

Carlsbad Field Office
Hobbs

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

SEP 12 2018
RECEIVED

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM113419
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input 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.
2. Name of Operator MARATHON OIL PERMIAN LLC (372098)		8. Lease Name and Well No. ENDER WIGGINS FC 25 34 14 WA 1H (322429)
3a. Address 5555 San Felipe St. Houston TX 77056	3b. Phone No. (include area code) (713)629-6600	9. API Well No. 30-025-45187 (96994)
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SWNW / 2449 FNL / 612 FWL / LAT 32.1308996 / LONG -103.4468457 At proposed prod. zone NWNW / 330 FNL / 330 FWL / LAT 32.1512363 / LONG -103.4477752		10. Field and Pool, or Exploratory PITCHFORK RANCH / WOLFCAMP; SOL
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Blk. and Survey or Area SEC 14 / T25S / R34E / NMP
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 612 feet		12. County or Parish
16. No. of acres in lease 1240		13. State
17. Spacing Unit dedicated to this well 240		
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1534 feet		20. BLM/BIA Bond No. in file FED: WYB002107
19. Proposed Depth 12702 feet / 19963 feet		
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3332 feet	22. Approximate date work will start* 06/01/2018	23. Estimated duration 30 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) Jennifer Van Curen / Ph: (713)296-2500	Date 03/12/2018
Title Sr. Regulatory Compliance Rep		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 08/23/2018
Title Assistant Field Manager Lands & Minerals 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.

GCP Rec 09/12/18

Ka 09/13/18

APPROVED WITH CONDITIONS

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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

1. SHL: SWNW / 2449 FNL / 612 FWL / TWSP: 25S / RANGE: 34E / SECTION: 14 / LAT: 32.1308996 / LONG: -103.4468457 (TVD: 0 feet, MD: 0 feet)
PPP: SWNW / 2639 FSL / 330 FWL / TWSP: 25S / RANGE: 34E / SECTION: 11 / LAT: 32.1448914 / LONG: -103.4477697 (TVD: 12702 feet, MD: 17655 feet)
PPP: SWSW / 0 FSL / 330 FWL / TWSP: 25S / RANGE: 34E / SECTION: 11 / LAT: 32.1376367 / LONG: -103.4477656 (TVD: 12702 feet, MD: 15016 feet)
PPP: SWNW / 2310 FNL / 330 FWL / TWSP: 25S / RANGE: 34E / SECTION: 14 / LAT: 32.131287 / LONG: -103.4477585 (TVD: 12589 feet, MD: 12681 feet)
BHL: NWNW / 330 FNL / 330 FWL / TWSP: 25S / RANGE: 34E / SECTION: 11 / LAT: 32.1512363 / LONG: -103.4477752 (TVD: 12702 feet, MD: 19963 feet)

BLM Point of Contact

Name: Tenille Ortiz

Title: Legal Instruments Examiner

Phone: 5752342224

Email: tortiz@blm.gov

CONFIDENTIAL

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.

CONFIDENTIAL



APD ID: 10400026575

Submission Date: 03/12/2018

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

Well Type: OIL WELL

Well Work Type: Drill



[Show Final Text](#)

Section 1 - General

APD ID: 10400026575

Tie to previous NOS?

Submission Date: 03/12/2018

BLM Office: CARLSBAD

User: Jennifer Van Curen

Title: Sr. Regulatory Compliance Rep

Federal/Indian APD: FED

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

Lease number: NMNM113419

Lease Acres: 1240

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO

APD Operator: MARATHON OIL PERMIAN LLC

Operator letter of designation:

Operator Info

Operator Organization Name: MARATHON OIL PERMIAN LLC

Operator Address: 5555 San Felipe St.

Zip: 77056

Operator PO Box:

Operator City: Houston

State: TX

Operator Phone: (713)629-6600

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO

Mater Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: PITCHFORK
RANCH

Pool Name: WOLFCAMP;
SOUTH

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

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

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: Number: 289-9

ENDER WIGGINS FED COM 25

Well Class: HORIZONTAL

34 11

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 30 Miles

Distance to nearest well: 1534 FT

Distance to lease line: 612 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: 1_C_102_ENDER_WIGGINS_F_C_25_34_14_WA_1H_20180206_R3816_002_20180613063430.pdf

APP_2_3160_3_ENDER_WIGGINS_F_C_25_34_14_WA_1H_20180711102916.pdf

Well work start Date: 06/01/2018

Duration: 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD27

Vertical Datum: NAVD88

Survey number: R3817

	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	244 9	FNL	612	FWL	25S	34E	14	Aliquot SWN W	32.13089 96	- 103.4468 457	LEA	NEW MEXI CO	NEW MEXI CO	F	FEE	333 2	0	0
KOP Leg #1	267 9	FNL	330	FWL	25S	34E	14	Aliquot SWN W	32.13076 52	- 103.4476 331	LEA	NEW MEXI CO	NEW MEXI CO	F	FEE	- 879 7	121 47	121 29



APD ID: 10400026575

Submission Date: 03/12/2018

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

Well Type: OIL WELL

Well Work Type: Drill



Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	RUSTLER	2424	908	908	DOLOMITE, ANHYDRITE	OTHER : Brine	No
2	SALADO	1921	1411	1411	SALT, ANHYDRITE	OTHER : Brine	No
3	CASTILE	-278	3610	3610	SALT	OTHER : Brine	No
4	BASE OF SALT	-1802	5134	5149	LIMESTONE, SANDSTONE	OTHER : Brine	No
5	LAMAR	-2087	5419	5436	SHALE, SANDSTONE	OIL	No
6	BELL CANYON	-2118	5450	5467	SHALE, SANDSTONE	OIL	No
7	CHERRY CANYON	-3427	6759	6777	SANDSTONE, OTHER : Carbonate	NATURAL GAS, OIL	No
8	BRUSHY CANYON	-4727	8059	8077	SANDSTONE, OTHER : Carbonate	NATURAL GAS, OIL	No
9	BONE SPRING	-6036	9368	9386	SANDSTONE, OTHER : Carbonate	NATURAL GAS, OIL	No
10	BONE SPRING 1ST	-7063	10395	10413	SANDSTONE, OTHER : Carbonate	NATURAL GAS, OIL	No
11	BONE SPRING 2ND	-7641	10973	10991	SANDSTONE, OTHER : Carbonate	NATURAL GAS, OIL	No
12	BONE SPRING 3RD	-8685	12017	12035	SANDSTONE, OTHER : Carbonates	NATURAL GAS, OIL	No
13	WOLFCAMP	-9138	12470	12512	SHALE, SANDSTONE, OTHER : Carbonate	NATURAL GAS, OIL	Yes

Section 2 - Blowout Prevention

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

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

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM113419
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator MARATHON OIL PERMIAN LLC (372098)		7. If Unit or CA Agreement, Name and No.
3a. Address 5555 San Felipe St. Houston TX 77056		8. Lease Name and Well No. ENDER WIGGINS FC 25 34 14 WA 1H
3b. Phone No. (include area code) (713)629-6600		9. API Well No. 30-025-1
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface SWNW / 2449 FNL / 612 FWL / LAT 32.1308996 / LONG -103.4468457 At proposed prod. zone NWNW / 330 FNL / 330 FWL / LAT 32.1512363 / LONG -103.4477752		10. Field and Pool, or Exploratory PITCHFORK RANCH / WOLFCAMP; SO
14. Distance in miles and direction from nearest town or post office* 30 miles		11. Sec., T. R. M. or Blk. and Survey or Area SEC 14 / T25S / R34E / NMP
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 612 feet	16. No. of acres in lease 1240	17. Spacing Unit dedicated to this well 240
18. Distance from proposed location* to nearest well, drilling, completed, 1534 feet applied for, on this lease, ft.	19. Proposed Depth 12702 feet / 19955 feet	20. BLM/BIA Bond No. on file FED: WYB002107
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3332 feet	22. Approximate date work will start* 08/01/2018	23. Estimated duration 30 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. | 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 required by the BLM. |

25. Signature (Electronic Submission)	Name (Printed/Typed) Jennifer Van Curen / Ph: (713)296-2500	Date 03/12/2018
Title Sr. Regulatory Compliance Rep		
Approved by (Signature)	Name (Printed/Typed)	Date
Title 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.
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(Continued on page 2)

*(Instructions on page 2)

Exp Rec 09/12/18

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Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

Pressure Rating (PSI): 10M

Rating Depth: 22000

Equipment: 13 5/8 5M Annular, 10M blind ram, 10M pipe ram, and 10M double ram will be installed and tested for each of the 8 3/4 and 6 1/8 hole sections.

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart. BOP variance is requested for the annular to be 5000 psi on 10000 psi BOP stack.

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table attached. If the system is upgraded all the components installed will be functional and tested. The Annular will be tested to 70% of 5000 working pressure (see attached BOP plan). The working pressure of 10000 for the Blind Ram and Double Ram will be tested to 10000 psi. - Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock, full opening safety valve / inside BOP and choke lines and choke manifold. See attached schematics. - Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i. - A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system will be tested. See attached schematic.

Choke Diagram Attachment:

5_Choke_Line_Test_Chart_SN_63393_20180306073908.pdf

5_Choke_Line_Flex_III_Rig_20180306073918.pdf

5_Contitech_Hose_SN_663393_20180306073928.pdf

BOP Diagram Attachment:

2_5M_Flex.BOPE.BLM_20180312044551.pdf

Ender_Wiggins_Federal_25_34_14_WA_1H_Wellhead_20180312044737.pdf

Well_Control_Plan___Permian_20180612120755.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	950	0	950	3266	2316	950	J-55	54.5	STC	1.53	2.92	BUOY	2.76	BUOY	2.76
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	5450	0	5450	3266	-2184	5450	J-55	40	LTC	1.21	1.26	BUOY	1.83	BUOY	1.83
3	PRODUCTION	8.75	7.0	NEW	API	N	0	12000	0	12000	3266	-8734	12000	P-110	29	OTHER - BTC	2.33	1.22	BUOY	3.26	BUOY	3.26

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

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
4	LINER	6.12 5	4.5	NEW	API	N	11800	19963	11800	12702	-8734	-9436	8163	P- 110	13.5	BUTT	1.38	2.03	BUOY	2.07	BUOY	2.07

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

7_Red_Hills_3_csg__liner__Surface_Csg_20180305083621.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

8_Red_Hills_3_csg__liner__Int_I_Csg_20180305083647.pdf

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

Casing Attachments

Casing ID: 3 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

9_Red_Hills_3_csg__liner__Int_II_Csg_20180305083656.pdf

Casing ID: 4 String Type: LINER

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

10_Red_Hills_3_csg__liner__Prod_Liner_20180305083713.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	760	604	1.75	13.5	1056	100	Class C	3 lbm/sk granular LCM + 0.1250 lbm/sk Poly-EFlake
SURFACE	Tail		760	950	194	1.36	14.8	264	100	Class C	0.25 % Accelerator
INTERMEDIATE	Lead		0	4360	1381	1.73	12.8	2390	75	Class C	0.02 Gal/Sx Defoamer + 0.5% Extender + 1% Accelerator
INTERMEDIATE	Tail		4360	5450	385	1.33	14.8	512	50	Class C	0.07 % Retarder

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Lead		5150	1100 0	554	2.7	11	1495	70	Class C	0.8% retarder + 10% extender + 0.02 gal/sk + 2.0% Extender + 015% Viscosifier
PRODUCTION	Tail		1100 0	1200 0	179	1.09	15.6	195	30	Class H	3% extender + 0.1% Dispersant + 0.2% retarder
LINER	Lead		1180 0	1996 3	0	0	0	0	0	No Lead	NA
LINER	Tail		1180 0	1996 3	819	1.22	14.5	999	30	Class H	0.15% retarder + 3.5% extender + 0.25% fluid loss

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: The necessary mud products for additional weight and fluid loss control will be on location at all times.

Describe the mud monitoring system utilized: Losses or gains in the mud system will be monitored visually/manually as well as with an electronic PVT.

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
950	5450	SALT SATURATED	9.9	10.2							
0	950	WATER-BASED MUD	8.4	8.8							
1200 0	1996 3	OIL-BASED MUD	12	12.5							

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

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
5450	1200 0	OTHER : Cut Brine	9	9.4							

Section 6 - Test, Logging, Coring

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

- a. A Kelly cock will be in the drill string at all times.
- b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor unobstructed and readily accessible at all times.
- c. Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production casing is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached. If Hydrogen Sulfide is encountered, measured amounts and formations will be reported to the BLM

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

GR

Coring operation description for the well:

- d. DST's: None.
- e. Open Hole Logs: GR while drilling from Intermediate I casing shoe to TD.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6984

Anticipated Surface Pressure: 4189.55

Anticipated Bottom Hole Temperature(F): 170

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:

- 4_Marathon_Carlsbad_Ender_Wiggins_Fed25_34_14_1H_2H_3H_Contingency_Plan_020918_20180305085331.pdf
- 4_H2S_Contiengency_Plan_Summary_20180305085341.pdf
- 3_RIG_LAYOUT_Pad_Flex_III_20180312044831.pdf

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

ENDER_WIGGINS_F_C_25_34_14_1_2_3_Gas_Capture_Plan_2_13_2018_20180626120434.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Ender_Wiggins_F_C_25_34_14_WA_1H_Directional_Plans_20180621093432.pdf

Other proposed operations facets description:

Potential Hazards:

- H2S detection equipment will be in operation after drilling out the surface casing shoe until the production casing has been cemented. Breathing equipment will be on location from drilling out the surface shoe until production casing is cemented. If H2S is encountered the operator will comply with Onshore Order #6.
- No abnormal temperatures or pressures are anticipated. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.
- No losses are anticipated at this time.
- All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.
- Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

Other proposed operations facets attachment:

Batch_Drilling_Plan_and_Surface_Rig_Request_20180516112309_20180517061943.pdf

ENDER_WIGGINS_F_C_25_34_14_WA_1H_Drilling_APD_Information_20180621093442.doc

Other Variance attachment:



Certificate of Conformity

ContiTech

Certificate Number 953233-4	COM Order Reference 953233	Customer Name & Address HELMERICH & PAYNE DRILLING CO 1434 SOUTH BOULDER AVE TULSA, OK 74119 USA	
Customer Purchase Order No: 740053080		Project:	
Test Center Address ContiTech Oil & Marine Corp. 11535 Brittmoores Park Drive Houston, TX 77041 USA		Accepted by GOM Inspection Signed: Roger Suarez Date: 5/11/17	Accepted by Client Inspection

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

Item	Part No.	Description	Qty	Serial Number	Specifications
------	----------	-------------	-----	---------------	----------------

30		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	63393	ContiTech Standard
----	--	---	---	-------	--------------------



Hydrostatic Test Certificate

ContiTech

Certificate Number 953233-4	COM Order Reference 953233	Customer Name & Address HELMERICH & PAYNE DRILLING CO 1434 SOUTH BOULDER AVE TULSA, OK 74119 USA	
Customer Purchase Order No: 740053080		Project:	
Test Center Address: ContiTech Oil & Marine Corp. 11535 Brittmoore Park Drive Houston, TX 77041 USA		Accepted by COM Inspection: Signed: Roger Suarez Date: 5/11/17	Accepted by Client Inspection:

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

Item No.	Description	Qty	Serial Number	Work Order	Test Pressure	Test Time (minutes)
----------	-------------	-----	---------------	------------	---------------	---------------------

30

RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL

1

63383

10,000 psi 15,000 psi

60

63393

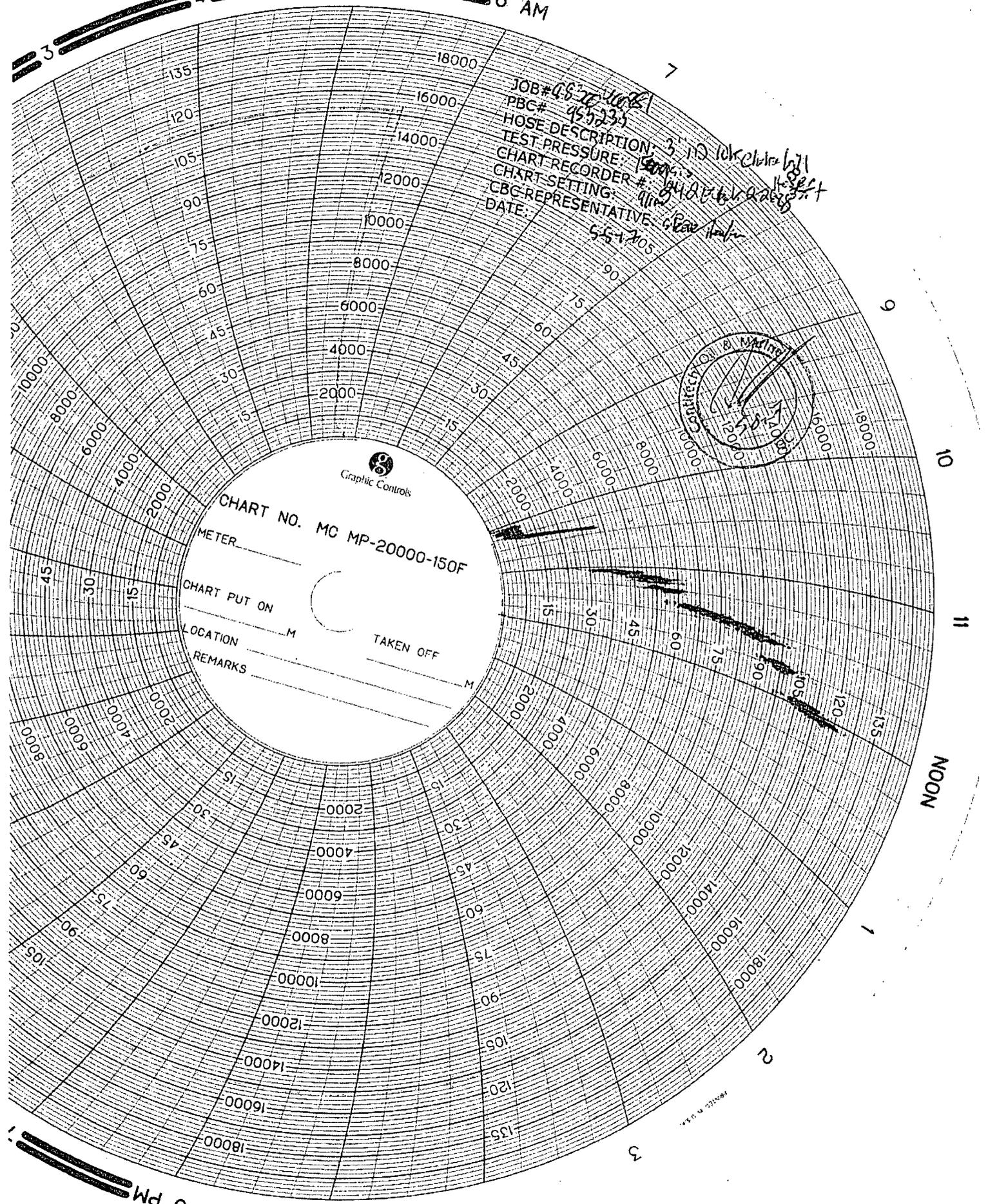
6 AM

JOB # *06-1081*
 PBC# *45723*
 HOSE DESCRIPTION: *3" HD Wk. Chlor. 1/2"*
 TEST PRESSURE: *1500 psi*
 CHART RECORDER # *9112*
 CHART SETTING: *9112*
 CBG REPRESENTATIVE: *G. E. ...*
 DATE: *5-5-70*



CHART NO. MC MP-20000-150F

METER _____
 CHART PUT ON _____ M
 LOCATION _____
 REMARKS _____
 TAKEN OFF _____ M



6 PM

4

3

2

1

NOON

11

10

9

7

QUALITY CONTROL	No.: QC-DB- 380 / 2012
	Page : 1 / 61
Hose No.: 63389, 63390, 63391 63392, 63393	Revision : 0
	Date: 28. August 2012.
	Prepared by : <i>Scalo Linder</i>
	Appr. by: <i>[Signature]</i>

CHOKER AND KILL HOSES

id.: 3" 69 MPa x 35 ft (10,67 m)

DATA BOOK

Purchaser: H & P

Purchaser Order No.:

ContiTech Rubber Order No.: 531895

ContiTech Beattie Co. Order No.: 006227

NOT DESIGNED FOR WELL TESTING

CONTENT

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ContiTech Rubber
Industrial Kft.
Quality Control Dept.
(1)



Certificate of Registration

APIQR REGISTRATION NUMBER
0760

This certifies that the quality management system of
CONTITECH RUBBER INDUSTRIAL LTD.
 Budapesti ut 10
 Szeged
 Hungary

*has been assessed by the American Petroleum Institute Quality Registrar (APIQR®) and
 found it to be in conformance with the following standard:*

ISO 9001:2008

The scope of this registration and the approved quality management system applies to the
Design and Manufacture of High Pressure Hoses

APIQR® approves the organization's justification for excluding:
No Exclusions Identified as Applicable

COPY

Effective Date: October 15, 2010
 Expiration Date: October 15, 2013
 Registered Since: October 15, 2007

W. Dan Whitaker
 Manager of Operations, APIQR

Accredited by Member of
 the International
 Accreditation Forum
 Multilateral Recognition
 Arrangement for Quality
 Management Systems



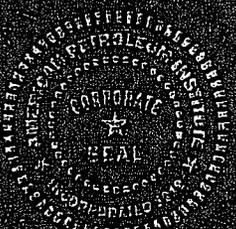
This certificate is valid for the period specified herein. The registered organization must continually meet all requirements of APIQR's Registration Program and the requirements of the Registration Agreement. Registration is maintained and regularly monitored through annual full system audits. Further clarifications regarding the scope of this certificate and the applicability of ISO 9001 standard requirements may be obtained by consulting the registered organization. This certificate has been issued from APIQR offices located at 1220 L Street, N.W., Washington, D.C. 20005-4070, U.S.A. It is the property of APIQR, and must be returned upon request. To verify the authenticity of this certificate, go to www.api.org/composites/list.



