

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD HOBBS OCD

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

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.

JUN 29 2015

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

RECEIVED

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMNM66272
2. Name of Operator DEVON ENERGY PRODUCTION CO LP Contact: DAVID H COOK Email: david.cook@dvn.com		6. If Indian, Allottee or Tribe Name
3a. Address 333 WEST SHERIDAN AVE OKLAHOMA CITY, OK 73102	3b. Phone No. (include area code) Ph: 405-552-7848	7. If Unit or CA/Agreement, Name and/or No. NMNM94480X
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 19 T22S R34E SESE 0200FSL 0370FEL 32.369937 N Lat, 103.500650 W Lon		8. Well Name and No. GAUCHO UNIT 16H
		9. API Well No. 30-025-41853-00-X1
		10. Field and Pool, or Exploratory OJO CHISO
		11. County or Parish, and State LEA COUNTY, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	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 recompleat 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 shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Devon Energy Production Co., L.P. respectfully requests approval to change the approved APD as follows:

- Remove pilot hole from drilling program.
- Change intermediate casing point from 4,000' to 5,000' due to change in base of salt depth.

(already approved here)

Please see the attached revised Drilling Plan and direction survey.

Drilling CAs from EC# 247590 still stand.
Changes -> (NO Pilot hole + single stage on Production cement)

14. I hereby certify that the foregoing is true and correct.	
Electronic Submission #304522 verified by the BLM Well Information System For DEVON ENERGY PRODUCTION CO LP, sent to the Hobbs Committed to AFMSS for processing by JENNIFER SANCHEZ on 06/12/2015 (15JAS0061SE)	
Name (Printed/Typed) DAVID H COOK	Title REGULATORY SPECIALIST
Signature (Electronic Submission)	Date 06/10/2015
APPROVED	
THIS SPACE FOR FEDERAL OR STATE OFFICE USE	
Approved By	Title
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
BUREAU OF LAND MANAGEMENT CARLSBAD FIELD OFFICE	

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.

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

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Casing and Cementing Plan Summary

The surface fresh water sands will be protected by setting 13 3/8" casing and circulating cement back to surface. The fresh water sands will be protected by setting 9 5/8" casing and circulating cement to surface. The Delaware intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement above the base of the 9 5/8" casing. All casing is new and API approved.

Casing program:

Hole Size	Hole Interval	Casing OD	Casing interval	Casing Wt (ppf)	Connection	Casing Grade
17-1/2"	0 - 1,700'	13-3/8"	0 - 1,700'	54.5	BTC	J-55
12-1/4"	1,700 - 5,000'	9-5/8"	0 - 4,300'	40	BTC	J-55
12-1/4"	1,700 - 5,000'	9-5/8"	4300' - 5000'	40	BTC	HCK-55
8-3/4"	5,000 - 14,947'	5-1/2"	0 - 14,947'	17	BTC	HCP-110

Design factors:

Casing	Collapse	Burst	Tension
13-3/8" J-55 STC	1.49	3.71	5.55
9-5/8" HCK-55 BTC	1.43	2.03	5.76
5-1/2" HCP-110 BTC	1.70	2.33	2.17

Mud program:

Depth	Mud Wt. (ppg)	Visc. (cp)	Fluid loss	Type System
0 - 1,700'	8.4 - 8.6	1 - 3	NC	Fresh water
1,700 - 5,000'	9.8 - 10.0	1 - 3	NC	Brine
5,000 - 14,947'	8.8 - 9.2	1 - 3	NC-12	Fresh water/cut brine

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

Pressure control equipment:

- The BOP system used to drill the intermediate hole will consist of a 13-5/8" 3M Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a 3M system prior to drilling out the surface casing shoe.
- The BOP system used to drill the production hole will consist of a 13-5/8" 3M Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a 3M system 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 Kelly cock will be in the drill string at all times.
- A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
- 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.

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 a rig becomes available following BLM approval. Move in operations and drilling is expected to take 32 days.

Location and Types of Water Supply:

This location will be drilled using a combination of water mud systems (outlined in the Drilling Program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using the existing and proposed roads shown in the C-102. On occasion, water will be obtained from a pre-existing water well, running a pump directly to the drill rig. In these cases where a poly pipeline is used to transport water for drilling purposes, proper authorizations will be secured. If a poly pipeline is used, the size, distance, and map showing route will be provided to the BLM via sundry notice.

Methods of Handling Waste Material:

- Drill cuttings will be disposed of in a closed loop system.
- All trash, junk and other waste material will be contained in trash cages or trash bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary landfill.
- The supplier will pick up salts remaining, including broken sacks, after completion of well.
- A Porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
- Remaining drilling fluids will be sent to a closed loop system.
- Disposal of fluids to be transported by the following companies:
- American Production Service Inc, Odessa TX
- Gandy Corporation, Lovington NM
- I & W Inc, Loco Hill NM
- Jims Water Service of Co Inc, Denver CO

String	Number of sx	Weight lbs/gal	Water Volume g/sx	Yield cf/sx	Stage; Lead/Tail	Slurry Description
13-3/8" Surface	675	12.9	9.07	1.87	Lead	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 4% bwoc Bentonite + 70.8% Fresh Water
	425	14.8	6.32	1.33	Tail	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water
9-5/8" Intermediate	1225	12.9	9.81	1.87	Lead	(65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 70.9 % Fresh Water
	395	14.8	6.32	1.33	Tail	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water
5-1/2" Production	1305	11.9	12.89	2.3	Lead	(50:50) Class H Cement: Poz (Fly Ash) + 10% BWOC Bentonite + 1 lb/sk of Kol-Seal + 0.3% BWOC HR-601 + 0.5lb/sk D-Air 5000 + 76.4% Fresh Water
	975	14.5	5.31	1.2	Tail	(50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.25% bwoc CFR-3 + 0.1% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water

TOC for all Strings:

13-3/8" Surface 0ft

9-5/8" Intermediate 0ft

5-1/2" Production 4800ft

Notes:

- Cement volumes Surface 100%, Intermediate 75%, Pilot 10% and Production based on at least 25% excess
- Actual cement volumes will be adjusted based on fluid caliper log data

devon

Gaucha Unit 16H
Lea Co, NM

Plan Data for Gaucha Unit 16H

Plan Point Information:

Dogleg Severity Unit: 7/100.00ft

MD	Inc	Az	TVD	+N/-S	+E/-W	North	East	VSec	DLS
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(DLSU)
0.00	0.00	0.00	0.00	0.00	0.00	499511.79	798050.23	0.00	0.00
9916.54	0.00	0.00	9916.54	0.00	0.00	499511.79	798050.23	0.00	0.00
10666.54	90.00	356.14	10394.00	476.38	-32.15	499988.17	798018.08	477.47	12.00
14947.54	90.00	356.14	10394.00	4747.67	-320.41	504259.46	797729.82	4758.47	0.00

Plan Data for Gaucha Unit 16H

Target Set Information:

Name: Gaucha Unit 16H

Position offsets from Slot centre

Name	TVD	+N/-S	+E/-W	North	East	Shape	Comment
(USft)	(USft)	(USft)	(USft)	(USft)	(USft)		
PBHL 16H	10394.00	4747.67	-320.41	504259.46	797729.82	Cuboid	

Plan Data for Gaucha Unit 16H

Slot: Gaucha Unit 16H

Position:

Offset is from Site centre

+N/-S: 0.00USft Northing: 499511.79USft Latitude: 32°22'13.7"

+E/-W: 0.00USft Easting: 798050.23USft Longitude: -103°30'6.7"

Elevation Above VRD: 3444.00USft

Plan Data for Gaucha Unit 16H

Well: Gaucha Unit 16H

Type: Main-Well

File Number:

Plan Folder: P1 Plan: P1-V3

Vertical Section: Position offset of origin from Slot centre:

+N/-S: 0.00USft Azimuth: 356.14°

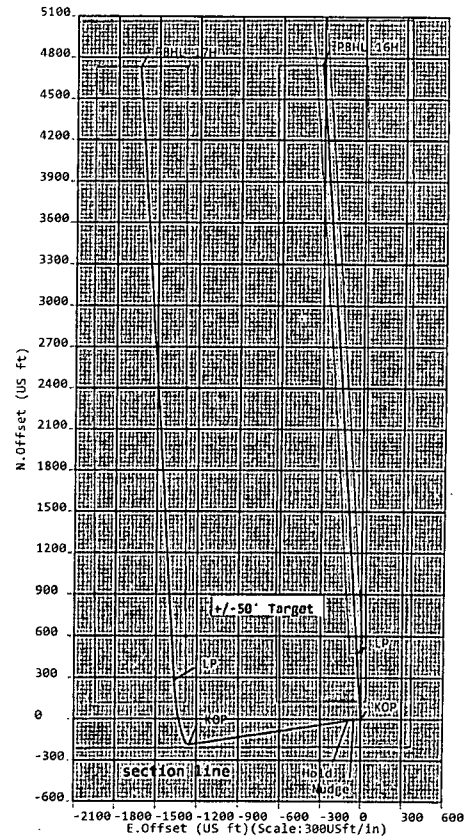
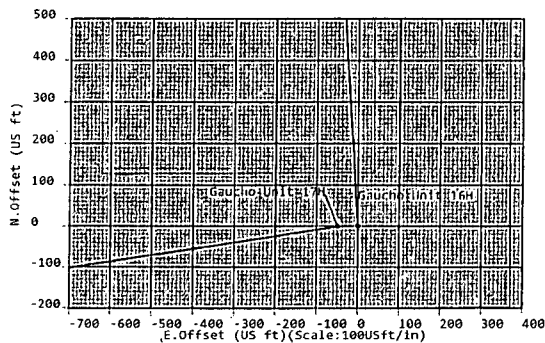
+E/-W: 0.00USft

Model: Field Strength Magnetic Parameters: Dip: Date:

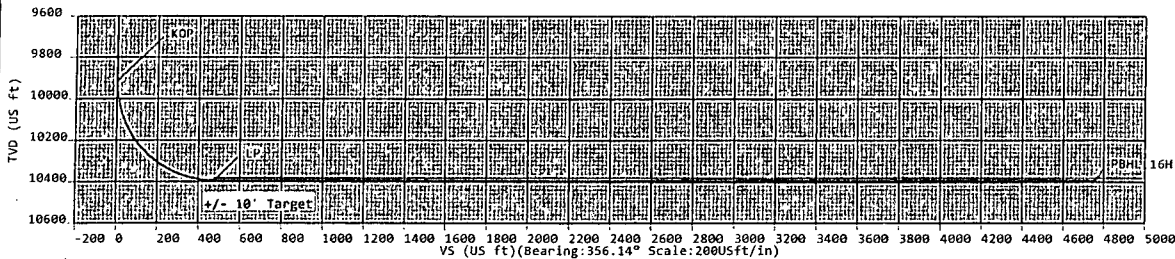
50000(nT) 0.00° 0.00° 2000-01-01

Gaucha Unit 16H ———

Gaucha Unit 17H ———



KB-3469
GL-3444



Sign Off: Russell Joyner

Gaucha Unit 16H

Field Name Lea Co. NM Nad 83 NMEZ	Map Units : US ft		Company Name : Devon Energy	
	Vertical Reference Datum (VRD) : Mean Sea Level			
	Projected Coordinate System : NAD83 / New Mexico East (ftUS)			
Comment :				
Site Name Gaucha Unit 16,17H Fed Pad	Units : US ft	North Reference : Grid	Convergence Angle : 0.45	
	Position	Northing : 499511.79 US ft	Latitude : 32° 22' 13.75"	
	Easting : 798050.23 US ft	Longitude : -103° 30' 6.65"		
Elevation above Mean Sea Level: 6888.00 US ft				
Comment :				
Slot Name Gaucha Unit 16H	Position (Offsets relative to Site Centre)			
	+N / -S : 0.00 US ft	Northing : 499511.79 US ft	Latitude : 32° 22' 13.75"	
	+E / -W : 0.00 US ft	Easting : 798050.23 US ft	Longitude : -103° 30' 6.65"	
Slot TVD Reference : Ground Elevation				
Elevation above Mean Sea Level : 3444.00 US ft				
Comment :				
Well Name Gaucha Unit 16H	Type : Main well		UWI : '	Plan : P1:V3
	Rig Height Drill Floor : 25.00 US ft		Comment :	
	Relative to Mean Sea Level: 3469.00 US ft			
	Closure Distance : 4758.47 US ft		Closure Azimuth : 356.139°	
	Vertical Section (Position of Origin Relative to Slot)			
	+N / -S : 0.00 US ft		+E / -W : 0.00 US ft	Az : 356.14°
Magnetic Parameters				
Model : BGGM	Field Strength : 48325.1nT	Dec : 7.21°	Dip : 60.29°	Date : 15/Aug/2015

Target Set

Name : Gaucha Unit 16H Number of Targets : 1

Comment :

Target Name: PBHL 16H Shape: Cuboid	Position (Relative to Slot centre)			
	+N / -S : 4747.67 US ft	Northing : 504259.46 US ft	Latitude : 32° 23' 0.75"	
	+E / -W : 320.41 US ft	Easting : 797729.82 US ft	Longitude : -103° 30' 9.96"	
TVD (Drill Floor) : 10394.00 US ft				
Orientation Azimuth : 356.14°		Inclination : 0.00°		
Dimensions Length : 8562.00 US ft	Breadth : 100.00 US ft	Height : 20.00 US ft		

Well path created using minimum curvature**Sidport Points (Relative to Slot centre, TVD relative to Drill Floor)**

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N Offset (US ft)	E Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	BRate (°/100 US ft)	Rate (°/100 US ft)	Face (°)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

SD Plan Report

Salient Points (Relative to Slot centre, TVD relative to Drill Floor)											
MB (US ft)	Incl (°)	AZ (°)	TVD (US ft)	N Offset (US ft)	E Offset (US ft)	V.S. (US ft)	DLS (%/100 US ft)	B Rate (%/100 US ft)	T Rate (%/100 US ft)	T Face (°)	Comment
9916.54	0.00	0.00	9916.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP
10666.54	90.00	356.14	10394.00	476.38	-32.15	477.47	12.00	12.00	0.00	356.14	LP
14947.54	90.00	356.14	10394.00	4747.67	-320.41	4758.47	0.00	0.00	0.00	0.00	PBHL 16H

