

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an
abandoned well. Use form 3160-3 (APD) for such proposals.*Carlsbad Field Office
OCD Hobbs
Lease Serial No. NMNM0359295A
6. If Indian Allottee or Tribe Name**SUBMIT IN TRIPLICATE - Other instructions on page 2**

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

HOBBS OCD

Well Name and No.
MARWARI 28-16 STATE FED COM 232H

2. Name of Operator

DEVON ENERGY PRODUCTION COMPANY

Contact: LINDA GOOD

Email: linda.good@dev.com

NOV 28 2018

9. API Well No.

30-025-45203

3a. Address

333 WEST SHERIDAN AVE
OKLAHOMA CITY, OK 73102

3b. Phone No. (include area code)

Ph: 405-552-6558

RECEIVED

10. Field and Pool or Exploratory Area

WC-025 G-08 S253235G; BS

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

Sec 28 T25S R32E Mer NMP NWNW 175FNL 410FWL

11. County or Parish, State

LEA COUNTY, NM

12. CHECK THE 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	☐ Hydraulic Fracturing	☐ 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 recomple horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Attention Haque & Chris:

Devon Energy Production Co., L.P. respectfully request permission to change the following for the subject well:

Bottomhole Location changed from 330 FNL 330 FWL Sec 16-T25S-R32E to 20 FSL 1650 FWL, Sec 33-T25S-32E

Pool changed from WC-025 G-06 S253206M; Bone Spring to WC-025-G-08 S253235G; Bone Spring

Attached are the revised Drilling Plan, Directional Plan, Survey, AC Report and C-102 plat.

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

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

Electronic Submission #442023 verified by the BLM Well Information System
For DEVON ENERGY PRODUCTION COMPANY, sent to the Hobbs
Committed to AFMSS for processing by MUSTAFA HAQUE on 11/01/2018 ()

Name (Printed/Typed) LINDA GOOD

Title REGULATORY SPECIALIST

Signature (Electronic Submission)

Date 10/31/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By Mustafa Haque

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.

Title **Petroleum Engineer**
Carlsbad Field Office

Office

Date 11-06-2018

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

(Instructions on page 2)

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

KJ

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Hrazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1226 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-45203	² Pool Code 97903	³ Pool Name WC-025 G-08 S253235G; Bone Spring
⁴ Property Code 322444	⁵ Property Name MARWARI 28-16 STATE FED COM	⁶ Well Number 232H
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	⁹ Elevation 3377.3

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	28	25 S	32 E		175	NORTH	410	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	33	25 S	32 E		20	SOUTH	1650	WEST	LEA

¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

NW CORNER SEC. 28 LAT. = 32.1085668°N LONG. = 103.6886334°W NMSP EAST (FT) N = 403829.87 E = 740937.30 W Q CORNER SEC. 28 LAT. = 32.1013805°N LONG. = 103.6886378°W NMSP EAST (FT) N = 401215.68 E = 740967.05 SW CORNER SEC. 28 LAT. = 32.0941331°N LONG. = 103.6886262°W NMSP EAST (FT) N = 398579.22 E = 740986.41 LAST TAKE POINT 100' FSL, 1650' FWL LAT. = 32.0799658°N LONG. = 103.6833496°W NMSP EAST (FT) N = 393435.20 E = 742651.52 W Q CORNER SEC. 33 LAT. = 32.0868667°N LONG. = 103.6886534°W NMSP EAST (FT) N = 395935.76 E = 740993.81 SW CORNER SEC. 33 LAT. = 32.0796430°N LONG. = 103.6886768°W NMSP EAST (FT) N = 393301.15 E = 741002.30	N 88°51'38"E 2661.92 FT N 89°21'15"E 2660.68 FT 410' SHL 175' FTP MARWARI 28-16 STATE FED COM 232H ELEV. = 3377.3' LAT. = 32.081014°N (NAD83) LONG. = 103.6873567°W NMSP EAST (FT) N = 403666.01 E = 741334.12 SEC. 28 S Q CORNER SEC. 28 LAT. = 32.0941449°N LONG. = 103.6800514°W NMSP EAST (FT) N = 39599.50 E = 742641.83 NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN, USING THE NORTH AMERICAN DATUM OF 1983 (NAD83) LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCE USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE VERTICAL DATUM NAVD83. SEC. 33 BOTTOM OF HOLE LAT. = 32.0799610°N LONG. = 103.6833506°W NMSP EAST (FT) N = 393332.22 E = 742651.83 S Q CORNER SEC. 33 LAT. = 32.0796430°N LONG. = 103.6800793°W NMSP EAST (FT) N = 39323.87 E = 742651.13 LTP BHL 1650' 20' S 89°30'40"W 2663.51 FT S 89°29'31"W 2661.05 FT	NE CORNER SEC. 28 LAT. = 32.1087061°N LONG. = 103.6714983°W NMSP EAST (FT) N = 403912.78 E = 746258.05 FIRST TAKE POINT 100' FSL, 1650' FWL LAT. = 32.1083549°N LONG. = 103.6833543°W NMSP EAST (FT) N = 403762.70 E = 742587.81 SE CORNER SEC. 28 LAT. = 32.0941915°N LONG. = 103.6714557°W NMSP EAST (FT) N = 398632.65 E = 746300.54 E Q CORNER SEC. 33 LAT. = 32.0869362°N LONG. = 103.6714764°W NMSP EAST (FT) N = 395393.26 E = 746313.42 SE CORNER SEC. 33 LAT. = 32.0796633°N LONG. = 103.6714898°W NMSP EAST (FT) N = 393347.47 E = 746325.50	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Linda Good</i> 10/31/2018 Signature Date Linda Good Printed Name linda.good@divn.com E-mail Address ¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. OCTOBER 30, 2018 Date of Survey F. JARAMILLO Signature and Seal of Professional Surveyor 32281 Certificate Number F. JARAMILLO, PLS 12797 SURVEY NO. 5869D
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Intent ☒ As Drilled ☐

API #
30-025-45203

Operator Name:	Property Name:	Well Number
DEVON ENERGY PRODUCTION CO., L.P.	MARWARI 28-16 STATE FED COM	232H

Kick Off Point (KOP)

UL C	Section 28	Township 25S	Range 32E	Lot	Feet 87	From N/S NORTH	Feet 1601	From E/W WEST	County LEA
Latitude 32.10837					Longitude -103.684			NAD 83	

First Take Point (FTP)

UL C	Section 28	Township 25S	Range 32E	Lot	Feet 100	From N/S NORTH	Feet 1650	From E/W WEST	County LEA
Latitude 32.1083549					Longitude 103.6833543			NAD 83	

Last Take Point (LTP)

UL N	Section 33	Township 25S	Range 32E	Lot	Feet 100	From N/S SOUTH	Feet 1650	From E/W WEST	County LEA
Latitude 32.0799658					Longitude 103.6833496			NAD 83	

Is this well the defining well for the Horizontal Spacing Unit? ☒

Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

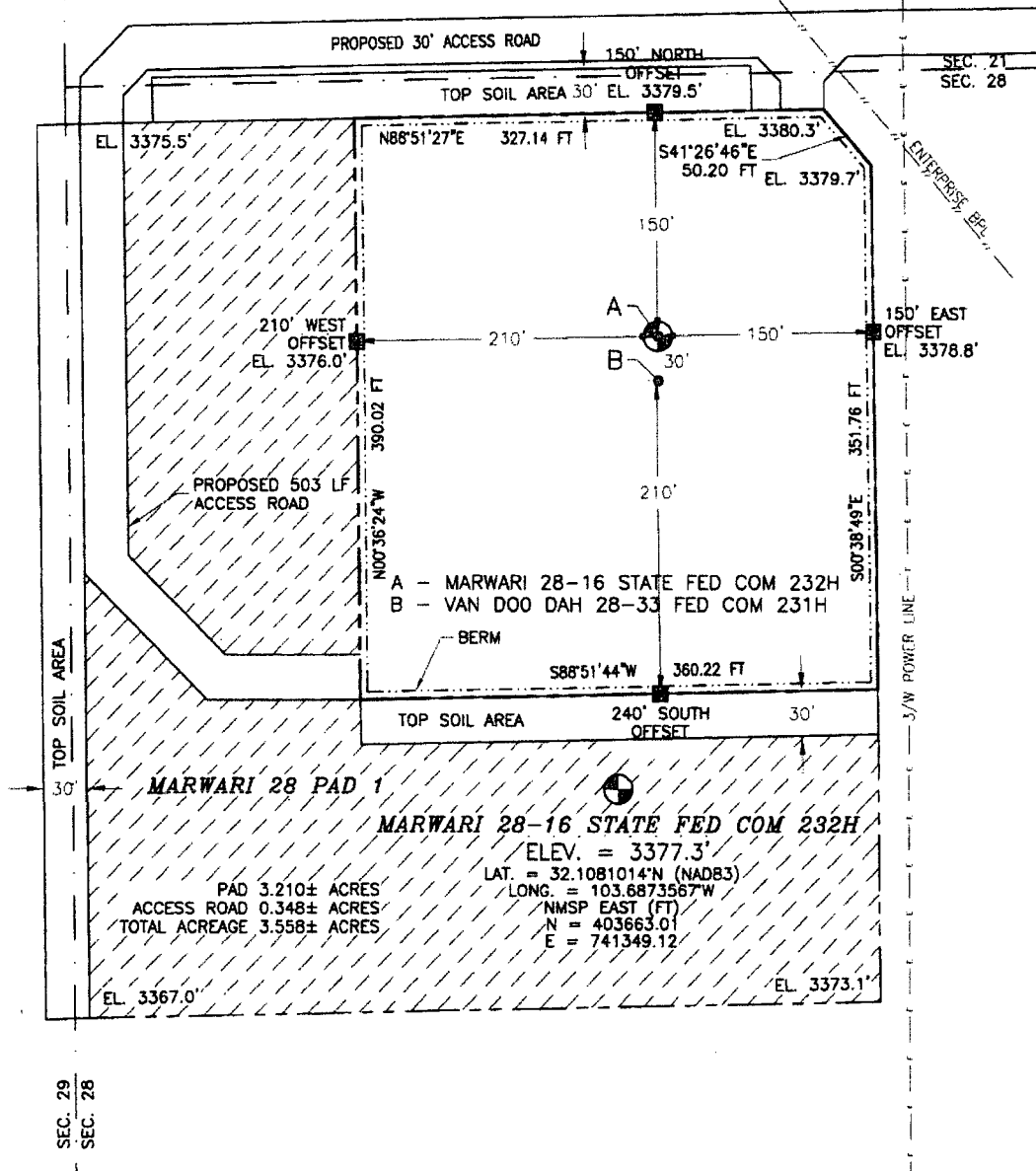
API #

Operator Name:	Property Name:	Well Number

KZ 06/29/2018

SECTION 28, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
SITE MAP

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83) LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. VERTICAL DATUM NAVD88.



012 60 120 240

SCALE 1" = 120'

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF CR 1 (ORLA) AND MONSANTO ROAD GO WEST ON MONSANTO ROAD FOR APPROX. 0.65 OF A MILE, THEN GO SOUTH ON 20' CALICHE LEASE ROAD FOR APPROX. 1.0 MILE, FOLLOW ROAD SURVEY WEST APPROX. 0.38 OF A MILE, THEN SOUTH-SOUTHEAST-EAST 528' TO THE SOUTHWEST PAD CORNER FOR THIS LOCATION.

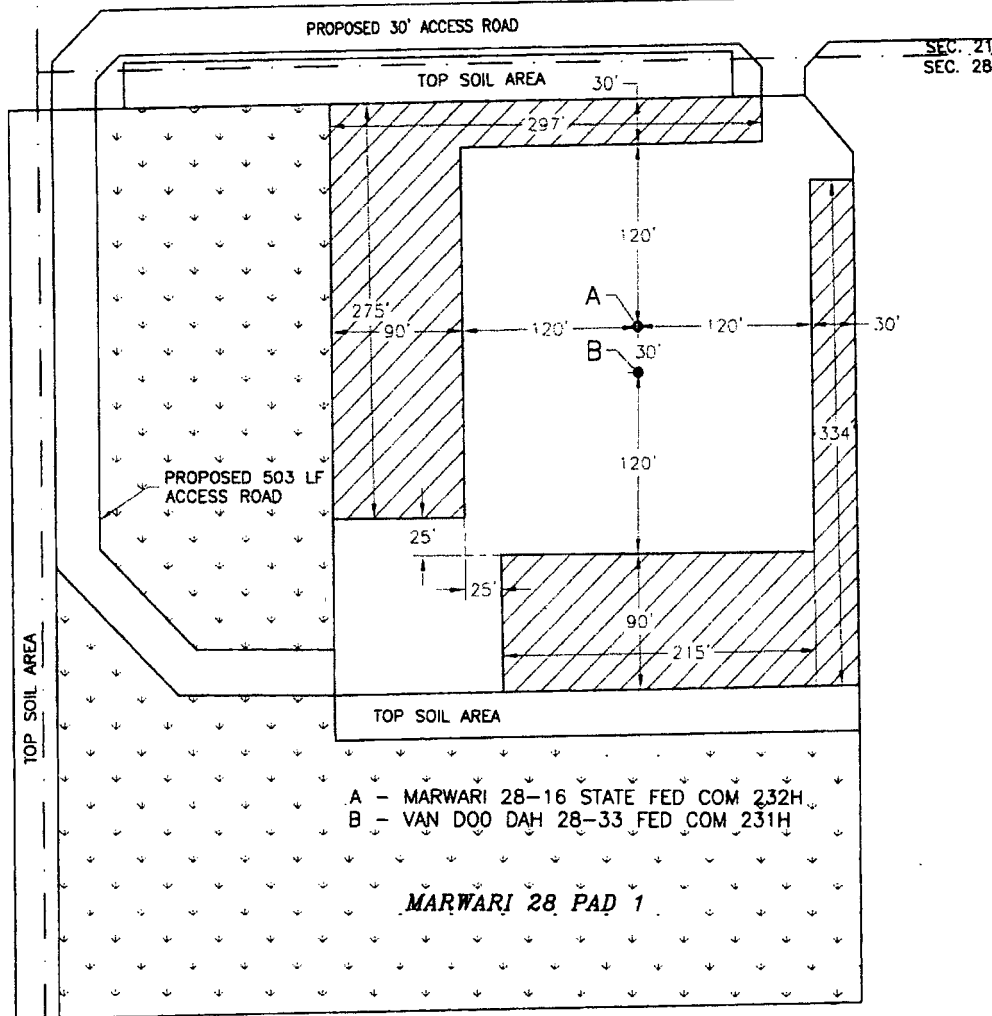
DEVON ENERGY PRODUCTION COMPANY, L.P.
MARWARI 28-16 STATE FED COM 232H
LOCATED 175 FT. FROM THE NORTH LINE
AND 410 FT. FROM THE WEST LINE OF
SECTION 28, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 30, 2018

SURVEY NO. 5869D

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

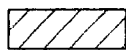
SECTION 28, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
INTERIM SITE BUILD PLAN



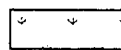
A - MARWARI 28-16 STATE FED COM 232H
B - VAN DOO DAH 28-33 FED COM 231H

MARWARI 28 PAD 1

SEC. 29
SEC. 28



DENOTES INTERIM PAD
RECLAMATION AREA



DENOTES GRADING SITE
RECLAMATION AREA

012 60 120 240
SCALE 1" = 120'

1.381± ACRES INTERIM PAD RECLAMATION AREA
4.005± ACRES GRADING SITE RECLAMATION AREA
2.176± ACRES NON-RECLAIMED AREA
7.562± ACRES MARWARI 28 PAD 1

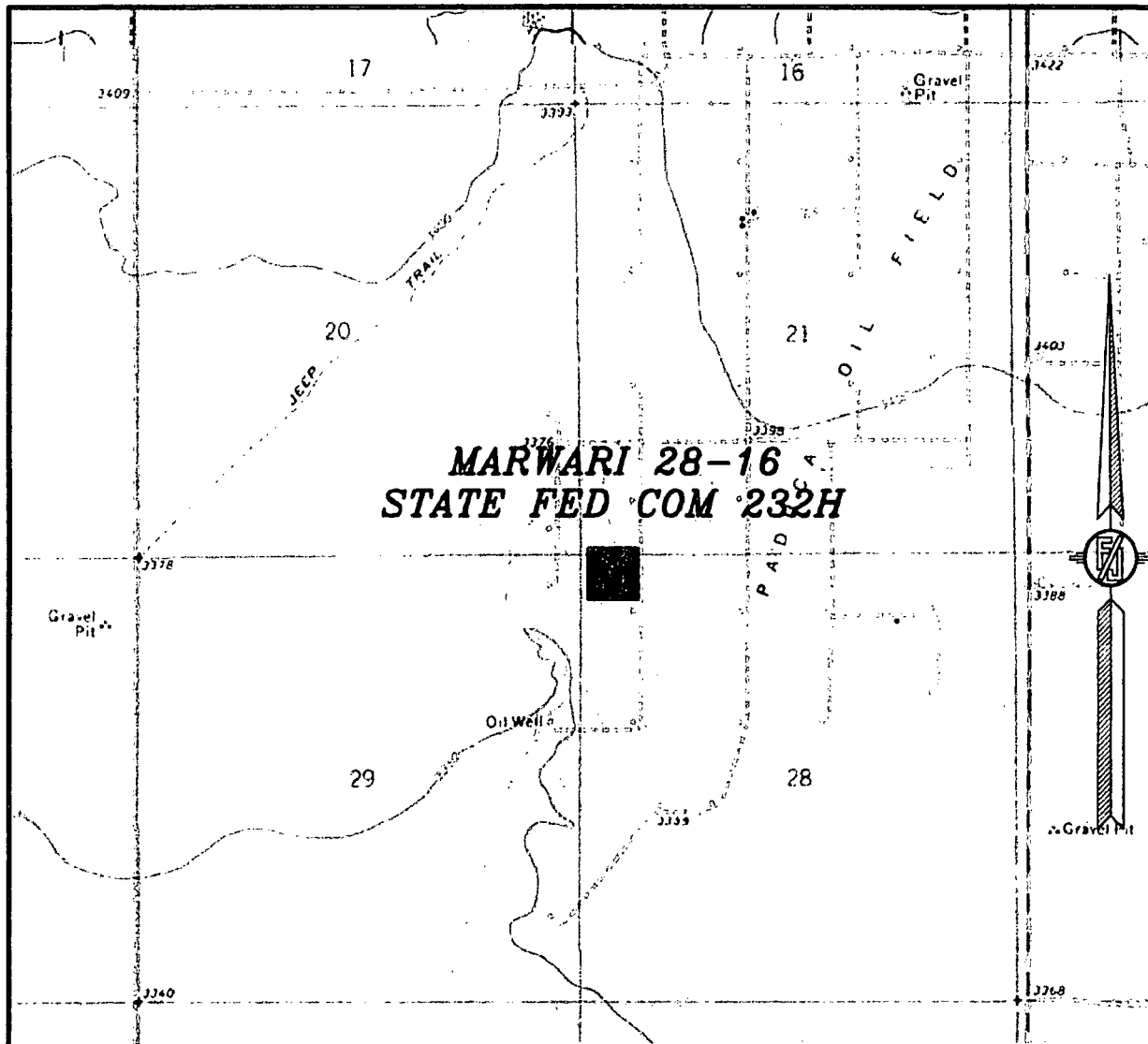
DEVON ENERGY PRODUCTION COMPANY, L.P.
MARWARI 28-16 STATE FED COM 232H
LOCATED 175 FT. FROM THE NORTH LINE
AND 410 FT. FROM THE WEST LINE OF
SECTION 28, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 30, 2018

SURVEY NO. 5869D

MADRON SURVEYING, INC. 301 SOUTH CANAL (S75) 234-334' CARLSBAD, NEW MEXICO

SECTION 28, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
PADUCA BREAKS WEST

NOT TO SCALE

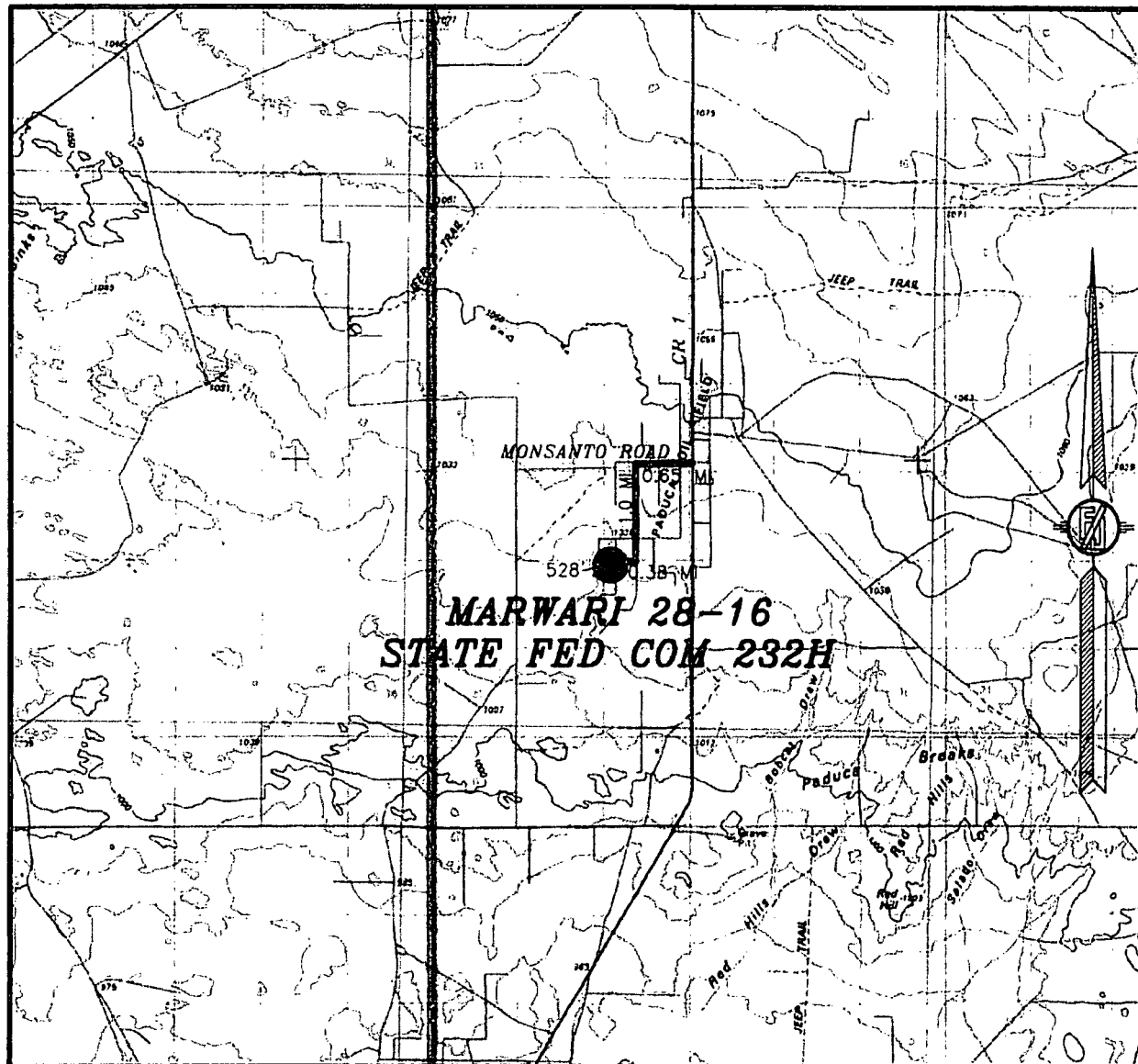
DEVON ENERGY PRODUCTION COMPANY, L.P.
MARWARI 28-16 STATE FED COM 232H
LOCATED 175 FT. FROM THE NORTH LINE
AND 410 FT. FROM THE WEST LINE OF
SECTION 28, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 30, 2018

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SURVEY NO. 5869D

SECTION 28, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.
MARWARI 28-16 STATE FED COM 232H
LOCATED 175 FT. FROM THE NORTH LINE
AND 410 FT. FROM THE WEST LINE OF
SECTION 28, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF CR 1 (ORLA) AND MONSANTO ROAD GO WEST ON MONSANTO ROAD FOR APPROX. 0.65 OF A MILE. THEN GO SOUTH ON 20' CALICHE LEASE ROAD FOR APPROX. 1.0 MILE. FOLLOW ROAD SURVEY WEST APPROX. 0.38 OF A MILE. THEN SOUTH-SOUTHEAST-EAST 528' TO THE SOUTHWEST PAD CORNER FOR THIS LOCATION.