2007-2013 (10/15) | 10



**American
Petroleum
Institute**



Certificate of Authority to use the Official API Monogram

License Number: 16C-0004

ORIGINAL

The American Petroleum Institute hereby grants to

CONTITECH RUBBER INDUSTRIAL LTD.

Budapesti ut 10

Szeged

Hungary

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1® and API Spec 16C and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram should be used in conjunction with this certificate number: 16C-0004

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following product: Flexible Choke and Kill Lines

QMS Exclusions: No Exclusions Identified as Applicable

COPY

Effective Date: OCTOBER 15, 2010

Expiration Date: OCTOBER 15, 2013

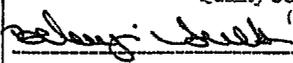
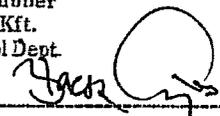
To verify the authenticity of this license, go to www.api.org/compositelst.

American Petroleum Institute

Director of Global Industry Services

CONTITECH RUBBER
Industrial Kft.

No: QC-DB-380/2012
Page: 4/61

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 1599	
PURCHASER: ContiTech Beattie Co.			P.O. N°: 006227		
CONTITECH ORDER N°: 531895	HOSE TYPE: 3" ID		Choke and Kill Hose		
HOSE SERIAL N°: 63393	NOMINAL / ACTUAL LENGTH: 10,67 m / 10,72 m				
W.P. 68,9 MPa	10000 psi	T.P. 103,4 MPa	15000 psi	Duration: 60	min.
<p>Pressure test with water at ambient temperature</p> <p style="text-align: center;">See attachment. (1 page)</p> <p>↑ 10 mm = 10 Min. → 10 mm = 20 MPa</p>					
COUPLINGS Type	Serial N°		Quality	Heat N°	
3" coupling with 4 1/16" 10K API Flange end	2156	2153	AISI 4130	20231	
			AISI 4130	34031	
NOT DESIGNED FOR WELL TESTING				API Spec 16 C	
				Temperature rate:"B"	
All metal parts are flawless					
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.					
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.					
COUNTRY OF ORIGIN HUNGARY/EU					
Date: 23. August 2012.	Inspector		Quality Control ContiTech Rubber Industrial Kft. Quality Control Dept. (1)		
		 			

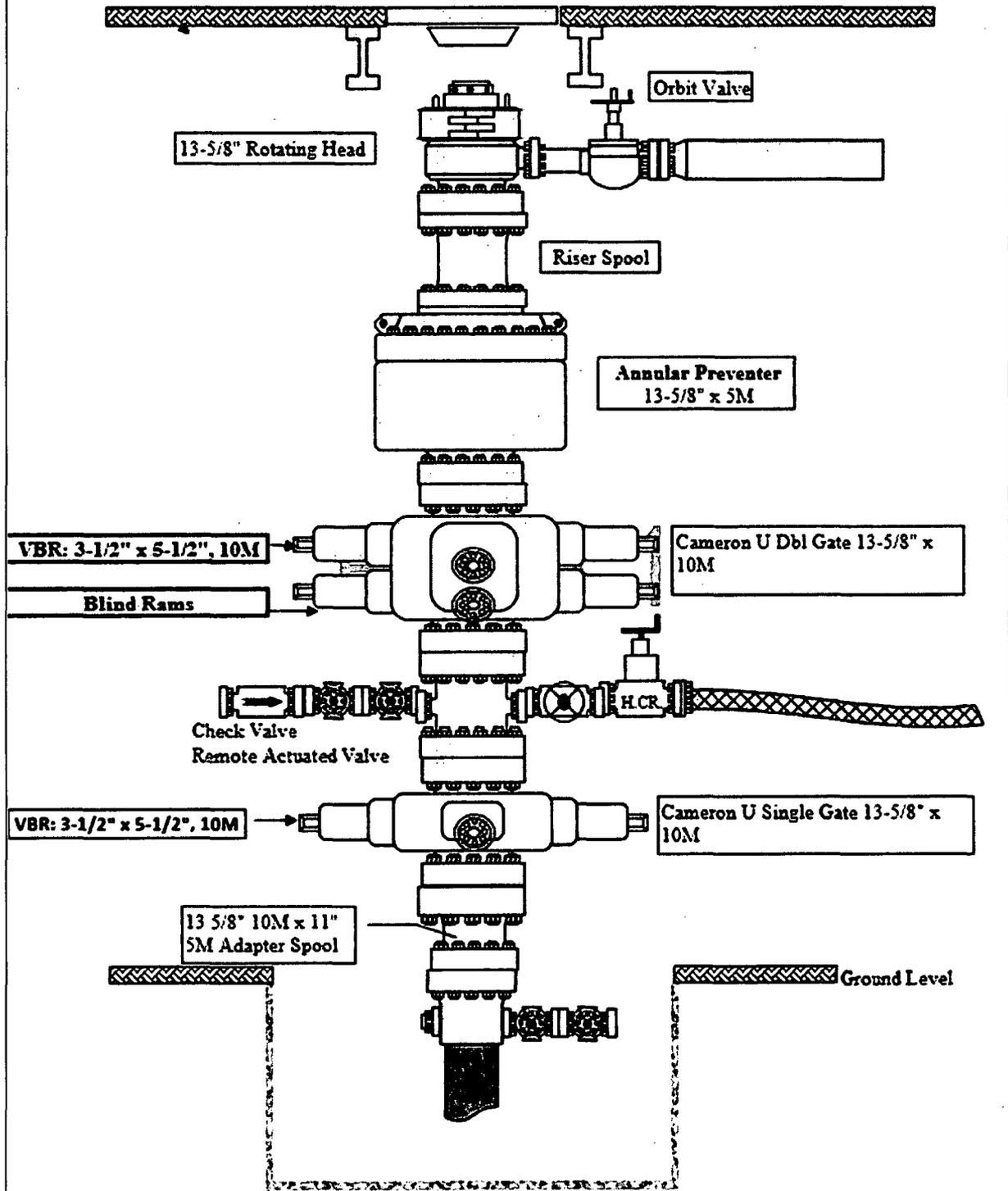
CONTITECH RUBBER Industrial Kft.	No:QC-DB- 380 /2012 Page: 10 /61
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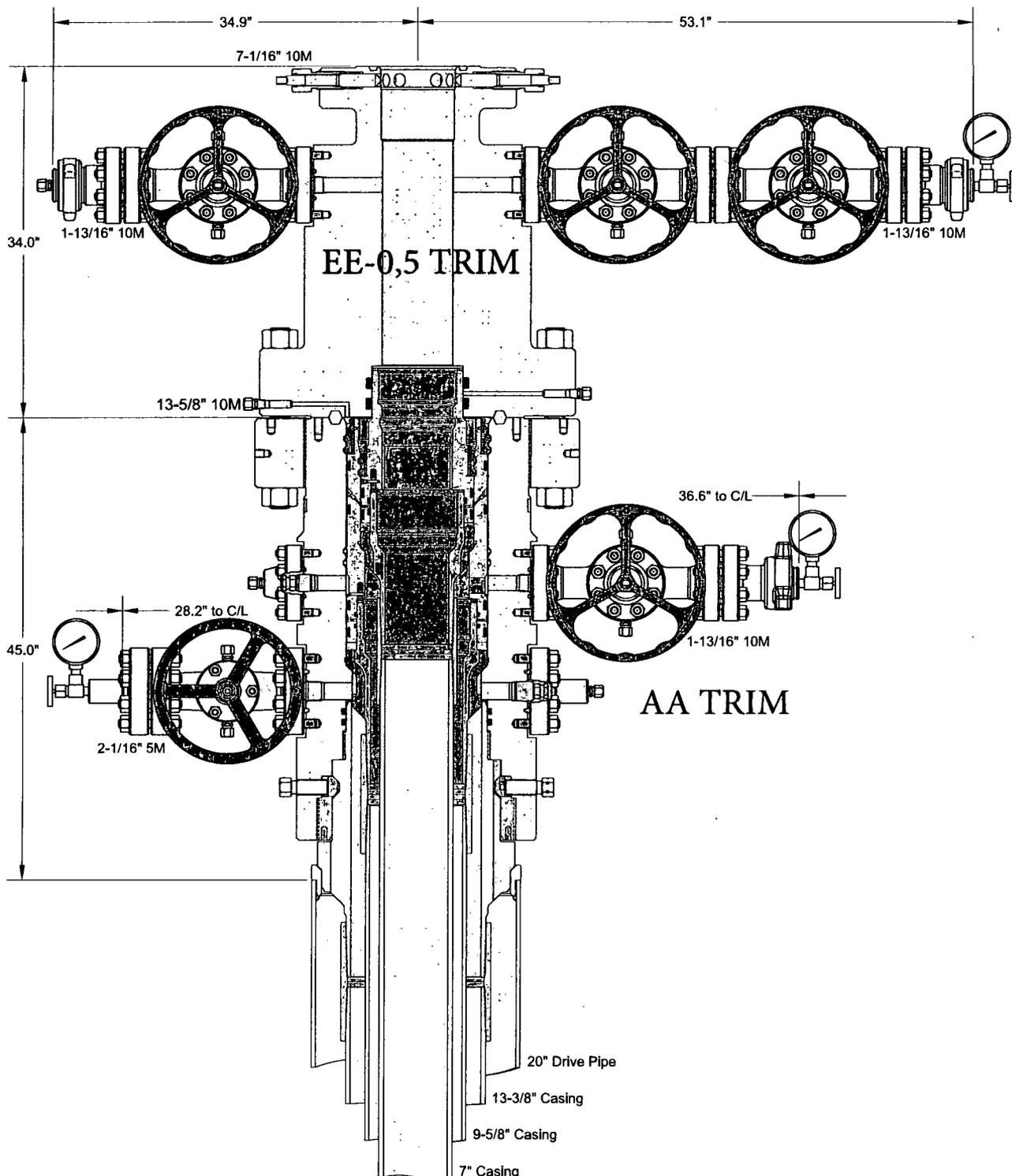
Hose Data Sheet

CRI Order No.	531895
Customer	ContiTech Beattie Co.
Customer Order No	PO6227 Pbc13080-H&P
Item No.	1
Hose Type	Flexible Hose
Standard	API SPEC 16 C
Inside dia in inches	3
Length	35 ft
Type of coupling one end	FLANGE 4 1/16" API SPEC 6A TYPE 6BX FOR 10000 PSI C/W BX155RING GROOVE
Type of coupling other end	FLANGE 4 1/16" API SPEC 6A TYPE 6BX FOR 10000 PSI C/W BX155 RING GROOVE
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St. steel outer wrap
Internal stripwound tube	No
Lining	OIL RESISTANT
Safety clamp	No
Lifting collar	No
Element C	No
Safety chain	No
Safety wire rope	No
Max. design temperature [°C]	100
Min. design temperature [°C]	-20
MBR operating [m]	1,60
MBR storage [m]	1,40
Type of packing	WOODEN CRATE ISPM-15

Operator: **Marathon Oil**
SM BOPE



WH&TH Design # 2



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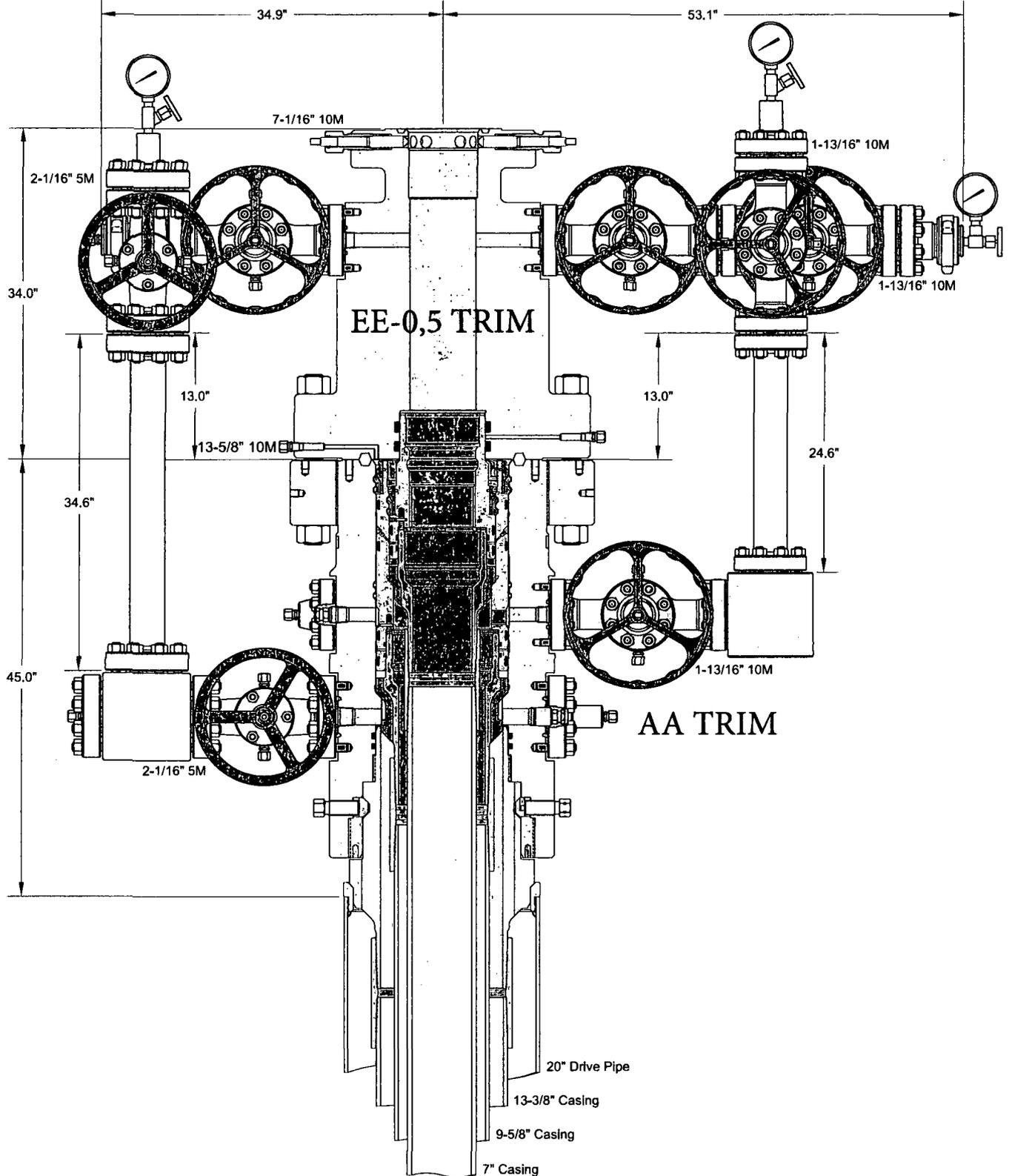
CACTUS WELLHEAD LLC

MARATHON OIL COMPANY

20" x 13-3/8" x 9-5/8" x 7" MBU-3T-CFL-R-DBLO Wellhead
 13-5/8" 10M x 7-1/16" 10M CTH-DBLHPS Tubing Head (34" LG)
 Utilizing Pin Down Mandrel Casing Hangers

DRAWN	DLE	23AUG17
APPRV		
DRAWING NO.	ODE0001825	

I&TH Design # 2



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CACTUS WELLHEAD LLC

MARATHON OIL COMPANY

20" x 13-3/8" x 9-5/8" x 7" MBU-3T-CFL-R-DBLO Wellhead
 13-5/8" 10M x 7-1/16" 10M CTH-DBLHPS Tubing Head (34" LG)
 Utilizing Pin Down Mandrel Casing Hangers With Annulus Risers

DRAWN	DLE	23AUG17
APPRV		
DRAWING NO.	ODE0001825	

1. DRILLING WELL CONTROL PLAN

1.1 WELL CONTROL - CERTIFICATIONS

Required IADC/IWCF Well Control Certifications Supervisor Level:

Any personnel who supervises or operates the BOP must possess a valid current IADC training certification and photo identification. This would include the onsite drilling supervisor, tool pusher/rig manager, driller, and any personnel that will be acting in these capacities. Another example of this may be a wireline or snubbing crew rigged up on the rig to assist the rig, the operator of each system must also have a valid control certification for their level of operation.

BLM recognizes IADC training as the industry approved accredited training. Online self-certifications will not be acceptable. Enforcement actions for the lack of a valid Supervisory Level certificate shall be prompt action to correct the deficiency. **Enforcement actions include but are not limited to immediate replacement of personnel lacking certifications, drilling operations being shut down or installment of a 10M annular.**

IADC Driller Level for all Drillers and general knowledge for the Assistant Driller, Derrick Hands, Floor Hands and Motor Hands is recognized by the BLM; however, a Driller Level certification will need to be presented only if acting in a temporary Driller Level certification capacity.