Interpolated Points (Relative to Slot centre, TVD relative to Drill Floor)											
MB (US ft)	Incl (°)	AZ (°)	TVD (US ft)	N Offset (US ft)	E Offset (US ft)	V.S. (US ft)	DLS (%/100 US ft)	Northing (US ft)	Eastings (US ft)		Comment
9900.00	0.00	0.00	9900.00	0.00	0.00	0.00	0.00	499511.79	798050.23		
9916.54	0.00	0.00	9916.54	0.00	0.00	0.00	0.00	499511.79	798050.23		KOP
10000.00	10.02	356.14	9999.58	7.26	-0.49	7.28	12.00	499519.05	798049.74		
10100.00	22.02	356.14	10095.52	34.74	-2.34	34.81	12.00	499546.53	798047.89		
10200.00	34.02	356.14	10183.64	81.51	-5.50	81.70	12.00	499593.30	798044.73		
10300.00	46.02	356.14	10260.09	145.55	-9.82	145.88	12.00	499657.34	798040.41		
10400.00	58.02	356.14	10321.52	224.04	-15.12	224.55	12.00	499735.83	798035.11		
10500.00	70.02	356.14	10365.25	313.57	-21.16	314.28	12.00	499825.36	798029.07		
10600.00	82.02	356.14	10389.38	410.21	-27.68	411.14	12.00	499922.00	798022.55		
10666.54	90.00	356.14	10394.00	476.38	-32.15	477.47	12.00	499988.17	798018.08		LP
10700.00	90.00	356.14	10394.00	509.77	-34.40	510.92	0.00	500021.56	798015.83		
10800.00	90.00	356.14	10394.00	609.54	-41.14	610.92	0.00	500121.33	798009.09		
10900.00	90.00	356.14	10394.00	709.31	-47.87	710.92	0.00	500221.10	798002.36		
11000.00	90.00	356.14	10394.00	809.08	-54.60	810.92	0.00	500320.87	797995.63		
11100.00	90.00	356.14	10394.00	908.86	-61.34	910.92	0.00	500420.65	797988.89		
11200.00	90.00	356.14	10394.00	1008.63	-68.07	1010.92	0.00	500520.42	797982.16		
11300.00	90.00	356.14	10394.00	1108.40	-74.80	1110.92	0.00	500620.19	797975.43		
11400.00	90.00	356.14	10394.00	1208.18	-81.54	1210.92	0.00	500719.97	797968.69		
11500.00	90.00	356.14	10394.00	1307.95	-88.27	1310.92	0.00	500819.74	797961.96		
11600.00	90.00	356.14	10394.00	1407.72	-95.00	1410.92	0.00	500919.51	797955.23		
11700.00	90.00	356.14	10394.00	1507.50	-101.74	1510.92	0.00	501019.29	797948.49		
11800.00	90.00	356.14	10394.00	1607.27	-108.47	1610.92	0.00	501119.06	797941.76		
11900.00	90.00	356.14	10394.00	1707.04	-115.20	1710.92	0.00	501218.83	797935.03		
12000.00	90.00	356.14	10394.00	1806.81	-121.94	1810.92	0.00	501318.60	797928.29		
12100.00	90.00	356.14	10394.00	1906.59	-128.67	1910.92	0.00	501418.38	797921.56		
12200.00	90.00	356.14	10394.00	2006.36	-135.40	2010.92	0.00	501518.15	797914.83		
12300.00	90.00	356.14	10394.00	2106.13	-142.14	2110.92	0.00	501617.92	797908.09		
12400.00	90.00	356.14	10394.00	2205.91	-148.87	2210.92	0.00	501717.70	797901.36		
12500.00	90.00	356.14	10394.00	2305.68	-155.61	2310.92	0.00	501817.47	797894.62		
12600.00	90.00	356.14	10394.00	2405.45	-162.34	2410.92	0.00	501917.24	797887.89		
12700.00	90.00	356.14	10394.00	2505.23	-169.07	2510.92	0.00	502017.02	797881.16		
12800.00	90.00	356.14	10394.00	2605.00	-175.81	2610.92	0.00	502116.79	797874.42		
12900.00	90.00	356.14	10394.00	2704.77	-182.54	2710.92	0.00	502216.56	797867.69		
13000.00	90.00	356.14	10394.00	2804.55	-189.27	2810.92	0.00	502316.34	797860.96		
13100.00	90.00	356.14	10394.00	2904.32	-196.01	2910.92	0.00	502416.11	797854.22		
13200.00	90.00	356.14	10394.00	3004.09	-202.74	3010.92	0.00	502515.88	797847.49		
13300.00	90.00	356.14	10394.00	3103.86	-209.47	3110.92	0.00	502615.65	797840.76		
13400.00	90.00	356.14	10394.00	3203.64	-216.21	3210.92	0.00	502715.43	797834.02		
13500.00	90.00	356.14	10394.00	3303.41	-222.94	3310.92	0.00	502815.20	797827.29		
13600.00	90.00	356.14	10394.00	3403.18	-229.67	3410.92	0.00	502914.97	797820.56		
13700.00	90.00	356.14	10394.00	3502.96	-236.41	3510.92	0.00	503014.75	797813.82		
13800.00	90.00	356.14	10394.00	3602.73	-243.14	3610.92	0.00	503114.52	797807.09		
13900.00	90.00	356.14	10394.00	3702.50	-249.87	3710.92	0.00	503214.29	797800.36		
14000.00	90.00	356.14	10394.00	3802.28	-256.61	3810.92	0.00	503314.07	797793.62		
14100.00	90.00	356.14	10394.00	3902.05	-263.34	3910.92	0.00	503413.84	797786.89		
14200.00	90.00	356.14	10394.00	4001.82	-270.07	4010.92	0.00	503513.61	797780.16		
14300.00	90.00	356.14	10394.00	4101.59	-276.81	4110.92	0.00	503613.38	797773.42		
14400.00	90.00	356.14	10394.00	4201.37	-283.54	4210.92	0.00	503713.16	797766.69		
14500.00	90.00	356.14	10394.00	4301.14	-290.27	4310.92	0.00	503812.93	797759.96		
14600.00	90.00	356.14	10394.00	4400.91	-297.01	4410.92	0.00	503912.70	797753.22		
14700.00	90.00	356.14	10394.00	4500.69	-303.74	4510.92	0.00	504012.48	797746.49		
14800.00	90.00	356.14	10394.00	4600.46	-310.48	4610.92	0.00	504112.25	797739.75		

5D Plan Report

Interpolated Points (Relative to Slot centre, TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N Offset (US ft)	E Offset (US ft)	CVS (US ft)	DLS (%/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
14900.00	90.00	356.14	10394.00	4700.23	-317.21	4710.92	0.00	504212.02	797733.02	
14947.54	90.00	356.14	10394.00	4747.67	-320.41	4758.47	0.00	504259.46	797729.82	PBHL 16H

5D Anti-Collision Report

Devon Energy

Field Name: *Lea Co, NM Nad 83 NMEZ*

Site Name: *Gaucha Unit 16,17H Fed Pad*

Well Name: *Gaucha Unit 16H*

02 June 2015



Weatherford®



Weatherford

Gaucho Unit 16H

Field Name
Lea Co. NM Nad
88 NMEZ

Map Units : US ft

Company Name : Devon Energy

Vertical Reference Datum (VRD) : Mean Sea Level

Projected Coordinate System : NAD83 / New Mexico East (ftUS)

Comment :

Site Name
Gaucho Unit
16, 17H Fed Pad

Units : US ft

North Reference : Grid

Convergence Angle : 0.45

Position
Northing: 499511.79 US ft
Easting: 798050.23 US ft

Latitude : 32° 22' 13.75"

Longitude : -103° 30' 6.65"

Elevation above Mean Sea Level: 6888.00 US ft

Comment :

Slot Name
Gaucho Unit 16H

Position (Offsets relative to Site Centre)

+N / -S : 0.00 US ft
+E / -W : 0.00 US ft

Northing: 499511.79 US ft

Latitude : 32° 22' 13.75"

Easting: 798050.23 US ft

Longitude : -103° 30' 6.65"

Slot TVD Reference : Ground Elevation

Elevation above Mean Sea Level : 3444.00 US ft

Comment :

Well Name
Gaucho Unit 16H

Type : Main well

UWI :

Plan : Working Plan

Rig Height Drill Floor : 25.00 US ft

Comment :

Relative to Mean Sea Level: 3469.00 US ft

Closure Distance : 4758.47 US ft

Closure Azimuth : 356.139°

Vertical Section (Position of Origin Relative to Slot)

+N / -S : 0.00 US ft
+E / -W : 0.00 US ft
Az : 356.14°

Magnetic Parameters

Model : BGGM

Field Strength :
48325.1nT

Dec : 7.21°

Dip : 60.29°

Date :
15/Aug/2015

Collision / Uncertainty Analysis

Primary Well	Start MD (US ft)	End MD (US ft)	Collision Risk Interval	No. of Std Deviations in Error Computation
Gaucho Unit 16H (p)	0.00	14947.54	100.00	2

Secondary Well Names

Gaucho Unit 17H (p)

Anti-Collision Report Terminology

S.Minor, S.Major : Radii of the ellipse of uncertainty at the current location as seen in the along hole direction.