OCTOBER 30, 2018

SURVEY NO. 5869D

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 28, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOVEMBER 2015

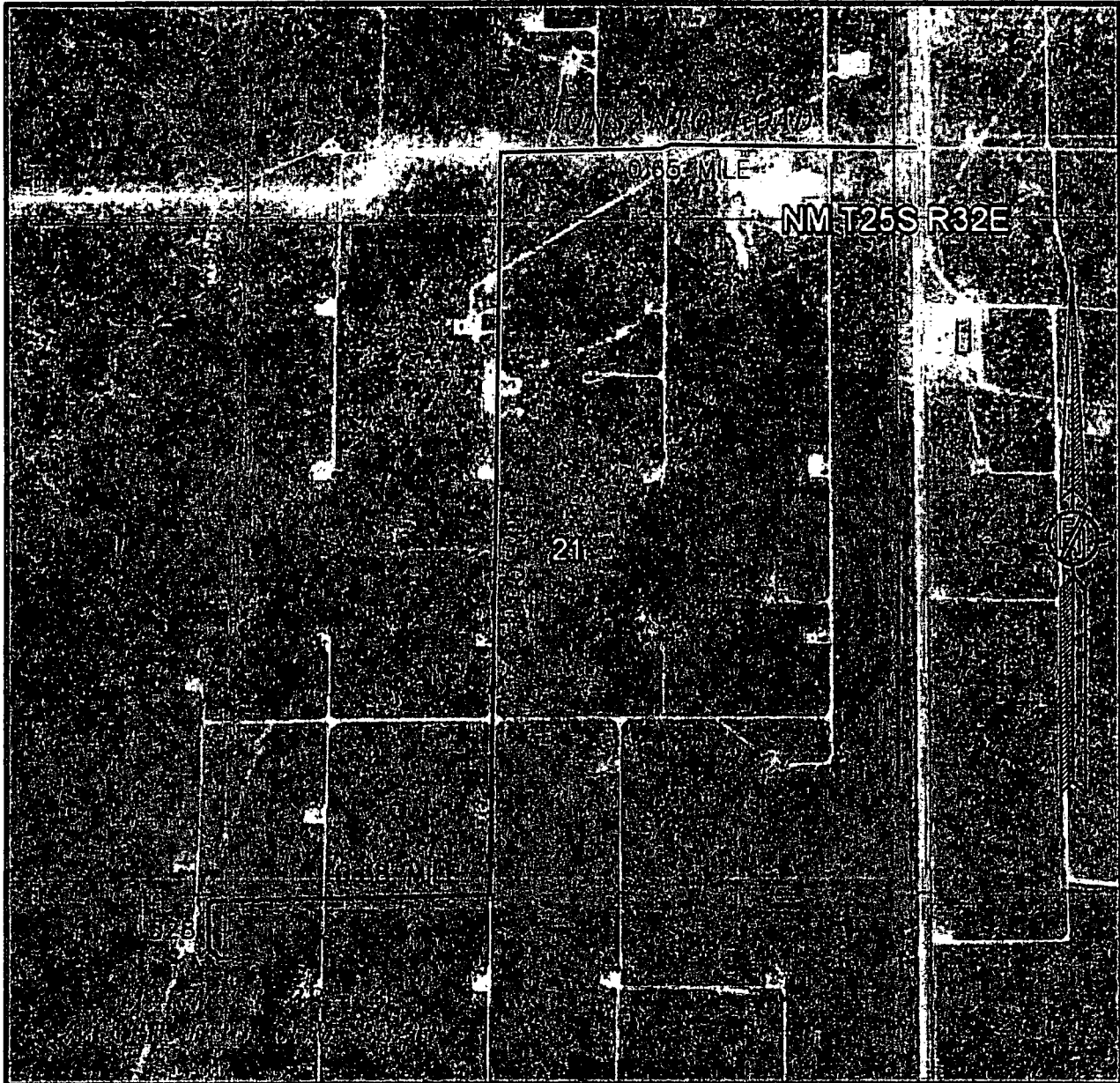
DEVON ENERGY PRODUCTION COMPANY, L.P.
MARWARI 28-16 STATE FED COM 232H
LOCATED 175 FT. FROM THE NORTH LINE
AND 410 FT. FROM THE WEST LINE OF
SECTION 28, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 30, 2018

SURVEY NO. 5869D

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3341

SECTION 28, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
ACCESS AERIAL ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOVEMBER 2015

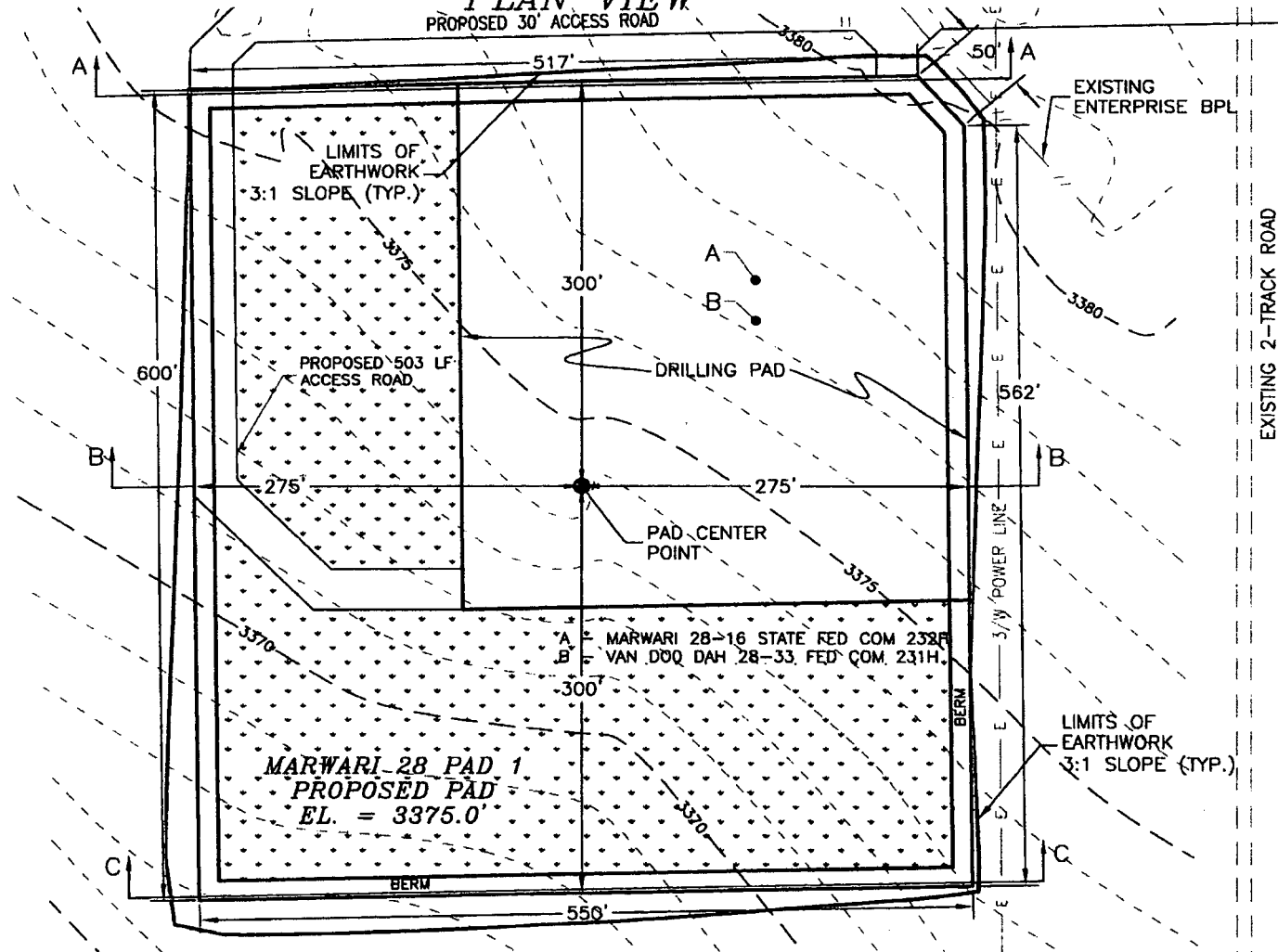
DEVON ENERGY PRODUCTION COMPANY, L.P.
MARWARI 28-16 STATE FED COM 232H
LOCATED 175 FT. FROM THE NORTH LINE
AND 410 FT. FROM THE WEST LINE OF
SECTION 28, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 30, 2018

SURVEY NO. 5869D

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

PLAN VIEW



DEVON ENERGY PRODUCTION COMPANY, L.P.
 GRADING PLAN AND CROSS SECTIONS
MARWARI 28-16 STATE FED COM 232H
 SECTION 28, TOWNSHIP 26 SOUTH,
 RANGE 32 EAST, N.M.P.M.
 LEA COUNTY, STATE OF NEW MEXICO

0 12 60 120 240
 SCALE 1" = 120'

CUT	FILL	NET
9161 CU. YD	27253 CU. YD	18092 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

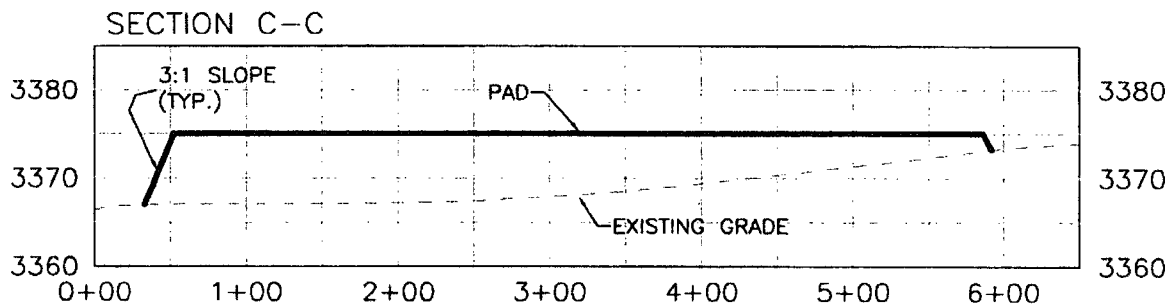
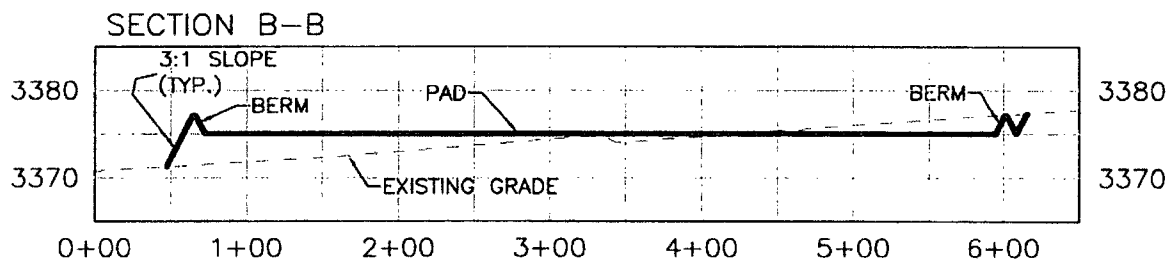
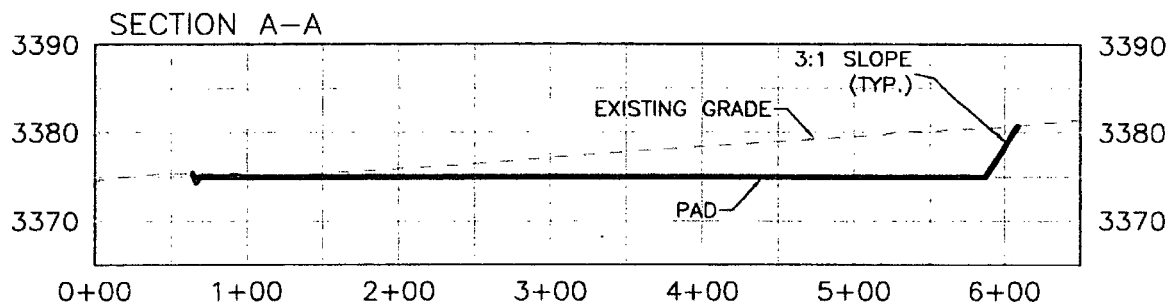
OCTOBER 30, 2018

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO

(575) 234-3341

SHEET 1-2
 SURVEY NO. 5869D

CROSS SECTIONS



DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
MARWARI 28-16 STATE FED COM 232H
SECTION 28, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

012 60 120 240
SCALE 1" = 120' - 1" = 20' VER

CUT	FILL	NET
9161 CU. YD	27253 CU. YD	18092 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

OCTOBER 30, 2018
MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3341

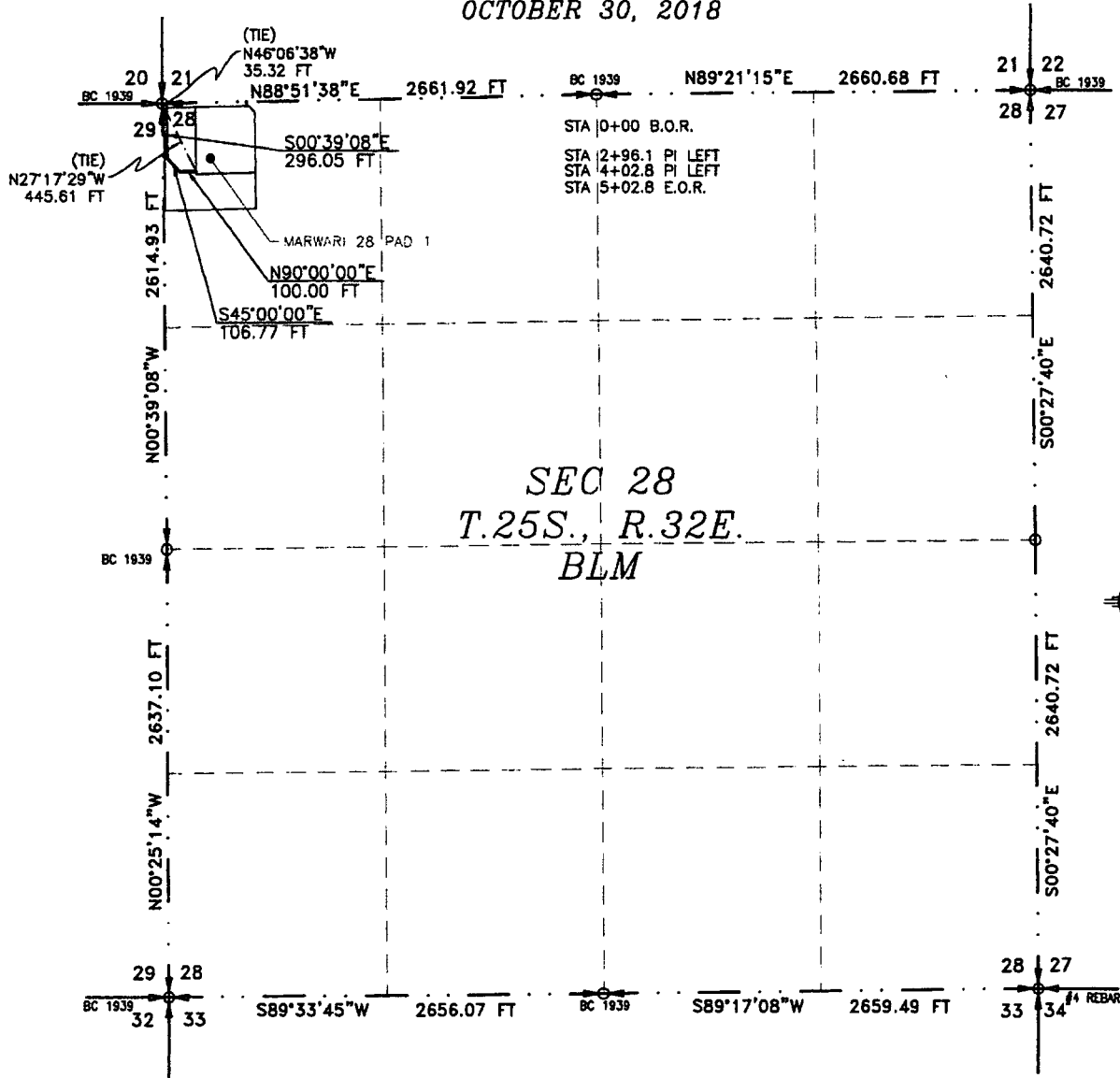
SHEET 2-2
SURVEY NO. 5869D

ACCESS ROAD PLAT

ACCESS ROAD TO THE MARWARI 28 PAD 1

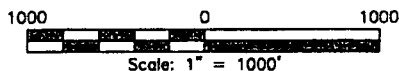
(MARWARI 28-16 STATE FED COM 232H & VAN DOO DAH 28-33 FED COM 231H)

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 28, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
OCTOBER 30, 2018



SEC 28
T.25S., R.32E.
BLM

SEE NEXT SHEET (2-2) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 1-2

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 30 DAY OF OCTOBER 2018

FILIMON F. JARAMILLO PLS 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 5869D

ACCESS ROAD PLAT

ACCESS ROAD TO THE MARWARI 28 PAD 1
(MARWARI 28-16 STATE FED COM 232H & VAN DOO DAH 28-33 FED COM 231H)

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 28, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
OCTOBER 30, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 28, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE NW/4 NW/4 OF SAID SECTION 28, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 28, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N46°06'38"W, A DISTANCE OF 35.32 FEET;

THENCE S00°39'08"E A DISTANCE OF 296.05 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S45°00'00"E A DISTANCE OF 106.77 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N90°00'00"E A DISTANCE OF 100.00 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 28, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N27°17'29"W, A DISTANCE OF 445.61 FEET;

SAID STRIP OF LAND BEING 502.82 FEET OR 30.47 RODS IN LENGTH, CONTAINING 0.346 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NW/4 502.82 L.F. 30.47 RODS 0.346 ACRES

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS 30 DAY OF OCTOBER 2018

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 2-2

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 5869D

Devon Energy, Marwari 28-16 State Fed Com 232H

1. Geologic Formations

TVD of target	10,549	Pilot hole depth	N/A
MD at TD:	20,850	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	829		
Salado	1190		
Delaware	4571		
Lower Brushy	8349		
1BSLM	8598		
1BSSS	9546		
2BSLM	9808		
2BSSS	10212		
2BSSS_U	10283		
2BSSS_M	10352		
2BSSS_L_TZT	10499		
TZB	10549		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	815' 900'	13.375"	48	H40	STC	1.125	1	1.6
12.25"	0	5,250'	9.625"	40	J55	LTC	1.125	1	1.6
8.75"	0	20,850	5.5"	17	P110	BTC	1.125	1	1.6
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet

Mark Lewis
Re write + Petrol Geop Report
Cherry 5539' - Sundry is Bell Canyon - OK ✓

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

Must have table for contingency casing

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y

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Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld ft ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	632	14.8	1.33	6.32	6	Lead: Class C Cement + 0.125 lbs/sack Poly-F-Flake
Inter.	742	10.3	3.65	22.06	24	Lead: (50:50) Poz (Silica) 3 lbm/sk Kol-Seal, .125 lbm/sk Poly-E-Flake
	153	14.8	1.33	6.32	6	Tail: Class C Cement + 0.125 lbs/sack Poly-F-Flake
Prod.	801	9	3.27	13.5	21	Lead: Tuned Light Cement
	1997	14.5	1.2	5.31	25	Tail: (50:50) Clas H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite

Casing String	TOC	% Excess
13-3/8" Surface	0'	50%
9-5/8" Intermediate	0'	30%
5-1/2" Production	4250'	25%

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
---	--

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

*Specify if additional ram is utilized.

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

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

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
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Devon Energy, Marwari 28-16 State Fed Com 232H

Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Y	Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi. ○ Wellhead will be installed by wellhead representatives. ○ If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. ○ Wellhead representative will install the test plug for the initial BOP test. ○ Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the packoff, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. ○ If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. ○ Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. ○ Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2. After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi. Low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2. After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the wellhead. 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.

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	Devon's proposed wellhead manufactures will be EMC Technologies, Cactus Wellhead, or Cameron. 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.
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5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	815 900'	FW Gel	8.5-9.0	28-34	N/C
815	5,250	Saturated Brine	10.0-11.0	28-34	N/C
5,250	20,850	Cut Brine	8.5-9.3	28-34	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
---	-----------------------------

6. Logging and Testing Procedures

Logging, Coring and Testing.	
X	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned	Interval
Resistivity	Int. shoe to KOP
Density	Int. shoe to KOP
X CBL	Production casing
X Mud log	KOP to TD
PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4942 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

8. Other facets of operation

Is this a walking operation? No.

Will be pre-setting casing? No.

Attachments

☒ Directional Plan

☐ Other, describe

Devon Energy Corporation

WELL DETAILS: Marwari 28-16 STATE FED COM 232H

RKB (Nabors X05) 33' + GL @ 3410.00usft
Ground Level: 3377.00

	0.00	0.00	Northings	Eastings	Latitude	Longitude
			403662.97	741349.12	32.10810128	-103.68735666

SECTION DETAILS Plan 1

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	Nudge KOP
3300.00	13.00	85.00	3288.87	12.80	146.29	1.00	5.61	EOB 13"
7300.00	13.00	85.00	7186.35	91.22	1042.57	0.00	39.98	EOH 13"
8500.00	0.00	0.00	8475.23	104.02	1188.96	1.00	45.59	Vertical Point
10090.81	0.00	0.00	9966.04	104.02	1188.96	0.00	45.59	EOH / KOP (86.93' FNL, 1600.43' FWL) of Section 28
10990.81	90.00	179.38	10539.00	-468.90	1195.21	10.00	614.79	Land Point
20850.24	90.00	179.38	10539.00	-10327.75	1302.71	0.00	10409.58	TD

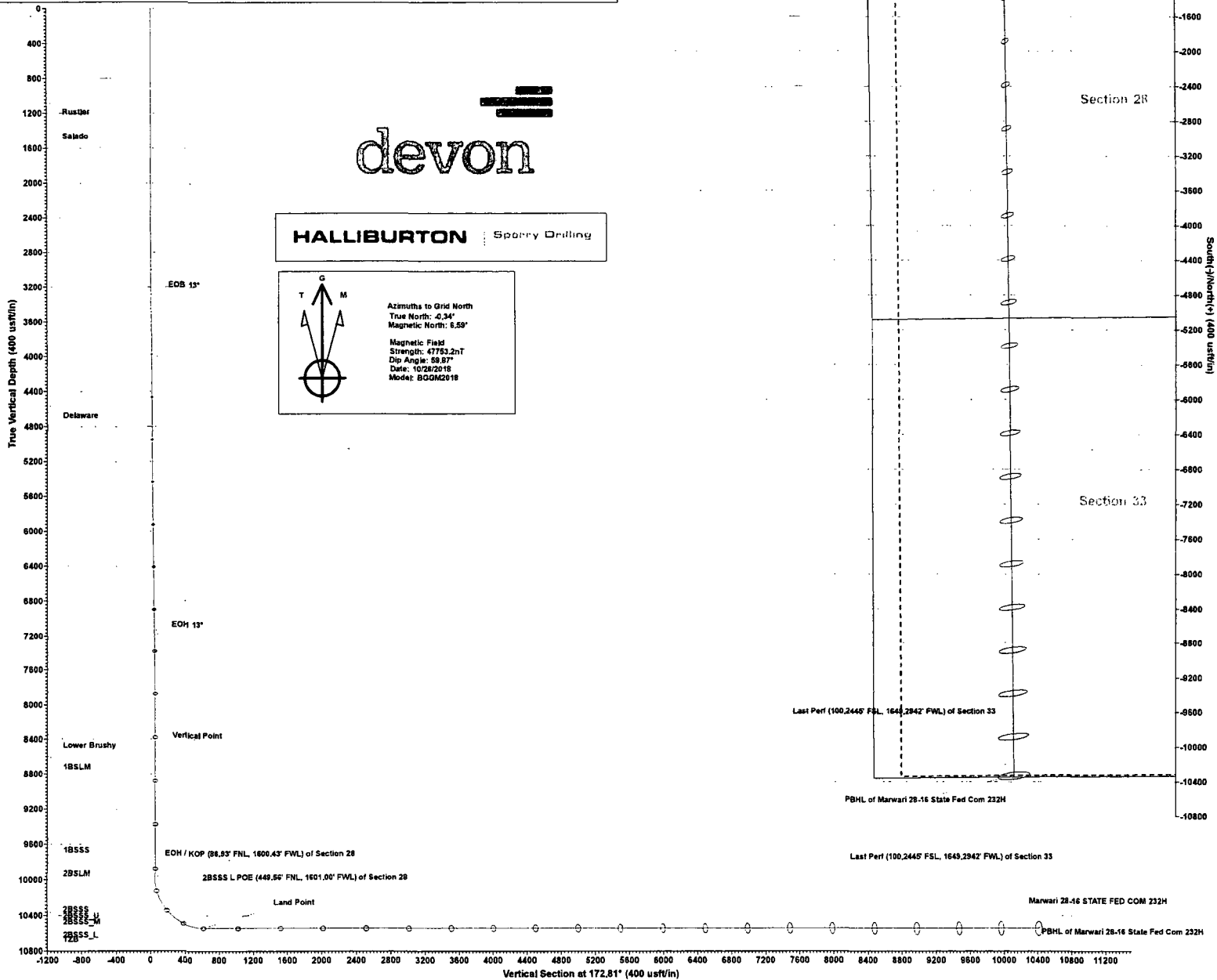
devon

HALLIBURTON Sperry Drilling



Azimuths to Grid North
True North: -0.34°
Magnetic North: 6.59°

Magnetic Field
Strength: 47753.2nT
Dip Angle: 58.67°
Date: 10/28/2018
Model: BQGM2018



Devon Energy Corporation

Lea County, NM (NAD 83) Sec 28 T. 25 S., R.32E.

