

HOBBS OCD

Form 3160-3
(March 2012)

MAY 19 2014

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD-Hobbs

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM-066272(BH); NMNM-092781; NMNM-069596	
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator Devon Energy Production Company, L.P. 6137		7. If Unit or CA Agreement, Name and No. GAUCHO UNIT NM 94480X	
3a. Address 333 W. Sheridan Oklahoma City, OK 73102-5010		8. Lease Name and Well No. GAUCHO UNIT 17H 30863	
3b. Phone No. (include area code) 405-235-3611		9. API Well No. 30-025-4185K	
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 200' FSL & 720' FEL, P At proposed prod. zone 330' FNL & 1980' FEL, B Sec 19 PP: 200' FSL & 720' FEL Sec 19		10. Field and Pool, or Exploratory WC-025-5-06 52234214; B5	
11. Sec., T. R. M. or Blk. and Survey or Area Sec 19, T22S, R34E		12. County or Parish LEA	
13. State NM		14. Distance in miles and direction from nearest town or post office* Approx. 20 miles SW of Eunice, NM	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) See Attached Map		16. No. of acres in lease 120 ac (NMNM-066272) 960 ac (NMNM-092781) 830.64 ac (NMNM-069596)	
17. Spacing Unit dedicated to this well 160 ac		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. See Attached Map	
19. Proposed Depth TVD: 10533' MD: 15720'		20. BLM/BIA Bond No. on file CO-1104; NMB-000801	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3446.5 (GL)		22. Approximate date work will start* As Soon As Possible	
23. Estimated duration 45 Days		24. Attachments To be pad drilled w/ GAUCHO UNIT 16H	

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

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

25. Signature D. A.	Name (Printed/Typed) David Cook	Date 9/26/2013
Title Regulatory Compliance Specialist		
Approved by (Signature)	Name (Printed/Typed) JS/STEPHEN J. CAFFEY	Date 5-12-14
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

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.

APPROVAL FOR TWO YEARS

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

(Continued on page 2)

SEE ATTACHED FOR
CONDITIONS OF APPROVALK2
09/19/14APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHEDWitness Surface &
Intermediate Casing

CAPITAN CONTROLLED WATER BASIN

MAY 20 2014

Operators Representative:

The Devon Energy Production Company, L.P. representatives responsible for ensuring compliance of the surface use plan are listed below.

Kim Henderson - Operations Engineer
Devon Energy Production Company, L.P.
333 W. Sheridan
Oklahoma City, OK 73102-5010
(405) 552-6505 (office)
(405) 479-3869 (Cellular)

Don Mayberry - Superintendent
Devon Energy Production Company, L.P.
Post Office Box 250
Artesia, NM 88211-0250
(575) 748-3371 (office)
(575) 746-4945 (home)

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Certification

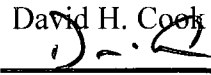
RECEIVED

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

I hereby also certify that I, or Devon Energy Production Company, L.P. have made a good faith effort to provide the surface owner with a copy of the Surface Use Plan of Operations and any Conditions of Approval that are attached to the APD.

Executed this 29th day of August, 2013.

Printed Name: David H. Cook

Signed Name: 

Position Title: Regulatory Specialist

Address: 333 W. Sheridan, OKC OK 73102

Telephone: (405)-552-7848

DRILLING PROGRAM

Devon Energy Production Company, L.P.

GAUCHO UNIT 17H

Surface Location: 200 FSL & 720 FEL, Unit P, Sec 19 T22S R34E, LEA, NM

Bottom Hole Location: 330 FNL & 1980 FEL, Unit B, Sec 19 T22S R34E, LEA, NM

1) **Geologic Name of Surface Formation:** Quaternary

2) **Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:**

a.	Fresh Water	300'	
b.	Rustler	1640'	Barren
c.	Top of Salt	1925'	Barren
d.	Base of Salt	3700'	Barren
e.	Yates	3930'	Barren
f.	Queen	4101'	Barren
g.	Greyburg	4548'	Barren
h.	Delaware	5256'	Oil/Gas
i.	Cherry Canyon	6016'	Oil/Gas
j.	Lower Brushy Canyon	8264'	Oil/Gas
k.	Bone Spring Lime	8443'	Oil/Gas
l.	1st Bone Spring Sand	9497'	Oil/Gas
m.	2nd Bone Spring Sand	10046'	Oil/Gas
	Total Depth	10533'	TVD
		15720'	MD

3) Pressure Control Equipment:

The BOP system used to drill the intermediate hole will consist of a 13-5/8" Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2, a 3M system will be installed and tested prior to drilling out the surface casing shoe.

The BOP system used to drill the production hole will consist of a 13-5/8" Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2, a 3M system will be installed and tested prior to drilling out the intermediate casing shoe.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

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 at all times.

4) Casing Program: (All casing is new and API approved)

See COA

Hole Size (in)	Hole Interval (ft)	Casing OD (in)	Casing Interval (ft)	Weight (lb)	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17-1/2	0-1700 1830	13-3/8	0-1700	54.5	BTC	J-55	1.42	3.43	9.81
12-1/4	1700-5150 5000	9-5/8	0-5150	40	BTC	HCK-55	1.58	1.47	4.50
8-3/4	5150-9600	5-1/2	0-9600	17	LTC	HCP-110	1.83	2.27	2.67
8-3/4	9600-15720	5-1/2	9600-15720	17	BTC	HCP-110	1.70	2.11	2.23

Maximum Lateral TVD: 10533'

5) Proposed Mud Circulation System:

Depth (ft)	Mud Weight	Viscosity	Fluid Loss	Type System
0-1700 1830	8.5-8.9	35-45	N/C	FW
1700-5150 5000	9.8-10.0	29-36	N/C	BRINE
5150-9714	8.4-8.8	29-36	<100	Cut Brine
9714-15720	8.6-9.0	29-36	<100	Cut Brine

The necessary mud products for weight addition and fluid loss control will be on location at all times. Visual mud monitoring equipment will be in place to detect volume changes indicating loss or gain of circulating fluid volume. If abnormal pressures are encountered, electronic/mechanical mud monitoring equipment will be installed.

