / LONG -104.0487607		10. Field and Pool, or Exploratory PURPLE SAGE / WOLFCAMP, (GAS)
11. Sec., T. R. M. or Blk. and Survey or Area SEC 1 / T24S / R28E / NMP		
14. Distance in miles and direction from nearest town or post office* 2.5 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) 497 feet	16. No of acres in lease 80	17. Spacing Unit dedicated to this well 320
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1488 feet	19. Proposed Depth 10488 feet / 15403 feet	20. BLM/BIA Bond No. in file FED: NMB001079
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 2987 feet	22. Approximate date work will start* 03/21/2019	23. Estimated duration 60 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.   | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan.  | 5. Operator certification.  |
| 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). | 6. Such other site specific information and/or plans as may be requested by the BLM.            |

25. Signature (Electronic Submission)	Name (Printed/Typed) Dusty Thornhill / Ph: (972)371-5405	Date 08/17/2018
Title Associate Landman		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 04/18/2019
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  
Approval Date: 04/18/2019

(Continued on page 2)

\*(Instructions on page 2)

RUP 5-6-19.

## 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 1:** 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 well, 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 directionally 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 well 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 will 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 collects this information to allow 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 Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

## Additional Operator Remarks

### Location of Well

- I. SHL: NESE / 2169 FSL / 573 FEL / TWSP: 24S / RANGE: 28E / SECTION: 1 / LAT: 32.2456248 / LONG: -104.0341777 ( TVD: 0 feet, MD: 0 feet )  
PPP: NWSW / 1650 FSL / 1320 FWL / TWSP: 24S / RANGE: 28E / SECTION: 1 / LAT: 32.2442242 / LONG: -104.0451643 ( TVD: 10516 feet, MD: 12972 feet )  
PPP: NESW / 1650 FSL / 2640 FWL / TWSP: 24S / RANGE: 28E / SECTION: 1 / LAT: 32.2442129 / LONG: -104.0408927 ( TVD: 10560 feet, MD: 11650 feet )  
PPP: NESE / 2169 FSL / 573 FEL / TWSP: 24S / RANGE: 28E / SECTION: 1 / LAT: 32.2441988 / LONG: -104.0333879 ( TVD: 10572 feet, MD: 11060 feet )  
BHL: NWSW / 1650 FSL / 240 FWL / TWSP: 24S / RANGE: 28E / SECTION: 1 / LAT: 32.244175 / LONG: -104.0487607 ( TVD: 10488 feet, MD: 15403 feet )

### BLM Point of Contact

Name: Tanja Baca

Title: Admin Support Assistant

Phone: 5752345940

Email: tabaca@blm.gov

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### **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.

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## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	Matador Production Company
<b>LEASE NO.:</b>	NMNM137445
<b>WELL NAME &amp; NO.:</b>	Dr. Scrivner Fed Com-227H
<b>SURFACE HOLE FOOTAGE:</b>	2169'S & 573'E
<b>BOTTOM HOLE FOOTAGE:</b>	1650'S & 240'W
<b>LOCATION:</b>	Section 1, T.24 S., R.28 E., NMPM
<b>COUNTY:</b>	Eddy County, New Mexico

COA

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input type="radio"/> Low	<input checked="" type="radio"/> Medium	<input type="radio"/> High
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

### 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

#### Casing Design:

1. The **13-3/8** inch surface casing shall be set at approximately **350** 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 intermediate casing is:
- Cement to surface. If cement does not circulate see B.1.a, c-d above.  
**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 X 7** inch 2<sup>nd</sup> 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 4 1/2** 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. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
  - 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.

#### **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.

## 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 2<sup>nd</sup> 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 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.
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.
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: 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. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
  - e. 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.
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.
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- 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. The results of the test shall be reported to the appropriate BLM office.
- f. 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.
- g. 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 if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. 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.

**NMK482019**

## Medium

13 3/8	surface csg in a	17 1/2	inch hole.	Design Factors			SURFACE		
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	Weight	
"A"	54.50	J 55	BUTT	44.73	7.4	1.89	350	19,075	
"B"							0	0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,500				Tail Cmt	does	circ to sfc.	Totals:	350	19,075
Comparison of Proposed to Minimum Required Cement Volumes									
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
17 1/2	0.6946	400	552	297	86	8.40	851	2M	1.56
Class 'C' tail cmt yield above 1.35.									

9 5/8	casing inside the	13 3/8		Design Factors			INTERMEDIATE		
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	Weight	
"A"	40.00	J 55	BUTT	5.83	1.78	0.78	2,700	108,000	
"B"							0	0	
w/8.4#/g mud, 30min Sfc Csg Test psig:							Totals:	2,700	108,000
The cement volume(s) are intended to achieve a top of				0	ft from surface or a				350 overlap.
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
12 1/4	0.3132	820	1544	882	75	10.30	2718	3M	0.81
Class 'C' tail cmt yld > 1.35									
Burst Frac Gradient(s) for Segment(s): A, B, C, D = 1.46, b, c, d All > 0.70,									
OK.									

7 5/8	casing inside the	9 5/8		Design Factors			INTERMEDIATE		
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	Weight	
"A"	29.70	P 110	BUTT	3.04	4.66	1.35	2,400	71,280	
"B"	29.70	P 110	VAM HTF-NR	3.27	3.21	1.53	2,400	71,280	
"C"	29.00	P 110	BUTT	3.02	1.56	1.60	5,992	173,768	
"D"							0	0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,500							Totals:	10,792	316,328
The cement volume(s) are intended to achieve a top of				2400	ft from surface or a				300 overlap.
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
8 3/4	0.1005	760	1386	855	62	9.20	4704	5M	0.52
Class 'H' tail cmt yld > 1.20									
MASP is within 10% of 5000psig, need exrtia equip?									

Tail cmt									
5 1/2	casing inside the	7 5/8		Design Factors			PRODUCTION		
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	Weight	
"A"	20.00	P 110	DWC/C-IS MS	3.10	1.63	1.77	9,850	197,000	
"B"	13.50	P 110	DWC/C-HT-IS	9.21	1.54	2.01	5,553	74,966	
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,167							Totals:	15,403	271,966
B segment Design Factors would be:				49.15	1.65	if it were a vertical wellbore.			
No Pilot Hole Planned				MTD	Max VTD	Csg VD	Curve KOP	Dogleg°	Severity°
				15403	10572	10572	10050	91	9
The cement volume(s) are intended to achieve a top of				10250	ft from surface or a				542 overlap.
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
6 1/8	0.0396	510	597	222	169	12.80			0.56
MASP is within 10% of 5000psig, need exrtia equip?									

**PECOS DISTRICT  
SURFACE USE  
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Matador Production Company
WELL NAME & NO.:	Dr. Scrivner Fed Com 227H
SURFACE HOLE FOOTAGE:	2169'/S & 573'/E
BOTTOM HOLE FOOTAGE	1650'/S & 240'/W
LOCATION:	Section 1, T.24 S., R.28 E., NMPM
COUNTY:	Eddy County, New Mexico

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

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## **I. GENERAL PROVISIONS**

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## **II. PERMIT EXPIRATION**

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## **III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## **IV. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

## **V. 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 must submit a sundry to add "Com" in the well name.



## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

### **B. TOPSOIL**

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

### **C. CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

### **D. FEDERAL MINERAL MATERIALS PIT**

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

### **E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

### **F. EXCLOSURE FENCING (CELLARS & PITS)**

**Exclosure Fencing**

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

**G. ON LEASE ACCESS ROADS****Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

**Surfacing**

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

**Crowning**

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

**Ditching**

Ditching shall be required on both sides of the road.

**Turnouts**

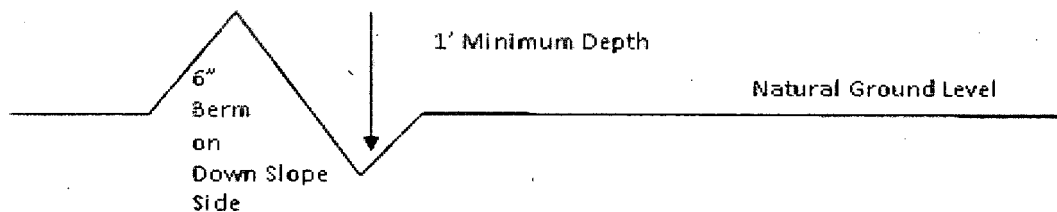
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

### **Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

**Cross Section of a Typical Lead-off Ditch**



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

### **Formula for Spacing Interval of Lead-off Ditches**

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

### **Cattleguards**

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguards that are in place and are utilized during lease operations.

### **Fence Requirement**

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

### **Public Access**

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

### Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

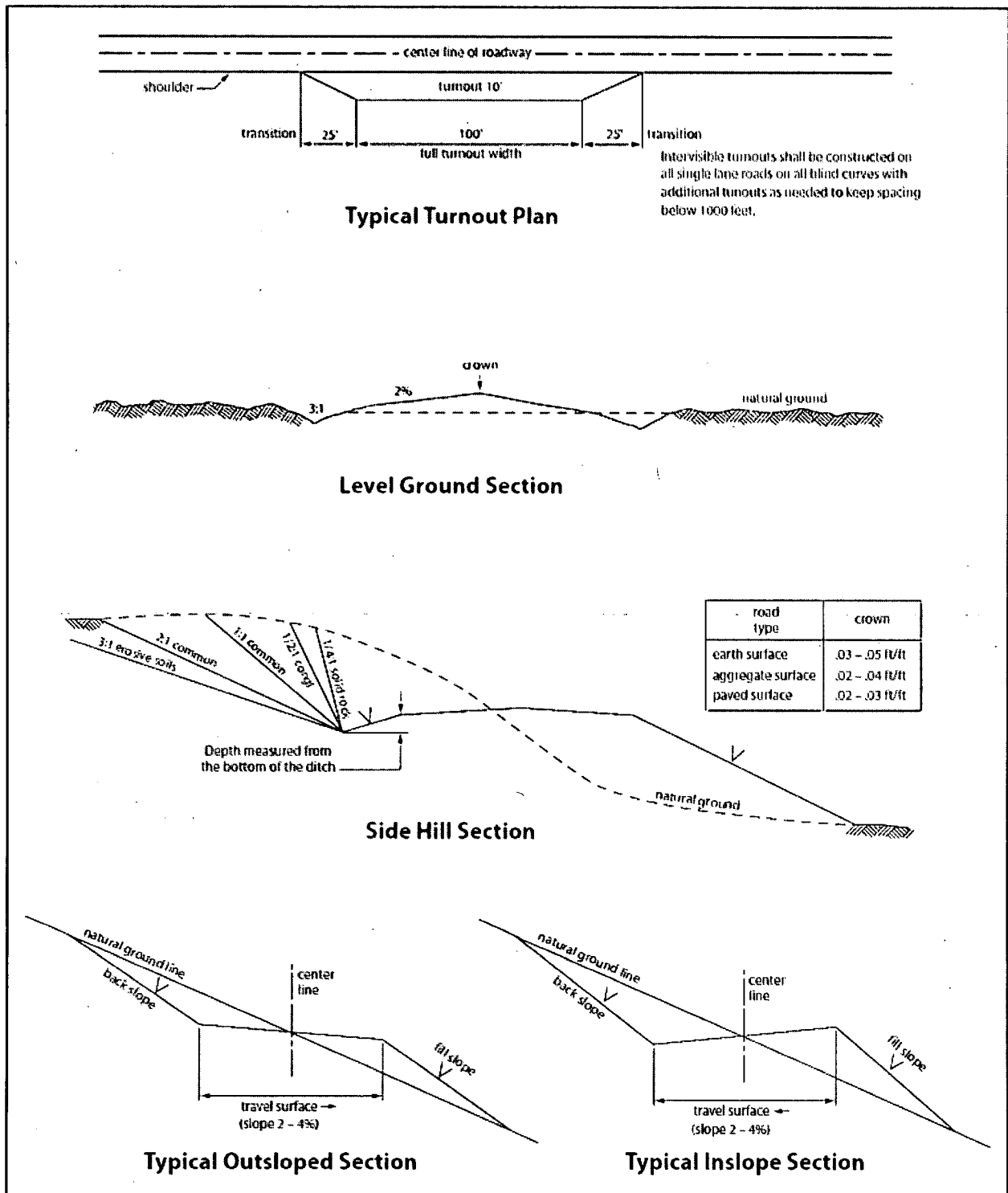


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## VII. DRILLING

### A. DRILLING OPERATIONS 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)

☒ **Eddy County**

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

1. **Hydrogen Sulfide (H<sub>2</sub>S) monitors shall be installed prior to drilling out the surface shoe. If H<sub>2</sub>S 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.**
2. 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. 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 is located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the GR/N well log 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.**

## **B. CASING**

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.

**Centralizers required on surface casing per Onshore Order 2.III.B.1.f.**

### **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.

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.

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

### **Medium Cave/Karst**

Possibility of water flows in the Castile.

Possibility of lost circulation in the Salado, Rustler, and Delaware.

Abnormal pressures may be encountered upon penetrating the 3<sup>rd</sup> Bone Spring Sandstone and all subsequent formations.

1. The 13-3/8 inch surface casing shall be set at approximately **360** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**
  - 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 is to include the lead cement slurry.**
  - 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 intermediate casing is:
- ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**

**If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface.**

**Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.**

3. The minimum required fill of cement behind the 7 inch production casing is:
- ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

**Formation below the 7" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.**

4. The minimum required fill of cement behind the 4-1/2 inch production Liner is:
- ☒ Cement as proposed by operator. Operator shall provide method of verification. **Excess calculates to 8% - Additional cement may be required.**
5. 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.

### C. 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 53.
2. Variance approved to use flex line from BOP to choke manifold. 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.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. BOP shall be installed with three sets of 10M rams.
4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi
5. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch 1<sup>st</sup> intermediate casing shoe shall be **3000 (3M)** psi.
6. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 7 inch 2<sup>nd</sup> intermediate casing shoe shall be **5000 (5M)** psi. **5M 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.**
7. Choke manifold equipment configuration required for drilling below the 7 inch 2<sup>nd</sup> intermediate casing shoe shall be functionally equivalent to a 10M system.
8. 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. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- c. 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.
- d. The results of the test shall be reported to the appropriate BLM office.
- 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 if test is done with a test plug and 30 minutes without a test plug. 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.

#### **D. 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.

#### **E. DRILL STEM TEST**

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

## **F. 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.

**MHH051316**

## **VIII. PRODUCTION (POST DRILLING)**

### **A. WELL STRUCTURES & FACILITIES**

#### **Placement of Production Facilities**

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### **Exclosure Netting (Open-top Tanks)**

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

#### **Chemical and Fuel Secondary Containment and Exclosure Screening**

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design,

construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock enclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

#### **Open-Vent Exhaust Stack Enclosures**

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended enclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

#### **Containment Structures**

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

#### **Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

### **B. PIPELINES**

#### **BURIED PIPELINE STIPULATIONS**

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as

a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be 15 feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 15 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately   6   inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.
9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.
10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.
11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.
12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

<input checked="" type="checkbox"/> (x) seed mixture 1	<input type="checkbox"/> ( ) seed mixture 3
<input type="checkbox"/> ( ) seed mixture 2	<input type="checkbox"/> ( ) seed mixture 4
<input type="checkbox"/> ( ) seed mixture 2/LPC	<input type="checkbox"/> ( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.
14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.
15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during

the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

- a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
- b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

#### **STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES**

**A copy of the application (Grant, Sundry Notice, APD) and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

- a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
- b. Activities of other parties including, but not limited to:
  - (1) Land clearing.
  - (2) Earth-disturbing and earth-moving work.
  - (3) Blasting.
  - (4) Vandalism and sabotage.
- c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of 15 feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline must be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline will be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.



12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, powerline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

17. Surface pipelines must be less than or equal to 4 inches and a working pressure below 125 psi.

### **C. ELECTRIC LINES**

#### **STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES**

**A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.)

Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on

public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

- For reclamation remove poles, lines, transformer, etc. and dispose of properly. Fill in any holes from the poles removed.

## **IX. INTERIM RECLAMATION**

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

## **X. FINAL ABANDONMENT & RECLAMATION**

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

### **Seed Mixture 1 for Loamy Sites**

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed shall be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed shall be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre shall be doubled. The seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains lovegrass ( <i>Eragrostis intermedia</i> )	0.5
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	1.0
Sideoats grama ( <i>Bouteloua curtipendula</i> )	5.0
Plains bristlegrass ( <i>Setaria macrostachya</i> )	2.0

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed



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

## APD Print Report

04/29/2019

APD ID: 10400031988

Submission Date: 08/17/2018

Highlighted data  
reflects the most  
recent changes

Operator Name: MATADOR PRODUCTION COMPANY

Federal/Indian APD: FED

Well Name: DR. SCRIVNER FED COM

Well Number: 227H

[Show Final Text](#)

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

### Application

#### Section 1 - General

APD ID: 10400031988

Tie to previous NOS?

Submission Date: 08/17/2018

BLM Office: CARLSBAD

User: Dusty Thornhill

Title: Associate Landman

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM137445

Lease Acres: 80

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? YES

Federal or Indian agreement: FEDERAL

Agreement number: NMNM136754

Agreement name:

Keep application confidential? YES

Permitting Agent? NO

APD Operator: MATADOR PRODUCTION COMPANY

Operator letter of designation:

#### Operator Info

Operator Organization Name: MATADOR PRODUCTION COMPANY

Operator Address: 5400 LBJ Freeway, Suite 1500

Zip: 75240

Operator PO Box:

Operator City: Dallas

State: TX

Operator Phone: (972)371-5200

Operator Internet Address: amonroe@matadorresources.com

#### Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Approval Date: 04/18/2019

Page 1 of 25

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

**Well API Number:**

**Field/Pool or Exploratory?** Field and Pool

**Field Name:** PURPLE SAGE

**Pool Name:** WOLFCAMP,  
(GAS)

**Is the proposed well in an area containing other mineral resources?** USEABLE WATER,NATURAL GAS,CO2,OIL

**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:** DR.  
SCRIVNER FED COM

**Number:** SLOT 3

**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:** 2.5 Miles

**Distance to nearest well:** 1488 FT

**Distance to lease line:** 497 FT

**Reservoir well spacing assigned acres Measurement:** 320 Acres

**Well plat:** Dr\_Scrivner\_227H\_C\_102\_20181210173054.pdf

**Well work start Date:** 03/21/2019

**Duration:** 60 DAYS

### Section 3 - Well Location Table

**Survey Type:** RECTANGULAR

**Describe Survey Type:**

**Datum:** NAD83

**Vertical Datum:** NAVD88

**Survey number:** 18329

	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	216 9	FSL	573	FEL	24S	28E	1	Aliquot NESE	32.24562 48	- 104.0341 777	EDD Y	NEW MEXI CO	NEW MEXI CO	F	FEE	298 7	0	0
KOP Leg #1	216 9	FSL	573	FEL	24S	28E	1	Aliquot NESE	32.24419 88	- 104.0333 879	EDD Y	NEW MEXI CO	NEW MEXI CO	F	FEE	- 699 9	100 42	998 6

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

	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	216 9	FSL	573	FEL	24S	28E	1	Aliquot NESE	32.24419 88	- 104.0333 879	EDD Y	NEW MEXI CO	NEW MEXI CO	F	FEE	- 758 5	110 60	105 72
PPP Leg #1	165 0	FSL	264 0	FWL	24S	28E	1	Aliquot NESW	32.24421 29	- 104.0408 927	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 137445	- 757 3	116 50	105 60
PPP Leg #1	165 0	FSL	132 0	FWL	24S	28E	1	Aliquot NWS W	32.24422 42	- 104.0451 643	EDD Y	NEW MEXI CO	NEW MEXI CO	F	FEE	- 752 9	129 72	105 16
EXIT Leg #1	165 0	FSL	330	FWL	24S	28E	1	Aliquot NWS W	32.24417 54	- 104.0484 696	EDD Y	NEW MEXI CO	NEW MEXI CO	F	FEE	- 750 1	154 03	104 88
BHL Leg #1	165 0	FSL	240	FWL	24S	28E	1	Aliquot NWS W	32.24417 5	- 104.0487 607	EDD Y	NEW MEXI CO	NEW MEXI CO	F	FEE	- 750 1	154 03	104 88

### Drilling Plan

#### Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	QUATERNARY	2987	0	0		NONE	No
2	SALADO	2487	500	500	SALT	NONE	No
3	CASTILE	2197	790	790	SALT	NONE	No
4	BASE OF SALT	772	2215	2215	SALT	NONE	No
5	LAMAR	325	2662	2662	LIMESTONE	NONE	No
6	BELL CANYON	295	2692	2692	SANDSTONE	NATURAL GAS,OIL	No
7	CHERRY CANYON	-591	3578	3578	SANDSTONE	NATURAL GAS,OIL	No
8	BRUSHY CANYON	-1796	4783	4783	SANDSTONE	NATURAL GAS,OIL	No
9	BONE SPRING LIME	-3578	6565	6565	LIMESTONE	NATURAL GAS,OIL	No



**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
10	FIRST BONE SPRING SAND	-4429	7416	7416	SANDSTONE	NATURAL GAS,OIL	No
11	BONE SPRING 2ND	-4701	7688	7688	LIMESTONE,OTHER : Carbonate	NATURAL GAS,CO2,OIL	No
12	BONE SPRING 2ND	-5202	8189	8189	SANDSTONE,OTHER : Sand	NATURAL GAS,CO2,OIL	No
13	BONE SPRING 3RD	-5556	8543	8543	LIMESTONE,OTHER : Carbonate	NATURAL GAS,CO2,OIL	No
14	BONE SPRING 3RD	-6333	9320	9320	SANDSTONE,OTHER : Sand	NATURAL GAS,CO2,OIL	No
15	WOLFCAMP	-6676	9663	9663	SHALE	NATURAL GAS,CO2,OIL	Yes

## Section 2 - Blowout Prevention

**Pressure Rating (PSI):** 5M

**Rating Depth:** 12000

**Equipment:** A BOP consisting of 3 rams with 2 pipe rams, 1 blind ram and one annular preventer. The BOP will be utilized below surface casing to TD. See attachments for BOP and choke manifold diagrams. Also present will be an accumulator that meets the requirements of Onshore Order #2 for the pressure rating of the BOP stack. A rotating head will also be installed as needed. BOP will be inspected and operated as recommended in Onshore Order #2. A Kelly cock 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.

**Requesting Variance?** YES

**Variance request:** Matador requests a variance to have the option of running a speed head for setting the Intermediate 1, Intermediate 2, and Production Strings. Matador requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. If the specific hose is not available, then one of equal or higher rating will be used. Matador requests a variance to have the option of batch drilling this well with other wells on the same pad. In the event that this well is batch drilled, after drilling surface, 1st intermediate, and 2nd intermediate hole sections and cementing 2nd intermediate casing, a 10M dry hole cap with bleed off valve will be installed. The rig will then walk to another well on the pad. When the rig returns to this well and BOPs are installed, the operator will perform a full BOP test. Matador requests a variance to run 7-5/8" BTC casing inside 9-5/8" BTC casing which will be less than the 0.422" stand off regulation. Matador has met with Christopher Walls and Mustafa Haque as well as other BLM representatives and determined that this would be acceptable as long as the 7-5/8" flush casing was run throughout the entire 300' cement tie back section between 9-5/8" and 7-5/8" casing.

**Testing Procedure:** After setting surface casing, a minimum 5M BOPE system will be installed. Test pressures will be 250 psi low and 5000 psi high with the annular being tested to 250 psi low and 2500 psi high before drilling below surface shoe. In the event that the rig drills multiple wells on the pad and the BOPs are removed after setting Intermediate 2 casing, a full BOP test will be performed when the rig returns and the 5M BOPE system is re-installed. Test pressures will be 250 psi low and 5000 psi high with the annular being tested to 250 psi low and 2500 psi high before drilling below the Intermediate 2 shoe. The BOPS will not be tested again unless any flanges are separated.

**Choke Diagram Attachment:**

BLM\_5M\_BOP\_System\_20180718002731.pdf

**BOP Diagram Attachment:**

BOP\_297\_001\_20180718002745.pdf

Approval Date: 04/18/2019

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Operator Name: MATADOR PRODUCTION COMPANY

Well Name: DR. SCRIVNER FED COM

Well Number: 227H

BLM\_5M\_BOP\_System\_20180718002731.pdf

BOP\_297\_001\_20180718002745.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	610	0	610			610	J-55	54.5	BUTT	1.125	1.125	BUOY	1.8	BUOY	1.8
2	INTERMEDIATE	8.75	7.625	NEW	API	Y	0	2400	0	2400			2400	P-110	29.7	BUTT	1.125	1.125	BUOY	1.8	BUOY	1.8
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2700	0	2700			2700	J-55	40	BUTT	1.125	1.125	BUOY	1.8	BUOY	1.8
4	PRODUCTION	6.125	5.5	NEW	NON API	Y	0	9850	0	9850			9850	P-110	20	OTHER - DWCC-IS-MS	1.125	1.125	BUOY	1.8	BUOY	1.8
5	INTERMEDIATE	8.75	7.625	NEW	NON API	Y	2400	9950	2400	9950			7550	P-110	29.7	OTHER - VAM HTF-NR	1.125	1.125	BUOY	1.8	BUOY	1.8
6	INTERMEDIATE	8.75	7.0	NEW	API	Y	9950	10792	9950	10539			842	P-110	29	BUTT	1.125	1.125	BUOY	1.8	BUOY	1.8
7	PRODUCTION	6.125	4.5	NEW	NON API	Y	9850	15403	9850	10488			5553	P-110	13.5	OTHER - DWCC-HT-IS	1.125	1.125	BUOY	1.8	BUOY	1.8

### Casing Attachments

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

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**Casing Attachments**

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

BLM\_Casing\_Design\_Assumptions\_4\_string\_20180718004214.pdf

---

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

Federal\_APD\_Tables\_Dr\_S.\_227H\_20190218184649.xlsx

**Casing Design Assumptions and Worksheet(s):**

BLM\_Casing\_Design\_Assumptions\_4\_string\_20190218185036.pdf

---

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

BLM\_Casing\_Design\_Assumptions\_4\_string\_20180718004227.pdf

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**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

---

**Casing Attachments**

---

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

**Inspection Document:**

**Spec Document:**

5.500in\_x\_20\_\_VST\_P110EC\_DWC\_C\_IS\_MS\_CDS\_20180718005058.PDF

**Tapered String Spec:**

Federal\_APD\_Tables\_Dr\_S.\_\_227H\_20190218190112.xlsx

**Casing Design Assumptions and Worksheet(s):**

BLM\_Casing\_Design\_Assumptions\_4\_string\_20180718004348.pdf

---

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

**Inspection Document:**

**Spec Document:**

VRCC\_16\_1177\_\_CDS\_\_7.625\_in\_29.70\_ppf\_P110\_EC\_VAM\_\_HTF\_NR\_Rev02\_20180718004959.pdf

**Tapered String Spec:**

Federal\_APD\_Tables\_Dr\_S.\_\_227H\_20190218184359.xlsx

**Casing Design Assumptions and Worksheet(s):**

BLM\_Casing\_Design\_Assumptions\_4\_string\_20180718004641.pdf

---

**Casing ID:** 6      **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

Federal\_APD\_Tables\_Dr\_S.\_\_227H\_20190218185310.xlsx

**Casing Design Assumptions and Worksheet(s):**

BLM\_Casing\_Design\_Assumptions\_4\_string\_20190218185939.pdf

---

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: DR. SCRIVNER FED COM

Well Number: 227H

#### Casing Attachments

Casing ID: 7 String Type: PRODUCTION

Inspection Document:

Spec Document:

4.500in\_x\_13.50\_\_0.290in\_\_VST\_P110EC\_DWC\_C\_HT\_IS\_Tubing\_CDS\_20190218190341.PDF

Tapered String Spec:

Federal\_APD\_Tables\_Dr\_S.\_227H\_20190218190403.xlsx

Casing Design Assumptions and Worksheet(s):

BLM\_Casing\_Design\_Assumptions\_4\_string\_20190218190657.pdf

#### Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	0	0	0	0	0	0	None	None
SURFACE	Tail		0	610	400	1.38	14.8	552	100	Class C	5% NaCl + LCM
INTERMEDIATE	Lead		0	2160	550	2.13	12.6	1065	100	Class C	Bentonite + 1% CaCL2 + 8% NaCl + LCM
INTERMEDIATE	Tail		2160	2700	270	1.38	14.8	372.6	100	Class C	5% NaCl + LCM
INTERMEDIATE	Lead		2400	9950	450	2.13	12.6	958.5	60	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Tail		9950	10792	310	1.38	14.8	427.8	60	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Lead		2400	9950	450	2.13	12.6	958.5	60	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Tail		9950	10792	310	1.38	14.8	427.8	60	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Lead		2400	9950	450	2.13	12.6	958.5	60	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Tail		9950	10792	310	1.38	14.8	427.8	60	TXI	Fluid Loss + Dispersant + Retarder + LCM
PRODUCTION	Lead		10250	10250	0	0	0	0	0	None	None

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Tail		1025 0	1025 0	510	1.17	15.8	596.7	25	Class H	Fluid Loss + Dispersant + Retarder + LCM
PRODUCTION	Lead		1025 0	1025 0	0	0	0	0	0	None	None
PRODUCTION	Tail		1025 0	1025 0	510	1.17	15.8	596.7	25	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 for weight addition and fluid loss control will be on location at all times. Mud program subject to change due to hole conditions.