Well Control-Position/Roles

IADC Well control training and certification is targeted toward each role, e.g., Supervisor Level toward those who direct, Driller Level to those who act, Introductory to those who need to know.

- **Supervisor Level**
 - Specifies and has oversight that the correct actions are carried out
 - Role is to supervise well control equipment, training, testing, and well control events
 - Directs the testing of BOP and other well control equipment
 - Regularly direct well control crew drills
 - Land based rigs – usually runs the choke during a well kill operation
 - Due to role on the rig, training and certification is targeted more toward management of well control and managing an influx out of the well

- **Driller Level**
 - Performs an action to prevent or respond to well control accident
 - Role is to monitor the well via electronic devices while drilling and detect unplanned influxes
 - Assist with the testing of BOP and other well control equipment
 - Regularly assist with well control crew drills
 - When influx is detected, responsible to close the BOP
 - Due to role on the rig, training and certification is targeted more toward monitoring and shutting the well in (closing the BOP) when an influx is detected

(Well Control-Positions/Roles Continued)

- **Derrick Hand, Assistant Driller Introductory Level**
 - Role is to assist Driller with kick detection by physically monitoring the well at the mixing pits/tanks
 - Regularly record mud weights/viscosity for analysis by the Supervisor level and mud engineer so pre-influx signs can be detected
 - Mix required kill fluids as directed by Supervisor or Driller
 - Due to role on the rig, training and certification is targeted more toward monitoring for influxes, either via mud samples or visual signs on the pits/tanks

- **Motorman, Floor Hand Introductory Level**
 - Role is to assist the Supervisor, Driller, or Derrick Hand with detecting influxes
 - Be certain all valves are aligned for proper well control as directed by Supervisor
 - Perform Supervisor or Driller assigned tasks during a well control event
 - Due to role on the rig, training and certification is targeted more toward monitoring for influxes

1.2 WELL CONTROL-COMPONENT AND PREVENTER COMPATIBILITY CHECKLIST

The table below, which covers the drilling and casing of the 10M Stack portion of the well, outlines the tubulars and the compatible preventers in use. This table, combined with the mud program, documents that two barriers to flow can be maintained at all times, independent of the rating of the annular preventer.

- **Example 8-3/4" Production hole section, 10M requirement**

Component	OD	Preventer	RWP
Drill pipe	5"	Fixed lower 5" Upper 4.5-7" VBR	10M
HWDP	5"	Fixed lower 5" Upper 4.5-7" VBR	10M
Drill collars and MWD tools	6.25-6.75"	Upper 4.5-7" VBR	10M
Mud Motor	6.75"	Upper 4.5-7" VBR	10M
Production casing	5.5"	Upper 4.5-7" VBR	10M
ALL	0-13-5/8"	Annular	5M
Open-hole	-	Blind Rams	10M

- VBR = Variable Bore Ram. Compatible range listed in chart.

1.3 WELL CONTROL-BOP TESTING

BOP Test will be completed per Onshore Oil and Gas Order #2 Well Control requirements. The 5M Annular Preventer on a required 10M BOP stack will be tested to 70 % of rated working pressure including a 10 minute low pressure test. Pressure shall be maintained at least 10 minutes.

1.4 WELL CONTROL - DRILLS

The following drills are conducted and recorded in the Daily Drilling Report and the Contractor's reporting system while engaged in drilling operations:

Type	Frequency	Objective	Comments
Shallow gas kick drill - drilling	Once per well with crew on tour	Response training to a shallow gas influx	To be done prior to drilling surface hole if shallow gas is noted
Kick drill - drilling	Once per week per crew	Response training to an influx while drilling (bit on bottom)	Only one kick drill per week per crew is required, alternating between drilling and tripping.
Kick drill - tripping	Once per week per crew	Response training to an influx while tripping (bit off bottom). Practice stabbing TIW valve	
Choke drill	Once per well with crew on tour	Practice in operating the remotely operated choke with pressure in the well	Before drilling out of the last casing set above a prospective reservoir Include the scenario of flowing well with gas on drill floor as a table top
H ₂ S drill	Prior to drilling into a potential H ₂ S zone/reservoir	Practice in use of respiratory equipment	

1.5 WELL CONTROL – MONITORING

- Drilling operations which utilize static fluid levels in the wellbore as the active barrier element, a means of accurately monitoring fill-up and displacement volumes during trips are available to the driller and operator. A recirculating trip tank is installed and equipped with a volume indicator easily read from the driller's / operator's position. This data is recorded on a calibrated chart recorder or digitally. The actual volumes are compared to the calculated volumes.
- The On-Site Supervisor ensures hole-filling and pit monitoring procedures are established and documented for every rig operation.
- The well is kept full of fluid with a known density and monitored at all times even when out of the hole.
- Flow checks are a minimum of 15 minutes.
- A flow check is made:
 - In the event of a drilling break.
 - After indications of down hole gains or losses.
 - Prior to all trips out of the hole.
 - After pulling into the casing shoe.
 - Before the BHA enters the BOP stack.
 - If trip displacement is incorrect.

Well Control-Monitoring (Continued)

- Prior to dropping a survey instrument.
- Prior to dropping a core ball.
- After a well kill operation.
- When the mud density is reduced in the well.
- Flow checks may be made at any time at the sole discretion of the driller or his designate. The Onsite Supervisor ensures that personnel are aware of this authority and the authority to close the well in immediately without further consultation.
- Record slow circulating rates (SCR) after each crew change, bit trip, and 500' of new hole drilled and after any variance greater than 0.2 ppg in MW. Slow pump rate recordings should include return flow percent, TVD, MD & pressure. SCR's will be done on all pumps at 30, 40 & 50 SPM. Pressures will be recorded at the choke panel. SCR will be recorded in the IADC daily report and MRO Wellview daily report
- Drilling blind (i.e. without returns) is permissible only in known lithology where the absence of hydrocarbons has been predetermined and written approval of the Drilling Manager.
- All open hole logs to be run with pack-off, lubricator or Drilling Manager approved alternative means.
- The Drilling Contractor has a fully working pit level totalizer / monitoring system with read out for the driller and an audible alarm set to 10 BBL gain / loss volume. Systems are selectable to enable monitoring of all pits in use. Pit volumes are monitored at all times, especially when transferring fluids. Both systems data is recorded on a calibrated chart recorder or electronically.
- The Drilling Contractor has a fully working return mud flow indicator with drillers display and an audible alarm, and is adjustable to record any variance in return volumes.

1.6 WELL CONTROL – SHUT IN

- The “hard shut in” method (i.e. against a closed choke using either an annular or ram type preventer) is the Company standard.
- The HCR(s) or failsafe valves are left closed during drilling to prevent any erosion and buildup of solids. The adjustable choke should also be left closed.
- The rig specific shut in procedure, the BOP configuration along with space-out position for the tool joints is posted in the Driller’s control cabin or doghouse.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Manager.
- During a well kill by circulation, constant bottom hole pressure is maintained throughout.
- Kill sheets are maintained by the Driller and posted in the Driller’s control cabin or doghouse. The sheet is updated at a minimum every 500 feet.

2. SHUT-IN PROCEDURES:

2.1 PROCEDURE WHILE DRILLING

- Sound alarm (alert crew)
- Space out drill string – Stop rotating, pick the drill string up off bottom, and space out to ensure no tool joint is located in the BOP element selected for initial closure.
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
 - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify toolpusher/company representative
- Gather all relevant data required:
 - SIDPP and SICP
 - Hole Depth and Hole TVD
 - Pit gain
 - Time
 - Kick Volume
 - Pipe depth
 - MW in, MW out
 - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.
- Recheck all pressures and fluid volume on accumulator unit
- If pressure has built or is anticipated during the kill to reach 2,500 psi or greater, the annular preventer CANNOT be used as per Oil Company Well Control Policy, swap to the upper BOP pipe ram.

2.2 PROCEDURE WHILE TRIPPING

- Sound alarm (alert crew)
- Stab full opening safety valve in the drill string and close.
- Space out drill string (ensure no tool joint is located in the BOP element selected for initial closure).
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
 - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify tool pusher/company representative
- Gather all relevant data required:
 - SIDPP and SICP
 - Hole Depth and Hole TVD
 - Pit gain

Procedure While Tripping (Continued)

- Time
- Kick Volume
- Pipe depth
- MW in, MW out
- SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- **No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.**
- Recheck all pressures and fluid volume on accumulator unit
If pressure has built or is anticipated during the kill to reach X,XXX psi or greater, the annular preventer CANNOT be used as per Company Well Control Policy, swap to the upper BOP pipe ram.

2.3 PROCEDURE WHILE RUNNING CASING

- Sound alarm (alert crew)
- Stab crossover and full opening safety valve and close
- Space out casing (ensure no coupling is located in the BOP element selected for initial closure).
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
 - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify tool pusher/company representative
- Gather all relevant data required:
 - SIDPP and SICP
 - Hole Depth and Hole TVD
 - Pit gain
 - Time
 - Kick Volume
 - Pipe depth
 - MW in, MW out
 - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- **No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.**
- Recheck all pressures and fluid volume on accumulator unit
If pressure has built or is anticipated during the kill to reach 2,500 psi or greater, the annular preventer CANNOT be used, swap to the upper BOP pipe ram.

2.4 PROCEDURE WITH NO PIPE IN HOLE (OPEN HOLE)

- Sound alarm (alert crew)
- Shut-in with blind rams or BSR. (HCR and choke will already be in the closed position.)
- Confirm shut-in
- Notify toolpusher/company representative
- Gather all relevant data required:
 - Shut-In Pressure
 - Hole Depth and Hole TVD
 - Pit gain
 - Time
 - Kick Volume
 - MW in, MW out
 - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- **No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.**
- Recheck all pressures and fluid volume on accumulator unit.

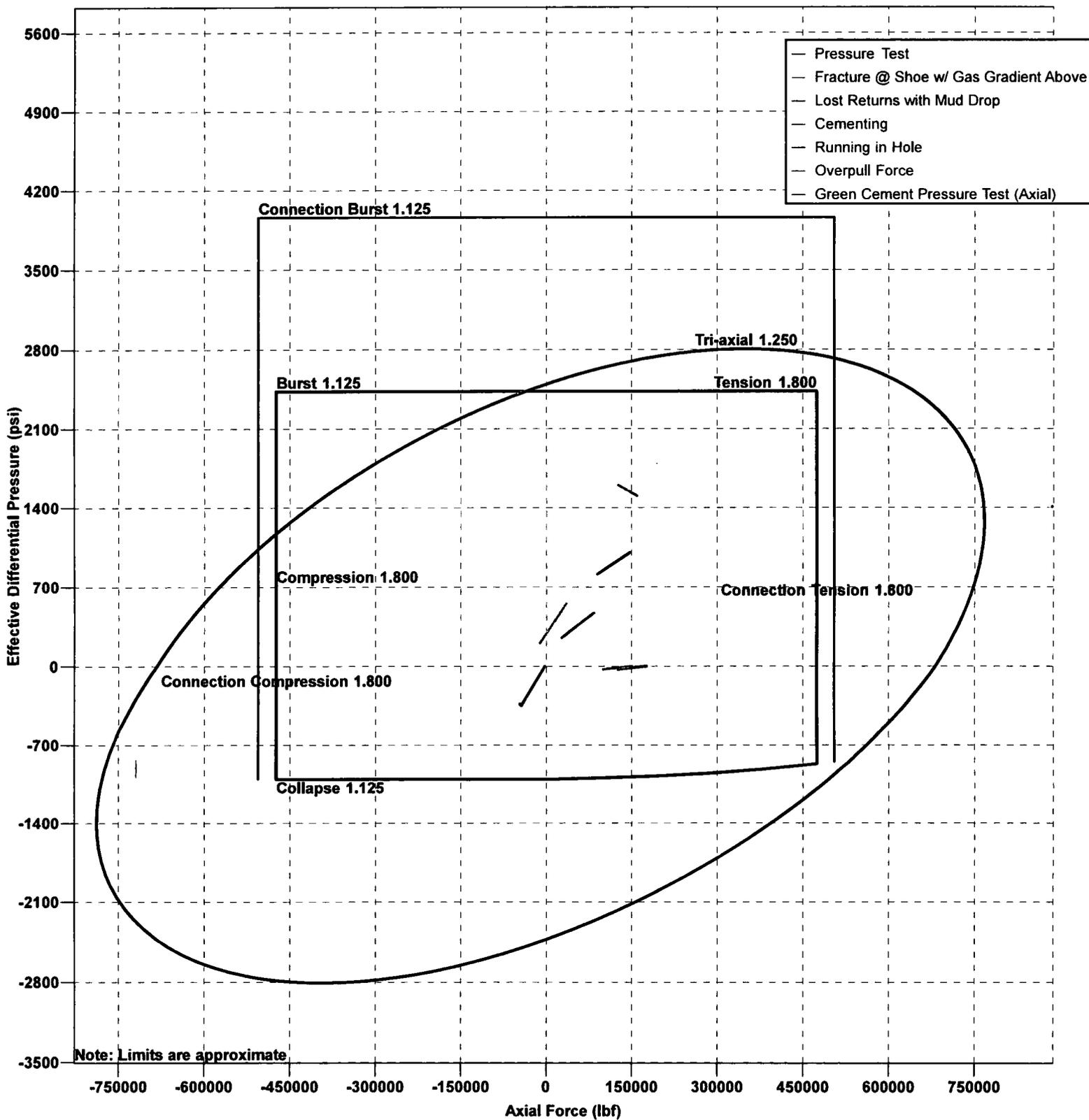
2.5 PROCEDURE WHILE PULLING BHA THRU STACK

- PRIOR to pulling last joint of drill pipe thru the stack.
 - Perform flow check, if flowing.
 - Sound alarm (alert crew).
 - Stab full opening safety valve and close
 - Space out drill string with tool joint just beneath the upper pipe ram.
 - Shut-in using upper pipe ram. (HCR and choke will already be in the closed position).
 - Confirm shut-in.
 - Notify toolpusher/company representative
 - Read and record the following:
 - SIDPP and SICP
 - Pit gain
 - Time
 - Regroup and identify forward plan
- **With BHA in the stack and compatible ram preventer and pipe combo immediately available.**
 - Sound alarm (alert crew)
 - Stab crossover and full opening safety valve and close
 - Space out drill string with upset just beneath the compatible pipe ram.
 - Shut-in using compatible pipe ram. (HCR and choke will already be in the closed position.)
 - Confirm shut-in
 - Notify toolpusher/company representative
 - Read and record the following:
 - SIDPP and SICP
 - Pit gain

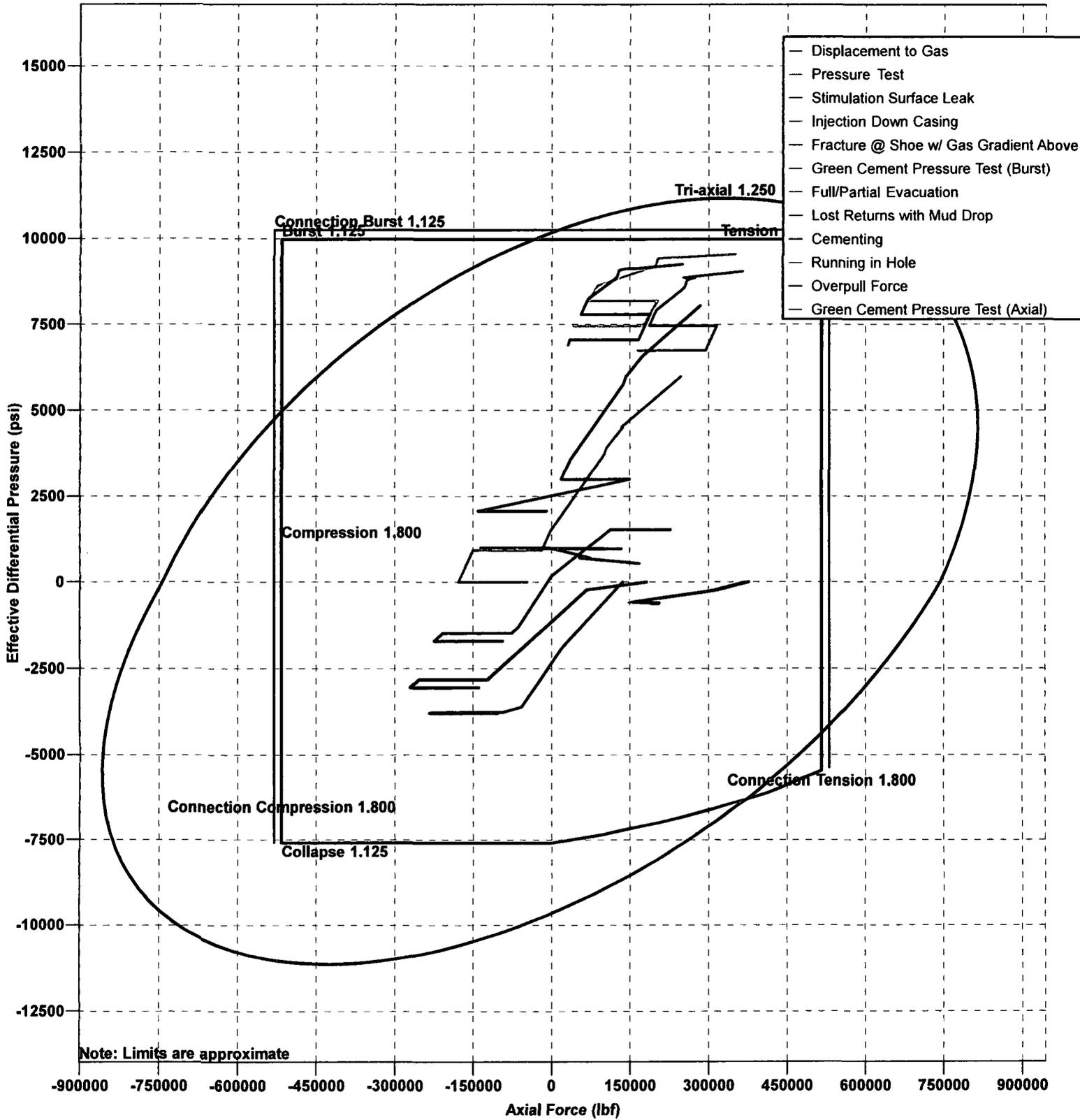
Procedures While Pulling BHA thru Stack (Continued)

- Time
 - Regroup and identify forward plan
- **With BHA in the stack and NO compatible ram preventer and pipe combo immediately available.**
 - Sound alarm (alert crew)
 - If possible to pick up high enough, pull string clear of the stack and follow “Open Hole” scenario.
 - If impossible to pick up high enough to pull the string clear of the stack:
 - Stab crossover, make up one joint/stand of drill pipe, and full opening safety valve and close
 - Space out drill string with tool joint just beneath the upper pipe ram.
 - Shut-in using upper pipe ram. (HCR and choke will already be in the closed position.)
 - Confirm shut-in
 - Notify toolpusher/company representative
 - Read and record the following:
 - SIDPP and SICP
 - Pit gain
 - Time

