F/F

Form 3160-3
(March 2012)

HOBBS OCD
FEB 16 2018
RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMLC065607

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

8. Lease Name and Well No.: VERNA RAE FEDERAL COM 203H (320548)

2. Name of Operator: MATADOR PRODUCTION COMPANY (228937)

9. API Well No.: 30-025-44493

3a. Address: 5400 LBJ Freeway, Suite 1500 Dallas TX 752

3b. Phone No. (include area code): (972)371-5200

10. Field and Pool, or Exploratory: TONTO / WOLFCAMP (59500)

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

At surface: LOT 2 / 230 FNL / 1845 FEL / LAT 32.6087624 / LONG -103.5968937

At proposed prod. zone: SWSE / 240 FSL / 2310 FEL / LAT 32.5955542 / LONG -103.5984985

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 6 / T20S / R34E / NMP

14. Distance in miles and direction from nearest town or post office*: 19 miles

12. County or Parish: LEA

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 230 feet

16. No. of acres in lease: 722.39

17. Spacing Unit dedicated to this well: 160

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 30 feet

19. Proposed Depth: 10955 feet / 15714 feet

20. BLM/BIA Bond No. on file: FED: NMB001079

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3620 feet

22. Approximate date work will start*: 09/01/2017

23. Estimated duration: 90 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

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

25. Signature	Name (Printed/Typed)	Date
(Electronic Submission)	Brian Wood / Ph: (505)466-8120	06/19/2017

Title: President

Approved by (Signature)	Name (Printed/Typed)	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	02/02/2018

Title	Office
Supervisor Multiple Resources	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.

(Continued on page 2)

*(Instructions on page 2)

KB 02/16/18

APPROVED WITH CONDITIONS

Approval Date: 02/02/2018

Double Sheet

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.

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 Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Continued on page 3)

Additional Operator Remarks

Location of Well

1. SHL: LOT 2 / 230 FNL / 1845 FEL / TWSP: 20S / RANGE: 34E / SECTION: 6 / LAT: 32.6087624 / LONG: -103.5968937 (TVD: 0 feet, MD: 0 feet)
   PPP: SWNE / 2640 FNL / 2310 FEL / TWSP: 20S / RANGE: 34E / SECTION: 6 / LAT: 32.60215 / LONG: -103.59844 (TVD: 10955 feet, MD: 13316 feet)
   PPP: LOT 2 / 230 FNL / 1845 FEL / TWSP: 20S / RANGE: 34E / SECTION: 6 / LAT: 32.6087624 / LONG: -103.5968937 (TVD: 0 feet, MD: 0 feet)
   BHL: SWSE / 240 FSL / 2310 FEL / TWSP: 20S / RANGE: 34E / SECTION: 6 / LAT: 32.5955542 / LONG: -103.5984985 (TVD: 10955 feet, MD: 15714 feet)

BLM Point of Contact

Name: Sipra Dahal
Title: Legal Instruments Examiner
Phone: 5752345983
Email: sdahal@blm.gov

Approval Date: 02/02/2018

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.

AFMSS

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

Operator Certification Data Report

02/12/2018

Operator Certification

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

NAME: Brian Wood **Signed on:** 06/19/2017

Title: President

Street Address: 37 Verano Loop

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

Phone: (505)466-8120

Email address: afmss@permitswest.com

Field Representative

Representative Name:

Street Address:

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

Phone:

Email address:

AFMSS

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

Application Data Report
02/12/2018

APD ID: 10400015211 **Submission Date:** 06/19/2017

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: VERNA RAE FEDERAL COM **Well Number:** 203H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400015211 **Tie to previous NOS?** **Submission Date:** 06/19/2017

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

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

Lease number: NMLC065607 **Lease Acres:** 722.39

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

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

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? YES **APD Operator:** 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 **Mater Development Plan name:**

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

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

Well Name: VERNA RAE FEDERAL COM **Well Number:** 203H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** TONTO **Pool Name:** WOLFCAMP

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

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: VERNA RAE FEDERAL COM **Well Number:** 203H

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:** VERNA RAE **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: 19 Miles **Distance to nearest well:** 30 FT **Distance to lease line:** 230 FT

Reservoir well spacing assigned acres Measurement: 160 Acres

Well plat: VernaRae_203H_Plat_20170928100754.PDF

Well work start Date: 09/01/2017 **Duration:** 90 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	230	FNL	1845	FEL	20S	34E	6	Lot 2	32.6087624	-103.5968937	LEA	NEW MEXICO	NEW MEXICO	F	NMLC065607	3620	0	0
KOP Leg #1	230	FNL	1845	FEL	20S	34E	6	Lot 2	32.6087624	-103.5968937	LEA	NEW MEXICO	NEW MEXICO	F	NMLC065607	-6809	10450	10429
PPP Leg #1	230	FNL	1845	FEL	20S	34E	6	Lot 2	32.6087624	-103.5968937	LEA	NEW MEXICO	NEW MEXICO	F	NMLC065607	3620	0	0

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: VERNA RAE FEDERAL COM **Well Number:** 203H

	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	2640	FNL	2310	FEL	20S	34E	6	Aliquot SWNE	32.60215	-103.59844	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 40406	-7335	13316	10955
EXIT Leg #1	240	FSL	2310	FEL	20S	34E	6	Aliquot SWSE	32.5955542	-103.5984985	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 40406	-7335	15714	10955
BHL Leg #1	240	FSL	2310	FEL	20S	34E	6	Aliquot SWSE	32.5955542	-103.5984985	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 40406	-7335	15714	10955

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

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint, but determined to be impractical, to reduce the amount of gas flared.