API#

Marwari 28-16 STATE FED COM 232H

Wellbore #1

Plan: Plan 1

Sperry Drilling Services

Combo Report

31 October, 2018

Well Coordinates: 32.10810127
-103.68735666

North American Datum 1983
New Mexico Eastern Zone
403,662.97 N
741,349.12 E

Ground Level: 3,377.00 usft

Local Coordinate Origin:

Centered on Well Marwari 28-16 STATE FED COM 232H

Viewing Datum:

RKB (Nabors X05) 33' + GL @ 3410.00usft

TVDs to System:

N

North Reference:

Grid

Unit System:

Midcon (2 decimal)

Version: 5000.15 Build: 91

Report Version: Midcon Combo v1.13

HALLIBURTON

HALLIBURTON**Plan Report for Marwari 28-16 STATE FED COM 232H - Plan 1**

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
0.00	0.00	0.00	0.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
1,000.00	0.00	0.00	1,000.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
1,069.00	0.00	0.00	1,069.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	Rustler
1,100.00	0.00	0.00	1,100.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
1,200.00	0.00	0.00	1,200.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
1,300.00	0.00	0.00	1,300.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
1,347.00	0.00	0.00	1,347.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	Salado
1,400.00	0.00	0.00	1,400.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
1,600.00	0.00	0.00	1,600.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
1,700.00	0.00	0.00	1,700.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
1,800.00	0.00	0.00	1,800.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
1,900.00	0.00	0.00	1,900.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00 N	0.00 E	403,662.97	741,349.12	0.00	0.00	0.00	Nudge KOP
2,100.00	1.00	85.00	2,099.99	0.08 N	0.87 E	403,663.04	741,349.99	1.00	0.03	85.00	
2,200.00	2.00	85.00	2,199.96	0.30 N	3.48 E	403,663.27	741,352.60	1.00	0.13	0.00	
2,300.00	3.00	85.00	2,299.86	0.68 N	7.82 E	403,663.65	741,356.94	1.00	0.30	0.00	
2,400.00	4.00	85.00	2,399.68	1.22 N	13.90 E	403,664.18	741,363.02	1.00	0.53	0.00	
2,500.00	5.00	85.00	2,499.37	1.90 N	21.72 E	403,664.87	741,370.84	1.00	0.83	0.00	
2,600.00	6.00	85.00	2,598.90	2.74 N	31.27 E	403,665.70	741,380.39	1.00	1.20	0.00	
2,700.00	7.00	85.00	2,698.26	3.72 N	42.54 E	403,666.69	741,391.67	1.00	1.63	0.00	
2,800.00	8.00	85.00	2,797.40	4.86 N	55.55 E	403,667.83	741,404.67	1.00	2.13	0.00	
2,900.00	9.00	85.00	2,896.30	6.15 N	70.27 E	403,669.11	741,419.39	1.00	2.69	0.00	
3,000.00	10.00	85.00	2,994.93	7.59 N	86.71 E	403,670.55	741,435.83	1.00	3.32	0.00	
3,100.00	11.00	85.00	3,093.26	9.17 N	104.87 E	403,672.14	741,453.99	1.00	4.02	0.00	
3,200.00	12.00	85.00	3,191.25	10.91 N	124.73 E	403,673.88	741,473.85	1.00	4.78	0.00	
3,300.00	13.00	85.00	3,288.87	12.80 N	146.29 E	403,675.76	741,495.41	1.00	5.61	0.00	EOB 13°

Plan Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)								
3,400.00	13.00	85.00	3,386.31	14.76 N	168.70 E	403,677.73	741,517.82	0.00	6.47	0.00	
3,500.00	13.00	85.00	3,483.75	16.72 N	191.11 E	403,679.69	741,540.23	0.00	7.33	0.00	
3,600.00	13.00	85.00	3,581.19	18.68 N	213.52 E	403,681.65	741,562.64	0.00	8.19	0.00	
3,700.00	13.00	85.00	3,678.62	20.64 N	235.93 E	403,683.61	741,585.05	0.00	9.05	0.00	
3,800.00	13.00	85.00	3,776.06	22.60 N	258.34 E	403,685.57	741,607.46	0.00	9.91	0.00	
3,900.00	13.00	85.00	3,873.50	24.56 N	280.75 E	403,687.53	741,629.87	0.00	10.77	0.00	
4,000.00	13.00	85.00	3,970.93	26.52 N	303.16 E	403,689.49	741,652.28	0.00	11.62	0.00	
4,100.00	13.00	85.00	4,068.37	28.48 N	325.57 E	403,691.45	741,674.69	0.00	12.48	0.00	
4,200.00	13.00	85.00	4,165.81	30.44 N	347.98 E	403,693.41	741,697.10	0.00	13.34	0.00	
4,300.00	13.00	85.00	4,263.24	32.40 N	370.38 E	403,695.37	741,719.51	0.00	14.20	0.00	
4,400.00	13.00	85.00	4,360.68	34.37 N	392.79 E	403,697.33	741,741.91	0.00	15.06	0.00	
4,500.00	13.00	85.00	4,458.12	36.33 N	415.20 E	403,699.29	741,764.32	0.00	15.92	0.00	
4,597.38	13.00	85.00	4,553.00	38.23 N	437.03 E	403,701.20	741,786.15	0.00	16.76	0.00	Delaware
4,600.00	13.00	85.00	4,555.56	38.29 N	437.61 E	403,701.25	741,786.73	0.00	16.78	0.00	
4,700.00	13.00	85.00	4,652.99	40.25 N	460.02 E	403,703.21	741,809.14	0.00	17.64	0.00	
4,800.00	13.00	85.00	4,750.43	42.21 N	482.43 E	403,705.17	741,831.55	0.00	18.50	0.00	
4,900.00	13.00	85.00	4,847.87	44.17 N	504.84 E	403,707.13	741,853.96	0.00	19.36	0.00	
5,000.00	13.00	85.00	4,945.30	46.13 N	527.25 E	403,709.09	741,876.37	0.00	20.22	0.00	
5,100.00	13.00	85.00	5,042.74	48.09 N	549.66 E	403,711.06	741,898.78	0.00	21.08	0.00	
5,200.00	13.00	85.00	5,140.18	50.05 N	572.07 E	403,713.02	741,921.19	0.00	21.94	0.00	
5,300.00	13.00	85.00	5,237.61	52.01 N	594.48 E	403,714.98	741,943.60	0.00	22.79	0.00	
5,400.00	13.00	85.00	5,335.05	53.97 N	616.89 E	403,716.94	741,966.01	0.00	23.65	0.00	
5,500.00	13.00	85.00	5,432.49	55.93 N	639.30 E	403,718.90	741,988.42	0.00	24.51	0.00	
5,600.00	13.00	85.00	5,529.93	57.89 N	661.71 E	403,720.86	742,010.83	0.00	25.37	0.00	
5,700.00	13.00	85.00	5,627.36	59.85 N	684.12 E	403,722.82	742,033.24	0.00	26.23	0.00	
5,800.00	13.00	85.00	5,724.80	61.81 N	706.53 E	403,724.78	742,055.65	0.00	27.09	0.00	
5,900.00	13.00	85.00	5,822.24	63.77 N	728.94 E	403,726.74	742,078.06	0.00	27.95	0.00	
6,000.00	13.00	85.00	5,919.67	65.73 N	751.35 E	403,728.70	742,100.47	0.00	28.81	0.00	
6,100.00	13.00	85.00	6,017.11	67.69 N	773.76 E	403,730.66	742,122.88	0.00	29.67	0.00	
6,200.00	13.00	85.00	6,114.55	69.66 N	796.17 E	403,732.62	742,145.29	0.00	30.53	0.00	
6,300.00	13.00	85.00	6,211.98	71.62 N	818.58 E	403,734.58	742,167.70	0.00	31.39	0.00	
6,400.00	13.00	85.00	6,309.42	73.58 N	840.98 E	403,736.54	742,190.10	0.00	32.25	0.00	
6,500.00	13.00	85.00	6,406.86	75.54 N	863.39 E	403,738.50	742,212.51	0.00	33.11	0.00	
6,600.00	13.00	85.00	6,504.30	77.50 N	885.80 E	403,740.46	742,234.92	0.00	33.97	0.00	
6,700.00	13.00	85.00	6,601.73	79.46 N	908.21 E	403,742.42	742,257.33	0.00	34.82	0.00	
6,800.00	13.00	85.00	6,699.17	81.42 N	930.62 E	403,744.38	742,279.74	0.00	35.68	0.00	
6,900.00	13.00	85.00	6,796.61	83.38 N	953.03 E	403,746.35	742,302.15	0.00	36.54	0.00	

HALLIBURTON**Plan Report for Marwari 28-16 STATE FED COM 232H - Plan 1**

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
7,000.00	13.00	85.00	6,894.04	85.34 N	975.44 E	403,748.31	742,324.56	0.00	37.40	0.00	
7,100.00	13.00	85.00	6,991.48	87.30 N	997.85 E	403,750.27	742,346.97	0.00	38.26	0.00	
7,200.00	13.00	85.00	7,088.92	89.26 N	1,020.26 E	403,752.23	742,369.38	0.00	39.12	0.00	
7,300.00	13.00	85.00	7,186.35	91.22 N	1,042.67 E	403,754.19	742,391.79	0.00	39.98	0.00	EOH 13°
7,400.00	12.00	85.00	7,283.98	93.11 N	1,064.23 E	403,756.07	742,413.35	1.00	40.81	180.00	
7,500.00	11.00	85.00	7,381.97	94.85 N	1,084.09 E	403,757.81	742,433.21	1.00	41.57	180.00	
7,600.00	10.00	85.00	7,480.30	96.43 N	1,102.25 E	403,759.40	742,451.37	1.00	42.26	180.00	
7,700.00	9.00	85.00	7,578.93	97.87 N	1,118.69 E	403,760.84	742,467.81	1.00	42.90	180.00	
7,800.00	8.00	85.00	7,677.83	99.16 N	1,133.41 E	403,762.13	742,482.53	1.00	43.46	180.00	
7,900.00	7.00	85.00	7,776.97	100.30 N	1,146.42 E	403,763.26	742,495.54	1.00	43.96	180.00	
8,000.00	6.00	85.00	7,876.33	101.28 N	1,157.69 E	403,764.25	742,506.81	1.00	44.39	180.00	
8,100.00	5.00	85.00	7,975.86	102.12 N	1,167.24 E	403,765.09	742,516.36	1.00	44.76	180.00	
8,200.00	4.00	85.00	8,075.55	102.80 N	1,175.06 E	403,765.77	742,524.18	1.00	45.06	180.00	
8,300.00	3.00	85.00	8,175.37	103.34 N	1,181.14 E	403,766.30	742,530.26	1.00	45.29	180.00	
8,400.00	2.00	85.00	8,275.27	103.72 N	1,185.48 E	403,766.68	742,534.60	1.00	45.46	180.00	
8,473.76	1.26	85.00	8,349.00	103.90 N	1,187.57 E	403,766.87	742,536.69	1.00	45.54	-180.00	Lower Brushy
8,500.00	1.00	85.00	8,375.23	103.94 N	1,188.09 E	403,766.91	742,537.21	1.00	45.56	180.00	
8,600.00	0.00	0.00	8,475.23	104.02 N	1,188.96 E	403,766.99	742,538.08	1.00	45.59	-180.00	Vertical Point
8,700.00	0.00	0.00	8,575.23	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	
8,722.77	0.00	0.00	8,598.00	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	1BSLM
8,800.00	0.00	0.00	8,675.23	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	
8,900.00	0.00	0.00	8,775.23	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	
9,000.00	0.00	0.00	8,875.23	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	
9,100.00	0.00	0.00	8,975.23	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	
9,200.00	0.00	0.00	9,075.23	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	
9,300.00	0.00	0.00	9,175.23	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	
9,400.00	0.00	0.00	9,275.23	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	
9,500.00	0.00	0.00	9,375.23	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	
9,600.00	0.00	0.00	9,475.23	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	
9,670.77	0.00	0.00	9,546.00	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	1BSST
9,700.00	0.00	0.00	9,575.23	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	
9,800.00	0.00	0.00	9,675.23	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	
9,900.00	0.00	0.00	9,775.23	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	
9,932.77	0.00	0.00	9,808.00	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	2BSLM
10,000.00	0.00	0.00	9,875.23	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	
10,090.81	0.00	0.00	9,966.04	104.02 N	1,188.96 E	403,766.99	742,538.08	0.00	45.59	0.00	EOH / KOP (86.93' FNL, 1600.43' FWL) of Section 28
10,100.00	0.92	179.38	9,975.23	103.95 N	1,188.96 E	403,766.91	742,538.08	10.00	45.66	179.38	

HALLIBURTON**Plan Report for Marwari 28-16 STATE FED COM 232H - Plan 1**

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
10,150.00	5.92	179.38	10,025.12	100.97 N	1,188.99 E	403,763.93	742,538.11	10.00	48.62	0.00	
10,200.00	10.92	179.38	10,074.57	93.65 N	1,189.07 E	403,756.61	742,538.19	10.00	55.89	0.00	
10,250.00	15.92	179.38	10,123.19	82.05 N	1,189.20 E	403,745.02	742,538.32	10.00	67.42	0.00	
10,300.00	20.92	179.38	10,170.61	66.26 N	1,189.37 E	403,729.22	742,538.49	10.00	83.11	0.00	
10,345.03	25.42	179.38	10,212.00	48.54 N	1,189.56 E	403,711.51	742,538.69	10.00	100.71	0.00	2BSSS
10,350.00	25.92	179.38	10,216.48	46.39 N	1,189.59 E	403,709.36	742,538.71	10.00	102.84	0.00	
10,400.00	30.92	179.38	10,260.44	22.60 N	1,189.85 E	403,685.57	742,538.97	10.00	126.48	0.00	
10,426.68	33.59	179.38	10,283.00	8.37 N	1,190.00 E	403,671.34	742,539.12	10.00	140.62	0.00	2BSSS_U
10,450.00	35.92	179.38	10,302.16	4.92 S	1,190.15 E	403,658.04	742,539.27	10.00	153.83	0.00	
10,500.00	40.92	179.38	10,341.32	35.98 S	1,190.49 E	403,626.98	742,539.61	10.00	184.68	0.00	
10,514.29	42.35	179.38	10,352.00	45.47 S	1,190.59 E	403,617.49	742,539.71	10.00	194.11	0.00	2BSSS_M
10,550.00	45.92	179.38	10,377.63	70.33 S	1,190.86 E	403,592.63	742,539.98	10.00	218.81	0.00	
10,600.00	50.92	179.38	10,410.80	107.72 S	1,191.27 E	403,555.24	742,540.39	10.00	255.96	0.00	
10,650.00	55.92	179.38	10,440.59	147.86 S	1,191.71 E	403,515.11	742,540.83	10.00	295.83	0.00	
10,700.00	60.92	179.38	10,466.77	190.44 S	1,192.17 E	403,472.53	742,541.29	10.00	338.13	0.00	
10,750.00	65.92	179.38	10,489.13	235.13 S	1,192.66 E	403,427.83	742,541.78	10.00	382.54	0.00	
10,775.46	68.46	179.38	10,499.00	258.60 S	1,192.91 E	403,404.37	742,542.03	10.00	405.85	0.00	2BSSS L POE (449.56' FNL, 1601.00' FWL) of Section 28 - 2BSSS_L
10,800.00	70.92	179.38	10,507.52	281.61 S	1,193.17 E	403,381.35	742,542.29	10.00	428.72	0.00	
10,850.00	75.92	179.38	10,521.78	329.51 S	1,193.69 E	403,333.45	742,542.81	10.00	476.31	0.00	
10,900.00	80.92	179.38	10,531.82	378.48 S	1,194.22 E	403,284.49	742,543.34	10.00	524.95	0.00	
10,950.00	85.92	179.38	10,537.54	428.13 S	1,194.76 E	403,234.84	742,543.88	10.00	574.28	0.00	
10,990.81	90.00	179.38	10,539.00	468.90 S	1,195.21 E	403,194.06	742,544.33	10.00	614.79	0.00	Land Point
11,000.00	90.00	179.38	10,539.00	478.09 S	1,195.31 E	403,184.87	742,544.43	0.00	623.92	0.00	
11,100.00	90.00	179.38	10,539.00	578.09 S	1,196.40 E	403,084.88	742,545.52	0.00	723.27	0.00	
11,200.00	90.00	179.38	10,539.00	678.08 S	1,197.49 E	402,984.89	742,546.61	0.00	822.61	0.00	
11,300.00	90.00	179.38	10,539.00	778.07 S	1,198.58 E	402,884.89	742,547.70	0.00	921.95	0.00	
11,400.00	90.00	179.38	10,539.00	878.07 S	1,199.67 E	402,784.90	742,548.79	0.00	1,021.30	0.00	
11,500.00	90.00	179.38	10,539.00	978.06 S	1,200.76 E	402,684.90	742,549.88	0.00	1,120.64	0.00	
11,600.00	90.00	179.38	10,539.00	1,078.06 S	1,201.85 E	402,584.91	742,550.97	0.00	1,219.99	0.00	
11,700.00	90.00	179.38	10,539.00	1,178.05 S	1,202.94 E	402,484.91	742,552.06	0.00	1,319.33	0.00	
11,800.00	90.00	179.38	10,539.00	1,278.05 S	1,204.03 E	402,384.92	742,553.15	0.00	1,418.68	0.00	
11,900.00	90.00	179.38	10,539.00	1,378.04 S	1,205.12 E	402,284.93	742,554.24	0.00	1,518.02	0.00	
12,000.00	90.00	179.38	10,539.00	1,478.03 S	1,206.21 E	402,184.93	742,555.33	0.00	1,617.37	0.00	
12,100.00	90.00	179.38	10,539.00	1,578.03 S	1,207.30 E	402,084.94	742,556.42	0.00	1,716.71	0.00	
12,200.00	90.00	179.38	10,539.00	1,678.02 S	1,208.39 E	401,984.94	742,557.51	0.00	1,816.05	0.00	
12,300.00	90.00	179.38	10,539.00	1,778.02 S	1,209.48 E	401,884.95	742,558.60	0.00	1,915.40	0.00	

HALLIBURTON**Plan Report for Marwari 28-16 STATE FED COM 232H - Plan 1**

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
12,400.00	90.00	179.38	10,539.00	1,878.01 S	1,210.57 E	401,784.96	742,559.69	0.00	2,014.74	0.00	
12,500.00	90.00	179.38	10,539.00	1,978.00 S	1,211.66 E	401,684.96	742,560.78	0.00	2,114.09	0.00	
12,600.00	90.00	179.38	10,539.00	2,078.00 S	1,212.75 E	401,584.97	742,561.87	0.00	2,213.43	0.00	
12,700.00	90.00	179.38	10,539.00	2,177.99 S	1,213.84 E	401,484.97	742,562.96	0.00	2,312.78	0.00	
12,800.00	90.00	179.38	10,539.00	2,277.99 S	1,214.93 E	401,384.98	742,564.05	0.00	2,412.12	0.00	
12,900.00	90.00	179.38	10,539.00	2,377.98 S	1,216.02 E	401,284.99	742,565.14	0.00	2,511.46	0.00	
13,000.00	90.00	179.38	10,539.00	2,477.97 S	1,217.11 E	401,184.99	742,566.23	0.00	2,610.81	0.00	
13,100.00	90.00	179.38	10,539.00	2,577.97 S	1,218.20 E	401,085.00	742,567.33	0.00	2,710.15	0.00	
13,200.00	90.00	179.38	10,539.00	2,677.96 S	1,219.30 E	400,985.00	742,568.42	0.00	2,809.50	0.00	
13,300.00	90.00	179.38	10,539.00	2,777.96 S	1,220.39 E	400,885.01	742,569.51	0.00	2,908.84	0.00	
13,400.00	90.00	179.38	10,539.00	2,877.95 S	1,221.48 E	400,785.02	742,570.60	0.00	3,008.19	0.00	
13,500.00	90.00	179.38	10,539.00	2,977.94 S	1,222.57 E	400,685.02	742,571.69	0.00	3,107.53	0.00	
13,600.00	90.00	179.38	10,539.00	3,077.94 S	1,223.66 E	400,585.03	742,572.78	0.00	3,206.88	0.00	
13,700.00	90.00	179.38	10,539.00	3,177.93 S	1,224.75 E	400,485.03	742,573.87	0.00	3,306.22	0.00	
13,800.00	90.00	179.38	10,539.00	3,277.93 S	1,225.84 E	400,385.04	742,574.96	0.00	3,405.56	0.00	
13,900.00	90.00	179.38	10,539.00	3,377.92 S	1,226.93 E	400,285.05	742,576.05	0.00	3,504.91	0.00	
14,000.00	90.00	179.38	10,539.00	3,477.91 S	1,228.02 E	400,185.05	742,577.14	0.00	3,604.25	0.00	
14,100.00	90.00	179.38	10,539.00	3,577.91 S	1,229.11 E	400,085.06	742,578.23	0.00	3,703.60	0.00	
14,200.00	90.00	179.38	10,539.00	3,677.90 S	1,230.20 E	399,985.06	742,579.32	0.00	3,802.94	0.00	
14,300.00	90.00	179.38	10,539.00	3,777.90 S	1,231.29 E	399,885.07	742,580.41	0.00	3,902.29	0.00	
14,400.00	90.00	179.38	10,539.00	3,877.89 S	1,232.38 E	399,785.08	742,581.50	0.00	4,001.63	0.00	
14,500.00	90.00	179.38	10,539.00	3,977.88 S	1,233.47 E	399,685.08	742,582.59	0.00	4,100.98	0.00	
14,600.00	90.00	179.38	10,539.00	4,077.88 S	1,234.56 E	399,585.09	742,583.68	0.00	4,200.32	0.00	
14,700.00	90.00	179.38	10,539.00	4,177.87 S	1,235.65 E	399,485.09	742,584.77	0.00	4,299.66	0.00	
14,800.00	90.00	179.38	10,539.00	4,277.87 S	1,236.74 E	399,385.10	742,585.86	0.00	4,399.01	0.00	
14,900.00	90.00	179.38	10,539.00	4,377.86 S	1,237.83 E	399,285.11	742,586.95	0.00	4,498.35	0.00	
15,000.00	90.00	179.38	10,539.00	4,477.85 S	1,238.92 E	399,185.11	742,588.04	0.00	4,597.70	0.00	
15,100.00	90.00	179.38	10,539.00	4,577.85 S	1,240.01 E	399,085.12	742,589.13	0.00	4,697.04	0.00	
15,200.00	90.00	179.38	10,539.00	4,677.84 S	1,241.10 E	398,985.12	742,590.22	0.00	4,796.39	0.00	
15,300.00	90.00	179.38	10,539.00	4,777.84 S	1,242.19 E	398,885.13	742,591.31	0.00	4,895.73	0.00	
15,400.00	90.00	179.38	10,539.00	4,877.83 S	1,243.28 E	398,785.13	742,592.40	0.00	4,995.07	0.00	
15,500.00	90.00	179.38	10,539.00	4,977.83 S	1,244.37 E	398,685.14	742,593.49	0.00	5,094.42	0.00	
15,600.00	90.00	179.38	10,539.00	5,077.82 S	1,245.46 E	398,585.15	742,594.58	0.00	5,193.76	0.00	
15,700.00	90.00	179.38	10,539.00	5,177.81 S	1,246.55 E	398,485.15	742,595.67	0.00	5,293.11	0.00	
15,800.00	90.00	179.38	10,539.00	5,277.81 S	1,247.64 E	398,385.16	742,596.76	0.00	5,392.45	0.00	
15,900.00	90.00	179.38	10,539.00	5,377.80 S	1,248.73 E	398,285.16	742,597.85	0.00	5,491.80	0.00	
16,000.00	90.00	179.38	10,539.00	5,477.80 S	1,249.83 E	398,185.17	742,598.95	0.00	5,591.14	0.00	