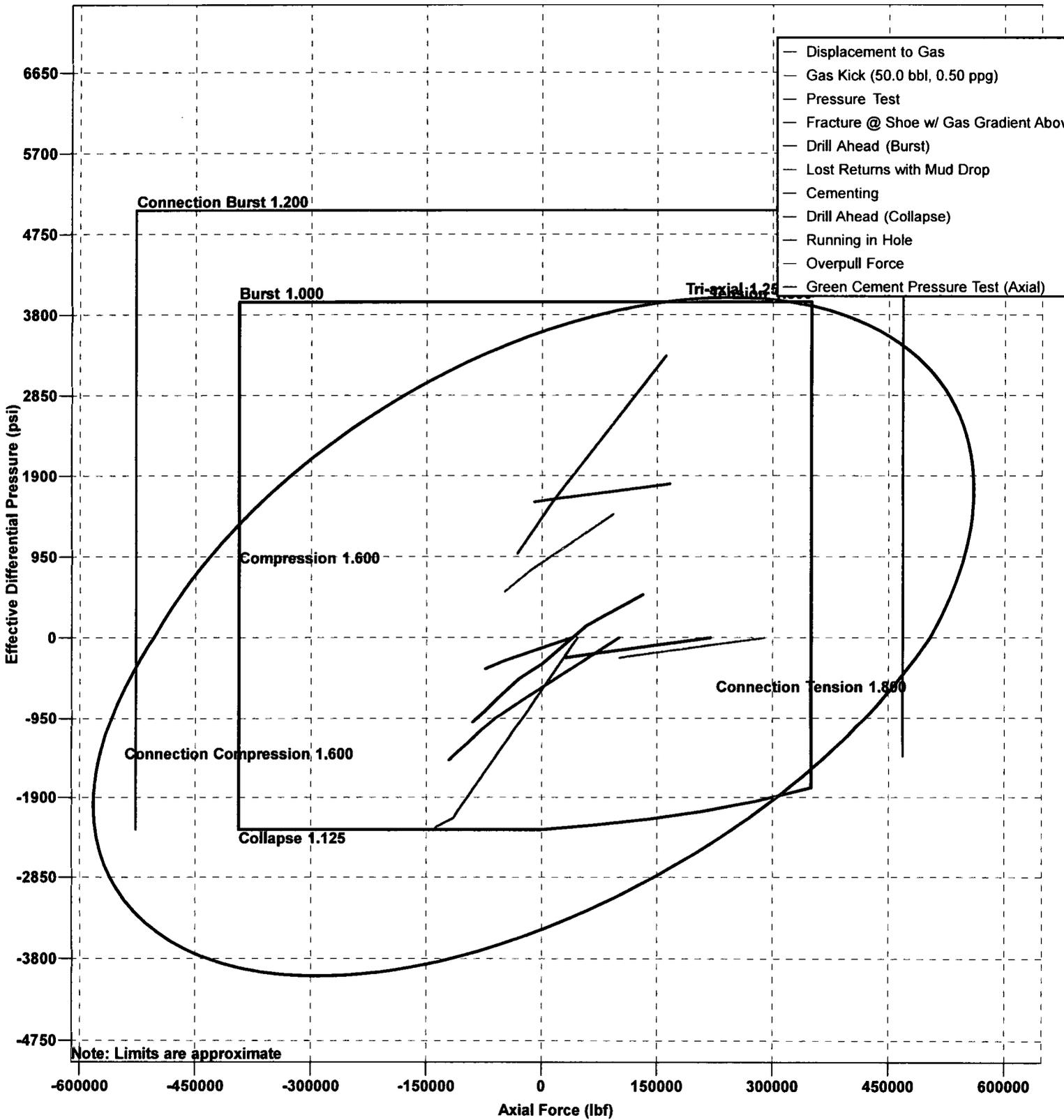
Design Limits (13 3/8" Surface Casing - Section 1)



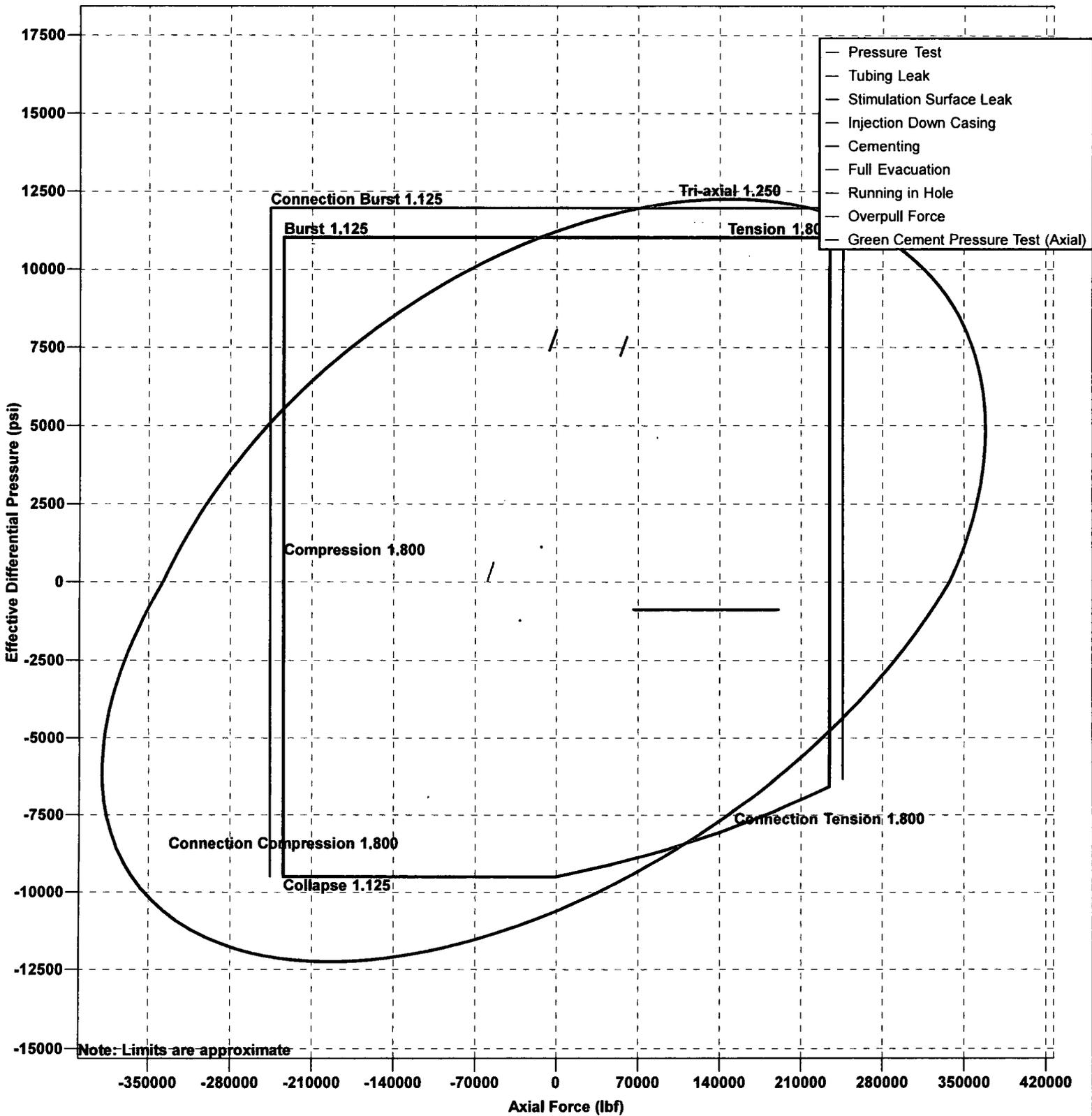
Design Limits (7" Production Casing - Section 1)

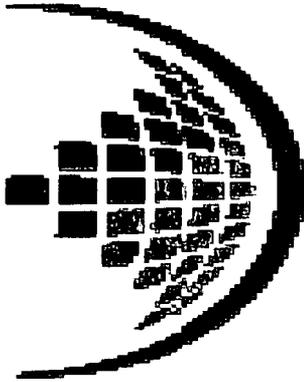


Design Limits (9 5/8" Intermediate Casing - Section 1)



Design Limits (4 1/2" Production Liner - Section 1)





TOTAL SAFETY

MARATHON OIL COMPANY

ENDER WIGGINS FEDERAL 25-34-14

WD Well # 2H

TB Well # 3H

WA Well # 1H

SHL: 2449' FNL & 582' FWL of Unit Letter 'E', Section 14, T-25S, R-34E

BHL: 330' FNL & 330' FWL of Unit Letter 'D', Section 11, T-25S, R-34E

LEA County, New Mexico

Rig: H&P 480

2/9/2018

**EMERGENCY MEDICAL PROCEDURES
DO NOT PANIC
REMAIN CALM-THINK**

1. HOLD YOUR BREATH. (DO NOT INHALE, STOP BREATHING)
2. PUT ON BREATHING APPARATUS. (NOTE: DO NOT ATTEMPT RESCUE UNTIL YOU HAVE PUT ON BREATHING APPARATUS.)
3. REMOVE VICTIM (S) TO FRESH AIR AS QUICKLY AS POSSIBLE.
4. BE SURE YOU HAVE MOVED VICTIM OUT OF CONTAMINATED AREA BEFORE REMOVING YOUR RESPIRATOR.
5. APPLY MOUTH-TO-MOUTH ARTIFICIAL RESPIRATION, WHICH IS MORE EFFECTIVE, WHILE SOMEONE ELSE GETS THE OXYGEN RESUSCITATOR. RENDER OXYGEN RESUSCITATION ONLY IF PORPERLY TRAINED IN ITS USE.
6. PROVIDE FOR PROMPT TRANSPORTATION TO HOSPITAL AND CONTUNUE GIVING ARTIFICIAL RESPIRATION IF NEEDED.
7. HOSPITAL (S) OR MEDICAL FACILITIES NEED TO BE INFORMED BEFOREHAND, OF THE POSSIBILITY OF H2S GAS POISONING, NO MATTER HOW REMOTE THE POSSIBLITY IS.

Lea Regional Medical Center	(575)492-5000
5419 N Lovington Hwy, Hobbs, NM 88240	
AMBULANCE	911
FIRE DEPARTMENT- HOBBS, NM	(575) 397-9308
POLICE - HOBBS, NM	(575) 397-9265

8. NOTIFY EMERGENCY-ROOM PERSONEL THAT THE VICTIM (S) HAVE POSSIBLY BEEN EXPOSED TO H2S GAS POISONING.

**TOTAL SAFETY INC
1420 East Greene St.
Carlsbad, NM 88220**

**THIS H2S DRILLING OPERATIONS PLAN WAS
PREPARED BY: Sean Chamblee
Strategic Account Manager
Cell: 713-703-6295**

**TOTAL SAFETY INC
1420 East Greene St
Carlsbad, NM 88220
Phone: 432-561-5049**

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INTRODUCTION

H2S DRILLING OPERATIONS PLAN

This Drilling Operations Plan was written specifically for:

**MARATHON OIL COMPANY
3122 NATIONAL PARKS HIGHWAY
CALRSBAD, NM 88220**

Action Plan for Accidental Release of H2S

ENDER WIGGINS FEDERAL 25-34-14

WD Well # 2H

TB Well # 3H

WA Well # 1H

LEA COUNTY, NM

Information, provisions and practices, as set forth in this plan, may be subject to revision and/or updating.

2-09-2018

**MARATHON OIL COMPANY
3122 NATIONAL PARKS HIGHWAY
CALRSBAD, NM 88220**

**ENDER WIGGINS FEDERAL 25-34-14
WD Well # 2H
TB Well # 3H
WA Well # 1H**

LEA COUNTY, NM

Directions:

FROM CARLSBAD, NM , AT THE INTERSECTION OF W. GREENE ST. AND N. CANAL ST. HEAD EAST ON W. GREENE STREET TOWARD S. CANAL ST. FOR 2.2 MILES TO REFINERY ROAD ON THE RIGHT. TRAVEL SOUTHEAST ON REFINERY ROAD FOR 12.5 MILES TO NEW MEXICO STATE HIGHWAY 31 ON THE LEFT. TRAVEL NORTHEAST ON NEW MEXICO STATE HIGHWAY 31 FOR 2.4 MILES TO NEW MEXICO STATE HIGHWAY 128 E ON THE RIGHT. TRAVEL SOUTHEAST ON NEW MEXICO STATE HIGHWAY 128 E. FOR 38.7 TO BATTLE AXE ROAD ON THE RIGHT. TRAVEL ON BATTLE AXE RD. FOR 0.3 MILES. TURN RIGHT TO STAY ON BATTLE AXE ROAD AND CONTINUE FOR 2.6 MILES. TURN RIGHT TO STAY ON BATTLE AXE ROAD AND CONTINUE FOR 2.6 MILES. AGAIN , TURN RIGHT TO STAY ON BATTLE AXE ROAD AND CONTINUE FOR 2.6 MILES TO AN EXISTING LEASE ROAD ON THE RIGHT. TRAVEL SOUTHEAST ON SAID EXISTING ROAD FOR 0.8 MILES TO THE PROPOSED.

**GPS Coordinates: 32.13102557, -103.44741086
LEA COUNTY, NEW MEXICO**

PURPOSE OF PLAN: The purpose of this plan is to safeguard the lives of the public, contract personnel and company personnel in the event of equipment failure or disasters during drilling or completion operations in formations that may contain Hydrogen Sulfide Gas, H₂S.

As a precautionary measure, this Drilling Plan has been prepared to assure the safety of all concerned, should a disaster occur. However, the Oil Company Representative may have specified materials and practices for the drilling or completion of this well, which supercede the minimum requirements as outlined in this plan.

Definitions: For the purpose of this plan the following definitions are to be referred to:

Controlled Release – Any release that is planned and occurs during normal operations. A controlled release is managed per the procedures outlined in this section.

Uncontrolled Release – Any release that is unplanned and not immediately contained utilizing established shut-in procedures. An uncontrolled release is normally associated with a loss of well control.

SCBA – (Self Contained Breathing Apparatus) – A full-face mask respirator with a supplied positive pressure air source.

Donned SCBA – When it is required per this plan to “don” a SCBA, personnel will be 100% masked up and be on supplied breathing air.

SCBA On Person – When it is required per this plan to have SCBA “on person”, personnel will be required to wear the SCBA equipment - but not be masked up.

“Qualified Buddy” – Person who has been fit tested and is trained and is familiar with the requirements of donning an SCBA. This person will provide immediate assistance to another person who may be utilizing an SCBA or SkaPack in an IDLH atmosphere in the event of an emergency situation.

In Scope Personnel – Rig Personnel who will be working or otherwise present in potential H₂S release areas, including the rig floor, cellar, pits, and shaker areas. This would not include 3rd party contractors who do not have a function, besides evacuating the rig, during an emergency condition such as during a well control event or H₂S / LEL alarm. All qualified personnel that have a function to shut a well in during an emergency will be considered In-Scope per this plan

Out of Scope Personnel – All personnel that are not in scope will be Out of Scope per the definition of this plan

H₂S Office – Onsite office trailer space or vehicle that will be designated as the H₂S office

Marathon H2S Plan Custodian – Marathon HES Advisor, Supervisor or Technician that has been specifically assigned per the authorization page of this plan to maintain this document.

SAFETY EQUIPMENT

All H2S related Safety Equipment must be installed, tested and Operational at a depth of 500 feet above, or 3 days prior to penetrating the first zone expected to contain H2S.

SAFETY EQUIPMENT PROVIDED BY TOTAL SAFETY INC.

<u>QTY</u>	<u>EQUIPMENT</u>
6 each	30-minute self-contained breathing apparatus
6 each	ELSA Escape Packs
1 Lot	Sufficient low-pressure airline hose with quick connects
1	6 Channel fixed H2S monitor
4	H2S Sensors (Loc determined at rig up – General: Cellar, Shale Shaker, floor/driller area)
4	Explosion proof Alarm Station (1-Drill Floor, 1- Pits/Shakers, 1- Generators, 1 Quarters area)
10	Personal H2S Monitors
1	Gastec pump type gas detector
Set	Various range of H2s & SO2 detector tubes
2 each	Windssocks w/frames and poles
1 Set	H2S and briefing area signs
1 Set	Well condition signs and flags
1	Flare Gun & Flares

TYPE OF EQUIPMENT AND STORAGE LOCATIONS

1. There will be six 30-minute self-contained breathing apparatus on location. They will be positioned as follows: Two at Briefing Area #1 Two at Briefing Area #2, Two at rig dog house. SCBA Facepieces will be equipped with voice amplifiers for effective means of communication when using protective breathing apparatus.
2. There will be six Escape-type packs on location. One for the Derrickman. One on the Shaker. One at the bottom of rig dog house stairway and spares.
3. A Gastec, pump type, gas detector with low and high range detector tubes for H₂S and SO₂ will be located in the doghouse
4. Two Briefing Areas will be designated at opposite ends of the location.
5. The Briefing Area most upwind is designated as the Safety Briefing Area #1. In an emergency, personnel must assemble at this upwind area for instructions from their supervisor.
6. The H₂S ‘Safety’ trailer provided by Total Safety, Inc. will contain a cascade system of at least 5 each -300 C.F. air cylinders that will provide a continuous air supply to air lines located on the rig. Note: This trailer will **Only** be provided if H₂S conditions require the use of the Air Trailer. (If Required)
7. Two windsocks will be installed so as to be visible from all parts of the location.
8. A well condition warning sign will be displayed at the location entrance to advise of current operating conditions. The condition signs must be at least 200’ from the entrance but not more than 500’ away.
9. A list of emergency telephone numbers will be kept on rig floor, tool pusher’s trailer, the Oil Company’s trailer and in the “safety” trailer (if Provided).
10. The primary means of communication will be cell phones.

11. A barricade will be available to block the entrance to location should an emergency occur. In most cases the use of a vehicle is used to block the entrance.
12. A 6-channel H₂S monitor will be located in the doghouse. The 3 sensors will be installed: one on the shale shaker, one at the Cellar, one at the rig floor.
13. An undulating high and low pitch siren and light will be installed on the derrick "A" leg.
14. If H₂S concentration reach 10 ppm an explosion-proof bug blower (fan) will be installed under the rig floor to disperse possible accumulations of H₂S.
15. Any time it is necessary to flare gas containing H₂S, a Sulfur Dioxide monitor or Detector tubes will be used to determine SO₂ concentrations.
16. A flare gun with flares will also be provided in the event it is necessary to ignite the well from a safe distance.

OPERATING PROCEDURES

BLOWOUT PREVENTION MEASURES DURING DRILLING

1. Blowout Prevention Requirements:

All BOP equipment shall meet the American Petroleum Institute specifications as to materials acceptable for H₂S service and tested accordingly (or to BLM specifications).

2. Drilling String Requirements:

All drill string components are to be of material that meets the American Petroleum Institute's specifications for H₂S service. All drill string components should be inspected to IADC critical service specifications prior to running in well.

GAS MONITORING EQUIPMENT

1. A continuous H₂S detection system, consisting of three H₂S detectors and an audible/visual warning system will be in operating during all phases of this H₂S Drilling Operations Plan. The detection system will be adjusted and calibrated such that an H₂S exposure of 10 ppm or higher (at any sensor) will trigger the audible and visual portion (wailing or yelping siren) of the warning system (i.e. H₂S continually present at or above threshold levels) a trained operator or H₂S supervisor will monitor the H₂S detection system.