6) Cementing Program:

String	No. of sx	Wt. #/gal	Yld. cf/sx	Stage; Lead/Tail	Slurry Description
Surface 13 ³ / ₈	960	13.5	1.75	Lead	Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Poly-E-Flake + 4% bwoc Bentonite + 70.1% Fresh Water
	550	14.8	1.34	Tail	Class C Cement + 1% bwoc Calcium Chloride + 0.125 lbs/sack Poly-E-Flake + 63.1% Fresh Water
Intermediate 9 ⁵ / ₈	1070	12.9	1.85	Lead	(65:35) Class H Cement:Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 70.9 % Fresh Water
	430	14.8	1.33	Tail	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.9% Fresh Water
Production 5 ¹ / ₂	370	11.5	2.57	1st Lead	(50:50) Class H Cement:Poz (Fly Ash) + 10% BWOC Bentonite + 0.15% SA-1015 + 0.1% BWOC HR-601 + 0.25 lb/sk D-Air 5000 + 80.01 % Fresh Water
	330	12.5	1.96	2nd Lead	(65:35) Class H Cement:Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake + 74.1 % Fresh Water
	1570	14.5	1.21	Tail	(50:50) Class H Cement:Poz (Fly Ash) + 1 lb/sk Sodium Chloride + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water
Contingency Plan For loss of Circulation					
See CA	460	11.5	2.57	Lead	(50:50) Class H Cement:Poz (Fly Ash) + 10% BWOC Bentonite + 0.15% SA-1015 + 0.1% BWOC HR-601 + 0.25 lb/sk D-Air 5000 + 80.01 % Fresh Water
	1570	14.5	1.21	Tail	(50:50) Class H Cement:Poz (Fly Ash) + 1 lb/sk Sodium Chloride + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water
2nd STAGE (DV tool at 6000 ft)					
	130	12.5	1.96	Lead	(65:35) Class H Cement:Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake + 74.1 % Fresh Water
	120	14.8	1.33	Tail	Class C Cement + 63.9% Fresh Water

TOC For All Strings:

Surface @ 0'
Intermediate @ 0'
Production @ 4650'

See COA

Cementing Notes:

*Cement volumes are based on excess of at least 100% surface, 75% intermediate, and 25% production.

*Actual cement volumes will be adjusted based on fluid caliper and caliper log data.

7) Logging, Coring, and Testing Program:

- a. Drill stem tests will be based on geological sample shows.
- b. If a drill stem test is anticipated, a procedure, equipment to be used, and safety measures will be provided via sundry notice to the BLM.
- c. The open hole electrical logging program will be:
 - i. Total Depth to Intermediate Casing:
 - Dual Laterolog
 - Micro Laterolog with SP & Gamma Ray
 - Compensated Neutron
 - Z-Density Log with Gamma Ray and Caliper
 - ii. Total Depth to Surface:
 - Compensated Neutron with Gamma Ray
 - iii. No coring program is planned
 - iv. Additional testing will be initiated subsequent to setting the 5-1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows, and drill stem tests.

8) Potential Hazards

- a. No abnormal pressures or temperatures are expected. There is no known presence of H₂S in this area. If H₂S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation being used to drill this well. Estimated BHP 4600psi and Estimated BHT 160 degrees. No H₂S is anticipated to be encountered.
- c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13-3/8" casing shoe until the 5-1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13-3/8" shoe until total depth is reached.

9) Anticipated Starting Date and Duration of Operations:

- a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 32 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Devon Energy	Slot	No.17H SHL
Area	Lea County, NM	Well	No.17H
Field	(Gaucho) Sec 17, T22S, R34E	Wellbore	No.17H PWB
Facility	Gaucho Unit No.16H & No.17H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Gentbry
Scale	0.999984	Report Generated	08/20/2013 at 2:38:37 PM
Convergence at slot	0.44° East	Database/Source file	WA Midland/No.17H_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-0.40	-49.93	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W
Facility Reference Pt			797750.19	499509.37	32°22'13.749"N	103°30'10.150"W
Field Reference Pt			800357.93	506259.73	32°23'20.341"N	103°29'39.128"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No.17H SHL (KB) to Facility Vertical Datum	3471.50ft
Horizontal Reference Pt	Slot	Rig on No.17H SHL (KB) to Mean Sea Level	3471.50ft
Vertical Reference Pt	Rig on No.17H SHL (KB)	Rig on No.17H SHL (KB) to Mud Line at Slot (No.17H SHL)	3471.50ft
MD Reference Pt	Rig on No.17H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	344.76°



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REFERENCE WELLPATH IDENTIFICATION

Operator	Devon Energy	Slot	No.17H SHL
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Field	(Gaucho) Sec 17, T22S, R34E	Wellbore	No.17H PWB
Facility	Gaucho Unit No.16H & No.17H		

WELLPATH DATA (174 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	250.000	0.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
25.00	0.000	250.000	25.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	Tie On
125.00†	0.000	250.000	125.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
225.00†	0.000	250.000	225.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
325.00†	0.000	250.000	325.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
425.00†	0.000	250.000	425.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
525.00†	0.000	250.000	525.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
625.00†	0.000	250.000	625.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
725.00†	0.000	250.000	725.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
825.00†	0.000	250.000	825.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
925.00†	0.000	250.000	925.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
1025.00†	0.000	250.000	1025.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
1125.00†	0.000	250.000	1125.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
1225.00†	0.000	250.000	1225.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
1325.00†	0.000	250.000	1325.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
1425.00†	0.000	250.000	1425.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
1525.00†	0.000	250.000	1525.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
1625.00†	0.000	250.000	1625.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
1640.00†	0.000	250.000	1640.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	Rustler
1725.00†	0.000	250.000	1725.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
1825.00†	0.000	250.000	1825.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
1925.00†	0.000	250.000	1925.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	Top Salt
2025.00†	0.000	250.000	2025.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
2125.00†	0.000	250.000	2125.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
2225.00†	0.000	250.000	2225.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
2325.00†	0.000	250.000	2325.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
2425.00†	0.000	250.000	2425.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
2525.00†	0.000	250.000	2525.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
2625.00†	0.000	250.000	2625.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
2725.00†	0.000	250.000	2725.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
2825.00†	0.000	250.000	2825.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
2925.00†	0.000	250.000	2925.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
3025.00†	0.000	250.000	3025.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
3125.00†	0.000	250.000	3125.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
3225.00†	0.000	250.000	3225.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
3325.00†	0.000	250.000	3325.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
3425.00†	0.000	250.000	3425.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
3525.00†	0.000	250.000	3525.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
3625.00†	0.000	250.000	3625.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
3700.00†	0.000	250.000	3700.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	Base Salt
3725.00†	0.000	250.000	3725.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
3825.00†	0.000	250.000	3825.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
3925.00†	0.000	250.000	3925.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
3930.00†	0.000	250.000	3930.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	Yates
4025.00†	0.000	250.000	4025.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Devon Energy	Slot	No.17H SHL
Area	Lea County, NM	Well	No.17H
Field	(Gaucho) Sec 17, T22S, R34E	Wellbore	No.17H PWB
Facility	Gaucho Unit No.16H & No.17H		

WELLPATH DATA (174 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4125.00†	0.000	250.000	4125.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
4225.00†	0.000	250.000	4225.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
4325.00†	0.000	250.000	4325.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
4425.00†	0.000	250.000	4425.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
4525.00†	0.000	250.000	4525.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
4625.00†	0.000	250.000	4625.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
4725.00†	0.000	250.000	4725.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
4825.00†	0.000	250.000	4825.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
4925.00†	0.000	250.000	4925.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
5025.00†	0.000	250.000	5025.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
5125.00†	0.000	250.000	5125.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
5225.00†	0.000	250.000	5225.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
5256.00†	0.000	250.000	5256.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	Delaware
5325.00†	0.000	250.000	5325.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
5425.00†	0.000	250.000	5425.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
5525.00†	0.000	250.000	5525.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
5625.00†	0.000	250.000	5625.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
5725.00†	0.000	250.000	5725.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
5825.00†	0.000	250.000	5825.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
5925.00†	0.000	250.000	5925.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
6016.00†	0.000	250.000	6016.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	Cherry Canyon
6025.00†	0.000	250.000	6025.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
6125.00†	0.000	250.000	6125.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
6225.00†	0.000	250.000	6225.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
6325.00†	0.000	250.000	6325.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
6425.00†	0.000	250.000	6425.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
6525.00†	0.000	250.000	6525.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
6625.00†	0.000	250.000	6625.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
6725.00†	0.000	250.000	6725.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
6825.00†	0.000	250.000	6825.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	
6900.00	0.000	250.000	6900.00	0.00	0.00	0.00	797700.26	499508.97	32°22'13.749"N	103°30'10.732"W	0.00	Nudge
6925.00†	0.500	250.000	6925.00	-0.01	-0.04	-0.10	797700.16	499508.93	32°22'13.748"N	103°30'10.733"W	2.00	
7025.00†	2.500	250.000	7024.96	-0.23	-0.93	-2.56	797697.70	499508.04	32°22'13.740"N	103°30'10.762"W	2.00	
7125.00†	4.500	250.000	7124.77	-0.73	-3.02	-8.30	797691.96	499505.95	32°22'13.719"N	103°30'10.829"W	2.00	
7225.00†	6.500	250.000	7224.30	-1.53	-6.30	-17.30	797682.96	499502.67	32°22'13.688"N	103°30'10.934"W	2.00	
7325.00†	8.500	250.000	7323.44	-2.61	-10.76	-29.57	797670.69	499498.21	32°22'13.644"N	103°30'11.078"W	2.00	
7350.00	9.000	250.000	7348.15	-2.93	-12.06	-33.14	797667.12	499496.91	32°22'13.632"N	103°30'11.119"W	2.00	EOB
7425.00†	9.000	250.000	7422.23	-3.90	-16.08	-44.17	797656.09	499492.89	32°22'13.593"N	103°30'11.248"W	0.00	
7525.00†	9.000	250.000	7521.00	-5.20	-21.43	-58.87	797641.39	499487.54	32°22'13.541"N	103°30'11.420"W	0.00	
7625.00†	9.000	250.000	7619.77	-6.50	-26.78	-73.57	797626.69	499482.19	32°22'13.489"N	103°30'11.592"W	0.00	
7725.00†	9.000	250.000	7718.53	-7.80	-32.13	-88.27	797611.99	499476.84	32°22'13.437"N	103°30'11.764"W	0.00	
7825.00†	9.000	250.000	7817.30	-9.10	-37.48	-102.97	797597.29	499471.49	32°22'13.386"N	103°30'11.936"W	0.00	
7925.00†	9.000	250.000	7916.07	-10.39	-42.83	-117.67	797582.59	499466.14	32°22'13.334"N	103°30'12.108"W	0.00	
8025.00†	9.000	250.000	8014.84	-11.69	-48.18	-132.37	797567.89	499460.79	32°22'13.282"N	103°30'12.280"W	0.00	
8125.00†	9.000	250.000	8113.61	-12.99	-53.53	-147.07	797553.19	499455.44	32°22'13.230"N	103°30'12.451"W	0.00	



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REFERENCE WELLPATH IDENTIFICATION

Operator	Devon Energy	Slot	No.17H SHL
Area	Lea County, NM	Well	No.17H
Field	(Gaucho) Sec 17, T22S, R34E	Wellbore	No.17H PWB
Facility	Gaucho Unit No.16H & No.17H		

WELLPATH DATA (174 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8225.00†	9.000	250.000	8212.38	-14.29	-58.88	-161.77	797538.49	499450.09	32°22'13.178"N	103°30'12.623"W	0.00	
8277.26†	9.000	250.000	8264.00	-14.97	-61.68	-169.45	797530.81	499447.30	32°22'13.151"N	103°30'12.713"W	0.00	Lwr Brushy Canyon
8325.00†	9.000	250.000	8311.15	-15.59	-64.23	-176.47	797523.79	499444.74	32°22'13.127"N	103°30'12.795"W	0.00	
8425.00†	9.000	250.000	8409.92	-16.89	-69.58	-191.17	797509.09	499439.39	32°22'13.075"N	103°30'12.967"W	0.00	
8458.50†	9.000	250.000	8443.00	-17.32	-71.37	-196.09	797504.17	499437.60	32°22'13.057"N	103°30'13.025"W	0.00	Bone Spring Line
8525.00†	9.000	250.000	8508.69	-18.19	-74.93	-205.87	797494.40	499434.04	32°22'13.023"N	103°30'13.139"W	0.00	
8625.00†	9.000	250.000	8607.45	-19.49	-80.28	-220.57	797479.70	499428.69	32°22'12.971"N	103°30'13.311"W	0.00	
8725.00†	9.000	250.000	8706.22	-20.78	-85.63	-235.27	797465.00	499423.34	32°22'12.919"N	103°30'13.483"W	0.00	
8825.00†	9.000	250.000	8804.99	-22.08	-90.98	-249.97	797450.30	499417.99	32°22'12.868"N	103°30'13.654"W	0.00	
8925.00†	9.000	250.000	8903.76	-23.38	-96.33	-264.67	797435.60	499412.64	32°22'12.816"N	103°30'13.826"W	0.00	
9025.00†	9.000	250.000	9002.53	-24.68	-101.68	-279.37	797420.90	499407.29	32°22'12.764"N	103°30'13.998"W	0.00	
9125.00†	9.000	250.000	9101.30	-25.98	-107.03	-294.07	797406.20	499401.94	32°22'12.712"N	103°30'14.170"W	0.00	
9225.00†	9.000	250.000	9200.07	-27.28	-112.38	-308.77	797391.50	499396.59	32°22'12.660"N	103°30'14.342"W	0.00	
9325.00†	9.000	250.000	9298.84	-28.58	-117.73	-323.47	797376.80	499391.24	32°22'12.608"N	103°30'14.514"W	0.00	
9425.00†	9.000	250.000	9397.61	-29.87	-123.08	-338.17	797362.10	499385.89	32°22'12.557"N	103°30'14.686"W	0.00	
9525.00†	9.000	250.000	9496.37	-31.17	-128.43	-352.87	797347.40	499380.54	32°22'12.505"N	103°30'14.858"W	0.00	
9525.63†	9.000	250.000	9497.00	-31.18	-128.47	-352.96	797347.30	499380.50	32°22'12.505"N	103°30'14.859"W	0.00	1st Bone Spring Sand
9625.00†	9.000	250.000	9595.14	-32.47	-133.78	-367.57	797332.70	499375.19	32°22'12.453"N	103°30'15.029"W	0.00	
9714.00	9.000	250.000	9683.05	-33.63	-138.55	-380.65	797319.61	499370.43	32°22'12.407"N	103°30'15.182"W	0.00	Est KOP
9725.00†	10.100	250.000	9693.89	-33.78	-139.17	-382.37	797317.90	499369.80	32°22'12.401"N	103°30'15.202"W	10.00	
9825.00†	20.100	250.000	9790.32	-35.94	-148.07	-406.82	797293.45	499360.90	32°22'12.315"N	103°30'15.488"W	10.00	
9925.00†	30.100	250.000	9880.76	-39.46	-162.56	-446.63	797253.64	499346.41	32°22'12.174"N	103°30'15.954"W	10.00	
10025.00†	40.100	250.000	9962.47	-44.22	-182.20	-500.59	797199.68	499326.77	32°22'11.984"N	103°30'16.585"W	10.00	
10125.00†	50.100	250.000	10032.97	-50.10	-206.40	-567.07	797133.20	499302.58	32°22'11.750"N	103°30'17.362"W	10.00	
10145.77†	52.177	250.000	10046.00	-51.44	-211.93	-582.26	797118.01	499297.05	32°22'11.696"N	103°30'17.540"W	10.00	2nd Bone Spring Sand
10224.00	60.000	250.000	10089.61	-56.82	-234.11	-643.23	797057.05	499274.86	32°22'11.481"N	103°30'18.252"W	10.00	60° Curve
10225.00†	59.981	250.114	10090.11	-56.89	-234.41	-644.04	797056.23	499274.56	32°22'11.479"N	103°30'18.262"W	10.01	
10325.00†	58.628	261.648	10141.29	-55.28	-255.39	-727.20	796973.07	499253.58	32°22'11.277"N	103°30'19.233"W	10.01	
10425.00†	58.326	273.386	10193.70	-36.52	-259.09	-812.13	796888.14	499249.89	32°22'11.247"N	103°30'20.224"W	10.01	
10525.00†	59.097	285.065	10245.77	-1.20	-245.39	-896.25	796804.03	499263.58	32°22'11.389"N	103°30'21.203"W	10.01	
10625.00†	60.890	296.437	10295.90	49.62	-214.71	-977.00	796723.28	499294.26	32°22'11.699"N	103°30'22.142"W	10.01	
10725.00†	63.604	307.325	10342.57	114.40	-167.99	-1051.92	796648.36	499340.98	32°22'12.167"N	103°30'23.011"W	10.01	
10825.00†	67.099	317.645	10384.37	191.15	-106.64	-1118.74	796581.54	499402.33	32°22'12.779"N	103°30'23.785"W	10.01	
10925.00†	71.224	327.403	10420.01	277.55	-32.53	-1175.42	796524.87	499476.44	32°22'13.517"N	103°30'24.439"W	10.01	
11025.00†	75.829	336.670	10448.41	370.96	52.08	-1220.23	796480.05	499561.05	32°22'14.357"N	103°30'24.954"W	10.01	
11125.00†	80.775	345.555	10468.72	468.56	144.62	-1251.82	796448.46	499653.59	32°22'15.275"N	103°30'25.314"W	10.01	
11225.00†	85.933	354.190	10480.31	567.36	242.28	-1269.23	796431.06	499751.25	32°22'16.243"N	103°30'25.508"W	10.01	
11290.42	89.363	359.770	10483.00	631.21	307.52	-1272.66	796427.62	499816.48	32°22'16.889"N	103°30'25.542"W	10.01	EOC
11290.91	89.353	359.771	10483.01	631.68	308.01	-1272.67	796427.62	499816.97	32°22'16.894"N	103°30'25.542"W	2.00	TL
11325.00†	89.353	359.771	10483.39	664.60	342.10	-1272.80	796427.48	499851.06	32°22'17.231"N	103°30'25.541"W	0.00	
11425.00†	89.353	359.771	10484.52	761.19	442.09	-1273.20	796427.08	499951.05	32°22'18.220"N	103°30'25.536"W	0.00	
11525.00†	89.353	359.771	10485.65	857.77	542.08	-1273.60	796426.68	500051.04	32°22'19.210"N	103°30'25.532"W	0.00	
11625.00†	89.353	359.771	10486.78	954.35	642.08	-1274.00	796426.28	500151.04	32°22'20.199"N	103°30'25.528"W	0.00	
11725.00†	89.353	359.771	10487.91	1050.93	742.07	-1274.40	796425.88	500251.03	32°22'21.189"N	103°30'25.523"W	0.00	
11825.00†	89.353	359.771	10489.03	1147.52	842.06	-1274.80	796425.48	500351.02	32°22'22.178"N	103°30'25.519"W	0.00	



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Field	(Gaucho) Sec 17, T22S, R34E	Wellbore	No.17H PWB
Facility	Gaucho Unit No.16H & No.17H		

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MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11925.00†	89.353	359.771	10490.16	1244.10	942.06	-1275.20	796425.08	500451.01	32°22'23.168"N	103°30'25.515"W	0.00	
12025.00†	89.353	359.771	10491.29	1340.68	1042.05	-1275.61	796424.68	500551.00	32°22'24.157"N	103°30'25.510"W	0.00	
12125.00†	89.353	359.771	10492.42	1437.26	1142.04	-1276.01	796424.28	500650.99	32°22'25.146"N	103°30'25.506"W	0.00	
12225.00†	89.353	359.771	10493.55	1533.85	1242.03	-1276.41	796423.88	500750.98	32°22'26.136"N	103°30'25.502"W	0.00	
12325.00†	89.353	359.771	10494.68	1630.43	1342.03	-1276.81	796423.48	500850.97	32°22'27.125"N	103°30'25.497"W	0.00	
12425.00†	89.353	359.771	10495.81	1727.01	1442.02	-1277.21	796423.08	500950.96	32°22'28.115"N	103°30'25.493"W	0.00	
12525.00†	89.353	359.771	10496.93	1823.59	1542.01	-1277.61	796422.68	501050.95	32°22'29.104"N	103°30'25.489"W	0.00	
12625.00†	89.353	359.771	10498.06	1920.18	1642.00	-1278.01	796422.27	501150.95	32°22'30.093"N	103°30'25.484"W	0.00	
12725.00†	89.353	359.771	10499.19	2016.76	1742.00	-1278.41	796421.87	501250.94	32°22'31.083"N	103°30'25.480"W	0.00	
12825.00†	89.353	359.771	10500.32	2113.34	1841.99	-1278.81	796421.47	501350.93	32°22'32.072"N	103°30'25.476"W	0.00	
12925.00†	89.353	359.771	10501.45	2209.92	1941.98	-1279.21	796421.07	501450.92	32°22'33.062"N	103°30'25.471"W	0.00	
13025.00†	89.353	359.771	10502.58	2306.51	2041.98	-1279.61	796420.67	501550.91	32°22'34.051"N	103°30'25.467"W	0.00	
13125.00†	89.353	359.771	10503.71	2403.09	2141.97	-1280.01	796420.27	501650.90	32°22'35.041"N	103°30'25.463"W	0.00	
13225.00†	89.353	359.771	10504.84	2499.67	2241.96	-1280.41	796419.87	501750.89	32°22'36.030"N	103°30'25.458"W	0.00	
13325.00†	89.353	359.771	10505.96	2596.25	2341.95	-1280.81	796419.47	501850.88	32°22'37.019"N	103°30'25.454"W	0.00	
13425.00†	89.353	359.771	10507.09	2692.84	2441.95	-1281.21	796419.07	501950.87	32°22'38.009"N	103°30'25.450"W	0.00	
13525.00†	89.353	359.771	10508.22	2789.42	2541.94	-1281.61	796418.67	502050.87	32°22'38.998"N	103°30'25.445"W	0.00	
13625.00†	89.353	359.771	10509.35	2886.00	2641.93	-1282.01	796418.27	502150.86	32°22'39.988"N	103°30'25.441"W	0.00	
13725.00†	89.353	359.771	10510.48	2982.58	2741.93	-1282.41	796417.87	502250.85	32°22'40.977"N	103°30'25.437"W	0.00	
13825.00†	89.353	359.771	10511.61	3079.17	2841.92	-1282.81	796417.47	502350.84	32°22'41.967"N	103°30'25.432"W	0.00	
13925.00†	89.353	359.771	10512.74	3175.75	2941.91	-1283.21	796417.07	502450.83	32°22'42.956"N	103°30'25.428"W	0.00	
14025.00†	89.353	359.771	10513.87	3272.33	3041.90	-1283.61	796416.67	502550.82	32°22'43.945"N	103°30'25.424"W	0.00	
14125.00†	89.353	359.771	10514.99	3368.91	3141.90	-1284.01	796416.27	502650.81	32°22'44.935"N	103°30'25.419"W	0.00	
14225.00†	89.353	359.771	10516.12	3465.50	3241.89	-1284.42	796415.87	502750.80	32°22'45.924"N	103°30'25.415"W	0.00	
14325.00†	89.353	359.771	10517.25	3562.08	3341.88	-1284.82	796415.47	502850.79	32°22'46.914"N	103°30'25.411"W	0.00	
14425.00†	89.353	359.771	10518.38	3658.66	3441.88	-1285.22	796415.07	502950.79	32°22'47.903"N	103°30'25.406"W	0.00	
14525.00†	89.353	359.771	10519.51	3755.24	3541.87	-1285.62	796414.67	503050.78	32°22'48.893"N	103°30'25.402"W	0.00	
14625.00†	89.353	359.771	10520.64	3851.83	3641.86	-1286.02	796414.27	503150.77	32°22'49.882"N	103°30'25.398"W	0.00	
14725.00†	89.353	359.771	10521.77	3948.41	3741.85	-1286.42	796413.87	503250.76	32°22'50.871"N	103°30'25.393"W	0.00	
14825.00†	89.353	359.771	10522.90	4044.99	3841.85	-1286.82	796413.46	503350.75	32°22'51.861"N	103°30'25.389"W	0.00	
14925.00†	89.353	359.771	10524.02	4141.57	3941.84	-1287.22	796413.06	503450.74	32°22'52.850"N	103°30'25.385"W	0.00	
15025.00†	89.353	359.771	10525.15	4238.16	4041.83	-1287.62	796412.66	503550.73	32°22'53.840"N	103°30'25.380"W	0.00	
15125.00†	89.353	359.771	10526.28	4334.74	4141.83	-1288.02	796412.26	503650.72	32°22'54.829"N	103°30'25.376"W	0.00	
15225.00†	89.353	359.771	10527.41	4431.32	4241.82	-1288.42	796411.86	503750.71	32°22'55.818"N	103°30'25.372"W	0.00	
15325.00†	89.353	359.771	10528.54	4527.90	4341.81	-1288.82	796411.46	503850.70	32°22'56.808"N	103°30'25.367"W	0.00	
15425.00†	89.353	359.771	10529.67	4624.49	4441.80	-1289.22	796411.06	503950.70	32°22'57.797"N	103°30'25.363"W	0.00	
15525.00†	89.353	359.771	10530.80	4721.07	4541.80	-1289.62	796410.66	504050.69	32°22'58.787"N	103°30'25.359"W	0.00	
15625.00†	89.353	359.771	10531.93	4817.65	4641.79	-1290.02	796410.26	504150.68	32°22'59.776"N	103°30'25.354"W	0.00	
15720.20	89.353	359.771	10533.00	4909.60	4736.98	-1290.40	796409.88	504245.87	32°23'00.718"N	103°30'25.350"W	0.00	No.17H PBHL



Planned Wellpath Report

Rev-B.0

Page 6 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	Devon Energy	Slot	No.17H SHL
Area	Lea County, NM	Well	No.17H
Field	(Gaucho) Sec 17, T22S, R34E	Wellbore	No.17H PWB
Facility	Gaucho Unit No.16H & No.17H		

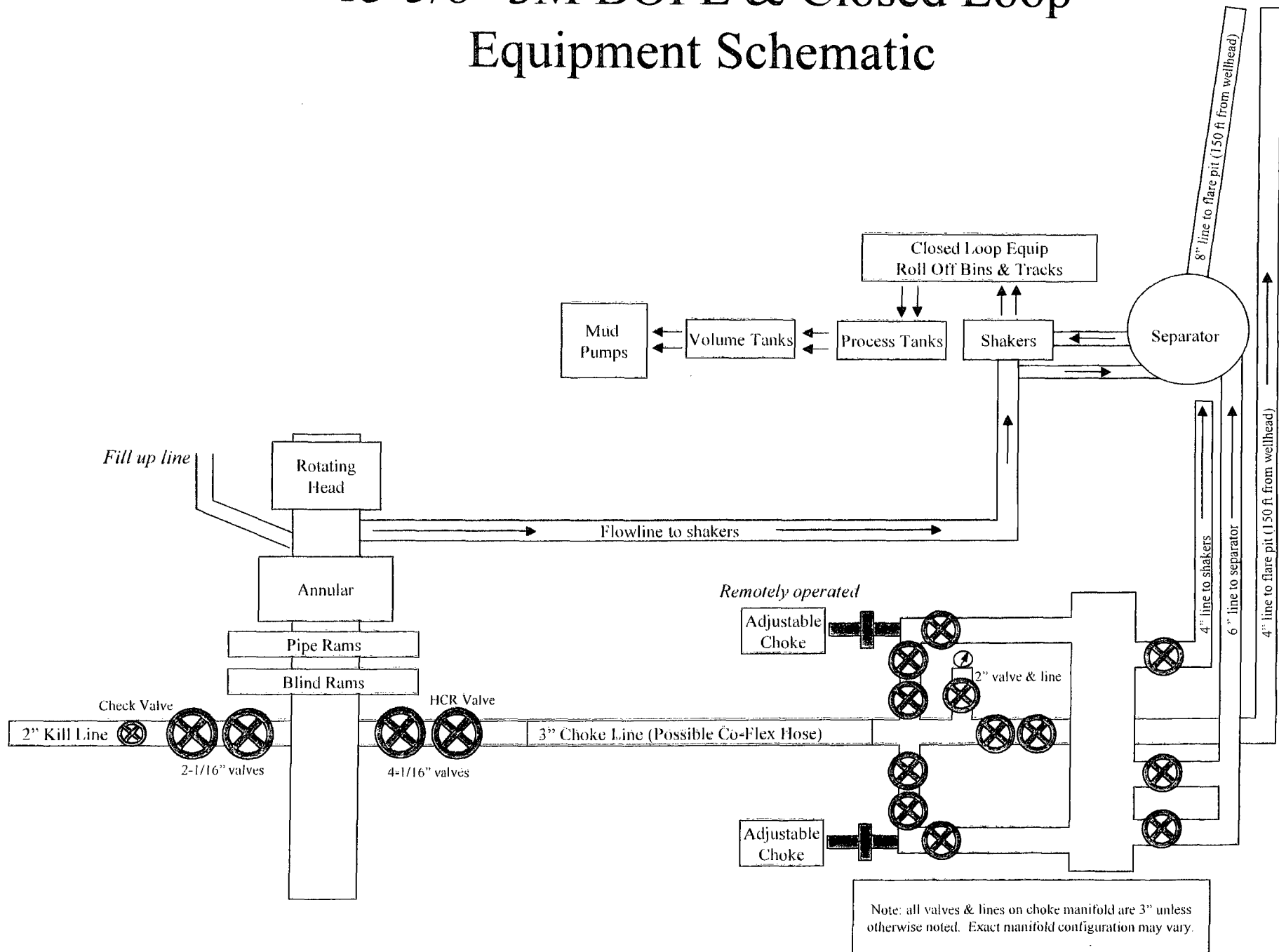
TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) No.17H PBHL	15720.20	10533.00	4736.98	-1290.40	796409.88	504245.87	32°23'00.718"N	103°30'25.350"W	point

SURVEY PROGRAM - Ref Wellbore: No.17H PWB Ref Wellpath: Rev-B.0

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	15720.20	NaviTrak (Standard)		No.17H PWB

13-5/8" 3M BOPE & Closed Loop Equipment Schematic



NOTES REGARDING BLOWOUT PREVENTERS

Devon Energy Production Company, LP
GAUCHO UNIT 17H

Surface Location: 200 FSL & 720 FEL, Unit P, Sec 19 T22S R34E, LEA, NM
Bottom Hole Location: 330 FNL & 1980 FEL, Unit B, Sec 19 T22S R34E, LEA, NM

- 1) Drilling nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.
- 2) Wear ring will be properly installed in head.
- 3) Blowout preventer and all associated fittings will be in operable condition to withstand a minimum of 3000psi working pressure.
- 4) All fittings will be flanged.
- 5) A full bore safety valve tested to a minimum 3000psi WP with proper thread connections will be available on the rotary rig floor at all times.
- 6) All choke lines will be anchored to prevent movement.
- 7) All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.
- 8) Will maintain a kelly cock attached to the kelly.
- 9) Hand wheels and wrenches will be properly installed and tested for safe operation.
- 10) Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.
- 11) All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.

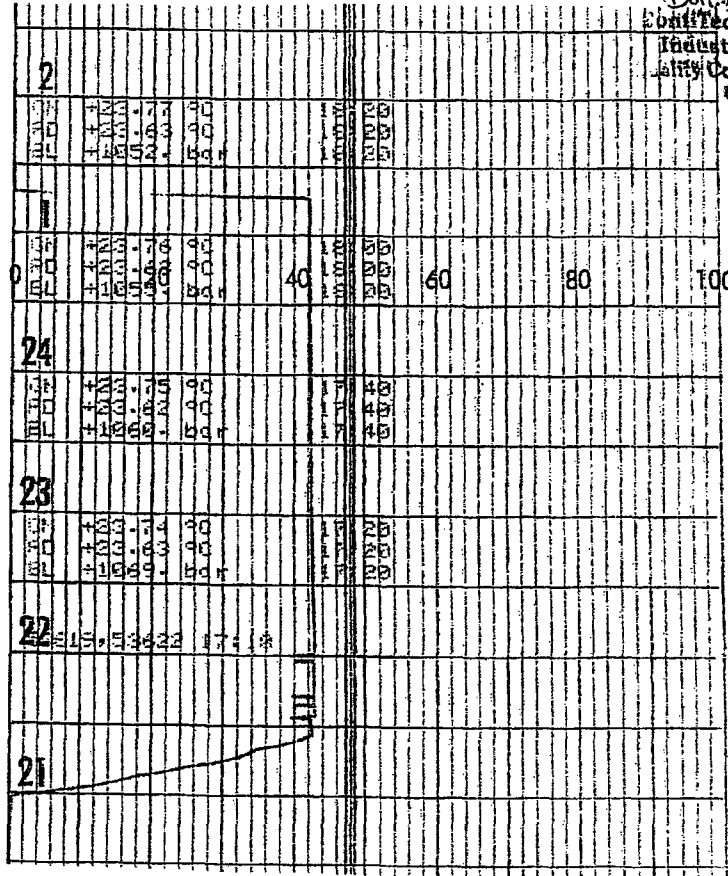
Continental CONTITECH

Quality Document

Bank data

H&P 416

HARTMANN &



Conditech Rubber
Industrial Kft.
Quality Control Dept.
(2)



Fluid Technology

ContiTech Beattie Corp.
Website: www.contitechbeattie.com

Monday, June 14, 2010

RE: Drilling & Production Hoses
Lifting & Safety Equipment

To Helmerich & Payne,

A Continental ContiTech hose assembly can perform as intended and suitable for the application regardless of whether the hose is secured or unsecured in its configuration. As a manufacturer of High Pressure Hose Assemblies for use in Drilling & Production, we do offer the corresponding lifting and safety equipment, this has the added benefit of easing the lifting and handling of each hose assembly whilst affording hose longevity by ensuring correct handling methods and procedures as well as securing the hose in the unlikely event of a failure; but in no way does the lifting and safety equipment affect the performance of the hoses providing the hoses have been handled and installed correctly. It is good practice to use lifting & safety equipment but not mandatory.

Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

ContiTech Beattie is part of the Continental AG Corporation and can offer the full support resources associated with a global organization.

Best regards,

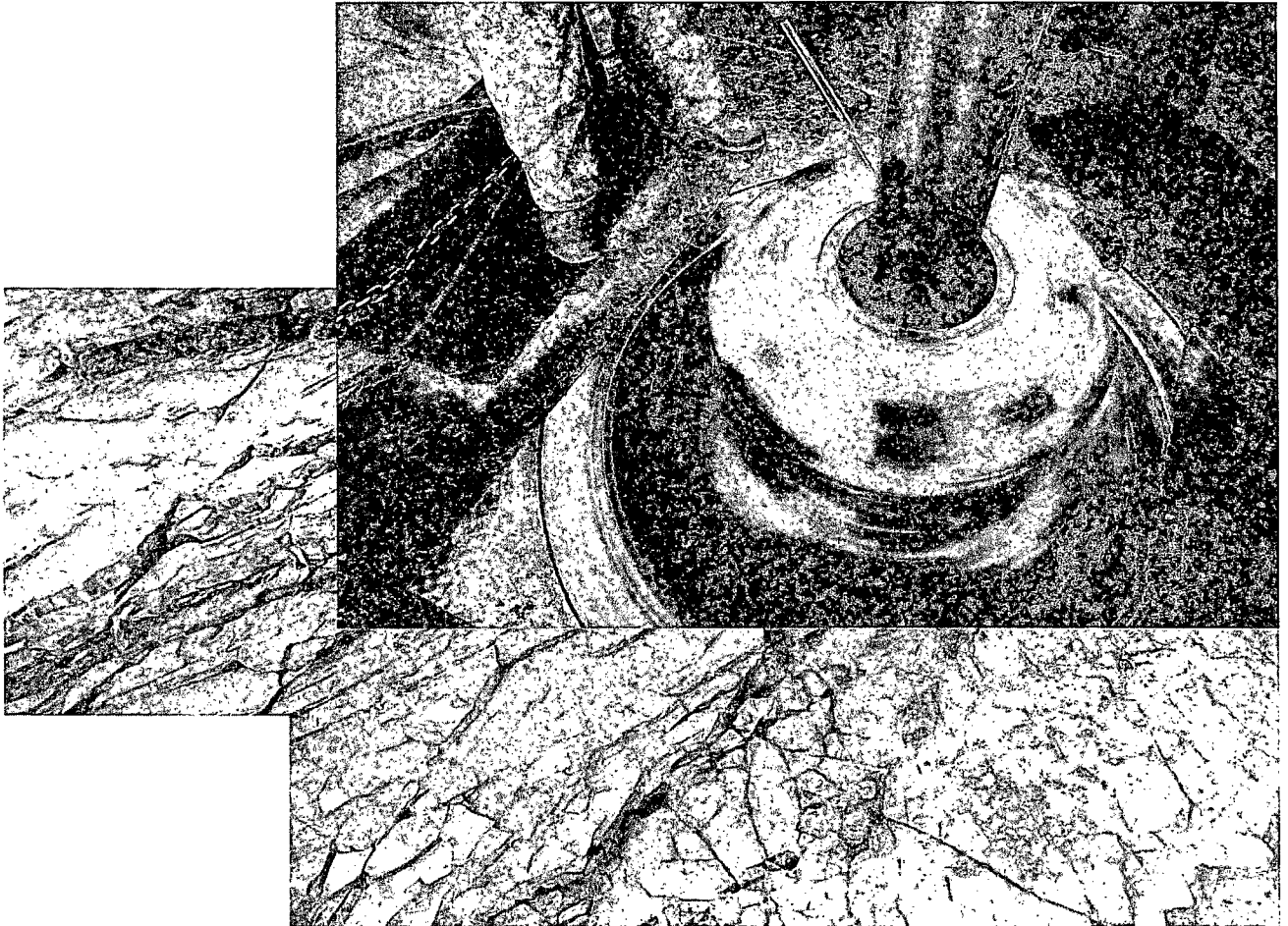
Robin Hodgson
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Houston, TX 77041
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Fax: +1 (832) 327-0148
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Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
August 2013

I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

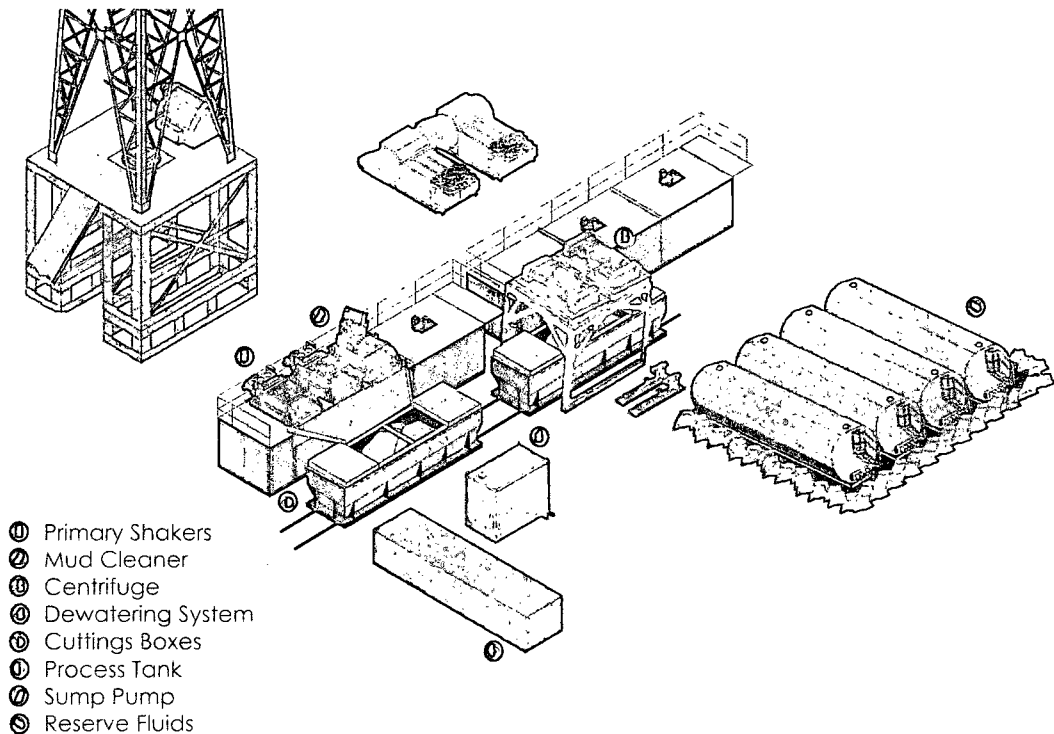
II. Operations and Maintenance Plan

Primary Shakers: The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

Mud Cleaner: The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



Closed Loop Schematic



Centrifuges: The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

Dewatering System: The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

Cuttings Boxes: Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

Process Tank: (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

Sump and Sump Pump: The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

Reserve Fluids (Tank Farm): A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

III. Closure Plan

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.

H&P Flex Rig Location Layout

2 Well Pad