- Power Generation – On lease
  - Operating a generator will only utilize a portion of the produced gas and the remainder of gas would still need to be flared.
  - Power generation also requires an agreement with a power company that is willing to purchase the gas. The terms of any such agreement typically require a long term commitment from the operator at certain and steady deliverables. With gas decline rates and the unpredictability of markets, it is impracticable for the operator to agree to a long term commitment because as the wells decline the operator would be burdened with penalties for failure to meet the deliverables.
- Compressed Natural Gas – On lease
  - Compressed Natural Gas is likely to be uneconomic to operate when the gas volume declines.
- NGL Removal – On lease
  - NGL Removal requires a plant and is expensive on such a small scale rendering it uneconomic and still requires residue gas to be flared.

APD ID: 10400015211 **Submission Date:** 06/19/2017

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: VERNA RAE FEDERAL COM **Well Number:** 203H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	—	3620	0	0	OTHER : Quaternary	USEABLE WATER	No
2	RUSTLER ANHYDRITE	2149	1475	1479	ANHYDRITE	OTHER : Anhydrite	No
3	TOP SALT	2019	1605	1609	SALT	OTHER : Salt	No
4	BASE OF SALT	460	3160	3170	SALT	OTHER : Salt	No
5	TANSILL	425	3195	3205	SANDSTONE	OTHER : Sandstone	No
6	YATES	318	3302	3313	GYPSUM	OTHER : Gypsum	No
7	SEVEN RIVERS	-75	3695	3707	DOLOMITE	NONE	No
8	QUEEN	-982	4602	4617	SANDSTONE	OTHER : Sandstone	No
9	CAPITAN REEF	-1130	4750	4766	OTHER : Carbonate	USEABLE WATER	No
10	DELAWARE SAND	-1675	5295	5313	SANDSTONE	NATURAL GAS,CO2,OIL	No
11	BRUSHY CANYON	-2574	6194	6215	SANDSTONE	NATURAL GAS,CO2,OIL	No
12	BONE SPRING LIME	-4659	8279	8300		NATURAL GAS,CO2,OIL	No
13	BONE SPRING 1ST	-5390	9010	9031	OTHER : Carbonate	NATURAL GAS,CO2,OIL	No
14	BONE SPRING 1ST	-5780	9400	9421	SANDSTONE	NATURAL GAS,CO2,OIL	No
15	BONE SPRING 2ND	-6075	9695	9716	OTHER : Carbonate	NATURAL GAS,CO2,OIL	No
16	BONE SPRING 2ND	-6310	9930	9951	SANDSTONE	NATURAL GAS,CO2,OIL	No
17	BONE SPRING 3RD	-6826	10446	10467	OTHER : Carbonate	NATURAL GAS,CO2,OIL	No
18	BONE SPRING 3RD	-7050	10670	10704	SANDSTONE	NATURAL GAS,CO2,OIL	Yes

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: VERNA RAE FEDERAL COM **Well Number:** 203H

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
19	WOLFCAMP	-7320	10940	11174	SANDSTONE	NATURAL GAS,CO2,OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 12000

Equipment: A 12,000' 5000-psi BOP stack consisting of 3 rams with 2 pipe rams, 1 blind ram, and 1 annular preventer will be used below surface casing to TD. See attached BOP, choke manifold, co-flex hose, and speed head diagrams. An accumulator complying with Onshore Order 2 for the BOP stack pressure rating will be present. Rotating head will be installed as needed.

Requesting Variance? YES

Variance request: Matador is requesting a variance to use a speed head. Speed head diameter range is 13.375" x 9.625" x 7.625" x 5.5". 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. Manufacturer does not require the hose to be anchored. If the specific hose is not available, then one of equal or higher rating will be used.

Testing Procedure: Pressure tests will be conducted before drilling out from under all casing strings. BOP will be inspected and operated as required in Onshore Order 2. 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. After surface casing is set and the BOP is nippled up, then BOP pressure tests will be made to 250 psi low and 2000 psi high. Intermediate 1 pressure tests will be made to 250 psi low and 3000 psi high. Intermediate 2 pressure tests will be made to 250 psi low and 7500 psi high. Annular preventer will be tested to 250 psi low and 2500 psi high on the surface casing, and 250 psi low and 2500 psi high on the intermediate 1 and 2 casing. In the case of running a speed head with landing mandrel for 9.625" and 7" casing, after surface casing is set, BOP test pressures will be 250 psi low and 3000 psi high. Wellhead seals will be tested to 5000 psi once the 9.625" casing has been landed and cemented. BOP will then be lifted to install the C-section of the wellhead. BOP will then be nippled back up and pressure tested to 250 psi low and 7500 psi high. Annular will be tested to 250 psi low and 2500 psi high.

Choke Diagram Attachment:

VernaRae_203H_Choke_20171023103316.pdf

BOP Diagram Attachment:

VernaRae_203H_BOP_06-19-2017.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	20	13.375	NEW	API	Y	0	1600	0	1596	3620	2024	1600	J-55	54.5	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: VERNA RAE FEDERAL COM **Well Number:** 203H

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
2	INTERMEDIATE	8.75	7.625	NEW	API	Y	0	5300	0	5282	3620	-1662	5300	P-110	29.7	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8
3	INTERMEDIATE	12.25	9.625	NEW	API	Y	0	5400	0	5381	3620	-1761	5400	J-55	40	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8
4	PRODUCTION	6.125	5.5	NEW	API	Y	0	10250	0	10229	3620		10250	P-110	20	OTHER - Tenaris XP	1.125	1.125	DRY	1.8	DRY	1.8
5	INTERMEDIATE	8.75	7.625	NEW	API	Y	5300	10350	5282	10339			5050	P-110	29.7	OTHER - VAM HTF-NR	1.125	1.125	DRY	1.8	DRY	1.8
6	INTERMEDIATE	8.75	7.0	NEW	API	Y	10350	11100	10339	10919			750	P-110	29	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8
7	PRODUCTION	6.125	4.5	NEW	API	Y	10250	15714	10229	10955			5464	P-110	13.5	OTHER - Tenaris XP	1.125	1.125	DRY	1.8	DRY	1.8