**Describe the mud monitoring system utilized:** The Mud Monitoring System is an electronic Pason system satisfying requirements of Onshore Order 2.

### Circulating Medium Table

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	610	SPUD MUD	8.3	8.4							
610	2700	SALT SATURATED	10	10.3							
2700	1079 2	SALT SATURATED	8.3	9.2							
1079 2	1540 3	OIL-BASED MUD	12.3	12.8							

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

### Section 6 - Test, Logging, Coring

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

Mud Logging Program: 2 man unit from 5600 – TD. Electric Logging Program: No electric logs are planned at this time. GR will be collected through the MWD tools from intermediate casing to TD. No DSTs or cores are planned at this time. CBL w/ CCL from as far as gravity will let it fall to TOC.

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

CBL,MWD,MUDLOG

**Coring operation description for the well:**

N/A

### Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 6800

**Anticipated Surface Pressure:** 4474.16

**Anticipated Bottom Hole Temperature(F):** 180

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

**Describe:**

**Contingency Plans geohazards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

H2S\_Emergency\_Contacts\_20190212235146.docx

Matador\_Hydrogen\_Sulfide\_Drilling\_Dr\_Scrivner\_227\_20190212235201.docx

MRC\_Energy\_Co\_Drilling\_Contingency\_plan\_20190212235209.doc

### Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

Dr.\_Scrivner\_227H\_\_AC\_Report\_20180718003939.pdf

Dr.\_Scrivner\_227H\_\_Preliminary\_Plan\_1\_20180718003952.pdf

**Other proposed operations facets description:**

**Other proposed operations facets attachment:**

297Co\_Flex\_Certs\_\_Dr.\_Scrivner\_227H\_20180718004049.pdf

Full\_Wellhead\_4\_String\_20190218161857.pdf

**Other Variance attachment:**

Close\_Loop\_System\_20180718004103.docx

SUPO

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

### Section 1 - Existing Roads

**Will existing roads be used?** YES

**Existing Road Map:**

Existing\_Road\_Dr\_Scrivner227H\_20180718010209.pdf

**Existing Road Purpose:** ACCESS,FLUID TRANSPORT

**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:**

EP\_DR\_SCRIVNER\_SURFACE\_PAD\_SITE\_ROAD\_S\_20180718010633.PDF

**New road type:** RESOURCE

**Length:** 519.7

**Feet**

**Width (ft.):** 20

**Max slope (%):** 0

**Max grade (%):** 4

**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

**Access road engineering design attachment:**

**Access surfacing type:** OTHER

**Access topsoil source:** OFFSITE



**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

**Access surfacing type description:** Caliche

**Access onsite topsoil source depth:**

**Offsite topsoil source description:** Caliche will be hauled from existing caliche pits on private land in NWSE 1-24S-28E and NWSW 6-24S-29E

**Onsite topsoil removal process:**

**Access other construction information:**

**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:** Crowned and ditched

**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:**

DrScriver227OneMileRadius\_OCDPlat\_20180802230311.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 map:**

DS\_Facility\_Diagram\_20180718010752.pdf

## Section 5 - Location and Types of Water Supply

### Water Source Table

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

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

**Water source type:** GW WELL

**Describe type:**

**Source longitude:** -104.041916

**Source latitude:** 32.22406

**Source datum:** NAD83

**Water source permit type:** PRIVATE CONTRACT

**Source land ownership:** PRIVATE

**Water source transport method:** TRUCKING

**Source transportation land ownership:** PRIVATE

**Water source volume (barrels):** 200000

**Source volume (acre-feet):** 25.77862

**Source volume (gal):** 8400000

**Water source and transportation map:**

Water\_Well\_C\_00464\_20180718010832.pdf

**Water source comments:**

**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:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

### Section 6 - Construction Materials

**Construction Materials description:** NM One Call (811) will be notified before construction starts. A temporary fence will be built on the east side of the pad before construction starts to keep construction equipment off a slope. Top 6" of soil and brush will be stockpiled west of the pad and CTB. Pipe racks will be to the south. A closed loop drilling system will be used. Caliche will be hauled from existing caliche pits on private land in NWSE 1-24S-28E and NWSW 6-24S-29E

**Construction Materials source location attachment:**

### Section 7 - Methods for Handling Waste

**Waste type:** DRILLING

**Waste content description:** 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:** CRI's state approved (NM-01-0006) disposal site

### 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?** NO

**Description of cuttings location**

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

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

**Cuttings area depth (ft.)**

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

**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:**

DS\_227H\_SITE\_REV2\_20180718011040.pdf

**Comments:**

## Section 10 - Plans for Surface Reclamation

**Type of disturbance:** New Surface Disturbance

**Multiple Well Pad Name:** DR. SCRIVNER FED COM

**Multiple Well Pad Number:** SLOT 3

**Recontouring attachment:**

**Drainage/Erosion control construction:** Crowned and ditched

**Drainage/Erosion control reclamation:** Harrowed on the contour

**Well pad proposed disturbance  
(acres):** 3.55

**Road proposed disturbance (acres):**  
0.36

**Powerline proposed disturbance  
(acres):** 0.2

**Pipeline proposed disturbance  
(acres):** 0.41

**Other proposed disturbance (acres):** 0

**Total proposed disturbance:** 4.52

**Well pad interim reclamation (acres):**  
2.1

**Road interim reclamation (acres):** 0

**Powerline interim reclamation (acres):**  
0

**Pipeline interim reclamation (acres):** 0

**Other interim reclamation (acres):** 0

**Total interim reclamation:** 2.1

**Well pad long term disturbance  
(acres):** 1.45

**Road long term disturbance (acres):**  
0.36

**Powerline long term disturbance  
(acres):** 0.2

**Pipeline long term disturbance  
(acres):** 0.41

**Other long term disturbance (acres):** 0

**Total long term disturbance:** 2.42

**Disturbance Comments:**

**Reconstruction method:** Matador requests a variance to begin Interim reclamation upon the completion of all wells permitted on this drilling location. Interim reclamation will consist of shrinking the pad by 40% (1.45 acres) by removing

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

caliche. This well leave 2.10 acres for future operations on the producing wells. Disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over the disturbed area and harrowed on the contour. Disturbed areas will be seeded in accordance with the surface owners' requirements.

**Topsoil redistribution:** Top soil will be piled just off the west side of the drilling pad. After interim reclamation, enough top soil will be retained to cover the remainder of the pad once the last well is plugged. The remainder of the drill site pad and any new road will be reclaimed within 6 months of plugging the last well on the pad.

**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:**

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

**Seed cultivar:**

**Seed use location:**

**PLS pounds per acre:**

**Proposed seeding season:**

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:** Matador will conduct its operations in accordance with the Gold Book standards

**Weed treatment plan attachment:**

**Monitoring plan description:** Matador will conduct its operations in accordance with the Gold Book standards

**Monitoring plan attachment:**

**Success standards:** Matador will conduct its operations in accordance with the Gold Book standards

**Pit closure description:** There will be no pit on this location.

**Pit closure attachment:**

**Section 11 - Surface Ownership**

**Disturbance type:** EXISTING ACCESS ROAD

**Describe:**

**Surface Owner:** PRIVATE OWNERSHIP

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

Approval Date: 04/18/2019

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**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

**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:**

**Fee Owner:** Johnson Enterprises

**Fee Owner Address:** P.O. Box 1713, Roswell, NM 88202

**Phone:** (575)622-6610

**Email:**

**Surface use plan certification:** NO

**Surface use plan certification document:**

**Surface access agreement or bond:** Agreement

**Surface Access Agreement Need description:** Reached private agreement with surface owner. No bonding required

**Surface Access Bond BLM or Forest Service:**

**BLM Surface Access Bond number:**

**USFS Surface access bond number:**

**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:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Fee Owner:** Johnson Enterprises

**Fee Owner Address:** P.O. Box 1713, Roswell, NM 88202

**Phone:** (575)622-6610

**Email:**

**Surface use plan certification:** NO

**Surface use plan certification document:**

**Surface access agreement or bond:** Agreement

**Surface Access Agreement Need description:** Reached private agreement with surface owner. No bonding required

**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:**



**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Fee Owner:** Johnson Enterprises

**Fee Owner Address:** P.O. Box 1713, Roswell, NM 88202

**Phone:** (575)622-6610

**Email:**

**Surface use plan certification:** NO

**Surface use plan certification document:**

**Surface access agreement or bond:** Agreement

**Surface Access Agreement Need description:** Reached private agreement with surface owner. No bonding required

**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:** On site inspection was conducted with Trisha Brad Bear of the BLM on November 19, 2015. Lone Mountain has previously submitted an archaeological report (NMCRIS134817, NMCRIS135053) but can be provided an updated report, if required. The APD has been previously reviewed by the BLM but was not approved due to a Federal Lease expiring while APD was reviewed. As a result, the APD was not officially approved.

### Other SUPO Attachment

Dr\_Scrivner\_SUPO\_227H\_20180815143507.pdf

PWD

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

### 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:**

**Describe 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?**

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

**Lined pit bond number:**

**Lined pit bond amount:**

**Additional bond information attachment:**

### **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:**

**Describe 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:**

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

#### **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 mineral owner:**

**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:**

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

**Other PWD type attachment:**

**Have other regulatory requirements been met?**

**Other regulatory requirements attachment:**

### Bond Info

#### Bond Information

**Federal/Indian APD:** FED

**BLM Bond number:** NMB001079

**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:**

### Operator Certification

#### 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:** Dusty Thornhill

**Signed on:** 08/17/2018

**Title:** Associate Landman

**Street Address:** 5400 LBJ Freeway, Ste. 1500

**City:** Dallas

**State:** TX

**Zip:** 75240

**Phone:** (972)371-5405

**Email address:** dthornhill@matadorresources.com

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR. SCRIVNER FED COM

**Well Number:** 227H

**Field Representative**

**Representative Name:** Sam Pryor

**Street Address:** One Lincoln Centre 5400 LBJ Fwy Suite 1500

**City:** Dallas

**State:** TX

**Zip:** 75240

**Phone:** (972)371-5241

**Email address:** spryor@matadorresources.com

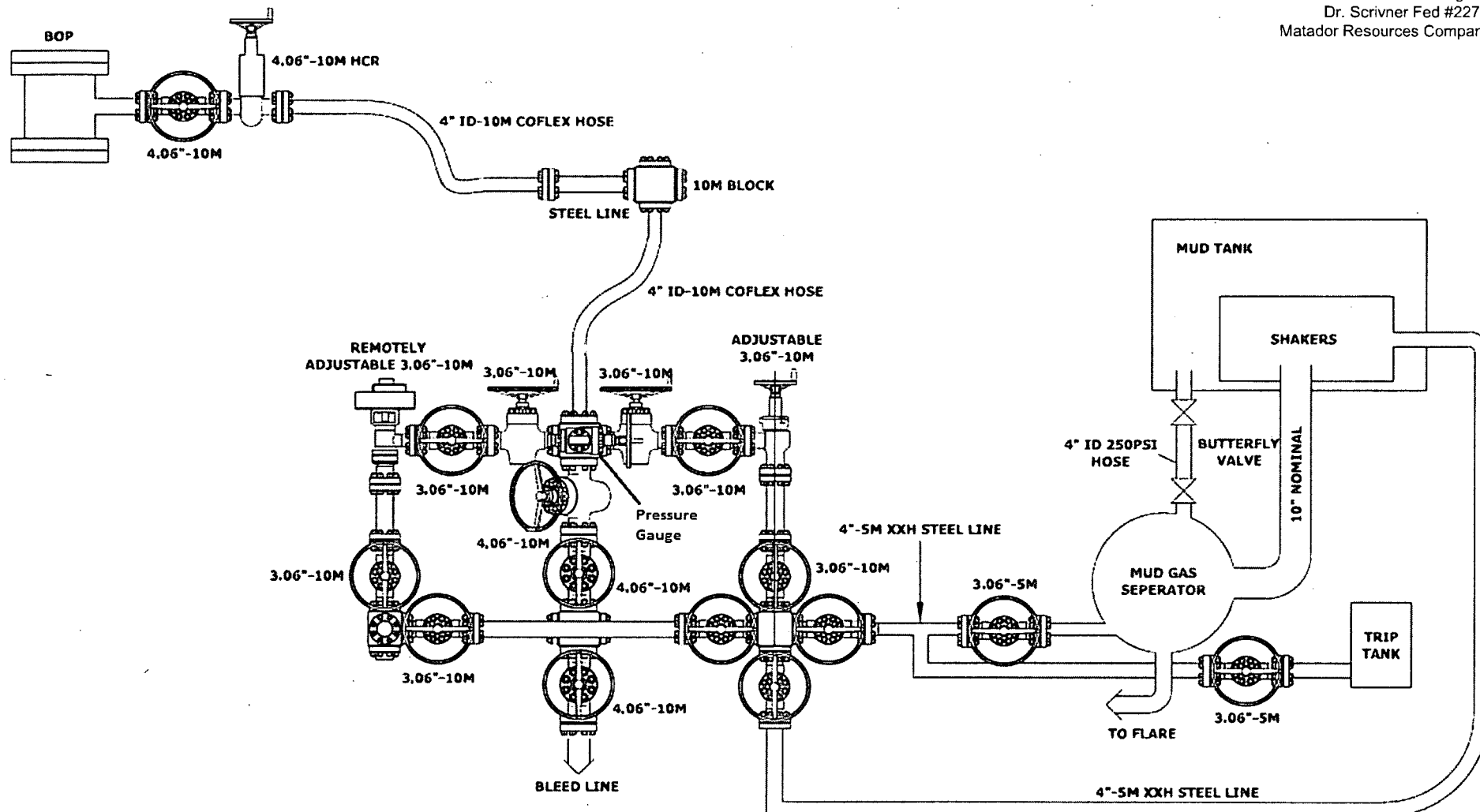
**Payment Info**

**Payment**

**APD Fee Payment Method:** BLM DIRECT

**CBS Receipt number:** 4223032

Exhibit E-1: Choke Manifold Diagram  
Dr. Scrivner Fed #227H  
Matador Resources Company



WELDING NOTE & TOLERANCE UNLESS OTHERWISE SPECIFIED.	
GENERAL WELDING NOTES: 1. ALL WELDED JOINTS TO BE FULL PENETRATION BUTT JOINTS. 2. ALL WELDED JOINTS TO BE FULL PENETRATION BUTT JOINTS. 3. ALL WELDED JOINTS TO BE FULL PENETRATION BUTT JOINTS. 4. ALL WELDED JOINTS TO BE FULL PENETRATION BUTT JOINTS. 5. ALL WELDED JOINTS TO BE FULL PENETRATION BUTT JOINTS. 6. ALL WELDED JOINTS TO BE FULL PENETRATION BUTT JOINTS. 7. ALL WELDED JOINTS TO BE FULL PENETRATION BUTT JOINTS. 8. ALL WELDED JOINTS TO BE FULL PENETRATION BUTT JOINTS. 9. ALL WELDED JOINTS TO BE FULL PENETRATION BUTT JOINTS. 10. ALL WELDED JOINTS TO BE FULL PENETRATION BUTT JOINTS.	MACHINING TOLERANCES: 1. ALL DIMENSIONS TO BE TO 0.005 IN. 2. ALL DIMENSIONS TO BE TO 0.005 IN. 3. ALL DIMENSIONS TO BE TO 0.005 IN. 4. ALL DIMENSIONS TO BE TO 0.005 IN. 5. ALL DIMENSIONS TO BE TO 0.005 IN. 6. ALL DIMENSIONS TO BE TO 0.005 IN. 7. ALL DIMENSIONS TO BE TO 0.005 IN. 8. ALL DIMENSIONS TO BE TO 0.005 IN. 9. ALL DIMENSIONS TO BE TO 0.005 IN. 10. ALL DIMENSIONS TO BE TO 0.005 IN.

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### CHOKE MANIFOLD

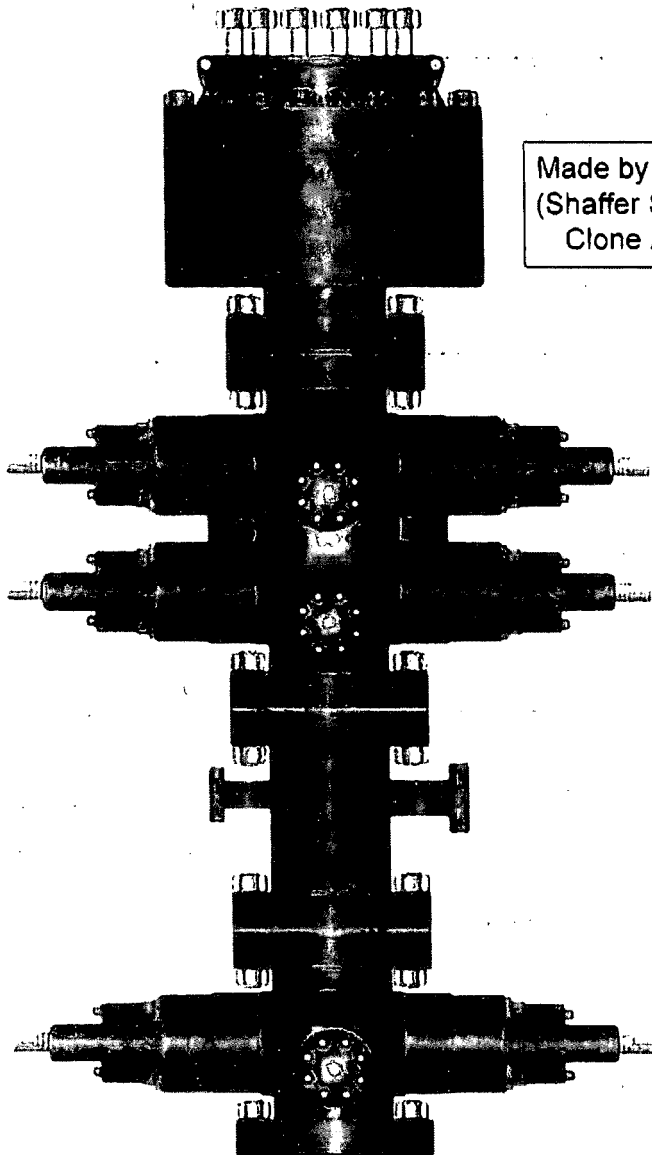
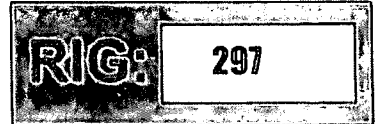
10M CHOKE ARRANGEMENT  
RIG 297

CLASS: R0297-D.001.LAY.09

Se	27	1972
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**PATTERSON-UTI**  
*Well Control*



Made by Cameron  
(Shaffer Spherical)  
Clone Annular

PATTERSON-UTI # PS2-628  
STYLE: New Shaffer Spherical  
BORE 13 5/8" PRESSURE 5,000  
HEIGHT: 48 1/2" WEIGHT: 13,800 lbs

PATTERSON-UTI # PC2-128  
STYLE: New Cameron Type U  
BORE 13 5/8" PRESSURE 10,000  
RAMS: TOP 5" Pipe BTM Blinds  
HEIGHT: 66 5/8" WEIGHT: 24,000 lbs

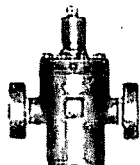
Length 40" Outlets 4" 10M  
DSA 4" 10M x 2" 10M

PATTERSON-UTI # PC2-228  
STYLE: New Cameron Type U  
BORE 13 5/8" PRESSURE 10,000  
RAMS: 5" Pipe  
HEIGHT: 41 5/8" WEIGHT: 13,000 lbs

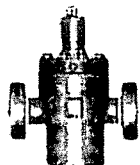
### WING VALVES



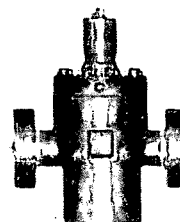
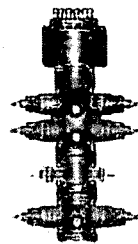
2" Check Valve



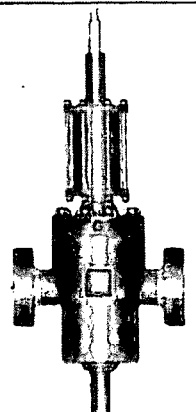
2" Manual Valve



2" Manual Valve



4" Manual Valve



4" Hydraulic Valve



## **Casing Design Criteria and Load Case Assumptions**

### **Surface Casing**

Collapse:  $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst:  $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile:  $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

### **Intermediate #1 Casing**

Collapse:  $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst:  $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile:  $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

### **Intermediate #2 Casing**

Collapse:  $DF_c=1.125$

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst:  $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile:  $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

### **Production Casing**

Collapse:  $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst:  $DF_b=1.125$

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile:  $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Name	Hole Size	Top Setting Depth MD	Top Setting Depth TVD	Bottom Setting Depth MD	Bottom Setting Depth TVD	Casing Size	Wt/Grade	Joint Type	Top Cement	API Standard
Surface	17-1/2"	0	0	610	610	13-3/8" (new)	54.5# J-55	BUTT	Surface	Yes
Intermediate	12-1/4"	0	0	2700	2700	9-5/8" (new)	40# J-55	BUTT	Surface	Yes
Intermediate 2 Top	8-3/4"	0	0	2400	2400	7-5/8" (new)	29.7# P-110	BUTT	2400	Yes
Intermediate 2 Middle	8-3/4"	2400	2400	9950	9950	7-5/8" (new)	29.7# P-110	VAM HTF-NR	2400	No
Intermediate 2 Bottom	8-3/4"	9950	9950	10792	10539	7" (new)	29# P-110	BUTT	2400	Yes
Production Top	6-1/8"	0	0	9850	9850	5-1/2" (new)	20# P-110	DWCC-IS MS	10250	No
Production Bottom	6-1/8"	9850	9850	15403	10488	4-1/2" (new)	13.5# P-110	DWCC-HT-IS	10250	No

Safety Design Factors: Collapse: 1.125, Burst: 1.125, Body Tensile: 1.8  
(Buoyant), Joint Tensile: 1.8 (Buoyant)

## Technical Specifications

<b>Connection Type:</b> DWC/C-IS MS Casing standard	<b>Size(O.D.):</b> 5-1/2 in	<b>Weight (Wall):</b> 20.00 lb/ft (0.361 in)	<b>Grade:</b> VST P110 EC
---	--------------------------------	---	------------------------------

<b>VST P110 EC</b>	<b>Material</b>
125,000	Grade
135,000	Minimum Yield Strength (psi)
	Minimum Ultimate Strength (psi)

	<b>Pipe Dimensions</b>
5.500	Nominal Pipe Body O.D. (in)
4.778	Nominal Pipe Body I.D.(in)
0.361	Nominal Wall Thickness (in)
20.00	Nominal Weight (lbs/ft)
19.83	Plain End Weight (lbs/ft)
5.828	Nominal Pipe Body Area (sq in)

	<b>Pipe Body Performance Properties</b>
729,000	Minimum Pipe Body Yield Strength (lbs)
12,090	Minimum Collapse Pressure (psi)
14,360	Minimum Internal Yield Pressure (psi)
13,100	Hydrostatic Test Pressure (psi)

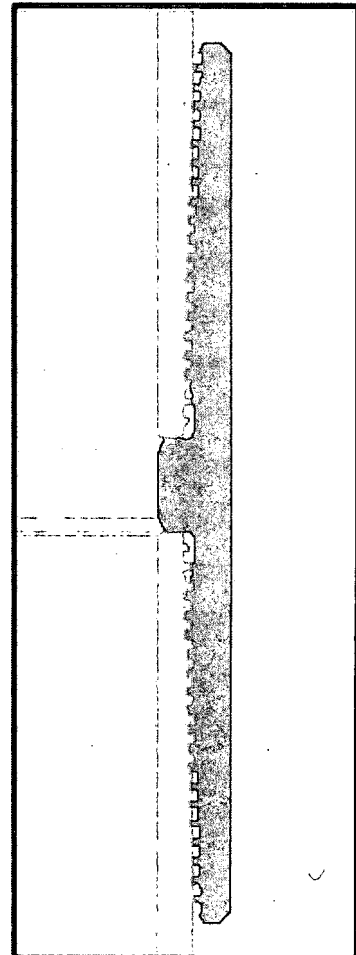
	<b>Connection Dimensions</b>
6.115	Connection O.D. (in)
4.778	Connection I.D. (in)
4.653	Connection Drift Diameter (in)
4.13	Make-up Loss (in)
5.828	Critical Area (sq in)
100.0	Joint Efficiency (%)

	<b>Connection Performance Properties</b>
729,000	Joint Strength (lbs)
26,040	Reference String Length (ft) 1.4 Design Factor
728,000	API Joint Strength (lbs)
729,000	Compression Rating (lbs)
12,090	API Collapse Pressure Rating (psi)
14,360	API Internal Pressure Resistance (psi)
104.2	Maximum Uniaxial Bend Rating [degrees/100 ft]

	<b>Approximated Field End Torque Values</b>
16,100	Minimum Final Torque (ft-lbs)
18,600	Maximum Final Torque (ft-lbs)
21,100	Connection Yield Torque (ft-lbs)



VAM USA  
4424 W. Sam Houston Pkwy. Suite 150  
Houston, TX 77041  
Phone: 713-479-3200  
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E-mail: [VAMUSAsales@vam-usa.com](mailto:VAMUSAsales@vam-usa.com)



**For detailed information on performance properties, refer to DWC Connection Data Notes on following page(s).**

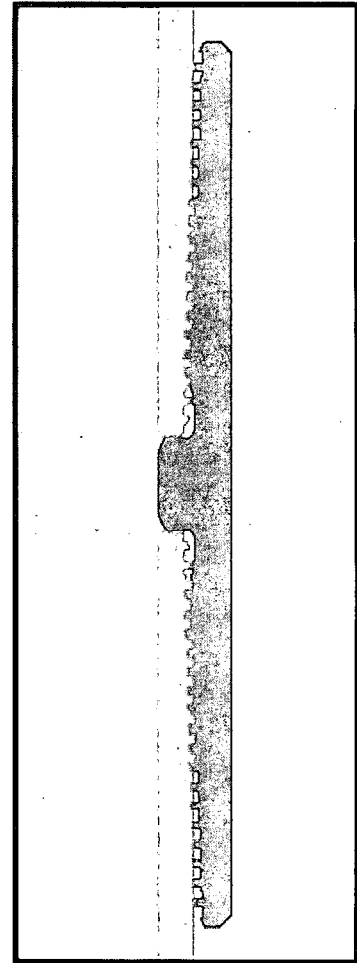
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#### DWC Connection Data Notes:

1. DWC connections are available with a seal ring (SR) option.
2. All standard DWC/C connections are interchangeable for a give pipe OD. DWC connections are interchangeable with DWC/C-SR connections of the same OD and wall.
3. Connection performance properties are based on nominal pipe body and connection dimensions.
4. DWC connection internal and external pressure resistance is calculated using the API rating for buttress connections. API Internal pressure resistance is calculated from formulas 31, 32, and 35 in the API Bulletin 5C3.
5. DWC joint strength is the minimum pipe body yield strength multiplied by the connection critical area.
6. API joint strength is for reference only. It is calculated from formulas 42 and 43 in the API Bulletin 5C3.
7. Bending efficiency is equal to the compression efficiency.
8. The torque values listed are recommended. The actual torque required may be affected by field conditions such as temperature, thread compound, speed of make-up, weather conditions, etc.
9. Connection yield torque is not to be exceeded.
10. Reference string length is calculated by dividing the joint strength by both the nominal weight in air and a design factor (DF) of 1.4. These values are offered for reference only and do not include load factors such as bending, buoyancy, temperature, load dynamics, etc.
11. DWC connections will accommodate API standard drift diameters.



