

HOBBS OCD
SEP 23 2013

OCD Hobbs

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014RECEIVED
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NM-112941
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.		7. If Unit or CA Agreement, Name and No.
3a. Address 333 W. SHERIDAN OKLAHOMA CITY, OK. 73102	3b. Phone No. (include area code) 405-552-4524	8. Lease Name and Well No. MEAN GREEN 22 FED 1H (40148)
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 150 FSL & 480 FEL Unit P At proposed prod. zone 330 FNL & 330 FEL Unit A		9. API Well No. 30-025-41434 UNDESIGNATED DELAWARE (98048)
14. Distance in miles and direction from nearest town or post office* 15.5 MILES SOUTHWEST OF JAL, NM		11. Sec., T. R. M. or Blk. and Survey or Area SECTION 22, T. 26 S., R. 34 E.
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease 1920	12. County or Parish LEA
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth MD: 13,697 TVD: 9140	13. State NM
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3215.8' GL	22. Approximate date work will start*	17. Spacing Unit dedicated to this well 160
23. Estimated duration 30 DAYS		20. BLM/BIA Bond No. on file NMB-000801 CO-1104

24. Attachments

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 Barry W. Hunt	Name (Printed/Typed) BARRY W. HUNT	Date 10/9/12
Title PERMIT AGENT FOR DEVON ENERGY PRODUCTION COMPANY, L.P.		
Approved by (Signature) /s/George MacDonell	Name (Printed/Typed)	Date
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

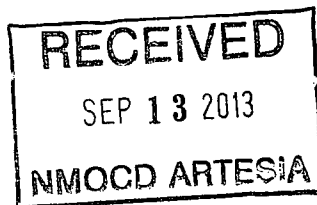
Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 18 U.S.C. Section 112, 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)

Carlsbad Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVALApproval Subject to General Requirements
& Special Stipulations Attached

SEP 30 2013

DEVON ENERGY PRODUCTION, L. P.
DRILLING PLAN

MEAN GREEN 22 FED 1H
SHL: 150 FSL & 480 FEL
BHL: 330 FNL & 330 FEL
Section 22-26S-34E
LEA County, NM

The elevation of the unprepared ground is 3215.8' feet above sea level.

The geologic name of the surface formation is Quaternary - Alluvium.

A rotary rig will be utilized to drill the well.

Proposed total depth is: MD: 13697'. TVD: 9140'.

Estimated tops of important geologic markers:

Quaternary – Alluvium	Surface*
Rustler	960'
Salado/Top of Salt	1100'
Castile	3460'
Base of Salt	5100'
Delaware	5321'
Bell Canyon Sand	5357'
Cherry Canyon Sand	6365'
Brushy Canyon Sand	7970'
TVD	9140' (145 degree F)

*Water anticipated at 180 feet.

Estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered:

Delaware	Oil (2341 psi)
Bell Canyon	Oil (2357 psi)
Cherry Canyon	Oil (2801 psi)
Brushy Canyon	Oil (3507 psi)
TVD	Oil BHP 4022 psi

Mean Green 22 Fed 1H – APD DRILLING PLAN

KKS 3-10-13

Revised 11-5-12: added DV Tool Depth, added BOP statement to detail when tested for surface casing

KKS 5-20-13 revised 9-5/8 casing point due to revised geo prog. Cement volumes, TOC on production string, and design factors revised accordingly. Removed DV-Tool

Casing Program

See COA

<u>Hole Size</u>	<u>Hole Interval</u>	<u>OD Csg</u>	<u>Casing Interval</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
17-1/2"	0 – 2,000	13-3/8"	0 – 2,000	54.5#	STC	J-55
12-1/4"	2,000 – 5,300	9-5/8"	0 – 5,300	40#	LTC	J-55
8-3/4"	5,300 – 8,300	5-1/2"	0 – 8,300	17#	LTC	HCP-110
8-3/4"	8,300 – 13,697	5-1/2"	9,087 – 13,697	17#	BTC	HCP-110

Note: only new casing will be utilized

MAXIMUM TVD 9,140'

Design Factors:

<u>Casing Size</u>	<u>Collapse Design Factor</u>	<u>Burst Design Factor</u>	<u>Tension Design Factor</u>
13-3/8", 54.5#, J-55, ST&C	1.21	2.92	8.34
9-5/8" 40# HCK-55 LTC	1.51	1.25	2.92
5-1/2" 17# HCP-110 LTC	1.75	2.49	1.91
5-1/2" 17# HCP-110 BTC	1.92	2.74	6.19

Mud Program:

See COA

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>Fluid Loss</u>	<u>Type System</u>
0 – 2,000	8.4 – 9.0	30 – 34	N/C	FW
2,000 – 5,300	9.8 – 10.0	28 – 32	N/C	Brine
5,300 – 13,697	8.6 – 9.0	28 – 32	N/C-12	FW

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 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 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 5,000 psi WP.

5/2/08

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.

Cementing Program (cement volumes based on Surface 100% excess, Intermediate on 50% excess and at least 25% excess on the Production.)

13-3/8" Surface . **Lead:** 400 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Poly-E-Flake + 4% bwoc Bentonite + 70.1% Fresh Water, 13.5 ppg

Yield: 1.75 cf/sk

TOC @ surface

500 ft Tail: 515 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Poly-E-Flake + 63.1% Fresh Water, 14.8 ppg

Yield: 1.35 cf/sk

9-5/8" Intermediate **Lead:** 1020 sacks (65:35) Class C Cement:Poz (Fly Ash): + 5% bwow Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 6% bwoc Bentonite + 70.9% Fresh Water, 12.5 ppg

Yield: 2.04 cf/sk

TOC @ surface

1000 ft. Tail: 430 sacks Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Water, 14.8 ppg

Yield: 1.33 cf/sk

5-1/2" Production

1st Stage

Lead: 975 sacks (65:35) Class H Cement:Poz (Fly Ash) + 6% bwoc Bentonite + 0.2% bwoc HR-601 + 74.1% Fresh Water, 12.5 ppg

Yield: 1.95 cf/sk

5000 ft. Tail: 1300 sacks (50:50) Class H Cement:Poz (Fly Ash) + 1 lb/sk Sodium Chloride + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.1% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water, 14.5 ppg

Yield: 1.22 cf/sk

TOC @ 4800 ft

TOC for All Strings:

Surface:	0
Intermediate:	0
Production:	4800 ft

ACTUAL CEMENT VOLUMES WILL BE ADJUSTED BASED ON FLUID CALIPER AND CALIPER LOG DATA.

6. 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:
 1. Total depth to intermediate casing Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
 2. Total Depth to Surface Compensated Neutron with Gamma Ray.
 3. No coring program is planned.
 4. Additional testing will be initiated subsequent to setting the 5 ½” production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

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 at all times.
- c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13.375” casing shoe until the 5.5” casing is cemented. Breathing equipment will be on location upon drilling the 13.375” shoe until total depth is reached.

8. Potential Hazards:

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. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP of 4,022 psi and estimated BHT 145°. No H₂S is anticipated to be encountered.