PHI : Angle between high-side vector and semi-minor axis

TVD Spread : Total TVD range of the ellipsoid of uncertainty at the current location

ES : Distance between the extremities of the primary and secondary uncertainty ellipsoids in the direction Cr-Cr

T.Face to Sec : Angle between the Hi-Side vector of the primary well at the current location and line of closest approach between the two wells

Separation factors calculated using Pedal Curve (Independent Uncertainty). Well path created using minimum curvature.

5D Anti-Collision Report

Anti Collision Proximity Summary (TVD relative to Drill Floor)

SP	Secondary Well Name	THMD (US ft)	SHMD (US ft)	TVD (US ft)	GC (US ft)	ES (US ft)	SEA (US ft)
	Gaucho Unit 17H (p)	2895.90	2896.10	2895.90	50.37	37.02	3.77

Primary Well: Gaucho Unit 16H (p) (TVD Relative to Drill Floor; All Azimuth Relative to GRID NORTH)

ID (US ft)	TVD (US ft)	Face to Seal (p)	S-Major (US ft)	S-Minor (US ft)	Nearest Well	GC (US ft)	ES (US ft)	SEA (US ft)
0.00	0.00	269.53	0.00	0.00	Gaucho Unit 17H (p)	49.99	49.42	86.79
100.00	100.00	269.53	0.11	0.11	Gaucho Unit 17H (p)	49.99	49.20	63.14
200.00	200.00	269.53	0.34	0.34	Gaucho Unit 17H (p)	49.99	48.75	40.32
300.00	300.00	269.53	0.56	0.56	Gaucho Unit 17H (p)	49.99	48.30	29.60
400.00	400.00	269.53	0.79	0.79	Gaucho Unit 17H (p)	49.99	47.85	23.38
500.00	500.00	269.53	1.01	1.01	Gaucho Unit 17H (p)	49.99	47.40	19.32
600.00	600.00	269.53	1.24	1.24	Gaucho Unit 17H (p)	49.99	46.95	16.46
700.00	700.00	269.53	1.46	1.46	Gaucho Unit 17H (p)	49.99	46.50	14.34
800.00	800.00	269.53	1.69	1.69	Gaucho Unit 17H (p)	49.99	46.05	12.70
900.00	900.00	269.53	1.91	1.91	Gaucho Unit 17H (p)	49.99	45.61	11.40
1000.00	1000.00	269.53	2.14	2.14	Gaucho Unit 17H (p)	49.99	45.16	10.34
1100.00	1100.00	269.53	2.36	2.36	Gaucho Unit 17H (p)	49.99	44.71	9.46
1200.00	1200.00	269.53	2.59	2.59	Gaucho Unit 17H (p)	49.99	44.26	8.72
1300.00	1300.00	269.53	2.81	2.81	Gaucho Unit 17H (p)	49.99	43.81	8.08
1400.00	1400.00	269.53	3.03	3.03	Gaucho Unit 17H (p)	49.99	43.36	7.54
1500.00	1500.00	269.53	3.26	3.26	Gaucho Unit 17H (p)	49.99	42.91	7.06
1600.00	1600.00	269.53	3.48	3.48	Gaucho Unit 17H (p)	49.99	42.46	6.64
1700.00	1700.00	269.53	3.71	3.71	Gaucho Unit 17H (p)	49.99	42.01	6.26
1800.00	1800.00	269.53	3.93	3.93	Gaucho Unit 17H (p)	49.99	41.56	5.93
1900.00	1900.00	269.53	4.16	4.16	Gaucho Unit 17H (p)	49.99	41.11	5.63
2000.00	2000.00	269.53	4.38	4.38	Gaucho Unit 17H (p)	49.99	40.66	5.36
2100.00	2100.00	269.53	4.61	4.61	Gaucho Unit 17H (p)	49.99	40.21	5.11
2200.00	2200.00	269.53	4.83	4.83	Gaucho Unit 17H (p)	49.99	39.76	4.89
2300.00	2300.00	269.53	5.06	5.06	Gaucho Unit 17H (p)	49.99	39.31	4.68
2400.00	2400.00	269.53	5.28	5.28	Gaucho Unit 17H (p)	49.99	38.86	4.49
2500.00	2500.00	269.53	5.51	5.51	Gaucho Unit 17H (p)	49.99	38.41	4.32
2600.00	2600.00	269.53	5.73	5.73	Gaucho Unit 17H (p)	49.99	37.96	4.16
2700.00	2700.00	269.53	5.96	5.96	Gaucho Unit 17H (p)	49.99	37.51	4.01
2800.00	2800.00	269.53	6.18	6.18	Gaucho Unit 17H (p)	49.99	37.06	3.87
2900.00	2900.00	269.46	6.41	6.41	Gaucho Unit 17H (p)	50.43	37.07	3.77
3000.00	3000.00	268.94	6.63	6.63	Gaucho Unit 17H (p)	53.86	40.11	3.92
3100.00	3100.00	268.08	6.86	6.86	Gaucho Unit 17H (p)	60.69	46.56	4.30

5D Antri-Collision Report

Primary Well: Gaucho Unit 16H (p) (WVD Relative to Drill Floor; All Azimuth Relative to GRID NORTH)								
WVD (US.ft)	WVD (US.ft)	WVD to Sec (p)	WVD (US.ft)	WVD (US.ft)	WVD (US.ft)	WVD (US.ft)	WVD (US.ft)	WVD (US.ft)
3200.00	3200.00	267.11	7.08	7.08	Gaucho Unit 17H (p)	70.90	56.40	4.89
3300.00	3300.00	266.18	7.31	7.31	Gaucho Unit 17H (p)	84.47	69.61	5.69
3400.00	3400.00	265.37	7.53	7.53	Gaucho Unit 17H (p)	101.13	85.89	6.63
3500.00	3500.00	264.76	7.76	7.76	Gaucho Unit 17H (p)	118.46	102.80	7.56
3600.00	3600.00	264.30	7.98	7.98	Gaucho Unit 17H (p)	135.79	119.71	8.44
3700.00	3700.00	263.95	8.21	8.21	Gaucho Unit 17H (p)	153.14	136.62	9.27
3800.00	3800.00	263.67	8.43	8.43	Gaucho Unit 17H (p)	170.48	153.54	10.06
3900.00	3900.00	263.44	8.65	8.65	Gaucho Unit 17H (p)	187.83	170.46	10.81
4000.00	4000.00	263.25	8.88	8.88	Gaucho Unit 17H (p)	205.19	187.38	11.52
4100.00	4100.00	263.09	9.10	9.10	Gaucho Unit 17H (p)	222.54	204.29	12.20
4200.00	4200.00	262.96	9.33	9.33	Gaucho Unit 17H (p)	239.90	221.21	12.84
4300.00	4300.00	262.84	9.55	9.55	Gaucho Unit 17H (p)	257.26	238.12	13.45
4400.00	4400.00	262.73	9.78	9.78	Gaucho Unit 17H (p)	274.61	255.04	14.03
4500.00	4500.00	262.64	10.00	10.00	Gaucho Unit 17H (p)	291.97	271.95	14.58
4600.00	4600.00	262.56	10.23	10.23	Gaucho Unit 17H (p)	309.33	288.86	15.11
4700.00	4700.00	262.49	10.45	10.45	Gaucho Unit 17H (p)	326.69	305.77	15.62
4800.00	4800.00	262.42	10.68	10.68	Gaucho Unit 17H (p)	344.05	322.69	16.10
4900.00	4900.00	262.37	10.90	10.90	Gaucho Unit 17H (p)	361.42	339.60	16.56
5000.00	5000.00	262.31	11.13	11.13	Gaucho Unit 17H (p)	378.78	356.51	17.01
5100.00	5100.00	262.26	11.35	11.35	Gaucho Unit 17H (p)	396.14	373.41	17.43
5200.00	5200.00	262.22	11.58	11.58	Gaucho Unit 17H (p)	413.50	390.32	17.84
5300.00	5300.00	262.18	11.80	11.80	Gaucho Unit 17H (p)	430.86	407.23	18.23
5400.00	5400.00	262.14	12.03	12.03	Gaucho Unit 17H (p)	448.23	424.14	18.61
5500.00	5500.00	262.11	12.25	12.25	Gaucho Unit 17H (p)	465.59	441.04	18.97
5600.00	5600.00	262.07	12.48	12.48	Gaucho Unit 17H (p)	482.95	457.95	19.32
5700.00	5700.00	262.04	12.70	12.70	Gaucho Unit 17H (p)	500.31	474.85	19.65
5800.00	5800.00	262.01	12.93	12.93	Gaucho Unit 17H (p)	517.68	491.76	19.97
5900.00	5900.00	261.99	13.15	13.15	Gaucho Unit 17H (p)	535.04	508.66	20.28
6000.00	6000.00	261.96	13.38	13.38	Gaucho Unit 17H (p)	552.40	525.57	20.58
6100.00	6100.00	261.94	13.60	13.60	Gaucho Unit 17H (p)	569.77	542.47	20.87
6200.00	6200.00	261.92	13.83	13.83	Gaucho Unit 17H (p)	587.13	559.37	21.15
6300.00	6300.00	261.90	14.05	14.05	Gaucho Unit 17H (p)	604.49	576.27	21.42
6400.00	6400.00	261.88	14.27	14.27	Gaucho Unit 17H (p)	621.86	593.17	21.68
6500.00	6500.00	261.86	14.50	14.50	Gaucho Unit 17H (p)	639.22	610.08	21.93
6600.00	6600.00	261.84	14.72	14.72	Gaucho Unit 17H (p)	656.58	626.98	22.18
6700.00	6700.00	261.83	14.95	14.95	Gaucho Unit 17H (p)	673.95	643.88	22.41