2. When approaching or completing H₂S formations, crewmembers may attach personnel H₂S monitors to their person.

3. Hand held H₂S sampling gas detectors will be used to check areas not covered by automatic monitoring equipment.

CREW TRAINING AND PROTECTION

1. All personnel working at the well site will be properly trained in accordance with the general training requirements outlined in the API Recommended Practices for Safe Drilling of Wells Containing H₂S. The training will cover, but will not be limited to, the following:
 - a. General information of H₂S AND SO₂ GAS
 - b. Hazards of these gases
 - c. Safety equipment on location
 - d. Proper use and care of personal protective equipment
 - e. Operational procedures in dealing with H₂S gas
 - f. Evacuation procedures
 - g. First aid, reviving an H₂S victim, toxicity, etc.
 - h. Designated Safe Briefing Areas
 - i. Buddy System
 - j. Regulations
 - k. Review of Drilling Operations Plan

2. Initial training shall be completed when drilling reaches, a depth of 500' above or 3 days prior to penetrating (whichever comes first) the first zone containing or expected to contain H₂S. It must also include a review of the site specific Drilling Operations Plan and, if applicable, the Public Protections Plan.

3. Weekly H₂S and well control drills for all personnel on each working crew shall be conducted.

4. All training sessions and drills shall be recorded on the driller's log or its equivalent.

5. Safety Equipment:

As outlined in the Safety Equipment index, H₂S safety protection equipment will be available to/or assigned each person on location.

6. One person (by job title) shall be designated and identified to all on-site personnel as the person primarily responsible for the overall operation of the on-site safety and training programs. This will be the PIC

METALLURGICAL CONSIDERATIONS

1. Steel drill pipe used in H₂S environments should have yield strength of 95,000psi or less because of potential embrittlement problems. Must conform to the current National Association of Corrosion Engineers (NACE) Standard MR-0175-90, Material Requirement, Sulfide Stress Cracking Resistant Metallica Material for Oil Field Equipment. Drill stem joints near the top of the drill string are normally under the highest stress levels during drilling and do not have the protection of elevated down hole temperatures. These factors should be considered in design of the drill string. Precautions should be taken to minimize drill string stress caused by conditions such as excessive dogleg severity, improper torque, whip, abrasive wear or tool joints and joint imbalance. American Petroleum Institute, Bulletin RR 7G, will be used as a guideline for drill string precautions.
2. Corrosion inhibitors may be applied to the drill pipe or to the mud system as an additional safeguard.
3. Blowout preventors should meet or exceed the recommendations for H₂S service as set forth in the latest edition of API RI 53.

MUD PROGRAM AND TREATING

1. It is of utmost importance that the mud be closely monitored for detection of H₂S and reliability of the H₂S treating chemicals.
2. Identification and analysis of sulfides in the mud and mud filtrates will be carried out per operators prescribed procedures.
3. The mud system will be pre-treated with Zinc Carbonate, Ironite Sponge or similar chemicals of H₂S control prior to drilling into the H₂S bearing formation. Sufficient quantities of corrosion inhibitor should be on location to treat the drill string during Drill Stem Test Operations. Additionally, Aqua Ammonia should be on hand to treat the drill string for crew protection, should H₂S be encountered while tripping string following drill stem testing

WELL CONTROL EQUIPMENT

1. Flare System

a. A flare system shall be designed and installed to safely gather and burn H₂S Bearing gas.

1. Flare lines shall be located as far from the operating site as feasible and in a manner to compensate for wind changes.
2. The flare line mouth shall be located not less than 150' from wellbore.
3. Flare lines shall be straight unless targeted with running tees.
4. Flare Gun & Flares to ignite the well

2. Remote Controlled Choke

a. A remote controlled choke shall be installed for all H₂S drilling and where feasible for completion operations. A remote controlled valve may be used in lieu of this requirement for completions operations.

3. Mud-gas separators and rotating heads shall be installed and operable for all exploratory wells.

OPERATING CONDITIONS

A Well Condition Sign and Flag will be posted on all access roads to the location. The sign shall be legible and large enough to be read by all persons entering the well site and be placed a minimum of 200' but no more than 500' from the well site which allows vehicles to turn around at a safe distance prior to reaching the site.

DEFINITION OF WARNING FLAGS

1. Condition:
GREEN-NORMAL OPERATIONS
Any operation where the possibility of encountering H₂S exists but no H₂S has been detected.

2. Condition:
YELLOW-POTENTIAL DANGER, CAUTION
Any operation where the possibility of encountering H₂S exists and in all situations where concentrations of H₂S are detected in the air below the threshold level (10ppm)
 - a. Cause of condition:
 - *Circulating up drill breaks
 - *Trip gas after trip
 - *Circulating out gas on choke
 - *Poisonous gas present, but below threshold concentrations
 - *Drill stem test
 - b. Safety Action:
 - *Check safety equipment and keep it with you
 - *Be alert for a change in condition
 - *Follow instructions

3. Condition:
RED-EXTREME DANGER
Presence of H₂S at or greater than 10ppm. Breathing apparatus must be worn.
 - a. Safety action:

***MASK UP.** All personal will have protective breathing equipment with them. All nonessential personnel will move to the Safe Briefing Area and stay there until instructed to do otherwise. All essential Qualified Personnel, using the “Buddy System” (those necessary to maintain control of the well) will don breathing apparatus to perform operations related to well control.

The decision to ignite the well is the responsibility of the operator’s on-site representative and should be made only as a last resort, when it is clear that:

- *human life is endangered**
- *there is no hope of controlling the well under prevailing conditions**

Order evacuation of local people within the danger zone. Request help from local authorities, State Police, Sheriff’s Dept. and Service Representative.

CIRCULATING OUT KICK (WAIT AND WEIGHT METHOD)

If it is suspected that H₂S is present with the gas whenever a kick is taken, the wait and weight method of eliminating gas and raising the mud will be followed.

1. Wait and Weight Method:

a. The wait and Weight Method is:

- *increase density of mud in pits to ‘kill’ weight mud.**
- *open choke and bring pump to initial circulating pressure by holding casing pressure at original valve until pump is up to predetermined speed.**
- *when initial circulating pressure is obtained on drill pipe, zero pump stroke counter and record time.**
- *reduce drill pipe pressure from initial circulating pressure to final circulating pressure by using pump strokes and/or time according to graph**
- *when ‘kill’ weight mud is at the bit, hold final circulating pressure until kill weight mud is to surface.**

b. If a kick has occurred, the standard blowout procedure will be followed and the wait and weight method will be used to kill the well. When the well has been put on the choke and circulation has been established, the following safety procedure must be established.

- *determine when gas is anticipated to reach surface.**

- *all non-essential personnel must be moved to safe briefing area
- *all remaining personnel will check out and keep with them their protective breathing apparatus.
- *mud men will see that the proper amount of H₂S scavenging chemical is in the mud and record times checked
- *make sure ignition flare is burning and valves are open to designated flare stacks

CORING OPERATIONS IN H₂S BEARING ZONES

1. Personal protective breathing apparatus will be worn from 10 to 15 stands in advance of retrieving the core barrel. Cores to be transported should be sealed and marked to the presence of H₂S.
 - a. Yellow Caution Flag will be flown at the well condition sign.
 - b. The “NO SMOKING” rule will be enforced

DRILL STEM TESTING OF H₂S ZONES

1. The DST subsurface equipment will be suitable for H₂S service as recommended by the API
2. Drill stem testing of H₂S zone will be conducted in daylight hours
3. All non-essential personnel will be moved to an established safe area or off location
4. The “NO SMOKING” rule will be enforced
5. DST fluids will be circulated through a remote controlled choke and a separator to permit flaring of gas. A continuous pilot light will be used.
6. A yellow or red flag will be flown at entrance to location depending on present gas condition
7. If warranted, the use of Aqua Ammonia for neutralizing the toxicity of H₂S from drill string
 - a. During drill stem tests adequate Filming Amine for H₂S corrosion and Aqua Ammonia for neutralizing H₂S should be on location.
8. On completion of DST, if H₂S contaminated formation fluids or gases are present in drill string, floor workers will be masked up before test valve is removed from drill string and continue “mask

on" conditions until such time that readings in the work area do not exceed 10ppm of H₂S gas.

EMERGENCY PROCEDURES

SOUNDING ALARM

In case of an alarm the crews will muster up at the designated area. Total Safety will be dispatched with (2) HES Techs who are to go in under protective breathing air and check the alarm readings and sniff ambient air for the presence of H₂S.

By no means are the Co. Rep or HES Advisor to go in under air with the HES Tech. If there is another method in place where the Rig Manager is to go in with the Tech we need to ensure that the rig company has cleared them and that they are properly trained.

1. The fact is to be instilled in the minds of all rig personnel that the sounding alarm means only one thing: **H₂S IS PRESENT**. Everyone is to proceed to his assigned station and the contingency plan is put into effect.

DRILLING CREW ACTIONS

1. All personnel will don their protective breathing apparatus. The driller will take necessary precautions as indicated in operating procedures.
2. The Buddy system will be implemented. All personnel will act upon directions from the operator's on-site representative.
3. If there are non-essential personnel on location, they will move off location.
4. Entrance to the location will be patrolled, and the proper well condition flag will be displayed at the entrance to the location.

RESPONSIBILITIES OF PERSONNEL

In order to assure the proper execution of this plan, it is essential that one person be responsible for and in complete charge of implementing these procedures. The responsibility will be as follows:

1. The operator's on-site representative or his assistant
2. Contract Tool Pusher

STEPS TO BE TAKEN

In the event of an accidental release of a potentially hazardous volume of H₂S, the following steps will be taken:

1. Contact by the quickest means of communications: the main offices of Oil Company & Contractor as listed on the preceding page.
2. An assigned crewmember will blockade the entrance to the location. No unauthorized personnel will be allowed entry into the location.
3. The operator's on-site representative will remain on location and attempt to regain control of the well.
4. The drilling company's rig superintendent will begin evacuation of those persons in immediate danger. He will begin by telephoning residents in the danger zone. In the event of no contact by telephoning, the tool pusher will proceed at once to each dwelling for a person-to-person contact. In the event the tool pusher cannot leave the location, he will assign a responsible crewmember to proceed in the evacuation off local residents. Upon arrival, the Sheriff's Department and TOTAL SAFETY personnel will aid in further evacuation.

LEAK IGNITION

Leak Ignition procedure: (used to ignite a leak in the event it becomes necessary to protect the public)

1. Two men, the operator's on-site representative and the contractor's rig superintendent or TOTAL SAFETY's representative(s), wearing self-contained pressure demand air masks must determine the perimeter of the flammable area. This should be done with one man using an H₂S detector and the other one using a flammable gas detector. The flammable perimeter should be established at 30% to 40% of the lower flammable limits.
2. After the flammable perimeter has been established and all employees and citizens have been removed from the area, the ignition team should move to the up-wind area of the leak perimeter and fire a flare into the area if the leak isn't ignited on the first attempt, move in 20 to 30 feet and fire again. Continue moving in and firing until the leak is ignited or the flammable gas detector indicates the ignition

team is moving into the hazardous area. If trouble is incurred in igniting the leak by firing toward the leak, try firing 40 degrees to 90 degrees to each side of the area where you have been firing. If still no ignition is accomplished ignite the copper line burner and push it into the leak area. This should accomplish ignition. If ignition is not possible due to the makeup of the gas, the toxic leak perimeter must be established and maintained to insure evacuation is completed and continue until the emergency is secure.

3. The following equipment and man-power will be required to support the ignition team:
 - a. one flare gun with flares
 - b. four pressure demand air packs
 - c. two nylon ropes tied to the ignition team
 - d. two men in a clear area equipped with air packs
 - e. portable propane bottle with copper line
4. The person with the final authority to ignite the well.

GENERAL EQUIPMENT

1. Two areas on the location will be designated as Briefing Areas. The one that is upwind from the well will be designated as the "Safe Briefing Area"
2. In the case of an emergency, personnel will assemble in the upwind area as per prior instructions from the operator's representative.
3. The H2S "Safety" trailer provide by TOTAL SAFETY will contain 10 air cylinders, a resuscitator, one 30-minute air pack and will have a windsock.
4. Two other windsocks will be installed.
5. A condition warning sign will be displayed at the location entrance.
6. A list of emergency telephone numbers will be kept on the rig floor, tool pusher's trailer and the Oil Company's trailer.
7. Two barricades will be available to block the entrance to location.
8. An undulating high and low pitch siren will be installed.
9. A telephone line or mobile phone will be available at the well site for incoming and outgoing communications.

CRITICAL OPERATIONS

These guidelines will be implemented during H2S alarms on drilling locations with the intent of minimizing catastrophic damage of “**critical tasks**” **ONLY** and exposure of field personnel (e.g. cement in the stack). **We will wait on Total Safety (or H2S Safety Company) for all other alarm events that aren't defined as “critical”.**

- 1.) H2S alarm sounds, crews secure well, and muster based off of wind direction. MOC Operation, MOC Safety, and H2S service company notification will be made and representative from the H2S Service Company is in route to location.
- 2.) Two qualified in scope personnel will don SCBA, utilizing the "buddy system", and respond to area of H2S alarm location to verify the presence of H2S utilizing hand held four gas analyzer or other approved and provided method.
- 3.) If no H2S is found, the “all clear” will be authorized by the Marathon Oil Drilling Superintendent and HES to resume operations. H2S service company will still be required to respond.

Note: Personnel will return to muster area awaiting H2S service company and additional equipment if H2S is verified.

Note: Personnel will be trained annually on H2S and the elements of this guideline. The MOC HES Advisor and Co Man will receive hands on training from a H2S service company field tech, on how to properly identify the location of the alarming sensor, and the proper method for checking the alarmed area.

APPENDICES

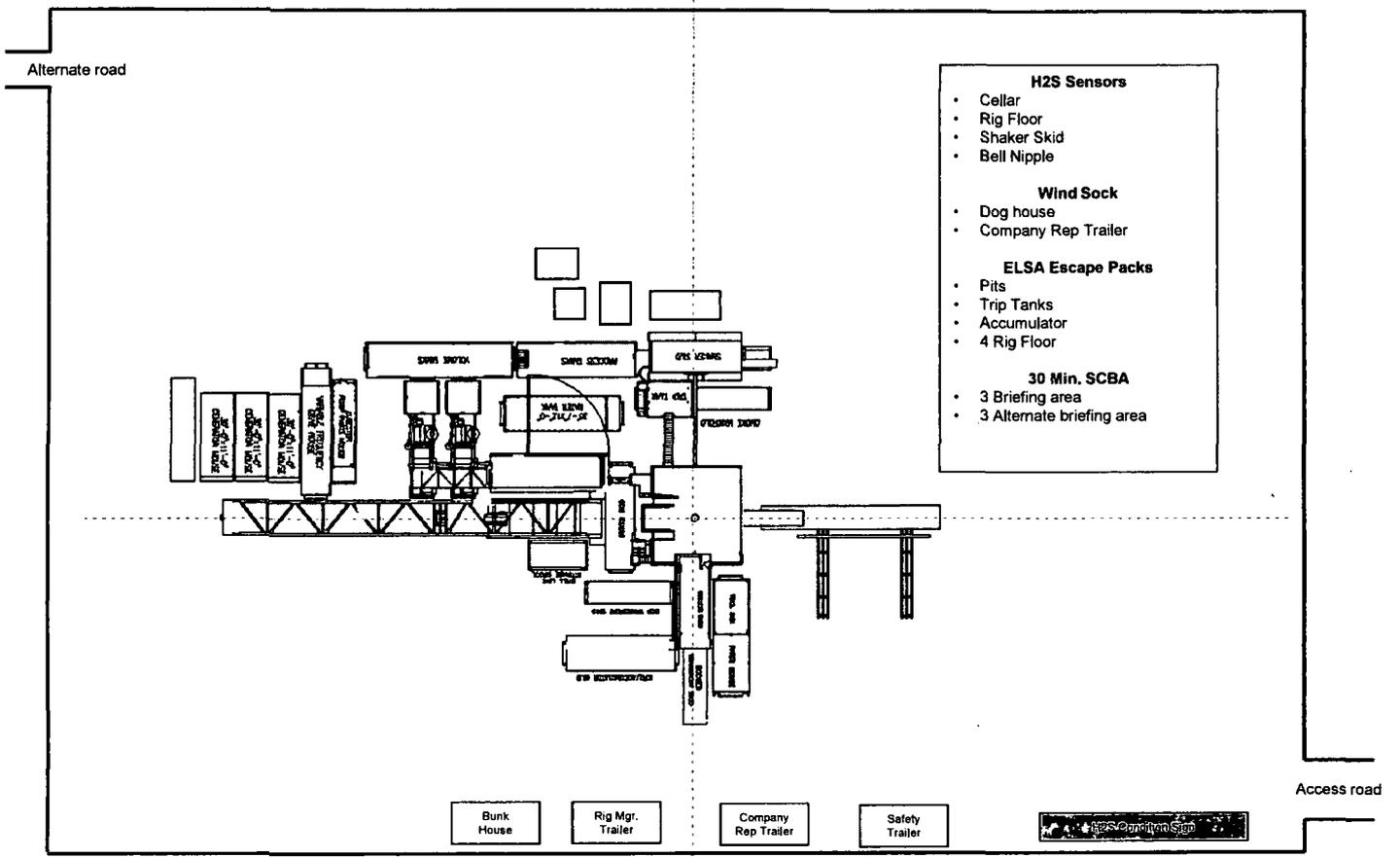
EMERGENCY & MEDICAL FACILITIES:

Marathon Oil Corporation Emergency Numbers			
Brent Evans	Drilling Manager	blevans@marathonoil.com	832 967-8474
Mark Bly	Drilling Superintendent	permiansuper@marathonoil.com	281-840-0467
Chad Butler	Drilling Superintendent	permiansuper@marathonoil.com	281-840-0467
Jacob Beaty	Drilling Engineer	jabeaty@marathonoil.com	713-296-1915
Noah Adams	HES Professional	njadams@marathonoil.com	713-591-4068
Nick Rogers	Lead HES Advisor	permiandches@marathonoil.com	281-659-3734
Scott Doughty	Lead HES Advisor	permiandches@marathonoil.com	281-659-3734
H&P 480	Company Man	Hp480@marathonoil.com	281-768-9946
H&P 498	Company Man	Hp498@marathonoil.com	281-745-0771
H&P 441	Company Man	Hp441@marathonoil.com	
H&P 423	Company Man	Hp423@marathonoil.com	
Precision 594	Company Man	Prec594@marathonoil.com	
H&P 480	HES Advisor	Hp480hes@marathonoil.com	
H&P 498	HES Advisor	Hp498hes@marathonoil.com	
H&P 441	HES Advisor	Hp441hes@marathonoil.com	
H&P 423	HES Advisor	Hp423hes@marathonoil.com	
Precision 594	HES Advisor	Prec594hes@marathonoil.com	

Emergency Services Area Numbers: Or Call 911			
Sheriff (Eddy County, NM)	575-887-7551	New Mexico Poison Control	800-222-1222
Sheriff (Lea County, NM)	575-396-3611	Border Patrol (Las Cruces, NM)	575-528-6600
New Mexico State Police	575-392-5580/5588	Energy Minerals & Natural Resources Dept.	575-748-1283
Carlsbad Medical Center	575-887-4100	Environmental Health Dept.	505-476-8600
Lea Regional Medical Center	575-492-5000	OSHA (Santa Fe, NM)	505-827-2855
Police (Carlsbad, NM)	575-885-2111		
Police (Hobbs, NM)	575-392-9265		
Fire (Carlsbad, NM)	575-885-3124		
Fire (Hobbs, NM)	575-397-9308		
Ambulance Service	911	TOTAL SAFETY H2S – SAFETY SERVICES	432-561-5049

- For Life Flight, 1st dial "911" They will determine nearest helicopter and confirm the need for helicopter.