HALLIBURTON**Plan Report for Marwari 28-16 STATE FED COM 232H - Plan 1**

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
16,100.00	90.00	179.38	10,539.00	5,577.79 S	1,250.92 E	398,085.18	742,600.04	0.00	5,690.49	0.00	
16,200.00	90.00	179.38	10,539.00	5,677.78 S	1,252.01 E	397,985.18	742,601.13	0.00	5,789.83	0.00	
16,300.00	90.00	179.38	10,539.00	5,777.78 S	1,253.10 E	397,885.19	742,602.22	0.00	5,889.17	0.00	
16,400.00	90.00	179.38	10,539.00	5,877.77 S	1,254.19 E	397,785.19	742,603.31	0.00	5,988.52	0.00	
16,500.00	90.00	179.38	10,539.00	5,977.77 S	1,255.28 E	397,685.20	742,604.40	0.00	6,087.86	0.00	
16,600.00	90.00	179.38	10,539.00	6,077.76 S	1,256.37 E	397,585.21	742,605.49	0.00	6,187.21	0.00	
16,700.00	90.00	179.38	10,539.00	6,177.75 S	1,257.46 E	397,485.21	742,606.58	0.00	6,286.55	0.00	
16,800.00	90.00	179.38	10,539.00	6,277.75 S	1,258.55 E	397,385.22	742,607.67	0.00	6,385.90	0.00	
16,900.00	90.00	179.38	10,539.00	6,377.74 S	1,259.64 E	397,285.22	742,608.76	0.00	6,485.24	0.00	
17,000.00	90.00	179.38	10,539.00	6,477.74 S	1,260.73 E	397,185.23	742,609.85	0.00	6,584.59	0.00	
17,100.00	90.00	179.38	10,539.00	6,577.73 S	1,261.82 E	397,085.24	742,610.94	0.00	6,683.93	0.00	
17,200.00	90.00	179.38	10,539.00	6,677.72 S	1,262.91 E	396,985.24	742,612.03	0.00	6,783.27	0.00	
17,300.00	90.00	179.38	10,539.00	6,777.72 S	1,264.00 E	396,885.25	742,613.12	0.00	6,882.62	0.00	
17,400.00	90.00	179.38	10,539.00	6,877.71 S	1,265.09 E	396,785.25	742,614.21	0.00	6,981.96	0.00	
17,500.00	90.00	179.38	10,539.00	6,977.71 S	1,266.18 E	396,685.26	742,615.30	0.00	7,081.31	0.00	
17,600.00	90.00	179.38	10,539.00	7,077.70 S	1,267.27 E	396,585.27	742,616.39	0.00	7,180.65	0.00	
17,700.00	90.00	179.38	10,539.00	7,177.69 S	1,268.36 E	396,485.27	742,617.48	0.00	7,280.00	0.00	
17,800.00	90.00	179.38	10,539.00	7,277.69 S	1,269.45 E	396,385.28	742,618.57	0.00	7,379.34	0.00	
17,900.00	90.00	179.38	10,539.00	7,377.68 S	1,270.54 E	396,285.28	742,619.66	0.00	7,478.68	0.00	
18,000.00	90.00	179.38	10,539.00	7,477.68 S	1,271.63 E	396,185.29	742,620.75	0.00	7,578.03	0.00	
18,100.00	90.00	179.38	10,539.00	7,577.67 S	1,272.72 E	396,085.30	742,621.84	0.00	7,677.37	0.00	
18,200.00	90.00	179.38	10,539.00	7,677.66 S	1,273.81 E	395,985.30	742,622.93	0.00	7,776.72	0.00	
18,300.00	90.00	179.38	10,539.00	7,777.66 S	1,274.90 E	395,885.31	742,624.02	0.00	7,876.06	0.00	
18,400.00	90.00	179.38	10,539.00	7,877.65 S	1,275.99 E	395,785.31	742,625.11	0.00	7,975.41	0.00	
18,500.00	90.00	179.38	10,539.00	7,977.65 S	1,277.08 E	395,685.32	742,626.20	0.00	8,074.75	0.00	
18,600.00	90.00	179.38	10,539.00	8,077.64 S	1,278.17 E	395,585.33	742,627.29	0.00	8,174.10	0.00	
18,700.00	90.00	179.38	10,539.00	8,177.63 S	1,279.26 E	395,485.33	742,628.38	0.00	8,273.44	0.00	
18,800.00	90.00	179.38	10,539.00	8,277.63 S	1,280.35 E	395,385.34	742,629.48	0.00	8,372.78	0.00	
18,900.00	90.00	179.38	10,539.00	8,377.62 S	1,281.45 E	395,285.34	742,630.57	0.00	8,472.13	0.00	
19,000.00	90.00	179.38	10,539.00	8,477.62 S	1,282.54 E	395,185.35	742,631.66	0.00	8,571.47	0.00	
19,100.00	90.00	179.38	10,539.00	8,577.61 S	1,283.63 E	395,085.35	742,632.75	0.00	8,670.82	0.00	
19,200.00	90.00	179.38	10,539.00	8,677.61 S	1,284.72 E	394,985.36	742,633.84	0.00	8,770.16	0.00	
19,300.00	90.00	179.38	10,539.00	8,777.60 S	1,285.81 E	394,885.37	742,634.93	0.00	8,869.51	0.00	
19,400.00	90.00	179.38	10,539.00	8,877.59 S	1,286.90 E	394,785.37	742,636.02	0.00	8,968.85	0.00	
19,500.00	90.00	179.38	10,539.00	8,977.59 S	1,287.99 E	394,685.38	742,637.11	0.00	9,068.19	0.00	
19,600.00	90.00	179.38	10,539.00	9,077.58 S	1,289.08 E	394,585.38	742,638.20	0.00	9,167.54	0.00	
19,700.00	90.00	179.38	10,539.00	9,177.58 S	1,290.17 E	394,485.39	742,639.29	0.00	9,266.88	0.00	

HALLIBURTON**Plan Report for Marwari 28-16 STATE FED COM 232H - Plan 1**

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
19,800.00	90.00	179.38	10,539.00	9,277.57 S	1,291.26 E	394,385.40	742,640.38	0.00	9,366.23	0.00	
19,900.00	90.00	179.38	10,539.00	9,377.56 S	1,292.35 E	394,285.40	742,641.47	0.00	9,465.57	0.00	
20,000.00	90.00	179.38	10,539.00	9,477.56 S	1,293.44 E	394,185.41	742,642.56	0.00	9,564.92	0.00	
20,100.00	90.00	179.38	10,539.00	9,577.55 S	1,294.53 E	394,085.41	742,643.65	0.00	9,664.26	0.00	
20,200.00	90.00	179.38	10,539.00	9,677.55 S	1,295.62 E	393,985.42	742,644.74	0.00	9,763.61	0.00	
20,300.00	90.00	179.38	10,539.00	9,777.54 S	1,296.71 E	393,885.43	742,645.83	0.00	9,862.95	0.00	
20,400.00	90.00	179.38	10,539.00	9,877.53 S	1,297.80 E	393,785.43	742,646.92	0.00	9,962.29	0.00	
20,500.00	90.00	179.38	10,539.00	9,977.53 S	1,298.89 E	393,685.44	742,648.01	0.00	10,061.64	0.00	
20,600.00	90.00	179.38	10,539.00	10,077.52 S	1,299.98 E	393,585.44	742,649.10	0.00	10,160.98	0.00	
20,700.00	90.00	179.38	10,539.00	10,177.52 S	1,301.07 E	393,485.45	742,650.19	0.00	10,260.33	0.00	
20,770.00	90.00	179.38	10,539.00	10,247.51 S	1,301.83 E	393,415.45	742,650.96	0.00	10,329.87	0.00	Last Perf (100.2445' FSL, 1649.2942' FWL) of Section 33
20,800.00	90.00	179.38	10,539.00	10,277.51 S	1,302.16 E	393,385.46	742,651.28	0.00	10,359.67	0.00	
20,850.24	90.00	179.38	10,539.00	10,327.75 S	1,302.71 E	393,335.22	742,651.83	0.00	10,409.58	0.00	TD

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,000.00	2,000.00	0.00	0.00	Nudge KOP
3,300.00	3,288.87	12.80	146.29	EOB 13°
7,300.00	7,186.35	91.22	1,042.67	EOH 13°
8,600.00	8,475.23	104.02	1,188.96	Vertical Point
10,090.81	9,966.04	104.02	1,188.96	EOH / KOP (86.93' FNL, 1600.43' FWL) of Section 28
10,775.46	10,499.00	-258.60	1,192.91	2BSSS L POE (449.56' FNL, 1601.00' FWL) of Section 28
10,990.81	10,539.00	-468.90	1,195.21	Land Point
20,770.00	10,539.00	-10,247.51	1,301.83	Last Perf (100.2445' FSL, 1649.2942' FWL) of Section 33
20,850.24	10,539.00	-10,327.75	1,302.71	TD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/-S (usft)	+E/-W (usft)	
TD	No Target (Freehand)	172.81	Slot	0.00	0.00	0.00

Plan Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	20,849.47	Plan 1	MWD

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	TVDSS (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,069.00	1,069.00	-2,341.00	Rustler			
1,347.00	1,347.00	-2,063.00	Salado			
4,597.38	4,553.00	1,143.00	Delaware			
8,473.76	8,349.00	4,939.00	Lower Brushy			
8,722.77	8,598.00	5,188.00	1BSLM			
9,670.77	9,546.00	6,136.00	1BSSS			
9,932.77	9,808.00	6,398.00	2BSLM			
10,345.03	10,212.00	6,802.00	2BSSS			
10,426.68	10,283.00	6,873.00	2BSSS_U			
10,514.29	10,352.00	6,942.00	2BSSS_M			
10,775.46	10,499.00	7,089.00	2BSSS_L			

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL of Marwari 28-16 State Fed Com 232H ()									
	0.00	0.00	10,539.00	-10,327.75	1,302.71	393,335.22	742,651.83	32.07969098	-103.68335058
- plan hits target center									
- Point									

Directional Difficulty Index

Average Dogleg over Survey:	0.56 °/100usft	Maximum Dogleg over Survey:	10.00 °/100usft at 10,990.81 usft
Net Tortousity applicable to Plans:	0.56 °/100usft	Directional Difficulty Index:	6.548

Plan Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Audit Info

SAP=346244

HALLIBURTON**North Reference Sheet for Sec 28 T. 25 S., R.32E. - Marwari 28-16 STATE FED COM 232H - Wellbore #1**

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to RKB (Nabors X05) 33' + GL @ 3410.00usft. Northing and Easting are relative to Marwari 28-16 STATE FED COM 232H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -104.3333333°, Longitude Origin:0.00000000°, Latitude Origin:0.00000000°

False Easting: 541,337.50usft, False Northing: 0.00usft, Scale Reduction: 0.99995491

Grid Coordinates of Well: 403,662.97 usft N, 741,349.12 usft E

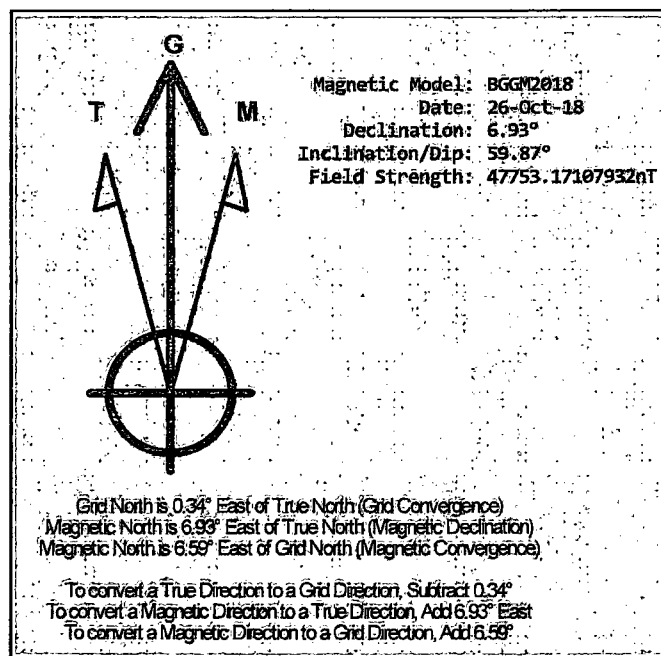
Geographical Coordinates of Well: 32° 06' 29.16" N, 103° 41' 14.48" W

Grid Convergence at Surface is: 0.34°

Based upon Minimum Curvature type calculations, at a Measured Depth of 20,850.24usft

the Bottom Hole Displacement is 10,409.58usft in the Direction of 172.81° (Grid).

Magnetic Convergence at surface is: -6.59° (26 October 2018, , BGGM2018)



Customer: Devon Fine Creation D 1/1/1990
Project: Lea County NM (NAD 83)
Field: Lea County NM (NAD North Ref: Grid
Structure: Sec 28 T 2 R 32 E Job Number 32.1081 Longitude: -103.687
EP56 Proj North Area New Meati Latitude: 3410
Wellhead: Marwari 21 Ground Lev 3377 Kelly Bushi
Profile: Plan 1 Print Date: 10/31/2018 Vertical Se 17281 BHL TVD: 10539

MD	Incl	Acim	Sub-Sea	TVD	Local N Co	Local E Co	Global N Co	Global E Co	Latitude	Longitude	Dogleg	Vertical Se	Build	Turn	Comment
(ft)	Deg	Deg	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	DDMMSS	DDMMSS	(deg/100 ft)	(deg/100 ft)	(deg/100 ft)	(deg/100 ft)	-----
0	0	0	-3410	0	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
100	0	0	-3310	100	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
200	0	0	-3210	200	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
300	0	0	-3110	300	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
400	0	0	-3010	400	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
500	0	0	-2910	500	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
600	0	0	-2810	600	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
700	0	0	-2710	700	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
800	0	0	-2610	800	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
900	0	0	-2510	900	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
1000	0	0	-2410	1000	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
1069	0	0	-2341	1069	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
1100	0	0	-2310	1100	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
1200	0	0	-2210	1200	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
1300	0	0	-2110	1300	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
1347	0	0	-2063	1347	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
1400	0	0	-2010	1400	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
1500	0	0	-1910	1500	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
1600	0	0	-1810	1600	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
1700	0	0	-1710	1700	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
1800	0	0	-1610	1800	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
1900	0	0	-1510	1900	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
2000	0	0	-1410	2000	0	0	403663	741349.1	32.1081	-103.687	0	0	0	0	
2100	1	85	-1310.005	2099.995	0.076	0.869	403663	741350	32.1081	-103.687	1	0.03	1	0	Nudge MCP
2200	2	85	-1210.041	2199.959	0.304	3.477	403663	741352.6	32.1081	-103.687	1	0.13	1	0	
2300	3	85	-1110.137	2299.863	0.684	7.822	403663	741356.9	32.1081	-103.687	1	0.3	1	0	
2400	4	85	-1010.325	2399.675	1.216	13.904	403664.2	741363	32.1081	-103.687	1	0.53	1	0	
2500	5	85	-910.634	2499.366	1.9	21.72	403664.9	741370.8	32.1081	-103.687	1	0.83	1	0	
2600	6	85	-811.096	2598.904	2.736	31.268	403665.7	741380.4	32.1081	-103.687	1	1.2	1	0	
2700	7	85	-711.174	2698.26	3.722	42.548	403666.7	741391.7	32.1081	-103.687	1	1.63	1	0	
2800	8	85	-612.597	2797.403	4.86	55.548	403667.8	741404.7	32.1081	-103.687	1	2.13	1	0	
2900	9	85	-513.697	2896.303	6.148	66.714	403669.1	741419.4	32.1081	-103.687	1	2.69	1	0	
3000	10	85	-415.069	2994.931	7.586	86.714	403670.6	741435.8	32.1081	-103.687	1	3.32	1	0	
3100	11	85	-316.745	3093.255	9.175	104.868	403672.1	741453.4	32.1081	-103.687	1	4.02	1	0	
3200	12	85	-218.754	3191.246	10.912	124.729	403673.9	741473.8	32.1081	-103.687	1	4.78	1	0	
3300	13	85	-121.125	3288.875	12.799	146.29	403675.8	741495.4	32.1081	-103.687	1	5.61	1	0	
3400	13	85	-23.688	3386.312	14.759	168.699	403677.7	741517.8	32.1081	-103.687	0	6.47	0	0	
3500	13	85	73.749	3483.749	16.72	191.109	403679.7	741540.2	32.1081	-103.687	0	7.33	0	0	
3600	13	85	171.186	3581.186	18.68	213.518	403681.6	741562.6	32.1081	-103.687	0	8.19	0	0	
3700	13	85	268.623	3678.623	20.641	235.928	403683.6	741585	32.1081	-103.687	0	9.05	0	0	
3800	13	85	366.06	3776.06	22.602	258.337	403685.6	741607.5	32.1081	-103.687	0	9.91	0	0	
3900	13	85	463.467	3873.467	24.562	280.747	403687.5	741629.9	32.1081	-103.686	0	10.77	0	0	
4000	13	85	560.934	3970.934	26.523	303.156	403689.5	741652.3	32.1081	-103.686	0	11.62	0	0	
4100	13	85	658.371	4068.371	28.483	325.566	403691.4	741674.7	32.1081	-103.686	0	12.48	0	0	
4200	13	85	755.808	4165.808	30.444	347.975	403693.4	741697.1	32.1081	-103.686	0	13.34	0	0	
4300	13	85	853.245	4263.245	32.404	370.385	403695.4	741719.5	32.1081	-103.686	0	14.2	0	0	
4400	13	85	950.682	4360.682	34.365	392.794	403697.3	741741.9	32.1081	-103.686	0	15.06	0	0	
4500	13	85	1048.119	4458.119	36.326	415.204	403699.3	741764.3	32.1081	-103.686	0	15.92	0	0	
4597.377	13	85	1143	4533	38.235	437.026	403701.2	741786.1	32.1082	-103.686	0	16.76	0	0	Dishware
4600	13	85	1145.536	4535.536	38.286	437.613	403701.3	741786.7	32.1082	-103.686	0	16.78	0	0	
4700	13	85	1242.993	4632.993	40.247	460.023	403703.2	741809.1	32.1082	-103.686	0	17.64	0	0	
4800	13	85	1340.43	4730.43	42.207	482.432	403705.2	741831.6	32.1082	-103.686	0	18.5	0	0	
4900	13	85	1437.867	4827.867	44.168	504.842	403707.1	741854	32.1082	-103.686	0	19.36	0	0	
5000	13	85	1535.304	4925.304	46.129	527.251	403709.1	741876.4	32.1082	-103.686	0	20.22	0	0	
5100	13	85	1632.741	5022.741	48.089	549.661	403711.1	741898.8	32.1082	-103.686	0	21.08	0	0	
5200	13	85	1730.178	5120.178	50.05	572.07	403713	741921.2	32.1083	-103.686	0	21.94	0	0	
5300	13	85	1827.615	5217.615	52.01	594.48	403715	741943.6	32.1083	-103.685	0	22.79	0	0	
5400	13	85	1925.052	5315.052	53.971	616.89	403716.9	741966	32.1082	-103.685	0	23.65	0	0	
5500	13	85	2022.489	5412.489	55.931	639.299	403718.9	741988.4	32.1082	-103.685	0	24.51	0	0	
5600	13	85	2119.926	5509.926	57.892	661.709	403720.9	742010.8	32.1082	-103.685	0	25.37	0	0	
5700	13	85	2217.363	5607.363	59.853	684.118	403722.8	742033.2	32.1082	-103.685	0	26.23	0	0	
5800	13	85	2314.8	5704.8	61.813	706.528	403724.8	742055.6	32.1082	-103.685	0	27.09	0	0	
5900	13	85	2412.37	5802.37	63.774	728.937	403726.7	742078.1	32.1082	-103.685	0	27.95	0	0	
6000	13	85	2509.674	5919.674	65.734	751.347	403728.7	742100.5	32.1082	-103.685	0	28.81	0	0	
6100	13	85	2607.111	6017.111	67.695	773.756	403730.7	742122.9	32.1082	-103.685	0	29.67	0	0	
6200	13	85	2704.548	6114.548	69.655	796.166	403732.6	742145.3	32.1082	-103.685	0	30.53	0	0	
6300	13	85	2801.985	6211.985	71.616	818.575	403734.6	742167.7	32.1082	-103.685	0	31.39	0	0	
6400	13	85	2899.422	6309.422	73.577	840.985	403736.5	742190.1	32.1082	-103.685	0	32.25	0	0	
6500	13	85	2996.859	6406.859	75.537	863.394	403738.5	742212.5	32.1082	-103.685	0	33.11	0	0	
6600	13	85	3094.296	6504.296	77.498	885.804	403740.5	742234.9	32.1083	-103.684	0	33.97	0	0	
6700	13	85	3191.733	6601.733	79.458	908.213	403742.4	742257.3	32.1083	-103.684	0	34.82	0	0	
6800	13	85	3289.17	6699.17	81.419	930.623	403744.4	742279.7	32.1083	-103.684	0	35.68	0	0	
6900	13	85	3386.607	6796.607	83.38	953.032	403746.3	742302.2	32.1083	-103.684	0	36.54	0	0	
7000	13	85	3484.044	6894.044	85.34	975.442	403748.3	742324.6	32.1083	-103.684	0	37.4	0	0	
7100	13	85	3581.481	6991.481	87.301	997.851	403750.3	742347	32.1083	-103.684	0	38.26	0	0	
7200	13	85	3678.918	7088.918	89.261	1020.261	403752.2	742369.4	32.1083	-103.684	0	39.12	0	0	
7300	13	85	3776.355	7186.355	91.222	1042.637	403754.1	742391.8	32.1083	-103.684	0	39.98	0	0	
7400	12	85	3873.983	7283.983	93.108	1064.231	403756.1	742413.4	32.1083	-103.684	1	40.81	0	0	EOH 13"
7500	11	85	3971.974	7381.974	94.846	1084.092	403757.8	742435.2	32.1083	-103.684	1	41.57	0	0	
7600	10	85	4070.299	7480.299	96.434	1102.246	403759.4	742451.4	32.1083	-103.684	1	42.26	0	0	
7700	9	85	4168.926	7578.926											