SD Anti-Collision Report

Primary Well: Gaucho Unit 16H (p) (TVD Relative to Drill Floor; All Azimuth Relative to GRID NORTH)								
TVD (US ft)	TVD (US ft)	True Close (°)	S. Major (US ft)	S. Minor (US ft)	Nearest Well	Acc (US ft)	Res (US ft)	SF
6800.00	6800.00	261.81	15.17	15.17	Gaucho Unit 17H (p)	691.31	660.78	22.64
6900.00	6900.00	261.79	15.40	15.40	Gaucho Unit 17H (p)	708.68	677.68	22.86
7000.00	7000.00	261.78	15.62	15.62	Gaucho Unit 17H (p)	726.04	694.58	23.08
7100.00	7100.00	261.77	15.85	15.85	Gaucho Unit 17H (p)	743.40	711.47	23.28
7200.00	7200.00	261.75	16.07	16.07	Gaucho Unit 17H (p)	760.77	728.37	23.48
7300.00	7300.00	261.74	16.30	16.30	Gaucho Unit 17H (p)	778.13	745.27	23.68
7400.00	7400.00	261.73	16.52	16.52	Gaucho Unit 17H (p)	795.50	762.17	23.87
7500.00	7500.00	261.72	16.75	16.75	Gaucho Unit 17H (p)	812.86	779.07	24.05
7600.00	7600.00	261.71	16.97	16.97	Gaucho Unit 17H (p)	830.22	795.96	24.23
7700.00	7700.00	261.70	17.20	17.20	Gaucho Unit 17H (p)	847.59	812.86	24.41
7800.00	7800.00	261.69	17.42	17.42	Gaucho Unit 17H (p)	864.95	829.76	24.58
7900.00	7900.00	261.68	17.65	17.65	Gaucho Unit 17H (p)	882.32	846.65	24.74
8000.00	8000.00	261.67	17.87	17.87	Gaucho Unit 17H (p)	899.68	863.55	24.90
8100.00	8100.00	261.66	18.10	18.10	Gaucho Unit 17H (p)	917.05	880.45	25.06
8200.00	8200.00	261.65	18.32	18.32	Gaucho Unit 17H (p)	934.41	897.34	25.21
8300.00	8300.00	261.64	18.55	18.55	Gaucho Unit 17H (p)	951.77	914.24	25.35
8400.00	8400.00	261.63	18.77	18.77	Gaucho Unit 17H (p)	969.14	931.13	25.50
8500.00	8500.00	261.63	19.00	19.00	Gaucho Unit 17H (p)	986.50	948.03	25.64
8600.00	8600.00	261.62	19.22	19.22	Gaucho Unit 17H (p)	1003.87	964.92	25.78
8700.00	8700.00	261.61	19.45	19.45	Gaucho Unit 17H (p)	1021.23	981.81	25.91
8800.00	8800.00	261.61	19.67	19.67	Gaucho Unit 17H (p)	1038.60	998.71	26.04
8900.00	8900.00	261.60	19.89	19.89	Gaucho Unit 17H (p)	1055.96	1015.60	26.16
9000.00	9000.00	261.59	20.12	20.12	Gaucho Unit 17H (p)	1073.32	1032.50	26.29
9100.00	9100.00	261.59	20.34	20.34	Gaucho Unit 17H (p)	1090.69	1049.39	26.41
9200.00	9200.00	261.58	20.57	20.57	Gaucho Unit 17H (p)	1108.05	1066.28	26.53
9300.00	9300.00	261.57	20.79	20.79	Gaucho Unit 17H (p)	1125.42	1083.18	26.64
9400.00	9400.00	261.57	21.02	21.02	Gaucho Unit 17H (p)	1142.78	1100.07	26.75
9500.00	9500.00	261.56	21.24	21.24	Gaucho Unit 17H (p)	1160.15	1116.96	26.86
9600.00	9600.00	261.56	21.47	21.47	Gaucho Unit 17H (p)	1177.51	1133.85	26.97
9700.00	9700.00	261.55	21.69	21.69	Gaucho Unit 17H (p)	1194.88	1150.75	27.08
9800.00	9800.00	261.55	21.92	21.92	Gaucho Unit 17H (p)	1212.24	1167.64	27.18
9900.00	9900.00	261.54	22.14	22.14	Gaucho Unit 17H (p)	1229.60	1184.53	27.28
10000.00	9999.58	266.89	22.36	22.15	Gaucho Unit 17H (p)	1247.49	1201.95	27.39
10100.00	10095.52	268.04	22.57	21.64	Gaucho Unit 17H (p)	1266.78	1220.86	27.58
10200.00	10183.64	268.78	22.78	20.70	Gaucho Unit 17H (p)	1287.90	1241.49	27.75
10300.00	10260.09	268.60	22.99	19.47	Gaucho Unit 17H (p)	1311.37	1264.41	27.92