MARATHON OIL - H2S Preparedness and Contingency Plan Summary



- H2S Sensors**
 - Cellar
 - Rig Floor
 - Shaker Skid
 - Bell Nipple
- Wind Sock**
 - Dog house
 - Company Rep Trailer
- ELSA Escape Packs**
 - Pits
 - Trip Tanks
 - Accumulator
 - 4 Rig Floor
- 30 Min. SCBA**
 - 3 Briefing area
 - 3 Alternate briefing area

Bunk House Rig Mgr. Trailer Company Rep Trailer Safety Trailer



MARATHON OIL PERMIAN LLC

DRILLING AND OPERATIONS PLAN

WELL NAME / NUMBER: ENDER WIGGINS F C 25 34 14 WA 1H
 STATE: NEW MEXICO COUNTY: LEA

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	TWSP	Range	Section	Aliquot/Lot/Trac	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL	2449	FNL	612	FWL	25S	34E	14	SWNW	32.130899615 N	103.44684572 W	Lea	NM	NMP			3332	0	0
KOP	2679	FNL	330	FWL	25S	34E	14	SWNW	32.130652222 N	103.447633056 W	Lea	NM	NMP			-8797	12147	12129
PPP	2310	FNL	330	FWL	25S	34E	14	SWNW	32.131286968 N	103.447758548 W	Lea	NM	NMP			-9257	12681	12589
EXIT	0	FNL	330	FWL	25S	34E	14	NWNW	32.137636667 N	103.447765556 W	Lea	NM	NMP			-9370	15016	12702
PPP	0	FSL	330	FWL	25S	34E	11	SWSW	32.137636667 N	103.447765556 W	Lea	NM	NMP	F	NMNM113419	-9370	15016	12702
EXIT	2639	FSL	330	FWL	25S	34E	11	NWSE	32.144891389 N	103.447769722 W	Lea	NM	NMP	F	NMNM113419	-9370	17655	12702
PP	2639	FSL	330	FWL	25S	34E	11	SWNW	32.144891389 N	103.447769722 W	Lea	NM	NMP	F	NMNM108476	-9370	17655	12702
EXIT	330	FNL	330	FWL	25S	34E	11	NWNW	32.15123633 N	103.44777519 W	Lea	NM	NMP	F	NMNM108476	-9370	19963	12702
BHL	330	FNL	330	FWL	25S	34E	11	NWNW	32.15123633 N	103.44777519 W	Lea	NM	NMP	F	NMNM108476	-9370	19963	12702

1. GEOLOGIC NAME OF SURFACE FORMATION

a. Permian/Quaternary Alluvium

2. ESTIMATED TOPS OF GEOLOGICAL MARKERS & DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS

Formation	True Vertical Depth (ft)	Measured Depth (ft)	Lithologies	Mineral Resources	Producing Formation
Rustler	908	908	Anhydrite/Dolomite	BRINE	N
Salado	1,411	1,411	Salt/Anhydrite	BRINE	N
Castile	3,610	3,610	Base Salt	BRINE	N
Base of Salt	5,134	5,149	Limy Sands	BRINE	N
Lamar	5,419	5,436	Sand/Shales	OIL	Y
Bell Canyon	5,450	5,467	Sands/Shale	OIL	Y
Cherry Canyon	6,759	6,777	Sands/Carbonates	OIL	Y
Brushy Canyon	8,059	8,077	Sands/Carbonates	OIL	Y
Bone Spring	9,368	9,386	Sands/Carbonates	OIL	Y
1st Bone Spring Sand	10,395	10,413	Sands/Carbonates	OIL	Y
2nd Bone Spring Sand	10,973	10,991	Sands/Carbonates	OIL	Y
3rd Bone Spring Sand	12,017	12,035	Sands/Carbonates	OIL	Y
Wolfcamp	12,470	12,512	Carbonates/Shales/Sands	OIL	Y

DEEPEST EXPECTED FRESH WATER: 475' TVD

ANTICIPATED BOTTOM HOLE PRESSURE: 6,984 psi

ANTICIPATED BOTTOM HOLE TEMPERATURE: 170 °F

ANTICIPATED ABNORMAL PRESSURE: N

ANTICIPATED ABNORMAL TEMPERATURE: N

3. CASING PROGRAM

String Type	Hole Size	Csg Size	Top Set MD	Bottom Set MD	Top Set TVD	TVDBottom Set	Weight (lbs/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
Surface	17 1/2	13 3/8	0	950	0	950	54.5	J55	STC	1.53	2.9 2	2.76
Intermediate I	12 1/4	9 5/8	0	5450	0	5450	40	J55	BTC	1.21	1.2 6	1.83
Intermediate II	8 3/4	7	0	1200 0	0	1200 0	29	P110	BTC	2.33	1.2 2	3.26
Production Liner	6 1/8	4 1/2	1180 0	1996 3	1180 0	1270 2	13.5	P110	BTC	1.38	2.0 3	2.07

Minimum safety factors: Burst 1.125 Collapse 1.125 Tension 1.8 Wet/1.6 Dry

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	

Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

4. CEMENT PROGRAM:

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity (sx)	Yield (ft3/sx)	Density (ppg)	Slurry Volume (ft3)	Excess (%)	Cement Type	Additives
Surface	Lead	--	0	760	604	1.747	13.5	1056	100	Class C	3 lbm/sk granular LCM + 0.1250 lbm/sk Poly-E-Flake
Surface	Tail	--	760	950	194	1.364	14.8	264	100	Class C	0.25 % Accelerator
Intermediate I	Lead	--	0	4360	1381	1.73	12.8	2390	75	Class C	0.02 Gal/Sx Defoamer + 0.5% Extender + 1% Accelerator
Intermediate I	Tail	--	4360	5450	385	1.33	14.8	512	50	Class C	0.07 % Retarder
Intermediate II	Lead	--	3000	11000	757	2.70	11	2045	70	Class C	0.8% retarder + 10% extender + 0.02 gal/sk + 2.0% Extender + 0.15% Viscosifier
Intermediate II	Tail	--	11000	12000	179	1.09	15.6	195	30	Class H	3% extender + 0.1% Dispersant + 0.2% retarder
Production Liner	Tail	--	11800	19963	819	1.22	14.5	999	30	Class H	0.15% retarder + 3.5% extender + 0.25% fluid loss

Stage tool may be utilized based on hole conditions. Stage tool depth(s) and cement volumes will be adjusted accordingly. Stage tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Pilot hole depth: N/A TVD/MD

KOP: N/A TVD/MD

Plug top	Plug Bottom	Excess (%)	Quantity (sx)	Density (ppg)	Yield (ft3/sx)	Water gal/sk	Slurry Description and Cement Type

Attach plugging procedure for pilot hole.

5. PRESSURE CONTROL EQUIPMENT

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12 1/4"	13 5/8	5000	Annular	X	50% of working pressure 5000
			Blind Ram	X	
			Pipe Ram		
			Double Ram	X	
			Other*		
8 3/4"	13 5/8	5000	Annular	X	50% testing pressure 5000
			Blind Ram	X	
			Pipe Ram		
			Double Ram	X	
			Other*		
6 1/8"	13 5/8	5000	Annular	X	50% testing pressure 5000
			Blind Ram	X	
			Pipe Ram		
			Double Ram	X	
			Other*		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock, full opening safety valve / inside BOP and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
N	Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. See attached schematic.

6. MUD PROGRAM:

Top Depth	Bottom Depth	Mud Type	Min. Weight (ppg)	Max. Weight (ppg)	Additional Characteristics
0	950	Water Based Mud	8.4	8.8	

<u>950</u>	<u>5450</u>	<u>Brine</u>	<u>9.9</u>	<u>10.2</u>	
<u>5450</u>	<u>12000</u>	<u>Cut Brine</u>	<u>9.0</u>	<u>9.4</u>	
<u>12000</u>	<u>19963</u>	<u>Oil Based mud</u>	<u>12</u>	<u>12.5</u>	

Losses or gains in the mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times.

7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT

- a. A Kelly cock will be in the drill string at all times.
- b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor unobstructed and readily accessible at all times.
- c. Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production casing is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached. **If Hydrogen Sulfide is encountered , measured amounts and formations will be reported to the BLM**

8. LOGGING / CORING AND TESTING PROGRAM:

- A. Mud Logger: Intermediate I shoe to TD.
- B. DST's: None.
- C. Open Hole Logs: GR while drilling from Intermediate I casing shoe to TD.

9. POTENTIAL HAZARDS:

- A. H2S detection equipment will be in operation after drilling out the surface casing shoe until the production casing has been cemented. Breathing equipment will be on location from drilling out the surface shoe until production casing is cemented. If H2S is encountered the operator will comply with Onshore Order #6.
- B. No abnormal temperatures or pressures are anticipated. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.
- C. No losses are anticipated at this time.
- D. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.
- E. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 30 days.



APD ID: 10400026575

Submission Date: 03/12/2018

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

Well Type: OIL WELL

Well Work Type: Drill



[Show Final Text](#)

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

2_ENDER_WIGGINS_F_C_25_34_14_EXISTING_ROADS_MAP_20180621093511.pdf

Existing Road Purpose: ACCESS

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

9_ROAD_PLAT_ENDER_WIGGINS_F_C_25_34_14_NM_LE_0001.00060_REV0_CERT..._20180621093542.pdf

New road type: LOCAL

Length: 30.73 Feet Width (ft.): 25

Max slope (%): 3 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: The access road will have a small low water crossing at the point of leaving the existing lease road to allow for continued drainage along existing lease road.

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

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: The topsoil will be stripped during construction activities and spread out on edge of road to be seeded during the interim reclamation of the well pad.

Access other construction information:

Access miscellaneous information:

Number of access turnouts:

Access turnout map:

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: Crowning and ditching (both sides) shall be constructed on the access road driving surface. The road crown shall have a grade of approximately 2%. The road shall conform to cross section and plans for typical road construction found in the BLM Gold Book.

Road Drainage Control Structures (DCS) description: Road will be crowned to allow proper water drainage and ditching will be constructed on both sides of the 30.73' access road. No other DCS's will be 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:

3_ENDER_WIGGINS_F_C_25_34_14_1_MILE_RADIUS_MAP_20180621093615.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: Proposed Central Tank Battery (CTB) will be shared with the Dogie Draw Fed Com 25 34 14 wells on same well pad. - There are 10 - 750 bbl steel tanks for oil storage and 24 - 750 bbl steel tanks for water storage planned for the CTB. -No permanent open top storage tanks will be used. - Open vent exhaust stacks will be modified to prevent birds or bats from entering, discourage perching, roosting, and nesting. - All chemical and fuel secondary containments will be covered for birds, wildlife, and livestock protection. The fluids will be disposed of as needed to prevent possible overflow. - The proposed CTB will have a secondary containment 1.5 times the holding capacity of largest storage tank plus freeboard to account for precipitation. - All above ground structures not subject to safety requirements will be

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

Painted a flat non-reflective shale green for blending with the surrounding environment. - At this time, the proposed CTB will have oil and water truck hauled from the facility. Pipelines/Flowlines: All flowlines transporting production from wells to the facility will remain on the pad; therefore, no further disturbance or ROW will be required. Powerlines: No power-lines will be needed. The power to the equipment will be provided via a natural gas generator.

Production Facilities map:

10_Ender_Wiggins_F_C_25_34_14_Facility_Layout_and_IR_Plat_20180621093630.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

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

Describe type:

Source latitude: 32.1673

Source datum: NAD83

Water source permit type: PRIVATE CONTRACT

Source land ownership: FEDERAL

Water source transport method: PIPELINE

Source transportation land ownership: FEDERAL

Water source volume (barrels): 147500

Source volume (gal): 6195000

Water source type: GW WELL

Source longitude: -103.4449

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

Describe type:

Source latitude: 32.1673

Source datum: NAD83

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: PIPELINE

Source transportation land ownership: PRIVATE

Water source volume (barrels): 147500

Source volume (gal): 6195000

Water source type: GW WELL

Source longitude: -103.4461

Source volume (acre-feet): 19.011732

Water source and transportation map:

Water_map_20180306051334.jpg

Water source comments: • All Fresh water will be obtained from a private water source. • 1st proposed (pond in Section 35,T24S,R34E) will be utilized for fresh water. • A temporary 10 expanding pipe transfer line will run East from pond along lease rd. then turn South along proposed access road approx. 2.1 Miles. • 2nd proposed (pond in Section 35,T24S-R34E) will be utilized for fresh water. • A temporary 10 expanding pipe transfer line will run South from pond along access rd. then turn

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

along proposed access road approx. 2.38 miles. • 3rd proposed pond(Madera in Section 30,T24S-R35E will be utilized for fresh water. • A temporary 10 expanding pipe transfer line will run south from pond along access rd. then west along proposed access road approx. 4.19 Miles. • Fresh water line will run parallel to existing disturbance and will stay within 10' of access road. Proposed water suppliers Madera Brad Beckem Rockhouse
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: Caliche will be used to construct well pad and roads. Material will be purchased from a federal permitted pit. The proposed source of construction material will be located: - Source 1: Madera Private mineral pit located in section 6, T25S, R35E - Source 2: Madera Private mineral pit located in section 26, T24S, R34E Payment shall be made by construction contractor. Notification shall be given to BLM at (575) 234-5909 at least 3 working days prior to commencing construction of well pad or related infrastructure.

Construction Materials source location attachment:

11_Water_and_Minerals_Map_20180305112734.jpg

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drilling fluids and produced oil and water from the well during drilling operations.

Amount of waste: 1000 barrels

Waste disposal frequency : Daily

Safe containment description: Lined steel tanks

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

Safe containmant attachment:

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

Disposal type description:

Disposal location description: Waste will be stored safely and disposed of properly in an NMOCD approved disposal facility.

Waste type: GARBAGE

Waste content description: Garbage and trash (solid waste)

Amount of waste: 1200 pounds

Waste disposal frequency : Weekly

Safe containment description: All garbage will be stored in closed containers

Safe containmant attachment:

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

Disposal type description:

Disposal location description: All garbage will be collected by a third party and disposed of properly at a State approved disposal facility.

Waste type: SEWAGE

Waste content description: Human waste and grey water.

Amount of waste: 600 barrels

Waste disposal frequency : Weekly

Safe containment description: Portable toilets and sewage tanks.

Safe containmant attachment:

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

Disposal type description:

Disposal location description: All sewage waste will be managed by a third party and disposed of properly at a State approved disposal facility.

Waste type: COMPLETIONS/STIMULATION

Waste content description: Oil and water from drilling operations

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:** COMMERCIAL

FACILITY

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

Disposal type description:

Disposal location description: Waste will be stored safely and disposed of properly in an NMOCD approved disposal facility.

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

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

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

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location The well will be drilled utilizing a closed loop system. Drill cutting will be properly disposed of into lined steel tanks and taken to an NMOCD approved disposal facility.

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:

Pages_from_5_ENDER_WIGGINS_F_C_25_34_14_WELL_PLATS_20180626123003.pdf

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

Comments: Exterior well pad dimensions are 629' by 525' (9.16 ac). Note this pad will have 6 total wells, see Well Pad Surface Plat. Interior well pad dimensions from first point of entry (well head) are: From west-220', north-180', east-306', south-450'. These wells will be utilizing the same proposed road, well pad, and facility for the Dogie Draw Fed Com 25 34 14 1H, 2H, 24H. Topsoil will be places on the west side of the pad to accommodate interim reclamation activities. Cut and fill will be minimal

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: ENDER WIGGINS FED COM 25 34 11

Multiple Well Pad Number: 289-9

Recontouring attachment:

SUPO_10__Dogie_Draw_Fed_Com_25_34_14__IR_Plat_20180808125655.pdf

Drainage/Erosion control construction: During construction, BMP's will be used to control erosion, runoff and siltation of surrounding area.

Drainage/Erosion control reclamation: BMP will be used to control erosion, runoff and siltation of surrounding area. All areas reclaimed will be ripped across the slope to prevent water erosion.

Well pad proposed disturbance (acres): 9.16	Well pad interim reclamation (acres): 2.42	Well pad long term disturbance (acres): 6.74
Road proposed disturbance (acres): 0.0141	Road interim reclamation (acres): 0	Road long term disturbance (acres): 0
Powerline proposed disturbance (acres): 0	Powerline interim reclamation (acres): 0	Powerline long term disturbance (acres): 0
Pipeline proposed disturbance (acres): 0	Pipeline interim reclamation (acres): 0	Pipeline long term disturbance (acres): 0
Other proposed disturbance (acres): 0	Other interim reclamation (acres): 0	Other long term disturbance (acres): 0
Total proposed disturbance: 9.1741	Total interim reclamation: 2.42	Total long term disturbance: 6.74

Disturbance Comments: Well pad only

Reconstruction method: Reclamation Objectives • The objective of interim reclamation is to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil; control erosion; and minimize habitat and forage loss, visual impact, and weed infestation, during the life of the well or facilities. • The BLM will be notified at least 3 days prior to commencement of any reclamation procedures. • If circumstances allow, interim reclamation and/or final reclamation actions will be completed no later than 6 months from when the final well on the location has been completed or plugged. We will gain written permission from the BLM if more time is needed. • Reclamation will be performed by using the following procedures: For Interim Reclamation: • Within 6 months of first production, the well location and surrounding areas will be cleared of, and maintained free of, all materials, trash, and equipment not required for production. A plan will be submitted showing where interim reclamation will be completed in order to allow for safe operations, protection of the environment outside of drilled well, and following best management practices found in the BLM "Gold Book". • Current plans for interim reclamation include reducing the pad size to approximately 6.74 acres from the proposed size of 9.16 acres. • In areas planned for interim reclamation, all the surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads. • The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation. • Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including cuts & fills. To seed the area, the proper BLM LPC seed mixture free of noxious weeds, will be used. • Proper erosion control methods will be used on the area to control erosion, runoff and siltation of the surrounding area. • The interim reclamation will be monitored periodically to ensure that vegetation has reestablished. For Final Reclamation: • Prior to final reclamation procedures, the well pad, road, and surrounding area will be cleared of

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

material, trash, and equipment. • All surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads. • All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends in distinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation. • After all the disturbed areas have been properly prepared; the areas will be seeded with the proper BLM LPC seed mixture free of noxious weeds. • Proper erosion control methods will be used on the entire area to control erosion, runoff and siltation of the surrounding area.

Topsoil redistribution: The topsoil will be evenly distributed across all reclaimed areas, ripped across the slopes, and seed accordingly. During final reclamation, Marathon will grab and evenly redistribute topsoil across the entire disturbed area (disc plowing if needed) area and seed accordingly.

Soil treatment: Stockpile and seeded until used for interim or final reclamation. Topsoil and subsoil will be piled separately.

Existing Vegetation at the well pad: Mesquite, shinnery oak, sand dropseed, and sage.