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing_Design_Assumptions_Surface_06-19-2017.docx

Casing Design Assumptions and Worksheet(s):

Casing_Design_Assumptions_Surface_06-19-2017.docx

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: VERNA RAE FEDERAL COM **Well Number:** 203H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing_Design_Assumptions_Intermediate2_06-19-2017.docx

Casing Design Assumptions and Worksheet(s):

Casing_Design_Assumptions_Intermediate2_06-19-2017.docx

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing_Design_Assumptions_Intermediate1_06-19-2017.docx

Casing Design Assumptions and Worksheet(s):

Casing_Design_Assumptions_Intermediate1_06-19-2017.docx

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing_Design_Assumptions_Production_06-19-2017.docx

Casing Design Assumptions and Worksheet(s):

Casing_Design_Assumptions_Production_06-19-2017.docx

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: VERNA RAE FEDERAL COM **Well Number:** 203H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing_Design_Assumptions_Intermediate2_06-19-2017.docx

Casing Design Assumptions and Worksheet(s):

Casing_Design_Assumptions_Intermediate2_06-19-2017.docx

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing_Design_Assumptions_Intermediate2_06-19-2017.docx

Casing Design Assumptions and Worksheet(s):

Casing_Design_Assumptions_Intermediate2_06-19-2017.docx

Casing ID: 7 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing_Design_Assumptions_Production_06-19-2017.docx

Casing Design Assumptions and Worksheet(s):

Casing_Design_Assumptions_Production_06-19-2017.docx

Section 4 - Cement

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: VERNA RAE FEDERAL COM **Well Number:** 203H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1600	1764	1.75	13.5	3087	100	Class C	3% NaCl + LCM
SURFACE	Tail		0	1600	559	1.38	14.8	771	100	Class C	5% NaCl + LCM
INTERMEDIATE	Lead		0	5300	845	2.36	11.5	1994	35	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Tail		0	5300	155	1.38	13.2	213	35	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Lead		0	5400	1262	1.81	13.5	2284	100	Class C	Bentonite + 1% CaCl2 + 8% NaCl + LCM
INTERMEDIATE	Tail		0	5400	490	1.38	14.8	676	100	Class C	5% NaCl + LCM
PRODUCTION	Lead		0	10250	421	1.38	15.8	580	10	Class H	Fluid Loss + Dispersant + Retarder + LCM
PRODUCTION	Tail		0	10250	421	1.38	15.8	580	10	Class H	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Lead		5300	10350	845	2.36	11.5	1994	35	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Tail		5300	10350	155	1.38	13.2	213	35	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Lead		10350	11100	845	2.36	11.5	1994	35	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Tail		10350	11100	155	1.38	13.2	213	35	TXI	Fluid Loss + Dispersant + Retarder + LCM
PRODUCTION	Lead		10250	15714	421	1.38	15.8	580	10	Class H	Fluid Loss + Dispersant + Retarder + LCM
PRODUCTION	Tail		10250	15714	421	1.38	15.8	580	10	Class H	Fluid Loss + Dispersant + Retarder + LCM

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: VERNA RAE FEDERAL COM **Well Number:** 203H

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 (barite, bentonite, LCM) for weight addition and fluid loss control will be on location at all times.

Describe the mud monitoring system utilized: An electronic Pason mud monitoring system complying with Onshore Order 1 will be used. Mud program is subject to change due to hole conditions. A closed loop system will be used.

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	1600	SPUD MUD	8.3	8.3							
5400	11100	OTHER : Fresh water & cut brine	9	9							
1600	5400	SALT SATURATED	10	10							
11100	15714	OIL-BASED MUD	12.5	12.5							

Section 6 - Test, Logging, Coring

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

A 2-person mud logging program will be used from 1600' to TD.

No electric logs are planned at this time. GR will be collected through the MWD tools from intermediate casing to TD. CBL with CCL will be run as far as gravity will let it fall to TOC.

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

CBL,GR,MWD,OTH

Other log type(s):

Casing collar locator

Coring operation description for the well:

No core or drill stem test is planned.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7668 **Anticipated Surface Pressure:** 5257.9

Anticipated Bottom Hole Temperature(F): 170

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

VernaRae_203H_H2S_Plan_06-19-2017.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