8200	4	85	4665.554	8075.554	102.804	1175.056	403765.8	742524.2	32.10836	-103.684	1	45.06	-1	0	
8300	3	85	4765.367	8175.367	103.336	1181.138	403766.3	742530.3	32.10837	-103.684	1	45.29	-1	0	
8400	2	85	4865.27	8275.27	103.716	1185.483	403766.7	742534.6	32.10837	-103.684	1	45.46	-1	0	
8473.76	1.262	85	4939	8349	103.899	1187.575	403766.9	742536.7	32.10837	-103.684	1	45.54	-1	0	Lower Brushy
8500	1	85	4965.235	8375.235	103.944	1188.091	403766.9	742537.2	32.10837	-103.684	1	45.56	-1	0	
8600	0	0	5065.229	8475.229	104.021	1188.96	403767	742538.1	32.10837	-103.684	1	45.59	-1	0	Vertical Point
8700	0	0	5165.229	8575.229	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	
8722.771	0	0	5188	8598	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	185LM
8800	0	0	5265.229	8675.229	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	
8900	0	0	5365.229	8775.229	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	
9000	0	0	5465.229	8875.229	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	
9100	0	0	5565.229	8975.229	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	
9200	0	0	5665.229	9075.229	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	
9300	0	0	5765.229	9175.229	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	
9400	0	0	5865.229	9275.229	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	
9500	0	0	5965.229	9375.229	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	
9600	0	0	6065.229	9475.229	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	
9670.771	0	0	6136	9546	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	185SS
9700	0	0	6165.229	9575.229	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	
9800	0	0	6265.229	9675.229	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	
9900	0	0	6365.229	9775.229	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	
9932.771	0	0	6398	9808	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	285LM
10000	0	0	6465.229	9875.229	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	
10090.81	0	0	6556.039	9966.039	104.021	1188.96	403767	742538.1	32.10837	-103.684	0	45.59	0	0	EOH / KOP 1600.43' FWL) of Section 28
10100	0.919	179.375	6565.229	9975.229	103.947	1188.961	403766.9	742538.1	32.10837	-103.684	10	45.66	10	0	
10150	5.919	179.375	6615.124	10025.12	100.966	1188.993	403763.9	742538.1	32.10836	-103.684	10	48.62	10	0	
10200	10.919	179.375	6664.57	10074.57	93.648	1189.073	403756.6	742538.2	32.10834	-103.684	10	55.89	10	0	
10250	15.919	179.375	6713.189	10123.19	82.049	1189.2	403745	742538.3	32.10831	-103.684	10	67.42	10	0	
10300	20.919	179.375	6760.613	10170.61	66.257	1189.372	403729.2	742538.5	32.10826	-103.684	10	83.11	10	0	
10345.03	25.422	179.375	6802	10212	48.545	1189.565	403711.5	742538.7	32.10822	-103.684	10	100.71	10	0	285SS
10350	25.919	179.375	6806.479	10216.48	46.392	1189.588	403709.4	742538.7	32.10821	-103.684	10	102.84	10	0	
10400	30.919	179.375	6850.44	10260.44	22.605	1189.848	403685.6	742539	32.10814	-103.684	10	126.48	10	0	
10426.68	33.587	179.375	6873	10283	8.37	1190.003	403671.3	742539.1	32.1081	-103.684	10	140.62	10	0	285SS_U
10450	35.919	179.375	6892.16	10302.16	-4.923	1190.148	403658	742539.3	32.10807	-103.684	10	153.83	10	0	
10500	40.919	179.375	6931.322	10341.32	-35.981	1190.487	403627	742539.6	32.10798	-103.684	10	184.68	10	0	
10514.29	42.348	179.375	6942	10352	-45.472	1190.59	403617.5	742539.7	32.10796	-103.684	10	194.11	10	0	285SS_M
10550	45.919	179.375	6967.628	10377.63	-70.335	1190.861	403592.6	742540	32.10789	-103.684	10	218.81	10	0	
10600	50.919	179.375	7000.801	10410.8	-107.722	1191.269	403555.2	742540.4	32.10779	-103.684	10	255.96	10	0	
10650	55.919	179.375	7030.59	10440.59	-147.857	1191.707	403515.1	742540.8	32.10768	-103.684	10	295.83	10	0	
10700	60.919	179.375	7056.766	10466.77	-190.436	1192.171	403472.5	742541.3	32.10756	-103.684	10	338.13	10	0	
10750	65.919	179.375	7079.132	10489.13	-235.134	1192.658	403427.8	742541.8	32.10744	-103.684	10	382.54	10	0	
10775.46	68.465	179.375	7089	10499	-258.598	1192.914	403404.4	742542	32.10737	-103.684	10	405.85	10	0	285SS_L PO 1601.00' FWL) of Section 28 - 285SS_L
10800	70.919	179.375	7097.517	10507.52	-281.612	1193.165	403381.4	742542.3	32.10731	-103.684	10	428.72	10	0	
10850	75.919	179.375	7111.781	10521.78	-329.515	1193.687	403333.5	742542.8	32.10718	-103.684	10	476.31	10	0	
10900	80.919	179.375	7121.816	10531.82	-378.478	1194.221	403284.5	742543.3	32.10704	-103.684	10	524.95	10	0	
10950	85.919	179.375	7127.544	10537.54	-428.13	1194.763	403234.8	742543.9	32.1069	-103.684	10	574.28	10	0	
10990.81	90	179.375	7128.997	10539	-468.903	1195.207	403194.1	742544.3	32.10679	-103.684	10	614.79	10	0	Land Point
11000	90	179.375	7128.997	10539	-478.093	1195.307	403184.9	742544.4	32.10677	-103.684	0	623.92	0	0	
11100	90	179.375	7128.997	10539	-578.087	1196.398	403084.9	742545.5	32.10649	-103.684	0	723.27	0	0	
11200	90	179.375	7128.997	10539	-678.081	1197.488	402984.9	742546.6	32.10622	-103.684	0	822.61	0	0	
11300	90	179.375	7128.997	10539	-778.075	1198.579	402884.9	742547.7	32.10594	-103.684	0	921.95	0	0	
11400	90	179.375	7128.997	10539	-878.069	1199.669	402784.9	742548.8	32.10567	-103.683	0	1021.3	0	0	
11500	90	179.375	7128.997	10539	-978.063	1200.759	402684.9	742549.9	32.10539	-103.683	0	1120.64	0	0	
11600	90	179.375	7128.997	10539	-1078.06	1201.85	402584.9	742551	32.10512	-103.683	0	1219.98	0	0	
11700	90	179.375	7128.997	10539	-1178.05	1202.94	402484.9	742552.1	32.10484	-103.683	0	1319.33	0	0	
11800	90	179.375	7128.997	10539	-1278.05	1204.03	402384.9	742553.2	32.10457	-103.683	0	1418.68	0	0	
11900	90	179.375	7128.998	10539	-1378.04	1205.121	402284.9	742554.2	32.10429	-103.683	0	1518.02	0	0	
12000	90	179.375	7128.998	10539	-1478.03	1206.211	402184.9	742555.3	32.10402	-103.683	0	1617.37	0	0	
12100	90	179.375	7128.998	10539	-1578.03	1207.301	402084.9	742556.4	32.10374	-103.683	0	1716.71	0	0	
12200	90	179.375	7128.998	10539	-1678.02	1208.392	401984.9	742557.5	32.10347	-103.683	0	1816.05	0	0	
12300	90	179.375	7128.998	10539	-1778.02	1209.482	401885	742558.6	32.10319	-103.683	0	1915.4	0	0	
12400	90	179.375	7128.998	10539	-1878.01	1210.572	401785	742559.7	32.10292	-103.683	0	2014.74	0	0	
12500	90	179.375	7128.998	10539	-1978	1211.663	401685	742560.8	32.10264	-103.683	0	2114.09	0	0	
12600	90	179.375	7128.998	10539	-2078	1212.753	401585	742561.9	32.10237	-103.683	0	2213.43	0	0	
12700	90	179.375	7128.998	10539	-2177.99	1213.843	401485	742563	32.10209	-103.683	0	2312.78	0	0	
12800	90	179.375	7128.998	10539	-2277.99	1214.934	401385	742564.1	32.10182	-103.683	0	2412.12	0	0	
12900	90	179.375	7128.998	10539	-2377.98	1216.024	401285	742565.1	32.10154	-103.683	0	2511.46	0	0	
13000	90	179.375	7128.998	10539	-2477.97	1217.115	401185	742566.2	32.10127	-103.683	0	2610.81	0	0	
13100	90	179.375	7128.998	10539	-2577.97	1218.205	401085	742567.3	32.10099	-103.683	0	2710.15	0	0	
13200	90	179.375	7128.998	10539	-2677.96	1219.295	400985	742568.4	32.10072	-103.683	0	2809.5	0	0	
13300	90	179.375	7128.998	10539	-2777.96	1220.386	400885	742569.5	32.10045	-103.683	0	2908.84	0	0	
13400	90	179.375	7128.998	10539	-2877.95	1221.476	400785	742570.6	32.10017	-103.683	0	3008.19	0	0	
13500	90	179.375	7128.998	10539	-2977.94	1222.566	400685	742571.7	32.0999	-103.683	0	3107.53	0	0	
13600	90	179.375	7128.998	10539	-3077.94	1223.657	400585	742572.8	32.09962	-103.683	0	3206.88	0	0	
13700	90	179.375	7128.998	10539	-3177										

15900	90	179.375	7128.999	10539	-5377.8	1248.735	398285.2	742597.9	32.0933	-103.683	0	5491.8	0	0	0
16000	90	179.375	7128.999	10539	-5477.8	1249.825	398185.2	742598.9	32.09302	-103.683	0	5591.14	0	0	0
16100	90	179.375	7128.999	10539	-5577.79	1250.915	398085.2	742600	32.09275	-103.683	0	5690.49	0	0	0
16200	90	179.375	7128.999	10539	-5677.78	1252.006	397985.2	742601.1	32.09247	-103.683	0	5789.83	0	0	0
16300	90	179.375	7128.999	10539	-5777.78	1253.096	397885.2	742602.2	32.0922	-103.683	0	5889.17	0	0	0
16400	90	179.375	7128.999	10539	-5877.77	1254.186	397785.2	742603.3	32.09192	-103.683	0	5988.52	0	0	0
16500	90	179.375	7128.999	10539	-5977.77	1255.277	397685.2	742604.4	32.09165	-103.683	0	6087.86	0	0	0
16600	90	179.375	7128.999	10539	-6077.76	1256.367	397585.2	742605.5	32.09137	-103.683	0	6187.21	0	0	0
16700	90	179.375	7128.999	10539	-6177.75	1257.458	397485.2	742606.6	32.0911	-103.683	0	6286.55	0	0	0
16800	90	179.375	7128.999	10539	-6277.75	1258.548	397385.2	742607.7	32.09082	-103.683	0	6385.9	0	0	0
16900	90	179.375	7128.999	10539	-6377.74	1259.638	397285.2	742608.8	32.09055	-103.683	0	6485.24	0	0	0
17000	90	179.375	7128.999	10539	-6477.74	1260.729	397185.2	742609.8	32.09027	-103.683	0	6584.59	0	0	0
17100	90	179.375	7128.999	10539	-6577.73	1261.819	397085.2	742610.9	32.09	-103.683	0	6683.93	0	0	0
17200	90	179.375	7128.999	10539	-6677.72	1262.909	396985.2	742612	32.08972	-103.683	0	6783.27	0	0	0
17300	90	179.375	7128.999	10539	-6777.72	1264	396885.2	742613.1	32.08945	-103.683	0	6882.62	0	0	0
17400	90	179.375	7128.999	10539	-6877.71	1265.09	396785.3	742614.2	32.08918	-103.683	0	6981.96	0	0	0
17500	90	179.375	7128.999	10539	-6977.71	1266.18	396685.3	742615.3	32.0889	-103.683	0	7081.31	0	0	0
17600	90	179.375	7128.999	10539	-7077.7	1267.271	396585.3	742616.4	32.08863	-103.683	0	7180.65	0	0	0
17700	90	179.375	7128.999	10539	-7177.69	1268.361	396485.3	742617.5	32.08835	-103.683	0	7280	0	0	0
17800	90	179.375	7128.999	10539	-7277.68	1269.451	396385.3	742618.6	32.08808	-103.683	0	7379.34	0	0	0
17900	90	179.375	7128.999	10539	-7377.68	1270.542	396285.3	742619.7	32.0878	-103.683	0	7478.68	0	0	0
18000	90	179.375	7128.999	10539	-7477.68	1271.632	396185.3	742620.8	32.08753	-103.683	0	7578.03	0	0	0
18100	90	179.375	7128.999	10539	-7577.67	1272.722	396085.3	742621.8	32.08725	-103.683	0	7677.37	0	0	0
18200	90	179.375	7128.999	10539	-7677.67	1273.813	395985.3	742622.9	32.08698	-103.683	0	7776.72	0	0	0
18300	90	179.375	7128.999	10539	-7777.66	1274.903	395885.3	742624	32.0867	-103.683	0	7876.06	0	0	0
18400	90	179.375	7128.999	10539	-7877.65	1275.994	395785.3	742625.1	32.08643	-103.683	0	7975.41	0	0	0
18500	90	179.375	7128.999	10539	-7977.65	1277.084	395685.3	742626.2	32.08615	-103.683	0	8074.75	0	0	0
18600	90	179.375	7128.999	10539	-8077.64	1278.174	395585.3	742627.3	32.08588	-103.683	0	8174.1	0	0	0
18700	90	179.375	7128.999	10539	-8177.64	1279.265	395485.3	742628.4	32.0856	-103.683	0	8273.44	0	0	0
18800	90	179.375	7128.999	10539	-8277.63	1280.355	395385.3	742629.5	32.08533	-103.683	0	8372.78	0	0	0
18900	90	179.375	7128.999	10539	-8377.62	1281.446	395285.3	742630.6	32.08505	-103.683	0	8472.13	0	0	0
19000	90	179.375	7128.999	10539	-8477.61	1282.536	395185.3	742631.7	32.08478	-103.683	0	8571.47	0	0	0
19100	90	179.375	7128.999	10539	-8577.61	1283.626	395085.4	742632.7	32.0845	-103.683	0	8670.82	0	0	0
19200	90	179.375	7128.999	10539	-8677.61	1284.716	394985.4	742633.8	32.08423	-103.683	0	8770.16	0	0	0
19300	90	179.375	7128.999	10539	-8777.6	1285.807	394885.4	742634.9	32.08395	-103.683	0	8869.51	0	0	0
19400	90	179.375	7128.999	10539	-8877.59	1286.897	394785.4	742635.6	32.08368	-103.683	0	8968.85	0	0	0
19500	90	179.375	7128.999	10539	-8977.58	1287.987	394685.4	742637.1	32.0834	-103.683	0	9068.19	0	0	0
19600	90	179.375	7128.999	10539	-9077.58	1289.078	394585.4	742638.2	32.08313	-103.683	0	9167.54	0	0	0
19700	90	179.375	7128.999	10539	-9177.58	1290.168	394485.4	742639.3	32.08285	-103.683	0	9266.88	0	0	0
19800	90	179.375	7128.999	10539	-9277.57	1291.258	394385.4	742640.4	32.08258	-103.683	0	9366.23	0	0	0
19900	90	179.375	7128.999	10539	-9377.56	1292.349	394285.4	742641.5	32.0823	-103.683	0	9465.57	0	0	0
20000	90	179.375	7128.999	10539	-9477.56	1293.439	394185.4	742642.6	32.08203	-103.683	0	9564.92	0	0	0
20100	90	179.375	7128.999	10539	-9577.55	1294.529	394085.4	742643.7	32.08175	-103.683	0	9664.26	0	0	0
20200	90	179.375	7128.999	10539	-9677.55	1295.62	393985.4	742644.7	32.08148	-103.683	0	9763.61	0	0	0
20300	90	179.375	7128.999	10539	-9777.54	1296.71	393885.4	742645.8	32.0812	-103.683	0	9862.95	0	0	0
20400	90	179.375	7128.999	10539	-9877.53	1297.801	393785.4	742646.9	32.08093	-103.683	0	9962.29	0	0	0
20500	90	179.375	7128.999	10539	-9977.53	1298.891	393685.4	742648.1	32.08065	-103.683	0	10061.64	0	0	0
20600	90	179.375	7128.999	10539	-10077.5	1299.981	393585.4	742649.2	32.08038	-103.683	0	10160.98	0	0	0
20700	90	179.375	7128.999	10539	-10177.5	1301.072	393485.5	742650.2	32.0801	-103.683	0	10260.33	0	0	0
20770	90	179.375	7128.999	10539	-10247.5	1301.885	393415.5	742651	32.07991	-103.683	0	10359.67	0	0	0
20800	90	179.375	7128.999	10539	-10277.5	1302.162	393385.5	742651.3	32.07963	-103.683	0	10409.58	0	0	0
20850.24	90	179.375	7128.999	10539	-10327.7	1302.71	393385.2	742651.8	32.07969	-103.683	0	10409.58	0	0	0

Last Perf (1.1649,2942) PMU of Section 33

Job#

Devon Energy Corporation

Lea County, NM (NAD 83) Sec 28 T. 25 S., R.32E.

API#

Marwari 28-16 STATE FED COM 232H

Wellbore #1

Sperry Drilling Services

Ellipse Separation

Anticollision Report

Minimum Magnetic Interference Warning level is 50' center to center

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Reference Design: Sec 28 T. 25 S., R.32E. - Marwari 28-16 STATE FED COM 232H - Wellbore #1 - Plan 1

Well Coordinates: 32.10810127
-103.68735666

North American Datum 1983
New Mexico Eastern Zone
403,662.97 N
741,349.12 E

Ground Level: 3,377.00 usft

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Version: 5000.15 Build: 91

Report Version: Midcon Ellipse v1.60

HALLIBURTON

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Anticollision Summary

Reference Design: Sec 28 T. 25 S., R.32E. - Marwari 28-16 STATE FED COM 232H - Wellbore #1 - Plan 1

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Site Name	Measured Depth (usft)	Minimum Distance (usft)	@Measured Depth (usft)	Ellipse Separation (usft)	@Measured Depth usft	Clearance Factor	Summary Based on Minimum
Comparison Well Name - Wellbore Name - Design							
Sec 28 T. 25 S., R.32E.							
Cotton Draw Unit #015 (PA) - Wellbore #1 - No Surveys							
Cotton Draw Unit #035 (PA) - Wellbore #1 - No Surveys	4,527.13	2,127.27	4,527.13	1,902.83	4,470.55	9.478	Centre Distance
	4,800.00	2,128.16	4,800.00	1,897.38	4,734.00	9.222	Ellipse Separation / Clearance Factor
Cotton Draw Unit #036 (PA) - Wellbore #1 - No Surveys							
Cotton Draw Unit #037 (PA) - Wellbore #1 - No Surveys	4,051.13	811.60	4,051.13	597.78	4,007.76	3.796	Centre Distance
	4,400.00	815.38	4,400.00	593.86	4,347.68	3.681	Ellipse Separation
	4,800.00	828.90	4,800.00	598.18	4,737.43	3.593	Clearance Factor
Cotton Draw Unit #045 (PA) - Wellbore #1 - No Surveys							
	3,575.14	504.08	3,575.14	300.43	3,526.96	2.475	Centre Distance
	3,800.00	506.61	3,800.00	298.41	3,746.06	2.433	Ellipse Separation
	4,100.00	517.72	4,100.00	303.21	4,038.37	2.414	Clearance Factor
Cotton Draw Unit #098 (PA) - Wellbore #1 - No Surveys							
Cotton Draw Unit 268H - Wellbore #1 - Plan #1 120414 RevA0	12,758.43	483.82	12,758.43	412.80	10,525.19	6.812	Centre Distance
	12,800.00	485.60	12,800.00	412.62	10,525.19	6.654	Ellipse Separation
	12,900.00	504.10	12,900.00	427.59	10,525.19	6.588	Clearance Factor
Ike Federal #001 (PA) - Wellbore #1 - No Surveys							
Monsanto State #007 (PA) - Wellbore #1 - No Surveys							
Monsanto State #008 (PA) - Wellbore #1 - No Surveys							
Paduca Delaware 16 State #003 (Active) - Wellbore #1 - No Surveys							
Paduca Delaware 16 State #004 (Active) - Wellbore #1 - No Surveys							
Pre-Ongard #001 (PA) - Wellbore #1 - No Surveys							
Pre-Ongard #002 (PA) - Wellbore #1 - No Surveys							
Pre-Ongard #015 (PA) - Wellbore #1 - No Surveys							
	3,080.95	1,819.75	3,080.95	1,625.19	3,054.55	9.353	Centre Distance
	3,900.00	1,828.65	3,900.00	1,618.19	3,853.50	8.689	Ellipse Separation
	4,800.00	1,859.54	4,800.00	1,628.91	4,730.43	8.063	Clearance Factor
Sol 28 Federal #001H (Active) - Wellbore #1 - Actual Drilled							
	15,200.96	1,150.97	15,200.96	1,083.12	12,545.77	16.966	Centre Distance

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Reference Design: Sec 28 T. 25 S., R.32E. - Marwari 28-16 STATE FED COM 232H - Wellbore #1 - Plan 1

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Site Name	Measured Depth (usft)	Minimum Distance (usft)	@Measured Depth (usft)	Ellipse Separation (usft)	@Measured Depth usft	Clearance Factor	Summary Based on Minimum
Comparison Well Name - Wellbore Name - Design							
Sol 28 Federal #001H (Active) - Wellbore #1 - Actual Drilled							
	15,300.00	1,155.21	15,300.00	1,082.09	12,548.75	15.799	Ellipse Separation
	16,200.00	1,523.75	16,200.00	1,355.10	12,571.19	9.035	Clearance Factor
Sol 28 Federal #002H (Active) - Wellbore #1 - Actual Drilled							
	13,446.61	1,139.98	13,446.61	1,082.33	12,556.00	19.772	Centre Distance
	13,600.00	1,150.26	13,600.00	1,081.37	12,556.00	16.699	Ellipse Separation
	14,400.00	1,486.11	14,400.00	1,326.54	12,556.00	9.313	Clearance Factor
Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Wellbore #1							
	1,326.00	14.54	1,326.00	8.95	1,326.24	2.604	Centre Distance
	1,400.00	14.83	1,400.00	8.93	1,400.15	2.514	Ellipse Separation / Clearance Factor
Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Plan 6							
	1,326.00	14.54	1,326.00	8.95	1,326.24	2.604	Centre Distance
	1,400.00	14.83	1,400.00	8.93	1,400.15	2.514	Ellipse Separation / Clearance Factor

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Cotton Draw Unit 268H - Wellbore #1 - Plan #1 120414 RevA0

O-MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
10,400.00	10,260.44	22.60	1,189.85	30.85	10,246.63	10,246.63	-2,231.15	1,698.27	22.89	2,310.39	2,256.92	-14.02	43.215
10,500.00	10,341.32	-35.98	1,190.49	30.96	10,327.52	10,327.52	-2,231.15	1,698.27	23.07	2,253.13	2,199.51	-16.22	42.024
10,600.00	10,410.80	-107.72	1,191.27	31.10	10,396.99	10,396.99	-2,231.15	1,698.27	23.23	2,183.11	2,129.43	-19.82	40.666
10,700.00	10,466.77	-190.44	1,192.17	31.27	10,452.96	10,452.96	-2,231.15	1,698.27	23.35	2,102.53	2,048.87	-25.94	39.183
10,800.00	10,507.52	-281.61	1,193.17	31.51	10,493.71	10,493.71	-2,231.15	1,698.27	23.45	2,013.91	1,960.37	-37.13	37.619
10,900.00	10,531.82	-378.48	1,194.22	31.83	10,518.01	10,518.01	-2,231.15	1,698.27	23.50	1,920.01	1,866.70	-58.78	36.017
11,000.00	10,539.00	-478.09	1,195.31	32.25	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,823.78	1,770.80	-90.00	34.423
11,100.00	10,539.00	-578.09	1,196.40	32.77	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,727.56	1,674.97	-90.00	32.846
11,200.00	10,539.00	-678.08	1,197.49	33.38	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,631.81	1,579.63	-90.00	31.273
11,300.00	10,539.00	-778.07	1,198.58	34.08	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,536.59	1,484.86	-90.00	29.705
11,400.00	10,539.00	-878.07	1,199.67	34.86	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,442.02	1,390.78	-90.00	28.142
11,500.00	10,539.00	-978.06	1,200.76	35.73	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,348.23	1,297.52	-90.00	26.583
11,600.00	10,539.00	-1,078.06	1,201.85	36.67	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,255.41	1,205.24	-90.00	25.024
11,700.00	10,539.00	-1,178.05	1,202.94	37.68	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,163.77	1,114.17	-90.00	23.463
11,800.00	10,539.00	-1,278.05	1,204.03	38.75	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,073.63	1,024.58	-90.00	21.891
11,900.00	10,539.00	-1,378.04	1,205.12	39.88	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	985.39	936.84	-90.00	20.297
12,000.00	10,539.00	-1,478.03	1,206.21	41.06	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	899.61	851.40	-90.00	18.661
12,100.00	10,539.00	-1,578.03	1,207.30	42.29	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	817.08	768.89	-90.00	16.958
12,200.00	10,539.00	-1,678.02	1,208.39	43.56	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	738.87	690.15	-90.00	15.166
12,300.00	10,539.00	-1,778.02	1,209.48	44.87	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	666.51	616.37	-90.00	13.291
12,400.00	10,539.00	-1,878.01	1,210.57	46.22	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	602.12	549.31	-90.00	11.400
12,500.00	10,539.00	-1,978.00	1,211.66	47.60	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	548.51	491.60	-90.00	9.638
12,600.00	10,539.00	-2,078.00	1,212.75	49.01	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	509.10	446.90	-90.00	8.185
12,700.00	10,539.00	-2,177.99	1,213.84	50.45	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	487.33	419.42	-90.00	7.176
12,758.43	10,539.00	-2,236.42	1,214.48	51.30	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	483.82	412.80	-90.00	6.812
12,800.00	10,539.00	-2,277.99	1,214.93	51.91	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	485.60	412.62	-90.00	6.654
12,900.00	10,539.00	-2,377.98	1,216.02	53.40	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	504.10	427.59	-90.00	6.588
13,000.00	10,539.00	-2,477.97	1,217.11	54.90	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	540.77	462.42	-90.00	6.902
13,100.00	10,539.00	-2,577.97	1,218.20	56.43	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	592.24	513.40	-90.00	7.512
13,200.00	10,539.00	-2,677.96	1,219.30	57.97	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	655.03	576.55	-90.00	8.346