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: NA

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: NA

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: NA

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

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

Seed type: OTHER

Seed source: COMMERCIAL

Seed name: BLM Sand LPC

Source name:

Source address:

Source phone:

Seed cultivar: Broadcast

Seed use location: WELL PAD

PLS pounds per acre: 38

Proposed seeding season: AUTUMN

Seed Summary	
--------------	--

Total pounds/Acre: 38

Seed Type	Pounds/Acre
-----------	-------------

OTHER

38

Seed reclamation attachment:

Seed_Mixture_LPC_HEA_20180123085729.pdf

Operator Contact/Responsible Official Contact Info
--

First Name:

Last Name:

Phone:

Email:

Seedbed prep: Rip native topsoil stockpiled during construction activities across the slope

Seed BMP:

Seed method: Broadcast seed with spreader

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: Marathon will control weeds per Federal, County and State regulations by contracting a certified third party.

Weed treatment plan attachment:

Monitoring plan description: Marathon will monitor all disturbed areas and lease roads leading to well pad monthly for weeds through routine inspections.

Monitoring plan attachment:

Success standards: Maintain all disturbed areas as per Gold Book Standards.

Pit closure description: N/A

Pit closure attachment:

Section 11 - Surface Ownership

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

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:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Fee Owner: mark and Annett McCloy Trustees

Fee Owner Address: PO Box 795, Tatum, NM 88267

Phone: (432)914-4459

Email:

Surface use plan certification: YES

Surface use plan certification document:

Dogie_Draw_Federal_Com_25_34_14_PAD__SUP_Certification_Letter_20180305130905.pdf

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: Private surface owner has been mailed a copy of the SUPO.

Surface Access Bond BLM or Forest Service: BLM

BLM Surface Access Bond number:

USFS Surface access bond number:

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

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: Performed 11/28/2017. Marathon Oil Attendees: Brian Hall and Nancy Pohl BLM Attendee: Colleen Cepero-Rios

Other SUPO Attachment

Dogie_Draw__Onsite_Inspection_20180305130544.xlsx

Dogie_Draw_Federal_Com_25_34_14_Pad__No_Arch_Survey_Letter_20180305130622.pdf

ENDER_WIGGINS_F_C_25_34_14_LR2000__NMNM108476_20180626123249.pdf

ENDER_WIGGINS_F_C_25_34_14_LR2000__NMNM113419_20180626123301.pdf

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

Dogie_Draw_Ender_Wiggins_Federal_Com_25_34_14_PAD__SUP_Document_20180626124216.docx

EXISTING ROADS MAP

ENDER WIGGINS FEDERAL 25-34-14
 TWP. 25-S RGE. 34-E
 SURVEY: N.M.P.M.
 COUNTY: LEA
 OPERATOR: MARATHON OIL PERMIAN LLC
 U.S.G.S. TOPOGRAPHIC MAP: WOODLEY FLAT, N.M.



LEGEND

SCALE: 1" = 2,000

- PROPOSED WELL PAD —————
- ARCH SURVEY LIMITS - - - - -
- EXISTING LEASE ROAD —————
- PROPOSED LEASE ROAD —————
- SECTION LINE —————
- PI/BEND ○
- WELLS •

PREPARED BY:
 R-SQUARED GLOBAL, LLC
 1309 LOUISVILLE AVENUE, MONROE, LA 71201
 318-323-8900 OFFICE
 JOB No. R3816

INTERIM RECLAMATION (IR) PLAT

DOGIE DRAW FED COM 25-34-14 / ENDER WIGGINS F C 25-34-14

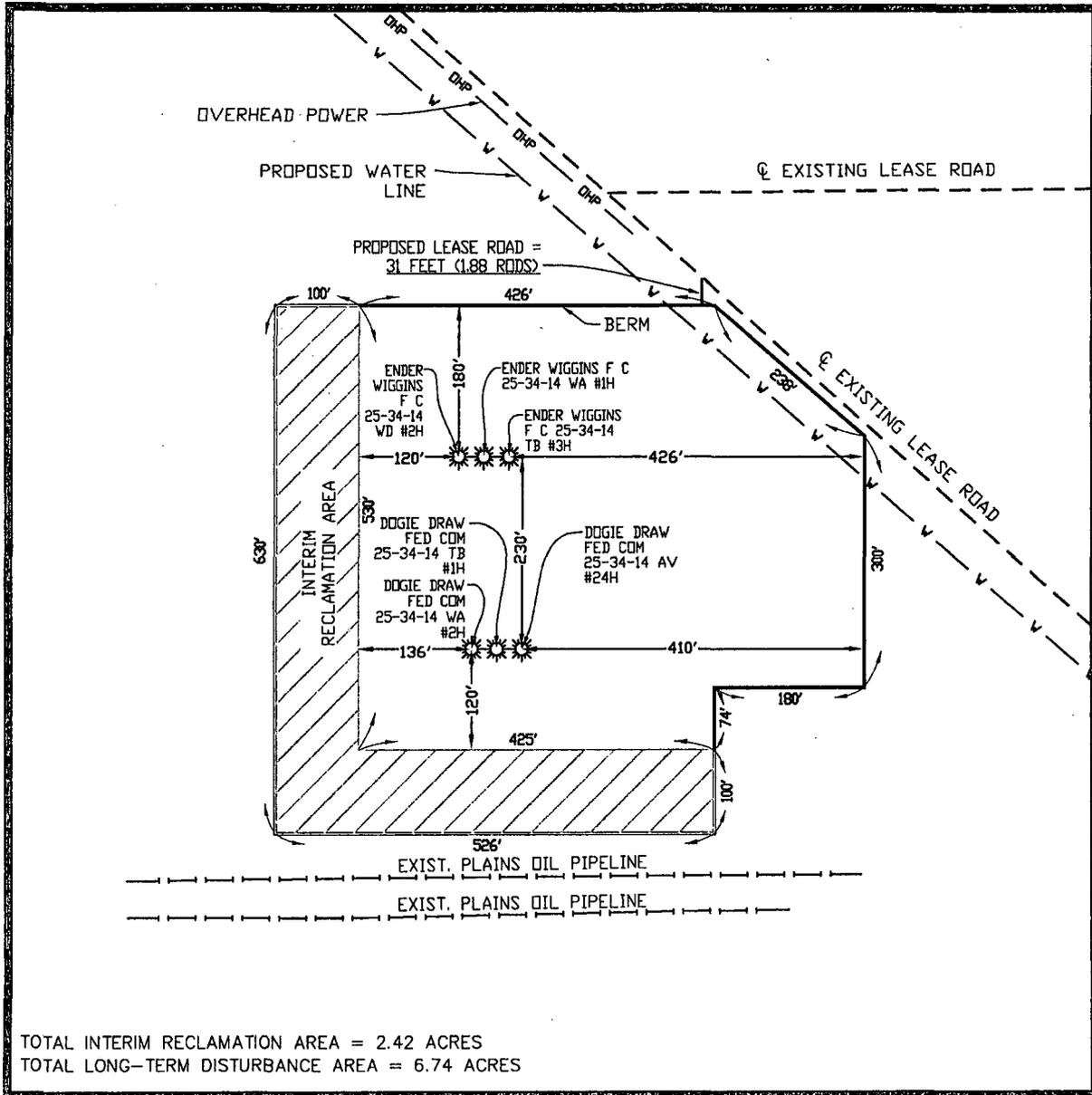
SEC. 14 TWP. 25-S RGE. 34-E

SURVEY: N.M.P.M.

COUNTY: LEA

OPERATOR: MARATHON OIL PERMIAN LLC

U.S.G.S. TOPOGRAPHIC MAP: WOODLEY FLAT, N.M.



TOTAL INTERIM RECLAMATION AREA = 2.42 ACRES
 TOTAL LONG-TERM DISTURBANCE AREA = 6.74 ACRES

9 | 07/02/2018 | DEF

LEGEND

- PROPOSED WELL PAD
- ARCH SURVEY LIMITS
- PROPOSED LEASE ROAD
- EXISTING LEASE ROAD
- SECTION LINE
- EXISTING PIPELINES
- ARC LIMITS
- PROPOSED WATER LINE

100' 0' 100' 200'
 SCALE: 1" = 200'

SHEET 5 OF 6
 PREPARED BY:
 R-SQUARED GLOBAL, LLC
 1309 LOUISVILLE AVENUE, MONROE, LA 71201
 318-323-8900 OFFICE
 JOB No. R3755

Seeding attachment
Marathon Oil Permian LLC
Madera 19 Federal Com 26 35 19 Reclamation

Seed Mixture for LPC/HEA 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 will be tested and the viability testing of seed shall 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.

The reclaimed area associated with pad construction will be ripped across the slope in order to loosen the soil and make moisture pockets. Seed application will be performed by dispersing seed through broadcasting seed with a seed spreader for even distribution. After application. With the soil being ripped properly, the seed will naturally get a thin covering of soil. The pockets will also allow for moisture to become trapped allowing for quicker germination of the seed. 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 1/2 acre:

<u>Species</u>	<u>lb/1/2 acre</u>
Plains Bristlegrass	5lbs
Sand Bluestem	5lbs
Little Bluestem	5lbs
Big Bluestem	5lbs
Plains Coreopsis	5lbs
Sand Dropseed	1lbs
Ragweed	4lbs
Dove weed	3lbs
Pig weed	2lbs
Black oil sunflower	3lbs

*Pounds of pure live seed:

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

SELF-CERTIFICATION STATEMENT
FROM LESSEE/OPERATOR
SURFACE OWNER IDENTIFICATION

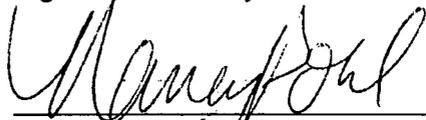
Well Number and Locations: Dogie Draw Federal Well Pad; Section 14, T25S, R34E, Lea County, New Mexico.

I hereby certify to the Authorized Officer of the Bureau of Land Management that Operator is in current negotiations with the Surface Owner and upon failure of the good-faith efforts of Operator to come to an agreement of any kind with the Surface Owner, Operator will provide a bond if necessary.

Surface owner information:

Mark and Annette McCloy, Trustees, under the Mark and Annette McCloy Revocable Living Trust of 2014, dated October 15, 2014
P. O. Box 1076
Jal, New Mexico 88252
432-940-4459

Signed this 12th day of December, 2017.



Nancy Pohl, Attorney-in-Fact

ONSITE Review Checklist

Onsite Inspection - Environmental							
Oil & Gas Operator: Marathon Oil Permian LLC			Field: Red Hills				
Case #		Well Name/ Number		Dogie Draw 23 Federal Com 25 34 14		API #	
Lease # NMNM136221							
Twn: 25S		Rng: 34E		County: Lea		Total Depth:	
Sec: 14 Qtr:		L		State: NM			
N/S Foot		E/W Foot:		Lat/Long		Formation(s):	
REPRESENTATIVES PRESENT							
Company: Brian and Nancy			Contractor: R-Squared				
BLM: Colleen Cepero-Rios			Other:				
Surface Owner: Mark and Annette McCloy, Trustees		<input type="checkbox"/> PRESENT <input type="checkbox"/> TCheck <input type="checkbox"/> Box 4		<input checked="" type="checkbox"/> NOT PRESENT Location Agreement		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
Name:			Phone: 432-940-4459				
Address:			P. O. Box 795, Tatum, NM 88267				
Other Surface Owners Involved in Access:			<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Name:		
ACCESS ROAD							
Existing Access: Yes		Miles: 4286'		New Construction: Yes		Miles: 31 feet	
<input type="checkbox"/> RETAIN FOR LAND OWNER		<input checked="" type="checkbox"/> ABANDON		Width (FT.): 30'		Grade (%Max): 0	
Culverts: Number: 0		Size:		Location:			
Cuts and Fills: Max Cut:		Max Fill:					
Surfacing: Type: Caliche		Depth: 8"		Source: Madera -Source 1: 24S-35E-6; Source 2: 25S-R34E -5			
Low Water Crossing-Number/Location--		0		<input type="checkbox"/> FOR LAND <input type="checkbox"/> ABANDON			
Water Bars-Number/Location--		0		<input type="checkbox"/> FOR LAND <input type="checkbox"/> ABANDON			
Gates-Number/Location--		0		<input type="checkbox"/> FOR LAND <input type="checkbox"/> ABANDON			
Cattleguards-Number/Location--		0		<input type="checkbox"/> FOR LAND <input type="checkbox"/> ABANDON			
WELL SITE							
Cuts-- Depth:		Slope: /		Top Soil Removal:			
Max: 5'				Inches: 12"			
Topsoil Stockpile Location:		West side of pad					
Pad Size:							
Water Bars Needed		<input type="checkbox"/> YES <input type="checkbox"/> NO		Fence Crossing Location		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
Location/Spacing:		30'					
Available Area for Frac. Equipment		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Reserve Pit Lined		<input type="checkbox"/> YES <input type="checkbox"/> NO	
		Closed Loop					

ONSITE Review Checklist

Production Facilities <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Flowlines-- <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Length: _____ Depth: _____	Power Lines Length: _____ <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Poles: _____
Special Requirements/TOPO Features: _____			
RESOURCES			
T&E Clearance Needed? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Archeological Inventory Needed <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Mitigation-- LPC habitat	Present Use: <input checked="" type="checkbox"/> Grazing <input type="checkbox"/> Crop and <input checked="" type="checkbox"/> Oil Field Development <input type="checkbox"/> Other
Floodplains/Wetlands-- <input type="checkbox"/> E <input checked="" type="checkbox"/> NO	Streams/Ponds-- <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Water Source-- <input type="checkbox"/> E <input type="checkbox"/> NO	Water Source-- _____
Nearest Residence:	Greater than 2 miles	Nearest Drainage: _____ Ephemeral <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	_____ None Y _____ _____ S <input checked="" type="checkbox"/> E <input type="checkbox"/> NO
Soil Type/Ecological Site	Wink fine sand		
Erosion Concerns -	No berm needed for pad, just around facility		
Native Vegetation Present	shinnery oaks, mesquite, yucca, grasses		
Invasive Species Present	Need plan to prevent invasive species being tracked in.		
Wildlife Present -	Cotton tails, jack rabbits, cows, deers, migratory birds		
ALTERNATIVES CONSIDERED			
MITIGATION/BMP(s)			
Need to notify allottee.			
RECLAMATION			
Seed Mix - per McCloy SUA	IR--Pad Size	_____	
Species	Broadcast Rate (lbs/acre)	Interim Reclamation Requirements--	
BLM #LPC	_____	_____	
Reclamation Plan Discussed	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Other/Special Conditions	

ONSITE Review Checklist

ABANDON

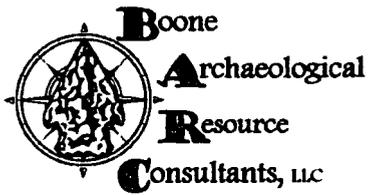
ABANDON

ABANDON

ABANDON

NO

ONSITE Review Checklist



506 E. Chapman Road
Carlsbad, NM 88220
Office: 575-885-1352
boonearch@yahoo.com

09/25/2017

Global Land Surveying
8205 Camp Bowie West Suite 108
Fort Worth, TX 76116
Attn: Corey Wilson

Re: Dogie Draw 26 Fed. #1H Well Pad (Marathon Oil Corporation)
Project No.: BARC 09-17-041
Legal Description: T25S R34E S23, S26

Dear Mr. Wilson:

A records search was conducted on 9/25/2017 at the Bureau of Land Management Carlsbad Field Office for a proposed project which lies T25S R34E S23, S26. During the records search it was noted that the proposed project area contains archaeological survey coverage, NMCRIS #: 137597. Due to previous surveyed space within the project location and after consultation with BLM archaeologist B. Boeke, it was determined that no further survey is required. This project is recommended for approval as currently staked without further archaeological compliance.

Sincerely,

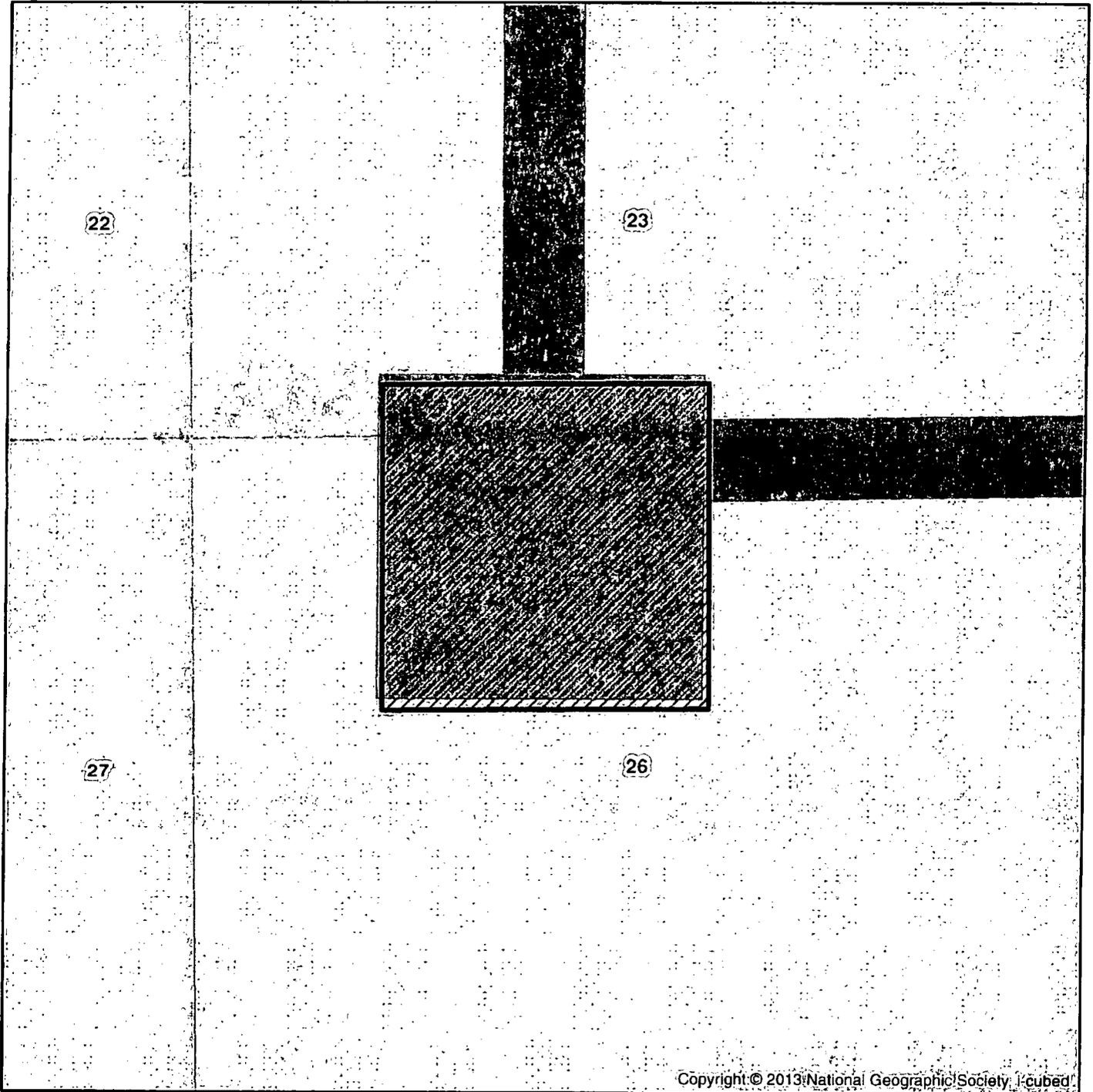
A handwritten signature in cursive script that reads "Stacy K. Galassini".