VernaRae_203H_Horizontal_Drilling_Plan_06-19-2017.pdf

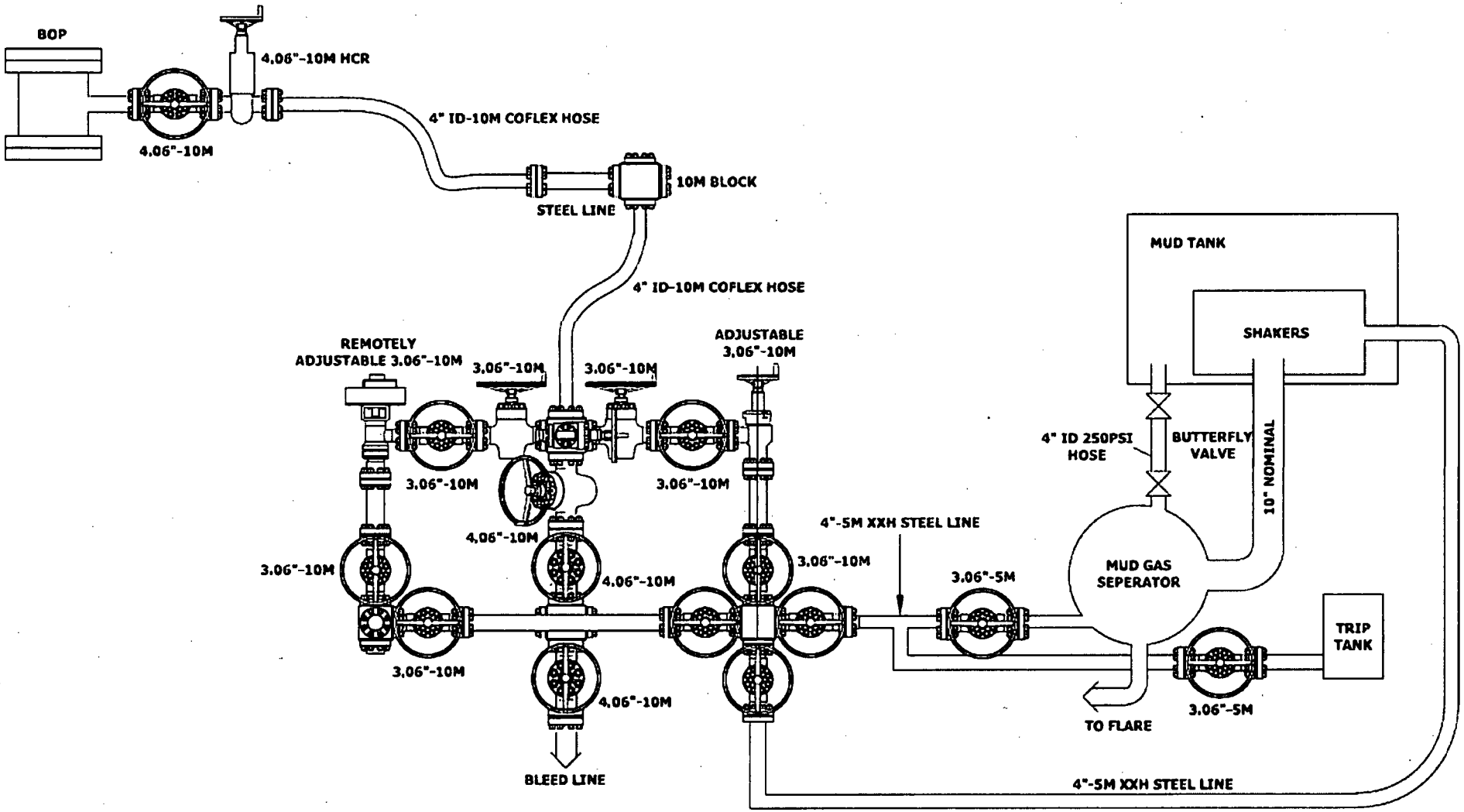
Other proposed operations facets description:

Deficiency Letter dated 10/20/17 requested:
1) Revised Choke Diagram - see attached
3) 7 5/8 in, 5.5 in, 4.5 in casing specs - attachment is correct, so no deficiency

Other proposed operations facets attachment:

VernaRae_203H_General_Drill_Plan_06-19-2017.pdf
VernaRae_203H_Wellhead_Casing_Spec_20170928101044.pdf

Other Variance attachment:



WELDING NOTE & TOLERANCES UNLESS OTHERWISE SPECIFIED.

GENERAL WELDING NOTE:
ALL ACCESSIBLE CONTACT SURFACES SHALL BE JOINED WITH CONTINUOUS 45 DEGREE FILLET WELDS, WELD SIZE TO BE 1/16 INCH SMALLER THAN THINNER MEMBER JOINED UP TO 3/16 INCH THICKNESS AND 1/8 INCH SMALLER THAN THINNER MEMBER JOINED UP TO 3/4 INCH THICKNESS. WELD PART TOLERANCES ± 1/16

MACHINING TOLERANCES:
1 PLACE DECIMAL ± 0.1
2 PLACE DECIMAL ± 0.01
3 PLACE DECIMAL ± 0.015
FRACTIONAL TOLERANCES ± 1/64
HOLES MACHINED CORNER TO EACH ± 0.031
CHAMFER OUTSIDE DIAMETERS 0.03 X 45 DEG
ANGLE TOLERANCES ± 1 DEGREE
MACHINED SURFACE FINISH 125 RMS
ALL UNSPECIFIED DIMENSIONS AND FINISHES

REV	DATE	DESCRIPTION	DRAWN BY	CHK BY	APPVD ENG.
02	6-3-15	ISSUED FOR INFORMATION	CP	CDL	
01	4-9-15	ISSUED FOR INFORMATION	CDL		