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1/11/2017 8:38:10 AM

Issued on: 12 Janv. 2017 by T. DELBOSCO

VRCC 16-1177 Rev02 for Houston Field Service

**DATA ARE INFORMATIVE ONLY.  
BASED ON SI\_PD-101836 P&B**

**VAM® HTF-NR™**  
Connection Data Sheet

OD	Weight	Wall Th.	Grade	API Drift	Connection
7 5/8 in.	29.70 lb/ft	0.375 in.	P110 EC	6.750 in.	VAM® HTF NR

#### PIPE PROPERTIES

Nominal OD	7.625 in.
Nominal ID	6.875 in.
Nominal Cross Section Area	8.541 sqin.
Grade Type	Enhanced API
Min. Yield Strength	125 ksi
Max. Yield Strength	140 ksi
Min. Ultimate Tensile Strength	135 ksi
Tensile Yield Strength	1 068 klb
Internal Yield Pressure	10 760 psi
Collapse pressure	7 360 psi

#### CONNECTION PROPERTIES

Connection Type	Premium Integral Flush
Connection OD (nom)	7.701 in.
Connection ID (nom)	6.782 in.
Make-Up Loss	4.657 in.
Critical Cross Section	4.971 sqin.
Tension Efficiency	58 % of pipe
Compression Efficiency	72.7 % of pipe
Compression Efficiency with Sealability	34.8 % of pipe
Internal Pressure Efficiency	100 % of pipe
External Pressure Efficiency	100 % of pipe

#### CONNECTION PERFORMANCES

Tensile Yield Strength	619 klb
Compression Resistance	778 klb
Compression with Sealability	372 klb
Internal Yield Pressure	10 760 psi
External Pressure Resistance	7 360 psi
Max. Bending	44 °/100ft
Max. Bending with Sealability	17 °/100ft

#### TORQUE VALUES

Min. Make-up torque	9 600 ft.lb
Opti. Make-up torque	11 300 ft.lb
Max. Make-up torque	13 000 ft.lb
Max. Torque with Sealability	58 500 ft.lb
Max. Torsional Value	73 000 ft.lb

VAM® HTF™ (High Torque Flush) is a flush OD integral connection providing maximum clearance along with torque strength for challenging applications such as extended reach and slim hole wells, drilling liner / casing, liner rotation to achieve better cementation in highly deviated and critical High Pressure / High Temperature wells.

Looking ahead on the outcoming testing industry standards, VAM® decided to create an upgraded design and launch on the market the VAM® HTF-NR as the new standard version of VAM® extreme high torque flush connection. The VAM® HTF-NR has extensive tests as per API RP 5C5:2015 CAL II which include the gas sealability having load points with bending, internal pressure and high temperature at 135°C.

**Do you need help on this product? - Remember no one knows VAM® like VAM®**

canada@vamfieldservice.com  
usa@vamfieldservice.com  
mexico@vamfieldservice.com  
brazil@vamfieldservice.com

uk@vamfieldservice.com  
dubai@vamfieldservice.com  
nigeria@vamfieldservice.com  
angola@vamfieldservice.com

china@vamfieldservice.com  
baku@vamfieldservice.com  
singapore@vamfieldservice.com  
australia@vamfieldservice.com

**Over 180 VAM® Specialists available worldwide 24/7 for Rig Site Assistance**

Other Connection Data Sheets are available at [www.vamservices.com](http://www.vamservices.com)

**Vallourec Group**



**Connection Type:**  
DWC/C-HT-IS Tubing  
STANDARD

**Size(O.D.):**  
4.500in

**Weight (Wall):**  
13.50 lb./ft. (0.290in)

**Grade:**  
VST P110EC

**Material**

VST P110EC Grade

125,000 Minimum Yield Strength (psi.)

135,000 Minimum Ultimate Strength (psi.)

**Pipe Dimensions**

4.500 Nominal Pipe Body O.D. (in.)

3.920 Nominal Pipe Body I.D.(in.)

0.290 Nominal Wall Thickness (in.)

13.50 Nominal Weight (lbs./ft.)

13.05 Plain End Weight (lbs./ft.)

3.836 Nominal Pipe Body Area (sq. in.)

**Pipe Body Performance Properties**

479,000 Minimum Pipe Body Yield Strength (lbs.)

11,600 Minimum Collapse Pressure (psi.)

14,100 Minimum Internal Yield Pressure (psi.)

12,900 Hydrostatic Test Pressure (psi.)

**Connection Dimensions**

5.000 Connection O.D. (in.)

3.920 Connection I.D. (in.)

3.795 Connection Drift Diameter (in.)

3.94 Make-up Loss (in.)

3.836 Critical Area (sq in.)

100.00 Joint Efficiency (%)

**Connection Performance Properties**

479,000 Joint Strength (lbs.)

25,340 Reference String Length (ft.) 1.4 Design Factor

482,000 API Joint Strength (lbs.)

479,000 Compression Rating (lbs.)

11,600 Collapse Pressure Rating (psi.)

14,100 API Internal Pressure Resistance (psi.)

127.3 Maximum Uniaxial Bend Rating [degrees/100 ft]

**Appoximated Field End Torque Values**

8,400 Minimum Final Torque (ft.-lbs.)

9,700 Maximum Final Torque (ft.-lbs.)

12,600 Connection Yield Torque (ft.-lbs.)



VAM USA

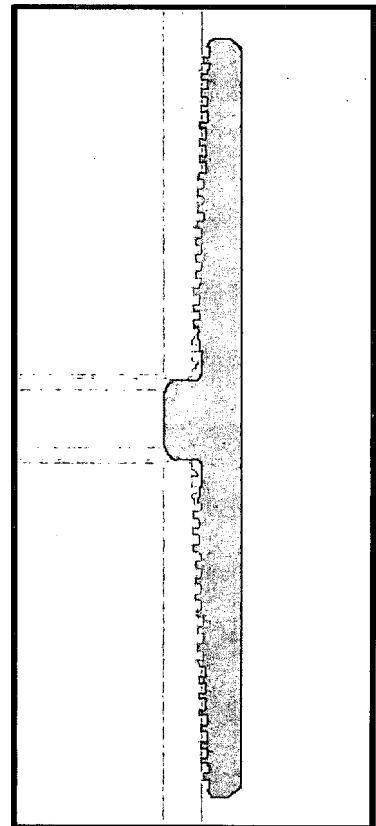
4424 W. Sam Houston Pkwy. Suite 150

Houston, TX 77041

Phone: 713-479-3200

Fax: 713-479-3234

E-mail: VAMUSAsales@vam-usa.com



For detailed information on performance properties, refer to DWC Connection Data Notes on following page(s).

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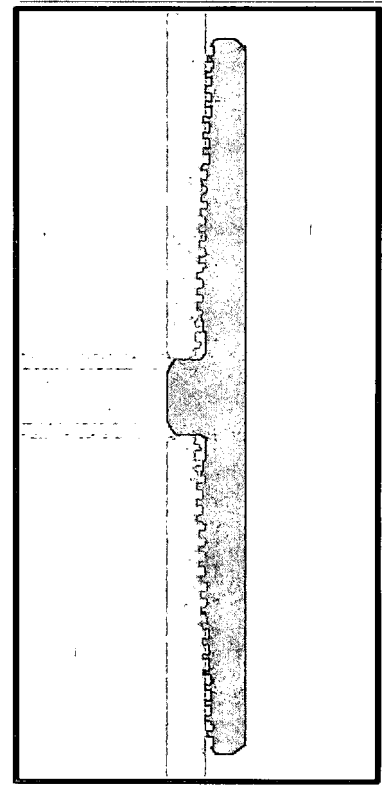
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**DWC Connection Data Notes:**

1. DWC connections are available with a seal ring (SR) option.
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6. API joint strength is for reference only. It is calculated from formulas 42 and 43 in the API Bulletin 5C3.
7. Bending efficiency is equal to the compression efficiency.
8. The torque values listed are recommended. The actual torque required may be affected by field conditions such as temperature, thread compound, speed of make-up, weather conditions, etc.
9. Connection yield torque is not to be exceeded.
10. Reference string length is calculated by dividing the joint strength by both the nominal weight in air and a design factor (DF) of 1.4. These values are offered for reference only and do not include load factors such as bending, buoyancy, temperature, load dynamics, etc.
11. DWC connections will accommodate API standard drift diameters.



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E-mail: VAMUSAsales@vam-usa.com



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Exhibit E-6: H2S Contingency Plan Emergency Contacts  
Dr. Scrivner Fed #227H  
Matador Resources Company  
Sec. 1, 24S, 28E  
Lea County, NM

<u>Company Office</u>			
Matador Resources Company		(972)-371-5200	
<u>Key Personnel</u>			
Name	Title	Office	Mobile
Billy Goodwin	Vice President Drilling	972-371-5210	817-522-2928
Dee Smith	Drilling Superintendent	972-371-5447	972-822-1010
Adam Lange	Drilling Engineer	972-371-5292	214-458-0788
<u>Artesia</u>			
Ambulance			911
State Police		575-746-2703	
City Police		575-746-2703	
Sheriff's Office		575-746-9888	
Fire Department		575-746-2701	
Local Emergency Planning Committee		575-746-2122	
New Mexico Oil Conservation Division		575-748-1283	
<u>Carlsbad</u>			
Ambulance			911
State Police		575-885-3137	
City Police		575-885-2111	
Sheriff's Office		575-887-7551	
Fire Department		575-887-3798	
Local Emergency Planning Committee		575-887-6544	
New Mexico Oil Conservation Division		575-887-6544	
<u>Santa Fe</u>			
New Mexico Emergency Response Comission (Santa Fe)		505-476-9600	
New Mexico Emergency Response Comission (Santa Fe) 24 hrs		505-827-9126	
New Mexico State Emergency Operations Center		505-476-9635	
<u>National</u>			
National Emergency Response Center (Washington, D.C.)		800-424-8802	
<u>Medical</u>			
Flight for Life- 4000 24th St.; Lubbock, TX		806-743-9911	
Aerocare- R3, Box 49F; Lubbock, TX		806-747-8923	
Med Flight Air Amb- 2301 Yale Blvd S.E., D3; Albuquerque, NM		505-842-4433	
SB Air Med Service- 2505 Clark Carr Loop S.E.; Albuquerque, NM		505-842-4949	
<u>Other</u>			
Boots & Coots IWC		800-256-9688	or 281-931-8884
Cudd Pressure Control		432-699-0139	or 432-563-3356
Haliburton		575-746-2757	
B.J. Services		575-746-3569	



## Hydrogen Sulfide Drilling

### Operations Plan

#### Matador 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 Exhibit E-1

##### 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 H<sub>2</sub>S has on tubulars good and other mechanical equipment

9 If H<sub>2</sub>S 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 H<sub>2</sub>S scavengers if necessary

#### 11 Emergency Contacts

- See exhibit E-6

**HYDROGEN SULFIDE CONTINGENCY PLAN**  
**Drilling, Testing, & Completion**

**MRC ENERGY CO.**

**Dr. Scrivner Fed #227H**

**Reviewers**

---

----- Operations Manager  
----- Operations Supt.  
----- Staff RES  
----- Field Supv.  
Adam Lange -----Engineering

**Latitude: 32.24550" N**  
**Longitude: 104.03369" W**

**SHL 2169' FSL & 573' FEL, Sec. 1**  
**BHL 1650' FSL & 240' FWL, Sec. 1**

**H2S Contingency Plan # 0165**

**Revision# 0**

**This H2S Contingency Plan is subject to updating**

Effective date: July 8, 2015

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## INTRODUCTION

**The H2S equipment will be rigged up 2 days prior to reaching a potential H2S containing zone. Drilling into any potential H2S zone shall not commence until the on-site MRC Drilling Supervisor has confirmed this plan in place.**

**The onsite Drilling Foreman will give Total Safety one week (7 days) notice to prepare for rig up of H2S equipment)**

To be effective, the plan requires the cooperation and effort of each person participating in the drilling of an H<sub>2</sub>S well. Each person must know his/her responsibilities and all emergency and safety procedures. He/she should thoroughly understand and be able to use with accuracy, all safety equipment while performing his/her normal duties, if the circumstance should arise. He/she should therefore familiarize himself/herself with the location of all safety equipment and check to see that it is properly stored, easily accessible at all times, and routinely maintained.

It is the intention of MRC ENERGY CO. and the Drilling Contractor to make every effort to provide adequate safeguards against harm to persons on the rig and in the immediate vicinity from the effects of hydrogen sulfide, which may be released into the atmosphere under emergency conditions. However, the initiative rests with the individual in utilizing the safeguards provided. The ideas and suggestions of the individuals involved in the drilling of this well are highly welcomed and act as a fundamental tool for providing the safest working conditions possible.

The drilling representative is required to enforce these procedures. They are set up for your safety and the safety of all others.

## II. PURPOSE

It is MRC Energy Co.'s intent to provide a safe working place, not only for its employees, but also for other contractors who are aiding in the drilling of this well. The safety of the general public is of utmost concern. All precautions will be taken to keep a safe working environment and protect the public.

There is a possibility of encountering toxic hydrogen sulfide gas. Safety procedures must be adhered to in order to protect all personnel connected with the operations as well as people living within the area.

The MRC Energy Co. representative will enforce all aspects of the H2S Contingency Plan. This job will become easier by a careful study of the following pages and training and informing all personnel that will be working on the well, their duties and responsibilities.

**A. OPERATING PROCEDURES**

**DEFINITIONS:**

**For purpose of this plan, on-site personnel shall be referred to as “In Scope Personnel” or “Out of Scope Personnel”, per the following definitions:**

**In Scope Personnel** – Personnel who will be working or otherwise present in potential H<sub>2</sub>S release areas, including the rig floor, cellar, pits, and shaker areas.

**Out of Scope Personnel** – Personnel who will not be working or Otherwise present in potential H<sub>2</sub>S areas. Such personnel include rig Site visitor, delivery and camp services personnel.

**GENERAL:**

Before this H<sub>2</sub>S contingency plan becomes operational, all regularly assigned In Scope Personnel (primarily the MRC, drilling contractor, and certain service personnel,) shall be thoroughly trained in the use of breathing equipment, emergency procedures, and responsibilities. Total Safety Technician or a designee assigned by the MRC Drilling Foreman shall keep a list of all personnel who have been through the on-site H<sub>2</sub>S training program at the drill site.

All In Scope Personnel shall be given H<sub>2</sub>S training and the steps to be taken during H<sub>2</sub>S conditions under which the well may be drilled. General information will be explained about toxic gases, as well as the physiological effects of H<sub>2</sub>S and the various classified operating conditions. In addition, the reader will be informed his/her general responsibility concerning safety equipment and emergency procedures.

The Total Safety H<sub>2</sub>S Safety Technician or MRC on-site RSE Technician shall make available the H<sub>2</sub>S Contingency Plan for all personnel to review.

Without exception, all personnel that arrive on location must proceed directly to and sign-in with the on-site MRC RSE Technician. In Scope Personnel will be required to complete an on-site H<sub>2</sub>S training and respirator fit testing before starting work, or produce evidence that they have received equivalent training. Out of Scope Personnel will be required to complete a site H<sub>2</sub>S awareness and general safety briefing. This briefing will consist of a H<sub>2</sub>S hazard overview, alarm review and required response to alarms.



**B. PROCEDURES TO BE INITIATED PRIOR TO H<sub>2</sub>S  
CONTINGENCY PLAN COMPLIANCE:**

A list of emergency phone numbers and contacts will be on location and posted at the following locations:

1. MRC ENERGY CO.'S Representative's Office
2. Drilling Contractor's, Toolpusher Office
3. Living Quarters Area

All safety equipment and H<sub>2</sub>S related hardware must be set up as required by MRC Energy Co. with regard to location of briefing areas, breathing equipment, etc. All safety equipment must be inspected periodically (at least weekly) with particular attention to resuscitators and breathing equipment.

In Scope Personnel working in the well site area will be assigned breathing apparatus. Operator and drilling contractor personnel required to work in the following areas will be provided with Self Contained Breathing Apparatus:

1. Rig Floor
2. Mud Pits
3. Derrick
4. Shale Shaker
5. Cellar

The Total Safety H<sub>2</sub>S Safety Technician will be responsible for rigging up all H<sub>2</sub>S continuous monitoring-type detectors. The Total Safety Technician will monitor and bump test the detector units periodically (at least at least once a week to test alarm function during drilling conditions. In the event H<sub>2</sub>S is detected, or when drilling in a zone confirmed to contain H<sub>2</sub>S, the units shall be bump tested at least once every 24 hours. A bump test/calibration log will be kept on location. All results will be reported to the MRC on-site Drilling Foreman.

All Total Safety H<sub>2</sub>S equipment will be maintained and inspected by a Total Safety Technician on at least a Weekly basis.

**C. DRILLING BELOW CONTINGENCY PLAN DEPTH**

H<sub>2</sub>S response drills will be held at least once per week if possible or as often as necessary to acquaint the crews and service company personnel of their responsibilities and the proper procedures to shut-in a well. Initial drills will be performed until crews demonstrate competency donning and working under mask. After the MRC Energy Co.'s representative is satisfied with initial blowout drill procedures, a drill will be conducted weekly with each crew, as necessary. The H<sub>2</sub>S Safety Technician or designee will conduct safety talks and maintain the safety equipment, consult and carry out the instructions of the drilling supervisor. All personnel allowed in the well work area during drilling or testing operations will be instructed in the use of breathing equipment until supervisory personnel are satisfied that they are capable of using it.

After familiarization, each person must perform a drill with breathing equipment. The drill should include getting the breathing equipment, donning the breathing apparatus, and performing expected duties for a short period. A record shall be kept of all personnel drilled and the date of the drill. H<sub>2</sub>S training records will be kept on location for all personnel.

Rig crews and service company personnel shall be made aware of the location of spare air bottles, resuscitation equipment, portable fire extinguishers, H<sub>2</sub>S monitors and detectors. Knowledge of the location of the H<sub>2</sub>S monitors and detectors are vital in determining as our gas location and the severity of the emergency conditions.

After any device has initially detected H<sub>2</sub>S, all areas of poor ventilation shall be inspected periodically by means of a portable H<sub>2</sub>S detector instrument. The buddy system will be utilized. (When an alarm sounds, personnel will don an SCBA, shut the well in, and proceed to SBA for roll call. The H<sub>2</sub>S Technician or designee will mask up, with a buddy and will verify source of H<sub>2</sub>S and report back to the on-site MRC Foreman.)

**D. PROCEDURES PROGRAM**

1. Drill Site
  - a. The drilling rig will be located to allow prevailing winds to blow across the reserve pit.
  - b. A Safe Briefing Area will be provided with a breathing air cascade trailer and or 30-minute SCBA's at the Primary Area. Personnel will assemble at the most up-wind station under alarm conditions, or when so ordered by the MRC Energy Co. representative, the Contractor representative, or

the Total Safety H<sub>2</sub>S Safety Technician. Windssocks or streamers will be anchored to various strategic places on a pole about 10 feet high, so it is in easy view from the rig floor at all times.

- c. Warning signs will be posted on the perimeters. "No Smoking" signs will be posted by MRC Energy Co. as well.
- d. One multi-channel automatic H<sub>2</sub>S monitor will be provided by Total Safety and the detector heads will be at the shale shaker, bell nipple, mud pits, rig floor, and quarter's area. The monitor will be located inside HSE or Company man trailer. Should the alarm be shut off to silence the sirens, the blinker light must continue to warn of H<sub>2</sub>S presence. The Total Safety H<sub>2</sub>S Safety Technician or designee will continuously monitor the detectors and will reactivate the alarm if H<sub>2</sub>S concentrations increase to a dangerous level.
- e. A method of escape will be open at all times.
- f. If available, land line telephone service will be provided or cell phones provided. (Primary communications provided)
- g. A rig communication system will be provided, as needed.
- h. A gas trap, choke manifold, and degasser will be installed.
- i. A kill line, securely anchored and of ample strength, will be laid to the well-head from a safe location. This line is to be used only in an emergency.

#### General

- a. The MRC Energy Co. representative and/or the Contractor's Toolpusher will be available at all times. The drilling supervisor, while on duty, will have complete charge of the rig and location operations and will take whatever action is deemed necessary to insure personnel safety, to protect the well, and to prevent damage.
- b. A Mud Engineer will be on location at all times when drilling takes place at the depth H<sub>2</sub>S may be expected. The mud engineer will be able to verify the presence or absence of H<sub>2</sub>S.

### III. CONDITIONS AND EMERGENCY PROCEDURES

#### A. DEFINITION OF OPERATIONAL "CONDITIONS"

##### CONDITION I

##### "POSSIBLE DANGER"

Warning Flags

Green

Alarms

No Alarm. Less than 10 ppm

Characterized By:

Drilling operations in zones that may contain hydrogen sulfide. This condition remains in effect unless H<sub>2</sub>S is detected and it becomes necessary to go to Condition II.

General Action:

- a. Be alert for a condition change
- b. Check all safety equipment for availability and proper functioning.
- c. Perform all drills for familiarization and proficiency.

##### CONDITION II

##### "MODERATE DANGER"

Warning Flags

Yellow

Alarms:

Actuates at 10 ppm. Continuous flashing light.

Characterized By:

Drilling operations in zones containing hydrogen sulfide. This condition will remain in effect until adding chemicals to the mud system neutralizes the hydrogen sulfide or it becomes necessary to go to Condition III.

General Action:

- a. Be alert for a condition change
- b. WHEN DRILLING AHEAD - Driller and designated crewmember will don 30 min SCBA, shut-in the well and immediately proceed to the Safe Briefing Area.

WHEN TRIPPING – Driller and two designated crewmembers will don 30 min SCBA, shut in the well and immediately proceed to the Safe Briefing Area. The Derrickman will

don a 5-minute escape pack, descend to the rig floor, don a 30-min SCBA (if necessary) and immediately proceed to the Safe Briefing Area.

- c. All In Scope Personnel will proceed directly to the appropriate Safe Briefing Area.
- d. Remain in safe briefing area, take roll call and wait for instructions
- e. Contact the Total H2S Technician if not on location.
- f. Personnel shall ensure that their breathing apparatus is properly fitted and operational before entering an H<sub>2</sub>S contaminated area to provide assistance to anyone who may be injured or overcome by toxic gases.
- g. All Out of Scope Personnel will report to the appropriate Safe Briefing Area.

**CONDITION III      "EXTREME DANGER"**  
Warning Flags                      Red

Alarms                                      Actuate at 15 ppm. Continuous Sirens and Flashing Lights

Characterized by:                      Critical well operations which pose an immediate threat of H<sub>2</sub>S exposure to on-site personnel and a potential threat to the public.

General Action:                      a.      WHEN DRILLING AHEAD - Driller and designated crewmember will don 30 min SCBA, shut-in the well and immediately proceed to the Safe Briefing Area.

WHEN TRIPPING – Driller and two designated crewmembers will don 30

min SCBA, shut in the well and immediately proceed to the Safe Briefing Area. The Derrickman will don a 5-minute escape pack, descend to the rig floor, don a 30-min SCBA (if necessary) and immediately proceed to the Safe Briefing Area.

- b. All In Scope Personnel should don SCBA if nearby and immediately proceed to Safe Briefing Area. If SCBA is not nearby at time of alarm, DO NOT GO TOWARDS RIG AREA, but proceed directly to the Safe Briefing Area
- c. All out of Scope Personnel shall evacuate the location.
- d. Remain in the Safe Briefing Area, take roll call and wait for instructions.
- e. Contact the Total H<sub>2</sub>S Technician if not on location.
- f. Personnel shall ensure that their breathing apparatus is properly fitted and operational before entering an H<sub>2</sub>S contaminated area to provide assistance to anyone who may be injured or overcome by toxic gases. Use the buddy system.
- g. Remain in safe briefing area, take roll call and wait for instructions.
- h. A cascade breathing air system shall be mobilized and utilized to conduct any additional on rig work required to correct the H<sub>2</sub>S release condition.
- i. If well is ignited do not assume area is safe. SO<sub>2</sub> is hazardous and not all H<sub>2</sub>S will burn.

## **H<sub>2</sub>S EMERGENCY PROCEDURES; IN SCOPE PERSONNEL**

### **A. Day To Day Drilling Operations**

1. Upon discovering a release of H<sub>2</sub>S gas in the ambient air by warning alarms or in any other way **Do Not Panic**.
2. Hold your breath donning the nearest Self Contained Breathing Apparatus and rapidly move up or across-wind away from the areas where H<sub>2</sub>S sensing devices are in place, to the closest available safe briefing area. Continue to use breathing apparatus until it has been determined that the exposure of H<sub>2</sub>S gas in the ambient air no longer exists. **Do Not Panic!**
3. Utilize the "Buddy System", i.e.; select and pair up each person participating in the drilling of an H<sub>2</sub>S well prior to an emergency situation.
4. Help anyone who is overcome or affected by the H<sub>2</sub>S gas by taking him/her up-wind out of the contaminated area. (This should be done utilizing an SCBA and with a buddy.)
5. Take necessary steps to confirm the release of the H<sub>2</sub>S gas into the ambient air.
  - When an H<sub>2</sub>S alarm activates, two designated personnel using the buddy system, while wearing their self contained breathing apparatus, will determine by the read-out on the fixed monitor which sensing device has detected the release of the H<sub>2</sub>S gas.
  - They will utilize the hand-held sniffer type device at the particular sensing point disclosed on the fixed monitor to corroborate the fact that H<sub>2</sub>S gas has actually been released. This will rule out the possibility of a false alarm. This will be done with a buddy and under mask after reporting to the Safe Briefing Area for roll call and instructions by on-site MRC Foreman.
6. Refer to the Emergency Phone Numbers and call emergency personnel.
7. Take the necessary steps to suppress the release of H<sub>2</sub>S gas into the ambient air. Comply with the MRC Energy Co. Representative to physically suppress the release of H<sub>2</sub>S gas at the actual release point.

8. Check all of MRC Energy Co.'s monitoring devices and increase gas-monitoring activities with the portable hand-operated H<sub>2</sub>S and gas detector units.

**Do Not Panic!**

The MRC Energy Co. representative will assess the situation and with assistance of the Contractor's Representative and Total Safety's H<sub>2</sub>S Safety Technician or on site designee, will assign duties to each person to bring the situation under control.

**B. RESPONSIBILITIES OF WELL-SITE PERSONNEL**

In the event of a release of potentially hazardous amounts of H<sub>2</sub>S, all personnel will immediately don their protective breathing apparatus, the well will be shut in and personnel will proceed upwind to the nearest designated safe briefing area for roll call and instructions by MRC Foreman. Consideration will be given to evacuating Out of Scope Personnel, as situation warrants.

**1. MRC ENERGY CO.'S Well-site Representatives**

- a. If MRC Energy Co.'s well-site representative is incapacitated or not on location, this responsibility will fall to the Toolpusher/Driller.
- b. Immediately upon assessing the situation, set this plan into Action by initiating the proper procedures to contain the gas and notify the appropriate people and agencies.
- c. Ensure that the alarm area indicated by the fixed H<sub>2</sub>S Monitor is checked and verified with a portable H<sub>2</sub>S detector. (Safety Technician if on location or MRC assigned designee with a buddy utilizing SCBA's)
- d. Consult Pusher/driller of remedial actions as needed.
- e. Ensure that non-essential personnel proceed to the safe briefing area.
- f. Ensure location entrance barricades are positioned. Keep the number of persons on location to a minimum during hazardous operations.



- g. Consult each contractor, Service Company and all others allowed to enter the site, that H<sub>2</sub>S gas may be encountered and the potential hazards that may exist.
- h. Authorize the evacuation of local residents if H<sub>2</sub>S threatens Their safety.
- i. Non essential personnel should be evacuated from location if Situation warrants.

**2. Toolpusher**

- a. Toolpusher/Driller will assume responsibilities of MRC Energy Co.'s well-site representative if that person is incapacitated or not on location.
- b. Ensure that the alarm area indicated by the fixed H<sub>2</sub>S monitor is checked and verified with a portable H<sub>2</sub>S gas detector. (Alarm area indicated by the monitor will be Checked by the H<sub>2</sub>S Technician and a buddy, under mask.) This will be done after checking in and roll call at the Upwind Safe Briefing Area.
- c. Confer with MRC Energy Co.'s well-site representative or superintendent and direct remedial action to suppress the H<sub>2</sub>S and control the well.
- d. Ensure that personnel at the safe briefing area are instructed on emergency actions required.
- e. Ensure that personnel at the drill floor area are instructed on emergency actions required.
- f. Ensure that all personnel observe the appropriate safety and emergency procedures.
- g. Ensure that all persons are accounted for and provided emergency assistance as necessary.

**3. Mud Engineer**

- a. Run a sulfide check on the flowline mud.
- b. Take steps to determine the source of the H<sub>2</sub>S and suppress it. Lime and H<sub>2</sub>S scavenger shall be added to the mud as necessary.