9. Anticipated Starting Date and Duration of Operations:

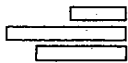
- a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as a rig becomes available following BLM approval. Move in operations and drilling is expected to take 32 days. If production casing is run, then an additional 30 days will be needed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



Weatherford[®]

Drilling Services

Proposal



devon

MEAN GREEN 22 FED #1H

LEA COUNTY, NM

WELL FILE: PLAN 1

JULY 11, 2012

Weatherford International, Ltd.

P.O. Box 61028

Midland, TX 79711 USA

+1.432.561.8892 Main

+1.432.561.8895 Fax

www.weatherford.com



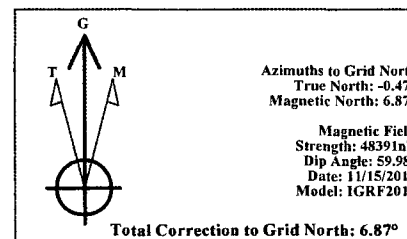
Mean Green 22 Fed #1H
Lea County, New Mexico

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	1.31	0.00	0.00	0.00	0.00	0.00	0.00	
2	8567.05	0.00	1.31	8567.05	0.00	0.00	0.00	0.00	0.00	
3	9469.76	90.27	1.31	9140.00	575.52	13.17	10.00	1.31	575.67	
4	13697.10	90.27	1.31	9120.00	4801.70	109.90	0.00	0.00	4802.96	PBHL

WELL DETAILS						
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
MG 22 Fed #1H	0.00	0.00	372887.70	814852.40	32°01'19.472N	103°27'02.889W

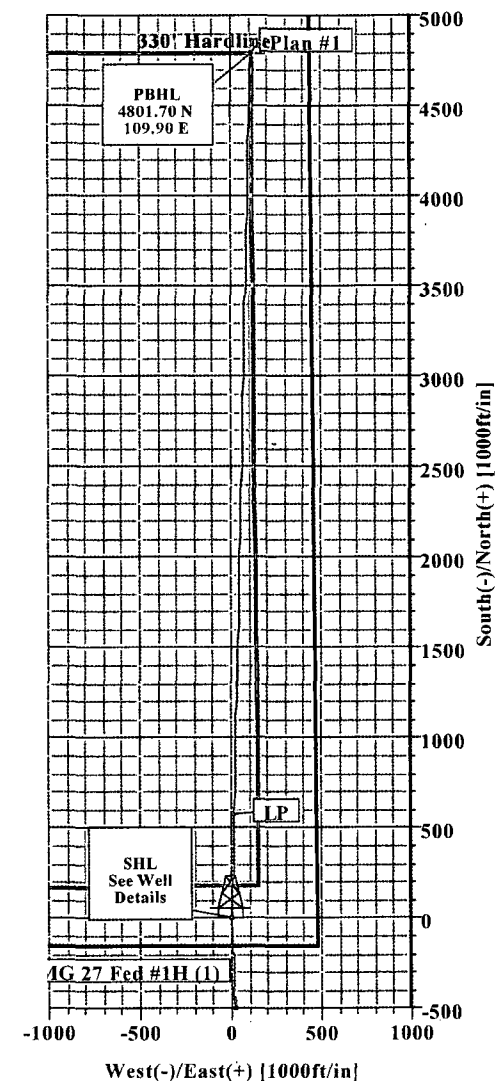
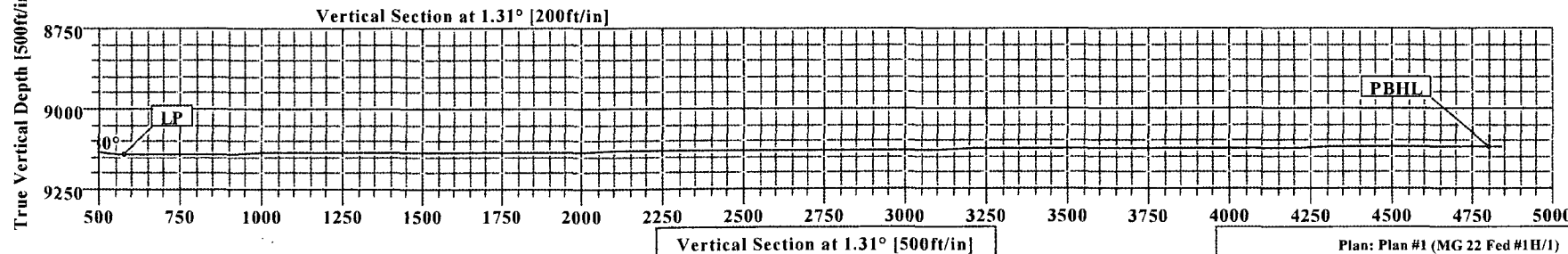
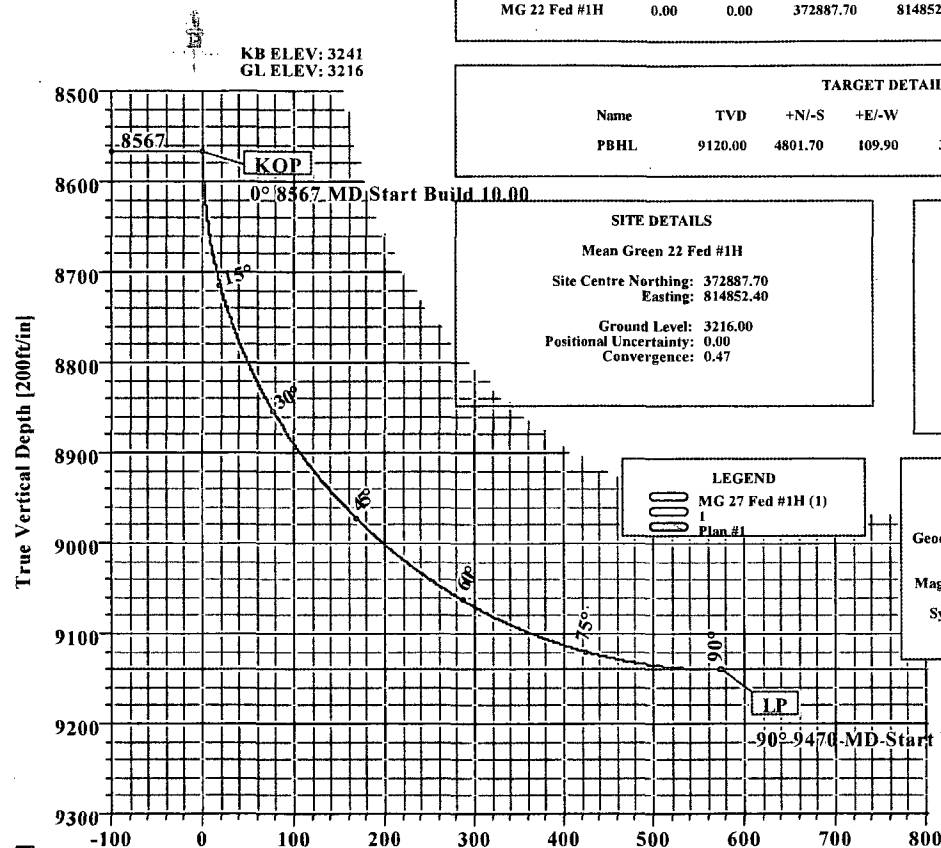
TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL	9120.00	4801.70	109.90	377689.40	814962.30	Point