PATTERSON-UTI DRILLING COMPANY LLC

CHOKE MANIFOLD

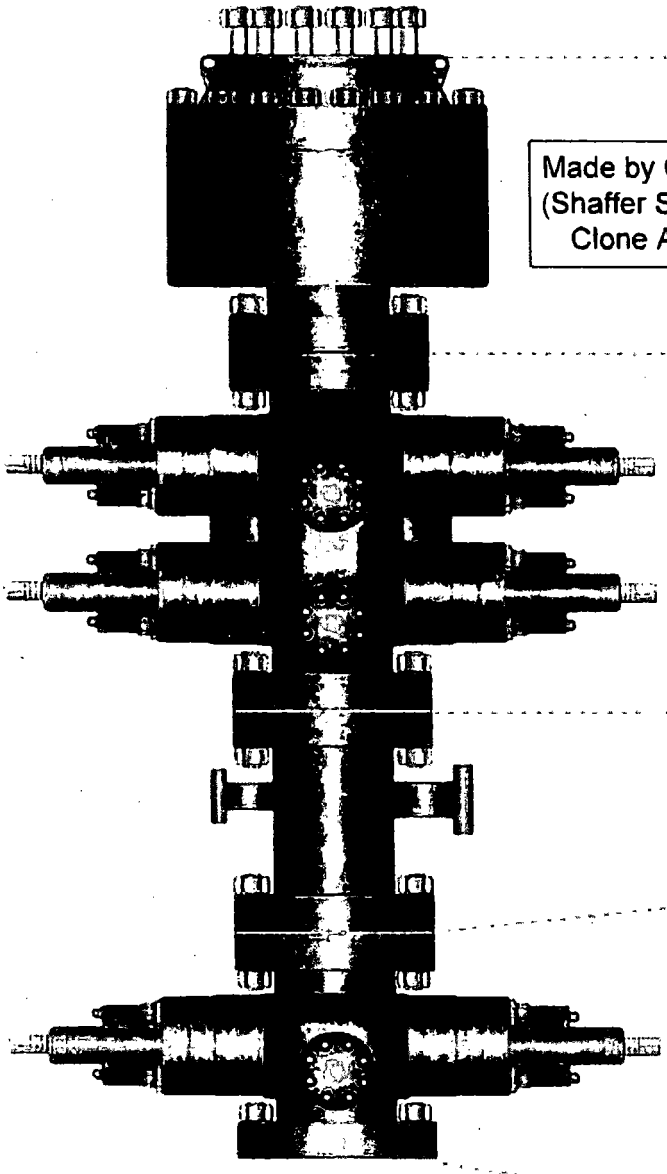
10M CHOKE ARRANGEMENT
RIG 297

DWG No. R0297-D.001.LAY.09

SHT 1 OF 1 | REV. 02

PATTERSON-UTI
Well Control

RIG: 809



Made by Cameron
(Shaffer Spherical)
Clone Annular

PATTERSON-UTI # PS2-628
STYLE: New Shaffer Spherical
BORE 13 5/8" **PRESSURE** 5,000
HEIGHT: 48 ½" **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

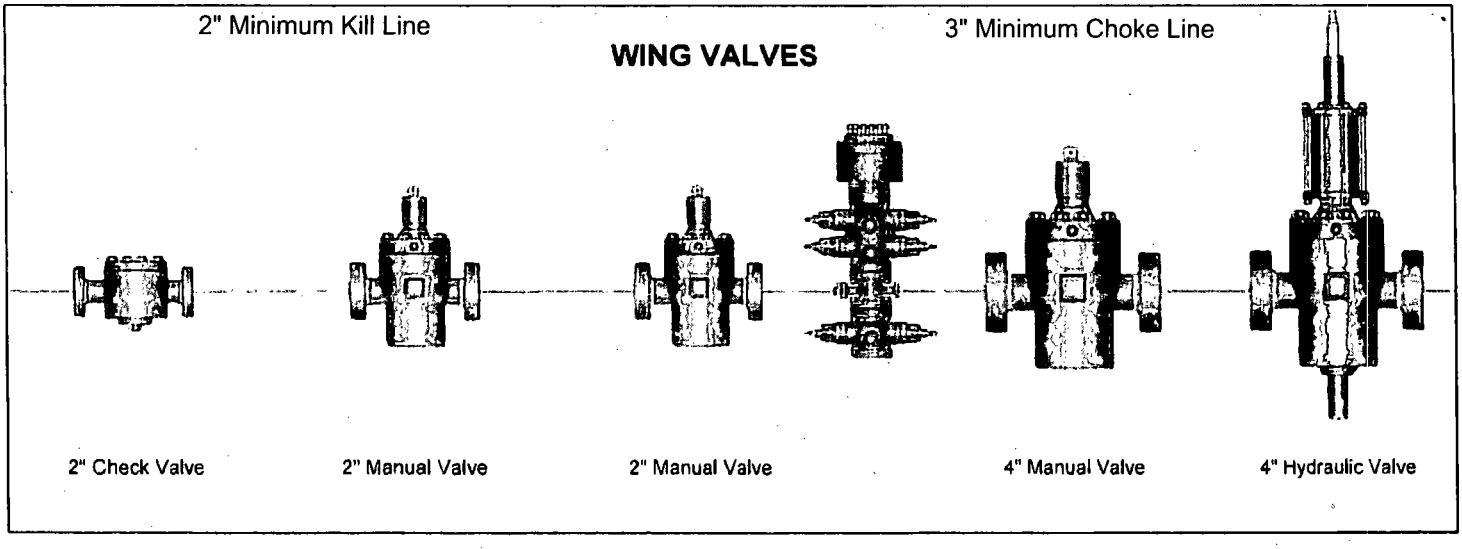
Length 40" **Outlets** 4" 10M
DSA 4" 10M x 2" 10M

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

2" Minimum Kill Line

WING VALVES

3" Minimum Choke Line



2" Check Valve | 2" Manual Valve | 2" Manual Valve | 4" Manual Valve | 4" Hydraulic Valve