Stacy K. Galassini
Owner/Principal Investigator
Boone Archaeological Resource
Consultants, LLC

Enclosure:

- (1) Project Map
- (2) BLM Prefield Form
- (3) BLM Map

Global Land Surveying
Proposed Dogie Draw 26 Fed. #1H Well Pad
T25S R34E S23, S26
BARC 09-17-041



Copyright © 2013 National Geographic Society. i-cubed

BLM Consultation Map

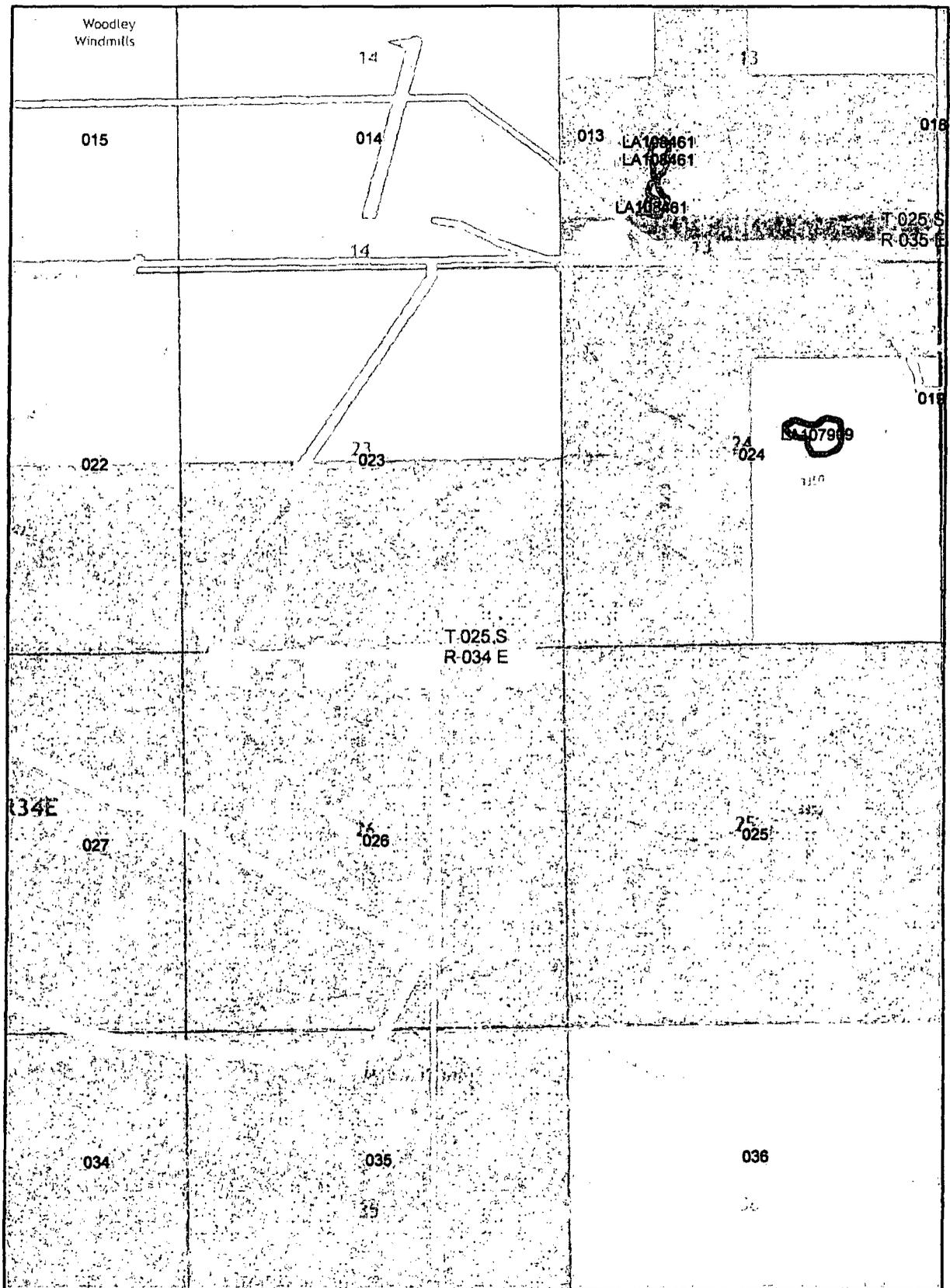
Lea County

Survey Project	Surveyed Space	Surface Ownership
 Well Pad	 Survey	 BLM
 Sections		



1:3,154.07

BLM Map



1:24,000

680 340 0 680 Meters



DEPARTMENT OF THE INTERIOR
 BUREAU OF LAND MANAGEMENT
 CASE RECORDATION
 (MASS) Serial Register Page

Run Date/Time: 1/31/2018 10:15 AM

Page 1 Of 3

01 12-22-1987;101STAT1330;30USC181 ET SEQ
 Case Type 312021: O&G LSE COMP PD -1987
 Commodity 459: OIL & GAS
 Case Disposition: AUTHORIZED

Total Acres:
 1,080.150

Serial Number
 NMNM 108476

Serial Number: NMNM-- 108476

Name & Address		Int Rel	% Interest
EOG M RESOURCES INC	105 S 4TH ST	ARTESIA NM 882102177	LESSEE 33.333333000
EOG A RESOURCES INC	105 S 4TH ST	ARTESIA NM 882102177	LESSEE 33.333333000
CHEVRON USA INC	1400 SMITH ST	HOUSTON TX 770027327	OPERATING RIGHTS 0.000000000
EOG Y RESOURCES INC	105 S 4TH ST	ARTESIA NM 882102177	OPERATING RIGHTS 0.000000000
MARATHON OIL PERMIAN LLC	5555 SAN FELIPE ST	HOUSTON TX 770562701	OPERATING RIGHTS 0.000000000
OXY Y-1 COMPANY	PO BOX 27570	HOUSTON TX 772277570	OPERATING RIGHTS 0.000000000
OXY Y-1 COMPANY	PO BOX 27570	HOUSTON TX 772277570	LESSEE 33.333334000
THE ALLAR CO	PO BOX 1567	GRAHAM TX 76450	OPERATING RIGHTS 0.000000000

Serial Number: NMNM-- 108476

Mer	Twp	Rng	Sec	SType	Nr	Suff	Subdivision	District/ Field Office	County	Mgmt Agency
23	0250S	0340E	001	ALIQ			W2SW,W2SE,SESE;	CARLSBAD FIELD OFFICE	LEA	BUREAU OF LAND MGMT
23	0250S	0340E	001	LOTS			2,3,4;	CARLSBAD FIELD OFFICE	LEA	BUREAU OF LAND MGMT
23	0250S	0340E	011	ALIQ			N2;	CARLSBAD FIELD OFFICE	LEA	BUREAU OF LAND MGMT
23	0250S	0340E	013	ALIQ			SWNW,S2;	CARLSBAD FIELD OFFICE	LEA	BUREAU OF LAND MGMT
23	0250S	0340E	024	ALIQ			W2NW;	CARLSBAD FIELD OFFICE	LEA	BUREAU OF LAND MGMT

Relinquished/Withdrawn Lands

Serial Number: NMNM-- 108476

Act Date	Act Code	Action Txt	Action Remarks	Pending Off
04/16/2002	387	CASE ESTABLISHED	200204043	
04/17/2002	191	SALE HELD		
04/17/2002	267	BID RECEIVED	\$49726.00;	
04/17/2002	392	MONIES RECEIVED	\$49726.00;	
05/30/2002	237	LEASE ISSUED		
05/30/2002	974	AUTOMATED RECORD VERIF	BTM	
06/01/2002	496	FUND CODE	05;145003	
06/01/2002	530	RLTY RATE - 12 1/2%		

NO WARRANTY IS MADE BY BLM FOR USE OF THE DATA FOR PURPOSES NOT INTENDED BY BLM

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CASE RECORDATION
(MASS) Serial Register Page

Run Date/Time: 1/31/2018 10:15 AM

Page 2 Of 3

Serial Number: NMNM-- 108476

Act Date	Act Code	Action Txt	Action Remarks	Pending Off
06/01/2002	868	EFFECTIVE DATE		
07/16/2002	963	CASE MICROFILMED/SCANNED		
05/12/2011	940	NAME CHANGE RECOGNIZED	YATES DRL CO/OXY Y-1	
05/01/2012	677	SUS OPS OR PROD/PMT REQD	/1/	
05/10/2012	673	SUS OPS/PROD APLN FILED		
05/25/2012	974	AUTOMATED RECORD VERIF	BCO	
07/19/2012	932	TRF OPER RGTS FILED	ABO PETRO/YATES PET;1	
08/24/2012	933	TRF OPER RGTS APPROVED	EFF 08/01/2012;	
08/24/2012	974	AUTOMATED RECORD VERIF	JS	
09/10/2012	932	TRF OPER RGTS FILED	MYCO INDU/YATES PET;1	
12/18/2012	933	TRF OPER RGTS APPROVED	EFF 10/01/12;	
12/18/2012	974	AUTOMATED RECORD VERIF	EMR	
02/11/2013	658	MEMO OF 1ST PROD-ACTUAL	/2/NMNM132924;	
02/12/2013	650	HELD BY PROD - ACTUAL	/1/	
02/12/2013	658	MEMO OF 1ST PROD-ACTUAL	/1/#2H RIDER BRQ FED;	
04/04/2013	246	LEASE COMMITTED TO CA	NMNM132924;	
04/05/2013	643	PRODUCTION DETERMINATION	/1/	
07/17/2014	643	PRODUCTION DETERMINATION	/2/	
05/04/2015	932	TRF OPER RGTS FILED	YATES PET/ALLAR COM;1	
06/10/2015	933	TRF OPER RGTS APPROVED	EFF 06/01/15;	
06/10/2015	974	AUTOMATED RECORD VERIF	MJD	
09/23/2016	932	TRF OPER RGTS FILED	YATES PET/CHEVRON U;1	
12/01/2016	817	MERGER RECOGNIZED	YATES PETRO/EOG Y RES	
12/01/2016	940	NAME CHANGE RECOGNIZED	ABO PETRO/EOG A RESOU	
12/01/2016	940	NAME CHANGE RECOGNIZED	MYCO INDUST/EOG M RES	
01/12/2017	933	TRF OPER RGTS APPROVED	EFF 10/01/17;	
01/12/2017	974	AUTOMATED RECORD VERIF	JS	
03/14/2017	932	TRF OPER RGTS FILED	ALLAR COM/CROWN OIL;1	
04/24/2017	933	TRF OPER RGTS APPROVED	EFF 04/01/17;	
04/24/2017	974	AUTOMATED RECORD VERIF	RCC	
07/06/2017	932	TRF OPER RGTS FILED	CROWN OIL/MARATHON;1	
09/15/2017	933	TRF OPER RGTS APPROVED	EFF 08/01/17;	
09/19/2017	974	AUTOMATED RECORD VERIF	JA	

Line Number Remark Text Serial Number: NMNM-- 108476

0002 /1/SUSPENSION GRANTED DUE TO THE INABILITY TO
0003 TIMELY OBTAIN A RIG.
0004 08/24/2012 - RENTAL PD THRU 06/01/12 PER ONRR

NO WARRANTY IS MADE BY BLM FOR USE OF THE DATA FOR PURPOSES NOT INTENDED BY BLM

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
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Line Number	Remark Text	Serial Number: NMNM-- 108476
0005	RENTAL PAID TO ONRR FROM 06/01/2012 THRU 05/31/2013	
0006	06/10/2015 - YATES PETRO NMB000434 N/W	
0007	01/12/2017 - CHEVRON USA INC - NM2867 NW	
0008	OPERATING RIGHTS HAVE BEEN ADJUDICATED	
0009	04/24/2017 - CROWN V NMB001240 SW	
0010	09/15/2017 - OPERATING RIGHTS HAVE BEEN ADJUDICATED;	
0011	09/15/2017 - MARATHON OIL PERMIAN WYB002107 N/W	

**DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
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01 12-22-1987;101STAT1330;30USC181 ET SEQ
Case Type 312021: O&G LSE COMP PD -1987
Commodity 459: OIL & GAS
Case Disposition: AUTHORIZED

Total Acres:
1,240.000

Serial Number
NMNM 113419

					Serial Number: NMNM-- 113419	
Name & Address					Int Rel	% Interest
EOG Y RESOURCES INC	105 S 4TH ST	ARTESIA	NM	882102177	OPERATING RIGHTS	0.000000000
MARATHON OIL PERMIAN LLC	5555 SAN FELIPE ST	HOUSTON	TX	770562701	OPERATING RIGHTS	0.000000000
REGENERATION ENERGY CORP	PO BOX 210	ARTESIA	NM	882110210	OPERATING RIGHTS	0.000000000
CHEVRON MIDCONTINENT LP	6301 DEAUVILLE	MIDLAND	TX	797062964	OPERATING RIGHTS	0.000000000
THE ALLAR CO	PO BOX 1567	GRAHAM	TX	76450	LESSEE	100.000000000

							Serial Number: NMNM-- 113419			
Mer	Twp	Rng	Sec	SType	Nr	Suff	Subdivision	District/ Field Office	County	Mgmt Agency
23	0250S	0340E	011	ALIQ			S2;	CARLSBAD FIELD OFFICE	LEA	BUREAU OF LAND MGMT
23	0250S	0340E	012	ALL			ENTIRE SECTION	CARLSBAD FIELD OFFICE	LEA	BUREAU OF LAND MGMT
23	0250S	0340E	013	ALIQ			NE,N2NW,SENW;	CARLSBAD FIELD OFFICE	LEA	BUREAU OF LAND MGMT

Relinquished/Withdrawn Lands

Serial Number: NMNM-- 113419

				Serial Number: NMNM-- 113419	
Act Date	Act Code	Action Txt	Action Remarks	Pending Off	
01/18/2005	299	PROTEST FILED			
01/18/2005	387	CASE ESTABLISHED	200501043;		
01/19/2005	191	SALE HELD			
01/19/2005	267	BID RECEIVED	\$198400.00;		
02/28/2005	237	LEASE ISSUED			
02/28/2005	298	PROTEST DISMISSED			
02/28/2005	974	AUTOMATED RECORD VERIF	LR		
03/01/2005	496	FUND CODE	05;145003		
03/01/2005	530	RLTY RATE - 12 1/2%			
03/01/2005	868	EFFECTIVE DATE			
06/20/2005	963	CASE MICROFILMED/SCANNED			
03/20/2006	932	TRF OPER RGTS FILED	ALLAR/PURE RESOURCE;1		
03/31/2006	940	NAME CHANGE RECOGNIZED	PURE RES/CHEVRONMIDCO		
05/16/2006	933	TRF OPER RGTS APPROVED	EFF 04/01/06;		

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Serial Number: NMNM-- 113419

Act Date	Act Code	Action Txt	Action Remarks	Pending Off
05/16/2006	974	AUTOMATED RECORD VERIF	JLV	
08/09/2006	899	TRF OF ORR FILED	1	
02/11/2013	650	HELD BY PROD - ACTUAL	/1/	
02/11/2013	658	MEMO OF 1ST PROD-ACTUAL	/1/NMNM132924;#2H	
03/29/2013	932	TRF OPER RGTS FILED	ALLAR/YATES PETROLE;1	
04/04/2013	246	LEASE COMMITTED TO CA	NMNM132924;	
07/23/2013	933	TRF OPER RGTS APPROVED	EFF 04/01/13;	
07/23/2013	974	AUTOMATED RECORD VERIF	DME	
08/12/2013	899	TRF OF ORR FILED	1	
08/15/2013	899	TRF OF ORR FILED	1	
08/15/2013	932	TRF OPER RGTS FILED	ALLAR/REGENERATION;1	
02/28/2014	933	TRF OPER RGTS APPROVED	EFF 09/01/13;	
02/28/2014	974	AUTOMATED RECORD VERIF	BTM	
03/24/2014	932	TRF OPER RGTS FILED	CHEVRON M/YATES PET;1	
06/05/2014	933	TRF OPER RGTS APPROVED	EFF 04/01/14;	
06/05/2014	974	AUTOMATED RECORD VERIF	DME	
07/17/2014	643	PRODUCTION DETERMINATION	/1/	
12/15/2014	899	TRF OF ORR FILED	2	
12/15/2014	899	TRF OF ORR FILED	1	
12/15/2014	932	TRF OPER RGTS FILED	ALLAR/CHEVRON MIDCO;1	
12/15/2014	932	TRF OPER RGTS FILED	CHEVRON MIDCO/ALLAR;1	
01/28/2015	379	REFUND AUTHORIZED	\$160.00;	
02/04/2015	933	TRF OPER RGTS APPROVED	EFF 01/01/15;1	
02/04/2015	933	TRF OPER RGTS APPROVED	EFF 01/01/15;2	
02/04/2015	933	TRF OPER RGTS APPROVED	EFF 01/01/15;3	
02/04/2015	974	AUTOMATED RECORD VERIF	JS	
12/01/2016	817	MERGER RECOGNIZED	YATES PETRO/EOG Y RES	
03/14/2017	932	TRF OPER RGTS FILED	REFENERAT/CROWN OIL;1	
03/14/2017	932	TRF OPER RGTS FILED	ALLAR COM/CROWN OIL;1	
04/24/2017	933	TRF OPER RGTS APPROVED	EFF 04/01/17;1	
04/24/2017	933	TRF OPER RGTS APPROVED	EFF 04/01/17;2	
04/24/2017	974	AUTOMATED RECORD VERIF	RCC	
07/06/2017	932	TRF OPER RGTS FILED	CROWN OIL/MARATHON;1	
09/15/2017	933	TRF OPER RGTS APPROVED	EFF 08/01/17;	
09/19/2017	974	AUTOMATED RECORD VERIF	JA	

Line Number Remark Text Serial Number: NMNM-- 113419

0002

STIPULATIONS ATTACHED TO LEASE:

NO WARRANTY IS MADE BY BLM FOR USE OF THE DATA FOR PURPOSES NOT INTENDED BY BLM



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?

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:

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:

Assigned injection well API number?

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Injection well name:

Injection well API number:

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:



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

Bond Information

Federal/Indian APD: FED

BLM Bond number: WYB002107

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:

104

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: ENDER WIGGINS F C 25 34 14 WA

Well Number: 1H

	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	2310	FNL	330	FWL	25S	34E	14	Aliquot SWN W	32.131287	-103.4477585	LEA	NEW MEXI CO	NEW MEXI CO	F	FEE	-9257	12681	12589
PPP Leg #1	0	FSL	330	FWL	25S	34E	11	Aliquot SWS W	32.1376367	-103.4477656	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 113419	-9370	15016	12702
PPP Leg #1	2639	FSL	330	FWL	25S	34E	11	Aliquot SWN W	32.1448914	-103.4477697	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 108476	-9370	17655	12702
EXIT Leg #1	330	FNL	330	FWL	25S	34E	11	Aliquot NWN W	32.1512363	-103.4477752	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 108476	-9370	19963	12702
BHL Leg #1	330	FNL	330	FWL	25S	34E	11	Aliquot NWN W	32.1512363	-103.4477752	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 108476	-9370	19963	12702