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Cotton Draw Unit 268H - Wellbore #1 - Plan #1 120414 RevA0

0-MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
13,300.00	10,539.00	-2,777.96	1,220.39	59.53	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	726.21	648.51	-90.00	9.347
13,400.00	10,539.00	-2,877.95	1,221.48	61.11	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	803.55	726.81	-90.00	10.471
13,500.00	10,539.00	-2,977.94	1,222.57	62.70	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	885.44	809.69	-90.00	11.689
13,600.00	10,539.00	-3,077.94	1,223.66	64.30	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	970.73	895.93	-90.00	12.978
13,700.00	10,539.00	-3,177.93	1,224.75	65.91	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,058.60	984.67	-90.00	14.320
13,800.00	10,539.00	-3,277.93	1,225.84	67.54	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,148.45	1,075.33	-90.00	15.705
13,900.00	10,539.00	-3,377.92	1,226.93	69.17	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,239.86	1,167.45	-90.00	17.123
14,000.00	10,539.00	-3,477.91	1,228.02	70.82	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,332.50	1,260.74	-90.00	18.567
14,100.00	10,539.00	-3,577.91	1,229.11	72.47	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,426.14	1,354.95	-90.00	20.032
14,200.00	10,539.00	-3,677.90	1,230.20	74.13	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,520.59	1,449.91	-90.00	21.514
14,300.00	10,539.00	-3,777.90	1,231.29	75.80	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,615.71	1,545.49	-90.00	23.009
14,400.00	10,539.00	-3,877.89	1,232.38	77.48	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,711.38	1,641.57	-90.00	24.516
14,500.00	10,539.00	-3,977.88	1,233.47	79.16	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,807.52	1,738.08	-90.00	26.031
14,600.00	10,539.00	-4,077.88	1,234.56	80.85	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	1,904.06	1,834.96	-90.00	27.553
14,700.00	10,539.00	-4,177.87	1,235.65	82.55	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	2,000.94	1,932.14	-90.00	29.082
14,800.00	10,539.00	-4,277.87	1,236.74	84.25	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	2,098.11	2,029.58	-90.00	30.614
14,900.00	10,539.00	-4,377.86	1,237.83	85.95	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	2,195.54	2,127.25	-90.00	32.151
15,000.00	10,539.00	-4,477.85	1,238.92	87.67	10,525.19	10,525.19	-2,231.15	1,698.27	23.52	2,293.19	2,225.12	-90.00	33.690

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Sol 28 Federal #002H (Active) - Wellbore #1 - Actual Drilled

100-MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N-S (usft)	Ellipse Centre +E-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N-S (usft)	Ellipse Centre +E-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
11,500.00	10,539.00	-978.06	1,200.76	35.73	12,526.28	9,373.90	-2,923.54	1,272.78	188.16	2,255.57	2,064.05	-2.55	11.777
11,600.00	10,539.00	-1,078.06	1,201.85	36.67	12,527.30	9,373.88	-2,923.56	1,271.76	188.18	2,169.88	1,980.72	-2.50	11.471
11,700.00	10,539.00	-1,178.05	1,202.94	37.68	12,528.34	9,373.86	-2,923.59	1,270.72	188.19	2,085.46	1,898.95	-2.45	11.182
11,800.00	10,539.00	-1,278.05	1,204.03	38.75	12,529.39	9,373.83	-2,923.61	1,269.68	188.20	2,002.47	1,818.93	-2.40	10.910
11,900.00	10,539.00	-1,378.04	1,205.12	39.88	12,530.45	9,373.81	-2,923.64	1,268.61	188.22	1,921.11	1,740.89	-2.34	10.660
12,000.00	10,539.00	-1,478.03	1,206.21	41.06	12,531.52	9,373.79	-2,923.67	1,267.54	188.23	1,841.58	1,665.11	-2.29	10.436
12,100.00	10,539.00	-1,578.03	1,207.30	42.29	12,532.61	9,373.77	-2,923.70	1,266.45	188.25	1,764.14	1,591.89	-2.24	10.242
12,200.00	10,539.00	-1,678.02	1,208.39	43.56	12,533.72	9,373.74	-2,923.73	1,265.34	188.26	1,689.06	1,521.59	-2.18	10.086
12,300.00	10,539.00	-1,778.02	1,209.48	44.87	12,534.84	9,373.72	-2,923.76	1,264.22	188.28	1,616.69	1,454.61	-2.12	9.975
12,400.00	10,539.00	-1,878.01	1,210.57	46.22	12,535.98	9,373.69	-2,923.78	1,263.09	188.29	1,547.39	1,391.41	-2.07	9.920
12,500.00	10,539.00	-1,978.00	1,211.66	47.60	12,537.13	9,373.67	-2,923.81	1,261.94	188.31	1,481.61	1,332.50	-2.01	9.937
12,600.00	10,539.00	-2,078.00	1,212.75	49.01	12,538.30	9,373.64	-2,923.85	1,260.77	188.32	1,419.82	1,278.45	-1.95	10.043
12,700.00	10,539.00	-2,177.99	1,213.84	50.45	12,539.48	9,373.61	-2,923.88	1,259.58	188.34	1,362.58	1,229.88	-1.89	10.268
12,800.00	10,539.00	-2,277.99	1,214.93	51.91	12,540.68	9,373.59	-2,923.91	1,258.38	188.35	1,310.48	1,187.40	-1.83	10.648
12,900.00	10,539.00	-2,377.98	1,216.02	53.40	12,541.90	9,373.56	-2,923.94	1,257.17	188.37	1,264.16	1,151.67	-1.77	11.238
13,000.00	10,539.00	-2,477.97	1,217.11	54.90	12,543.14	9,373.53	-2,923.97	1,255.93	188.38	1,224.26	1,123.23	-1.71	12.117
13,100.00	10,539.00	-2,577.97	1,218.20	56.43	12,544.39	9,373.50	-2,924.01	1,254.68	188.40	1,191.44	1,102.50	-1.64	13.396
13,200.00	10,539.00	-2,677.96	1,219.30	57.97	12,545.67	9,373.47	-2,924.04	1,253.40	188.42	1,166.30	1,089.56	-1.58	15.198
13,300.00	10,539.00	-2,777.96	1,220.39	59.53	12,556.00	9,373.21	-2,924.33	1,243.08	188.55	1,149.37	1,083.85	-1.06	17.543
13,400.00	10,539.00	-2,877.95	1,221.48	61.11	12,556.00	9,373.21	-2,924.33	1,243.08	188.55	1,140.94	1,082.62	-1.06	19.566
13,446.61	10,539.00	-2,924.55	1,221.98	61.85	12,556.00	9,373.21	-2,924.33	1,243.08	188.55	1,139.98	1,082.33	-1.06	19.772
13,500.00	10,539.00	-2,977.94	1,222.57	62.70	12,556.00	9,373.21	-2,924.33	1,243.08	188.55	1,141.23	1,081.69	-1.06	19.167
13,600.00	10,539.00	-3,077.94	1,223.66	64.30	12,556.00	9,373.21	-2,924.33	1,243.08	188.55	1,150.26	1,081.37	-1.06	16.699
13,700.00	10,539.00	-3,177.93	1,224.75	65.91	12,556.00	9,373.21	-2,924.33	1,243.08	188.55	1,167.81	1,086.05	-1.06	14.283
13,800.00	10,539.00	-3,277.93	1,225.84	67.54	12,556.00	9,373.21	-2,924.33	1,243.08	188.55	1,193.50	1,098.08	-1.06	12.508
13,900.00	10,539.00	-3,377.92	1,226.93	69.17	12,556.00	9,373.21	-2,924.33	1,243.08	188.55	1,226.84	1,118.13	-1.06	11.286
14,000.00	10,539.00	-3,477.91	1,228.02	70.82	12,556.00	9,373.21	-2,924.33	1,243.08	188.55	1,267.20	1,146.09	-1.06	10.463
14,100.00	10,539.00	-3,577.91	1,229.11	72.47	12,556.00	9,373.21	-2,924.33	1,243.08	188.55	1,313.96	1,181.53	-1.06	9.922
14,200.00	10,539.00	-3,677.90	1,230.20	74.13	12,556.00	9,373.21	-2,924.33	1,243.08	188.55	1,366.44	1,223.86	-1.06	9.583
14,300.00	10,539.00	-3,777.90	1,231.29	75.80	12,556.00	9,373.21	-2,924.33	1,243.08	188.55	1,424.02	1,272.41	-1.06	9.393

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Sol 28 Federal #002H (Active) - Wellbore #1 - Actual Drilled

100-MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	+E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	+E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
14,400.00	10,539.00	-3,877.89	1,232.38	77.48	12,556.00	9,373.21	-2,924.33	1,243.08	188.55	1,486.11	1,326.54	-1.06	9.313
14,500.00	10,539.00	-3,977.88	1,233.47	79.16	12,556.00	9,373.21	-2,924.33	1,243.08	188.55	1,552.16	1,385.60	-1.06	9.319
14,600.00	10,539.00	-4,077.88	1,234.56	80.85	12,564.97	9,372.97	-2,924.57	1,234.12	188.67	1,621.66	1,449.10	-0.61	9.398
14,700.00	10,539.00	-4,177.87	1,235.65	82.55	12,566.33	9,372.93	-2,924.61	1,232.76	188.69	1,694.23	1,516.33	-0.54	9.523
14,800.00	10,539.00	-4,277.87	1,236.74	84.25	12,567.67	9,372.90	-2,924.65	1,231.42	188.71	1,769.48	1,586.89	-0.47	9.691
14,900.00	10,539.00	-4,377.86	1,237.83	85.95	12,569.00	9,372.86	-2,924.68	1,230.09	188.73	1,847.08	1,660.39	-0.41	9.894
15,000.00	10,539.00	-4,477.85	1,238.92	87.67	12,570.32	9,372.82	-2,924.72	1,228.77	188.75	1,926.74	1,736.44	-0.34	10.125
15,100.00	10,539.00	-4,577.85	1,240.01	89.38	12,571.63	9,372.78	-2,924.75	1,227.46	188.76	2,008.22	1,814.75	-0.28	10.380
15,200.00	10,539.00	-4,677.84	1,241.10	91.10	12,572.92	9,372.75	-2,924.79	1,226.17	188.78	2,091.31	1,895.03	-0.21	10.655
15,300.00	10,539.00	-4,777.84	1,242.19	92.83	12,574.21	9,372.71	-2,924.82	1,224.89	188.80	2,175.82	1,977.06	-0.15	10.947
15,400.00	10,539.00	-4,877.83	1,243.28	94.56	12,575.48	9,372.67	-2,924.86	1,223.61	188.81	2,261.60	2,060.62	-0.08	11.253

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Pre-Ongard #015 (PA) - Wellbore #1 - No Surveys

100-Blind - assumed vertical

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	+E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	+E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
100.00	100.00	0.00	0.00	0.51	80.00	80.00	-1,803.97	259.88	164.00	1,822.59	1,658.08	171.80	11.079
200.00	200.00	0.00	0.00	0.58	180.00	180.00	-1,803.97	259.88	164.05	1,822.59	1,657.96	171.80	11.071
300.00	300.00	0.00	0.00	0.72	280.00	280.00	-1,803.97	259.88	164.15	1,822.59	1,657.72	171.80	11.054
400.00	400.00	0.00	0.00	0.90	380.00	380.00	-1,803.97	259.88	164.31	1,822.59	1,657.38	171.80	11.032
500.00	500.00	0.00	0.00	1.10	480.00	480.00	-1,803.97	259.88	164.52	1,822.59	1,656.97	171.80	11.005
600.00	600.00	0.00	0.00	1.30	580.00	580.00	-1,803.97	259.88	164.79	1,822.59	1,656.50	171.80	10.974
700.00	700.00	0.00	0.00	1.51	680.00	680.00	-1,803.97	259.88	165.11	1,822.59	1,655.97	171.80	10.939
800.00	800.00	0.00	0.00	1.72	780.00	780.00	-1,803.97	259.88	165.49	1,822.59	1,655.37	171.80	10.900
900.00	900.00	0.00	0.00	1.94	880.00	880.00	-1,803.97	259.88	165.93	1,822.59	1,654.72	171.80	10.857
1,000.00	1,000.00	0.00	0.00	2.16	980.00	980.00	-1,803.97	259.88	166.41	1,822.59	1,654.02	171.80	10.812
1,100.00	1,100.00	0.00	0.00	2.38	1,080.00	1,080.00	-1,803.97	259.88	166.96	1,822.59	1,653.26	171.80	10.763
1,200.00	1,200.00	0.00	0.00	2.60	1,180.00	1,180.00	-1,803.97	259.88	167.55	1,822.59	1,652.44	171.80	10.712
1,300.00	1,300.00	0.00	0.00	2.82	1,280.00	1,280.00	-1,803.97	259.88	168.20	1,822.59	1,651.57	171.80	10.657
1,400.00	1,400.00	0.00	0.00	3.04	1,380.00	1,380.00	-1,803.97	259.88	168.90	1,822.59	1,650.65	171.80	10.600
1,500.00	1,500.00	0.00	0.00	3.26	1,480.00	1,480.00	-1,803.97	259.88	169.65	1,822.59	1,649.68	171.80	10.540
1,600.00	1,600.00	0.00	0.00	3.48	1,580.00	1,580.00	-1,803.97	259.88	170.46	1,822.59	1,648.65	171.80	10.478
1,700.00	1,700.00	0.00	0.00	3.71	1,680.00	1,680.00	-1,803.97	259.88	171.31	1,822.59	1,647.58	171.80	10.414
1,800.00	1,800.00	0.00	0.00	3.93	1,780.00	1,780.00	-1,803.97	259.88	172.21	1,822.59	1,646.45	171.80	10.347
1,900.00	1,900.00	0.00	0.00	4.15	1,880.00	1,880.00	-1,803.97	259.88	173.16	1,822.59	1,645.28	171.80	10.279
2,000.00	2,000.00	0.00	0.00	4.37	1,980.00	1,980.00	-1,803.97	259.88	174.16	1,822.59	1,644.06	171.80	10.209
2,100.00	2,099.99	0.08	0.87	4.59	2,079.99	2,079.99	-1,803.97	259.88	175.20	1,822.54	1,642.75	86.83	10.137
2,200.00	2,199.96	0.30	3.48	4.79	2,179.96	2,179.96	-1,803.97	259.88	176.30	1,822.40	1,641.32	86.91	10.064
2,300.00	2,299.86	0.68	7.82	4.99	2,279.86	2,279.86	-1,803.97	259.88	177.43	1,822.17	1,639.75	87.05	9.989
2,400.00	2,399.68	1.22	13.90	5.20	2,379.68	2,379.68	-1,803.97	259.88	178.61	1,821.86	1,638.05	87.25	9.912
2,500.00	2,499.37	1.90	21.72	5.41	2,479.37	2,479.37	-1,803.97	259.88	179.83	1,821.50	1,636.26	87.50	9.833
2,600.00	2,598.90	2.74	31.27	5.64	2,578.90	2,578.90	-1,803.97	259.88	181.09	1,821.11	1,634.38	87.80	9.753
2,700.00	2,698.26	3.72	42.54	5.87	2,678.26	2,678.26	-1,803.97	259.88	182.39	1,820.71	1,632.45	88.16	9.671
2,800.00	2,797.40	4.86	55.55	6.11	2,777.40	2,777.40	-1,803.97	259.88	183.73	1,820.33	1,630.49	88.57	9.589
2,900.00	2,896.30	6.15	70.27	6.37	2,876.30	2,876.30	-1,803.97	259.88	185.10	1,820.02	1,628.54	89.03	9.505
3,000.00	2,994.93	7.59	86.71	6.65	2,974.93	2,974.93	-1,803.97	259.88	186.51	1,819.81	1,626.65	89.55	9.421

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Pre-Ongard #015 (PA) - Wellbore #1 - No Surveys

100-Blind - assumed vertical

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
3,080.95	3,074.55	8.86	101.28	6.88	3,054.55	3,054.55	-1,803.97	259.88	187.67	1,819.75	1,625.19	90.00	9.353
3,100.00	3,093.26	9.17	104.87	6.94	3,073.26	3,073.26	-1,803.97	259.88	187.95	1,819.75	1,624.87	90.11	9.337
3,200.00	3,191.25	10.91	124.73	7.25	3,171.25	3,171.25	-1,803.97	259.88	189.42	1,819.90	1,623.23	90.72	9.253
3,300.00	3,288.87	12.80	146.29	7.59	3,268.87	3,268.87	-1,803.97	259.88	190.92	1,820.31	1,621.80	91.39	9.170
3,400.00	3,386.31	14.76	168.70	7.94	3,366.31	3,366.31	-1,803.97	259.88	192.46	1,821.01	1,620.61	92.08	9.087
3,500.00	3,483.75	16.72	191.11	8.31	3,463.75	3,463.75	-1,803.97	259.88	194.02	1,821.98	1,619.66	92.76	9.005
3,600.00	3,581.19	18.68	213.52	8.69	3,561.19	3,561.19	-1,803.97	259.88	195.62	1,823.24	1,618.93	93.45	8.924
3,700.00	3,678.62	20.64	235.93	9.07	3,658.62	3,658.62	-1,803.97	259.88	197.25	1,824.76	1,618.45	94.14	8.844
3,800.00	3,776.06	22.60	258.34	9.47	3,756.06	3,756.06	-1,803.97	259.88	198.90	1,826.57	1,618.20	94.83	8.766
3,900.00	3,873.50	24.56	280.75	9.87	3,853.50	3,853.50	-1,803.97	259.88	200.59	1,828.65	1,618.19	95.51	8.689
4,000.00	3,970.93	26.52	303.16	10.28	3,950.93	3,950.93	-1,803.97	259.88	202.31	1,831.00	1,618.42	96.19	8.613
4,100.00	4,068.37	28.48	325.57	10.69	4,048.37	4,048.37	-1,803.97	259.88	204.06	1,833.63	1,618.89	96.87	8.539
4,200.00	4,165.81	30.44	347.98	11.11	4,145.81	4,145.81	-1,803.97	259.88	205.83	1,836.52	1,619.60	97.55	8.466
4,300.00	4,263.24	32.40	370.38	11.53	4,243.24	4,243.24	-1,803.97	259.88	207.64	1,839.69	1,620.56	98.23	8.395
4,400.00	4,360.68	34.37	392.79	11.95	4,340.68	4,340.68	-1,803.97	259.88	209.46	1,843.13	1,621.75	98.91	8.326
4,500.00	4,458.12	36.33	415.20	12.38	4,438.12	4,438.12	-1,803.97	259.88	211.32	1,846.83	1,623.18	99.58	8.258
4,600.00	4,555.56	38.29	437.61	12.82	4,535.56	4,535.56	-1,803.97	259.88	213.19	1,850.81	1,624.85	100.25	8.191
4,700.00	4,652.99	40.25	460.02	13.25	4,632.99	4,632.99	-1,803.97	259.88	215.10	1,855.04	1,626.76	100.91	8.126
4,800.00	4,750.43	42.21	482.43	13.69	4,730.43	4,730.43	-1,803.97	259.88	217.02	1,859.54	1,628.91	101.58	8.063
4,900.00	4,847.87	44.17	504.84	14.13	4,738.00	4,738.00	-1,803.97	259.88	217.17	1,866.46	1,635.53	101.63	8.082
5,000.00	4,945.30	46.13	527.25	14.57	4,738.00	4,738.00	-1,803.97	259.88	217.17	1,878.68	1,648.21	101.63	8.152
5,100.00	5,042.74	48.09	549.66	15.02	4,738.00	4,738.00	-1,803.97	259.88	217.17	1,896.09	1,666.67	101.63	8.265
5,200.00	5,140.18	50.05	572.07	15.46	4,738.00	4,738.00	-1,803.97	259.88	217.17	1,918.57	1,690.73	101.63	8.421
5,300.00	5,237.61	52.01	594.48	15.91	4,738.00	4,738.00	-1,803.97	259.88	217.17	1,945.93	1,720.16	101.63	8.619
5,400.00	5,335.05	53.97	616.89	16.36	4,738.00	4,738.00	-1,803.97	259.88	217.17	1,977.97	1,754.72	101.63	8.860
5,500.00	5,432.49	55.93	639.30	16.81	4,738.00	4,738.00	-1,803.97	259.88	217.17	2,014.48	1,794.09	101.63	9.141
5,600.00	5,529.93	57.89	661.71	17.26	4,738.00	4,738.00	-1,803.97	259.88	217.17	2,055.20	1,838.00	101.63	9.462
5,700.00	5,627.36	59.85	684.12	17.72	4,738.00	4,738.00	-1,803.97	259.88	217.17	2,099.90	1,886.13	101.63	9.823
5,800.00	5,724.80	61.81	706.53	18.17	4,738.00	4,738.00	-1,803.97	259.88	217.17	2,148.33	1,938.16	101.63	10.222

HALLIBURTON**Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1**

Offset Design: Sec 28 T. 25 S., R.32E. - Pre-Ongard #015 (PA) - Wellbore #1 - No Surveys

100-Blind - assumed vertical

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well				Separation (Ref. > Comp.)				
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	+E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	+E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
5,900.00	5,822.24	63.77	728.94	18.63	4,738.00	4,738.00	-1,803.97	259.88	217.17	2,200.24	1,993.81	101.63	10.659
6,000.00	5,919.67	65.73	751.35	19.08	4,738.00	4,738.00	-1,803.97	259.88	217.17	2,255.39	2,052.79	101.63	11.132
6,100.00	6,017.11	67.69	773.76	19.54	4,738.00	4,738.00	-1,803.97	259.88	217.17	2,313.56	2,114.81	101.63	11.641

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Wellbore #1

141-MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	+E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	+E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
100.00	100.00	0.00	0.00	0.51	100.04	100.04	-29.83	0.03	0.51	29.83	28.82	179.94	29.449
200.00	200.00	0.00	0.00	0.58	200.05	200.05	-29.67	-0.66	0.56	29.68	28.54	-178.73	26.061
300.00	300.00	0.00	0.00	0.72	300.17	300.17	-29.35	-1.27	0.67	29.38	27.98	-177.52	21.018
400.00	400.00	0.00	0.00	0.90	400.25	400.24	-28.55	-2.01	0.83	28.62	26.89	-175.98	16.497
500.00	500.00	0.00	0.00	1.10	500.37	500.35	-27.45	-2.81	1.02	27.59	25.48	-174.15	13.039
600.00	600.00	0.00	0.00	1.30	600.40	600.36	-25.97	-3.70	1.22	26.23	23.71	-171.90	10.409
700.00	700.00	0.00	0.00	1.51	700.53	700.48	-24.14	-4.48	1.43	24.55	21.62	-169.48	8.363
800.00	800.00	0.00	0.00	1.72	800.50	800.42	-22.11	-4.97	1.62	22.66	19.32	-167.33	6.774
900.00	900.00	0.00	0.00	1.94	900.49	900.39	-20.06	-5.42	1.82	20.78	17.02	-164.87	5.528
1,000.00	1,000.00	0.00	0.00	2.16	1,000.49	1,000.37	-17.83	-6.06	2.03	18.84	14.65	-161.22	4.498
1,100.00	1,100.00	0.00	0.00	2.38	1,100.45	1,100.30	-15.54	-6.74	2.24	16.94	12.33	-156.55	3.672
1,200.00	1,200.00	0.00	0.00	2.60	1,200.38	1,200.20	-13.30	-7.79	2.45	15.41	10.37	-149.65	3.057
1,300.00	1,300.00	0.00	0.00	2.82	1,300.27	1,300.04	-11.10	-9.45	2.66	14.58	9.10	-139.57	2.664
1,326.00	1,326.00	0.00	0.00	2.87	1,326.24	1,326.00	-10.56	-9.98	2.71	14.54	8.95	-136.62	2.604
1,400.00	1,400.00	0.00	0.00	3.04	1,400.15	1,399.88	-9.21	-11.62	2.86	14.83	8.93	-128.38	2.514
1,500.00	1,500.00	0.00	0.00	3.26	1,500.04	1,499.73	-7.97	-13.97	3.06	16.08	9.76	-119.71	2.544
1,600.00	1,600.00	0.00	0.00	3.48	1,599.97	1,599.65	-7.55	-16.25	3.26	17.92	11.18	-114.93	2.659
1,700.00	1,700.00	0.00	0.00	3.71	1,699.97	1,699.61	-7.38	-18.48	3.47	19.90	12.73	-111.76	2.776
1,800.00	1,800.00	0.00	0.00	3.93	1,800.06	1,799.69	-7.29	-20.42	3.67	21.68	14.08	-109.64	2.854
1,900.00	1,900.00	0.00	0.00	4.15	1,900.00	1,899.62	-7.18	-21.97	3.88	23.12	15.10	-108.09	2.881
2,000.00	2,000.00	0.00	0.00	4.37	1,999.68	1,999.26	-7.05	-24.36	4.09	25.37	16.91	-106.14	3.000
2,100.00	2,099.99	0.08	0.87	4.59	2,099.39	2,098.92	-7.08	-27.75	4.31	29.52	20.64	170.95	3.326
2,200.00	2,199.96	0.30	3.48	4.79	2,199.11	2,198.57	-7.50	-31.54	4.52	35.90	26.62	172.42	3.868
2,300.00	2,299.86	0.68	7.82	4.99	2,298.95	2,298.34	-8.54	-35.00	4.73	43.83	34.14	172.82	4.524
2,400.00	2,399.68	1.22	13.90	5.20	2,398.24	2,397.55	-9.71	-38.61	4.94	53.68	43.58	173.21	5.316
2,500.00	2,499.37	1.90	21.72	5.41	2,497.85	2,497.10	-10.37	-42.26	5.15	65.18	54.67	174.10	6.200
2,600.00	2,598.90	2.74	31.27	5.64	2,597.16	2,596.35	-11.09	-45.42	5.36	77.97	67.04	174.73	7.136
2,700.00	2,698.26	3.72	42.54	5.87	2,695.68	2,694.81	-12.11	-48.80	5.57	92.77	81.43	175.11	8.180
2,800.00	2,797.40	4.86	55.55	6.11	2,794.52	2,793.58	-13.17	-52.32	5.79	109.43	97.67	175.45	9.304
2,900.00	2,896.30	6.15	70.27	6.37	2,893.71	2,892.73	-14.17	-55.32	5.99	127.27	115.09	175.74	10.447