**4. Total H<sub>2</sub>S Safety Technician, if on location, or MRC Designee**

- a. H<sub>2</sub>S Safety Technician or designee don nearest SCBA and report to Safe Briefing Area for roll call, take a buddy masked up and check monitor and verify with a portable H<sub>2</sub>S detector the alarm area indicated by the fixed H<sub>2</sub>S monitor. Advise the Toolpusher/Driller and MRC Energy Co.'s well-site representative of findings. Record all findings.
- b. If H<sub>2</sub>S is flared, check for sulfur dioxide (SO<sub>2</sub>) near the flare as necessary. Take hourly readings at different perimeters, log readings and record on location.
- c. Ensure that personnel at the safe briefing area are instructed on emergency actions required.
- d. Ensure that the appropriate warning flags are displayed.
- e. Ensure that all personnel are in S.C.B.A. as necessary.
- f. Ensure that all persons are accounted for and provide emergency assistance as necessary.
- g. Be prepared to evacuate rig if order is issued.

**5. General Personnel & Visitors**

- a. All In Scope Personnel, if not specifically designated to shut the well in or control the well, shall proceed to the (upwind) safe briefing area. All Out of Scope Personnel shall immediately proceed to the appropriate (upwind) safe briefing area or evacuate the site as conditions warrant.

- b. During any emergency, use the "buddy" system to prevent anyone from entering or being left in a gas area alone, even wearing breathing apparatus.
- c. Provide assistance to anyone who may be injured or overcome by toxic gases. Personnel shall ensure that their breathing apparatus is properly fitted and operational before entering a potentially H<sub>2</sub>S contaminated area.
- d. Remain in safe briefing area and wait for instructions.

### **C. INSTRUCTIONS FOR IGNITING THE WELL**

1. The Toolpusher/Driller will confer with MRC Energy Co.'s well-site representative who will secure the approval of the "Texas Wells Delivery Manager, prior to igniting the well, if at all possible.

The Toolpusher/Driller will be responsible for igniting the well in the event of severe well control problems. This decision should be made only as a last resort in situations where it is clear that:

- a. Human life and property are endangered, or
  - b. There is no hope of controlling the well under current conditions.
2. Once the decision has been made, the following procedures should be followed:
    - a. Two people wearing self-contained breathing apparatus will be needed for the actual lighting of the well. They must first establish the flammable perimeter by using an explosimeter. This should be established at 30% to 40% of the lower flammable limits.
    - b. After the flammable perimeter has been established and everyone removed from the area, the ignition team should select a site upwind of the well from which to ignite the well. This site should offer the maximum protection and have a clear path for retreat from the area.

- c. The ignition team should have safety belts and lifeline attached and manned before attempting ignition. If the leak is not ignited on the first attempt, move in 20 to 30 feet and fire again. Continue to monitor with the explosimeter and NEVER fire from an area with over 75% of the Lower Explosive Limit (LEL). If having trouble igniting the well, try firing 40 degrees to 90 degrees on either side of the well.
- d. If ignition is not possible due to the makeup of the gas, the toxic perimeter must be established and evacuation continued until the well is contained.
- e. All personnel must act only as directed by the person in charge of the operations.

NOTE: After the well is ignited, burning hydrogen sulfide (H<sub>2</sub>S) will convert to sulfur dioxide (SO<sub>2</sub>), which is also a highly toxic gas.

**DO NOT ASSUME THE AREA IS SAFE AFTER THE WELL IS IGNITED**

**D. CORING PROCEDURES**

Only essential personnel shall be on the rig floor. Ten (10) stands prior to retrieving core barrel; all personnel on drill floor and in derrick shall confirm self-Contained breathing apparatus available and ready for use.

A Total H<sub>2</sub>S Technician will don a SCBA with a buddy assigned from the rig crew, and continuously monitor for H<sub>2</sub>S at each connection. Any levels detected will require operations to be shut down and all involved personnel to don SCBAs. Precautions will remain in place until barrel is laid down.

All involved personnel will don SCBAs when removing the inner barrel from the outer barrel. SCBAs can be removed once the absence of H<sub>2</sub>S is confirmed by the Total H<sub>2</sub>S Technician.

Cores will be appropriately marked and sealed for transportation.

## **Normal Operations**

### **1. Responsibilities of well-site personnel**

#### **a. Well-site Representative**

1. Notify H<sub>2</sub>S Technician of expected date to reach Contingency Plan implementation depth (Two (2) days prior to reaching suspected H<sub>2</sub>S bearing zone) or prior to starting well work.
2. Ensure H<sub>2</sub>S Safety Technician completes rig-up procedures prior to reaching Contingency Plan effective depth.
3. Restrict the number of personnel at the drilling rig or well site to a minimum while drilling, starting well work, testing or coring.
4. Ensure weekly H<sub>2</sub>S drills/training are performed, if possible.

#### **B. Toolpusher**

1. Ensure that necessary H<sub>2</sub>S safety equipment is provided on the rig, and that it is properly inspected and maintained.
2. Ensure that all personnel that work in the well area, are thoroughly trained in the use of H<sub>2</sub>S safety equipment and periodic drills are held to maintain an adequate level of proficiency.

#### **C. In Scope Personnel**

1. Remain clean-shaven. Beards and long sideburns do not allow a proper facepiece seal.
2. Receive H<sub>2</sub>S safety training on location, or confirm prior training by certification that is one year within date.
3. Familiarize yourself with the rig's Contingency Plan.
4. Inspect and practice putting on your breathing apparatus.

5. Know the location of the "safe briefing areas".
6. Keep yourself "wind conscious". Be prepared to quickly move upwind and away in the event of any emergency involving release of H<sub>2</sub>S.

**D. Total Safety H<sub>2</sub>S Safety Technician or MRC Designee**

1. Conduct training as necessary to ensure all personnel working in well area are familiar with the contingency procedures and the operation of emergency equipment.
2. Check all H<sub>2</sub>S safety equipment to ensure that it is ready for emergency use:
  - Check pressure weekly for each shift on breathing apparatus (both 30-minute and hip-packs) to make sure they are charged to full volume.
  - Check pressure on cascade air bottles, if on location, to see that they are capable of recharging breathing apparatus.
  - Check oxygen resuscitator, if on location, to ensure that it is charged to full volume.
  - Check H<sub>2</sub>S detectors weekly for each shift (fixed and portable), and explosimeter, to ensure they are working properly.
3. Provide a weekly report to MRC Energy Co.'s well-site representative documenting:
  - Calibrations performed on H<sub>2</sub>S detectors.
  - Proper location and working order of H<sub>2</sub>S safety equipment.
  - Attendance of all personnel, trained or retrained, and their company.
  - Weekly drills, if held and a list of personnel participating and summary of actions.

**OUT OF SCOPE PERSONNEL**

MRC Energy Co. policy will not require Out of Scope Personnel to be clean shaven, have processed medical questionnaires, fit testing, or have certified H2S Training.

## SAFETY EQUIPMENT

**All respirators will be designed, selected, used and maintained in conformance with ANSI Z88.2, American National Standard for respiratory protection.**

Personal protective equipment must be provided and used. Those who are expected to use respiratory equipment in case of an emergency will be carefully instructed in the proper use and told why the equipment is being used. Careful attention will be given to the minute details in order to avoid possible misuse of the equipment during periods of extreme stress.

Self-contained breathing apparatus provides complete respiratory and eye protection in any concentration of toxic gases and under any condition of oxygen deficiency. The wearer is independent of the surrounding atmosphere because he/she is breathing with a system admitting no outside air. It consists of a full face mask, breathing tube, pressure demand regulator, air supply cylinder, and harness. Pure breathing air from the supply cylinder flows to the mask automatically through the pressure demand regulator which reduces the pressure to a breathing level. Upon inhalation, air flows into the mask at a rate precisely regulated to the user's demand. Upon exhalation, the flow to the mask stops and the exhaled breath passes through a valve in the face piece to the surrounding atmosphere. The apparatus includes an alarm & gauge which warns the wearer to leave the contaminated area for a new cylinder of air or cylinder refill.

The derrickman is provided with a full face piece unit attached to a 5- minute escape cylinder. He will also have his own self-contained 30-minute unit breathing apparatus located on the drilling floor. He will use the 5-minute unit to exit the derrick to the floor, donning the 30-minute unit located on the floor, if needed.

All respiratory protective equipment, when not in use, should be stored in a clean, cool, dry place, and out of direct sunlight to retard the deterioration of rubber parts. After each use, the mask assembly will be scrubbed with soap and water, rinsed thoroughly, and dried. Air cylinders can be recharged to a full condition from a cascade system.

Personnel in each crew will be trained in the proper techniques of bottle filling.

The primary piece of equipment to be utilized, should anyone be overcome by hydrogen sulfide, is the oxygen resuscitator, if on location.

When asphyxiation occurs, the victim must be moved to fresh air and immediately given artificial respiration. In order to assure readiness, the bottles of oxygen will be checked at regular intervals and an extra tank kept on hand.

Hand-operated pump-type detectors incorporating detector tubes will give more accurate readings of hydrogen sulfide. The pump-type draws air to be tested through the detector tube containing lead acetate-silica gel granules. Presence of hydrogen sulfide in the air sample is shown by the development of a dark brown stain on the granules, which is the



scale reading of the concentration of hydrogen sulfide. By changing the type of detector tube used, this detector may also be used for sulfur dioxide (SO<sub>2</sub>) detection when hydrogen sulfide (H<sub>2</sub>S) is being burned in the flare area.

Provisions must be made for the storage of all safety equipment as is evident from the foregoing discussion. All equipment must be stored in an available location so that anyone engaged in normal work situations is no more than "one breath away" from a mask.

**V – TOXICITY OF VARIOUS GASES**

<b>Lethal Common Name ppm<sup>4</sup></b>	<b>Chemical Formula</b>	<b>Specific Gravity<sup>1</sup></b>	<b>PEL (OSHA)<sup>2</sup></b>	<b>STEL<sup>3</sup></b>
Hydrogen Cyanide 300	HCN	0.94	10	150
Hydrogen Sulfide 600	H <sub>2</sub> S	1.18	20	Peak- 50ppm
Note: The ACGIH(7) recommends a TWA(6) value of 10ppm as the TLV(5) for H <sub>2</sub> S and an STEL of 15ppm.				
Sulfur Dioxide 1000	SO <sub>2</sub>	2.21	2	5 ppm
Chlorine	CL <sub>2</sub>	2.45	1	
Carbon Monoxide 1000	CO	0.97	35	200/1 Hour
Carbon Dioxide 10%	CO <sub>2</sub>	1.52	5000	5%
Methane	CH <sub>4</sub>	0.55	90000	

<sup>1</sup> **Air = 1.0**

<sup>2</sup> **Permissible** - Concentration at which is believed that all workers may repeatedly be exposed, day after day, without adverse effect.

<sup>3</sup> **STEL** - Short Term Exposure Limit. A 15-minute time weighted average.

<sup>4</sup> **Lethal** - Concentration that will cause death with short-term exposure.

**TLV** – Threshold Limit Value; a concentration recommended by the American Conference of Governmental Industrial Hygienists (ACGIH)

**TWA** – Time Weighted Average; the average concentration of contaminant one can be exposed to over a given eight-hour period.

**ACGIH** – (American Conference of Governmental Industrial Hygienists) is an organization comprised of Occupational Health Professionals believed by many to be the top experts in the field of Industrial Hygiene. They are recognized as an expert resource by OSHA. The ACGIH releases a bi-annual publication "Threshold Limit Values and Biological Indices" that many safety professionals consider to be the authoritative document on airborne contaminants.

Reference: API RP-49, September 1974 - Reissued August 1978

## VI. PROPERTIES OF GASES

### A. CARBON DIOXIDE

1. Carbon Dioxide (CO<sub>2</sub>) is usually considered inert and is commonly used to extinguish fires. It is 1.52 times heavier than air and will concentrate in low areas of still air. Humans cannot breathe air containing more than 10% CO<sub>2</sub> without losing conscience or becoming disorientation in a few minutes. Continued exposure to CO<sub>2</sub> after being affected will cause convulsions, coma, and respiratory failure.

2. The threshold limit of CO<sub>2</sub> is 5000 ppm. Short-term exposure to 50,000 ppm (5%) is reasonable. This gas is colorless, odorless, and can be tolerated in relatively high concentrations.

### B. HYDROGEN SULFIDE

1. Hydrogen Sulfide (H<sub>2</sub>S) is a colorless, transparent, flammable gas. It is heavier than air and, hence, may accumulate in low places.

2. Although the slightest presence of H<sub>2</sub>S in the air is normally detectable by its characteristic "rotten egg" odor, it is dangerous to rely on the odor as a means of detecting excessive concentrations because the sense of smell is rapidly lost, allowing lethal concentrations to be accumulated without warning. The following table indicates the poisonous nature of H<sub>2</sub>S.

CONCENTRATION			EFFECTS
% H <sub>2</sub> S	PPM	GR/100 SCF <sup>1</sup>	
0.001	10	.65	Safe for 8 hours without respirator. Obvious and unpleasant odor.
0.0015	15	0.975	Safe for 15 minutes of exposure without respirator.
0.01	100	6.48	Kills smell in 3-15 minutes; may sting eyes and throat.
0.02	200	12.96	Kills smell quickly; stings eyes and throat.
0.05	500	32.96	Dizziness; breathing ceases in a few minutes; need prompt artificial respiration.
0.07	700	45.92	Rapid Unconsciousness; death will result if not rescued promptly.
0.1	1000	64.80	Instant unconsciousness, followed by death within minutes.

<sup>1</sup> Grains per 100 Cubic Feet

## VII. Treatment Procedures for Hydrogen Sulfide Poisoning

- A. Remove the victim to fresh air.
- B. If breathing has ceased or is labored, begin resuscitation immediately.  
Note: This is the quickest and preferred method of clearing victim's lungs of contaminated air; however, under disaster conditions, it may not be practical to move the victim to fresh air. In such instances, where those rendering first aid must continue to wear masks, a resuscitator should be used.
- C. Apply resuscitator to help purge H<sub>2</sub>S from the blood stream.
- D. Keep the victim at rest and prevent chilling.
- E. Get victim under physician's care as soon as possible.

### C. SULPHUR DIOXIDE

1. Sulfur Dioxide (SO<sub>2</sub>) is a colorless, non-flammable, transparent gas.
2. SO<sub>2</sub> is produced during the burning of H<sub>2</sub>S. Although SO<sub>2</sub> is heavier than air, it can be picked up by a breeze and carried downwind at elevated temperatures. Since SO<sub>2</sub> is extremely irritating to the eyes and mucous membranes of the upper respiratory tract, it has exceptionally good warning powers in this respect. The following table indicates the toxic nature of SO<sub>2</sub>:

CONCENTRATION		EFFECTS
% SO <sub>2</sub>	PPM	
0.0005	3 to 5	Pungent odor, normally a person can detect SO <sub>2</sub> in this range.
0.0012	12	Throat irritation, coughing, constriction of the chest, tearing and smarting of eyes.
0.015	150	So irritating that it can only be endured for a few minutes.
.05	500	Causes a sense of suffocation, event with the first breath.

## **VIII. BREATHING AIR EQUIPMENT DRILLS FOR ON & OFF DUTY PERSONNEL**

**An H<sub>2</sub>S Drill and Training Session must be given once a week to ALL on-duty personnel with off duty personnel. On-duty and Off-duty personnel will reverse roles on alternate drills.**

**An H<sub>2</sub>S drill and training session must be given once a week to all off-duty personnel in coincidence with on-duty personnel reversing roles on alternate drills.**

The purpose of this drill is to instruct the crews in the operation and use of breathing air and H<sub>2</sub>S related emergency equipment and to allow the personnel to become acquainted with using the equipment under working conditions. The crews should be trained to put on the breathing air equipment within one minute when required or requested to do so.

The following procedure should be used for weekly drills. The MRC supervisor must be satisfied that the crews are proficient with the equipment.

1. All personnel should be informed that a drill will be held.
2. The Total H<sub>2</sub>S Safety Technician or a designee assigned by the MRC Drilling Foreman should initiate the drill by signaling as he/she would if H<sub>2</sub>S was detected.
3. Personnel should don their breathing apparatus.
4. Once the breathing air equipment is on, the H<sub>2</sub>S Technician should check all personnel to insure proper operation.

A training and information session will be conducted after each drill to answer any H<sub>2</sub>S related questions and to cover any gaps identified from one of the following topics:

- Condition II, and III alerts and steps to be taken by all personnel.
- The importance of wind direction when dealing with H<sub>2</sub>S.
- Proper use and storage of all types of breathing equipment.
- Proper use and storage of oxygen resuscitators.
- Proper use and storage of H<sub>2</sub>S detectors (Mini Checks or equivalent).
- The "buddy system" and the procedure for rescuing a person overcome by H<sub>2</sub>S.
- Responsibilities and duties.
- Location of H<sub>2</sub>S safety equipment.
- Other parts of the "H<sub>2</sub>S Contingency Plan" that should be reviewed.

**NOTE:** A record of attendance must be kept for weekly drills and training sessions.

## **IX. HYDROGEN SULFIDE TRAINING CURRICULUM**

(FOR EMPLOYERS, VISITORS, AND CONTRACTORS)

EACH PERSON WILL BE INFORMED ON THE RESTRICTIONS OF HAVING BEARDS AND CONTACT LENS. THEY WILL ALSO BE INFORMED OF THE AVAILABILITY OF SPECTACLE KITS.

AFTER THE H2S EQUIPMENT IS RIGGED UP, ALL IN SCOPE PERSONNEL WILL BE H2S TRAINED AND PUT THROUGH A DRILL. ANY DEFICIENCIES WILL BE CORRECTED.

Training Completion cards are good for one year and will indicate date of completion or expiration. Personnel previously trained on another facility and visiting, must attend a "supplemental briefing" on H2S equipment and procedures before beginning duty. Visitors who remain on the location more than 24 hours must receive full H2S training given all crew members. A "supplemental briefing" will include but not be limited to: Location of respirators, familiarization with safe briefing areas, alarms with instruction on responsibilities in the event of a release and hazards of H2S and (SO2, if applicable). A training and drill log will be kept.

Topics for full H2S training shall include the following equipment if on location, but not be limited to the following:

1. **Brief Introduction on H2S**
  - A. Slide or Computer presentation (If Available)
  - B. H2S material will be distributed
  - C. Re-emphasize the properties, toxicity, and hazards of H2S
  - D. Source of SO2 (if applicable)
2. **H2S Detection**
  - A. Description of H2S sensors
  - B. Description of warning system (how it works & it's location)
  - C. Actual location of H2S sensors
  - D. Instruction on use of pump type detector (Gastec)
  - E. Use of card detectors, ampoules, or dosimeters
  - F. Use of combustible gas detector
  - G. Other personnel detectors used
  - H. Alarm conditions I & II,
  - I. SO2 alarms (if applicable)

3. **H2S Protection**
  - A. Types of breathing apparatus provided (30-minute SCBA & 5-minute SCBA (with voice diaphragms for communication if supplied)
  - B. Principle of how breathing apparatus works
  - C. Demonstration on how to use breathing apparatus
  - D. Location of breathing apparatus
4. **Cascade System**
  - A. Description of cascade system
  - B. How system works
  - C. Cascade location of rig with reference to briefing areas
  - D. How to use cascade system (with 5-minute hose work line units & refill, if supplied)
  - E. Importance of wind direction and actual location of Windssocks
  - F. Purpose of compressor/ function (if one is on site)
5. **H2S Rescue and First Aid**
  - A. Importance of wind direction
  - B. Safe briefing area
  - C. Buddy system
  - D. H2S symptoms
  - E. Methods of rescue
6. **Hands on Training**
  - A. Donning/ familiarization of SCBA 30-minute unit
  - B. Donning/ familiarization of SKADA 5- MIN. Packs
  - C. Familiarization of cascades
  - D. Use of O2 resuscitator
  - E. Alarm conditions - upwind briefing areas, etc...
  - F. Duties and responsibilities of all personnel
  - G. Procedures for evacuation
  - H. Search and Rescue teams
7. **Certification**
  - A. Testing on material covered

## TOTAL SAFETY US INC., FIT TEST

### *X. EMPLOYEE INFORMATION*

Employee Name: \_\_\_\_\_ Date: \_\_\_\_\_

Date of Employee Medical Evaluation: \_\_\_\_\_

Medical Status (circle):      Unrestricted      Limitations on Use      Use Not  
Authorized

### RESPIRATOR INFORMATION

Respirator Type (Dustmask, SCBA, etc): \_\_\_\_\_

Brand: \_\_\_\_\_

Size: (circle):      XS      S      M      L      XL

### FIT TEST INFORMATION

Type of Fit Test Performed:

#### Quantitative

Porta Count  
Fittestest 3000

Fit Factor: \_\_\_\_\_  
Fit Factor: \_\_\_\_\_

#### Qualitative

Irritant Smoke  
Isoamyl Acetate (Banana Oil)  
Saccharin  
Bitrex

Passed / Failed  
Passed / Failed  
Passed / Failed  
Passed / Failed

I hereby certify that this fittestest was conducted in accordance with the OSHA Fit Testing Protocols found in Appendix A of 1910.134.

Fit Tester Name (Print): \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_



## **XI. H<sub>2</sub>S SAFETY SERVICES**

HYDROGEN SULFIDE SAFETY PACKAGE – Contained on location in Total Safety H<sub>2</sub>S Equipment Trailer, unless otherwise noted:

### **RESPIRATORY SAFETY SYSTEMS**

#### **QTY DESCRIPTION**

- 12 30-Minute Pressure Demand SCBA  
(4-Primary Safe Briefing Area, 4-Secondary Safe Briefing Area, 4-floor with one of these for derrick man)
- 9 Hose Line 5-minute Work Unit w/EscapE Cylinder (1 in derrick, 6 on drill floor, 1 in mud pit wt area, 1 in shaker area)

The following shall be part of the package if requested by the MRC Foremen (at least one trailer with cascade system is required to be located in the MRC Magnolia asset for use as needed)

- 1 Breathing air cascade of 10 bottles w/regulator
- 2 Refill lines to refill 30-minute units on location
- 1 6-Man manifold that can be rigged up to work area on floor, if needed
- 6 25 foot hose lines
- 2 50 foot hose lines
- 100 Feet of hose line to rig cascade up to 12 man manifold on floor
- 12 30-minute Self Contained Breathing apparatus

### **DETECTION AND ALARM SAFETY SYSTEM**

- 1 H<sub>2</sub>S Fixed Monitor w/8Channels (Loc determined at rig up) suggested.  
(Mud pit area, shaker area, bell nipple area, floor/driller area, & outside quarters)
- 5 H<sub>2</sub>S Sensors
- 3 Explosion Proof Alarms (Light and Siren)  
(1 on floor, 1 in work area, 1 in trailer area where quarters are located)
- 2 Personal H<sub>2</sub>S monitors
- 1 Portable Tri-Gas Hand Held Meter (O<sub>2</sub>, LEL, H<sub>2</sub>S)
- 1 Sensidyne/Gastech Manual Pump Type Detector
- 8 Boxes H<sub>2</sub>S Tubes Various Ranges
- 2 Boxes SO<sub>2</sub> Tubes Various Ranges
- 1 Calibration Gas
- 1 Set Paper Work for Records: Training, Cal, Inspection, other

**ADDITIONAL SAFETY RELATED EQUIPMENT**

**QTY DESCRIPTION**

- |   |  |
|---|--|
| 2 | Windsacks with Pole and Bracket                            |
| 1 | Set Well Condition Sign w/Green, Yellow, Red Flags         |
| 1 | Primary Safe Briefing Area Sign                            |
| 1 | Secondary Safe Briefing Area Sign                          |
| 6 | Operating Condition Signs for Work Areas & Living Quarters |

**TRAILER WITH BREATHING AIR CASCADE WILL  
ALSO INCLUDE THE FOLLOWING:**

This equipment will be part of the H2S equipment stored in the trailer, when on location

- |   |                                   |
|---|-----------------------------------|
| 1 | First aid kit                     |
| 1 | Fire Blanket                      |
| 1 | Eye wash station                  |
| 2 | Safety Harness w/150' safety line |

**XII. EMERGENCY PHONE NUMBERS (Updated March 18, 2009)****EMERGENCY PHONE NUMBERS**

MRC Energy Co. Emergency Phone #

MRC Energy Co. Permian Operations Phone-----

**MRC Energy Co. Production**

113 Daw Rd

Mansfield LA 71052

<b>Title</b>	<b>Names</b>	<b>Phone</b>	<b>Cell</b>
Operations Manager			
Operation Supt.			
Operations Supervisor			
Operations Supervisor			
Office Supervisor			
HSE			
Scheduler Planner			

**Hydrogen Sulfide Safety Consultants**

Total Safety W. Bender Blvd. Hobbs, NM	575-392-2973	After Hours 24 Hour Call Center Through Office Number
Tommy Throckmorton Operations Manager	575-392-2973	940-268-9614
Rodney Jourdan Sales Contact	575-392-2973	432-349-3928

**MRC Energy Co. MEDICAL RESPONSE PLAN AND IT'S MEDICAL  
PROTOCOLS WILL BE FOLLOWED**

**MEDICAL COORDINATOR # -----**

Emergency Numbers & Directions

**Hospitals (911)**

<b>Artesia General Hospital 702 N. 13<sup>th</sup> St. Artesia, NM 88210</b>	<b>Main Phone Number</b>	<b>575-748-3333</b>
<b>Nor-Lea General Hospital 1600 N. Main Ave. Lovington, NM 88260</b>	<b>Main Phone Number</b>	<b>575-396-6611</b>
<b>Lea Regional Medical Center 5419 N. Lovington Hwy Hobbs, NM 88240</b>	<b>Main Phone Number</b>	<b>575-492-5260</b>
<b>Carlsbad General Hospital 2430 W. Pierce St. Carlsbad, NM</b>	<b>Main Phone Number</b>	<b>575-887-4100</b>
<b>Lovelace Regional Hospital 117 E. 19<sup>th</sup> St Roswell, NM 88201</b>	<b>Main Phone Number</b>	<b>575-627-7000</b>
<b>Winkler Co. Memorial Hospital 821 Jeffee Dr. Kermit, Texas 79745</b>	<b>Main Phone Number</b>	<b>432-586-8299</b>
<b>Reeves County Hospital 2323 Texas St. Pecos, Texas 79772</b>	<b>Main Phone Number</b>	<b>432-447-3551</b>

**State Police (911)**

<b>Texas DPS Loving co. 225 N.Pecos Mentone, Texas 79754</b>	<b>Office Number</b>	<b>432-377-2411</b>
<b>Texas DPS Winkler Co. 100 E Winkler Kermit, Texas 79745</b>	<b>Office Number</b>	<b>432-586-3465</b>
<b>Texas DPS Pecos Co. 148 N I-20 Frontage RD Pecos, Texas 79772</b>	<b>Office Number</b>	<b>432-447-3532</b>
<b>New Mexico State Police 3300 W. Main St Artesia, NM</b>	<b>Office Number</b>	<b>575-748-9718</b>
<b>New Mexico State Police 304 N. Canyon St Carlsbad, NM 88220</b>	<b>Office Number</b>	<b>575-885-3137</b>
<b>New Mexico State Police 5100 Jack Gomez Blvd. Hobbs, NM 88240</b>	<b>Office Number</b>	<b>575-392-5588</b>

**Local Law Enforcement (911) (Sheriff)**

<b>Reeves Co. Sheriff 500 N. Oak ST Pecos, Texas 79722</b>	<b>Office Number</b>	<b>432-445-4901</b>
<b>Winkler Co. Sheriff 1300 Bellaire St. Kermit, Texas 79745</b>	<b>Office Number</b>	<b>432-586-3461</b>
<b>Loving Co. Sheriff Courthouse Mentone, Texas</b>	<b>Office Number</b>	<b>432-377-2411</b>
<b>Lea Co. Sheriff 1417 S. Commercial St. Lovington, NM 88260</b>	<b>Office Number</b>	
<b>Eddy Co. Sheriff 305 N 7th St. Artesia, NM 88210</b>	<b>Office Number</b>	<b>575-766-9888</b>
<b>Eddy Co. Sheriff 305 N 7th St. Carlsbad, NM 88220</b>	<b>Office Number</b>	<b>575-746-9888</b>

## Federal &amp; State Agencies

<b>OSHA Lubbock Area Office 1205 Texas Av. Room 806 Lubbock, Texas 79401</b>	<b>Main Number</b>	<b>806-472-7681 EXT 7685</b>
<b>New Mexico Environment Department 400 N Pennsylvania Roswell, NM 88201</b>	<b>Joe Fresquez</b>	<b>575-623-3935</b>
<b>Texas Railroad Commission Midland, Texas</b>	<b>Main Number</b>	<b>844-773-0305</b>
<b>BLM Carlsbad, NM Field Office 620 E. Green ST Carlsbad, NM 88220</b>	<b>Main Number</b>	<b>575-234-5972</b>
<b>BLM Hobbs Field Station 414 W. Taylor Rd. Hobbs, NM 88240</b>	<b>Main Number</b>	<b>575-393-3612</b>
<b>BLM Roswell District Office 2909 W. Second St. Roswell, NM 88201</b>	<b>Main Number</b>	<b>575-627-0272</b>
<b>TECQ Texas Commission on Environmental Quality</b>	<b>Main Number</b>	<b>800-832-8224</b>
<b>New Mexico OCD</b>		
<b>U.S. Environmental Protection Agency Region 6 Texas/New Mexico</b>	<b>Main Number</b>	<b>214-655-2222</b>
<b>National Response Center Toxic Chemicals &amp; Oil Spills</b>	<b>Main Number</b>	<b>800-424-8802</b>

**Rig Company**


### **XIII. EVACUATION OF THE GENERAL PUBLIC**

The procedure to be used in alerting nearby persons in the event of any occurrence that could pose a threat to life or property will be arranged and completed with public officials in detail, prior to drilling into the hydrogen sulfide formations.