SD Anti-Collision Report

Primary Well : Gaucho Unit 17H (p) (TVD Relative to Drill Floor, All Azimuth Relative to GRID NORTH)								
MD (US ft)	TVD (US ft)	Face to Gas (°)	SL Major (US ft)	SL Minor (US ft)	Nearest Well	ES (US ft)	SP	TS
10400.00	10321.52	266.43	23.32	18.15	Gaucho Unit 17H (p)	1333.11	1285.05	27.74
10500.00	10365.25	264.98	23.73	16.96	Gaucho Unit 17H (p)	1346.08	1297.14	27.51
10600.00	10389.38	266.11	24.23	16.24	Gaucho Unit 17H (p)	1346.10	1295.85	26.79
10700.00	10394.00	266.18	24.82	16.20	Gaucho Unit 17H (p)	1345.30	1293.85	26.15
10800.00	10394.00	266.13	25.53	16.35	Gaucho Unit 17H (p)	1344.81	1291.93	25.43
10900.00	10394.00	266.08	26.35	16.53	Gaucho Unit 17H (p)	1344.32	1289.78	24.65
11000.00	10394.00	266.03	27.28	16.74	Gaucho Unit 17H (p)	1343.83	1287.48	23.85
11100.00	10394.00	265.98	28.29	16.98	Gaucho Unit 17H (p)	1343.34	1284.96	23.01
11200.00	10394.00	265.93	29.39	17.25	Gaucho Unit 17H (p)	1342.86	1282.29	22.17
11300.00	10394.00	265.88	30.55	17.54	Gaucho Unit 17H (p)	1342.37	1279.56	21.37
11400.00	10394.00	265.83	31.79	17.86	Gaucho Unit 17H (p)	1341.89	1276.55	20.54
11500.00	10394.00	265.78	33.08	18.20	Gaucho Unit 17H (p)	1341.41	1273.52	19.76
11600.00	10394.00	265.73	34.42	18.56	Gaucho Unit 17H (p)	1340.93	1270.47	19.03
11700.00	10394.00	265.69	35.81	18.93	Gaucho Unit 17H (p)	1340.45	1267.18	18.30
11800.00	10394.00	265.64	37.24	19.32	Gaucho Unit 17H (p)	1339.97	1263.83	17.60
11900.00	10394.00	265.59	38.70	19.75	Gaucho Unit 17H (p)	1339.49	1260.46	16.95
12000.00	10394.00	265.54	40.20	20.22	Gaucho Unit 17H (p)	1339.01	1257.06	16.34
12100.00	10394.00	265.49	41.73	20.71	Gaucho Unit 17H (p)	1338.53	1253.63	15.77
12200.00	10394.00	265.44	43.28	21.20	Gaucho Unit 17H (p)	1338.06	1250.09	15.21
12300.00	10394.00	265.39	44.85	21.67	Gaucho Unit 17H (p)	1337.58	1246.44	14.68
12400.00	10394.00	265.34	46.45	22.16	Gaucho Unit 17H (p)	1337.11	1242.77	14.17
12500.00	10394.00	265.29	48.06	22.65	Gaucho Unit 17H (p)	1336.64	1239.09	13.70
12600.00	10394.00	265.24	49.69	23.19	Gaucho Unit 17H (p)	1336.17	1235.39	13.26
12700.00	10394.00	265.19	51.34	23.76	Gaucho Unit 17H (p)	1335.69	1231.71	12.84
12800.00	10394.00	265.14	52.99	24.26	Gaucho Unit 17H (p)	1335.23	1228.05	12.46
12900.00	10394.00	265.09	54.67	24.88	Gaucho Unit 17H (p)	1334.76	1224.25	12.08
13000.00	10394.00	265.04	56.35	25.39	Gaucho Unit 17H (p)	1334.29	1220.36	11.71
13100.00	10394.00	264.99	58.04	26.03	Gaucho Unit 17H (p)	1333.82	1216.51	11.37
13200.00	10394.00	264.94	59.74	26.61	Gaucho Unit 17H (p)	1333.36	1212.69	11.05
13300.00	10394.00	264.89	61.45	27.19	Gaucho Unit 17H (p)	1332.89	1208.86	10.75
13400.00	10394.00	264.84	63.17	27.77	Gaucho Unit 17H (p)	1332.43	1205.04	10.46
13500.00	10394.00	264.79	64.90	28.35	Gaucho Unit 17H (p)	1331.97	1201.20	10.19
13600.00	10394.00	264.74	66.63	28.93	Gaucho Unit 17H (p)	1331.51	1197.35	9.93
13700.00	10394.00	264.69	68.37	29.52	Gaucho Unit 17H (p)	1331.05	1193.49	9.68
13800.00	10394.00	264.64	70.12	30.16	Gaucho Unit 17H (p)	1330.59	1189.62	9.44
13900.00	10394.00	264.59	71.87	30.80	Gaucho Unit 17H (p)	1330.13	1185.74	9.21

SD Anti-Collision Report

Primary Well : Gaucho Unit 16H (p) (TVD Relative to Drill Floor; All Azimuth Relative to GRID NORTH)								
MD (US ft)	TVD (US ft)	Face to Sec (p)	Sec MD (US ft)	Sec TVD (US ft)	Sec Azimuth (US ft)	Sec MD (US ft)	Sec TVD (US ft)	Sec Azimuth (US ft)
14000.00	10394.00	264.54	73.62	31.44	Gaucho Unit 17H (p)	1329.67	1181.85	9.00
14100.00	10394.00	264.49	75.39	32.09	Gaucho Unit 17H (p)	1329.21	1177.96	8.79
14200.00	10394.00	264.44	77.15	32.73	Gaucho Unit 17H (p)	1328.76	1174.05	8.59
14300.00	10394.00	264.38	78.92	33.38	Gaucho Unit 17H (p)	1328.30	1170.14	8.40
14400.00	10394.00	264.33	80.69	34.03	Gaucho Unit 17H (p)	1327.85	1166.17	8.21
14500.00	10394.00	264.28	82.47	34.69	Gaucho Unit 17H (p)	1327.40	1162.19	8.03
14600.00	10394.00	264.23	84.25	35.35	Gaucho Unit 17H (p)	1326.95	1158.21	7.86
14700.00	10394.00	264.18	86.03	36.01	Gaucho Unit 17H (p)	1326.50	1154.23	7.70
14800.00	10394.00	264.13	87.82	36.67	Gaucho Unit 17H (p)	1326.05	1150.24	7.54
14900.00	10394.00	264.08	89.60	37.33	Gaucho Unit 17H (p)	1325.60	1146.25	7.39
14947.54	10394.00	264.06	90.45	37.65	Gaucho Unit 17H (p)	1325.39	1144.35	7.32