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Wellbore #1

141-MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
3,000.00	2,994.93	7.59	86.71	6.65	2,992.46	2,991.44	-15.01	-57.72	6.20	146.23	133.63	176.03	11.603
3,100.00	3,093.26	9.17	104.87	6.94	3,091.14	3,090.09	-15.51	-59.88	6.41	166.62	153.59	176.40	12.787
3,200.00	3,191.25	10.91	124.73	7.25	3,190.15	3,189.10	-15.68	-61.34	6.61	187.97	174.51	176.79	13.966
3,300.00	3,288.87	12.80	146.29	7.59	3,288.36	3,287.29	-15.83	-62.21	6.82	210.46	196.58	177.10	15.154
3,400.00	3,386.31	14.76	168.70	7.94	3,386.82	3,385.76	-16.05	-62.73	7.02	233.47	219.15	177.35	16.303
3,500.00	3,483.75	16.72	191.11	8.31	3,485.45	3,484.39	-15.86	-62.71	7.22	255.90	241.15	177.63	17.341
3,600.00	3,581.19	18.68	213.52	8.69	3,582.84	3,581.78	-15.50	-62.47	7.43	278.10	262.90	177.89	18.304
3,700.00	3,678.62	20.64	235.93	9.07	3,680.06	3,679.00	-15.25	-62.35	7.63	300.43	284.80	178.09	19.220
3,800.00	3,776.06	22.60	258.34	9.47	3,777.48	3,776.41	-14.90	-62.28	7.83	322.81	306.73	178.28	20.084
3,900.00	3,873.50	24.56	280.75	9.87	3,876.46	3,875.40	-14.65	-62.03	8.03	345.02	328.50	178.44	20.887
4,000.00	3,970.93	26.52	303.16	10.28	3,974.53	3,973.46	-14.72	-61.38	8.23	366.87	349.90	178.51	21.628
4,100.00	4,068.37	28.48	325.57	10.69	4,073.33	4,072.26	-15.15	-60.50	8.43	388.55	371.14	178.52	22.318
4,200.00	4,165.81	30.44	347.98	11.11	4,173.55	4,172.46	-15.73	-59.13	8.64	409.77	391.90	178.50	22.939
4,300.00	4,263.24	32.40	370.38	11.53	4,270.05	4,268.96	-16.43	-57.60	8.83	430.80	412.49	178.46	23.528
4,400.00	4,360.68	34.37	392.79	11.95	4,370.75	4,369.62	-17.50	-55.76	9.04	451.64	432.87	178.37	24.064
4,500.00	4,458.12	36.33	415.20	12.38	4,461.00	4,459.85	-18.94	-54.35	9.22	472.80	453.60	178.24	24.624
4,600.00	4,555.56	38.29	437.61	12.82	4,555.00	4,553.84	-20.66	-53.99	9.42	495.12	475.48	178.11	25.206
4,700.00	4,652.99	40.25	460.02	13.25	4,646.65	4,645.47	-22.19	-54.66	9.61	518.52	498.44	178.03	25.824
4,800.00	4,750.43	42.21	482.43	13.69	4,748.53	4,747.34	-23.58	-55.55	9.82	542.00	521.45	177.97	26.374
4,900.00	4,847.87	44.17	504.84	14.13	4,844.76	4,843.56	-24.77	-56.06	10.02	565.14	544.13	177.94	26.907
5,000.00	4,945.30	46.13	527.25	14.57	4,942.82	4,941.61	-26.10	-56.58	10.23	588.29	566.83	177.89	27.409
5,100.00	5,042.74	48.09	549.66	15.02	5,040.53	5,039.31	-27.09	-57.03	10.43	611.35	589.42	177.88	27.884
5,200.00	5,140.18	50.05	572.07	15.46	5,137.57	5,136.35	-27.97	-57.48	10.63	634.38	612.00	177.88	28.342
5,300.00	5,237.61	52.01	594.48	15.91	5,234.35	5,233.12	-29.02	-58.03	10.84	657.54	634.70	177.86	28.788
5,400.00	5,335.05	53.97	616.89	16.36	5,335.64	5,334.40	-30.00	-58.31	11.05	680.40	657.08	177.86	29.182
5,500.00	5,432.49	55.93	639.30	16.81	5,430.00	5,428.76	-30.75	-58.39	11.24	703.06	679.30	177.86	29.581
5,600.00	5,529.93	57.89	661.71	17.26	5,524.79	5,523.54	-30.12	-59.25	11.44	726.34	702.12	177.98	29.989
5,700.00	5,627.36	59.85	684.12	17.72	5,628.69	5,627.43	-28.45	-60.08	11.66	749.42	724.72	178.19	30.335
5,800.00	5,724.80	61.81	706.53	18.17	5,729.29	5,727.97	-24.98	-60.11	11.87	771.54	746.36	178.50	30.643

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Wellbore #1

141-MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	+E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	+E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
5,900.00	5,822.24	63.77	728.94	18.63	5,828.31	5,826.84	-19.67	-60.23	12.08	793.58	767.93	178.94	30.943
6,000.00	5,919.67	65.73	751.35	19.08	5,920.96	5,919.23	-12.82	-60.58	12.28	815.72	789.62	179.46	31.258
6,100.00	6,017.11	67.69	773.76	19.54	6,016.42	6,014.27	-3.91	-61.66	12.49	838.49	811.93	-179.90	31.572
6,200.00	6,114.55	69.66	796.17	20.00	6,041.00	6,038.70	-1.25	-61.97	12.54	864.40	837.69	-179.71	32.362
6,300.00	6,211.98	71.62	818.58	20.45	6,041.00	6,038.70	-1.25	-61.97	12.54	900.39	873.82	-179.71	33.885
6,400.00	6,309.42	73.58	840.98	20.91	6,041.00	6,038.70	-1.25	-61.97	12.54	945.63	919.35	-179.71	35.981
6,500.00	6,406.86	75.54	863.39	21.37	6,041.00	6,038.70	-1.25	-61.97	12.54	998.87	972.97	-179.71	38.570
6,600.00	6,504.30	77.50	885.80	21.83	6,041.00	6,038.70	-1.25	-61.97	12.54	1,058.89	1,033.42	-179.71	41.573
6,700.00	6,601.73	79.46	908.21	22.30	6,041.00	6,038.70	-1.25	-61.97	12.54	1,124.62	1,099.58	-179.71	44.916
6,800.00	6,699.17	81.42	930.62	22.76	6,041.00	6,038.70	-1.25	-61.97	12.54	1,195.11	1,170.49	-179.71	48.534
6,900.00	6,796.61	83.38	953.03	23.22	6,041.00	6,038.70	-1.25	-61.97	12.54	1,269.57	1,245.33	-179.71	52.367
7,000.00	6,894.04	85.34	975.44	23.68	6,041.00	6,038.70	-1.25	-61.97	12.54	1,347.34	1,323.44	-179.71	56.363
7,100.00	6,991.48	87.30	997.85	24.14	6,041.00	6,038.70	-1.25	-61.97	12.54	1,427.88	1,404.27	-179.71	60.477
7,200.00	7,088.92	89.26	1,020.26	24.61	6,041.00	6,038.70	-1.25	-61.97	12.54	1,510.75	1,487.39	-179.71	64.670
7,300.00	7,186.35	91.22	1,042.67	25.07	6,041.00	6,038.70	-1.25	-61.97	12.54	1,595.58	1,572.43	-179.71	68.910
7,400.00	7,283.98	93.11	1,064.23	25.48	6,041.00	6,038.70	-1.25	-61.97	12.54	1,681.65	1,658.68	-179.72	73.196
7,500.00	7,381.97	94.85	1,084.09	25.82	6,041.00	6,038.70	-1.25	-61.97	12.54	1,768.35	1,745.54	-179.73	77.507
7,600.00	7,480.30	96.43	1,102.25	26.15	6,041.00	6,038.70	-1.25	-61.97	12.54	1,855.57	1,832.89	-179.74	81.804
7,700.00	7,578.93	97.87	1,118.69	26.45	6,041.00	6,038.70	-1.25	-61.97	12.54	1,943.21	1,920.64	-179.74	86.076
7,800.00	7,677.83	99.16	1,133.41	26.74	6,041.00	6,038.70	-1.25	-61.97	12.54	2,031.19	2,008.70	-179.75	90.313
7,900.00	7,776.97	100.30	1,146.42	27.00	6,041.00	6,038.70	-1.25	-61.97	12.54	2,119.45	2,097.03	-179.76	94.504
8,000.00	7,876.33	101.28	1,157.69	27.25	6,041.00	6,038.70	-1.25	-61.97	12.54	2,207.93	2,185.55	-179.77	98.642
8,100.00	7,975.86	102.12	1,167.24	27.47	6,041.00	6,038.70	-1.25	-61.97	12.54	2,296.57	2,274.21	-179.78	102.719

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Cotton Draw Unit #037 (PA) - Wellbore #1 - No Surveys

100-Blind - assumed vertical

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
100.00	100.00	0.00	0.00	0.51	87.00	87.00	836.03	243.88	164.01	870.88	706.37	16.26	5.294
200.00	200.00	0.00	0.00	0.58	187.00	187.00	836.03	243.88	164.05	870.88	706.24	16.26	5.290
300.00	300.00	0.00	0.00	0.72	287.00	287.00	836.03	243.88	164.16	870.88	706.00	16.26	5.282
400.00	400.00	0.00	0.00	0.90	387.00	387.00	836.03	243.88	164.32	870.88	705.66	16.26	5.271
500.00	500.00	0.00	0.00	1.10	487.00	487.00	836.03	243.88	164.54	870.88	705.25	16.26	5.258
600.00	600.00	0.00	0.00	1.30	587.00	587.00	836.03	243.88	164.81	870.88	704.77	16.26	5.243
700.00	700.00	0.00	0.00	1.51	687.00	687.00	836.03	243.88	165.14	870.88	704.23	16.26	5.226
800.00	800.00	0.00	0.00	1.72	787.00	787.00	836.03	243.88	165.52	870.88	703.64	16.26	5.207
900.00	900.00	0.00	0.00	1.94	887.00	887.00	836.03	243.88	165.96	870.88	702.98	16.26	5.187
1,000.00	1,000.00	0.00	0.00	2.16	987.00	987.00	836.03	243.88	166.45	870.88	702.27	16.26	5.165
1,100.00	1,100.00	0.00	0.00	2.38	1,087.00	1,087.00	836.03	243.88	167.00	870.88	701.51	16.26	5.142
1,200.00	1,200.00	0.00	0.00	2.60	1,187.00	1,187.00	836.03	243.88	167.60	870.88	700.69	16.26	5.117
1,300.00	1,300.00	0.00	0.00	2.82	1,287.00	1,287.00	836.03	243.88	168.25	870.88	699.81	16.26	5.091
1,400.00	1,400.00	0.00	0.00	3.04	1,387.00	1,387.00	836.03	243.88	168.95	870.88	698.89	16.26	5.064
1,500.00	1,500.00	0.00	0.00	3.26	1,487.00	1,487.00	836.03	243.88	169.71	870.88	697.91	16.26	5.035
1,600.00	1,600.00	0.00	0.00	3.48	1,587.00	1,587.00	836.03	243.88	170.51	870.88	696.88	16.26	5.005
1,700.00	1,700.00	0.00	0.00	3.71	1,687.00	1,687.00	836.03	243.88	171.37	870.88	695.80	16.26	4.974
1,800.00	1,800.00	0.00	0.00	3.93	1,787.00	1,787.00	836.03	243.88	172.27	870.88	694.68	16.26	4.942
1,900.00	1,900.00	0.00	0.00	4.15	1,887.00	1,887.00	836.03	243.88	173.23	870.88	693.50	16.26	4.910
2,000.00	2,000.00	0.00	0.00	4.37	1,987.00	1,987.00	836.03	243.88	174.23	870.88	692.27	16.26	4.876
2,100.00	2,099.99	0.08	0.87	4.59	2,086.99	2,086.99	836.03	243.88	175.28	870.56	690.70	-68.79	4.840
2,200.00	2,199.96	0.30	3.48	4.79	2,186.96	2,186.96	836.03	243.88	176.37	869.62	688.46	-68.96	4.800
2,300.00	2,299.86	0.68	7.82	4.99	2,286.86	2,286.86	836.03	243.88	177.51	868.06	685.56	-69.25	4.756
2,400.00	2,399.68	1.22	13.90	5.20	2,386.68	2,386.68	836.03	243.88	178.69	865.92	682.02	-69.64	4.709
2,500.00	2,499.37	1.90	21.72	5.41	2,486.37	2,486.37	836.03	243.88	179.92	863.21	677.88	-70.16	4.658
2,600.00	2,598.90	2.74	31.27	5.64	2,585.90	2,585.90	836.03	243.88	181.18	859.99	673.18	-70.78	4.603
2,700.00	2,698.26	3.72	42.54	5.87	2,685.26	2,685.26	836.03	243.88	182.48	856.32	667.96	-71.53	4.546
2,800.00	2,797.40	4.86	55.55	6.11	2,784.40	2,784.40	836.03	243.88	183.83	852.24	662.31	-72.40	4.487
2,900.00	2,896.30	6.15	70.27	6.37	2,883.30	2,883.30	836.03	243.88	185.20	847.85	656.28	-73.38	4.426
3,000.00	2,994.93	7.59	86.71	6.65	2,981.93	2,981.93	836.03	243.88	186.61	843.22	649.97	-74.49	4.363

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Cotton Draw Unit #037 (PA) - Wellbore #1 - No Surveys

100-Blind - assumed vertical

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre		Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre		Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
		+N/-S (usft)	+E/-W (usft)				+N/-S (usft)	+E/-W (usft)					
3,100.00	3,093.26	9.17	104.87	6.94	3,080.26	3,080.26	836.03	243.88	188.05	838.46	643.48	-75.71	4.300
3,200.00	3,191.25	10.91	124.73	7.25	3,178.25	3,178.25	836.03	243.88	189.53	833.68	636.91	-77.06	4.237
3,300.00	3,288.87	12.80	146.29	7.59	3,275.87	3,275.87	836.03	243.88	191.03	829.00	630.39	-78.53	4.174
3,400.00	3,386.31	14.76	168.70	7.94	3,373.31	3,373.31	836.03	243.88	192.57	824.71	624.21	-80.03	4.113
3,500.00	3,483.75	16.72	191.11	8.31	3,470.75	3,470.75	836.03	243.88	194.13	821.01	618.58	-81.53	4.056
3,600.00	3,581.19	18.68	213.52	8.69	3,568.19	3,568.19	836.03	243.88	195.73	817.92	613.50	-83.05	4.001
3,700.00	3,678.62	20.64	235.93	9.07	3,665.62	3,665.62	836.03	243.88	197.36	815.43	609.00	-84.58	3.950
3,800.00	3,776.06	22.60	258.34	9.47	3,763.06	3,763.06	836.03	243.88	199.03	813.56	605.07	-86.12	3.902
3,900.00	3,873.50	24.56	280.75	9.87	3,860.50	3,860.50	836.03	243.88	200.72	812.31	601.72	-87.66	3.857
4,000.00	3,970.93	26.52	303.16	10.28	3,957.93	3,957.93	836.03	243.88	202.44	811.68	598.97	-89.21	3.816
4,051.13	4,020.76	27.53	314.62	10.49	4,007.76	4,007.76	836.03	243.88	203.33	811.60	597.78	-90.00	3.796
4,100.00	4,068.37	28.48	325.57	10.69	4,055.37	4,055.37	836.03	243.88	204.19	811.67	596.80	-90.76	3.777
4,200.00	4,165.81	30.44	347.98	11.11	4,152.81	4,152.81	836.03	243.88	205.96	812.29	595.23	-92.30	3.742
4,300.00	4,263.24	32.40	370.38	11.53	4,250.24	4,250.24	836.03	243.88	207.77	813.53	594.25	-93.85	3.710
4,400.00	4,360.68	34.37	392.79	11.95	4,347.68	4,347.68	836.03	243.88	209.60	815.38	593.86	-95.38	3.681
4,500.00	4,458.12	36.33	415.20	12.38	4,445.12	4,445.12	836.03	243.88	211.45	817.85	594.07	-96.91	3.655
4,600.00	4,555.56	38.29	437.61	12.82	4,542.56	4,542.56	836.03	243.88	213.33	820.94	594.86	-98.43	3.631
4,700.00	4,652.99	40.25	460.02	13.25	4,639.99	4,639.99	836.03	243.88	215.24	824.62	596.23	-99.94	3.611
4,800.00	4,750.43	42.21	482.43	13.69	4,737.43	4,737.43	836.03	243.88	217.16	828.90	598.18	-101.43	3.593
4,900.00	4,847.87	44.17	504.84	14.13	4,784.00	4,784.00	836.03	243.88	218.09	835.31	603.69	-102.14	3.606
5,000.00	4,945.30	46.13	527.25	14.57	4,784.00	4,784.00	836.03	243.88	218.09	852.20	623.27	-102.14	3.723
5,100.00	5,042.74	48.09	549.66	15.02	4,784.00	4,784.00	836.03	243.88	218.09	880.20	656.51	-102.14	3.935
5,200.00	5,140.18	50.05	572.07	15.46	4,784.00	4,784.00	836.03	243.88	218.09	918.29	701.74	-102.14	4.241
5,300.00	5,237.61	52.01	594.48	15.91	4,784.00	4,784.00	836.03	243.88	218.09	965.27	757.07	-102.14	4.636
5,400.00	5,335.05	53.97	616.89	16.36	4,784.00	4,784.00	836.03	243.88	218.09	1,019.93	820.63	-102.14	5.118
5,500.00	5,432.49	55.93	639.30	16.81	4,784.00	4,784.00	836.03	243.88	218.09	1,081.09	890.80	-102.14	5.681
5,600.00	5,529.93	57.89	661.71	17.26	4,784.00	4,784.00	836.03	243.88	218.09	1,147.72	966.21	-102.14	6.323
5,700.00	5,627.36	59.85	684.12	17.72	4,784.00	4,784.00	836.03	243.88	218.09	1,218.92	1,045.74	-102.14	7.038
5,800.00	5,724.80	61.81	706.53	18.17	4,784.00	4,784.00	836.03	243.88	218.09	1,293.94	1,128.54	-102.14	7.823

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Cotton Draw Unit #037 (PA) - Wellbore #1 - No Surveys

100-Blind - assumed vertical

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
5,900.00	5,822.24	63.77	728.94	18.63	4,784.00	4,784.00	836.03	243.88	218.09	1,372.14	1,213.94	-102.14	8.673
6,000.00	5,919.67	65.73	751.35	19.08	4,784.00	4,784.00	836.03	243.88	218.09	1,453.02	1,301.42	-102.14	9.584
6,100.00	6,017.11	67.69	773.76	19.54	4,784.00	4,784.00	836.03	243.88	218.09	1,536.16	1,390.57	-102.14	10.551
6,200.00	6,114.55	69.66	796.17	20.00	4,784.00	4,784.00	836.03	243.88	218.09	1,621.20	1,481.09	-102.14	11.571
6,300.00	6,211.98	71.62	818.58	20.45	4,784.00	4,784.00	836.03	243.88	218.09	1,707.86	1,572.74	-102.14	12.639
6,400.00	6,309.42	73.58	840.98	20.91	4,784.00	4,784.00	836.03	243.88	218.09	1,795.91	1,665.31	-102.14	13.751
6,500.00	6,406.86	75.54	863.39	21.37	4,784.00	4,784.00	836.03	243.88	218.09	1,885.15	1,758.67	-102.14	14.904
6,600.00	6,504.30	77.50	885.80	21.83	4,784.00	4,784.00	836.03	243.88	218.09	1,975.42	1,852.68	-102.14	16.094
6,700.00	6,601.73	79.46	908.21	22.30	4,784.00	4,784.00	836.03	243.88	218.09	2,066.59	1,947.25	-102.14	17.316
6,800.00	6,699.17	81.42	930.62	22.76	4,784.00	4,784.00	836.03	243.88	218.09	2,158.54	2,042.30	-102.14	18.569
6,900.00	6,796.61	83.38	953.03	23.22	4,784.00	4,784.00	836.03	243.88	218.09	2,251.18	2,137.77	-102.14	19.849

HALLIBURTON**Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1**

Offset Design: Sec 28 T. 25 S., R.32E. - Sol 28 Federal #001H (Active) - Wellbore #1 - Actual Drilled