In the event of an actual emergency, the following steps will be immediately taken:

1. The MRC Energy Co.'s representative will dispatch sufficient personnel to immediately warn each resident and transients down-wind within radius of exposure from the well site. Then warn all residence in the radius of exposure. Additional evacuation zones may be necessary as the situation warrants.
2. The MRC Energy Co.'s representative will immediately notify proper authorities, including the Sheriff's Office, Highway Patrol, and any other public officials as described above and will enlist their assistance in warning residents and transients in the calculated radius of exposure.
3. The MRC Energy Co.'s representative will dispatch sufficient personnel to divert traffic in the vicinity away from the potentially dangerous area. A guard to the entrance of the well site will be posted to monitor essential and non essential traffic.
4. General:
  - A. The area included within the radius of exposure is considered to be the zone of maximum potential hazard from a hydrogen sulfide gas escape. Immediate evacuation of public areas, in accordance with the provisions of this contingency plan, is imperative. When it is determined that conditions exist which create an additional area (beyond the initial zone of maximum potential hazard) vulnerable to possible hazard, public areas in the additional hazardous area will be evacuated in accordance with the contingency plan.
  - B. In the event of a disaster, after the public areas have been evacuated and traffic stopped, it is expected that local civil authorities will have arrived and within a few hours will have assumed direction of and control of the public, including all public areas. MRC Energy Co. will cooperate with these authorities to the fullest extent and will exert every effort by careful advice to such authorities to prevent panic or rumors.
  - C. MRC Energy Co. will dispatch appropriate management personnel at the disaster site as soon as possible. The company's personnel

will cooperate with and provide such information to civil authorities as they might require.

- D. One of the products of the combustion of hydrogen sulfide is sulfur dioxide ( $\text{SO}_2$ ). Under certain conditions this gas may be equally as dangerous as  $\text{H}_2\text{S}$ . A pump type detector device, which determines the percent of  $\text{SO}_2$  in air through concentrations in ppm, will be available. Although normal air movement is sufficient to dissipate this material to safe levels, the  $\text{SO}_2$  detector should be utilized to check concentrations in the proximity of the well once every hour, or as necessary and the situation warrants. Also, if any low areas are suspected of having high concentrations, personnel should be made aware of these areas, and steps should be taken to determine whether or not these low areas are hazardous.





## **Matador Resources**

**Eddy County, NM (NAD27 NME)**

**Dr. Scrivner Federal 01-24S-28E RB  
227H**

**OH**

**Preliminary Plan 1**

## **Anticollision Report**

**10 December, 2015**





# Phoenix Technology Services

## Anticollision Report



Company: Matador Resources  
 Project: Eddy County, NM (NAD27 NME)  
 Reference Site: Dr. Scrivner Federal 01-24S-28E RB  
 Site Error: 0.00 usft  
 Reference Well: 227H  
 Well Error: 0.00 usft  
 Reference Wellbore: OH  
 Reference Design: Preliminary Plan 1

Local Co-ordinate Reference: Well 227H  
 TVD Reference: RKB @ 3014.50usft  
 MD Reference: RKB @ 3014.50usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Output errors are at: 2.00 sigma  
 Database: Compass 5000 GCR  
 Offset TVD Reference: Offset Datum

Reference	Preliminary Plan 1				
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria				
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA		
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D		
Results Limited by:	Maximum center-center distance of 247.00 usft	Error Surface:	Elliptical Conic		
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied		

Survey Tool Program	Date 12/10/2015				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	15,402.61	Preliminary Plan 1 (OH)	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Dr. Scrivner Federal 01-24S-28E RB						
123H - OH - Preliminary Plan 1	900.00	900.00	60.00	54.00	10.008	CC
123H - OH - Preliminary Plan 1	1,100.00	1,100.67	60.36	52.95	8.152	ES
123H - OH - Preliminary Plan 1	2,900.00	2,902.01	97.85	77.62	4.838	SF
203H - OH - Preliminary Plan 1	1,000.00	1,000.00	90.00	83.29	13.408	CC
203H - OH - Preliminary Plan 1	1,100.00	1,100.44	90.67	83.27	12.244	ES
203H - OH - Preliminary Plan 1	2,900.00	2,899.52	158.51	138.28	7.832	SF
207H - OH - Preliminary Plan 1	1,000.00	1,000.00	30.00	23.29	4.469	CC
207H - OH - Preliminary Plan 1	1,400.00	1,401.26	31.78	22.35	3.369	ES
207H - OH - Preliminary Plan 1	3,000.00	3,002.31	44.56	23.62	2.128	SF
223H - OH - Preliminary Plan 1	1,000.00	999.00	120.00	113.29	17.887	CC, ES
223H - OH - Preliminary Plan 1	2,900.00	2,894.08	217.17	196.94	10.737	SF

Offset Design Dr. Scrivner Federal 01-24S-28E RB - 123H - OH - Preliminary Plan 1														Offset Site Error:	0.00 usft
Survey Program: 0-PHX+MWD+HDGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.00	0.00	60.00						
100.00	100.00	100.00	100.00	0.13	0.13	0.00	60.00	0.00	60.00	59.74	0.26	230.865			
200.00	200.00	200.00	200.00	0.49	0.49	0.00	60.00	0.00	60.00	59.02	0.98	61.423			
300.00	300.00	300.00	300.00	0.85	0.85	0.00	60.00	0.00	60.00	58.31	1.69	35.424			
400.00	400.00	400.00	400.00	1.21	1.21	0.00	60.00	0.00	60.00	57.59	2.41	24.889			
500.00	500.00	500.00	500.00	1.56	1.56	0.00	60.00	0.00	60.00	56.87	3.13	19.184			
600.00	600.00	600.00	600.00	1.92	1.92	0.00	60.00	0.00	60.00	56.16	3.84	15.606			
700.00	700.00	700.00	700.00	2.28	2.28	0.00	60.00	0.00	60.00	55.44	4.56	13.153			
800.00	800.00	800.00	800.00	2.64	2.64	0.00	60.00	0.00	60.00	54.72	5.28	11.367			
900.00	900.00	900.00	900.00	3.00	3.00	0.00	60.00	0.00	60.00	54.00	6.00	10.008	CC		
1,000.00	1,000.00	1,000.00	1,000.00	3.36	3.36	0.01	60.00	0.00	60.00	53.29	6.71	8.939			
1,100.00	1,099.99	1,100.67	1,100.66	3.70	3.70	-134.25	59.44	1.20	60.36	52.95	7.40	8.152	ES		
1,200.00	1,199.91	1,201.33	1,201.23	4.03	4.04	-133.52	57.75	4.80	61.44	53.36	8.07	7.609			
1,300.00	1,299.70	1,301.73	1,301.43	4.37	4.39	-132.39	55.01	10.64	63.23	54.47	8.75	7.222			
1,400.00	1,399.46	1,401.71	1,401.16	4.72	4.74	-131.28	52.04	16.95	65.21	55.77	9.44	6.905			
1,500.00	1,499.22	1,501.68	1,500.89	5.06	5.09	-130.23	49.08	23.26	67.22	57.08	10.14	6.629			

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



# Phoenix Technology Services

## Anticollision Report



Company: Matador Resources  
Project: Eddy County, NM (NAD27 NME)  
Reference Site: Dr. Scrivner Federal 01-24S-28E RB  
Site Error: 0.00 usft  
Reference Well: 227H  
Well Error: 0.00 usft  
Reference Wellbore: OH  
Reference Design: Preliminary Plan 1

Local Co-ordinate Reference: Well 227H  
TVD Reference: RKB @ 3014.50usft  
MD Reference: RKB @ 3014.50usft  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Output errors are at: 2.00 sigma  
Database: Compass 5000 GCR  
Offset TVD Reference: Offset Datum

Offset Design Dr. Scrivner Federal 01-24S-28E RB - 123H - OH - Preliminary Plan 1													Offset Site Error:	0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
1,600.00	1,598.97	1,601.65	1,600.62	5.41	5.44	-129.24	46.11	29.57	69.25	58.41	10.84	6.387		
1,700.00	1,698.73	1,701.62	1,700.35	5.77	5.80	-128.31	43.15	35.89	71.30	59.75	11.55	6.174		
1,800.00	1,798.48	1,801.60	1,800.08	6.12	6.15	-127.43	40.19	42.20	73.36	61.10	12.26	5.984		
1,900.00	1,898.24	1,901.57	1,899.80	6.48	6.51	-126.60	37.22	48.51	75.45	62.47	12.97	5.816		
2,000.00	1,998.00	2,001.54	1,999.53	6.84	6.87	-125.82	34.26	54.83	77.54	63.85	13.69	5.664		
2,100.00	2,097.75	2,101.51	2,099.26	7.20	7.24	-125.07	31.30	61.14	79.66	65.25	14.41	5.528		
2,200.00	2,197.51	2,201.49	2,198.99	7.56	7.60	-124.37	28.33	67.45	81.78	66.65	15.13	5.405		
2,300.00	2,297.27	2,301.46	2,298.72	7.92	7.96	-123.70	25.37	73.76	83.92	68.06	15.85	5.293		
2,400.00	2,397.02	2,401.43	2,398.45	8.29	8.33	-123.06	22.40	80.08	86.06	69.48	16.58	5.191		
2,500.00	2,496.78	2,501.40	2,498.18	8.65	8.69	-122.46	19.44	86.39	88.22	70.92	17.31	5.098		
2,600.00	2,596.54	2,601.38	2,597.91	9.02	9.06	-121.88	16.48	92.70	90.39	72.35	18.03	5.012		
2,700.00	2,696.29	2,701.35	2,697.64	9.38	9.42	-121.33	13.51	99.01	92.56	73.80	18.76	4.934		
2,800.00	2,796.02	2,801.57	2,797.59	9.75	9.79	-120.76	10.39	105.66	94.84	75.35	19.49	4.866		
2,900.00	2,895.56	2,902.01	2,897.56	10.12	10.16	-120.01	6.28	114.41	97.85	77.62	20.23	4.838 SF		
3,000.00	2,994.81	3,002.39	2,997.19	10.50	10.55	-119.12	1.06	125.54	101.69	80.72	20.97	4.848		
3,100.00	3,093.71	3,102.72	3,096.39	10.89	10.94	-118.12	-5.27	139.02	106.37	84.64	21.73	4.895		
3,200.00	3,192.25	3,202.76	3,194.96	11.29	11.33	-117.14	-12.53	154.48	111.82	89.30	22.51	4.967		
3,300.00	3,290.73	3,302.59	3,293.28	11.68	11.73	-116.28	-19.89	170.17	117.39	94.08	23.31	5.036		
3,400.00	3,389.21	3,402.42	3,391.59	12.09	12.13	-115.50	-27.26	185.85	123.00	98.89	24.11	5.102		
3,500.00	3,487.69	3,502.24	3,489.90	12.49	12.54	-114.79	-34.62	201.54	128.62	103.70	24.91	5.162		
3,600.00	3,586.17	3,602.07	3,588.22	12.90	12.94	-114.13	-41.98	217.23	134.26	108.54	25.72	5.219		
3,700.00	3,684.65	3,701.90	3,686.53	13.31	13.35	-113.53	-49.35	232.91	139.91	113.38	26.54	5.273		
3,800.00	3,783.13	3,801.73	3,784.85	13.72	13.76	-112.98	-56.71	248.60	145.59	118.23	27.35	5.323		
3,900.00	3,881.61	3,901.56	3,883.16	14.13	14.17	-112.47	-64.07	264.28	151.27	123.10	28.17	5.370		
4,000.00	3,980.09	4,001.39	3,981.48	14.54	14.58	-112.00	-71.44	279.97	156.96	127.97	28.99	5.414		
4,100.00	4,078.57	4,101.22	4,079.79	14.95	15.00	-111.55	-78.80	295.66	162.67	132.85	29.82	5.455		
4,200.00	4,177.05	4,201.05	4,178.10	15.37	15.41	-111.14	-86.17	311.34	168.38	137.73	30.65	5.494		
4,300.00	4,275.54	4,300.88	4,276.42	15.79	15.83	-110.76	-93.53	327.03	174.10	142.63	31.48	5.531		
4,400.00	4,374.02	4,400.71	4,374.73	16.20	16.25	-110.40	-100.89	342.72	179.83	147.52	32.31	5.566		
4,500.00	4,472.50	4,500.54	4,473.05	16.62	16.67	-110.06	-108.26	358.40	185.57	152.42	33.14	5.599		
4,600.00	4,570.98	4,600.37	4,571.36	17.04	17.08	-109.74	-115.62	374.09	191.31	157.33	33.98	5.630		
4,700.00	4,669.46	4,700.20	4,669.67	17.46	17.50	-109.45	-122.99	389.77	197.05	162.24	34.82	5.660		
4,800.00	4,767.94	4,800.03	4,767.99	17.88	17.93	-109.16	-130.35	405.46	202.81	167.15	35.65	5.688		
4,900.00	4,866.42	4,899.86	4,866.30	18.31	18.35	-108.90	-137.71	421.15	208.56	172.07	36.49	5.715		
5,000.00	4,964.90	4,999.69	4,964.62	18.73	18.77	-108.65	-145.08	436.83	214.32	176.99	37.34	5.740		
5,100.00	5,063.38	5,099.52	5,062.93	19.15	19.19	-108.41	-152.44	452.52	220.09	181.91	38.18	5.765		
5,200.00	5,161.86	5,199.35	5,161.25	19.58	19.61	-108.18	-159.81	468.20	225.86	186.83	39.02	5.788		
5,300.00	5,260.34	5,299.26	5,259.78	20.00	20.03	-108.17	-166.84	483.18	231.61	191.75	39.86	5.811		
5,400.00	5,358.82	5,399.13	5,358.66	20.42	20.44	-108.77	-172.79	495.86	237.34	196.67	40.67	5.835		
5,500.00	5,457.30	5,498.81	5,457.68	20.85	20.83	-109.96	-177.63	506.18	243.12	201.66	41.46	5.864		



# Phoenix Technology Services

## Anticollision Report



Company: Matador Resources  
Project: Eddy County, NM (NAD27 NME)  
Reference Site: Dr. Scrivner Federal 01-24S-28E RB  
Site Error: 0.00 usft  
Reference Well: 227H  
Well Error: 0.00 usft  
Reference Wellbore: OH  
Reference Design: Preliminary Plan 1

Local Co-ordinate Reference: Well 227H  
TVD Reference: RKB @ 3014.50usft  
MD Reference: RKB @ 3014.50usft  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Output errors are at: 2.00 sigma  
Database: Compass 5000 GCR  
Offset TVD Reference: Offset Datum

Offset Design Dr. Scrivner Federal 01-24S-28E RB - 203H - OH - Preliminary Plan 1													Offset Site Error: 0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	90.00	0.00	90.00				
100.00	100.00	100.00	100.00	0.13	0.13	0.00	90.00	0.00	90.00	89.74	0.26	346.297	
200.00	200.00	200.00	200.00	0.49	0.49	0.00	90.00	0.00	90.00	89.02	0.98	92.134	
300.00	300.00	300.00	300.00	0.85	0.85	0.00	90.00	0.00	90.00	88.31	1.69	53.136	
400.00	400.00	400.00	400.00	1.21	1.21	0.00	90.00	0.00	90.00	87.59	2.41	37.333	
500.00	500.00	500.00	500.00	1.56	1.56	0.00	90.00	0.00	90.00	86.87	3.13	28.775	
600.00	600.00	600.00	600.00	1.92	1.92	0.00	90.00	0.00	90.00	86.16	3.84	23.409	
700.00	700.00	700.00	700.00	2.28	2.28	0.00	90.00	0.00	90.00	85.44	4.56	19.730	
800.00	800.00	800.00	800.00	2.64	2.64	0.00	90.00	0.00	90.00	84.72	5.28	17.050	
900.00	900.00	900.00	900.00	3.00	3.00	0.00	90.00	0.00	90.00	84.00	6.00	15.011	
1,000.00	1,000.00	1,000.00	1,000.00	3.36	3.36	0.00	90.00	0.00	90.00	83.29	6.71	13.408 CC	
1,100.00	1,099.99	1,100.44	1,100.43	3.70	3.71	-134.27	89.75	1.30	90.67	83.27	7.41	12.244 ES	
1,200.00	1,199.91	1,200.84	1,200.75	4.03	4.05	-133.59	89.01	5.19	92.70	84.62	8.08	11.474	
1,300.00	1,299.70	1,301.04	1,300.74	4.37	4.40	-132.56	87.81	11.50	96.02	87.26	8.76	10.960	
1,400.00	1,399.46	1,400.96	1,400.41	4.72	4.75	-131.55	86.51	18.34	99.68	90.23	9.45	10.545	
1,500.00	1,499.22	1,500.87	1,500.09	5.06	5.10	-130.61	85.20	25.19	103.37	93.22	10.15	10.182	
1,600.00	1,598.97	1,600.79	1,599.76	5.41	5.45	-129.74	83.90	32.04	107.09	96.23	10.86	9.864	
1,700.00	1,698.73	1,700.71	1,699.44	5.77	5.81	-128.92	82.59	38.88	110.82	99.26	11.56	9.583	
1,800.00	1,798.48	1,800.63	1,799.11	6.12	6.17	-128.16	81.29	45.73	114.58	102.31	12.28	9.334	
1,900.00	1,898.24	1,900.55	1,898.79	6.48	6.53	-127.45	79.98	52.58	118.36	105.37	12.99	9.111	
2,000.00	1,998.00	2,000.47	1,998.46	6.84	6.89	-126.78	78.68	59.42	122.15	108.45	13.71	8.911	
2,100.00	2,097.75	2,100.38	2,098.14	7.20	7.25	-126.15	77.38	66.27	125.97	111.54	14.43	8.730	
2,200.00	2,197.51	2,200.30	2,197.81	7.56	7.62	-125.56	76.07	73.12	129.79	114.64	15.15	8.567	
2,300.00	2,297.27	2,300.22	2,297.49	7.92	7.98	-125.00	74.77	79.96	133.63	117.75	15.87	8.418	
2,400.00	2,397.02	2,400.14	2,397.16	8.29	8.35	-124.48	73.46	86.81	137.48	120.88	16.60	8.282	
2,500.00	2,496.78	2,500.06	2,496.83	8.65	8.71	-123.98	72.16	93.66	141.34	124.01	17.33	8.158	
2,600.00	2,596.54	2,599.97	2,596.51	9.02	9.08	-123.51	70.86	100.50	145.21	127.15	18.05	8.043	
2,700.00	2,696.29	2,699.89	2,696.18	9.38	9.44	-123.06	69.55	107.35	149.09	130.31	18.78	7.938	
2,800.00	2,796.02	2,799.77	2,795.80	9.75	9.81	-122.59	68.19	114.51	153.16	133.65	19.51	7.851	
2,900.00	2,895.56	2,899.52	2,895.09	10.12	10.18	-121.98	66.40	123.90	158.51	138.28	20.24	7.832 SF	
3,000.00	2,994.81	2,999.13	2,993.95	10.50	10.56	-121.26	64.13	135.80	165.34	144.36	20.98	7.881	
3,100.00	3,093.71	3,098.57	3,092.30	10.89	10.94	-120.46	61.39	150.21	173.65	151.92	21.73	7.992	
3,200.00	3,192.25	3,197.95	3,190.23	11.29	11.34	-119.67	58.22	166.83	183.25	160.75	22.50	8.144	
3,300.00	3,290.73	3,297.44	3,288.21	11.68	11.74	-118.99	54.99	183.80	193.07	169.78	23.29	8.289	
3,400.00	3,389.21	3,396.94	3,386.19	12.09	12.14	-118.38	51.76	200.78	202.91	178.83	24.09	8.424	
3,500.00	3,487.69	3,496.43	3,484.17	12.49	12.54	-117.83	48.52	217.75	212.77	187.89	24.89	8.550	
3,600.00	3,586.17	3,595.92	3,582.15	12.90	12.94	-117.33	45.29	234.72	222.65	196.96	25.69	8.668	
3,700.00	3,684.65	3,695.42	3,680.13	13.31	13.35	-116.87	42.06	251.70	232.55	206.05	26.49	8.777	
3,800.00	3,783.13	3,794.91	3,778.11	13.72	13.76	-116.44	38.82	268.67	242.45	215.15	27.30	8.880	

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



# Phoenix Technology Services

## Anticollision Report



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 Reference Design: Preliminary Plan 1

Local Co-ordinate Reference: Well 227H  
 TVD Reference: RKB @ 3014.50usft  
 MD Reference: RKB @ 3014.50usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Output errors are at: 2.00 sigma  
 Database: Compass 5000 GCR  
 Offset TVD Reference: Offset Datum

Offset Design Dr. Scrivner Federal 01-24S-28E RB - 207H - OH - Preliminary Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-PHX+MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.00	0.00	30.00				
100.00	100.00	100.00	100.00	0.13	0.13	0.00	30.00	0.00	30.00	29.74	0.26	115.432	
200.00	200.00	200.00	200.00	0.49	0.49	0.00	30.00	0.00	30.00	29.02	0.98	30.711	
300.00	300.00	300.00	300.00	0.85	0.85	0.00	30.00	0.00	30.00	28.31	1.69	17.712	
400.00	400.00	400.00	400.00	1.21	1.21	0.00	30.00	0.00	30.00	27.59	2.41	12.444	
500.00	500.00	500.00	500.00	1.56	1.56	0.00	30.00	0.00	30.00	26.87	3.13	9.592	
600.00	600.00	600.00	600.00	1.92	1.92	0.00	30.00	0.00	30.00	26.16	3.84	7.803	
700.00	700.00	700.00	700.00	2.28	2.28	0.00	30.00	0.00	30.00	25.44	4.56	6.577	
800.00	800.00	800.00	800.00	2.64	2.64	0.00	30.00	0.00	30.00	24.72	5.28	5.683	
900.00	900.00	900.00	900.00	3.00	3.00	0.00	30.00	0.00	30.00	24.00	6.00	5.004	
1,000.00	1,000.00	1,000.00	1,000.00	3.36	3.36	0.00	30.00	0.00	30.00	23.29	6.71	4.469 CC	
1,100.00	1,099.99	1,100.48	1,100.47	3.70	3.70	-134.29	29.20	1.05	30.12	22.72	7.40	4.069	
1,200.00	1,199.91	1,200.95	1,200.86	4.03	4.04	-133.65	26.80	4.20	30.49	22.42	8.07	3.778	
1,300.00	1,299.70	1,301.26	1,300.96	4.37	4.38	-132.66	22.90	9.32	31.09	22.35	8.74	3.556	
1,400.00	1,399.46	1,401.26	1,400.71	4.72	4.73	-131.66	18.67	14.87	31.78	22.35	9.43	3.369 ES	
1,500.00	1,499.22	1,501.25	1,500.47	5.06	5.07	-130.71	14.45	20.42	32.47	22.35	10.13	3.207	
1,600.00	1,598.97	1,601.25	1,600.22	5.41	5.43	-129.80	10.22	25.97	33.18	22.35	10.82	3.065	
1,700.00	1,698.73	1,701.25	1,699.97	5.77	5.78	-128.92	5.99	31.52	33.89	22.36	11.53	2.939	
1,800.00	1,798.48	1,801.24	1,799.72	6.12	6.14	-128.08	1.76	37.06	34.61	22.37	12.24	2.828	
1,900.00	1,898.24	1,901.24	1,899.48	6.48	6.49	-127.28	-2.46	42.61	35.33	22.38	12.95	2.729	
2,000.00	1,998.00	2,001.23	1,999.23	6.84	6.85	-126.50	-6.69	48.16	36.07	22.40	13.66	2.639	
2,100.00	2,097.75	2,101.23	2,098.98	7.20	7.22	-125.76	-10.92	53.71	36.81	22.42	14.38	2.559	
2,200.00	2,197.51	2,201.23	2,198.73	7.56	7.58	-125.05	-15.14	59.26	37.55	22.45	15.10	2.486	
2,300.00	2,297.27	2,301.22	2,298.49	7.92	7.94	-124.37	-19.37	64.81	38.30	22.48	15.82	2.420	
2,400.00	2,397.02	2,401.22	2,398.24	8.29	8.30	-123.71	-23.60	70.36	39.06	22.51	16.55	2.360	
2,500.00	2,496.78	2,501.22	2,497.99	8.65	8.67	-123.08	-27.82	75.91	39.82	22.54	17.27	2.305	
2,600.00	2,596.54	2,601.21	2,597.74	9.02	9.03	-122.47	-32.05	81.45	40.58	22.58	18.00	2.255	
2,700.00	2,696.29	2,701.21	2,697.50	9.38	9.40	-121.88	-36.28	87.00	41.35	22.63	18.73	2.208	
2,800.00	2,796.02	2,801.44	2,797.45	9.75	9.77	-121.26	-40.72	92.84	42.16	22.70	19.46	2.167	
2,900.00	2,895.56	2,901.88	2,897.43	10.12	10.14	-120.45	-46.59	100.53	43.21	23.02	20.19	2.140	
3,000.00	2,994.81	3,002.31	2,997.11	10.50	10.52	-119.47	-54.04	110.31	44.56	23.62	20.94	2.128 SF	
3,100.00	3,093.71	3,102.74	3,096.42	10.89	10.91	-118.37	-63.07	122.17	46.21	24.51	21.70	2.130	
3,200.00	3,192.25	3,202.92	3,195.13	11.29	11.31	-117.24	-73.44	135.78	48.15	25.67	22.48	2.142	
3,300.00	3,290.73	3,302.90	3,293.59	11.68	11.71	-116.25	-83.96	149.58	50.16	26.88	23.27	2.155	
3,400.00	3,389.21	3,402.88	3,392.04	12.09	12.11	-115.33	-94.48	163.39	52.18	28.10	24.07	2.168	
3,500.00	3,487.69	3,502.85	3,490.50	12.49	12.52	-114.48	-105.00	177.20	54.21	29.33	24.88	2.179	
3,600.00	3,586.17	3,602.83	3,588.96	12.90	12.92	-113.69	-115.52	191.00	56.25	30.57	25.69	2.190	
3,700.00	3,684.65	3,702.80	3,687.42	13.31	13.33	-112.95	-126.04	204.81	58.30	31.81	26.50	2.200	
3,800.00	3,783.13	3,802.78	3,785.88	13.72	13.74	-112.27	-136.55	218.61	60.37	33.05	27.32	2.210	
3,900.00	3,881.61	3,902.76	3,884.33	14.13	14.15	-111.63	-147.07	232.42	62.44	34.30	28.14	2.219	
4,000.00	3,980.09	4,002.73	3,982.79	14.54	14.57	-111.03	-157.59	246.22	64.51	35.55	28.96	2.228	
4,100.00	4,078.57	4,102.71	4,081.25	14.95	14.98	-110.47	-168.11	260.03	66.60	36.81	29.79	2.236	
4,200.00	4,177.05	4,202.69	4,179.71	15.37	15.40	-109.95	-178.63	273.84	68.69	38.07	30.62	2.243	
4,300.00	4,275.54	4,302.66	4,278.17	15.79	15.81	-109.45	-189.15	287.64	70.78	39.33	31.45	2.251	
4,400.00	4,374.02	4,402.64	4,376.62	16.20	16.23	-108.99	-199.67	301.45	72.88	40.60	32.28	2.258	
4,500.00	4,472.50	4,502.61	4,475.08	16.62	16.65	-108.55	-210.19	315.25	74.99	41.87	33.12	2.264	
4,600.00	4,570.98	4,602.59	4,573.54	17.04	17.07	-108.13	-220.71	329.06	77.10	43.14	33.96	2.270	
4,700.00	4,669.46	4,702.57	4,672.00	17.46	17.49	-107.74	-231.23	342.87	79.21	44.41	34.80	2.276	
4,800.00	4,767.94	4,802.54	4,770.46	17.88	17.91	-107.36	-241.75	356.67	81.33	45.69	35.64	2.282	
4,900.00	4,866.42	4,902.52	4,868.91	18.31	18.33	-107.01	-252.27	370.48	83.45	46.97	36.48	2.287	
5,000.00	4,964.90	5,002.50	4,967.37	18.73	18.76	-106.67	-262.78	384.28	85.57	48.24	37.33	2.293	
5,100.00	5,063.38	5,102.47	5,065.83	19.15	19.18	-106.35	-273.30	398.09	87.70	49.52	38.17	2.297	