R809

March 10, 2015

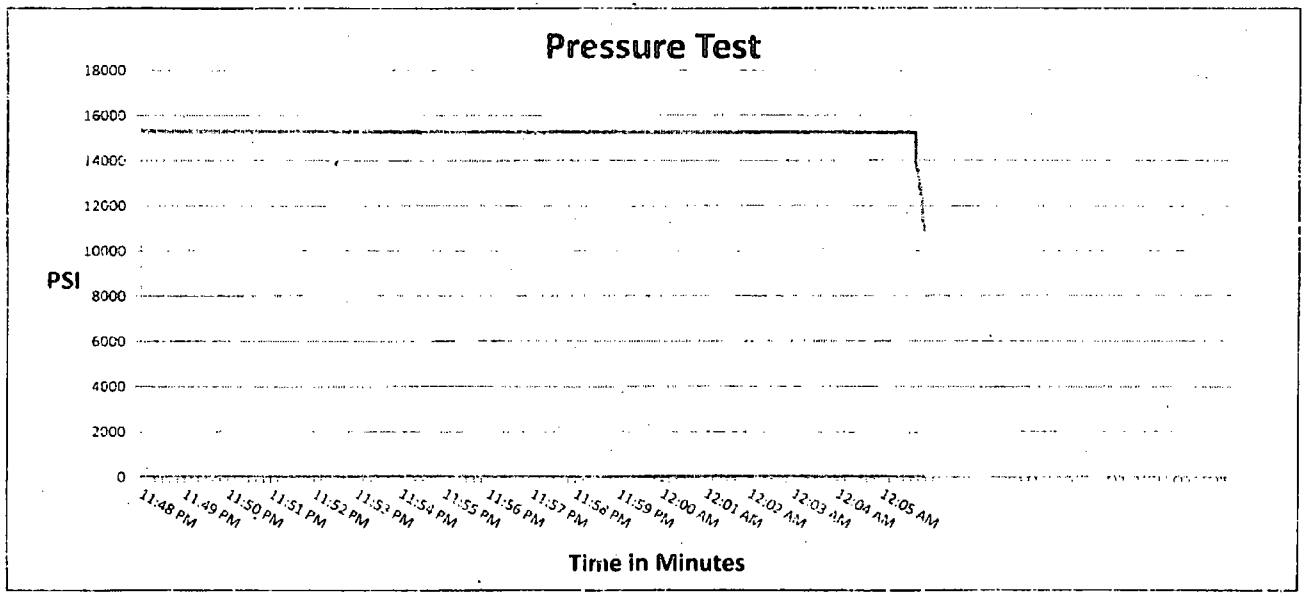
Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Graph

Customer: Patterson B&E

Pick Ticket #: 296283

Hose Specifications		Verification	
Hose Type	**Length**	**Type of Fitting**	**Coupling Method**
Mud	50'	2"1502	Swage
I.D.	**O.D.**	**Die Size**	**Final O.D.**
2"	3.47"	97MM	4.03"
Working Pressure	**Burst Pressure**	**Hose Serial #**	**Hose Assembly Serial #**
10000 PSI	Standard Safety Multiplier Applies	11839	296283



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	17 3/4 Minutes		15361 PSI

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

Tested By: *Richard Davis*

Approved By: *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/FSL Level 2
Date Assembled	3/10/2015	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	245805	Hose Lot # and Date Code	11839-11/14
Customer Purchase Order #	270590	Hose I.D. (Inches)	2"
Assembly Serial # (Pick Ticket #)	296283	Hose O.D. (Inches)	3.99"
Hose Assembly Length	50'	Armor (yes/no)	YES

Fittings

End A		End B	
Stem (Part and Revision #)	R2.0X32M1502	Stem (Part and Revision #)	RF2.0 32F1502
Stem (Heat #)	14104546	Stem (Heat #)	A144853
Ferrule (Part and Revision #)	RF2.0 10K	Ferrule (Part and Revision #)	RF2.0 10K
Ferrule (Heat #)	41044	Ferrule (Heat #)	41044
Connection - Flange Hammer Union Part		Connection (Part #)	
Connection (Heat #)		Connection (Heat #)	
Nut (Part #)	2" 1502 H2S	Nut (Part #)	
Nut (Heat #)		Nut (Heat #)	
Dies Used	97MM	Dies Used	97MM

Hydrostatic Test Requirements

Test Pressure (psi)	15,000	***Hose assembly was tested with ambient water temperature.***
Test Pressure Hold Time (minutes)	17 3/4	

Date Tested	Tested By	Approved By
3/10/2015		

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: **PATTERSON B&E**	*Customer P.O.#* **270590**
Sales Order # **245805**	*Date Assembled:* **3/10/2015**

Specifications

Hose Assembly Type:	**Choke & Kill**		
Assembly Serial #	**296283**	*Hose Lot # and Date Code*	**11839-11/14**
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***
	3/19/2015