Secondary Well : Gaucho Unit 17H (p) (TVD Relative to Drill Floor (Primary); All Azimuth Relative to GRID NORTH)								
MD (US ft)	TVD (US ft)	Face to Sec (p)	Sec MD (US ft)	Sec TVD (US ft)	Sec Azimuth (US ft)	Sec MD (US ft)	Sec TVD (US ft)	Sec Azimuth (US ft)
0.00	0.00	1.00	269.53	0.01	0.01	49.99	49.42	86.79
100.00	100.00	101.00	269.53	0.12	0.12	49.99	49.20	63.14
200.00	200.00	201.00	269.53	0.34	0.34	49.99	48.75	40.32
300.00	300.00	301.00	269.53	0.56	0.56	49.99	48.30	29.60
400.00	400.00	401.00	269.53	0.79	0.79	49.99	47.85	23.38
500.00	500.00	501.00	269.53	1.01	1.01	49.99	47.40	19.32
600.00	600.00	601.00	269.53	1.24	1.24	49.99	46.95	16.46
700.00	700.00	701.00	269.53	1.46	1.46	49.99	46.50	14.34
800.00	800.00	801.00	269.53	1.69	1.69	49.99	46.05	12.70
900.00	900.00	901.00	269.53	1.91	1.91	49.99	45.61	11.40
1000.00	1000.00	1001.00	269.53	2.14	2.14	49.99	45.16	10.34
1100.00	1100.00	1101.00	269.53	2.36	2.36	49.99	44.71	9.46
1200.00	1200.00	1201.00	269.53	2.59	2.59	49.99	44.26	8.72
1300.00	1300.00	1301.00	269.53	2.81	2.81	49.99	43.81	8.08
1400.00	1400.00	1401.00	269.53	3.04	3.04	49.99	43.36	7.54
1500.00	1500.00	1501.00	269.53	3.26	3.26	49.99	42.91	7.06
1600.00	1600.00	1601.00	269.53	3.49	3.49	49.99	42.46	6.64
1700.00	1700.00	1701.00	269.53	3.71	3.71	49.99	42.01	6.26
1800.00	1800.00	1801.00	269.53	3.94	3.94	49.99	41.56	5.93
1900.00	1900.00	1901.00	269.53	4.16	4.16	49.99	41.11	5.63
2000.00	2000.00	2001.00	269.53	4.39	4.39	49.99	40.66	5.36
2100.00	2100.00	2101.00	269.53	4.61	4.61	49.99	40.21	5.11
2200.00	2200.00	2201.00	269.53	4.84	4.84	49.99	39.76	4.89
2300.00	2300.00	2301.00	269.53	5.06	5.06	49.99	39.31	4.68
2400.00	2400.00	2401.00	269.53	5.29	5.29	49.99	38.86	4.49
2500.00	2500.00	2501.00	269.53	5.51	5.51	49.99	38.41	4.32
2600.00	2600.00	2601.00	269.53	5.73	5.73	49.99	37.96	4.16
2700.00	2700.00	2701.00	269.53	5.96	5.96	49.99	37.51	4.01
2800.00	2800.00	2801.00	269.53	6.18	6.18	49.99	37.06	3.87
2900.00	2899.13	2900.13	269.46	6.40	6.40	50.43	37.07	3.77
3000.00	2997.24	2998.30	268.94	6.59	6.58	53.86	40.11	3.92
3100.00	3094.83	3096.13	268.08	6.78	6.75	60.69	46.56	4.30
3200.00	3191.57	3193.39	267.11	6.99	6.91	70.90	56.40	4.89
3300.00	3287.13	3289.86	266.18	7.20	7.08	84.47	69.61	5.69
3400.00	3382.48	3386.57	265.37	7.42	7.27	101.13	85.89	6.63
3500.00	3479.47	3485.06	264.76	7.67	7.47	118.46	102.80	7.56
3600.00	3576.45	3583.54	264.30	7.92	7.67	135.79	119.71	8.44

SD Anti-Collision Report

Secondary Well : Gaucho Unit-17M (p) (TVD Relative to Drill Floor (Primary)) ; All Azimuth Relative to GRID NORTH								
Time (US It)	TVD (US It)	Sec TVD (US It)	True to Sec (°)	S-Major (US It)	S-Minor (US It)	CC (US It)	ES (US It)	Risk
3700.00	3673.44	3682.02	263.95	8.19	7.87	153.14	136.62	9.27
3800.00	3770.42	3780.50	263.67	8.47	8.08	170.48	153.54	10.06
3900.00	3867.41	3878.98	263.44	8.75	8.29	187.83	170.46	10.81
4000.00	3964.39	3977.46	263.25	9.04	8.50	205.19	187.38	11.52
4100.00	4061.38	4075.94	263.09	9.34	8.72	222.54	204.29	12.20
4200.00	4158.36	4174.42	262.96	9.64	8.93	239.90	221.21	12.84
4300.00	4255.35	4272.90	262.84	9.95	9.16	257.26	238.12	13.45
4400.00	4352.33	4371.38	262.73	10.27	9.38	274.61	255.04	14.03
4500.00	4449.31	4469.86	262.64	10.59	9.60	291.97	271.95	14.58
4600.00	4546.30	4568.34	262.56	10.91	9.83	309.33	288.86	15.11
4700.00	4643.28	4666.82	262.49	11.24	10.06	326.69	305.77	15.62
4800.00	4740.27	4765.31	262.42	11.57	10.28	344.05	322.69	16.10
4900.00	4837.25	4863.79	262.37	11.91	10.51	361.42	339.60	16.56
5000.00	4934.24	4962.27	262.31	12.25	10.74	378.78	356.51	17.01
5100.00	5031.22	5060.75	262.26	12.59	10.97	396.14	373.41	17.43
5200.00	5128.21	5159.23	262.22	12.93	11.21	413.50	390.32	17.84
5300.00	5225.19	5257.71	262.18	13.28	11.44	430.86	407.23	18.23
5400.00	5322.18	5356.19	262.14	13.62	11.67	448.23	424.14	18.61
5500.00	5419.16	5454.67	262.11	13.97	11.91	465.59	441.04	18.97
5600.00	5516.15	5553.15	262.07	14.33	12.14	482.95	457.95	19.32
5700.00	5613.13	5651.63	262.04	14.68	12.38	500.31	474.85	19.65
5800.00	5710.12	5750.11	262.01	15.04	12.61	517.68	491.76	19.97
5900.00	5807.10	5848.59	261.99	15.39	12.85	535.04	508.66	20.28
6000.00	5904.08	5947.07	261.96	15.75	13.09	552.40	525.57	20.58
6100.00	6001.07	6045.56	261.94	16.11	13.33	569.77	542.47	20.87
6200.00	6098.05	6144.04	261.92	16.47	13.56	587.13	559.37	21.15
6300.00	6195.04	6242.52	261.90	16.83	13.80	604.49	576.27	21.42
6400.00	6292.02	6341.00	261.88	17.19	14.04	621.86	593.17	21.68
6500.00	6389.01	6439.48	261.86	17.56	14.28	639.22	610.08	21.93
6600.00	6485.99	6537.96	261.84	17.92	14.52	656.58	626.98	22.18
6700.00	6582.98	6636.44	261.83	18.29	14.76	673.95	643.88	22.41
6800.00	6679.96	6734.92	261.81	18.66	15.01	691.31	660.78	22.64
6900.00	6776.95	6833.40	261.79	19.02	15.25	708.68	677.68	22.86
7000.00	6873.93	6931.88	261.78	19.39	15.49	726.04	694.58	23.08
7100.00	6970.92	7030.36	261.77	19.76	15.73	743.40	711.47	23.28
7200.00	7067.90	7128.84	261.75	20.13	15.97	760.77	728.37	23.48
7300.00	7164.88	7227.32	261.74	20.50	16.22	778.13	745.27	23.68
7400.00	7261.87	7325.81	261.73	20.87	16.46	795.50	762.17	23.87
7500.00	7358.85	7424.29	261.72	21.24	16.70	812.86	779.07	24.05
7600.00	7455.84	7522.77	261.71	21.61	16.95	830.22	795.96	24.23
7700.00	7552.82	7621.25	261.70	21.98	17.19	847.59	812.86	24.41
7800.00	7649.81	7719.73	261.69	22.36	17.43	864.95	829.76	24.58
7900.00	7746.79	7818.21	261.68	22.73	17.68	882.32	846.65	24.74
8000.00	7843.78	7916.69	261.67	23.10	17.92	899.68	863.55	24.90
8100.00	7940.76	8015.17	261.66	23.48	18.17	917.05	880.45	25.06
8200.00	8037.75	8113.65	261.65	23.85	18.41	934.41	897.34	25.21
8300.00	8134.73	8212.13	261.64	24.23	18.66	951.77	914.24	25.35
8400.00	8231.72	8310.61	261.63	24.60	18.90	969.14	931.13	25.50
8500.00	8328.70	8409.09	261.63	24.98	19.15	986.50	948.03	25.64
8600.00	8425.68	8507.57	261.62	25.35	19.39	1003.87	964.92	25.78
8700.00	8522.67	8606.06	261.61	25.73	19.64	1021.23	981.81	25.91
8800.00	8619.65	8704.54	261.61	26.11	19.89	1038.60	998.71	26.04
8900.00	8716.64	8803.02	261.60	26.48	20.13	1055.96	1015.60	26.16
9000.00	8813.62	8901.50	261.59	26.86	20.38	1073.32	1032.50	26.29
9100.00	8910.61	8999.98	261.59	27.24	20.62	1090.69	1049.39	26.41
9200.00	9007.59	9098.46	261.58	27.61	20.87	1108.05	1066.28	26.53
9300.00	9104.58	9196.94	261.57	27.99	21.12	1125.42	1083.18	26.64
9400.00	9201.56	9295.42	261.57	28.37	21.36	1142.78	1100.07	26.75