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



# Phoenix Technology Services

## Anticollision Report



Company: Matador Resources  
Project: Eddy County, NM (NAD27 NME)  
Reference Site: Dr. Scrivner Federal 01-24S-28E RB  
Site Error: 0.00 usft  
Reference Well: 227H  
Well Error: 0.00 usft  
Reference Wellbore: OH  
Reference Design: Preliminary Plan 1

Local Co-ordinate Reference: Well 227H  
TVD Reference: RKB @ 3014.50usft  
MD Reference: RKB @ 3014.50usft  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Output errors are at: 2.00 sigma  
Database: Compass 5000 GCR  
Offset TVD Reference: Offset Datum

Offset Design Dr. Scrivner Federal 01-24S-28E RB - 207H - OH - Preliminary Plan 1											Offset Site Error: 0.00 usft		
Survey Program: 0-PHX+MWD+HDGM												Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,200.00	5,161.86	5,202.45	5,164.29	19.58	19.60	-106.04	-283.82	411.90	89.82	50.81	39.02	2.302	
5,300.00	5,260.34	5,302.42	5,262.75	20.00	20.03	-105.75	-294.34	425.70	91.95	52.09	39.87	2.307	
5,400.00	5,358.82	5,402.40	5,361.20	20.42	20.45	-105.47	-304.86	439.51	94.09	53.37	40.72	2.311	
5,500.00	5,457.30	5,502.38	5,459.66	20.85	20.88	-105.21	-315.38	453.31	96.22	54.66	41.57	2.315	
5,600.00	5,555.79	5,602.35	5,558.12	21.28	21.30	-104.95	-325.90	467.12	98.36	55.94	42.42	2.319	
5,700.00	5,654.27	5,702.28	5,656.53	21.70	21.73	-104.73	-336.40	480.90	100.50	57.23	43.27	2.323	
5,800.00	5,752.75	5,801.88	5,754.89	22.13	22.14	-105.43	-345.87	493.33	102.87	58.79	44.09	2.333	
5,900.00	5,851.23	5,901.33	5,853.48	22.55	22.54	-107.48	-353.77	503.70	105.70	60.85	44.85	2.356	
6,000.00	5,949.71	6,000.49	5,952.10	22.98	22.93	-110.74	-360.10	512.00	109.24	63.68	45.56	2.398	
6,100.00	6,048.19	6,099.25	6,050.53	23.41	23.30	-115.01	-364.86	518.25	113.89	67.70	46.19	2.466	
6,200.00	6,146.79	6,197.55	6,148.69	23.83	23.65	-119.79	-368.06	522.46	119.74	72.99	46.75	2.561	
6,300.00	6,245.79	6,295.57	6,246.67	24.24	23.99	-124.20	-369.73	524.65	126.10	78.81	47.29	2.666	
6,400.00	6,345.12	6,394.02	6,345.12	24.64	24.30	-128.17	-370.00	525.00	132.72	84.92	47.79	2.777	
6,500.00	6,444.71	6,493.62	6,444.71	25.01	24.61	-131.14	-370.00	525.00	138.43	90.11	48.32	2.865	
6,600.00	6,544.51	6,593.41	6,544.51	25.38	24.92	-133.09	-370.00	525.00	142.67	93.80	48.87	2.919	
6,700.00	6,644.44	6,693.34	6,644.44	25.72	25.23	-134.19	-370.00	525.00	145.23	95.78	49.45	2.937	
6,800.00	6,744.43	6,793.33	6,744.43	26.05	25.55	0.01	-370.00	525.00	146.00	96.19	49.81	2.931	
6,900.00	6,844.43	6,893.33	6,844.43	26.35	25.86	0.01	-370.00	525.00	146.00	95.55	50.45	2.894	
7,000.00	6,944.43	6,993.33	6,944.43	26.66	26.18	0.01	-370.00	525.00	146.00	94.91	51.09	2.858	
7,100.00	7,044.43	7,093.33	7,044.43	26.97	26.50	0.01	-370.00	525.00	146.00	94.27	51.73	2.823	
7,200.00	7,144.43	7,193.33	7,144.43	27.28	26.82	0.01	-370.00	525.00	146.00	93.63	52.37	2.788	
7,300.00	7,244.43	7,293.33	7,244.43	27.59	27.14	0.01	-370.00	525.00	146.00	92.98	53.02	2.754	
7,400.00	7,344.43	7,393.33	7,344.43	27.90	27.46	0.01	-370.00	525.00	146.00	92.34	53.66	2.721	
7,500.00	7,444.43	7,493.33	7,444.43	28.21	27.78	0.01	-370.00	525.00	146.00	91.69	54.31	2.688	
7,600.00	7,544.43	7,593.33	7,544.43	28.53	28.10	0.01	-370.00	525.00	146.00	91.04	54.96	2.656	
7,700.00	7,644.43	7,693.33	7,644.43	28.84	28.43	0.01	-370.00	525.00	146.00	90.39	55.61	2.625	
7,800.00	7,744.43	7,793.33	7,744.43	29.16	28.75	0.01	-370.00	525.00	146.00	89.73	56.27	2.595	
7,900.00	7,844.43	7,893.33	7,844.43	29.48	29.08	0.01	-370.00	525.00	146.00	89.08	56.92	2.565	
8,000.00	7,944.43	7,993.33	7,944.43	29.80	29.40	0.01	-370.00	525.00	146.00	88.42	57.58	2.536	
8,100.00	8,044.43	8,093.33	8,044.43	30.12	29.73	0.01	-370.00	525.00	146.00	87.76	58.24	2.507	
8,200.00	8,144.43	8,193.33	8,144.43	30.44	30.06	0.01	-370.00	525.00	146.00	87.10	58.90	2.479	
8,300.00	8,244.43	8,293.33	8,244.43	30.76	30.38	0.01	-370.00	525.00	146.00	86.44	59.56	2.451	
8,400.00	8,344.43	8,393.33	8,344.43	31.08	30.71	0.01	-370.00	525.00	146.00	85.78	60.22	2.424	
8,500.00	8,444.43	8,493.33	8,444.43	31.40	31.04	0.01	-370.00	525.00	146.00	85.12	60.88	2.398	
8,600.00	8,544.43	8,593.33	8,544.43	31.72	31.37	0.01	-370.00	525.00	146.00	84.45	61.55	2.372	
8,700.00	8,644.43	8,693.33	8,644.43	32.05	31.70	0.01	-370.00	525.00	146.00	83.79	62.21	2.347	
8,800.00	8,744.43	8,793.33	8,744.43	32.37	32.03	0.01	-370.00	525.00	146.00	83.12	62.88	2.322	
8,900.00	8,844.43	8,893.33	8,844.43	32.70	32.37	0.01	-370.00	525.00	146.00	82.45	63.55	2.297	
9,000.00	8,944.43	8,993.33	8,944.43	33.02	32.70	0.01	-370.00	525.00	146.00	81.78	64.22	2.274	
9,100.00	9,044.43	9,093.33	9,044.43	33.35	33.03	0.01	-370.00	525.00	146.00	81.11	64.89	2.250	
9,200.00	9,144.43	9,193.33	9,144.43	33.68	33.37	0.01	-370.00	525.00	146.00	80.44	65.56	2.227	
9,300.00	9,244.43	9,295.55	9,246.57	34.01	33.70	-0.94	-370.43	522.62	145.61	79.34	66.27	2.197	
9,400.00	9,344.43	9,396.59	9,345.86	34.34	33.99	-8.06	-373.60	504.83	143.82	76.58	67.24	2.139	
9,419.18	9,363.61	9,415.09	9,363.61	34.40	34.04	-10.13	-374.52	499.72	143.72	76.28	67.45	2.131	
9,500.00	9,444.43	9,488.79	9,432.41	34.66	34.23	-20.49	-379.14	473.85	146.60	78.27	68.33	2.145	
9,600.00	9,544.43	9,569.22	9,502.96	34.99	34.41	-34.39	-385.91	435.97	163.00	93.75	69.25	2.354	
9,700.00	9,644.43	9,637.46	9,558.10	35.33	34.56	-46.25	-392.96	396.47	197.76	127.90	69.87	2.831	

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



# Phoenix Technology Services

## Anticollision Report

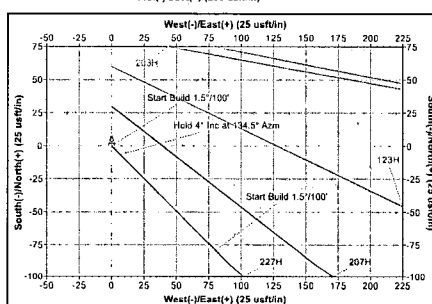
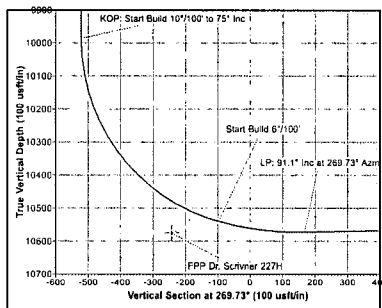
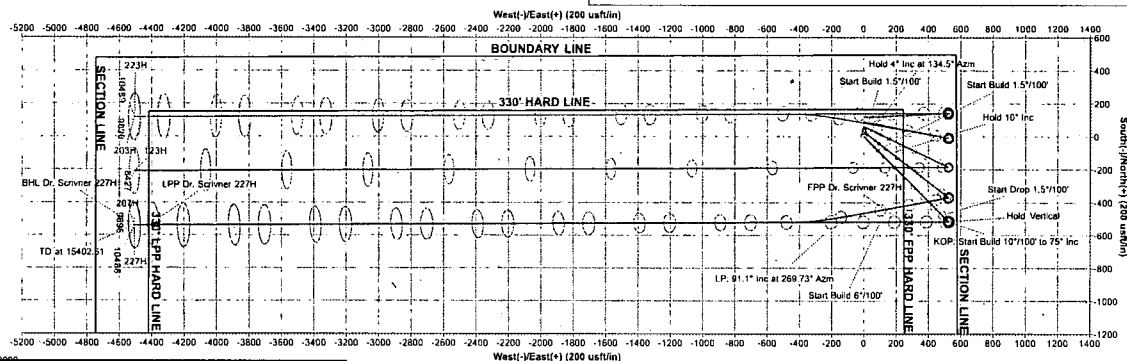
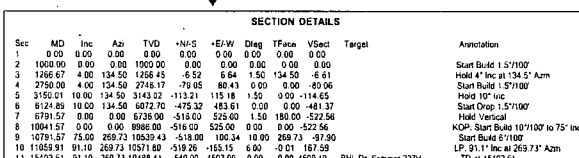
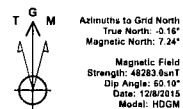


Company: Matador Resources  
 Project: Eddy County, NM (NAD27 NME)  
 Reference Site: Dr. Scrivner Federal 01-24S-28E RB  
 Site Error: 0.00 usft  
 Reference Well: 227H  
 Well Error: 0.00 usft  
 Reference Wellbore: OH  
 Reference Design: Preliminary Plan 1

Local Co-ordinate Reference: Well 227H  
 TVD Reference: RKB @ 3014.50usft  
 MD Reference: RKB @ 3014.50usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Output errors are at: 2.00 sigma  
 Database: Compass 5000 GCR  
 Offset TVD Reference: Offset Datum

Offset Design Dr. Scrivner Federal 01-24S-28E RB - 223H - OH - Preliminary Plan 1													Offset Site Error: 0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance				Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	120.00	0.00	120.00				
100.00	100.00	99.00	99.00	0.13	0.13	0.00	120.00	0.00	120.00	119.74	0.26	464.050	
200.00	200.00	199.00	199.00	0.49	0.48	0.00	120.00	0.00	120.00	119.03	0.97	123.298	
300.00	300.00	299.00	299.00	0.85	0.84	0.00	120.00	0.00	120.00	118.31	1.69	70.998	
400.00	400.00	399.00	399.00	1.21	1.20	0.00	120.00	0.00	120.00	117.59	2.41	49.852	
500.00	500.00	499.00	499.00	1.56	1.56	0.00	120.00	0.00	120.00	116.88	3.12	38.411	
600.00	600.00	599.00	599.00	1.92	1.92	0.00	120.00	0.00	120.00	116.16	3.84	31.242	
700.00	700.00	699.00	699.00	2.28	2.28	0.00	120.00	0.00	120.00	115.44	4.56	26.328	
800.00	800.00	799.00	799.00	2.64	2.64	0.00	120.00	0.00	120.00	114.73	5.27	22.749	
900.00	900.00	899.00	899.00	3.00	2.99	0.00	120.00	0.00	120.00	114.01	5.99	20.027	
1,000.00	1,000.00	999.00	999.00	3.36	3.35	0.00	120.00	0.00	120.00	113.29	6.71	17.887 CC, ES	
1,100.00	1,099.99	1,098.85	1,098.84	3.70	3.70	-134.33	120.06	1.28	120.98	113.57	7.40	16.344	
1,200.00	1,199.91	1,198.63	1,198.54	4.03	4.05	-133.80	120.24	5.16	123.92	115.84	8.08	15.341	
1,300.00	1,299.70	1,298.36	1,298.07	4.37	4.40	-132.99	120.53	11.50	128.72	119.96	8.76	14.693	
1,400.00	1,399.46	1,398.20	1,397.67	4.72	4.75	-132.20	120.85	18.46	133.99	124.54	9.45	14.172	
1,500.00	1,499.22	1,498.05	1,497.27	5.06	5.10	-131.46	121.17	25.42	139.29	129.13	10.15	13.717	
1,600.00	1,598.97	1,597.89	1,596.87	5.41	5.46	-130.78	121.49	32.38	144.60	133.74	10.86	13.316	
1,700.00	1,698.73	1,697.74	1,696.47	5.77	5.82	-130.15	121.81	39.33	149.94	138.37	11.57	12.961	
1,800.00	1,798.48	1,797.58	1,796.07	6.12	6.18	-129.56	122.13	46.29	155.29	143.01	12.28	12.645	
1,900.00	1,898.24	1,897.43	1,895.67	6.48	6.54	-129.01	122.45	53.25	160.66	147.66	13.00	12.362	
2,000.00	1,998.00	1,997.27	1,995.27	6.84	6.90	-128.50	122.77	60.21	166.04	152.32	13.71	12.107	
2,100.00	2,097.75	2,097.11	2,094.87	7.20	7.26	-128.02	123.09	67.16	171.43	157.00	14.43	11.877	
2,200.00	2,197.51	2,196.96	2,194.48	7.56	7.63	-127.56	123.40	74.12	176.83	161.68	15.15	11.668	
2,300.00	2,297.27	2,296.80	2,294.08	7.92	7.99	-127.14	123.72	81.08	182.25	166.37	15.88	11.478	
2,400.00	2,397.02	2,396.65	2,393.68	8.29	8.35	-126.74	124.04	88.04	187.67	171.07	16.60	11.304	
2,500.00	2,496.78	2,496.49	2,493.28	8.65	8.72	-126.36	124.36	94.99	193.11	175.78	17.33	11.144	
2,600.00	2,596.54	2,596.34	2,592.88	9.02	9.08	-126.00	124.68	101.95	198.55	180.49	18.05	10.997	
2,700.00	2,696.29	2,696.18	2,692.48	9.38	9.45	-125.66	125.00	108.91	203.99	185.21	18.78	10.861	
2,800.00	2,796.02	2,795.51	2,791.55	9.75	9.81	-125.31	125.33	116.10	209.69	190.19	19.50	10.751	
2,900.00	2,895.56	2,894.08	2,889.68	10.12	10.18	-124.84	125.76	125.40	217.17	196.94	20.23	10.737 SF	
3,000.00	2,994.81	2,992.40	2,987.28	10.50	10.56	-124.29	126.30	137.20	226.68	205.73	20.95	10.818	
3,100.00	3,093.71	3,090.39	3,084.22	10.89	10.93	-123.67	126.96	151.45	238.23	216.54	21.69	10.984	

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



Map System: US State Plane (NAD27) (Cont. solution)  
 Datum: NAD 1927 (NAD27) (Cont. solution)  
 Ellipsoid: Clarke 1866  
 Zone Name: New Mexico East 3001  
 Local Origin: Wall 227th, Grid North  
 Latitude: 32° 14' 43.8154 N  
 Longitude: 104° 2' 1.26860 W  
 Grid East: 592861.0  
 Grid North: 453162.0  
 Scale Factor: 1.000  
 Paramagnetic Mode: HDGM  
 Sample Date: 08 Dec-15  
 Magnetic Declination: 7.40°  
 Dip Angle Horizontal: 66.16°  
 Dip Angle Vertical: 0°  
 Electric Field Strength: 46263  
 Magnetic Declination to a Grid Direction, Add 7.24°  
 Magnetic Declination to a True Direction, Add 7.40° East  
 Dip Angle Horizontal, Subtract 0.16°  
 Dip Angle Vertical, Add 0.00°

**FORMATION TOP DETAILS**

### CASING DETAILS

TVD	MD	Name	Size
600.00	600.00	13 3/8"	13-3/8
2646.41	2650.00	9 5/8"	9-5/8





## **Matador Resources**

**Eddy County, NM (NAD27 NME)  
Dr. Scrivner Federal 01-24S-28E RB  
227H**

**OH**

**Plan: Preliminary Plan 1**

## **Standard Planning Report**

**10 December, 2015**





# Phoenix Technology Services

## Planning Report



Database: Compass 5000 GCR  
 Company: Matador Resources  
 Project: Eddy County, NM (NAD27 NME)  
 Site: Dr. Scrivner Federal 01-24S-28E RB  
 Well: 227H  
 Wellbore: OH  
 Design: Preliminary Plan 1

Local Co-ordinate Reference: Well 227H  
 TVD Reference: RKB @ 3014.50usft  
 MD Reference: RKB @ 3014.50usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

Project	Eddy County, NM (NAD27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Dr. Scrivner Federal 01-24S-28E RB				
Site Position:		Northing:	451,653.00 usft	Latitude:	32° 14' 28.88339 N
From:	Map	Easting:	592,560.00 usft	Longitude:	104° 2' 2.26075 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.16 °

Well	227H					
Well Position	+N/-S	1,509.00 usft	Northing:	453,162.00 usft	Latitude:	32° 14' 43.81454 N
	+E/-W	81.00 usft	Easting:	592,641.00 usft	Longitude:	104° 2' 1.26860 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	2,987.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/8/2015	7.40	60.10	48,283

Design	Preliminary Plan 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	269.73

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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,266.67	4.00	134.51	1,266.45	-6.52	6.64	1.50	1.50	0.00	134.51	
2,750.00	4.00	134.51	2,746.17	-79.05	80.43	0.00	0.00	0.00	0.00	
3,150.01	10.00	134.50	3,143.02	-113.21	115.18	1.50	1.50	0.00	0.00	
6,124.89	10.00	134.50	6,072.70	-475.32	483.61	0.00	0.00	0.00	0.00	
6,791.57	0.00	0.00	6,736.00	-516.00	525.00	1.50	-1.50	0.00	180.00	
10,041.57	0.00	0.00	9,986.00	-516.00	525.00	0.00	0.00	0.00	0.00	
10,791.57	75.00	269.73	10,539.43	-518.00	100.34	10.00	10.00	0.00	269.73	
11,059.91	91.10	269.73	10,571.80	-519.26	-165.15	6.00	6.00	0.00	-0.01	
15,402.61	91.10	269.73	10,488.41	-540.00	-4,507.00	0.00	0.00	0.00	0.00	BHL Dr. Scrivner 2271



Phoenix Technology Services  
Planning Report



Database: Compass 5000 GCR  
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Project: Eddy County, NM (NAD27 NME)  
Site: Dr. Scrivner Federal 01-24S-28E RB  
Well: 227H  
Wellbore: OH  
Design: Preliminary Plan 1

Local Co-ordinate Reference: Well 227H  
TVD Reference: RKB @ 3014.50usft  
MD Reference: RKB @ 3014.50usft  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature

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
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8"									
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
Start Build 1.5°/100'									
1,100.00	1.50	134.51	1,099.99	-0.92	0.93	-0.93	1.50	1.50	0.00
1,200.00	3.00	134.51	1,199.91	-3.67	3.73	-3.72	1.50	1.50	0.00
1,266.67	4.00	134.51	1,266.45	-6.52	6.64	-6.61	1.50	1.50	0.00
Hold 4° Inc at 134.5° Azm									
1,300.00	4.00	134.51	1,299.70	-8.15	8.29	-8.26	0.00	0.00	0.00
1,400.00	4.00	134.51	1,399.46	-13.04	13.27	-13.21	0.00	0.00	0.00
1,500.00	4.00	134.51	1,499.22	-17.93	18.24	-18.16	0.00	0.00	0.00
1,600.00	4.00	134.51	1,598.97	-22.82	23.22	-23.11	0.00	0.00	0.00
1,700.00	4.00	134.51	1,698.73	-27.71	28.19	-28.06	0.00	0.00	0.00
1,800.00	4.00	134.51	1,798.48	-32.60	33.17	-33.02	0.00	0.00	0.00
1,900.00	4.00	134.51	1,898.24	-37.49	38.14	-37.97	0.00	0.00	0.00
2,000.00	4.00	134.51	1,998.00	-42.38	43.12	-42.92	0.00	0.00	0.00
2,100.00	4.00	134.51	2,097.75	-47.27	48.09	-47.87	0.00	0.00	0.00
2,200.00	4.00	134.51	2,197.51	-52.16	53.07	-52.82	0.00	0.00	0.00
2,300.00	4.00	134.51	2,297.27	-57.05	58.04	-57.77	0.00	0.00	0.00
2,400.00	4.00	134.51	2,397.02	-61.94	63.02	-62.73	0.00	0.00	0.00
2,500.00	4.00	134.51	2,496.78	-66.83	67.99	-67.68	0.00	0.00	0.00
2,600.00	4.00	134.51	2,596.54	-71.72	72.97	-72.63	0.00	0.00	0.00
2,650.00	4.00	134.51	2,646.41	-74.16	75.46	-75.11	0.00	0.00	0.00
9 5/8"									
2,700.00	4.00	134.51	2,696.29	-76.61	77.94	-77.58	0.00	0.00	0.00
2,750.00	4.00	134.51	2,746.17	-79.05	80.43	-80.06	0.00	0.00	0.00
Start Build 1.5°/100'									
2,800.00	4.75	134.50	2,796.02	-81.73	83.15	-82.77	1.50	1.50	0.00
2,900.00	6.25	134.50	2,895.56	-88.45	89.99	-89.57	1.50	1.50	0.00
3,000.00	7.75	134.50	2,994.81	-96.99	98.68	-98.22	1.50	1.50	0.00
3,100.00	9.25	134.50	3,093.71	-107.35	109.22	-108.71	1.50	1.50	0.00
3,150.01	10.00	134.50	3,143.02	-113.21	115.18	-114.65	1.50	1.50	0.00
Hold 10° Inc									
3,200.00	10.00	134.50	3,192.25	-119.29	121.37	-120.81	0.00	0.00	0.00
3,300.00	10.00	134.50	3,290.73	-131.47	133.76	-133.14	0.00	0.00	0.00
3,400.00	10.00	134.50	3,389.21	-143.64	146.14	-145.46	0.00	0.00	0.00
3,500.00	10.00	134.50	3,487.69	-155.81	158.53	-157.79	0.00	0.00	0.00
3,600.00	10.00	134.50	3,586.17	-167.98	170.91	-170.12	0.00	0.00	0.00
3,700.00	10.00	134.50	3,684.65	-180.16	183.30	-182.45	0.00	0.00	0.00
3,800.00	10.00	134.50	3,783.13	-192.33	195.68	-194.77	0.00	0.00	0.00
3,900.00	10.00	134.50	3,881.61	-204.50	208.07	-207.10	0.00	0.00	0.00
4,000.00	10.00	134.50	3,980.09	-216.67	220.45	-219.43	0.00	0.00	0.00
4,100.00	10.00	134.50	4,078.57	-228.85	232.84	-231.76	0.00	0.00	0.00
4,200.00	10.00	134.50	4,177.05	-241.02	245.22	-244.08	0.00	0.00	0.00



# Phoenix Technology Services

## Planning Report



Database: Compass 5000 GCR  
Company: Matador Resources  
Project: Eddy County, NM (NAD27 NME)  
Site: Dr. Scrivner Federal 01-24S-28E RB  
Well: 227H  
Wellbore: OH  
Design: Preliminary Plan 1

Local Co-ordinate Reference: Well 227H  
TVD Reference: RKB @ 3014.50usft  
MD Reference: RKB @ 3014.50usft  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature

### 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)
4,300.00	10.00	134.50	4,275.54	-253.19	257.61	-256.41	0.00	0.00	0.00
4,400.00	10.00	134.50	4,374.02	-265.36	269.99	-268.74	0.00	0.00	0.00
4,500.00	10.00	134.50	4,472.50	-277.53	282.37	-281.06	0.00	0.00	0.00
4,600.00	10.00	134.50	4,570.98	-289.71	294.76	-293.39	0.00	0.00	0.00
4,700.00	10.00	134.50	4,669.46	-301.88	307.14	-305.72	0.00	0.00	0.00
4,800.00	10.00	134.50	4,767.94	-314.05	319.53	-318.05	0.00	0.00	0.00
4,900.00	10.00	134.50	4,866.42	-326.22	331.91	-330.37	0.00	0.00	0.00
5,000.00	10.00	134.50	4,964.90	-338.40	344.30	-342.70	0.00	0.00	0.00
5,100.00	10.00	134.50	5,063.38	-350.57	356.68	-355.03	0.00	0.00	0.00
5,200.00	10.00	134.50	5,161.86	-362.74	369.07	-367.35	0.00	0.00	0.00
5,300.00	10.00	134.50	5,260.34	-374.91	381.45	-379.68	0.00	0.00	0.00
5,400.00	10.00	134.50	5,358.82	-387.09	393.84	-392.01	0.00	0.00	0.00
5,500.00	10.00	134.50	5,457.30	-399.26	406.22	-404.34	0.00	0.00	0.00
5,600.00	10.00	134.50	5,555.79	-411.43	418.61	-416.66	0.00	0.00	0.00
5,700.00	10.00	134.50	5,654.27	-423.60	430.99	-428.99	0.00	0.00	0.00
5,800.00	10.00	134.50	5,752.75	-435.77	443.38	-441.32	0.00	0.00	0.00
5,900.00	10.00	134.50	5,851.23	-447.95	455.76	-453.64	0.00	0.00	0.00
6,000.00	10.00	134.50	5,949.71	-460.12	468.14	-465.97	0.00	0.00	0.00
6,100.00	10.00	134.50	6,048.19	-472.29	480.53	-478.30	0.00	0.00	0.00
6,124.89	10.00	134.50	6,072.70	-475.32	483.61	-481.37	0.00	0.00	0.00
<b>Start Drop 1.5°/100'</b>									
6,200.00	8.87	134.50	6,146.79	-483.95	492.39	-490.11	1.50	-1.50	0.00
6,300.00	7.37	134.50	6,245.79	-493.86	502.47	-500.14	1.50	-1.50	0.00
6,400.00	5.87	134.50	6,345.12	-501.94	510.70	-508.33	1.50	-1.50	0.00
6,500.00	4.37	134.50	6,444.71	-508.20	517.07	-514.67	1.50	-1.50	0.00
6,600.00	2.87	134.50	6,544.51	-512.63	521.57	-519.15	1.50	-1.50	0.00
6,700.00	1.37	134.50	6,644.44	-515.23	524.22	-521.78	1.50	-1.50	0.00
6,791.57	0.00	0.00	6,736.00	-516.00	525.00	-522.56	1.50	-1.50	0.00
<b>Hold Vertical</b>									
6,800.00	0.00	0.00	6,744.43	-516.00	525.00	-522.56	0.00	0.00	0.00
6,900.00	0.00	0.00	6,844.43	-516.00	525.00	-522.56	0.00	0.00	0.00
7,000.00	0.00	0.00	6,944.43	-516.00	525.00	-522.56	0.00	0.00	0.00
7,100.00	0.00	0.00	7,044.43	-516.00	525.00	-522.56	0.00	0.00	0.00
7,200.00	0.00	0.00	7,144.43	-516.00	525.00	-522.56	0.00	0.00	0.00
7,300.00	0.00	0.00	7,244.43	-516.00	525.00	-522.56	0.00	0.00	0.00
7,400.00	0.00	0.00	7,344.43	-516.00	525.00	-522.56	0.00	0.00	0.00
7,500.00	0.00	0.00	7,444.43	-516.00	525.00	-522.56	0.00	0.00	0.00
7,600.00	0.00	0.00	7,544.43	-516.00	525.00	-522.56	0.00	0.00	0.00
7,700.00	0.00	0.00	7,644.43	-516.00	525.00	-522.56	0.00	0.00	0.00
7,800.00	0.00	0.00	7,744.43	-516.00	525.00	-522.56	0.00	0.00	0.00
7,900.00	0.00	0.00	7,844.43	-516.00	525.00	-522.56	0.00	0.00	0.00
8,000.00	0.00	0.00	7,944.43	-516.00	525.00	-522.56	0.00	0.00	0.00
8,100.00	0.00	0.00	8,044.43	-516.00	525.00	-522.56	0.00	0.00	0.00
8,200.00	0.00	0.00	8,144.43	-516.00	525.00	-522.56	0.00	0.00	0.00
8,300.00	0.00	0.00	8,244.43	-516.00	525.00	-522.56	0.00	0.00	0.00
8,400.00	0.00	0.00	8,344.43	-516.00	525.00	-522.56	0.00	0.00	0.00
8,500.00	0.00	0.00	8,444.43	-516.00	525.00	-522.56	0.00	0.00	0.00
8,600.00	0.00	0.00	8,544.43	-516.00	525.00	-522.56	0.00	0.00	0.00
8,700.00	0.00	0.00	8,644.43	-516.00	525.00	-522.56	0.00	0.00	0.00
8,800.00	0.00	0.00	8,744.43	-516.00	525.00	-522.56	0.00	0.00	0.00
8,900.00	0.00	0.00	8,844.43	-516.00	525.00	-522.56	0.00	0.00	0.00
9,000.00	0.00	0.00	8,944.43	-516.00	525.00	-522.56	0.00	0.00	0.00
9,100.00	0.00	0.00	9,044.43	-516.00	525.00	-522.56	0.00	0.00	0.00
9,200.00	0.00	0.00	9,144.43	-516.00	525.00	-522.56	0.00	0.00	0.00