R 809 · Chuck & Kelly Hoses

December 24, 2014

Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Graph

Customer: Patterson

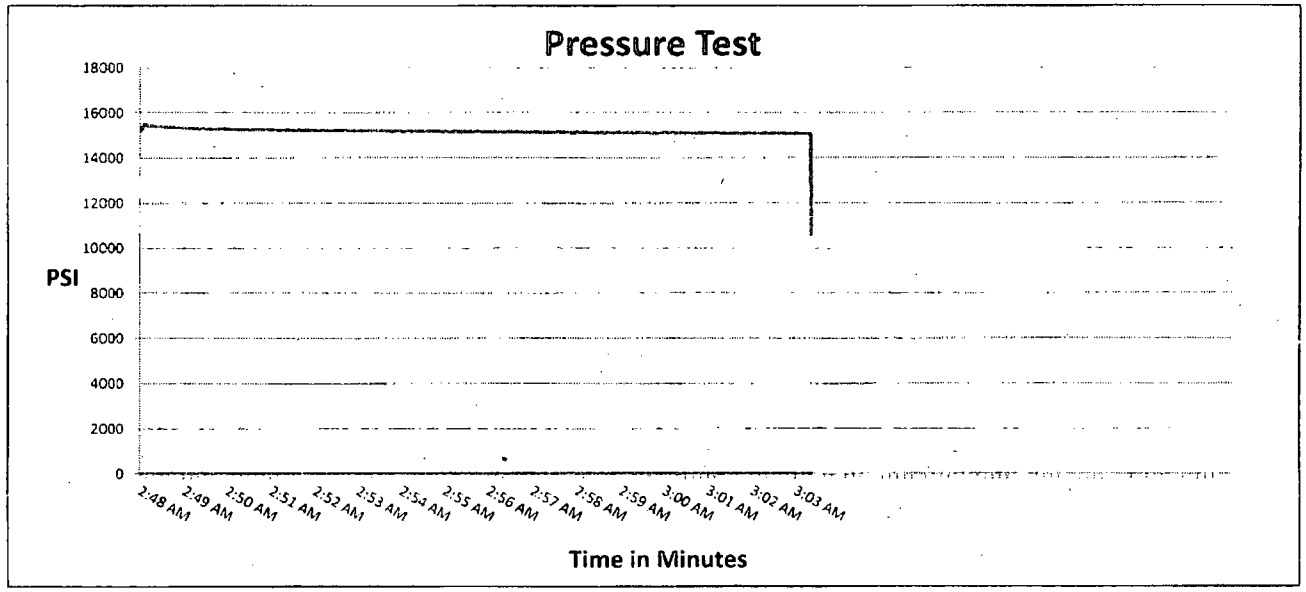
Pick Ticket #: 286159

Hose Specifications

Hose Type	Length
Ck	50'
I.D.	**O.D.**
2"	3.55"
Working Pressure	**Burst Pressure**
10000 PSI	Standard Safety Multiplier Applies

Verification

Type of Fitting	Coupling Method
2" 1502	Swage
Die Size	**Final O.D.**
97MM	3.98"
Hose Serial #	**Hose Assembly Serial #**
11784	286159



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	15 1/4 Minutes		15410 PSI

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

Tested By: *Tyler Hill*

Approved By: *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/FSL Level 2**
Date Assembled	**12/23/2014**	*Hose Grade*	**MUD**
Location Assembled	**OKC**	*Hose Working Pressure*	**10000**
Sales Order #	**237566**	*Hose Lot # and Date Code*	**11784-10/14**
Customer Purchase Order #	**261581**	*Hose I.D. (Inches)*	**2"**
Assembly Serial # (Pick Ticket #)	**286159**	*Hose O.D. (Inches)*	**4.00"**
Hose Assembly Length	**50'**	*Armor (yes/no)*	YES

Fittings

End A		End B	
Stem (Part and Revision #)	**R2.0X32M1502**	*Stem (Part and Revision #)*	**R2.0X32M1502**
Stem (Heat #)	**M14104546**	*Stem (Heat #)*	**M14101226**
Ferrule (Part and Revision #)	**RF2.0 10K**	*Ferrule (Part and Revision #)*	**RF2.0 10K**
Ferrule (Heat #)	**41044**	*Ferrule (Heat #)*	**41044**
Connection . Flange Hammer Union Part	**2"1502**	*Connection (Part #)*	
Connection (Heat #)	**2866**	*Connection (Heat #)*	
Nut (Part #)		*Nut (Part #)*	
Nut (Heat #)		*Nut (Heat #)*	
Dies Used	**97MM**	*Dies Used*	**97MM**

Hydrostatic Test Requirements

Test Pressure (psi)	**15,000**	***Hose assembly was tested with ambient water temperature.***
Test Pressure Hold Time (minutes)	**15 1/4**	

Date Tested	*Tested By*	*Approved By*
12/24/2014	Tyler Hill	Ryan Adams

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: **PATTERSON B&E**	*Customer P.O.#* **261581**
Sales Order # **237566**	*Date Assembled:* **12/23/2014**

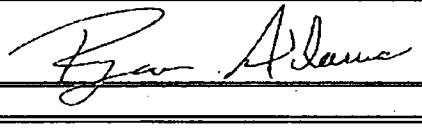
Specifications

Hose Assembly Type:	**Choke & Kill**		
Assembly Serial #	**286159**	*Hose Lot # and Date Code*	**11784-10/14**
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***
	**12/29/2014**

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/FSL Level 2
Date Assembled	3/10/2015	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	245805	Hose Lot # and Date Code	11839-11/14
Customer Purchase Order #	270590	Hose I.D. (Inches)	2"
Assembly Serial # (Pick Ticket #)	296283	Hose O.D. (Inches)	3.99"
Hose Assembly Length	50'	Armor (yes/no)	YES

Fittings

End A		End B	
Stem (Part and Revision #)	R2.0X32M1502	Stem (Part and Revision #)	RF2.0 32F1502
Stem (Heat #)	14104546	Stem (Heat #)	A144853
Ferrule (Part and Revision #)	RF2.0 10K	Ferrule (Part and Revision #)	RF2.0 10K
Ferrule (Heat #)	41044	Ferrule (Heat #)	41044
Connection . Flange Hammer Union Part		Connection (Part #)	
Connection (Heat #)		Connection (Heat #)	
Nut (Part #)	2" 1502 H2S	Nut (Part #)	
Nut (Heat #)		Nut (Heat #)	
Dies Used	97MM	Dies Used	97MM

Hydrostatic Test Requirements

Test Pressure (psi)	15,000	Hose assembly was tested with ambient water temperature.
Test Pressure Hold Time (minutes)	17 3/4	

Date Tested	Tested By	Approved By
3/10/2015		

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).

Casing Design Criteria and Load Case Assumptions

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).

Casing Design Criteria and Load Case Assumptions

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).

Casing Design Criteria and Load Case Assumptions

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).

Casing Design Criteria and Load Case Assumptions

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).

Casing Design Criteria and Load Case Assumptions

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).

Casing Design Criteria and Load Case Assumptions

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).

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).