5D Anti-Collision Report

Secondary Well: Gaucho Unit 17H (p) (TVD Relative to Drill Floor (Primary)) ; All Azimuth Relative to GRID NORTH								
Time (US It)	TVD (US It)	Sec MD (US It)	Rate to Sec (%)	S.Major (US It)	S.Minor (US It)	CE (US It)	ESY (US It)	SP (US It)
9500.00	9298.55	9393.90	261.56	28.75	21.61	1160.15	1116.96	26.86
9600.00	9395.53	9492.38	261.56	29.13	21.86	1177.51	1133.85	26.97
9700.00	9492.52	9590.86	261.55	29.51	22.11	1194.88	1150.75	27.08
9800.00	9589.50	9689.34	261.55	29.88	22.35	1212.24	1167.64	27.18
9900.00	9686.49	9787.82	261.54	30.26	22.60	1229.60	1184.53	27.28
10000.00	9782.95	9885.78	266.89	30.64	22.85	1247.49	1201.95	27.39
10100.00	9875.60	9979.85	268.04	31.00	23.08	1266.78	1220.86	27.58
10200.00	9960.37	10065.93	268.78	31.34	23.30	1287.90	1241.49	27.75
10300.00	10067.65	10174.99	268.60	31.46	23.58	1311.37	1264.41	27.92
10400.00	10258.13	10381.40	266.43	28.67	24.07	1333.11	1285.05	27.74
10500.00	10448.88	10687.75	264.98	24.92	19.59	1346.08	1297.14	27.51
10600.00	10482.53	10909.65	266.11	25.97	16.62	1346.10	1295.85	26.79
10700.00	10483.65	11009.48	266.18	26.56	16.81	1345.30	1293.85	26.15
10800.00	10484.77	11109.47	266.13	27.36	17.04	1344.81	1291.93	25.43
10900.00	10485.89	11209.47	266.08	28.18	17.30	1344.32	1289.78	24.65
11000.00	10487.01	11309.46	266.03	29.15	17.59	1343.83	1287.48	23.85
11100.00	10488.13	11409.45	265.98	30.12	17.90	1343.34	1284.96	23.01
11200.00	10489.25	11509.44	265.93	31.28	18.25	1342.86	1282.29	22.17
11300.00	10490.37	11609.43	265.88	32.36	18.62	1342.37	1279.56	21.37
11400.00	10491.49	11709.43	265.83	33.62	18.99	1341.89	1276.55	20.54
11500.00	10492.61	11809.42	265.78	34.93	19.40	1341.41	1273.52	19.76
11600.00	10493.73	11909.41	265.73	36.21	19.83	1340.93	1270.47	19.03
11700.00	10494.85	12009.40	265.69	37.49	20.25	1340.45	1267.18	18.30
11800.00	10495.97	12109.39	265.64	38.98	20.71	1339.97	1263.83	17.60
11900.00	10497.09	12209.39	265.59	40.46	21.17	1339.49	1260.46	16.95
12000.00	10498.21	12309.38	265.54	41.93	21.71	1339.01	1257.06	16.34
12100.00	10499.33	12409.37	265.49	43.39	22.25	1338.53	1253.63	15.77
12200.00	10500.45	12509.36	265.44	44.86	22.81	1338.06	1250.09	15.21
12300.00	10501.57	12609.35	265.39	46.32	23.38	1337.58	1246.44	14.68
12400.00	10502.69	12709.35	265.34	47.94	23.85	1337.11	1242.77	14.17
12500.00	10503.81	12809.34	265.29	49.56	24.35	1336.64	1239.09	13.70
12600.00	10504.93	12909.33	265.24	51.17	25.00	1336.17	1235.39	13.26
12700.00	10506.05	13009.32	265.19	52.81	25.49	1335.69	1231.71	12.84
12800.00	10507.17	13109.32	265.14	54.47	26.14	1335.23	1228.05	12.46
12900.00	10508.29	13209.31	265.09	56.11	26.71	1334.76	1224.25	12.08
13000.00	10509.41	13309.30	265.04	57.72	27.24	1334.29	1220.36	11.71
13100.00	10510.53	13409.29	264.99	59.41	27.83	1333.82	1216.51	11.37
13200.00	10511.65	13509.28	264.94	61.14	28.53	1333.36	1212.69	11.05
13300.00	10512.77	13609.28	264.89	62.86	29.05	1332.89	1208.86	10.75
13400.00	10513.89	13709.27	264.84	64.57	29.75	1332.43	1205.04	10.46
13500.00	10515.01	13809.26	264.79	66.27	30.39	1331.97	1201.20	10.19
13600.00	10516.13	13909.25	264.74	67.97	31.00	1331.51	1197.35	9.93
13700.00	10517.25	14009.24	264.69	69.68	31.60	1331.05	1193.49	9.68
13800.00	10518.37	14109.24	264.64	71.38	32.19	1330.59	1189.62	9.44
13900.00	10519.49	14209.23	264.59	73.09	32.83	1330.13	1185.74	9.21
14000.00	10520.61	14309.22	264.54	74.80	33.51	1329.67	1181.85	9.00
14100.00	10521.73	14409.21	264.49	76.52	34.18	1329.21	1177.96	8.79
14200.00	10522.85	14509.21	264.44	78.24	34.84	1328.76	1174.05	8.59
14300.00	10523.97	14609.20	264.38	80.01	35.51	1328.30	1170.14	8.40
14400.00	10525.09	14709.19	264.33	81.78	36.18	1327.85	1166.17	8.21
14500.00	10526.21	14809.18	264.28	83.57	36.84	1327.40	1162.19	8.03
14600.00	10527.33	14909.17	264.23	85.35	37.51	1326.95	1158.21	7.86
14700.00	10528.45	15009.17	264.18	87.14	38.18	1326.50	1154.23	7.70
14800.00	10529.57	15109.16	264.13	88.92	38.86	1326.05	1150.24	7.54
14900.00	10530.69	15209.15	264.08	90.71	39.53	1325.60	1146.25	7.39
14947.54	10531.22	15256.69	264.06	91.57	39.85	1325.39	1144.35	7.32

**Weatherford**

Weatherford Drilling Services

GeoDec4 v2.1.0.0

Report Date: June 02, 2015
Job Number: _____
Customer: Devon Energy
Well Name: Gaucho Unit 16H
API Number: _____
Rig Name: _____
Location: Lea Co, NM Nad83 NME
Block: _____
Engineer: RWJ

NAD83 / New Mexico East (ftUS)	NAD83 (1986)
Projected Coordinate System	Geodetic Coordinate System
Datum: North American Datum 1983 (1986)	Datum: North American Datum 1983 (1986)
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
EPSG: 2257	EPSG: 4269
North: 499511.79 US Survey Foot	Latitude: 32.370486 Degree
East: 798050.23 US Survey Foot	Longitude: -103.501848 Degree
Convergence: 0.45°	
Declination: 7.21°	
Total Correction: 6.76°	
Datum Transformation: none	

Geodetic Location WGS84

MSL Elevation = 0 m
Latitude = 32° 22' 13.75" N
Longitude = 103° 30' 06.65" W

Magnetic Declination = 7.21 deg	[True North Offset]
Local Gravity = .9988 g	Checksum = 6685
Local Field Strength = 48325 nT	Magnetic Vector X = 23759 nT
Magnetic Dip = 60.29 deg	Magnetic Vector Y = 3005 nT
Magnetic Model = bggm2015.dat	Magnetic Vector Z = 41973 nT
Run Date = August 15, 2015	Magnetic Vector H = 23949 nT

Signed: _____ Date: _____

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