# Phoenix Technology Services

## Planning Report



Database: Compass 5000 GCR  
Company: Matador Resources  
Project: Eddy County, NM (NAD27 NME)  
Site: Dr. Scrivner Federal 01-24S-28E RB  
Well: 227H  
Wellbore: OH  
Design: Preliminary Plan 1

Local Co-ordinate Reference: Well 227H  
TVD Reference: RKB @ 3014.50usft  
MD Reference: RKB @ 3014.50usft  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature

### 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)
9,300.00	0.00	0.00	9,244.43	-516.00	525.00	-522.56	0.00	0.00	0.00
9,400.00	0.00	0.00	9,344.43	-516.00	525.00	-522.56	0.00	0.00	0.00
9,500.00	0.00	0.00	9,444.43	-516.00	525.00	-522.56	0.00	0.00	0.00
9,600.00	0.00	0.00	9,544.43	-516.00	525.00	-522.56	0.00	0.00	0.00
9,700.00	0.00	0.00	9,644.43	-516.00	525.00	-522.56	0.00	0.00	0.00
9,800.00	0.00	0.00	9,744.43	-516.00	525.00	-522.56	0.00	0.00	0.00
9,900.00	0.00	0.00	9,844.43	-516.00	525.00	-522.56	0.00	0.00	0.00
10,000.00	0.00	0.00	9,944.43	-516.00	525.00	-522.56	0.00	0.00	0.00
10,041.57	0.00	0.00	9,986.00	-516.00	525.00	-522.56	0.00	0.00	0.00
<b>KOP: Start Build 10°/100' to 75° Inc</b>									
10,050.00	0.84	269.73	9,994.43	-516.00	524.94	-522.50	10.00	10.00	0.00
10,100.00	5.84	269.73	10,044.33	-516.01	522.02	-519.59	10.00	10.00	0.00
10,150.00	10.84	269.73	10,093.79	-516.05	514.77	-512.33	10.00	10.00	0.00
10,200.00	15.84	269.73	10,142.42	-516.10	503.24	-500.80	10.00	10.00	0.00
10,250.00	20.84	269.73	10,189.86	-516.18	487.51	-485.07	10.00	10.00	0.00
10,300.00	25.84	269.73	10,235.76	-516.27	467.70	-465.26	10.00	10.00	0.00
10,350.00	30.84	269.73	10,279.75	-516.38	443.97	-441.53	10.00	10.00	0.00
10,400.00	35.84	269.73	10,321.51	-516.51	416.50	-414.06	10.00	10.00	0.00
10,450.00	40.84	269.73	10,360.71	-516.66	385.49	-383.05	10.00	10.00	0.00
10,500.00	45.84	269.73	10,397.06	-516.82	351.18	-348.74	10.00	10.00	0.00
10,550.00	50.84	269.73	10,430.28	-517.00	313.84	-311.40	10.00	10.00	0.00
10,600.00	55.84	269.73	10,460.12	-517.18	273.74	-271.30	10.00	10.00	0.00
10,650.00	60.84	269.73	10,486.36	-517.38	231.19	-228.75	10.00	10.00	0.00
10,700.00	65.84	269.73	10,508.78	-517.60	186.52	-184.08	10.00	10.00	0.00
10,750.00	70.84	269.73	10,527.23	-517.81	140.07	-137.62	10.00	10.00	0.00
10,791.57	75.00	269.73	10,539.43	-518.00	100.34	-97.90	10.00	10.00	0.00
<b>Start Build 6°/100'</b>									
10,800.00	75.51	269.73	10,541.58	-518.04	92.19	-89.74	6.00	6.00	0.00
10,850.00	78.51	269.73	10,552.82	-518.27	43.47	-41.03	6.00	6.00	0.00
10,900.00	81.51	269.73	10,561.50	-518.50	-5.76	8.21	6.00	6.00	0.00
10,950.00	84.51	269.73	10,567.59	-518.74	-55.38	57.83	6.00	6.00	0.00
11,000.00	87.51	269.73	10,571.07	-518.98	-105.26	107.70	6.00	6.00	0.00
11,050.00	90.51	269.73	10,571.94	-519.21	-155.24	157.69	6.00	6.00	0.00
11,059.91	91.10	269.73	10,571.80	-519.26	-165.15	167.59	6.00	6.00	0.00
<b>LP: 91.1° Inc at 269.73° Azm</b>									
11,100.00	91.10	269.73	10,571.03	-519.45	-205.23	207.68	0.00	0.00	0.00
11,200.00	91.10	269.73	10,569.11	-519.93	-305.21	307.66	0.00	0.00	0.00
11,300.00	91.10	269.73	10,567.19	-520.41	-405.19	407.64	0.00	0.00	0.00
11,400.00	91.10	269.73	10,565.27	-520.89	-505.17	507.62	0.00	0.00	0.00
11,500.00	91.10	269.73	10,563.35	-521.36	-605.16	607.61	0.00	0.00	0.00
11,600.00	91.10	269.73	10,561.43	-521.84	-705.14	707.59	0.00	0.00	0.00
11,700.00	91.10	269.73	10,559.51	-522.32	-805.12	807.57	0.00	0.00	0.00
11,800.00	91.10	269.73	10,557.59	-522.80	-905.10	907.55	0.00	0.00	0.00
11,900.00	91.10	269.73	10,555.67	-523.27	-1,005.08	1,007.53	0.00	0.00	0.00
12,000.00	91.10	269.73	10,553.75	-523.75	-1,105.06	1,107.51	0.00	0.00	0.00
12,100.00	91.10	269.73	10,551.83	-524.23	-1,205.04	1,207.49	0.00	0.00	0.00
12,200.00	91.10	269.73	10,549.91	-524.71	-1,305.02	1,307.48	0.00	0.00	0.00
12,300.00	91.10	269.73	10,547.99	-525.18	-1,405.00	1,407.46	0.00	0.00	0.00
12,400.00	91.10	269.73	10,546.07	-525.66	-1,504.98	1,507.44	0.00	0.00	0.00
12,500.00	91.10	269.73	10,544.15	-526.14	-1,604.96	1,607.42	0.00	0.00	0.00
12,600.00	91.10	269.73	10,542.23	-526.62	-1,704.94	1,707.40	0.00	0.00	0.00
12,700.00	91.10	269.73	10,540.31	-527.09	-1,804.92	1,807.38	0.00	0.00	0.00
12,800.00	91.10	269.73	10,538.39	-527.57	-1,904.90	1,907.37	0.00	0.00	0.00



# Phoenix Technology Services

## Planning Report



Database: Compass 5000 GCR  
Company: Matador Resources  
Project: Eddy County, NM (NAD27 NME)  
Site: Dr. Scrivner Federal 01-24S-28E RB  
Well: 227H  
Wellbore: OH  
Design: Preliminary Plan 1

Local Co-ordinate Reference: Well 227H  
TVD Reference: RKB @ 3014.50usft  
MD Reference: RKB @ 3014.50usft  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature

### 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)
12,900.00	91.10	269.73	10,536.47	-528.05	-2,004.88	2,007.35	0.00	0.00	0.00
13,000.00	91.10	269.73	10,534.55	-528.53	-2,104.86	2,107.33	0.00	0.00	0.00
13,100.00	91.10	269.73	10,532.63	-529.00	-2,204.84	2,207.31	0.00	0.00	0.00
13,200.00	91.10	269.73	10,530.71	-529.48	-2,304.82	2,307.29	0.00	0.00	0.00
13,300.00	91.10	269.73	10,528.79	-529.96	-2,404.80	2,407.27	0.00	0.00	0.00
13,400.00	91.10	269.73	10,526.87	-530.44	-2,504.78	2,507.26	0.00	0.00	0.00
13,500.00	91.10	269.73	10,524.95	-530.91	-2,604.76	2,607.24	0.00	0.00	0.00
13,600.00	91.10	269.73	10,523.03	-531.39	-2,704.74	2,707.22	0.00	0.00	0.00
13,700.00	91.10	269.73	10,521.10	-531.87	-2,804.72	2,807.20	0.00	0.00	0.00
13,800.00	91.10	269.73	10,519.18	-532.35	-2,904.71	2,907.18	0.00	0.00	0.00
13,900.00	91.10	269.73	10,517.26	-532.82	-3,004.69	3,007.16	0.00	0.00	0.00
14,000.00	91.10	269.73	10,515.34	-533.30	-3,104.67	3,107.14	0.00	0.00	0.00
14,100.00	91.10	269.73	10,513.42	-533.78	-3,204.65	3,207.13	0.00	0.00	0.00
14,200.00	91.10	269.73	10,511.50	-534.26	-3,304.63	3,307.11	0.00	0.00	0.00
14,300.00	91.10	269.73	10,509.58	-534.73	-3,404.61	3,407.09	0.00	0.00	0.00
14,400.00	91.10	269.73	10,507.66	-535.21	-3,504.59	3,507.07	0.00	0.00	0.00
14,500.00	91.10	269.73	10,505.74	-535.69	-3,604.57	3,607.05	0.00	0.00	0.00
14,600.00	91.10	269.73	10,503.82	-536.17	-3,704.55	3,707.03	0.00	0.00	0.00
14,700.00	91.10	269.73	10,501.90	-536.64	-3,804.53	3,807.02	0.00	0.00	0.00
14,800.00	91.10	269.73	10,499.98	-537.12	-3,904.51	3,907.00	0.00	0.00	0.00
14,900.00	91.10	269.73	10,498.06	-537.60	-4,004.49	4,006.98	0.00	0.00	0.00
15,000.00	91.10	269.73	10,496.14	-538.08	-4,104.47	4,106.96	0.00	0.00	0.00
15,100.00	91.10	269.73	10,494.22	-538.55	-4,204.45	4,206.94	0.00	0.00	0.00
15,200.00	91.10	269.73	10,492.30	-539.03	-4,304.43	4,306.92	0.00	0.00	0.00
15,300.00	91.10	269.73	10,490.38	-539.51	-4,404.41	4,406.91	0.00	0.00	0.00
15,402.61	91.10	269.73	10,488.41	-540.00	-4,507.00	4,509.49	0.00	0.00	0.00

TD at 15402.61

### Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL Dr. Scrivner 227H	0.00	0.00	10,488.41	-540.00	-4,507.00	452,622.00	588,134.00	32° 14' 38.59201 N	104° 2' 53.76518 W
- plan hits target center									
- Point									
LPP Dr. Scrivner 227H	0.00	0.00	10,488.41	-540.00	-4,417.00	452,622.00	588,224.00	32° 14' 38.58965 N	104° 2' 52.71723 W
- plan misses target center by 12.75usft at 15300.00usft MD (10490.38 TVD, -539.51 N, -4404.41 E)									
- Point									
FPP Dr. Scrivner 227H	0.00	0.00	10,575.00	-518.00	245.00	452,644.00	592,886.00	32° 14' 38.68153 N	104° 1' 58.43268 W
- plan misses target center by 84.88usft at 10677.44usft MD (10499.15 TVD, -517.50 N, 206.92 E)									
- Point									

### Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
600.00	600.00	13 3/8"	13-3/8	17-1/2
2,650.00	2,646.41	9 5/8"	9-5/8	12-1/4



## Phoenix Technology Services

### Planning Report



Database: Compass 5000 GCR  
Company: Matador Resources  
Project: Eddy County, NM (NAD27 NME)  
Site: Dr. Scrivner Federal 01-24S-28E RB  
Well: 227H  
Wellbore: OH  
Design: Preliminary Plan 1

Local Co-ordinate Reference: Well 227H  
TVD Reference: RKB @ 3014.50usft  
MD Reference: RKB @ 3014.50usft  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature

#### Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,000.00	1,000.00	0.00	0.00	Start Build 1.5°/100'
1,266.67	1,266.45	-6.52	6.64	Hold 4° Inc at 134.5° Azm
2,750.00	2,746.17	-79.05	80.43	Start Build 1.5°/100'
3,150.01	3,143.02	-113.21	115.18	Hold 10° Inc
6,124.89	6,072.70	-475.32	483.61	Start Drop 1.5°/100'
6,791.57	6,736.00	-516.00	525.00	Hold Vertical
10,041.57	9,986.00	-516.00	525.00	KOP: Start Build 10°/100' to 75° Inc
10,791.57	10,539.43	-518.00	100.34	Start Build 6°/100'
11,059.91	10,571.80	-519.26	-165.15	LP: 91.1° Inc at 269.73° Azm
15,402.61	10,488.41	-540.00	-4,507.00	TD at 15402.61

Exhibit E-2: Co-Flex Certifications  
Dr. Scrivner Fed. #227H  
Matador Resources Company



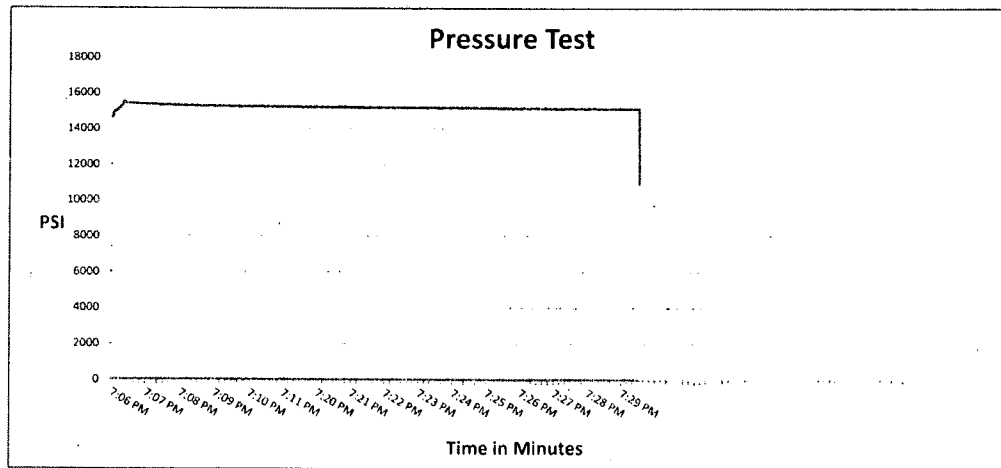
### Internal Hydrostatic Test Graph

December 8, 2014

Customer: Patterson

Pick Ticket #: 284918

Hose Specifications		Verification	
Hose Type	Length	Type of Fitting	Coupling Method
CK	10'	4-1/16 10K	Swage
I.D.	O.D.	Die Size	Final O.D.
3"	4.79"	5.37"	5.37"
Working Pressure	Burst Pressure	Hose Serial #	Hose Assembly Serial #
10000 PSI	Standard Safety Multiplier Applies	10490	284918-2



Test Pressure  
15000 PSI

Time Held at Test Pressure  
15 2/4 Minutes

Actual Burst Pressure

Peak Pressure  
15732 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Tyler Hill

Approved By: Ryan Adams

*[Signature]*

*[Signature]*





Midwest Hose  
& Specialty, Inc.

### Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	PATTERSON B&E	Hose Assembly Type	Choke & Kill
MWH Sales Representative	AMY WHITE	Certification	API 7K
Date Assembled	12/8/2014	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	236404	Hose Lot # and Date Code	10490-01/13
Customer Purchase Order #	260471	Hose I.D. (Inches)	3"
Assembly Serial # (Pick Ticket #)	287918-2	Hose O.D. (Inches)	5.30"
Hose Assembly Length	10'	Armor (yes/no)	YES
Fittings			
End A		End B	
Stem (Part and Revision #)	R3.0X64WB	Stem (Part and Revision #)	R3.0X64WB
Stem (Heat #)	91996	Stem (Heat #)	91996
Ferrule (Part and Revision #)	RF3.0	Ferrule (Part and Revision #)	RF3.0
Ferrule (Heat #)	37DA5631	Ferrule (Heat #)	37DA5631
Connection (Part #)	4 1/16 10K	Connection (Part #)	4 1/16 10K
Connection (Heat #)		Connection (Heat #)	
Dies Used	5.37	Dies Used	5.37
Hydrostatic Test Requirements			
Test Pressure (psi)	15,000	Hose assembly was tested with ambient water temperature.	
Test Pressure Hold Time (minutes)	15 1/2		
Date Tested	Tested By		Approved By
12/8/2014			



Midwest Hose  
& Specialty, Inc.

### Certificate of Conformity

Customer: <b>PATTERSON B&amp;E</b>	Customer P.O.# <b>260471</b>
Sales Order # <b>236404</b>	Date Assembled: <b>12/8/2014</b>

### Specifications

Hose Assembly Type:	<b>Choke &amp; Kill</b>		
Assembly Serial #	<b>287918-2</b>	Hose Lot # and Date Code	<b>10490-01/13</b>
Hose Working Pressure (psi)	<b>10000</b>	Test Pressure (psi)	<b>15000</b>

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:

**Midwest Hose & Specialty, Inc.**  
**3312 S I-35 Service Rd**  
**Oklahoma City, OK 73129**

Comments:

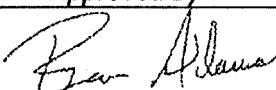
Approved By	Date
	<b>12/9/2014</b>

Exhibit E-2: Co-Flex Certifications  
Dr. Scrivner Fed. #227H  
Matador Resources Company



Midwest Hose  
& Specialty, Inc.

### Internal Hydrostatic Test Graph

December 9, 2014

Customer: Patterson

Pick Ticket #: 284918

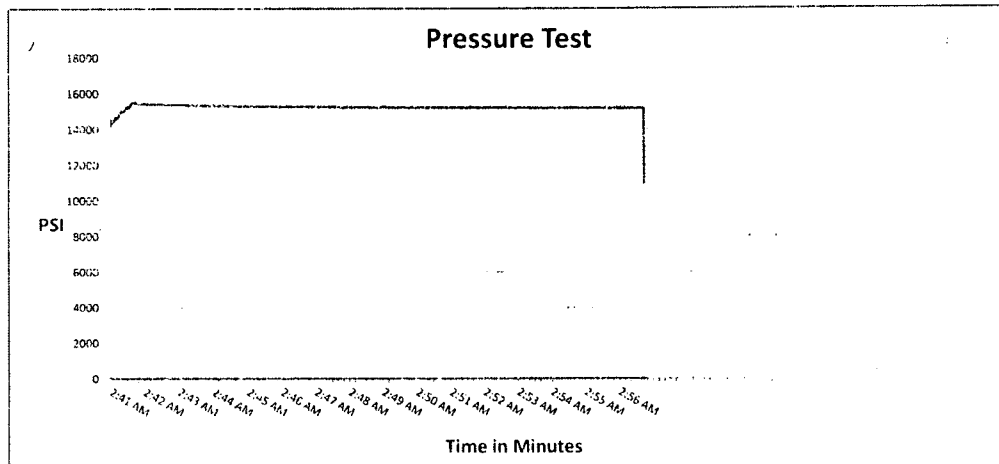
#### Hose Specifications

<u>Hose Type</u>	<u>Length</u>
Ck	20'
<u>I.D.</u>	<u>O.D.</u>
3"	4.77"
<u>Working Pressure</u>	<u>Burst Pressure</u>
10000 PSI	Standard Safety Multiple Applies

#### Verification

<u>Type of Fitting</u>	<u>Coupling Method</u>
4-1/16 10K	Swage
<u>Die Size</u>	<u>Final O.D.</u>
5.37"	5.40"
<u>Hose Serial #</u>	<u>Hose Assembly Serial #</u>
10490	284918-1

*R297*



Test Pressure  
15000 PSI

Time Held at Test Pressure  
15 2/4 Minutes

Actual Burst Pressure

Peak Pressure  
15893 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Tyler Hill

Approved By: Ryan Adams

*[Signature]*

*[Signature]*



Midwest Hose  
& Specialty, Inc.

### Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	PATTERSON B&E	Hose Assembly Type	Choke & Kill
MWH Sales Representative	AMY WHITE	Certification	API 7K
Date Assembled	12/8/2014	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	236404	Hose Lot # and Date Code	10490-01/13
Customer Purchase Order #	260471	Hose I.D. (Inches)	3"
Assembly Serial # (Pick Ticket #)	287918-1	Hose O.D. (Inches)	5.30"
Hose Assembly Length	20'	Armor (yes/no)	YES
Fittings			
End A		End B	
Stem (Part and Revision #)	R3.0X64WB	Stem (Part and Revision #)	R3.0X64WB
Stem (Heat #)	A141420	Stem (Heat #)	A141420
Ferrule (Part and Revision #)	RF3.0	Ferrule (Part and Revision #)	RF3.0
Ferrule (Heat #)	37DA5631	Ferrule (Heat #)	37DA5631
Connection (Part #)	4 1/16 10K	Connection (Part #)	4 1/16 10K
Connection (Heat #)	V3579	Connection (Heat #)	V3579
Dies Used	5.37	Dies Used	5.37
Hydrostatic Test Requirements			
Test Pressure (psi)	15,000	Hose assembly was tested with ambient water temperature.	
Test Pressure Hold Time (minutes)	15 1/2		
Date Tested	Tested By		Approved By
12/9/2014			



Midwest Hose  
& Specialty, Inc.

### Certificate of Conformity

Customer: <b>PATTERSON B&amp;E</b>	Customer P.O.# <b>260471</b>
Sales Order # <b>236404</b>	Date Assembled: <b>12/8/2014</b>

### Specifications

Hose Assembly Type:	<b>Choke &amp; Kill</b>		
Assembly Serial #	<b>287918-1</b>	Hose Lot # and Date Code	<b>10490-01/13</b>
Hose Working Pressure (psi)	<b>10000</b>	Test Pressure (psi)	<b>15000</b>

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:

Midwest Hose & Specialty, Inc.  
3312 S I-35 Service Rd  
Oklahoma City, OK 73129

Comments:

Approved By	Date
	<b>12/9/2014</b>

Exhibit E-2: Co-Flex Certifications  
Dr. Scrivner Fed. #227H  
Matador Resources Company



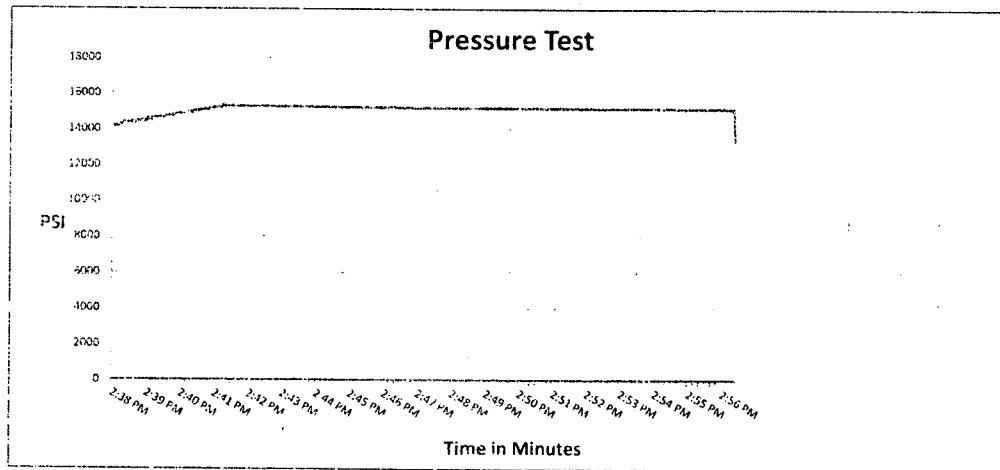
### Internal Hydrostatic Test Graph

December 9, 2014

Customer: Patterson

Pick Ticket #: 284918

Hose Specifications		Verification	
<b>Hose Type</b>	<b>Length</b>	<b>Type of Fitting</b>	<b>Coupling Method</b>
Mud	70'	4 1/16 10K	Swage
<b>I.D.</b>	<b>O.D.</b>	<b>Die Size</b>	<b>Final O.D.</b>
3"	4.79"	5.37"	5.37"
<b>Working Pressure</b>	<b>Burst Pressure</b>	<b>Hose Serial #</b>	<b>Hose Assembly Serial #</b>
10000 PSI	Standard Safety Multiplier Applies	10490	284918-3



**Test Pressure**  
15000 PSI

**Time Held at Test Pressure**  
16 3/4 Minutes

**Actual Burst Pressure**

**Peak Pressure**  
15410 PSI

**Comments:** Hose assembly pressure tested with water at ambient temperature.

**Tested By:** Tyler Hill

**Approved By:** Ryan Adams

*[Signature of Tyler Hill]*

*[Signature of Ryan Adams]*



Midwest Hose  
& Specialty, Inc.

### Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	PATTERSON B&E	Hose Assembly Type	Choke & Kill
MWH Sales Representative	AMY WHITE	Certification	API 7K
Date Assembled	12/8/2014	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	236404	Hose Lot # and Date Code	10490-01/13
Customer Purchase Order #	260471	Hose I.D. (Inches)	3"
Assembly Serial # (Pick Ticket #)	287918-3	Hose O.D. (Inches)	5.23"
Hose Assembly Length	70'	Aarmor (yes/no)	YES
Fittings			
End A		End B	
Stem (Part and Revision #)	R3.0X64WB	Stem (Part and Revision #)	R3.0X64WB
Stem (Heat #)	A141420	Stem (Heat #)	A141420
Ferrule (Part and Revision #)	RF3.0	Ferrule (Part and Revision #)	RF3.0
Ferrule (Heat #)	37DA5631	Ferrule (Heat #)	37DA5631
Connection (Part #)	4 1/16 10K	Connection (Part #)	4 1/16 10K
Connection (Heat #)		Connection (Heat #)	
Dies Used	5.37	Dies Used	5.37
Hydrostatic Test Requirements			
Test Pressure (psi)	15,000	Hose assembly was tested with ambient water temperature.	
Test Pressure Hold Time (minutes)	16 3/4		
Date Tested	Tested By		Approved By
12/9/2014			



Midwest Hose  
& Specialty, Inc.

### Certificate of Conformity

Customer: PATTERSON B&E

Customer P.O.# 260471

Sales Order # 236404

Date Assembled: 12/8/2014

### Specifications

Hose Assembly Type: Choke & Kill

Assembly Serial # 287918-3

Hose Lot # and Date Code 10490-01/13

Hose Working Pressure (psi) 10000

Test Pressure (psi) 15000

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:

Midwest Hose & Specialty, Inc.  
3312 S I-35 Service Rd  
Oklahoma City, OK 73129

Comments:

Approved By

Date

12/9/2014



**OIL CONSERVATION DIVISION**  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

# WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number		Pool Code 96831	Pool Name CEDAR LAKE GLORITA YESO
Property Code 20767	Property Name JACKSON A		Well Number 61
OGRID No. 03080	Operator Name BURNETT OIL COMPANY, INC.		Elevation 3726'

### Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	FEET from the	SOUTH/South line	FEET from the	East/EAST line	County
0	13	17 S	30 E		990	SOUTH	2310	EAST	EDDY

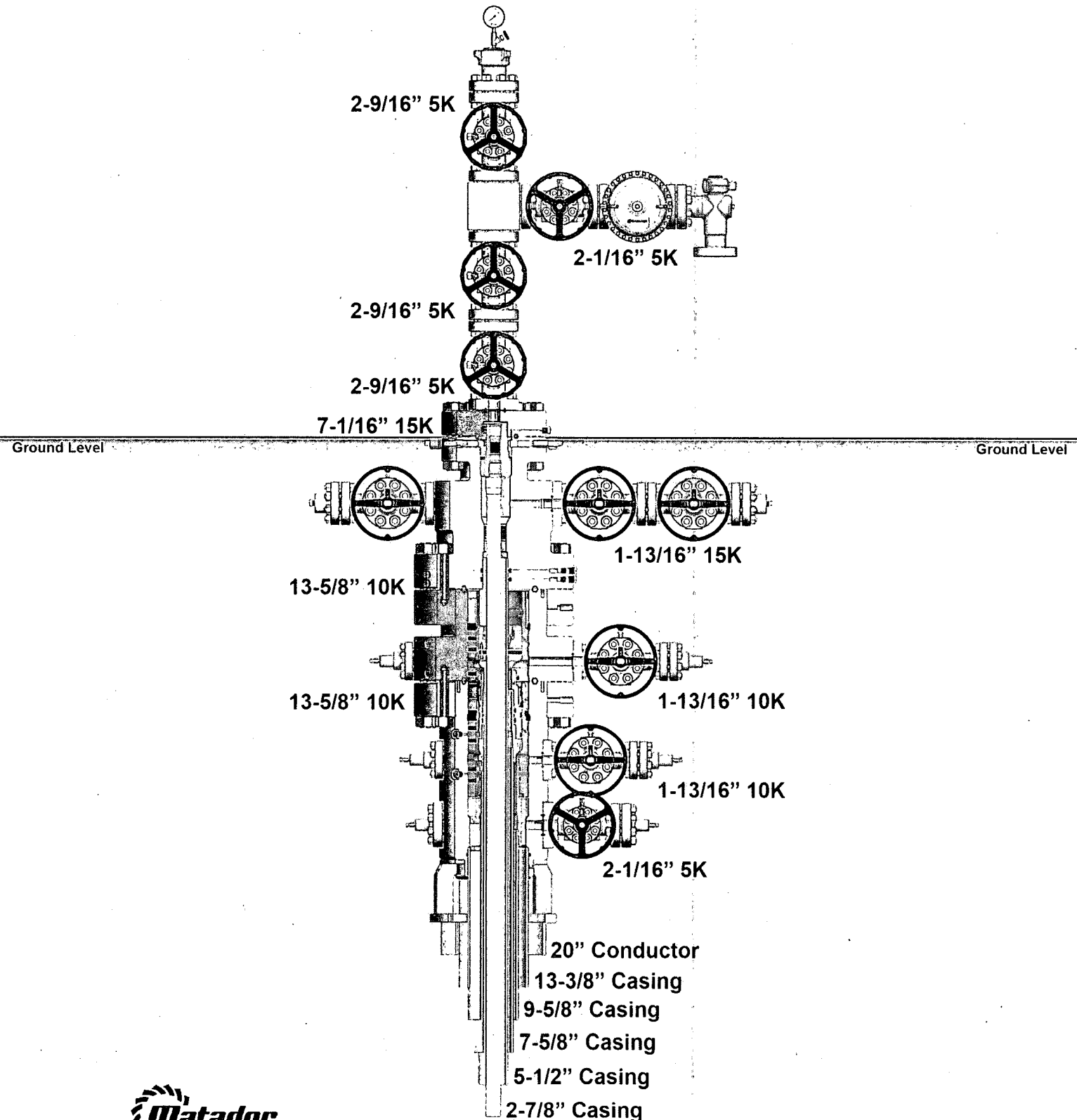
## Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	FEET from the	SOUTH/South line	FEET from the	East/EAST line	County
---------------	---------	----------	-------	---------	---------------	------------------	---------------	----------------	--------

Dedicated Acres 20	Joint or Infill	Consolidation Code	Order No.
-----------------------	-----------------	--------------------	-----------

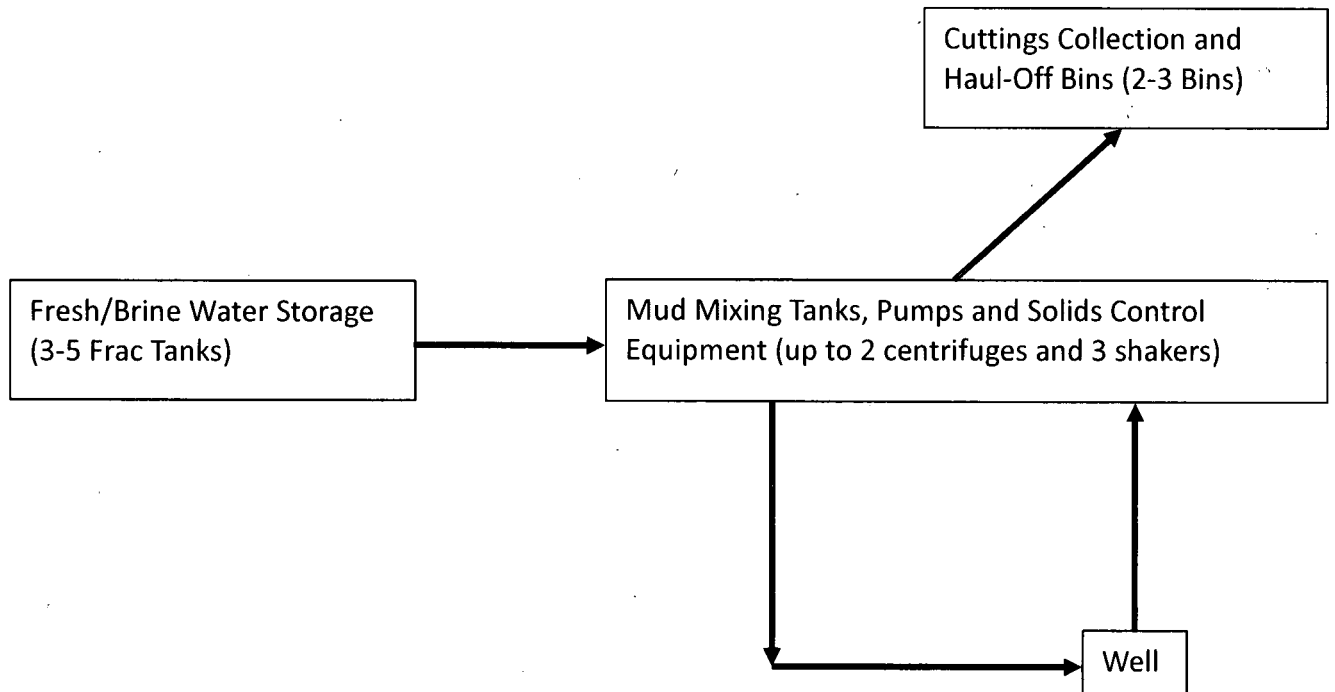
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<b>OPERATOR CERTIFICATION</b> <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</i>	
9/28/18	
Signature	Date
Leslie Garvis	
Printed Name	
lgarvis@burnettoil.com	
Email Address	
<b>SURVEYOR CERTIFICATION</b> <i>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</i>	
JULY 27, 2018	
Date Surveyed	
Signature of Professional Surveyor	
7977	
Certificate No.	7977
BURNETT OIL & GAS	
0' 500' 1000' 1500' 2000'	
SCALE: 1" = 1000'	
WO Num.: 33865	



## Closed-Loop System

Exhibit E-5: Closed-Loop System  
Dr. Scrivner Fed. #227H  
Matador Resources Company  
01-24S-28E  
SHL 2169' FSL & 573' FEL  
BHL 1650' FSL & 240' FWL  
Eddy County, NM



### Operating and Maintenance Plan:

During drilling operations, third party service companies will utilize solids control equipment to remove cuttings from the drilling fluids and collect it in haul-off bins. Equipment will be closely monitored at all times while drilling by the derrick man and the service company employees.

### Closure Plan:

During drilling operations, third party service companies will haul off drill solids and fluids to an approved disposal facility. At the end of the well, all closed loop equipment will be removed from the location.

Dr. Scrivner Fed. 01-24S-28E RB 227H

MAP 2

1 mile radius

BLM O&G lease  
NMNM-06880

BHL

Dr  
Scrivner  
227H  
SUPD  
Attachments

proposed  
gas line &  
power line

1 mile radius

access

water well C 00464

LEGEND

- New
- ★ Active
- ⊕ P&A
- ⊙ INJ
- ⊙ SWD
- ⊙ Water

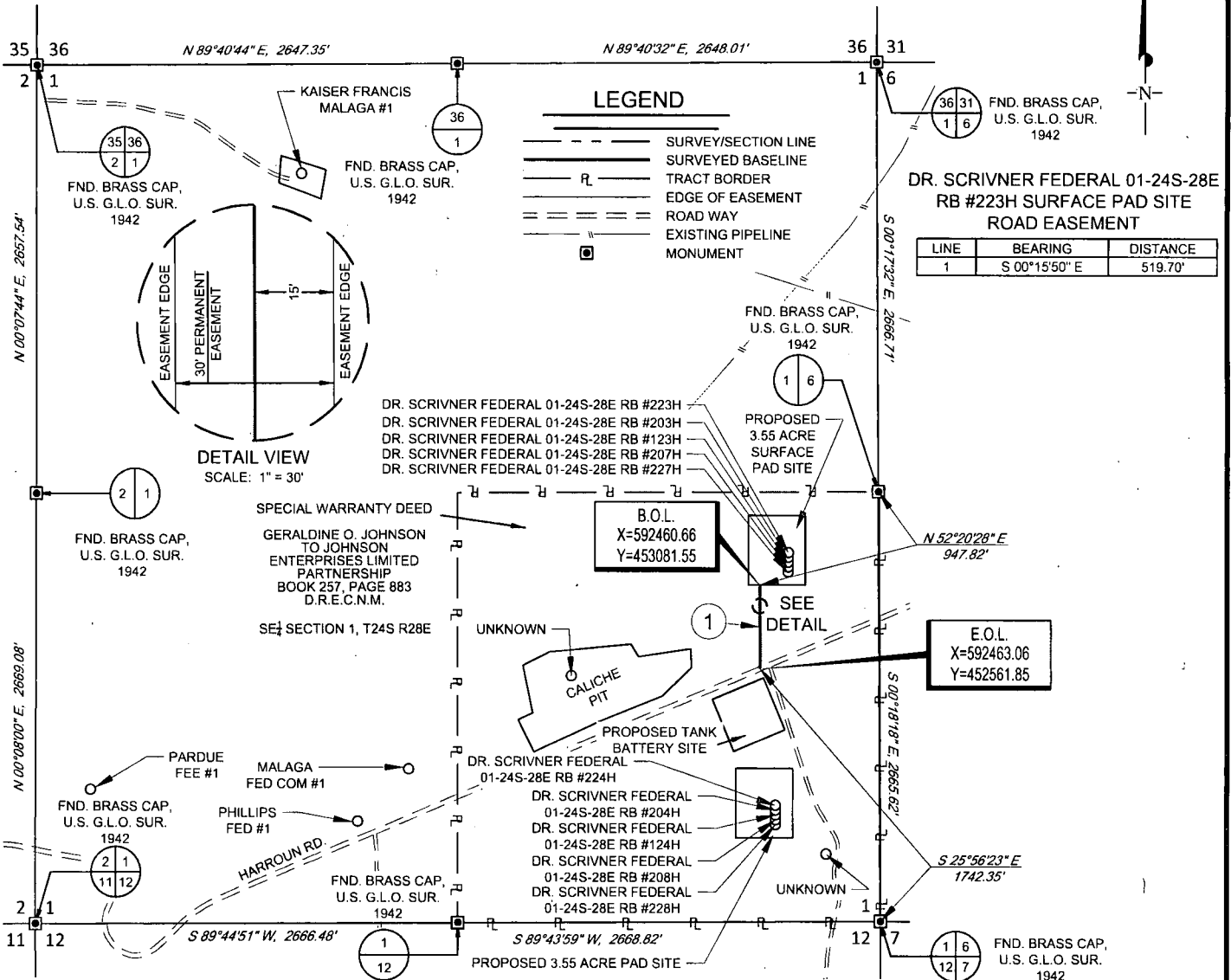


Quad: MALAGA  
Scale: 1 inch = 2,000 ft.

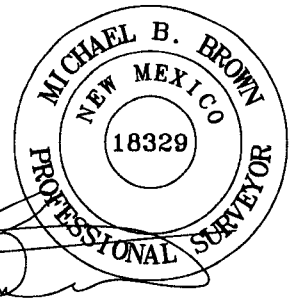
SCALE: 1" = 1000'

0' 500' 1000'

SECTION 1, TOWNSHIP 24-S, RANGE 28-E, N.M.P.M.  
EDDY COUNTY, NEW MEXICO



**TOPOGRAPHIC**  
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2803 NORTH BIG SPRING • MIDLAND, TEXAS 79705  
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743  
WWW.TOPOGRAPHIC.COM



Michael Blake Brown, P.S. No. 18329  
NOVEMBER 30, 2015

DR. SCRIVNER FEDERAL  
01-24S-28E RB #223H  
SURFACE PAD SITE  
ROAD EASEMENT

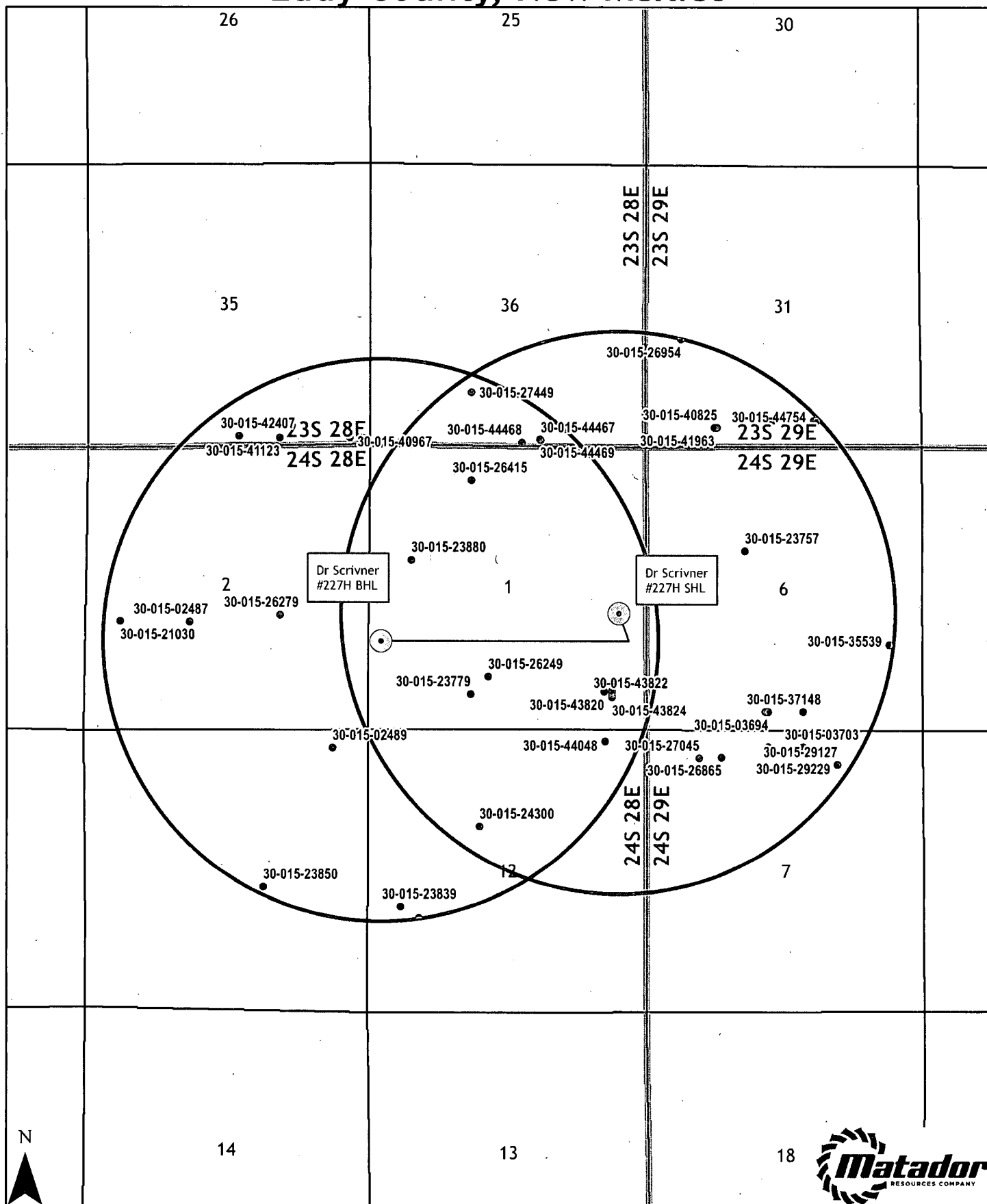
REVISION:

DATE: 11/30/2015  
FILE: EP DR SCRIVNER FEDERAL 01-24S-28E RB #223H SURFACE PAD SITE ROAD  
DRAWN BY: MML  
SHEET: 1 OF 1

NOTES:

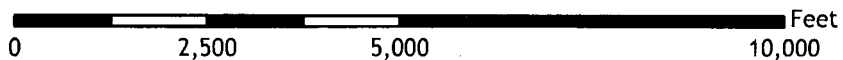
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 1927.
3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY MATADOR PRODUCTION COMPANY. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
4. B.O.L. = BEGINNING OF LINE
5. E.O.L. = END OF LINE

# Eddy County, New Mexico



Projection: NAD\_1927\_StatePlane\_New\_Mexico\_East\_FIPS\_3001 (feet)

1 inch = 2,500 feet



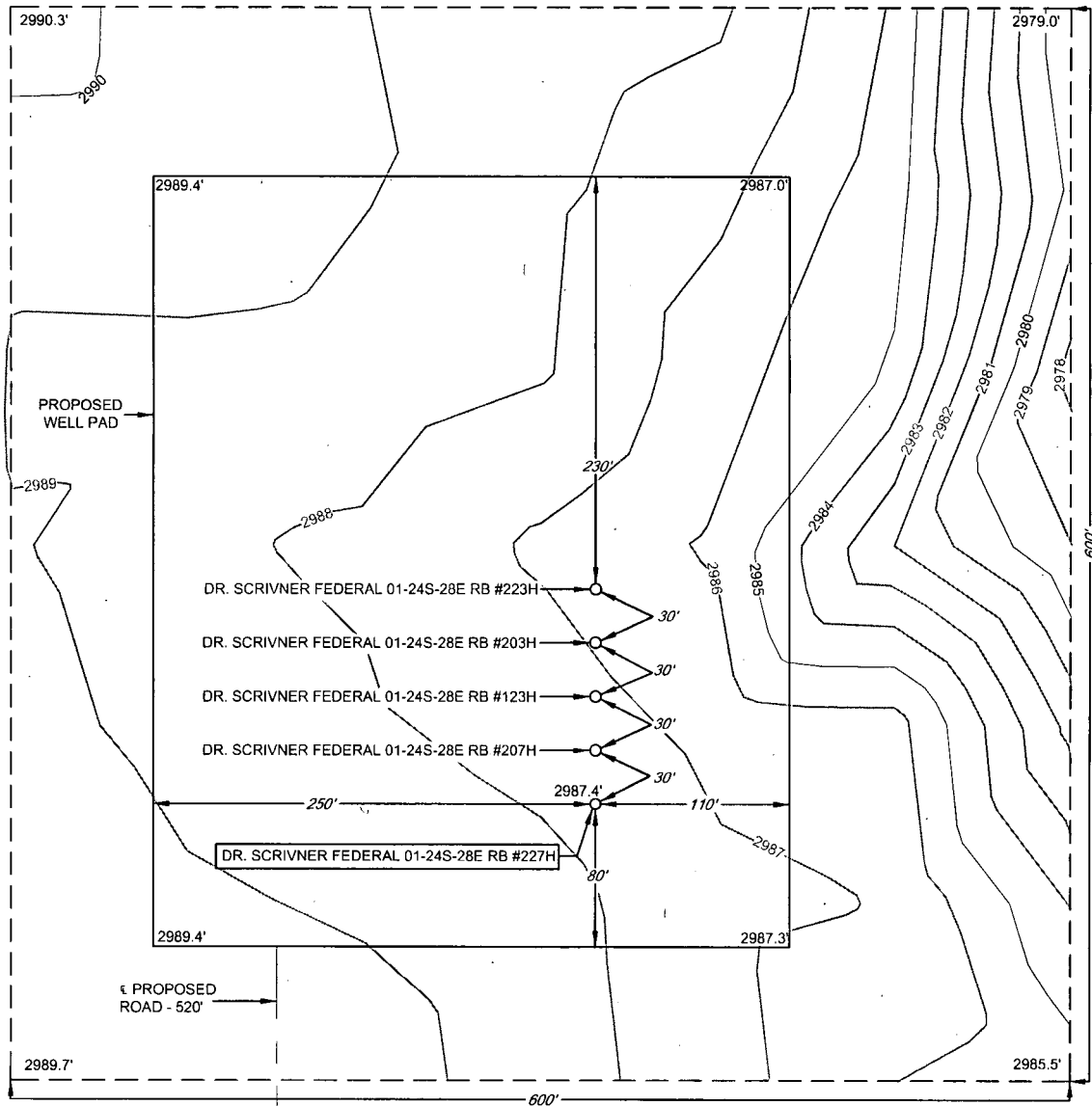
Map Prepared by: AGreen  
Date: August 2, 2018  
filename: OneMileRadius\_Plat  
Sources: IHS Energy; Midland Map Company;  
Environmental Systems Research Institute [ESRI];





SECTION 1, TOWNSHIP 24-S, RANGE 28-E, N.M.P.M.  
EDDY COUNTY, NEW MEXICO

DETAIL VIEW  
SCALE: 1" = 100'



# LEGEND

----- PROPOSED ROAD  
----- ARCH SITE

LEASE NAME & WELL NO.: DR. SCRIVNER FEDERAL 01-24S-28E RB #227H  
#227H LATITUDE N 32.2455029 #227H LONGITUDE W 104.0336863

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



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TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743  
WWW.TOPOGRAPHIC.COM

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID  
BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE OF THE  
NORTH AMERICAN DATUM 1927, 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 MATADOR PRODUCTION COMPANY. 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.

ORIGINAL DOCUMENT SIZE: 8.5" X 11"



**Matador Production Company  
Dr. Scrivner Fed Com 227H  
SHL 2169' FSL & 573' FEL Sec. 1, T. 24 S., R. 28 E.  
BHL 1650' FSL & 240' FWL Sec. 1, T. 24 S., R. 28 E.  
Eddy County, NM**

**SURFACE USE PLAN**

**1. ROAD DIRECTIONS AND DESCRIPTIONS**

From the Malaga Post Office ...

Go East 0.85 miles on paved County Road 744 (aka, Duarte Road)

Then turn left and go North 1.0 mile on paved County Road 745

Then turn right and go East and Northeast 1.1 miles on paved Harroun Road

Then turn left and go North 519.7' cross-country to the proposed pad.

Non-county roads will be maintained as needed to Gold Book standards. This includes pulling ditches, preserving the crown, and cleaning culverts. This will be done at least once a year, and more often as needed. Caliche will be hauled from existing caliche pits on private land in NWSE 1-24s-28e and NWSW 6-24s-29e.

**2. ROAD TO BE BUILT OR UPGRADED**

The 519.7' of new road to the well will be crowned, have a 14' wide driving surface, and be surfaced with caliche. Maximum disturbed width = 20'. Maximum grade = 4%. Maximum cut or fill = 3 '. No upgrade, culvert, cattle guard, or vehicle turn out is needed.

Fifty feet of new road to the central tank battery (CTB) will be crowned, have a 14' wide driving surface, and be surfaced with caliche. Maximum disturbed width = 20'. Maximum grade = 1 %. Maximum cut or fill = 3 '. No upgrade, culvert, cattle guard, or vehicle turn out is needed.

**3. EXISTING WELLS**

Existing oil, gas, water, and P&A wells are within a mile. There are no injection or disposal wells within a mile radius.

**Matador Production Company**

**Dr. Scrivner Fed Com 227H**

**SHL 2169' FSL & 573' FEL Sec. 1, T. 24 S., R. 28 E.**

**BHL 1650' FSL & 240' FWL Sec. 1, T. 24 S., R. 28 E.**

**Eddy County, NM**

#### **4. PROPOSED PRODUCTION FACILITIES**

The only production equipment on the pad will be the pump jack. A ≈6" O. D. steel buried flow line will be laid 596.69' south parallel to the new road to Matador's proposed central tank battery. A 605.99' long overhead raptor safe 3-phase power line will be built south parallel to the flow line to the battery. Construction corridor for each line will be 15' wide.

A ≈6" O. D. steel buried gas line will be laid 3,452.91' northeast parallel to roads to an existing Enterprise meter. A 2,858.78' long overhead raptor safe 3-phase power line will be built northeast parallel to the gas line to an existing Xcel power line.

#### **5. WATER SUPPLY**

Water will be trucked from an existing well (C 00464) on private land in NENW 13-24s-28e.

#### **6. CONSTRUCTION MATERIALS & METHODS**

NM One Call (811) will be notified before construction starts. A temporary fence will be built on the east side of the pad before construction starts to keep construction equipment off a slope. Top ≈6" of soil and brush will be stockpiled west of the pad and CTB. Pipe racks will be to the south. A closed loop drilling system will be used. Caliche will be hauled from existing caliche pits on private land in NWSE 1-24s-28e and NWSW 6-24s-29e.

**Matador Production Company**

**Dr. Scrivner Fed Com 227H**

**SHL 2169' FSL & 573' FEL Sec. 1, T. 24 S., R. 28 E.**

**BHL 1650' FSL & 240' FWL Sec. 1, T. 24 S., R. 28 E.**

**Eddy County, NM**

**7. WASTE DISPOSAL**

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 CRI's state approved (NM-01-0006) disposal site. 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 Rig Diagram for depictions of the well pad, trash cage, access onto the location, parking, living facilities, and rig orientation.

**10. RECLAMTION**

Interim reclamation will consist of shrinking the pad ≈59% by removing caliche and reclaiming the north (130') and west (150') sides, leaving a 210' x 300' (1.45 acre) area around the pump jacks. Disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over disturbed areas. Disturbed areas will be seeded in accordance with the surface owner's requirements. Enough stockpiled topsoil will be retained to cover the remainder of the pad when the wells are plugged. Once the last well is plugged, then the remainder of the pad will be similarly reclaimed. Noxious weeds will be controlled

**Matador Production Company  
Dr. Scrivner Fed Com 227H  
SHL 2169' FSL & 573' FEL Sec. 1, T. 24 S., R. 28 E.  
BHL 1650' FSL & 240' FWL Sec. 1, T. 24 S., R. 28 E.  
Eddy County, NM**

**11. SURFACE OWNER**

All construction will be on private surface. Matador has surface use agreements with the surface owners.

Johnson Enterprises (P.O. Box 1713, Roswell NM 88202) is the surface owner for the well site, battery, road, and those portions of the pipelines and power lines in Section 1, T. 24 S., R. 28 E. Eddy County, NM.

John Draper Brantley, Jr. and Henry McDonald (706 W. Riverside Dr., Carlsbad NM 88220) are the surface owners (together) for those portions of the pipeline and power line in Section 6, T. 24 S., R. 29 E. Eddy County, NM.

**12. OTHER INFORMATION**

Onsite inspection was held with Trish Bad Bear (BLM) on November 19, 2015. Lone Mountain submitted archaeology report NMCRIS 134817 on December 8, 2015 for the pad and report NMCRIS 135053 on January 20, 2016 for the central tank battery and lines.

**Matador Production Company  
Dr. Scrivner Fed Com 227H  
SHL 2169' FSL & 573' FEL Sec. 1, T. 24 S., R. 28 E.  
BHL 1650' FSL & 240' FWL Sec. 1, T. 24 S., R. 28 E.  
Eddy County, NM**

**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 APO 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 APO 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 18th day of July, 2018.



Sam Pryor, Senior Staff Landman  
Matador Production Company  
5400 LBJ Freeway, Suite 1500  
Dallas TX 75240  
Phone: (972) 371 -5241  
FAX: (214) 866-4841