Casing Design Criteria and Load Case Assumptions

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).

Casing Design Criteria and Load Case Assumptions

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).

Casing Design Criteria and Load Case Assumptions

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).

Casing Design Criteria and Load Case Assumptions

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).

Casing Design Criteria and Load Case Assumptions

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).

Casing Design Criteria and Load Case Assumptions

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).

APD ID: 10400015211 **Submission Date:** 06/19/2017

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: VERNA RAE FEDERAL COM **Well Number:** 203H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

VernaRae_203H_Road_Map_06-19-2017.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:

VernaRae_203H_Road_Map_06-19-2017.pdf

New road type: RESOURCE

Length: 629.25 Feet **Width (ft.):** 30

Max slope (%): 0 **Max grade (%):** 3

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: Crown & ditch, surface with caliche

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: ONSITE

Access surfacing type description: Caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: grader

Access other construction information:

Access miscellaneous information:

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

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: No drainage crossings needed.

Road Drainage Control Structures (DCS) description: Crown & ditch, no culverts needed.

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:

VernaRae_203H_Well_Map_06-19-2017.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: A 1415.63' long overhead raptor safe 3-phase power line will be built east to the slot 4 pad. (Power line to slot 4 pad is BLM right-of-way NMNM-137063). Oil tanks, water tanks, meter runs, separators, pumps, heater-treaters, combustion unit, and a flare will be installed on the south and west sides of the pad. Gas line plans have not been finalized, though it appears DCP will build a short line from its existing line that is between the Verna Rae Fed Com slot 3 and 4 pads.

Production Facilities map:

VernaRae_203H_Production_Diagram_06-19-2017.PDF

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: VERNA RAE FEDERAL COM **Well Number:** 203H

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: DUST CONTROL, STIMULATION **Water source type:** GW WELL

Describe type:

Source latitude: **Source longitude:**

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: PRIVATE

Water source volume (barrels): 15000 **Source volume (acre-feet):** 1.9333965

Source volume (gal): 630000

Water source and transportation map:

VernaRae_203H_Water_Source_06-19-2017.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:

Section 6 - Construction Materials

Construction Materials description: NM One Call (811) will be notified before construction starts. Top 6" of soil and brush will be stockpiled north of the pad. V-door will face south. Closed loop drilling system will be used. Caliche will be hauled from existing caliche pits on private land. Klein pit is in SWNW 27-19S-35E. Berry pit is in E2NE4 35-20s-34e.
Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: cuttings and mud

Amount of waste: 15000 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: Halfway, NM

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.)**

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:

VernaRae_203H_Well_Site_Layout_06-19-2017.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: VERNA RAE

Multiple Well Pad Number: SLOT 3

Recontouring attachment:

VernaRae_203H_Recontour_Plat_06-19-2017.PDF

VernaRae_203H_Interim_Reclamation_Diagram_20170928101238.PDF

Drainage/Erosion control construction: Surface with caliche

Drainage/Erosion control reclamation: Disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over disturbed areas and harrowed on the contour. Disturbed areas will be seeded in accordance with the surface owner's requirements.

Wellpad long term disturbance (acres): 3.15

Wellpad short term disturbance (acres): 3.57

Access road long term disturbance (acres): 0.43

Access road short term disturbance (acres): 0.43

Pipeline long term disturbance (acres): 0

Pipeline short term disturbance (acres): 0

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0.49

Total long term disturbance: 3.58

Total short term disturbance: 4.49

Reconstruction method: Within 7 days disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over disturbed areas and harrowed on the contour with a grader. Disturbed areas will be seeded in accordance with the surface owner's requirements.
Topsoil redistribution: Soil will be evenly spread over disturbed areas

Soil treatment: No soil treatment planned, site will be revegetated in accordance with the surface owner's requirements.

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?

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project?

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation?

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: VERNA RAE FEDERAL COM **Well Number:** 203H

Seed Type	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: Noxious weeds will be controlled.

Weed treatment plan attachment:

Monitoring plan description: On pumper visits.

Monitoring plan attachment:

Success standards: To landowner's specifications.

Pit closure description: N/A (closed loop)

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: VERNA RAE FEDERAL COM **Well Number:** 203H

USFWS Local Office:

Other Local Office:

USFS Region:

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

Fee Owner: Larry Hughes **Fee Owner Address:** HC 69 Box 57 Monument NM 88265

Phone: (575)263-7602 **Email:**

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: Matador Resources Company has a private surface owner agreement with Larry Hughes (HC 69 Box 57, Monument NM 88265) for the Verna Rae Fed Com road in SESE Sec. 31, T. 19 S., R. 34 E. and the Verna Rae Fed Com slot 3 well site, road, and power line in Section 6, T. 20 S., R. 34 E., Lea County, NM. Matador Resources Company will file an Application for Right-Of-Way Easement with the NM State Land Office (PO Box 1148, Santa Fe NM 87504) for road access across S2S2 32-19s-34e. Their phone number is (505) 827-5728.

Surface Access Bond BLM or Forest Service: BLM

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: Deficiency Letter dated 9/19/17 requested: 1) Reclamation Diagram - see attachment in Reclamation section; 2) Surface Use Agreement - see attachment in Other SUPO attachments

Use a previously conducted onsite? YES

Previous Onsite information: On site inspection was held with Vance Wolf, Cassie Brooks, and Bob Ballard (all BLM) on April 3, 2017.

Other SUPO Attachment

VernaRae_203H_General_SUPO_06-19-2017.pdf

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

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

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

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

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

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

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

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

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

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

Injection PWD discharge volume (bbl/day):

Injection well 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:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

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

Bond Info Data Report

02/12/2018

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:

Section 1 - General

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

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

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

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment: