

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
Do not use this form for proposals to drill or to re-enter an
abandoned well. Use form 3160-3 (APD) for such proposals.**HOBBS OGD****JUL 03 2019****SUBMIT IN TRIPLICATE - Other instructions on page 2****RECEIVED**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.

BLUE STEEL 21 WD FEE 3H

2. Name of Operator

MARATHON OIL PERMIAN LLC

Contact: MELISSA SZUDERA

E-Mail: mszudera@marathonoil.com

9. API Well No.

30-015-45892-00-X1

3a. Address

5555 SAN FELIPE ST
HOUSTON, TX 77056

3b. Phone No. (include area code)

Ph: 713-296-3179

10. Field and Pool or Exploratory Area

PURPLE SAGE-WOLFCAMP (GAS)

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 28 T23S R29E NWNW 270FNL 1135FWL
32.282478 N Lat, 103.994804 W Lon

11. County or Parish, State

EDDY COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

SEE ATTACHED FOR**CONDITIONS OF APPROVAL**

TYPE OF SUBMISSION

☒ Notice of Intent☐ Subsequent Report☐ Final Abandonment Notice☐ Acidize☐ Alter Casing☐ Casing Repair☐ Change Plans☐ Convert to Injection☐ Deepen☐ Hydraulic Fracturing☐ New Construction☐ Plug and Abandon☐ Plug Back☐ Production (Start/Resume)☐ Reclamation☐ Recomplete☐ Temporarily Abandon☐ Water Disposal☐ Water Shut-Off☐ Well Integrity☒ Other
Change to Original A
PD

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Marathon Oil respectfully requests to make the following changes to this well:

- Target Formation: FROM Purple Sage Wolfcamp TO Laguna Salado Bone Spring
- Well Name: FROM Blue Steel 21 WD Fee 3H TO Blue Steel 21 FB Fee 25H ✓

Please see updated well attachments: C-102, Drill Plan, Directional, BOP, Well Head, and Casing Strings.

NOTE: This well is a FEE lease with SHL located on Federal Lease NMNM086024, at the request of the BLM and OCD the permits were submitted to the BLM through AFMSS II.

RECEIVED**JUL 18 2019****DISTRICT II-ARTESIA O.G.D.**

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #464923 verified by the BLM Well Information System

For MARATHON OIL PERMIAN LLC, sent to the Carlsbad

Committed to AFMSS for processing by PRISCILLA PEREZ on 05/13/2019 (19PP2024SE)

Name (Printed/Typed) MELISSA SZUDERA

Title REGULATORY COMPLIANCE REP

Signature (Electronic Submission)

Date 05/10/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By ZOTA STEVENS

Title PETROLEUM ENGINEER

Date 06/06/2019

Conditions of approval, if any, are attached. Approval of this notice 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.

Office Carlsbad

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.

(Instructions on page 2)

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

RWP 8-22-19

MARATHON OIL PERMIAN LLC

DRILLING AND OPERATIONS PLAN

WELL NAME / NUMBER: BLUE STEEL 21 FB FEE 25H

STATE: NEW MEXICO

COUNTY: EDDY

	NS Foot	NS Indicator	EW Foot	EW Indicator	TWSP	Range	Section	Aliquot/Lot/Trac	Latitude (NAD 83)	Longitude (NAD 83)	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL	270	FNL	1135	FWL	23S	29E	28	NWNW	32.28247880	-103.99480756	EDDY	NM	NMP	F	NMNM086024	3001	0	0
KOP	50	FSL	1994	FWL	23S	29E	21	SESW	32.28335266	-103.99203179	EDDY	NM	NMP	Fee		-4194	7287	7195
PPP1	100	FSL	1994	FWL	23S	29E	21	SESW	32.28349010	-103.99203107	EDDY	NM	NMP	Fee		-4767	7526	7428
BHL	100	FNL	1993	FWL	23S	29E	21	NESW	32.29757396	-103.99195813	EDDY	NM	NMP	Fee		-4767	12788	7768

1. GEOLOGIC NAME OF SURFACE FORMATION

a. Permian

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
Salado	374.0	374.0	Salt/Anhydrite	BRINE	N
Base of Salt	2964.0	2987.8	Base Salt	BRINE	N
Lamar	3010.0	3034.8	Sand/Shale	OIL	Y
Bell Canyon	3045.0	3070.6	Sand/Shale	OIL	Y
Cherry Canyon	3918.0	3963.1	Sand/Carbonate	OIL	Y
Brushy Canyon	5075.0	5145.9	Sand/Carbonate	OIL	Y
Bone Spring	6704.0	6795.7	Sand/Carbonate/Shale	OIL	Y

DEEPEST EXPECTED FRESH WATER: 275' TVD

ANTICIPATED BOTTOM HOLE PRESSURE: 3,935 psi

ANTICIPATED BOTTOM HOLE TEMPERATURE: 144 °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	Bottom Set TVD	Weight (lbs/ft)	Grade	Conn	SF Collapse	SF Burst	SF Tension
Surface	17 1/2	13 3/8	0	400 ³²⁵	0	400	54.5	J55	STC	5.22	1.81	3.42
Intermediate	12 1/4	9 5/8	0	3020	0	2996	36	J55	LTC	2.26	2.01	2.51
Production csg	8 3/4	5 1/2	0	12788	0	7768	20	P110	BTC	2.48	1.23	2.58

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	0	0	1.747	13.5	0	100	Class C	
Surface	Tail	--	0	400	407	1.364	14.8	556	100	Class C	0.02 Gal/Sk Defoamer + 0.5% Extender + 1% Accelerator
Intermediate I	Lead	--	0	2000	634	1.73	12.8	1096	75	Class C	0.02 Gal/Sx Defoamer + 0.5% Extender + 1% Accelerator
Intermediate I	Tail	--	2000	3020	360	1.33	14.8	479	50	Class C	0.07 % Retarder
Production	Lead	--	2720	7280	725	2.807	11	1958	70	Class H	0.1% viscofier + 0.25 lb/sx defoamer + 5% retarder
Production	Tail	--	7280	12788	1659	1.223	14.5	1809	30	Class H	2% extender + 0.25% defoamer + 0.5% fluid loss + 0.2% dispersant

Stage tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. 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	70% of working pressure
			Blind Ram	x	5000
			Pipe Ram	x	
			Double Ram	x	
			Other*		
8 3/4"	13 5/8	5000	5M Annular	x	70% of working pressure
			Blind Ram	x	5000
			Pipe Ram	x	
			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	400	Water Based Mud	8.4	8.8	
400	3020	Brine	9.9	10.2	
3020	12788	Cut Brine / Oil Based Mud	9.0	9.8	

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: None.
- B. DST's: None.
- C. Open Hole Logs: GR while drilling from 9 5/8" Intermediate casing shoe to TD.

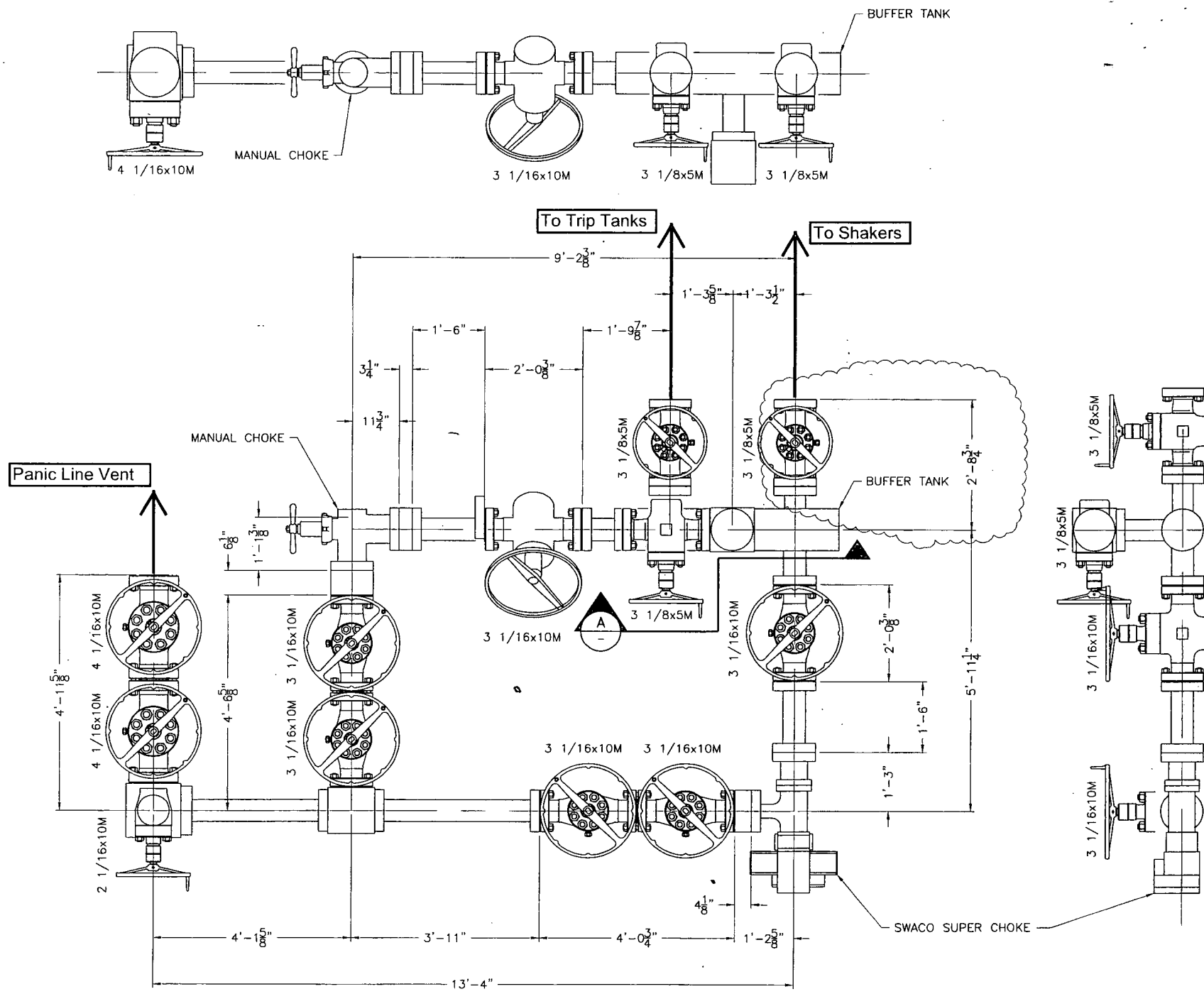
9. POTENTIAL HAZARDS:

- 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.

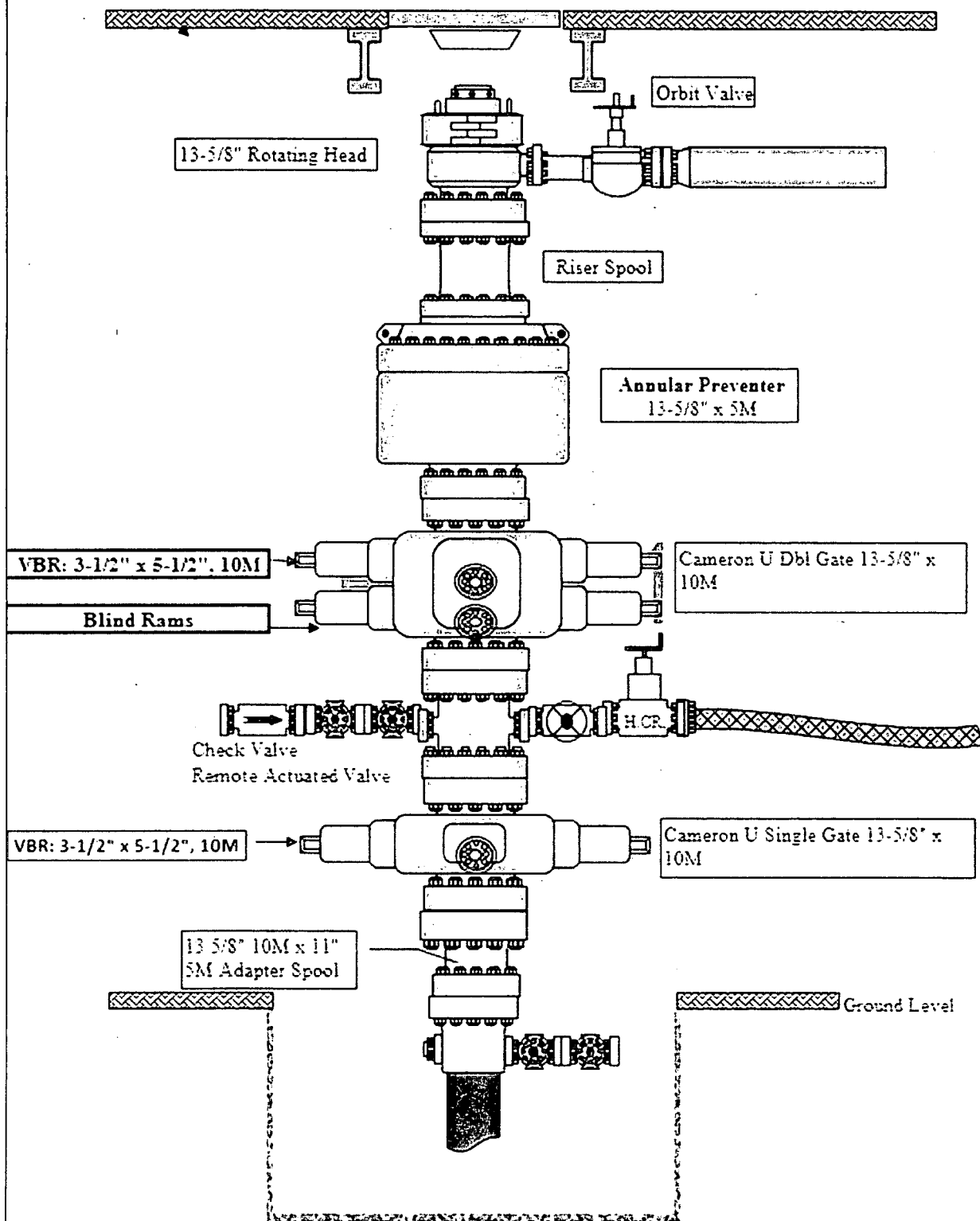
E. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

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.



Operator : **Marathon Oil**
SM BOPE



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 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 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	Part No.	Description	Qty	Serial Number	Work Press.	Test Press.	Test Time (minutes)
30		RECERTIFICATION - 3" ID 10K Choke and Kill Hose x 35 ft OAL	1	63393	10,000 psi	15,000 psi	60

3 4 5 6 AM

JOB# 45-20-4081
PBC# 455231
HOSE DESCRIPTION: 3" ID 10K Chlorinated Polyethylene
TEST PRESSURE: 1500 PSI
CHART RECORDER # 104107
CHART SETTING: 91mm
CBC REPRESENTATIVE: G. E. H. H. H.
DATE: 5-5-70

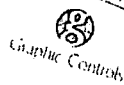


CHART NO. MC MP-20000-150F

METER

CHART PUT ON

LOCATION

REMARKS

TAKEN OFF

NOON

6 PM

4

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>Sala Linder</i>
	Appr. by: <i>W. Linder</i>

CHOKE 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

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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

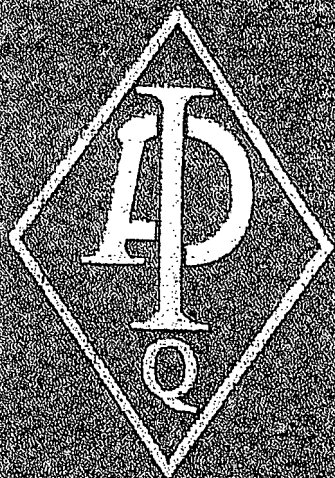
W. Dan Whittaker
Manager of Operations, APIQR

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

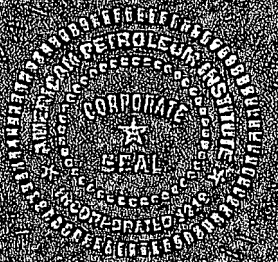


This certificate is valid for the period specified herein. The registered organization must continually meet all requirements of APIQR's Registration Program and the requirements of the Registration Agreement. Registration is maintained and regularly monitored through annual full system audits. Further 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.apiqr.org/compositelst.





**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/compositelist.

American Petroleum Institute

Director of Global Industry Services

CONTITECH RUBBER
Industrial Kft.

No: QC-DB-380/2012
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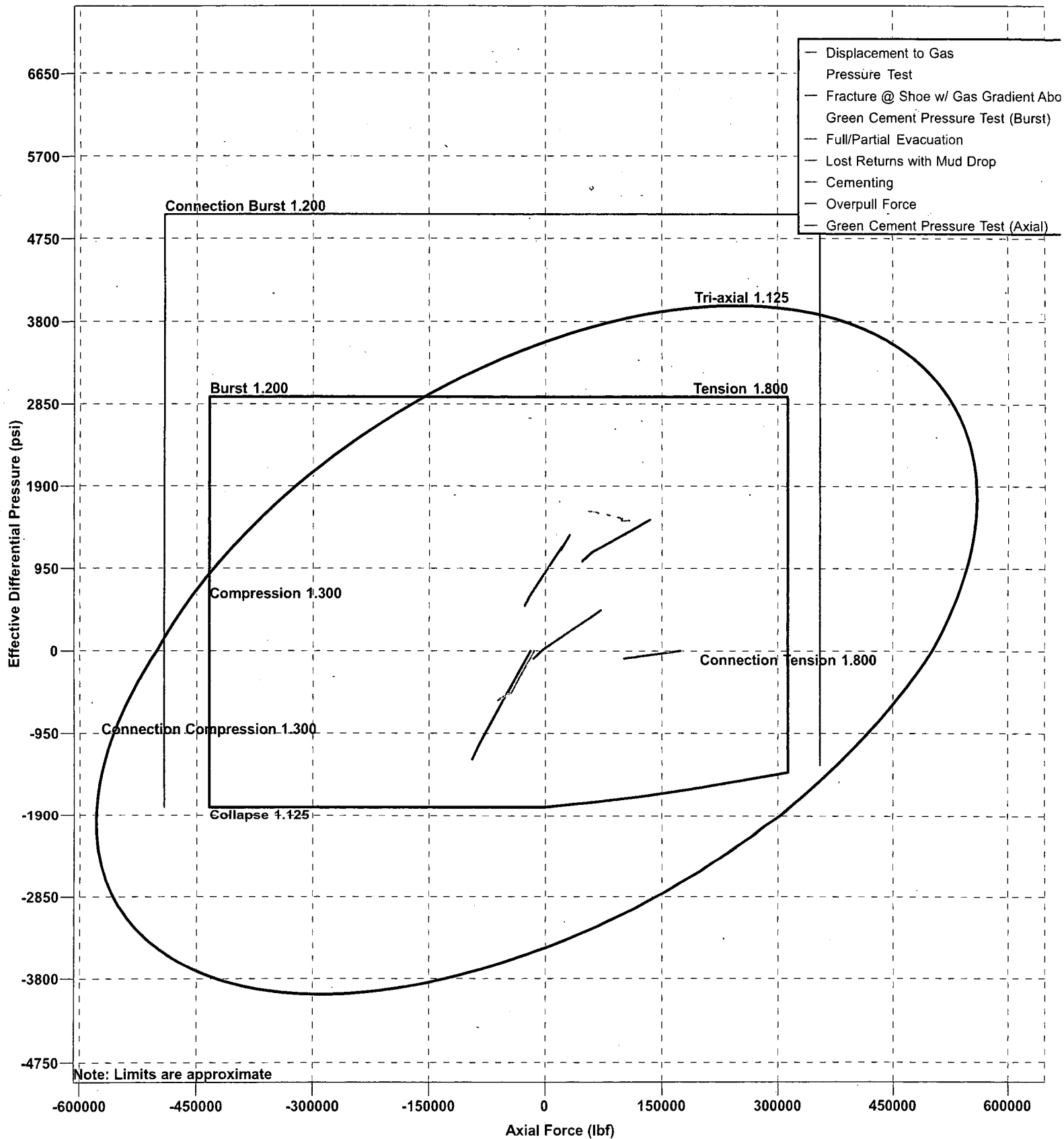
QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 1599	
PURCHASER: ContiTech Beattie Co.				P.O. N°: 006227	
CONTITECH ORDER N°: 531895		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N°: 63393		NOMINAL / ACTUAL LENGTH: 10,67 m / 10,72 m			
W.P. 68,9 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 min.	
Pressure test with water at ambient temperature See attachment. (1 page) ↑ 10 mm = 10 Min. → 10 mm = 20 MPa					
COUPLINGS Type		Serial N°		Quality	
3" coupling with		2156 2153		AISI 4130	
4 1/16" 10K API Flange end				AISI 4130	
NOT DESIGNED FOR WELL TESTING All metal parts are flawless				API Spec 16 C Temperature rate:"B"	
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:		Inspector		Quality Control	
23. August 2012.				ContiTech Rubber Industrial Kft. Quality Control Dept. (1) <i>[Signature]</i> <i>[Signature]</i>	



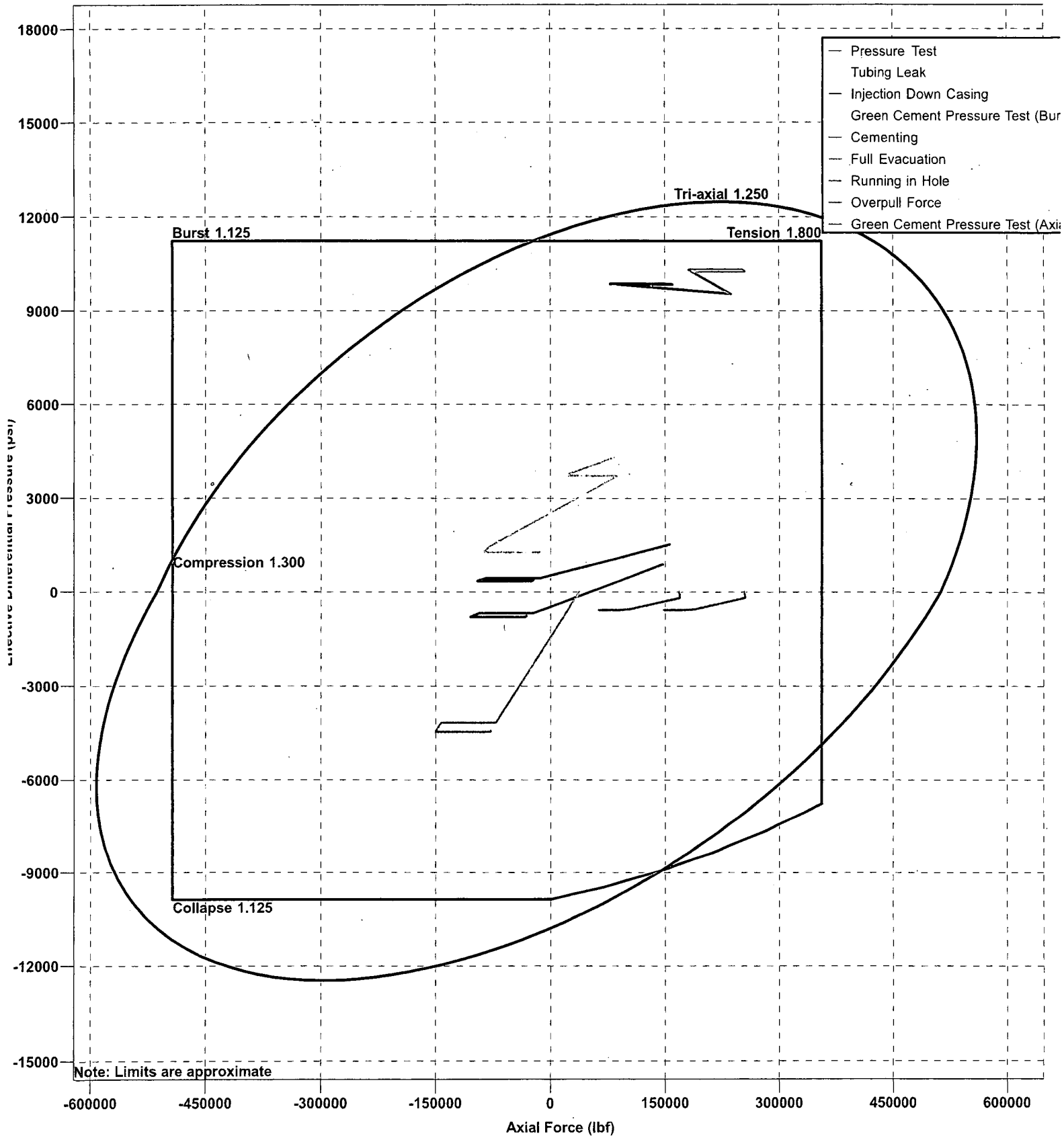
Hose Data Sheet

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

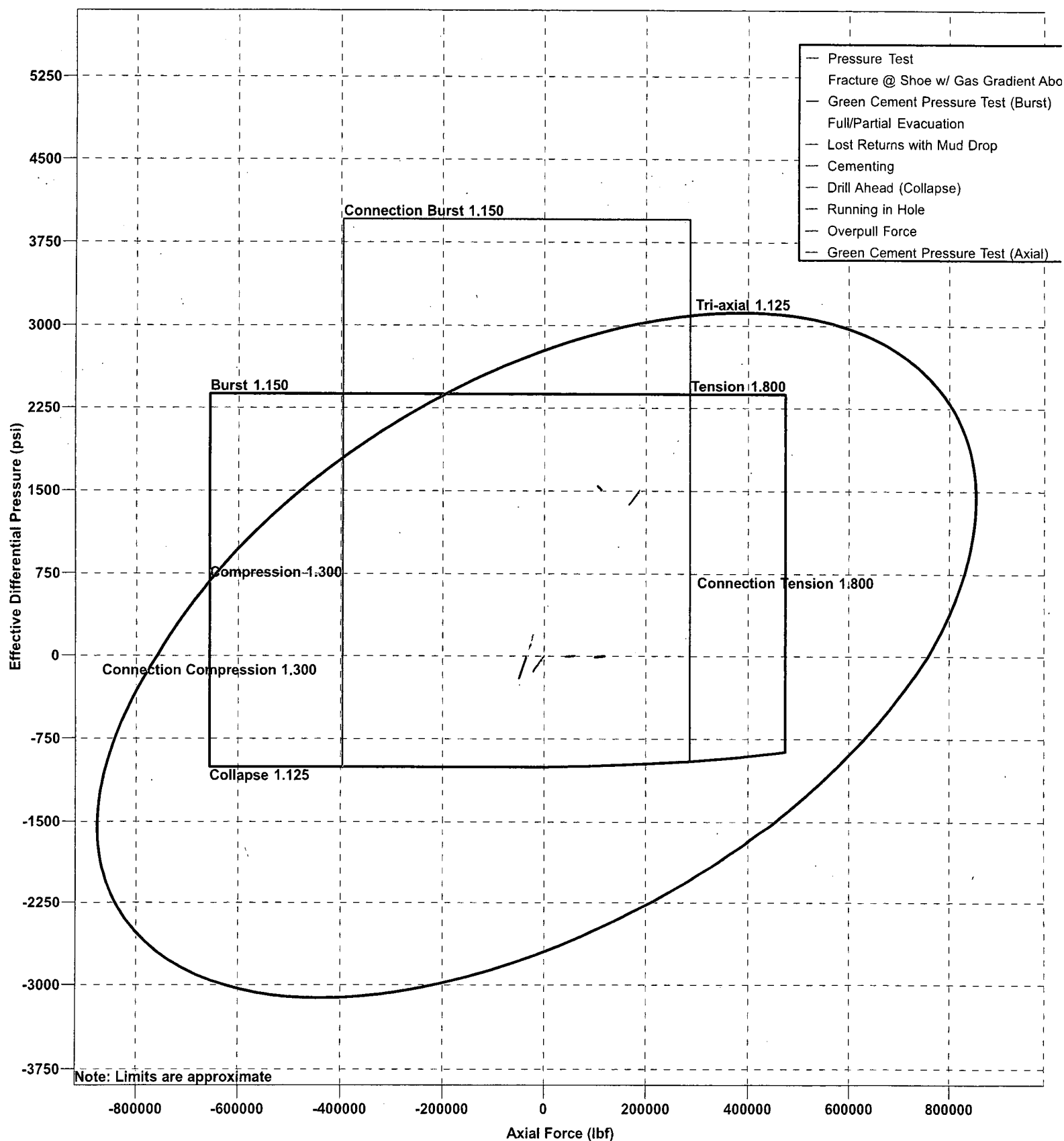
Design Limits (9 5/8" Intermediate Casing - Section 1)



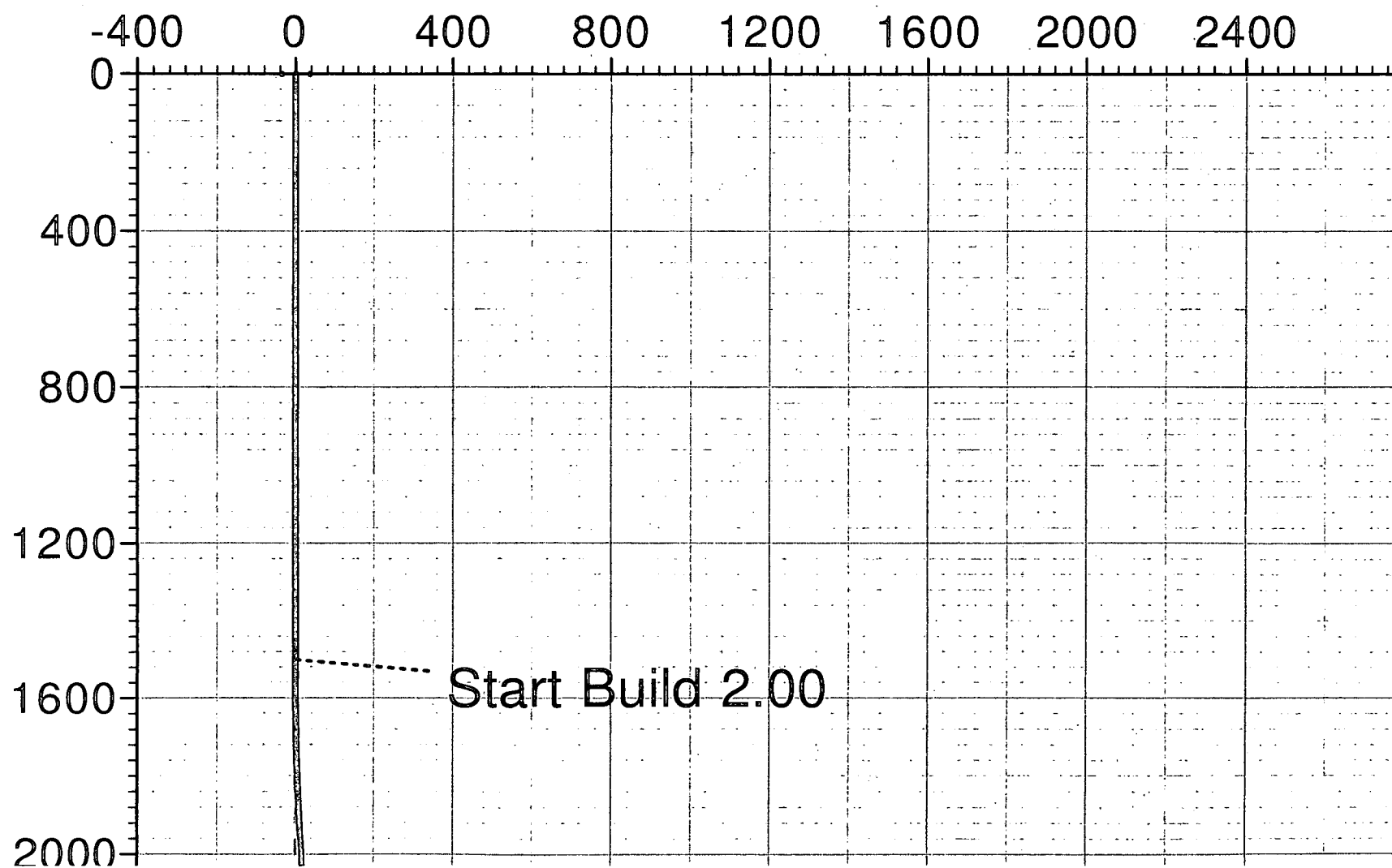
Design Limits (5 1/2" Production Casing - Section 1)



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



Vertical Section at 0.07° (400 usft/in)



Company: Marathon Oil
Project: Eddy County, NM
Site: Blue Steel 21 FB Fee
Well: #25H
Wellbore: OH
Design: Prelim Plan A

Local/Co-ordinate Reference: Well FB #25H
TVD Reference: Well @ 3028.00usft (GL: 3001' + KB: 27' (PD582))
MD Reference: Well @ 3028.00usft (GL: 3001' + KB: 27' (PD582))
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Project: Eddy County, NM

Map System: US State Plane 1927 (Exact solution) System Datum: Mean Sea Level
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

Site: Blue Steel 21 FB Fee 25H

Site Position: Northing: 466,604.25 usft Latitude: 32.282356
From: Map Easting: 604,860.40 usft Longitude: -103.994025
Position Uncertainty: 0.00 usft Slot Radius: 13-3/16 " Grid Convergence: 0.18 °

Well: FB #25H
Well Position: +N/-S 0.00 usft Northing: 466,604.24 usft Latitude: 32.282357
+E/-W 0.00 usft Easting: 604,770.42 usft Longitude: -103.994317
Position Uncertainty: 0.00 usft Wellhead Elevation: usft Ground Level: 3,001.00 usft

Wellbore: OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/25/2018	7.12	60.07	47,987.00

Design: Prelim Plan A

Audit Notes:

Version: Phase: PLAN Tie On Depth: 0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	0.07

Survey Tool Program Date: 5/9/2019

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	1,850.00	Prelim Plan A (OH)	MWD+IFR1	OWSG MWD + IFR1
1,850.00	5,400.00	Prelim Plan A (OH)	MWD+IFR1	OWSG MWD + IFR1
5,400.00	7,277.49	Prelim Plan A (OH)	MWD+IFR1	OWSG MWD + IFR1
10,000.00	12,787.28	Prelim Plan A (OH)	MWD+IFR1	OWSG MWD + IFR1

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
[BlueSteelFeeFB#25H]FTP									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00

Company: Marathon Oil
Project: Eddy County, NM
Site: Blue Steel 21 FB Fee
Well: #25H
Wellbore: OH
Design: Prelim Plan A

Local Co-ordinate Reference: Well FB #25H
TVD Reference: Well @ 3028.00usft (GL: 3001' + KB: 27' (PD582))
MD Reference: Well @ 3028.00usft (GL: 3001' + KB: 27' (PD582))
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	2.00	69.48	1,599.98	0.61	1.63	0.61	2.00	2.00	0.00
1,700.00	4.00	69.48	1,699.84	2.45	6.54	2.45	2.00	2.00	0.00
1,800.00	6.00	69.48	1,799.45	5.50	14.70	5.52	2.00	2.00	0.00
1,900.00	8.00	69.48	1,898.70	9.77	26.11	9.80	2.00	2.00	0.00
2,000.00	10.00	69.48	1,997.47	15.25	40.76	15.30	2.00	2.00	0.00
2,100.00	12.00	69.48	2,095.62	21.94	58.63	22.01	2.00	2.00	0.00
2,200.00	12.00	69.48	2,193.44	29.23	78.10	29.32	0.00	0.00	0.00
2,300.00	12.00	69.48	2,291.25	36.51	97.58	36.63	0.00	0.00	0.00
2,400.00	12.00	69.48	2,389.07	43.80	117.05	43.94	0.00	0.00	0.00
2,500.00	12.00	69.48	2,486.88	51.09	136.52	51.25	0.00	0.00	0.00
2,600.00	12.00	69.48	2,584.70	58.37	155.99	58.56	0.00	0.00	0.00
2,700.00	12.00	69.48	2,682.51	65.66	175.47	65.87	0.00	0.00	0.00
2,800.00	12.00	69.48	2,780.33	72.94	194.94	73.18	0.00	0.00	0.00
2,900.00	12.00	69.48	2,878.14	80.23	214.41	80.49	0.00	0.00	0.00
3,000.00	12.00	69.48	2,975.96	87.52	233.89	87.80	0.00	0.00	0.00
3,100.00	12.00	69.48	3,073.77	94.80	253.36	95.11	0.00	0.00	0.00
3,200.00	12.00	69.48	3,171.59	102.09	272.83	102.42	0.00	0.00	0.00
3,300.00	12.00	69.48	3,269.40	109.38	292.30	109.73	0.00	0.00	0.00
3,400.00	12.00	69.48	3,367.22	116.66	311.78	117.04	0.00	0.00	0.00
3,500.00	12.00	69.48	3,465.03	123.95	331.25	124.35	0.00	0.00	0.00
3,600.00	12.00	69.48	3,562.84	131.24	350.72	131.66	0.00	0.00	0.00
3,700.00	12.00	69.48	3,660.66	138.52	370.19	138.97	0.00	0.00	0.00
3,800.00	12.00	69.48	3,758.47	145.81	389.67	146.29	0.00	0.00	0.00
3,900.00	12.00	69.48	3,856.29	153.10	409.14	153.60	0.00	0.00	0.00
4,000.00	12.00	69.48	3,954.10	160.38	428.61	160.91	0.00	0.00	0.00
4,100.00	12.00	69.48	4,051.92	167.67	448.08	168.22	0.00	0.00	0.00
4,200.00	12.00	69.48	4,149.73	174.95	467.56	175.53	0.00	0.00	0.00
4,300.00	12.00	69.48	4,247.55	182.24	487.03	182.84	0.00	0.00	0.00
4,400.00	12.00	69.48	4,345.36	189.53	506.50	190.15	0.00	0.00	0.00
4,500.00	12.00	69.48	4,443.18	196.81	525.97	197.46	0.00	0.00	0.00
4,600.00	12.00	69.48	4,540.99	204.10	545.45	204.77	0.00	0.00	0.00

Company: Marathon Oil
Project: Eddy County, NM
Site: Blue Steel 21 FB Fee
Well: #25H
Wellbore: OH
Design: Prelim Plan A

Local Co-ordinate Reference
TVD Reference
MD Reference
North Reference
Survey Calculation Method
Database
Well FB #25H
Well @ 3028.00usft (GL: 3001' + KB: 27' (PD582))
Well @ 3028.00usft (GL: 3001' + KB: 27' (PD582))
Grid
Minimum Curvature
WellPlanner1

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.00	12.00	69.48	4,638.81	211.39	564.92	212.08	0.00	0.00	0.00
4,800.00	12.00	69.48	4,736.62	218.67	584.39	219.39	0.00	0.00	0.00
4,900.00	12.00	69.48	4,834.44	225.96	603.86	226.70	0.00	0.00	0.00
5,000.00	12.00	69.48	4,932.25	233.25	623.34	234.01	0.00	0.00	0.00
5,100.00	12.00	69.48	5,030.07	240.53	642.81	241.32	0.00	0.00	0.00
5,200.00	12.00	69.48	5,127.88	247.82	662.28	248.63	0.00	0.00	0.00
5,300.00	12.00	69.48	5,225.70	255.11	681.75	255.94	0.00	0.00	0.00
5,400.00	12.00	69.48	5,323.51	262.39	701.23	263.25	0.00	0.00	0.00
5,500.00	12.00	69.48	5,421.33	269.68	720.70	270.56	0.00	0.00	0.00
5,600.00	12.00	69.48	5,519.14	276.97	740.17	277.87	0.00	0.00	0.00
5,700.00	12.00	69.48	5,616.95	284.25	759.64	285.18	0.00	0.00	0.00
5,800.00	12.00	69.48	5,714.77	291.54	779.12	292.49	0.00	0.00	0.00
5,897.89	12.00	69.48	5,810.52	298.67	798.18	299.65	0.00	0.00	0.00
5,900.00	11.96	69.48	5,812.58	298.82	798.59	299.80	2.00	-2.00	0.00
6,000.00	9.96	69.48	5,910.76	305.49	816.39	306.48	2.00	-2.00	0.00
6,100.00	7.96	69.48	6,009.53	310.94	830.97	311.96	2.00	-2.00	0.00
6,200.00	5.96	69.48	6,108.79	315.19	842.32	316.22	2.00	-2.00	0.00
6,300.00	3.96	69.48	6,208.41	318.22	850.41	319.25	2.00	-2.00	0.00
6,400.00	1.96	69.48	6,308.27	320.02	855.24	321.07	2.00	-2.00	0.00
6,497.89	0.00	0.00	6,406.14	320.61	856.81	321.66	2.00	-2.00	0.00
6,500.00	0.00	0.00	6,408.25	320.61	856.81	321.66	0.00	0.00	0.00
6,600.00	0.00	0.00	6,508.25	320.61	856.81	321.66	0.00	0.00	0.00
6,700.00	0.00	0.00	6,608.25	320.61	856.81	321.66	0.00	0.00	0.00
6,800.00	0.00	0.00	6,708.25	320.61	856.81	321.66	0.00	0.00	0.00
6,900.00	0.00	0.00	6,808.25	320.61	856.81	321.66	0.00	0.00	0.00
7,000.00	0.00	0.00	6,908.25	320.61	856.81	321.66	0.00	0.00	0.00
7,100.00	0.00	0.00	7,008.25	320.61	856.81	321.66	0.00	0.00	0.00
7,200.00	0.00	0.00	7,108.25	320.61	856.81	321.66	0.00	0.00	0.00
7,286.75	0.00	0.00	7,195.00	320.61	856.81	321.66	0.00	0.00	0.00
[BlueSteelFeeFB#25H]KOP									
7,300.00	1.33	0.07	7,208.25	320.76	856.81	321.81	10.00	10.00	0.00
7,350.00	6.33	0.07	7,258.13	324.10	856.81	325.14	10.00	10.00	0.00
7,400.00	11.33	0.07	7,307.52	331.77	856.82	332.81	10.00	10.00	0.00
7,450.00	16.33	0.07	7,356.05	343.71	856.84	344.76	10.00	10.00	0.00
7,500.00	21.33	0.07	7,403.36	359.84	856.86	360.89	10.00	10.00	0.00
7,550.00	26.33	0.07	7,449.09	380.03	856.88	381.08	10.00	10.00	0.00
7,600.00	31.33	0.07	7,492.88	404.13	856.91	405.18	10.00	10.00	0.00
7,650.00	36.33	0.07	7,534.40	431.95	856.95	433.00	10.00	10.00	0.00
7,700.00	41.33	0.07	7,573.34	463.29	856.99	464.34	10.00	10.00	0.00
7,750.00	46.33	0.07	7,609.40	497.90	857.03	498.95	10.00	10.00	0.00
7,800.00	51.33	0.07	7,642.31	535.53	857.08	536.57	10.00	10.00	0.00
7,850.00	56.33	0.07	7,671.82	575.88	857.13	576.92	10.00	10.00	0.00

Company: Marathon Oil
Project: Eddy County, NM
Site: Blue Steel 21 FB Fee
Well: #25H
Wellbore: OH
Design: Prelim Plan A

Local Co-ordinate Reference: Well FB #25H
TVD Reference: Well @ 3028.00usft (GL: 3001' + KB: 27' (PD582))
MD Reference: Well @ 3028.00usft (GL: 3001' + KB: 27' (PD582))
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N/S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,900.00	61.33	0.07	7,697.69	618.64	857.18	619.69	10.00	10.00	0.00
7,950.00	66.33	0.07	7,719.74	663.50	857.24	664.55	10.00	10.00	0.00
8,000.00	71.33	0.07	7,737.79	710.11	857.30	711.16	10.00	10.00	0.00
8,050.00	76.33	0.07	7,751.72	758.12	857.36	759.16	10.00	10.00	0.00
8,100.00	81.33	0.07	7,761.40	807.15	857.42	808.20	10.00	10.00	0.00
8,150.00	86.33	0.07	7,766.78	856.85	857.48	857.89	10.00	10.00	0.00
8,186.74	90.00	0.07	7,767.96	893.56	857.52	894.61	10.00	10.00	0.00
8,200.00	90.00	0.07	7,767.96	906.82	857.54	907.87	0.00	0.00	0.00
8,300.00	90.00	0.07	7,767.96	1,006.82	857.67	1,007.87	0.00	0.00	0.00
8,400.00	90.00	0.07	7,767.96	1,106.82	857.79	1,107.87	0.00	0.00	0.00
8,500.00	90.00	0.07	7,767.96	1,206.82	857.91	1,207.87	0.00	0.00	0.00
8,600.00	90.00	0.07	7,767.96	1,306.82	858.04	1,307.87	0.00	0.00	0.00
8,700.00	90.00	0.07	7,767.96	1,406.82	858.16	1,407.87	0.00	0.00	0.00
8,800.00	90.00	0.07	7,767.96	1,506.82	858.29	1,507.87	0.00	0.00	0.00
8,900.00	90.00	0.07	7,767.96	1,606.82	858.41	1,607.87	0.00	0.00	0.00
9,000.00	90.00	0.07	7,767.97	1,706.82	858.54	1,707.87	0.00	0.00	0.00
9,100.00	90.00	0.07	7,767.97	1,806.82	858.66	1,807.87	0.00	0.00	0.00
9,200.00	90.00	0.07	7,767.97	1,906.82	858.79	1,907.87	0.00	0.00	0.00
9,300.00	90.00	0.07	7,767.97	2,006.82	858.91	2,007.87	0.00	0.00	0.00
9,400.00	90.00	0.07	7,767.97	2,106.82	859.04	2,107.87	0.00	0.00	0.00
9,500.00	90.00	0.07	7,767.97	2,206.82	859.16	2,207.87	0.00	0.00	0.00
9,600.00	90.00	0.07	7,767.97	2,306.82	859.29	2,307.87	0.00	0.00	0.00
9,700.00	90.00	0.07	7,767.97	2,406.82	859.41	2,407.87	0.00	0.00	0.00
9,800.00	90.00	0.07	7,767.97	2,506.82	859.54	2,507.87	0.00	0.00	0.00
9,900.00	90.00	0.07	7,767.97	2,606.82	859.66	2,607.87	0.00	0.00	0.00
10,000.00	90.00	0.07	7,767.97	2,706.82	859.79	2,707.87	0.00	0.00	0.00
10,100.00	90.00	0.07	7,767.98	2,806.82	859.91	2,807.87	0.00	0.00	0.00
10,200.00	90.00	0.07	7,767.98	2,906.82	860.03	2,907.87	0.00	0.00	0.00
10,300.00	90.00	0.07	7,767.98	3,006.82	860.16	3,007.87	0.00	0.00	0.00
10,400.00	90.00	0.07	7,767.98	3,106.82	860.28	3,107.87	0.00	0.00	0.00
10,500.00	90.00	0.07	7,767.98	3,206.82	860.41	3,207.87	0.00	0.00	0.00
10,600.00	90.00	0.07	7,767.98	3,306.82	860.53	3,307.87	0.00	0.00	0.00
10,700.00	90.00	0.07	7,767.98	3,406.82	860.66	3,407.87	0.00	0.00	0.00
10,800.00	90.00	0.07	7,767.98	3,506.82	860.78	3,507.87	0.00	0.00	0.00
10,900.00	90.00	0.07	7,767.98	3,606.82	860.91	3,607.87	0.00	0.00	0.00
11,000.00	90.00	0.07	7,767.98	3,706.82	861.03	3,707.87	0.00	0.00	0.00
11,100.00	90.00	0.07	7,767.98	3,806.82	861.16	3,807.87	0.00	0.00	0.00
11,200.00	90.00	0.07	7,767.99	3,906.82	861.28	3,907.87	0.00	0.00	0.00
11,300.00	90.00	0.07	7,767.99	4,006.82	861.41	4,007.87	0.00	0.00	0.00
11,400.00	90.00	0.07	7,767.99	4,106.82	861.53	4,107.87	0.00	0.00	0.00
11,500.00	90.00	0.07	7,767.99	4,206.82	861.66	4,207.87	0.00	0.00	0.00
11,600.00	90.00	0.07	7,767.99	4,306.82	861.78	4,307.87	0.00	0.00	0.00

Company: Marathon Oil
Project: Eddy County, NM
Site: Blue Steel 21 FB Fee
Well: #25H
Wellbore: OH
Design: Prelim Plan A

Local Co-ordinate Reference: Well FB #25H
TVD Reference: Well @ 3028.00usft (GL: 3001' + KB: 27' (PD582))
MD Reference: Well @ 3028.00usft (GL: 3001' + KB: 27' (PD582))
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Planned Survey

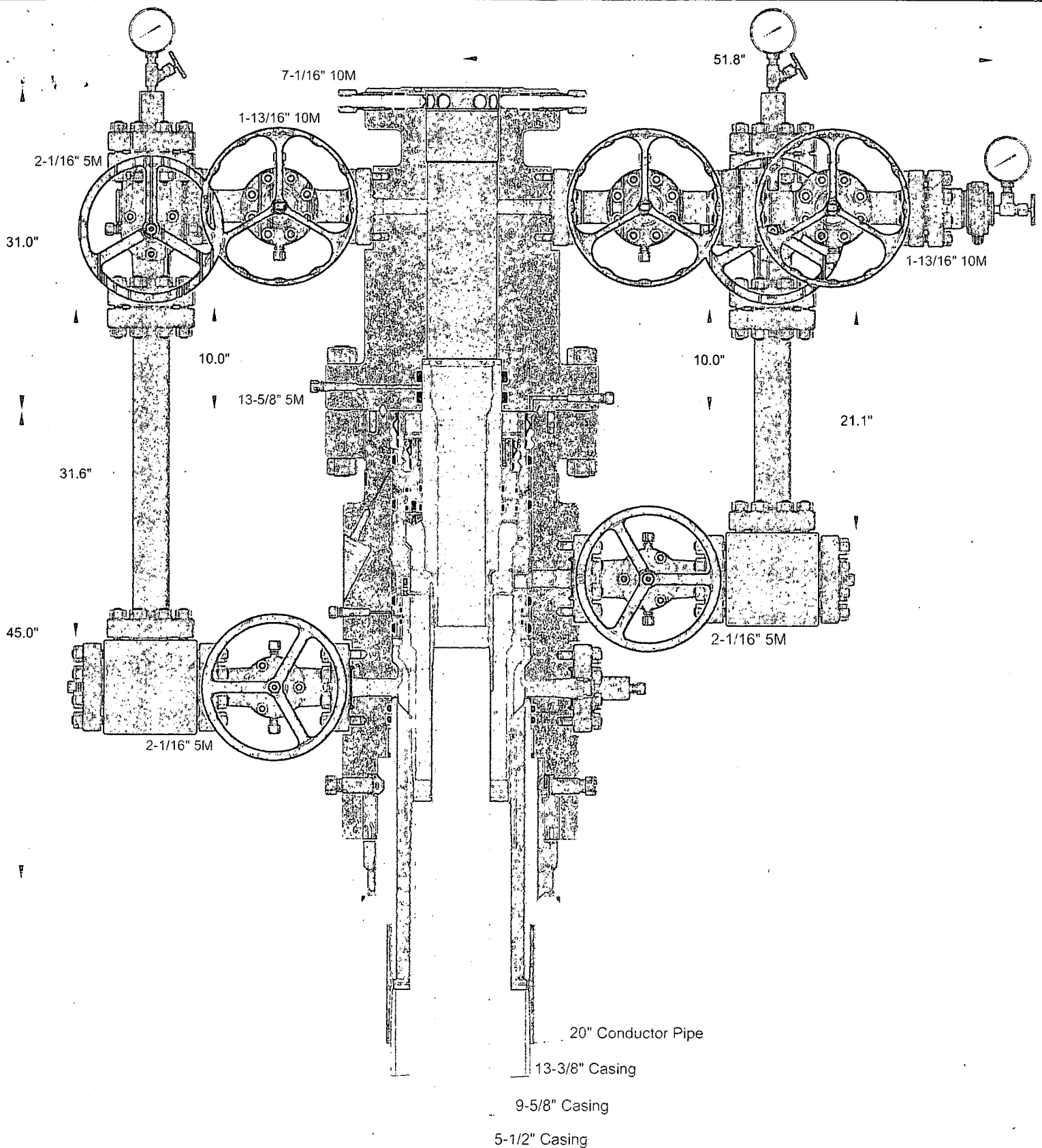
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,700.00	90.00	0.07	7,767.99	4,406.82	861.90	4,407.87	0.00	0.00	0.00
11,800.00	90.00	0.07	7,767.99	4,506.82	862.03	4,507.87	0.00	0.00	0.00
11,900.00	90.00	0.07	7,767.99	4,606.82	862.15	4,607.87	0.00	0.00	0.00
12,000.00	90.00	0.07	7,767.99	4,706.82	862.28	4,707.87	0.00	0.00	0.00
12,100.00	90.00	0.07	7,767.99	4,806.82	862.40	4,807.87	0.00	0.00	0.00
12,200.00	90.00	0.07	7,767.99	4,906.82	862.53	4,907.87	0.00	0.00	0.00
12,300.00	90.00	0.07	7,768.00	5,006.82	862.65	5,007.87	0.00	0.00	0.00
12,400.00	90.00	0.07	7,768.00	5,106.82	862.78	5,107.87	0.00	0.00	0.00
12,500.00	90.00	0.07	7,768.00	5,206.82	862.90	5,207.87	0.00	0.00	0.00
12,600.00	90.00	0.07	7,768.00	5,306.82	863.03	5,307.87	0.00	0.00	0.00
12,700.00	90.00	0.07	7,768.00	5,406.82	863.15	5,407.87	0.00	0.00	0.00
12,787.28	90.00	0.07	7,768.00	5,494.10	863.26	5,495.15	0.00	0.00	0.00

[BlueSteelFeeFB#25H]LTP/BHL

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
[BlueSteelFeeFB#25H]F - hit/miss target - Shape - plan misses target center by 933.59usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	370.61	856.88	466,974.85	605,627.30	32.283368	-103.991540
[BlueSteelFeeFB#25H]K - plan hits target center - Point	0.00	0.00	7,195.00	320.61	856.81	466,924.85	605,627.23	32.283231	-103.991541
[BlueSteelFeeFB#25H]L - plan hits target center - Point	0.00	0.00	7,768.00	5,494.10	863.26	472,098.34	605,633.68	32.297452	-103.991467

Checked By: _____ Approved By: _____ Date: _____



INFORMATION CONTAINED HEREIN IS THE PROPERTY OF CACTUS WELLHEAD, LLC. REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PERMISSIBLE ONLY AS PROVIDED BY CONTRACT OR AS EXPRESSLY AUTHORIZED BY CACTUS WELLHEAD, LLC.

CACTUS WELLHEAD LLC

13-3/8" x 9-5/8" x 5-1/2" 15M MBU-3T-CFL Wellhead Assembly
 With 13-5/8" 5M x 7-1/16" 10M CTH-DBLHPS Tubing Head
 and 9-5/8" & 5-1/2" Pin Down Casing Hangers

MARATHON OIL COMPANY
 CARLSBAD, NM

DRAWN	DLE	24JUL17
APPRV		
DRAWING NO.		ODE0001625



Quotation

Quote Number : ODE0001625

MIDLAND WAREHOUSE
8001 GROENING STREET
ODESSA TX 79765
Phone: 432-653-0306

Date: 07/21/2017

Valid For 30 Days

Page 1 of 6

Bill To: 7170

MARATHON OIL COMPANY
SOUTHERN BUSINESS
PO BOX 22165
TULSA OK 74121-2165
US

Ship To: 0

MARATHON OIL COMPANY
SOUTHERN BUSINESS
PO BOX 22165
TULSA OK 74121-2165
US

Quantity	Price	Ext Price
----------	-------	-----------

MARATHON OIL COMPANY
BRENT EVANS

CARLSBAD, NM

MBU-3T-CFL WELLHEAD ASSEMBLY
20" X 13-3/8" X 9-5/8" X 5-1/2"

QUOTATION SUMMARY:

- MBU-3T-CFL ASSEMBLY - \$13,898.00
- CASING HANGERS & PACKOFFS - \$11,519.00
- TUBING HEAD ASSEMBLY - \$14,762.30
- TUBING HEAD ASSEMBLY - \$11,197.88

CACTUS CONTACT:

DEAN SMITH

OFFICE: 713.396.5763

MOBILE: 832.691.7857

EMAIL: dean.smith@cactuswellhead.com

NOTE: PRICES ARE F.O.B. CACTUS BOSSIER CITY, LA. THE FOLLOWING QUOTATION DOES NOT INCLUDE PRO RATA FREIGHT AND OTHER APPLICABLE MILEAGE AND SERVICES THAT WILL BE CHARGED AT TIME OF INVOICING.



Quotation

Quote Number : ODE0001625

MIDLAND WAREHOUSE
8001 GROENING STREET
ODESSA TX 79765
Phone: 432-653-0306

Date: 07/21/2017

Valid For 30 Days

Page 2 of 6

		Quantity	Price	Ext Price
MBU-3T CFL ASSEMBLY				
1	118173 HSG,CW,MBU-3T-CFL-R-DBLO,13-3/8,13-5/8 5M,W/2 2-1/16 5M FP UPR & LWR,6A-PU-AA-1-2	1.00	10,963.00	10,963.00
2	116444 LANDING RING,20 X 3/8 WT CSG X 20.06 OD X 18.13 ID,4140 110K	1.00	650.00	650.00
3	118174 CSGHGR,CW,MBU-3T-CFL-R,13-3/8,13-3/8 (54.5#) BC PIN BTM X 14.000-2 STUB ACME-2G LEFT HAND PIN TOP,12.489 MIN BORE,6A-U-AA-1-1	1.00	2,225.00	2,225.00
4	VR2 VR PLUG,CW,1-1/2 (1.900) SHARP VEE X 1-1/4 HEX,API 6A-DD-NL	1.00	30.00	30.00
5	VR2 VR PLUG,CW,1-1/2 (1.900) SHARP VEE X 1-1/4 HEX,API 6A-DD-NL	1.00	30.00	30.00
				13,898.00
CASING HANGERS AND PACKOFFS				
6	117760 CSGHGR,CW,MBU-3T-LWR-TP,FLUTED,13-5/8 X 9-5/8 (40#) BC PIN BTM X 10.250-4 STUB ACME-2G R.H BOX TOP,W/11-1/2 OD NECK,6A-U-AA-1-2	1.00	2,500.00	2,500.00
7	117152 PACKOFF,CW,MBU-3T,MANDREL,13-5/8 NESTED X 11,W/11.250-4 STUB ACME-2G LH BOX TOP,6A-U-AA-1-1	1.00	2,899.00	2,899.00
8	117296 CSGHGR,CW,MBU-3T-TP8-UPR,SN,7-5/8,FLUTED,11 NESTED X 5-1/2 (20#) BC PIN BTM X 6.125-4 STUB ACME-2G RIGHT HAND BOX TOP & 5 HBPV THD,SPEC FOR ROTATING CASING STRING,6A-U-AA-1-2	1.00	2,870.00	2,870.00
9	115867 PACKOFF,CW,CTF-MBU-3T,11,A/F 7.75 SEAL PREP,W/8.750-4 STUB ACME-2G LH BOX TOP,10000 PSI MAX WP,A/F LANDING ON 45 DEG SHOULDER ON HANGER,6A-PU-DD-NL-2-2	1.00	3,250.00	3,250.00
				11,519.00



Quotation

Quote Number : ODE0001625

MIDLAND WAREHOUSE
8001 GROENING STREET
ODESSA TX 79765
Phone: 432-653-0306

Date: 07/21/2017

Valid For 30 Days

Page 3 of 6

			Quantity	Price	Ext Price
RENTAL TOOLS					
10	AR4	Advance Rental Charge 45 Day	0.00	4,650.00	0.00
MBU-3T RENTAL TOOLS = \$4,650.00 PER WELL FOR THE FIRST 45 DAYS; \$250.00 PER DAY THEREAFTER					
RENTAL TOOLS INCLUDE THE FOLLOWING ITEMS:					
PN 119126: LIFT RING,CSGHGR,CFL-R,W/14.000-2 STUB ACME-2G LEFT HAND THDS,4140 110K (\$200.00; \$10.00)					
PN 118176: RUN TOOL,CW,CSGHGR,MBU-3T-CFL-R,13-3/8 BC BOX TOP X 14.000-2 STUB ACME-2G LH BOX LANDING THD,12.60 MIN BORE (\$200.00; \$10.00)					
PN 118178: TORQUE COLLAR,CW,CSGHGR,MBU-3T-CFL-R,F/16 NECK,4140 110K (\$100.00; \$5.00)					
PN 800002: COMB TEST PLUG/RET TOOL,JMPE,13-5/8 X 4-1/2 IF (NC50) BOX BTM & TOP, W/1-1/2 SHARP VEE BYPASS & SPRING LOADED DOGS (\$250.00; \$15.00)					
PN 116974: WBUSH,CW,MBU-3T,LWR,13-5/8 X 12.31 ID X 26.5 LG (\$250.00; \$15.00)					
PN 107796: RUN TOOL,CW,CSGHGR,MBU-3T-LR-TP,13-5/8 X 9-5/8 BC BOX TOP,10.250-4 STUB ACME-2G RIGHT HAND PIN BTM,MAX LOAD CAPACITY 1000K,MAX TORQUE 18000FT-LBS,SPEC FOR ROTATING CASING STRING (\$575.00; \$30.00)					
PN 103374: TORQUE COLLAR,CW,F/USE W RUN TOOL,TP,10.250-4 STUB ACME-2G RIGHT HAND PIN BTM AND A/F 11.50 OD X 5.00 LG BOX HGR NECK,MAXIMUM TORQUE 36000 LBF-FT (\$200.00; \$10.00)					
PN 106277: WASH TOOL,CW,MBU-LR,MBS2 & FLUTED,13-5/8 X 4-1/2 IF (NC50) BOX TOP THD,W/BRUSHES (\$400.00; \$20.00)					
PN 117310: RUN TOOL,CW,PACKOFF,MBU-3T,13-5/8 X 4-1/2 IF (NC50) BTM & TOP,W/10.250-4 STUB ACME-2G LH (\$300.00; \$15.00)					
PN 108848: TEST PLUG,CW,MBU-2LR(3T) INNER,11 X 4-1/2 IF (NC50) BOX BTM & TOP,W/1-1/4 LP BYPASS (\$150.00; \$10.00)					
PN 117158: WBUSH,CW,MBU-3T,UPR,NESTED,13-5/8 X 11 X 9.00 ID X 20.0 LG,A/F 13-5/8 RET TOOL (\$250.00; \$15.00)					
PN 111379: RUN TOOL,CW,CSGHGR,CTH-MBU-3T-TP8.6.125-4 STUB ACME-2G RIGHT HAND PIN BTM X 5-1/2 BC BOX TOP,W/4.940 MIN BORE & MAX LOAD CAPACITY 500K,MAX (\$550.00; \$30.00)					
PN 103164: WASH TOOL,CW,CSGHGR,MBU-2LR/MBS2-R,FLUTED,11 X 4-1/2 IF (NC50) BOX TOP THDS,FAB (\$250.00; \$15.00)					
PN 117306: RUN TOOL,CW,PACKOFF,MBU-3T-SN,7-5/8,W/8.750-4 STUB ACME-2G LEFT HAND PIN BTM X 4-1/2 IF (NC50) BOX TOP,W/BALL BEARINGS (\$275.00; \$15.00)					
PN 117319: TORQUE COLLAR,CW,CSGHGR,F/USE W/7.62 OD X 15.38 LG BOX HGR NECK AND 10.83 OD RUNNING TOOL,MAXIMUM TORQUE 35000 LBF-FT (\$500.00; \$25.00)					

		Quantity	Price	Ext Price
				14,762.30
	CONTINGENCY EQUIPMENT			
	EMERGENCY EQUIPMENT; INVOICED AS REQUIRED			
23	116998	0.00	1,350.00	0.00
	CSGHGR,CW,MBU-3T-LWR,EMERG,13-5/8 X 9-5/8,6A-PU-DD-NL-3-1			
24	117184	0.00	3,080.00	0.00
	PACKOFF,CW,MBU-3T,EMERG,13-5/8 NESTED X 11 X 9-5/8,W/11.250-4 STUB ACME-2G LH BOX TOP,6A-U-AA-1-1			
25	117987	0.00	2,885.00	0.00
	CSGHGR,CW,C2-(MBU-3T,INNER,EMERG,NESTED),11 X 5-1/2,6A-P-AA-3-1			
26	117989	0.00	2,995.00	0.00
	PACKOFF,CW,C2,MBU-3T,INNER,EMERG,NESTED,11 X 5-1/2,W/7-5/8 SEAL NECK,5 HBPV THDS & 4.93 MIN BORE,A/F HOLD DOWN RING,4140 80K,6A-U-DD-NL-1-1			
27	116161	0.00	600.00	0.00
	HOLD DOWN,RING,F/22 CSGHGR 11 X 4-1/2,A/F PACKOFF MBU-LR,13-5/8 10M,W/11.250-4 STUB ACME-2G LH PIN X 8.00 ID X 2.62 LG,4140 110K			
				0.00
	RISER ASSEMBLIES			
28	610003	1.00	755.00	755.00
	VLV,CW1,2-1/16 3/5M FE AA/DD-NL (API 6A LU AA/DD-NL PSL1 PR2)			
29	100177	1.00	650.00	650.00
	TEE,CW,STD,2-1/16 5M X 2-1/16 5M,6A-PU-EE-NL-1			
30	191005	1.00	120.00	120.00
	FLG,BLIND,CW,2-1/16 5M X 1/2 NPT,6A-LU-EE-NL-1			
31	NPN-WHD	1.00	2,910.00	2,910.00
	SPACER SPL,CW,2-1/16 5M X 2-1/16 5M X 31.6" LG,6A-PU-EE-NL-1 (REF 110024)			
32	610003	1.00	755.00	755.00
	VLV,CW1,2-1/16 3/5M FE AA/DD-NL (API 6A LU AA/DD-NL PSL1 PR2)			
33	200002	2.00	80.00	160.00
	FLG,COMP,CW,2-1/16 5M X 2 LP,6A-KU-EE-NL-1			
34	BP2T	2.00	33.00	66.00
	BULL PLUG,CW,2 LP X 1/2 LP,API 6A DD-NL			
35	100048	2.00	34.55	69.10
	FTG,GRS,VENTED CAP,1/2 NPT,4140 -50F W/ELECTROLESS NICKEL COATING NACE,K-MONEL BALL,INCONEL X-750 SPRING			
36	R24	7.00	8.40	58.80
	RING GASKET,R24,2-1/16 3/5M			

			Quantity	Price	Ext Price
	PN 116240: SUB,CROSSOVER,CW,5 HBPV PIN THD BTM X 4-1/2 IF (NC50) BOX TOP,18.0 LG,4140 110K (\$200.00; \$10.00)				
	NOTE: CUSTOMER RESPONSIBLE FOR LOST, DAMAGED, OR BEYOND REPAIR RENTAL TOOLS. RENTAL CHARGES MAY NOT BE APPLIED TO THE PURCHASE PRICE OF EQUIPMENT.				
11	RNM	Rental Charge Minimum	0.00	65.00	0.00
	TA CAP RENTAL = \$65.00 PER DAY				
	PN 119995: TA CAP,CW,DBLHPS,7-5/8,13-5/8 5M STD,F/5.75 CUTOFF,W/ONE 2 LP & 1/2 LP PORT,6A-PU-EE-NL-1-1				
	NOTE: CUSTOMER RESPONSIBLE FOR LOST, DAMAGED, OR BEYOND REPAIR RENTAL EQUIPMENT. RENTAL CHARGES MAY NOT BE APPLIED TO THE PURCHASE PRICE OF EQUIPMENT. ACCESSORIES FOR ASSEMBLY NOT INCLUDED IN RENTAL RATE,				
					0.00
	TUBING HEAD ASSEMBLY				
12	117451		1.00	7,881.00	7,881.00
	TBGHD,CW,CTH-DBLHPS,7-5/8,13-5/8 5M X 7-1/16 10M,W/2 1-13/16 10M FP,31 LG,RND BAR,17-4PH LDS,6A-PU-EE-0,5-2-1				
13	103188		1.00	1,700.00	1,700.00
	VLV,AOZE,FC,1-13/16 10M FE EE-0,5 (6A LU EE-0,5 PSL3 PR1) QPQ TRIM				
14	105943		1.00	450.00	450.00
	ADPT,CFH,1-13/16 10M X 2 FIG 1502 X 1/2 NPT,NACE SVC,6A-PU-EE-NL-1-1				
15	103188		2.00	1,700.00	3,400.00
	VLV,AOZE,FC,1-13/16 10M FE EE-0,5 (6A LU EE-0,5 PSL3 PR1)				
16	105943		1.00	450.00	450.00
	ADPT,CFH,1-13/16 10M X 2 FIG 1502 X 1/2 NPT,NACE SVC,6A-PU-EE-NL-1-1				
17	BX151		5.00	10.85	54.25
	RING GASKET,BX151,1-13/16 10/15/20M				
18	780080		24.00	5.20	124.80
	STUD,ALL-THD W/2 NUTS,BLK,3/4-10UNC X 5-1/2,A193 GR B7/A194 GR 2H,NO PLATING				
19	NVA		2.00	47.25	94.50
	NEEDLE VALVE,MFA,1/2 10M				
20	PG10M		2.00	63.84	127.68
	PRESSURE GAUGE,10M,4-1/2 FACE, LIQUID FILLED,1/2 NPT				
21	BX160		1.00	70.47	70.47
	RING GASKET,BX160,13-5/8 5M				
22	780087		16.00	25.60	409.60
	STUD,ALL-THD W/2 NUTS,BLK,1-5/8-8UN X 12-3/4,A193 GR B7/A194 GR 2H,NO PLATING				

**Quotation****Quote Number : ODE0001625**MIDLAND WAREHOUSE
8001 GROENING STREET
ODESSA TX 79765
Phone: 432-653-0306

Date: 07/21/2017

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Page 6 of 6

		Quantity	Price	Ext Price
37	780067 STUD,ALL-THD W/2 NUTS,BLK,7/8-9UNC X 6-1/2,A193 GR B7/A194 GR 2H,NO PLATING	16.00	5.20	83.20
38	NVS NEEDLE VALVE,MFS,1/2 NPT MXF 10,000 PSI WP CARBON STEEL BODY, 304/316SS STEM, TFE PACKING NACE	1.00	54.00	54.00
39	PG5M PRESSURE GAUGE,5M,4-1/2 FACE,LIQUID FILLED,1/2 NPT	1.00	63.84	63.84
40	610003 VLV,CW1,2-1/16 3/5M FE AA/DD-NL (API 6A LU AA/DD-NL PSL1 PR2)	1.00	755.00	755.00
41	100177 TEE,CW,STD,2-1/16 5M X 2-1/16 5M,6A-PU-EE-NL-1	1.00	650.00	650.00
42	191005 FLG,BLIND,CW,2-1/16 5M X 1/2 NPT,6A-LU-EE-NL-1	1.00	120.00	120.00
43	110024 SPACER SPL,CW,2-1/16 5M X 2-1/16 5M X 24.0 LG,6A-PU-EE-NL-1	1.00	2,618.00	2,618.00
44	610003 VLV,CW1,2-1/16 3/5M FE AA/DD-NL (API 6A LU AA/DD-NL PSL1 PR2)	1.00	755.00	755.00
45	200002 FLG,COMP,CW,2-1/16 5M X 2 LP,6A-KU-EE-NL-1	2.00	80.00	160.00
46	BP2T BULL PLUG,CW,2 LP X 1/2 LP,API 6A DD-NL	2.00	33.00	66.00
47	100048 FTG,GRS,VENTED CAP,1/2 NPT,4140 -50F W/ELECTROLESS NICKEL COATING NACE,K-MONEL BALL,INCONEL X-750 SPRING	2.00	34.55	69.10
48	R24 RING GASKET,R24,2-1/16 3/5M	7.00	8.40	58.80
49	780067 STUD,ALL-THD W/2 NUTS,BLK,7/8-9UNC X 6-1/2,A193 GR B7/A194 GR 2H,NO PLATING	16.00	5.20	83.20
50	NVS NEEDLE VALVE,MFS,1/2 NPT MXF 10,000 PSI WP CARBON STEEL BODY, 304/316SS STEM, TFE PACKING NACE	1.00	54.00	54.00
51	PG5M PRESSURE GAUGE,5M,4-1/2 FACE,LIQUID FILLED,1/2 NPT	1.00	63.84	63.84

11,197.88

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For Acceptance of this Quotation
Please Contact Dean Smith Ph: 713-396-5763
dean.smith@cactuswellhead.com

Matl:	51,377.18
Labor:	0.00
Misc:	0.00
Sales Tax:	0.00
Total:	51,377.18

PECOS DISTRICT

DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	MARATHON OIL PERMIAN LLC
LEASE NO.:	NMNM086024
WELL NAME & NO.:	BLUE STEEL 21 FB FEE 25H
SURFACE HOLE FOOTAGE:	270' FNL & 1135' FWL
BOTTOM HOLE FOOTAGE:	100' FNL & 1993' FWL
LOCATION:	Section 28, T. 23 S., R 29 E., NMPM
COUNTY:	Eddy County, New Mexico

COA

All previous COAs still apply expect the following:

H2S	☒ Yes	☐ No	
Potash	☐ None	☐ Secretary	☒ R-111-P
Cave/Karst Potential	☐ Low	☒ Medium	☐ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☒ Multibowl	☐ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☒ COM	☐ Unit

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Bone Spring** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **325** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever

is greater. (This is to include the lead cement)

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

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

- Cement to surface. If cement does not circulate see B.1.a, c-d above.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

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

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:

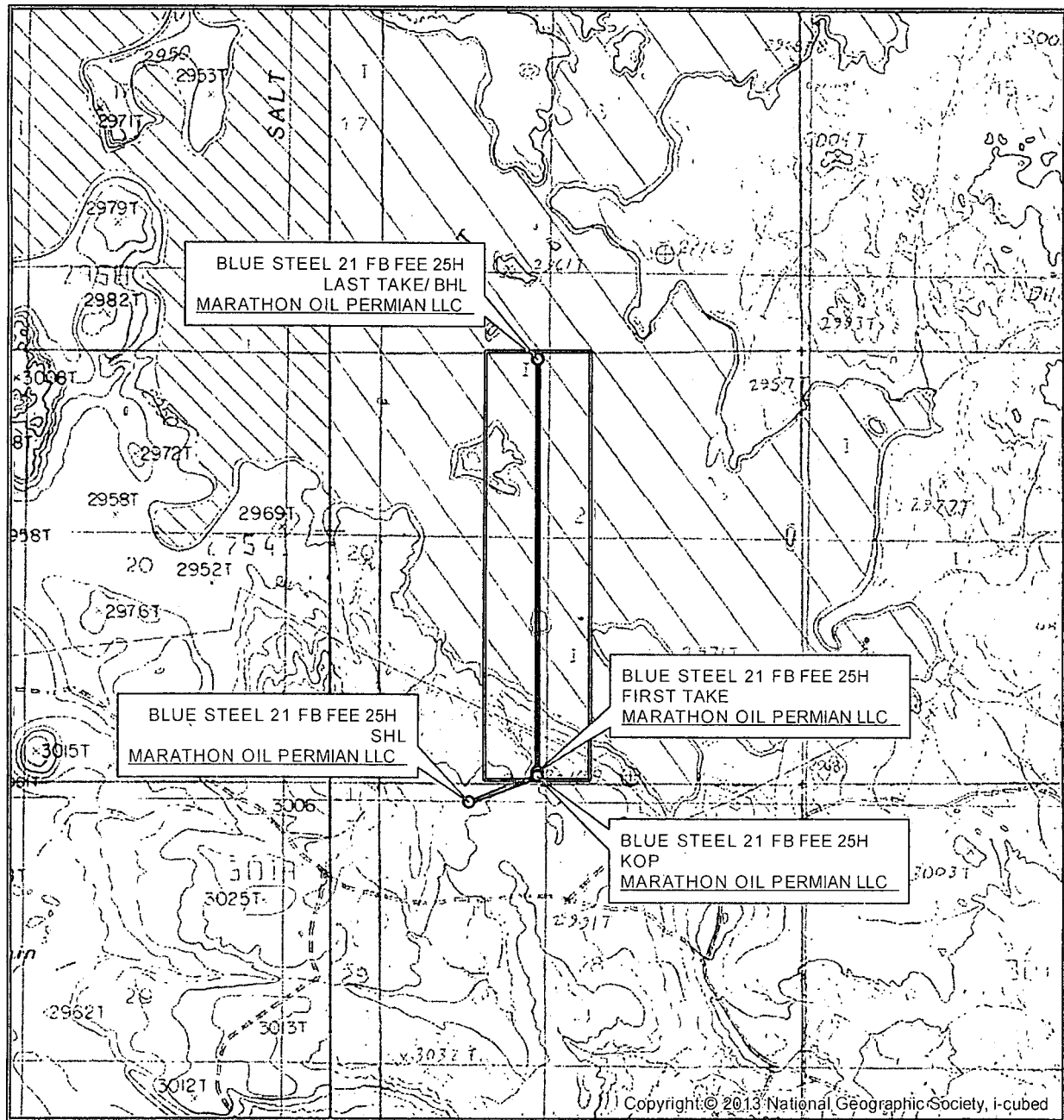
- Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Additional cement maybe required. Excess calculates to 24%.**

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - a. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - b. Manufacturer representative shall install the test plug for the initial BOP test.
 - c. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

ZS 060619

LOCATION VERIFICATION MAP



SEC. 28 TWP. 23-S RGE. 29-E
 SURVEY: N.M.P.M.
 COUNTY: EDDY
 OPERATOR: MARATHON OIL PERMIAN LLC
 DESCRIPTION: 270' FNL & 1135' FWL
 ELEVATION: 3001'
 LEASE: BLUE STEEL 21 FEE
 U.S.G.S. TOPOGRAPHIC MAP: REMUDA BASIN, NM.

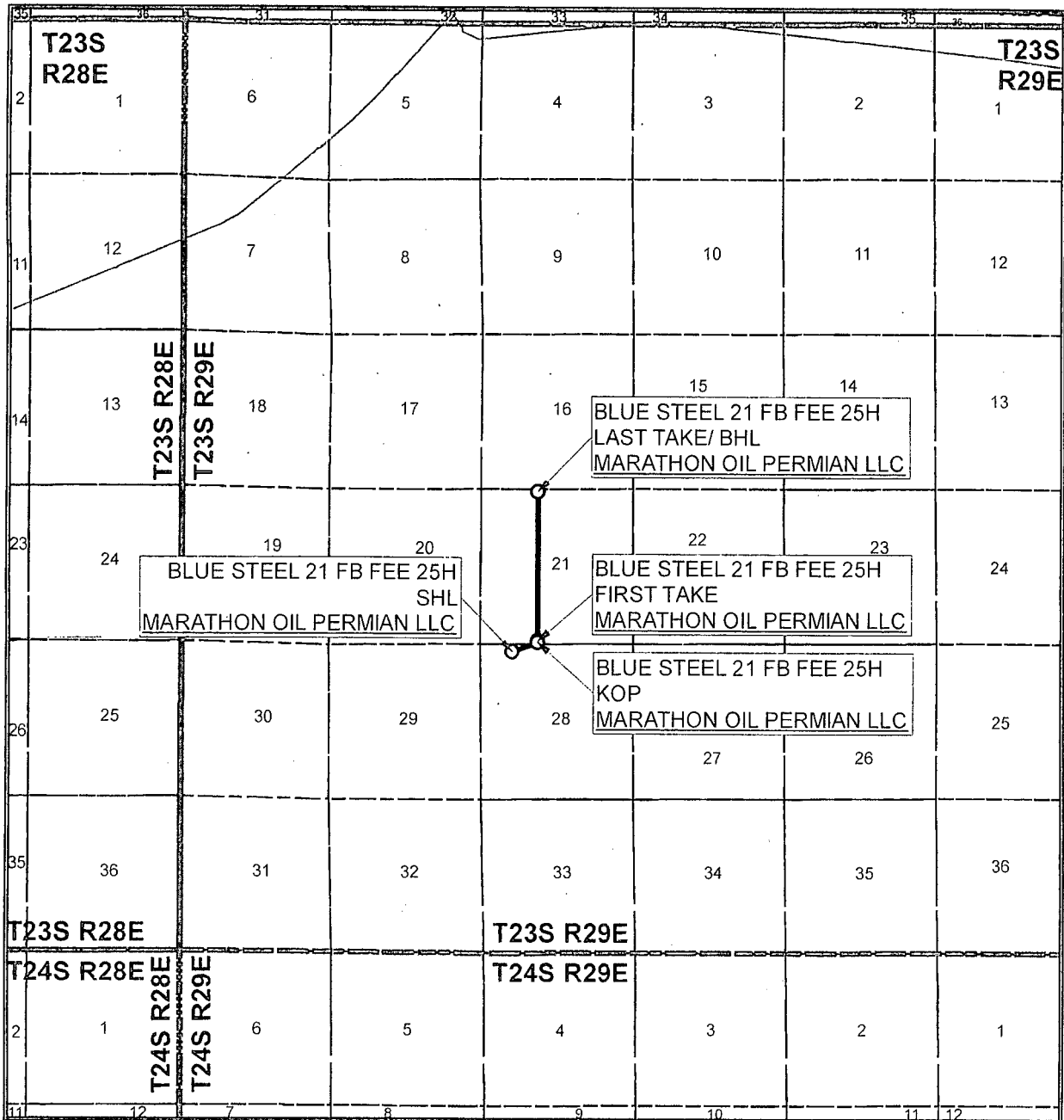
1" = 2,000'
 CONTOUR INTERVAL = 20'



SHEET 2 OF 3

PREPARED BY:
 R-SQUARED GLOBAL, LLC
 1309 LOUISVILLE AVENUE, MONROE, LA 71201
 318-323-6900 OFFICE
 JOB No. R3942_016

VICINITY MAP



SEC. 28 TWP. 23-S RGE. 29-E

SURVEY: N.M.P.M.

COUNTY: EDDY

OPERATOR: MARATHON OIL PERMIAN LLC

DESCRIPTION: 270' FNL & 1135' FWL

ELEVATION: 3001'

LEASE: BLUE STEEL 21 FEE

U.S.G.S. TOPOGRAPHIC MAP: REMUDA BASIN, NM.

1" = 1 MILE



SHEET 3 OF 3

PREPARED BY:
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