SITE DETAILS	
Mean Green 22 Fed #1H	
Site Centre Northing:	372887.70
Easting:	814852.40
Ground Level:	3216.00
Positional Uncertainty:	0.00
Convergence:	0.47



FIELD DETAILS	
Lea County, New Mexico (NAD 83)	
Geodetic System:	US State Plane Coordinate System 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico, Eastern Zone
Magnetic Model:	IGRF2010
System Datum:	Mean Sea Level
Local North:	Grid North

LEGEND	
MG 22 Fed #1H (1)	
Plan #1	





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WFT Plan Report - X & Y's

**Weatherford**

Company: Devon Energy Date: 7/11/2012 Time: 11:40:23 Page: 1
Field: Lea County, New Mexico (NAD 83) Co-ordinate(NE) Reference: Well: MG 22 Fed #1H, Grid North
Site: Mean Green 22 Fed #1H Vertical (TVD) Reference: SITE 3241.0
Well: MG 22 Fed #1H Section (VS) Reference: Well (0.00N,0.00E,1.31Azi)
Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Plan: Plan #1 Date Composed: 7/11/2012
Principal: Yes Version: 1
Tied-to: From Surface

Field: Lea County, New Mexico (NAD 83)

Map System: US State Plane Coordinate System 1983 Map Zone: New Mexico, Eastern Zone
Geo Datum: GRS 1980 Coordinate System: Well Centre
Sys Datum: Mean Sea Level Geomagnetic Model: IGRF2010

Site: Mean Green 22 Fed #1H

Site Position: Northing: 372887.70 ft Latitude: 32 1 19.472 N
From: Map Easting: 814852.40 ft Longitude: 103 27 2.889 W
Position Uncertainty: 0.00 ft North Reference: Grid
Ground Level: 3216.00 ft Grid Convergence: 0.47 deg

Well: MG 22 Fed #1H Slot Name:
Well Position: +N/-S 0.00 ft Northing: 372887.70 ft Latitude: 32 1 19.472 N
+E/-W 0.00 ft Easting: 814852.40 ft Longitude: 103 27 2.889 W
Position Uncertainty: 0.00 ft

Wellpath: 1
Current Datum: SITE Height 3241.00 ft
Magnetic Data: 11/15/2012
Field Strength: 48391 nT
Vertical Section: Depth From (TVD) +N/-S Direction
ft ft deg
0.00 0.00 0.00 1.31

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	1.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8567.05	0.00	1.31	8567.05	0.00	0.00	0.00	0.00	0.00	0.00	
9469.76	90.27	1.31	9140.00	575.52	13.17	10.00	10.00	0.00	1.31	
13697.10	90.27	1.31	9120.00	4801.70	109.90	0.00	0.00	0.00	0.00	PBHL

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
8500.00	0.00	1.31	8500.00	0.00	0.00	0.00	0.00	372887.70	814852.40	
8567.05	0.00	1.31	8567.05	0.00	0.00	0.00	0.00	372887.70	814852.40	KOP
8600.00	3.30	1.31	8599.98	0.95	0.02	0.95	10.00	372888.65	814852.42	
8650.00	8.30	1.31	8649.71	5.99	0.14	5.99	10.00	372893.69	814852.54	
8700.00	13.30	1.31	8698.81	15.35	0.35	15.36	10.00	372903.05	814852.75	
8750.00	18.30	1.31	8746.91	28.95	0.66	28.96	10.00	372916.65	814853.06	
8800.00	23.30	1.31	8793.63	46.69	1.07	46.71	10.00	372934.39	814853.47	
8850.00	28.30	1.31	8838.64	68.44	1.57	68.46	10.00	372956.14	814853.97	
8900.00	33.30	1.31	8881.58	94.02	2.15	94.05	10.00	372981.72	814854.55	
8950.00	38.30	1.31	8922.12	123.25	2.82	123.28	10.00	373010.95	814855.22	
9000.00	43.30	1.31	8959.96	155.90	3.57	155.94	10.00	373043.60	814855.97	
9050.00	48.30	1.31	8994.81	191.72	4.39	191.77	10.00	373079.42	814856.79	
9100.00	53.30	1.31	9026.40	230.44	5.27	230.50	10.00	373118.14	814857.67	
9150.00	58.30	1.31	9054.50	271.77	6.22	271.84	10.00	373159.47	814858.62	
9200.00	63.30	1.31	9078.89	315.39	7.22	315.47	10.00	373203.09	814859.62	
9250.00	68.30	1.31	9099.39	360.97	8.26	361.06	10.00	373248.67	814860.66	
9300.00	73.30	1.31	9115.83	408.16	9.34	408.26	10.00	373295.86	814861.74	



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WFT Plan Report - X & Y's

**Weatherford**

Company: Devon Energy Date: 7/11/2012 Time: 11:40:23 Page: 2
Field: Lea County, New Mexico (NAD 83) Co-ordinate(NE) Reference: Well: MG 22 Fed #1H, Grid North
Site: Mean Green 22 Fed #1H Vertical (TVD) Reference: SITE 3241.0
Well: MG 22 Fed #1H Section (VS) Reference: Well (0.00N,0.00E,1.31Azi)
Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
9350.00	78.30	1.31	9128.09	456.60	10.45	456.72	10.00	373344.30	814862.85	
9400.00	83.30	1.31	9136.09	505.93	11.58	506.06	10.00	373393.63	814863.98	
9450.00	88.30	1.31	9139.75	555.76	12.72	555.91	10.00	373443.46	814865.12	
9469.76	90.27	1.31	9140.00	575.52	13.17	575.67	10.00	373463.22	814865.57	LP
9500.00	90.27	1.31	9139.86	605.75	13.86	605.91	0.00	373493.45	814866.26	
9600.00	90.27	1.31	9139.39	705.72	16.15	705.91	0.00	373593.42	814868.55	
9700.00	90.27	1.31	9138.91	805.69	18.44	805.91	0.00	373693.39	814870.84	
9800.00	90.27	1.31	9138.44	905.67	20.73	905.90	0.00	373793.37	814873.13	
9900.00	90.27	1.31	9137.97	1005.64	23.02	1005.90	0.00	373893.34	814875.42	
10000.00	90.27	1.31	9137.49	1105.61	25.30	1105.90	0.00	373993.31	814877.70	
10100.00	90.27	1.31	9137.02	1205.59	27.59	1205.90	0.00	374093.29	814879.99	
10200.00	90.27	1.31	9136.55	1305.56	29.88	1305.90	0.00	374193.26	814882.28	
10300.00	90.27	1.31	9136.07	1405.53	32.17	1405.90	0.00	374293.23	814884.57	
10400.00	90.27	1.31	9135.60	1505.50	34.46	1505.90	0.00	374393.20	814886.86	
10500.00	90.27	1.31	9135.13	1605.48	36.75	1605.90	0.00	374493.18	814889.15	
10600.00	90.27	1.31	9134.65	1705.45	39.03	1705.90	0.00	374593.15	814891.43	
10700.00	90.27	1.31	9134.18	1805.42	41.32	1805.89	0.00	374693.12	814893.72	
10800.00	90.27	1.31	9133.71	1905.39	43.61	1905.89	0.00	374793.09	814896.01	
10900.00	90.27	1.31	9133.23	2005.37	45.90	2005.89	0.00	374893.07	814898.30	
11000.00	90.27	1.31	9132.76	2105.34	48.19	2105.89	0.00	374993.04	814900.59	
11100.00	90.27	1.31	9132.29	2205.31	50.47	2205.89	0.00	375093.01	814902.87	
11200.00	90.27	1.31	9131.81	2305.28	52.76	2305.89	0.00	375192.98	814905.16	
11300.00	90.27	1.31	9131.34	2405.26	55.05	2405.89	0.00	375292.96	814907.45	
11400.00	90.27	1.31	9130.87	2505.23	57.34	2505.89	0.00	375392.93	814909.74	
11500.00	90.27	1.31	9130.40	2605.20	59.63	2605.89	0.00	375492.90	814912.03	
11600.00	90.27	1.31	9129.92	2705.18	61.92	2705.88	0.00	375592.88	814914.32	
11700.00	90.27	1.31	9129.45	2805.15	64.20	2805.88	0.00	375692.85	814916.60	
11800.00	90.27	1.31	9128.98	2905.12	66.49	2905.88	0.00	375792.82	814918.89	
11900.00	90.27	1.31	9128.50	3005.09	68.78	3005.88	0.00	375892.79	814921.18	
12000.00	90.27	1.31	9128.03	3105.07	71.07	3105.88	0.00	375992.77	814923.47	
12100.00	90.27	1.31	9127.56	3205.04	73.36	3205.88	0.00	376092.74	814925.76	
12200.00	90.27	1.31	9127.08	3305.01	75.64	3305.88	0.00	376192.71	814928.04	
12300.00	90.27	1.31	9126.61	3404.98	77.93	3405.88	0.00	376292.68	814930.33	
12400.00	90.27	1.31	9126.14	3504.96	80.22	3505.87	0.00	376392.66	814932.62	
12500.00	90.27	1.31	9125.66	3604.93	82.51	3605.87	0.00	376492.63	814934.91	
12600.00	90.27	1.31	9125.19	3704.90	84.80	3705.87	0.00	376592.60	814937.20	
12700.00	90.27	1.31	9124.72	3804.88	87.08	3805.87	0.00	376692.58	814939.48	
12800.00	90.27	1.31	9124.24	3904.85	89.37	3905.87	0.00	376792.55	814941.77	
12900.00	90.27	1.31	9123.77	4004.82	91.66	4005.87	0.00	376892.52	814944.06	
13000.00	90.27	1.31	9123.30	4104.79	93.95	4105.87	0.00	376992.49	814946.35	
13100.00	90.27	1.31	9122.83	4204.77	96.24	4205.87	0.00	377092.47	814948.64	
13200.00	90.27	1.31	9122.35	4304.74	98.53	4305.87	0.00	377192.44	814950.93	
13300.00	90.27	1.31	9121.88	4404.71	100.81	4405.86	0.00	377292.41	814953.21	
13400.00	90.27	1.31	9121.41	4504.68	103.10	4505.86	0.00	377392.38	814955.50	
13500.00	90.27	1.31	9120.93	4604.66	105.39	4605.86	0.00	377492.36	814957.79	
13600.00	90.27	1.31	9120.46	4704.63	107.68	4705.86	0.00	377592.33	814960.08	
13697.10	90.27	1.31	9120.00	4801.70	109.90	4802.96	0.00	377689.40	814962.30	PBHL



Weatherford

WFT Plan Report - X & Y's



Weatherford

Company: Devon Energy Date: 7/11/2012 Time: 11:40:23 Page: 3
Field: Lea County, New Mexico (NAD 83) Co-ordinate(NE) Reference: Well: MG 22 Fed #1H, Grid North
Site: Mean Green 22 Fed #1H Vertical (TVD) Reference: SITE 3241.0
Well: MG 22 Fed #1H Section (VS) Reference: Well (0.00N,0.00E,1.31Azi)
Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Targets

Name	Description Dip. Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude --->			<--- Longitude --->		
							Deg	Min	Sec	Deg	Min	Sec
PBHL		9120.00	4801.70	109.90	377689.40	814962.30	32	2	6.977 N	103	27	1.156 W

Casing Points

MD	TVD	Diameter	Hole Size	Name

Annotation

MD ft	TVD ft	
8567.05	8567.05	KOP
9469.76	9140.00	LP
13697.09	9120.00	PBHL

Formations

MD	TVD	Formations	Lithology	Dip Angle	Dip Direction



Weatherford Anticollision Report



Weatherford

Company: Devon Energy Date: 7/11/2012 Time: 11:36:14 Page: 1
Field: Lea County, New Mexico (NAD 83)
Reference Site: Mean Green 22 Fed #1H Co-ordinate(NE) Reference: Well: MG 22 Fed #1H, Grid North
Reference Well: MG 22 Fed #1H Vertical (TVD) Reference: SITE 3241.0
Reference Wellpath: Db: Sybase

NO GLOBAL SCAN: Using user defined selection & scan criteria
Interpolation Method MD Interval: 100.00 ft
Depth Range: 0.00 to 13697.10 ft
Maximum Radius 40000.00 ft

Reference: Plan: Plan #1
Error Model: ISCWSA Ellipse
Scan Method: Closest Approach 3D
Error Surface: Ellipse

Plan: Plan #1

Date Composed: 7/11/2012

Principal: Yes

Version: 1

Tied-to:

From Surface

Summary

Site	Offset Wellpath Well	Wellpath	Reference MD ft	Offset MD ft	Ctr-Ctr Edge Distance ft	Separation Distance ft	Factor	Warning
Mean Green 27 Fed #1H	MG 27 Fed #1H	1 V0 Plan: Plan #1 V1	8500.00	8500.00	49.90	11.97	1.32	Level 3

Site: Mean Green 27 Fed #1H

Well: MG 27 Fed #1H

Wellpath: 1 V0 Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference MD ft	TVD ft	Offset MD ft	TVD ft	Semi-Major Axis Ref ft	Offset ft	TFO-HS deg	Offset Location North ft	East ft	Ctr-Ctr Edge Distance ft	Separation Distance ft	Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	179.54	-49.90	0.40	49.90			No Data
100.00	100.00	100.00	100.00	0.08	0.08	179.54	-49.90	0.40	49.90	49.73	296.02	
200.00	200.00	200.00	200.00	0.31	0.31	179.54	-49.90	0.40	49.90	49.28	80.73	
300.00	300.00	300.00	300.00	0.53	0.53	179.54	-49.90	0.40	49.90	48.83	46.74	
400.00	400.00	400.00	400.00	0.76	0.76	179.54	-49.90	0.40	49.90	48.38	32.89	
500.00	500.00	500.00	500.00	0.98	0.98	179.54	-49.90	0.40	49.90	47.93	25.37	
600.00	600.00	600.00	600.00	1.21	1.21	179.54	-49.90	0.40	49.90	47.49	20.65	
700.00	700.00	700.00	700.00	1.43	1.43	179.54	-49.90	0.40	49.90	47.04	17.41	
800.00	800.00	800.00	800.00	1.66	1.66	179.54	-49.90	0.40	49.90	46.59	15.05	
900.00	900.00	900.00	900.00	1.88	1.88	179.54	-49.90	0.40	49.90	46.14	13.25	
1000.00	1000.00	1000.00	1000.00	2.11	2.11	179.54	-49.90	0.40	49.90	45.69	11.84	
1100.00	1100.00	1100.00	1100.00	2.33	2.33	179.54	-49.90	0.40	49.90	45.24	10.70	
1200.00	1200.00	1200.00	1200.00	2.56	2.56	179.54	-49.90	0.40	49.90	44.79	9.76	
1300.00	1300.00	1300.00	1300.00	2.78	2.78	179.54	-49.90	0.40	49.90	44.34	8.97	
1400.00	1400.00	1400.00	1400.00	3.01	3.01	179.54	-49.90	0.40	49.90	43.89	8.30	
1500.00	1500.00	1500.00	1500.00	3.23	3.23	179.54	-49.90	0.40	49.90	43.44	7.72	
1600.00	1600.00	1600.00	1600.00	3.46	3.46	179.54	-49.90	0.40	49.90	42.99	7.22	
1700.00	1700.00	1700.00	1700.00	3.68	3.68	179.54	-49.90	0.40	49.90	42.54	6.78	
1800.00	1800.00	1800.00	1800.00	3.91	3.91	179.54	-49.90	0.40	49.90	42.09	6.39	
1900.00	1900.00	1900.00	1900.00	4.13	4.13	179.54	-49.90	0.40	49.90	41.64	6.04	
2000.00	2000.00	2000.00	2000.00	4.35	4.35	179.54	-49.90	0.40	49.90	41.19	5.73	
2100.00	2100.00	2100.00	2100.00	4.58	4.58	179.54	-49.90	0.40	49.90	40.74	5.45	
2200.00	2200.00	2200.00	2200.00	4.80	4.80	179.54	-49.90	0.40	49.90	40.29	5.19	
2300.00	2300.00	2300.00	2300.00	5.03	5.03	179.54	-49.90	0.40	49.90	39.84	4.96	
2400.00	2400.00	2400.00	2400.00	5.25	5.25	179.54	-49.90	0.40	49.90	39.39	4.75	
2500.00	2500.00	2500.00	2500.00	5.48	5.48	179.54	-49.90	0.40	49.90	38.94	4.55	
2600.00	2600.00	2600.00	2600.00	5.70	5.70	179.54	-49.90	0.40	49.90	38.49	4.37	
2700.00	2700.00	2700.00	2700.00	5.93	5.93	179.54	-49.90	0.40	49.90	38.05	4.21	
2800.00	2800.00	2800.00	2800.00	6.15	6.15	179.54	-49.90	0.40	49.90	37.60	4.06	
2900.00	2900.00	2900.00	2900.00	6.38	6.38	179.54	-49.90	0.40	49.90	37.15	3.91	
3000.00	3000.00	3000.00	3000.00	6.60	6.60	179.54	-49.90	0.40	49.90	36.70	3.78	
3100.00	3100.00	3100.00	3100.00	6.83	6.83	179.54	-49.90	0.40	49.90	36.25	3.65	
3200.00	3200.00	3200.00	3200.00	7.05	7.05	179.54	-49.90	0.40	49.90	35.80	3.54	
3300.00	3300.00	3300.00	3300.00	7.28	7.28	179.54	-49.90	0.40	49.90	35.35	3.43	
3400.00	3400.00	3400.00	3400.00	7.50	7.50	179.54	-49.90	0.40	49.90	34.90	3.33	
3500.00	3500.00	3500.00	3500.00	7.73	7.73	179.54	-49.90	0.40	49.90	34.45	3.23	



Weatherford Anticollision Report

**Weatherford**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Reference Site: Mean Green 22 Fed #1H
Reference Well: MG 22 Fed #1H
Reference Wellpath:

Date: 7/11/2012 Time: 11:36:14 Page: 2
Co-ordinate(NE) Reference: Well: MG 22 Fed #1H, Grid North
Vertical (TVD) Reference: SITE 3241.0

Db: Sybase

Site: Mean Green 27 Fed #1H
Well: MG 27 Fed #1H
Wellpath: 1 V0 Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference		Offset		Semi-Major Axis			Offset Location		Ctr-Ctr Edge		Separation		Warning
MD	TVD	MD	TVD	Ref	Offset	TFO-HS	North	East	Distance	Distance	Factor		
ft	ft	ft	ft	ft	ft	deg	ft	ft	ft	ft			
3600.00	3600.00	3600.00	3600.00	7.95	7.95	179.54	-49.90	0.40	49.90	34.00	3.14		
3700.00	3700.00	3700.00	3700.00	8.18	8.18	179.54	-49.90	0.40	49.90	33.55	3.05		
3800.00	3800.00	3800.00	3800.00	8.40	8.40	179.54	-49.90	0.40	49.90	33.10	2.97		
3900.00	3900.00	3900.00	3900.00	8.63	8.63	179.54	-49.90	0.40	49.90	32.65	2.89		
4000.00	4000.00	4000.00	4000.00	8.85	8.85	179.54	-49.90	0.40	49.90	32.20	2.82		
4100.00	4100.00	4100.00	4100.00	9.07	9.07	179.54	-49.90	0.40	49.90	31.75	2.75		
4200.00	4200.00	4200.00	4200.00	9.30	9.30	179.54	-49.90	0.40	49.90	31.30	2.68		
4300.00	4300.00	4300.00	4300.00	9.52	9.52	179.54	-49.90	0.40	49.90	30.85	2.62		
4400.00	4400.00	4400.00	4400.00	9.75	9.75	179.54	-49.90	0.40	49.90	30.40	2.56		
4500.00	4500.00	4500.00	4500.00	9.97	9.97	179.54	-49.90	0.40	49.90	29.95	2.50		
4600.00	4600.00	4600.00	4600.00	10.20	10.20	179.54	-49.90	0.40	49.90	29.50	2.45		
4700.00	4700.00	4700.00	4700.00	10.42	10.42	179.54	-49.90	0.40	49.90	29.05	2.39		
4800.00	4800.00	4800.00	4800.00	10.65	10.65	179.54	-49.90	0.40	49.90	28.61	2.34		
4900.00	4900.00	4900.00	4900.00	10.87	10.87	179.54	-49.90	0.40	49.90	28.16	2.29		
5000.00	5000.00	5000.00	5000.00	11.10	11.10	179.54	-49.90	0.40	49.90	27.71	2.25		
5100.00	5100.00	5100.00	5100.00	11.32	11.32	179.54	-49.90	0.40	49.90	27.26	2.20		
5200.00	5200.00	5200.00	5200.00	11.55	11.55	179.54	-49.90	0.40	49.90	26.81	2.16		
5300.00	5300.00	5300.00	5300.00	11.77	11.77	179.54	-49.90	0.40	49.90	26.36	2.12		
5400.00	5400.00	5400.00	5400.00	12.00	12.00	179.54	-49.90	0.40	49.90	25.91	2.08		
5500.00	5500.00	5500.00	5500.00	12.22	12.22	179.54	-49.90	0.40	49.90	25.46	2.04		
5600.00	5600.00	5600.00	5600.00	12.45	12.45	179.54	-49.90	0.40	49.90	25.01	2.00		
5700.00	5700.00	5700.00	5700.00	12.67	12.67	179.54	-49.90	0.40	49.90	24.56	1.97		
5800.00	5800.00	5800.00	5800.00	12.90	12.90	179.54	-49.90	0.40	49.90	24.11	1.93		
5900.00	5900.00	5900.00	5900.00	13.12	13.12	179.54	-49.90	0.40	49.90	23.66	1.90		
6000.00	6000.00	6000.00	6000.00	13.35	13.35	179.54	-49.90	0.40	49.90	23.21	1.87		
6100.00	6100.00	6100.00	6100.00	13.57	13.57	179.54	-49.90	0.40	49.90	22.76	1.84		
6200.00	6200.00	6200.00	6200.00	13.80	13.80	179.54	-49.90	0.40	49.90	22.31	1.81		
6300.00	6300.00	6300.00	6300.00	14.02	14.02	179.54	-49.90	0.40	49.90	21.86	1.78		
6400.00	6400.00	6400.00	6400.00	14.24	14.24	179.54	-49.90	0.40	49.90	21.41	1.75		
6500.00	6500.00	6500.00	6500.00	14.47	14.47	179.54	-49.90	0.40	49.90	20.96	1.72		
6600.00	6600.00	6600.00	6600.00	14.69	14.69	179.54	-49.90	0.40	49.90	20.51	1.70		
6700.00	6700.00	6700.00	6700.00	14.92	14.92	179.54	-49.90	0.40	49.90	20.06	1.67		
6800.00	6800.00	6800.00	6800.00	15.14	15.14	179.54	-49.90	0.40	49.90	19.61	1.65		
6900.00	6900.00	6900.00	6900.00	15.37	15.37	179.54	-49.90	0.40	49.90	19.16	1.62		
7000.00	7000.00	7000.00	7000.00	15.59	15.59	179.54	-49.90	0.40	49.90	18.72	1.60		
7100.00	7100.00	7100.00	7100.00	15.82	15.82	179.54	-49.90	0.40	49.90	18.27	1.58		
7200.00	7200.00	7200.00	7200.00	16.04	16.04	179.54	-49.90	0.40	49.90	17.82	1.56		
7300.00	7300.00	7300.00	7300.00	16.27	16.27	179.54	-49.90	0.40	49.90	17.37	1.53		
7400.00	7400.00	7400.00	7400.00	16.49	16.49	179.54	-49.90	0.40	49.90	16.92	1.51		
7500.00	7500.00	7500.00	7500.00	16.72	16.72	179.54	-49.90	0.40	49.90	16.47	1.49	Level 3	
7600.00	7600.00	7600.00	7600.00	16.94	16.94	179.54	-49.90	0.40	49.90	16.02	1.47	Level 3	
7700.00	7700.00	7700.00	7700.00	17.17	17.17	179.54	-49.90	0.40	49.90	15.57	1.45	Level 3	
7800.00	7800.00	7800.00	7800.00	17.39	17.39	179.54	-49.90	0.40	49.90	15.12	1.43	Level 3	
7900.00	7900.00	7900.00	7900.00	17.62	17.62	179.54	-49.90	0.40	49.90	14.67	1.42	Level 3	
8000.00	8000.00	8000.00	8000.00	17.84	17.84	179.54	-49.90	0.40	49.90	14.22	1.40	Level 3	
8100.00	8100.00	8100.00	8100.00	18.07	18.07	179.54	-49.90	0.40	49.90	13.77	1.38	Level 3	
8200.00	8200.00	8200.00	8200.00	18.29	18.29	179.54	-49.90	0.40	49.90	13.32	1.36	Level 3	
8300.00	8300.00	8300.00	8300.00	18.52	18.52	179.54	-49.90	0.40	49.90	12.87	1.35	Level 3	
8400.00	8400.00	8400.00	8400.00	18.74	18.74	179.54	-49.90	0.40	49.90	12.42	1.33	Level 3	
8500.00	8500.00	8500.00	8500.00	18.96	18.96	179.54	-49.90	0.40	49.90	11.97	1.32	Level 3	
8600.00	8599.98	8597.27	8597.26	19.19	19.18	178.23	-50.70	0.43	51.72	13.39	1.35	Level 3	



Weatherford Anticollision Report

**Weatherford**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Reference Site: Mean Green 22 Fed #1H
Reference Well: MG 22 Fed #1H
Reference Wellpath:

Date: 7/11/2012

Time: 11:36:14

Page: 3

Co-ordinate(NE) Reference: Well: MG 22 Fed #1H, Grid North
Vertical (TVD) Reference: SITE 3241.0

Db: Sybase

Site: Mean Green 27 Fed #1H
Well: MG 27 Fed #1H
Wellpath: 1 V0 Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference MD	TVD	Offset		Semi-Major Axis			Offset Location		Ctr-Ctr Edge		Separation	Warning
		MD	TVD	Ref	Offset	TFO-HS	North	East	Distance	Distance	Factor	
ft	ft	ft	ft	ft	ft	deg	ft	ft	ft	ft		
8700.00	8698.81	8683.71	8682.90	19.41	19.38	178.19	-61.73	0.85	78.71	40.55	2.06	
8800.00	8793.63	8754.04	8750.74	19.62	19.55	178.06	-80.12	1.54	133.88	96.48	3.58	
8900.00	8881.58	8803.99	8797.29	19.85	19.68	177.76	-98.17	2.23	209.86	173.59	5.79	
9000.00	8959.96	8834.85	8825.20	20.12	19.76	177.04	-111.31	2.73	299.27	264.34	8.57	
9100.00	9026.40	8850.00	8838.64	20.46	19.80	174.38	-118.31	2.99	396.10	362.51	11.79	
9200.00	9078.89	8850.00	8838.64	20.90	19.80	16.11	-118.31	2.99	495.82	462.91	15.07	
9300.00	9115.83	8850.00	8838.64	21.45	19.80	2.86	-118.31	2.99	595.02	563.77	19.05	
9400.00	9136.09	8834.75	8825.11	22.12	19.76	1.27	-111.27	2.72	691.17	660.46	22.50	
9500.00	9139.86	8817.18	8809.31	22.90	19.71	0.82	-103.60	2.43	782.67	751.85	25.39	
9600.00	9139.39	8800.00	8793.63	23.78	19.67	0.72	-96.58	2.17	873.74	842.56	28.02	
9700.00	9138.91	8785.39	8780.14	24.76	19.63	0.64	-90.97	1.96	965.92	934.39	30.63	
9800.00	9138.44	8772.19	8767.83	25.83	19.60	0.57	-86.21	1.78	1059.02	1027.11	33.18	
9900.00	9137.97	8750.00	8746.91	26.99	19.54	0.48	-78.84	1.50	1153.04	1120.66	35.61	
10000.00	9137.49	8750.00	8746.91	28.21	19.54	0.48	-78.84	1.50	1247.42	1214.68	38.10	
10100.00	9137.02	8750.00	8746.91	29.50	19.54	0.48	-78.84	1.50	1342.62	1309.48	40.52	
10200.00	9136.55	8731.74	8729.48	30.84	19.50	0.41	-73.39	1.29	1438.06	1404.43	42.76	
10300.00	9136.07	8723.91	8721.96	32.22	19.48	0.39	-71.23	1.21	1534.03	1499.93	44.98	
10400.00	9135.60	8716.77	8715.07	33.65	19.46	0.36	-69.34	1.14	1630.36	1595.76	47.12	
10500.00	9135.13	8700.00	8698.81	35.11	19.42	0.32	-65.25	0.98	1727.13	1691.97	49.13	
10600.00	9134.65	8700.00	8698.81	36.60	19.42	0.32	-65.25	0.98	1823.94	1788.29	51.15	
10700.00	9134.18	8700.00	8698.81	38.13	19.42	0.32	-65.25	0.98	1921.09	1884.91	53.10	
10800.00	9133.71	8700.00	8698.81	39.67	19.42	0.32	-65.25	0.98	2018.51	1981.79	54.98	
10900.00	9133.23	8700.00	8698.81	41.24	19.42	0.32	-65.25	0.98	2116.17	2078.91	56.79	
11000.00	9132.76	8700.00	8698.81	42.83	19.42	0.32	-65.25	0.98	2214.04	2176.22	58.53	
11100.00	9132.29	8680.20	8679.47	44.44	19.37	0.27	-61.03	0.82	2311.67	2273.23	60.14	
11200.00	9131.81	8676.35	8675.68	46.06	19.37	0.27	-60.29	0.79	2409.71	2370.67	61.74	
11300.00	9131.34	8672.73	8672.14	47.70	19.36	0.26	-59.61	0.77	2507.87	2468.24	63.28	
11400.00	9130.87	8669.35	8668.80	49.35	19.35	0.25	-59.00	0.74	2606.15	2565.90	64.76	
11500.00	9130.40	8650.00	8649.71	51.01	19.30	0.22	-55.89	0.63	2704.80	2663.91	66.14	
11600.00	9129.92	8650.00	8649.71	52.68	19.30	0.22	-55.89	0.63	2803.19	2761.67	67.53	
11700.00	9129.45	8650.00	8649.71	54.36	19.30	0.22	-55.89	0.63	2901.68	2859.54	68.86	
11800.00	9128.98	8650.00	8649.71	56.05	19.30	0.22	-55.89	0.63	3000.27	2957.50	70.15	
11900.00	9128.50	8650.00	8649.71	57.74	19.30	0.22	-55.89	0.63	3098.95	3055.55	71.40	
12000.00	9128.03	8650.00	8649.71	59.45	19.30	0.22	-55.89	0.63	3197.72	3153.67	72.60	
12100.00	9127.56	8650.00	8649.71	61.16	19.30	0.22	-55.89	0.63	3296.56	3251.86	73.76	
12200.00	9127.08	8650.00	8649.71	62.87	19.30	0.22	-55.89	0.63	3395.46	3350.12	74.88	
12300.00	9126.61	8650.00	8649.71	64.59	19.30	0.22	-55.89	0.63	3494.43	3448.43	75.97	
12400.00	9126.14	8650.00	8649.71	66.32	19.30	0.22	-55.89	0.63	3593.46	3546.80	77.01	
12500.00	9125.66	8650.00	8649.71	68.05	19.30	0.22	-55.89	0.63	3692.54	3645.22	78.03	
12600.00	9125.19	8650.00	8649.71	69.79	19.30	0.22	-55.89	0.63	3791.67	3743.68	79.01	
12700.00	9124.72	8650.00	8649.71	71.53	19.30	0.22	-55.89	0.63	3890.84	3842.18	79.96	
12800.00	9124.24	8650.00	8649.71	73.27	19.30	0.22	-55.89	0.63	3990.05	3940.72	80.88	
12900.00	9123.77	8650.00	8649.71	75.02	19.30	0.22	-55.89	0.63	4089.30	4039.29	81.77	
13000.00	9123.30	8650.00	8649.71	76.77	19.30	0.22	-55.89	0.63	4188.59	4137.90	82.64	
13100.00	9122.83	8650.00	8649.71	78.52	19.30	0.22	-55.89	0.63	4287.91	4236.54	83.47	
13200.00	9122.35	8650.00	8649.71	80.28	19.30	0.22	-55.89	0.63	4387.26	4335.21	84.29	
13300.00	9121.88	8650.00	8649.71	82.04	19.30	0.22	-55.89	0.63	4486.64	4433.91	85.08	
13400.00	9121.41	8628.83	8628.71	83.80	19.26	0.19	-53.23	0.53	4585.61	4532.19	85.83	
13500.00	9120.93	8627.61	8627.50	85.56	19.25	0.19	-53.10	0.52	4684.99	4630.88	86.58	
13600.00	9120.46	8626.43	8626.32	87.33	19.25	0.19	-52.97	0.52	4784.39	4729.59	87.30	
13697.10	9120.00	8625.33	8625.23	89.04	19.25	0.19	-52.86	0.51	4880.93	4825.46	87.98	

**Weatherford®****Weatherford Drilling Services**

GeoDec v5.03

Report Date: July 11, 2012
Job Number: _____
Customer: Devon Energy
Well Name: Mean Green 22 Fed #1H
API Number: _____
Rig Name: _____
Location: Lea County, NM
Block: _____
Engineer: RWJ

US State Plane 1983	Geodetic Latitude / Longitude
System: New Mexico Eastern Zone	System: Latitude / Longitude
Projection: Transverse Mercator/Gauss Kruger	Projection: Geodetic Latitude and Longitude
Datum: North American Datum 1983	Datum: North American Datum 1983
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
North/South 372887.700 USFT	Latitude 32.0220776 DEG
East/West 814852.400 USFT	Longitude -103.4507971 DEG
Grid Convergence: .47°	
Total Correction: +6.87°	

Geodetic Location WGS84	Elevation =	0.0 Meters
Latitude =	32.02208° N	32° 1 min 19.480 sec
Longitude =	103.45080° W	103° 27 min 2.870 sec

Magnetic Declination =	7.34°	[True North Offset]
Local Gravity =	.9988 g	Checksum = 6932
Local Field Strength =	48387 nT	Magnetic Vector X = 24006 nT
Magnetic Dip =	59.98°	Magnetic Vector Y = 3093 nT
Magnetic Model =	IGRF-2010g11	Magnetic Vector Z = 41898 nT
Spud Date =	Nov 15, 2012	Magnetic Vector H = 24205 nT

Signed: _____

Date: _____

Attachment to Exhibit #1
NOTES REGARDING BLOWOUT PREVENTERS
Devon Energy Production Company, LP

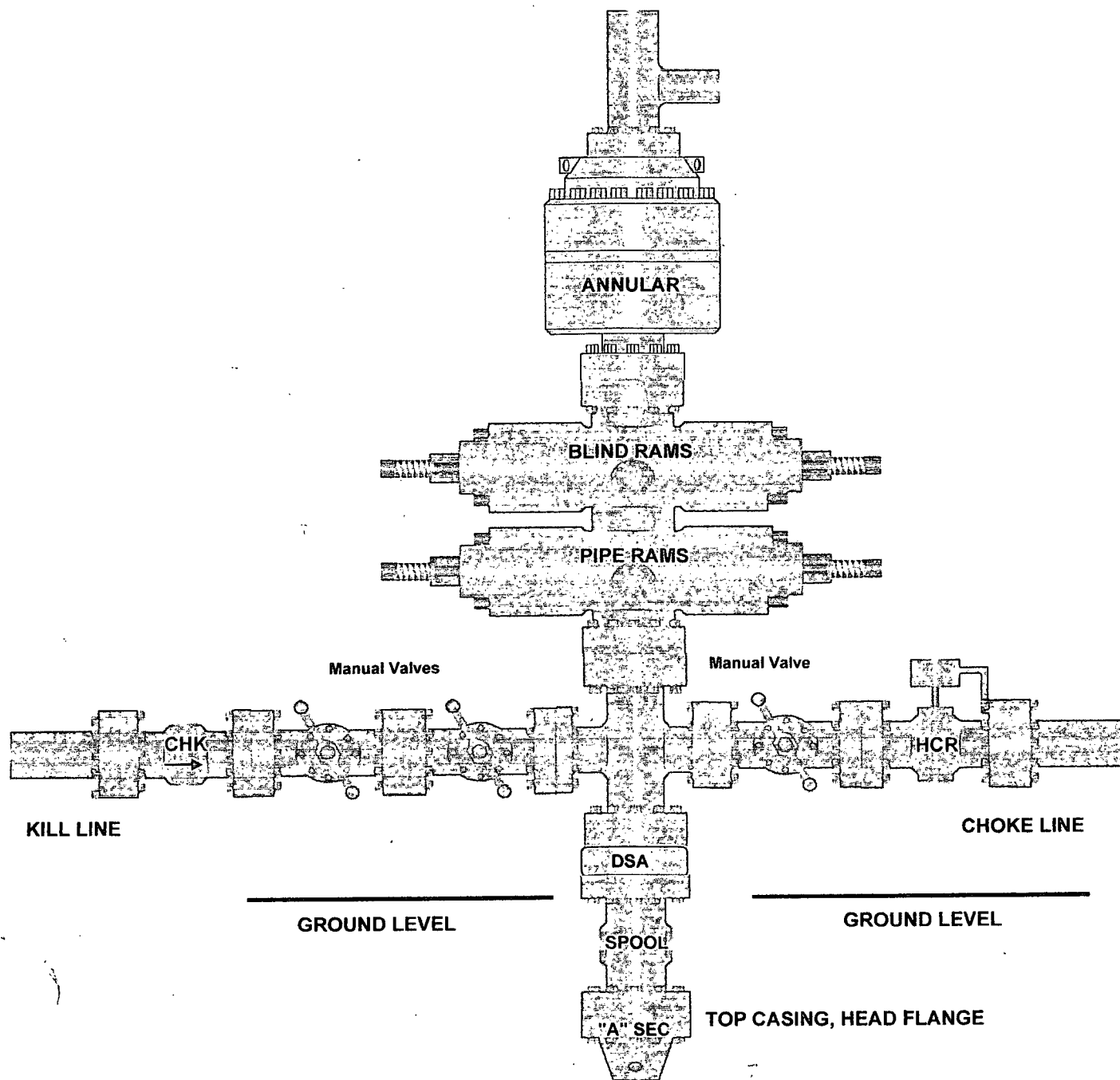
Mean Green 22 Fed 1H

Surface Location: 150' FSL & 480' FEL of Section 22-26S-34E, Lea, NM

Bottom Hole Location: 330' FNL & 330' FEL of Section 22-26S-34E, 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 3000 psi working pressure.
4. All fittings will be flanged.
5. A full bore safety valve tested to a minimum 3000 psi 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.

13-5/8" x 3,000 psi BOP Stack



Equipment Schematic

The diagram illustrates the equipment and flow for a closed-loop system. The main components and their connections are as follows:

- Wellhead:** The flow starts at the wellhead, passing through a **Rotating Head**, **Annular**, **Pipe Rams**, and **Blind Rams**.
- Flowline to Shakers:** A line labeled "Flowline to shakers" connects the wellhead area to the **Shakers**.
- Shakers:** The flow enters the **Shakers**, which are connected to **Process Tanks**.
- Process Tanks:** The flow moves from the **Process Tanks** to **Volume Tanks**.
- Volume Tanks:** The flow continues from the **Volume Tanks** to **Mud Pumps**.
- Mud Pumps:** The flow enters the **Mud Pumps**, which are connected to the **Shakers** via a return line.
- Separator:** The flow enters the **Separator**, which is connected to the **Shakers** and the **Wellhead** via a return line.
- Return Line:** A line labeled "8" line to flow pit (150 ft from wellhead)" connects the **Separator** back to the wellhead area.

Choke Manifold Details:

- The manifold is **Remotely Operated**.
- It includes an **Adjustable Choke** and a **3" Choke Line (Possible Co-Flex Hose)**.
- The manifold is equipped with **2-1/16" valves** and **4-1/16" valves**.
- The manifold is connected to the **Wellhead** via a **2" Kill Line** and a **Check Valve**.
- The manifold is connected to the **Shakers** via a **4" line to shakers** and a **6" line to separator**.

Note: all valves & lines on choke manifold are 3" unless otherwise noted. Exact manifold configuration may vary

Note: all valves & lines on choke manifold are 3" unless otherwise noted. Exact manifold configuration may vary

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 1713	
PURCHASER: ContiTech Beattie Co.				P.O. N°: 002808	
CONTITECH ORDER N°: 426127		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N°: 53622		NOMINAL / ACTUAL LENGTH: 10,67 m			
W.P. 68,96 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 = 25 MPa					
COUPLINGS Type	Serial N°		Quality	Heat N°	
3" coupling with 4 1/16" Flange end	5503 2029		AISI 4130 AISI 4130	N1590P 27566	
INFOCHIP INSTALLED				API Spec 16 C Temperature rate: "B"	
All metal parts are flawless				Hose conform to NACE MR 01-75	
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		
25. August. 2008			ContiTech Rubber Industrial Kft. Quality Control Dept. 