100-Copy of MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
13,200.00	10,539.00	-2,677.96	1,219.30	57.97	12,470.79	9,371.14	-4,674.98	1,312.51	187.13	2,307.03	2,115.02	-3.55	12.015
13,300.00	10,539.00	-2,777.96	1,220.39	59.53	12,474.21	9,371.15	-4,675.15	1,309.10	187.18	2,220.99	2,030.98	-3.38	11.688
13,400.00	10,539.00	-2,877.95	1,221.48	61.11	12,477.68	9,371.17	-4,675.32	1,305.64	187.22	2,136.16	1,948.37	-3.21	11.375
13,500.00	10,539.00	-2,977.94	1,222.57	62.70	12,481.21	9,371.18	-4,675.49	1,302.11	187.27	2,052.69	1,867.38	-3.03	11.077
13,600.00	10,539.00	-3,077.94	1,223.66	64.30	12,484.80	9,371.20	-4,675.67	1,298.53	187.32	1,970.75	1,788.23	-2.86	10.797
13,700.00	10,539.00	-3,177.93	1,224.75	65.91	12,488.45	9,371.22	-4,675.86	1,294.88	187.36	1,890.54	1,711.15	-2.68	10.539
13,800.00	10,539.00	-3,277.93	1,225.84	67.54	12,492.16	9,371.23	-4,676.05	1,291.17	187.41	1,812.30	1,636.43	-2.49	10.305
13,900.00	10,539.00	-3,377.92	1,226.93	69.17	12,495.94	9,371.25	-4,676.24	1,287.40	187.46	1,736.27	1,564.39	-2.30	10.101
14,000.00	10,539.00	-3,477.91	1,228.02	70.82	12,499.79	9,371.27	-4,676.44	1,283.56	187.51	1,662.79	1,495.40	-2.11	9.934
14,100.00	10,539.00	-3,577.91	1,229.11	72.47	12,503.70	9,371.30	-4,676.64	1,279.65	187.56	1,592.18	1,429.90	-1.92	9.811
14,200.00	10,539.00	-3,677.90	1,230.20	74.13	12,507.68	9,371.32	-4,676.85	1,275.67	187.61	1,524.85	1,368.35	-1.72	9.743
14,300.00	10,539.00	-3,777.90	1,231.29	75.80	12,511.74	9,371.34	-4,677.06	1,271.62	187.66	1,461.26	1,311.29	-1.52	9.744
14,400.00	10,539.00	-3,877.89	1,232.38	77.48	12,515.86	9,371.37	-4,677.28	1,267.50	187.72	1,401.91	1,259.33	-1.31	9.832
14,500.00	10,539.00	-3,977.88	1,233.47	79.16	12,520.07	9,371.40	-4,677.50	1,263.30	187.77	1,347.36	1,213.08	-1.11	10.033
14,600.00	10,539.00	-4,077.88	1,234.56	80.85	12,524.35	9,371.42	-4,677.73	1,259.03	187.83	1,298.23	1,173.19	-0.89	10.383
14,700.00	10,539.00	-4,177.87	1,235.65	82.55	12,528.71	9,371.45	-4,677.96	1,254.67	187.89	1,255.13	1,140.29	-0.68	10.929
14,800.00	10,539.00	-4,277.87	1,236.74	84.25	12,528.00	9,371.45	-4,677.92	1,255.38	187.88	1,218.73	1,114.97	-0.71	11.746
14,900.00	10,539.00	-4,377.86	1,237.83	85.95	12,535.92	9,371.50	-4,678.35	1,247.47	187.98	1,189.62	1,097.35	-0.32	12.894
15,000.00	10,539.00	-4,477.85	1,238.92	87.67	12,539.34	9,371.51	-4,678.52	1,244.06	188.03	1,168.36	1,087.46	-0.15	14.442
15,100.00	10,539.00	-4,577.85	1,240.01	89.38	12,542.61	9,371.53	-4,678.69	1,240.79	188.07	1,155.38	1,083.90	0.02	16.164
15,200.00	10,539.00	-4,677.84	1,241.10	91.10	12,545.75	9,371.54	-4,678.84	1,237.66	188.11	1,150.97	1,083.13	0.17	16.968
15,200.96	10,539.00	-4,678.81	1,241.11	91.12	12,545.77	9,371.54	-4,678.85	1,237.63	188.11	1,150.97	1,083.12	0.17	16.966
15,300.00	10,539.00	-4,777.84	1,242.19	92.83	12,548.75	9,371.55	-4,678.99	1,234.66	188.15	1,155.21	1,082.09	0.32	15.799
15,400.00	10,539.00	-4,877.83	1,243.28	94.56	12,551.64	9,371.55	-4,679.13	1,231.77	188.19	1,168.03	1,083.80	0.47	13.867
15,500.00	10,539.00	-4,977.83	1,244.37	96.29	12,554.42	9,371.56	-4,679.26	1,229.00	188.22	1,189.14	1,091.90	0.60	12.230
15,600.00	10,539.00	-5,077.82	1,245.46	98.03	12,557.09	9,371.56	-4,679.39	1,226.33	188.26	1,218.10	1,107.79	0.74	11.042
15,700.00	10,539.00	-5,177.81	1,246.55	99.76	12,559.66	9,371.56	-4,679.51	1,223.76	188.29	1,254.39	1,131.68	0.86	10.222
15,800.00	10,539.00	-5,277.81	1,247.64	101.51	12,562.14	9,371.56	-4,679.62	1,221.29	188.33	1,297.38	1,163.27	0.99	9.675
15,900.00	10,539.00	-5,377.80	1,248.73	103.25	12,564.52	9,371.56	-4,679.73	1,218.90	188.36	1,346.43	1,202.06	1.11	9.326
16,000.00	10,539.00	-5,477.80	1,249.83	105.00	12,566.83	9,371.55	-4,679.83	1,216.61	188.39	1,400.90	1,247.39	1.22	9.126

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Sol 28 Federal #001H (Active) - Wellbore #1 - Actual Drilled

100-Copy of MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
16,100.00	10,539.00	-5,577.79	1,250.92	106.75	12,569.05	9,371.55	-4,679.93	1,214.39	188.42	1,460.20	1,298.63	1.33	9.037
16,200.00	10,539.00	-5,677.78	1,252.01	108.51	12,571.19	9,371.54	-4,680.02	1,212.24	188.44	1,523.75	1,355.10	1.44	9.035
16,300.00	10,539.00	-5,777.78	1,253.10	110.26	12,573.27	9,371.54	-4,680.11	1,210.17	188.47	1,591.05	1,416.22	1.54	9.100
16,400.00	10,539.00	-5,877.77	1,254.19	112.02	12,575.27	9,371.53	-4,680.19	1,208.17	188.50	1,661.64	1,481.41	1.64	9.219
16,500.00	10,539.00	-5,977.77	1,255.28	113.78	12,577.21	9,371.52	-4,680.27	1,206.23	188.52	1,735.12	1,550.17	1.74	9.382
16,600.00	10,539.00	-6,077.76	1,256.37	115.55	12,579.09	9,371.52	-4,680.35	1,204.36	188.55	1,811.14	1,622.07	1.83	9.579
16,700.00	10,539.00	-6,177.75	1,257.46	117.31	12,580.90	9,371.51	-4,680.42	1,202.54	188.57	1,889.39	1,696.71	1.92	9.806
16,800.00	10,539.00	-6,277.75	1,258.55	119.08	12,582.67	9,371.50	-4,680.49	1,200.78	188.60	1,969.61	1,773.76	2.01	10.057
16,900.00	10,539.00	-6,377.74	1,259.64	120.85	12,584.37	9,371.49	-4,680.56	1,199.07	188.62	2,051.56	1,852.93	2.09	10.328
17,000.00	10,539.00	-6,477.74	1,260.73	122.62	12,586.03	9,371.48	-4,680.63	1,197.42	188.64	2,135.05	1,933.96	2.17	10.617
17,100.00	10,539.00	-6,577.73	1,261.82	124.39	12,587.64	9,371.47	-4,680.69	1,195.81	188.66	2,219.91	2,016.63	2.25	10.921
17,200.00	10,539.00	-6,677.72	1,262.91	126.16	12,589.20	9,371.46	-4,680.75	1,194.26	188.68	2,305.97	2,100.77	2.33	11.237

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Plan 6

141-MWD, 6041-MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
100.00	100.00	0.00	0.00	0.51	100.04	100.04	-29.83	0.03	0.51	29.83	28.82	179.94	29.449
200.00	200.00	0.00	0.00	0.58	200.05	200.05	-29.67	-0.66	0.56	29.68	28.54	-178.73	26.061
300.00	300.00	0.00	0.00	0.72	300.17	300.17	-29.35	-1.27	0.67	29.38	27.98	-177.52	21.018
400.00	400.00	0.00	0.00	0.90	400.25	400.24	-28.55	-2.01	0.83	28.62	26.89	-175.98	16.497
500.00	500.00	0.00	0.00	1.10	500.37	500.35	-27.45	-2.81	1.02	27.59	25.48	-174.15	13.039
600.00	600.00	0.00	0.00	1.30	600.40	600.36	-25.97	-3.70	1.22	26.23	23.71	-171.90	10.409
700.00	700.00	0.00	0.00	1.51	700.53	700.48	-24.14	-4.48	1.43	24.55	21.62	-169.48	8.363
800.00	800.00	0.00	0.00	1.72	800.50	800.42	-22.11	-4.97	1.62	22.66	19.32	-167.33	6.774
900.00	900.00	0.00	0.00	1.94	900.49	900.39	-20.06	-5.42	1.82	20.78	17.02	-164.87	5.528
1,000.00	1,000.00	0.00	0.00	2.16	1,000.49	1,000.37	-17.83	-6.06	2.03	18.84	14.65	-161.22	4.498
1,100.00	1,100.00	0.00	0.00	2.38	1,100.45	1,100.30	-15.54	-6.74	2.24	16.94	12.33	-156.55	3.672
1,200.00	1,200.00	0.00	0.00	2.60	1,200.38	1,200.20	-13.30	-7.79	2.45	15.41	10.37	-149.65	3.057
1,300.00	1,300.00	0.00	0.00	2.82	1,300.27	1,300.04	-11.10	-9.45	2.66	14.58	9.10	-139.57	2.664
1,326.00	1,326.00	0.00	0.00	2.87	1,326.24	1,326.00	-10.56	-9.98	2.71	14.54	8.95	-136.62	2.604
1,400.00	1,400.00	0.00	0.00	3.04	1,400.15	1,399.88	-9.21	-11.62	2.86	14.83	8.93	-128.38	2.514
1,500.00	1,500.00	0.00	0.00	3.26	1,500.04	1,499.73	-7.97	-13.97	3.06	16.08	9.76	-119.71	2.544
1,600.00	1,600.00	0.00	0.00	3.48	1,599.97	1,599.65	-7.55	-16.25	3.26	17.92	11.18	-114.93	2.659
1,700.00	1,700.00	0.00	0.00	3.71	1,699.97	1,699.61	-7.38	-18.48	3.47	19.90	12.73	-111.76	2.776
1,800.00	1,800.00	0.00	0.00	3.93	1,800.06	1,799.69	-7.29	-20.42	3.67	21.68	14.08	-109.64	2.854
1,900.00	1,900.00	0.00	0.00	4.15	1,900.00	1,899.62	-7.18	-21.97	3.88	23.12	15.10	-108.09	2.881
2,000.00	2,000.00	0.00	0.00	4.37	1,999.68	1,999.26	-7.05	-24.36	4.09	25.37	16.91	-106.14	3.000
2,100.00	2,099.99	0.08	0.87	4.59	2,099.39	2,098.92	-7.08	-27.75	4.31	29.52	20.64	170.95	3.326
2,200.00	2,199.96	0.30	3.48	4.79	2,199.11	2,198.57	-7.50	-31.54	4.52	35.90	26.62	172.42	3.868
2,300.00	2,299.86	0.68	7.82	4.99	2,298.95	2,298.34	-8.54	-35.00	4.73	43.83	34.14	172.82	4.524
2,400.00	2,399.68	1.22	13.90	5.20	2,398.24	2,397.55	-9.71	-38.61	4.94	53.68	43.58	173.21	5.316
2,500.00	2,499.37	1.90	21.72	5.41	2,497.85	2,497.10	-10.37	-42.26	5.15	65.18	54.67	174.10	6.200
2,600.00	2,598.90	2.74	31.27	5.64	2,597.16	2,596.35	-11.09	-45.42	5.36	77.97	67.04	174.73	7.136
2,700.00	2,698.26	3.72	42.54	5.87	2,695.68	2,694.81	-12.11	-48.80	5.57	92.77	81.43	175.11	8.180
2,800.00	2,797.40	4.86	55.55	6.11	2,794.52	2,793.58	-13.17	-52.32	5.79	109.43	97.67	175.45	9.304
2,900.00	2,896.30	6.15	70.27	6.37	2,893.71	2,892.73	-14.17	-55.32	5.99	127.27	115.09	175.74	10.447

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Plan 6

141-MWD, 6041-MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
3,000.00	2,994.93	7.59	86.71	6.65	2,992.46	2,991.44	-15.01	-57.72	6.20	146.23	133.63	176.03	11.603
3,100.00	3,093.26	9.17	104.87	6.94	3,091.14	3,090.09	-15.51	-59.88	6.41	166.62	153.59	176.40	12.787
3,200.00	3,191.25	10.91	124.73	7.25	3,190.15	3,189.10	-15.68	-61.34	6.61	187.97	174.51	176.79	13.966
3,300.00	3,288.87	12.80	146.29	7.59	3,288.36	3,287.29	-15.83	-62.21	6.82	210.46	196.58	177.10	15.154
3,400.00	3,386.31	14.76	168.70	7.94	3,386.82	3,385.76	-16.05	-62.73	7.02	233.47	219.15	177.35	16.303
3,500.00	3,483.75	16.72	191.11	8.31	3,485.45	3,484.39	-15.86	-62.71	7.22	255.90	241.15	177.63	17.341
3,600.00	3,581.19	18.68	213.52	8.69	3,582.84	3,581.78	-15.50	-62.47	7.43	278.10	262.90	177.89	18.304
3,700.00	3,678.62	20.64	235.93	9.07	3,680.06	3,679.00	-15.25	-62.35	7.63	300.43	284.80	178.09	19.220
3,800.00	3,776.06	22.60	258.34	9.47	3,777.48	3,776.41	-14.90	-62.28	7.83	322.81	306.73	178.28	20.084
3,900.00	3,873.50	24.56	280.75	9.87	3,876.46	3,875.40	-14.65	-62.03	8.03	345.02	328.50	178.44	20.887
4,000.00	3,970.93	26.52	303.16	10.28	3,974.53	3,973.46	-14.72	-61.38	8.23	366.87	349.90	178.51	21.628
4,100.00	4,068.37	28.48	325.57	10.69	4,073.33	4,072.26	-15.15	-60.50	8.43	388.55	371.14	178.52	22.318
4,200.00	4,165.81	30.44	347.98	11.11	4,173.55	4,172.46	-15.73	-59.13	8.64	409.77	391.90	178.50	22.939
4,300.00	4,263.24	32.40	370.38	11.53	4,270.05	4,268.96	-16.43	-57.60	8.83	430.80	412.49	178.46	23.528
4,400.00	4,360.68	34.37	392.79	11.95	4,370.75	4,369.62	-17.50	-55.76	9.04	451.64	432.87	178.37	24.064
4,500.00	4,458.12	36.33	415.20	12.38	4,461.00	4,459.85	-18.94	-54.35	9.22	472.80	453.60	178.24	24.624
4,600.00	4,555.56	38.29	437.61	12.82	4,555.00	4,553.84	-20.66	-53.99	9.42	495.12	475.48	178.11	25.206
4,700.00	4,652.99	40.25	460.02	13.25	4,646.65	4,645.47	-22.19	-54.66	9.61	518.52	498.44	178.03	25.824
4,800.00	4,750.43	42.21	482.43	13.69	4,748.53	4,747.34	-23.58	-55.55	9.82	542.00	521.45	177.97	26.374
4,900.00	4,847.87	44.17	504.84	14.13	4,844.76	4,843.56	-24.77	-56.06	10.02	565.14	544.13	177.94	26.907
5,000.00	4,945.30	46.13	527.25	14.57	4,942.82	4,941.61	-26.10	-56.58	10.23	588.29	566.83	177.89	27.409
5,100.00	5,042.74	48.09	549.66	15.02	5,040.53	5,039.31	-27.09	-57.03	10.43	611.35	589.42	177.88	27.884
5,200.00	5,140.18	50.05	572.07	15.46	5,137.57	5,136.35	-27.97	-57.48	10.63	634.38	612.00	177.88	28.342
5,300.00	5,237.61	52.01	594.48	15.91	5,234.35	5,233.12	-29.02	-58.03	10.84	657.54	634.70	177.86	28.788
5,400.00	5,335.05	53.97	616.89	16.36	5,335.64	5,334.40	-30.00	-58.31	11.05	680.40	657.08	177.86	29.182
5,500.00	5,432.49	55.93	639.30	16.81	5,430.00	5,428.76	-30.75	-58.39	11.24	703.06	679.30	177.86	29.581
5,600.00	5,529.93	57.89	661.71	17.26	5,524.79	5,523.54	-30.12	-59.25	11.44	726.34	702.12	177.98	29.989
5,700.00	5,627.36	59.85	684.12	17.72	5,628.69	5,627.43	-28.45	-60.08	11.66	749.42	724.72	178.19	30.335
5,800.00	5,724.80	61.81	706.53	18.17	5,729.29	5,727.97	-24.98	-60.11	11.87	771.54	746.36	178.50	30.643

HALLIBURTON

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Plan 6

141-MWD, 6041-MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
5,900.00	5,822.24	63.77	728.94	18.63	5,828.31	5,826.84	-19.67	-60.23	12.08	793.58	767.93	178.94	30.943
6,000.00	5,919.67	65.73	751.35	19.08	5,920.96	5,919.23	-12.82	-60.58	12.28	815.72	789.62	179.46	31.258
6,100.00	6,017.11	67.69	773.76	19.54	6,016.42	6,014.27	-3.91	-61.66	12.49	838.49	811.93	-179.90	31.572
6,200.00	6,114.55	69.66	796.17	20.00	6,114.13	6,111.37	6.89	-62.90	12.70	861.36	834.33	-179.16	31.865
6,300.00	6,211.98	71.62	818.58	20.45	6,218.02	6,214.49	19.49	-63.77	12.93	883.89	856.36	-178.34	32.104
6,400.00	6,309.42	73.58	840.98	20.91	6,319.63	6,315.14	33.40	-63.94	13.17	905.84	877.80	-177.48	32.313
6,500.00	6,406.86	75.54	863.39	21.37	6,416.37	6,410.92	47.04	-63.94	13.39	927.78	899.26	-176.68	32.525
6,600.00	6,504.30	77.50	885.80	21.83	6,513.11	6,506.69	60.67	-63.94	13.62	949.90	920.87	-175.91	32.728
6,700.00	6,601.73	79.46	908.21	22.30	6,609.85	6,602.47	74.30	-63.94	13.85	972.17	942.64	-175.18	32.922
6,800.00	6,699.17	81.42	930.62	22.76	6,706.59	6,698.24	87.93	-63.94	14.09	994.59	964.55	-174.48	33.108
6,900.00	6,796.61	83.38	953.03	23.22	6,803.33	6,794.02	101.56	-63.94	14.33	1,017.14	986.58	-173.82	33.285
7,000.00	6,894.04	85.34	975.44	23.68	6,900.07	6,889.80	115.19	-63.94	14.57	1,039.82	1,008.74	-173.18	33.455
7,100.00	6,991.48	87.30	997.85	24.14	6,996.81	6,985.57	128.82	-63.94	14.82	1,062.62	1,031.01	-172.56	33.617
7,200.00	7,088.92	89.26	1,020.26	24.61	7,093.56	7,081.35	142.45	-63.94	15.07	1,085.53	1,053.39	-171.98	33.771
7,300.00	7,186.35	91.22	1,042.67	25.07	7,190.30	7,177.12	156.08	-63.94	15.32	1,108.55	1,075.87	-171.41	33.919
7,400.00	7,283.98	93.11	1,064.23	25.48	7,287.22	7,273.08	169.74	-63.94	15.57	1,130.83	1,097.62	-170.90	34.056
7,500.00	7,381.97	94.85	1,084.09	25.82	7,384.48	7,369.37	183.44	-63.94	15.83	1,151.52	1,117.81	-170.39	34.159
7,600.00	7,480.30	96.43	1,102.25	26.15	7,482.04	7,465.96	197.19	-63.94	16.09	1,170.62	1,136.40	-169.89	34.210
7,700.00	7,578.93	97.87	1,118.69	26.45	7,579.89	7,562.83	210.98	-63.94	16.36	1,188.14	1,153.41	-169.39	34.214
7,800.00	7,677.83	99.16	1,133.41	26.74	7,677.98	7,659.95	224.80	-63.94	16.62	1,204.06	1,168.83	-168.88	34.173
7,900.00	7,776.97	100.30	1,146.42	27.00	7,776.30	7,757.28	238.65	-63.94	16.90	1,218.40	1,182.66	-168.37	34.089
8,000.00	7,876.33	101.28	1,157.69	27.25	7,874.80	7,854.80	252.53	-63.94	17.17	1,231.15	1,194.90	-167.86	33.964
8,100.00	7,975.86	102.12	1,167.24	27.47	7,973.47	7,952.48	266.43	-63.94	17.44	1,242.32	1,205.57	-167.33	33.801
8,200.00	8,075.55	102.80	1,175.06	27.68	8,072.26	8,050.29	280.35	-63.94	17.72	1,251.91	1,214.65	-166.80	33.602
8,300.00	8,175.37	103.34	1,181.14	27.87	8,171.15	8,148.19	294.29	-63.94	18.00	1,259.93	1,222.17	-166.25	33.368
8,400.00	8,275.27	103.72	1,185.48	28.04	8,270.11	8,246.16	308.23	-63.94	18.28	1,266.39	1,228.13	-165.68	33.102
8,500.00	8,375.23	103.94	1,188.09	28.18	8,369.11	8,344.18	322.18	-63.94	18.56	1,271.29	1,232.54	-165.10	32.804
8,600.00	8,475.23	104.02	1,188.96	28.31	8,468.12	8,442.20	336.13	-63.94	18.85	1,274.65	1,235.40	-79.50	32.476
8,700.00	8,575.23	104.02	1,188.96	28.45	8,567.12	8,540.21	350.08	-63.94	19.13	1,277.32	1,237.56	-78.89	32.131
8,800.00	8,675.23	104.02	1,188.96	28.59	8,666.12	8,638.22	364.03	-63.94	19.42	1,280.13	1,239.87	-78.28	31.791

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Plan 6

141-MWD, 6041-MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
8,900.00	8,775.23	104.02	1,188.96	28.73	8,765.12	8,736.24	377.98	-63.94	19.71	1,283.10	1,242.31	-77.67	31.462
9,000.00	8,875.23	104.02	1,188.96	28.87	8,864.13	8,834.25	391.93	-63.94	20.00	1,286.21	1,244.91	-77.06	31.143
9,100.00	8,975.23	104.02	1,188.96	29.01	8,963.13	8,932.27	405.88	-63.94	20.29	1,289.47	1,247.65	-76.45	30.834
9,200.00	9,075.23	104.02	1,188.96	29.16	9,062.13	9,030.28	419.83	-63.94	20.59	1,292.87	1,250.53	-75.85	30.535
9,300.00	9,175.23	104.02	1,188.96	29.30	9,168.32	9,135.55	433.77	-63.94	20.86	1,296.18	1,253.32	-75.25	30.243
9,400.00	9,275.23	104.02	1,188.96	29.45	9,275.99	9,242.60	445.32	-63.94	21.13	1,298.97	1,255.61	-74.76	29.962
9,500.00	9,375.23	104.02	1,188.96	29.60	9,384.17	9,350.40	454.30	-63.94	21.38	1,301.18	1,257.35	-74.38	29.688
9,600.00	9,475.23	104.02	1,188.96	29.75	9,492.72	9,458.76	460.64	-63.94	21.61	1,302.77	1,258.49	-74.11	29.421
9,700.00	9,575.23	104.02	1,188.96	29.90	9,601.52	9,567.50	464.32	-63.94	21.84	1,303.70	1,258.99	-73.96	29.159
9,800.00	9,675.23	104.02	1,188.96	30.05	9,709.26	9,675.23	465.33	-63.94	22.04	1,303.96	1,258.85	-73.91	28.904
9,900.00	9,775.23	104.02	1,188.96	30.20	9,809.26	9,775.23	465.33	-63.94	22.24	1,303.96	1,258.46	-73.91	28.657
10,000.00	9,875.23	104.02	1,188.96	30.35	9,909.26	9,875.23	465.33	-63.94	22.44	1,303.96	1,258.07	-73.91	28.413
10,100.00	9,975.23	103.95	1,188.96	30.50	10,051.55	10,017.41	462.06	-63.85	22.69	1,303.67	1,257.33	106.60	28.133
10,200.00	10,074.57	93.65	1,189.07	30.63	10,344.36	10,288.22	359.41	-60.98	22.68	1,295.73	1,249.72	104.17	28.160
10,300.00	10,170.61	66.26	1,189.37	30.74	10,540.86	10,425.67	220.44	-57.10	22.48	1,281.61	1,236.03	101.26	28.116
10,400.00	10,260.44	22.60	1,189.85	30.85	10,716.16	10,502.96	63.99	-52.73	22.46	1,266.70	1,221.12	97.87	27.790
10,500.00	10,341.32	-35.98	1,190.49	30.96	10,835.67	10,526.62	-52.89	-49.47	22.61	1,253.84	1,207.82	95.47	27.248
10,600.00	10,410.80	-107.72	1,191.27	31.10	10,932.20	10,529.86	-149.28	-46.50	22.84	1,244.17	1,197.60	93.45	26.713
10,700.00	10,466.77	-190.44	1,192.17	31.27	11,015.67	10,531.02	-232.69	-43.58	23.11	1,238.15	1,190.97	91.95	26.245
10,800.00	10,507.52	-281.61	1,193.17	31.51	11,107.38	10,532.30	-324.34	-40.38	23.56	1,234.54	1,186.51	90.64	25.707
10,900.00	10,531.82	-378.48	1,194.22	31.83	11,204.55	10,533.66	-421.45	-36.99	24.16	1,231.96	1,182.84	89.87	25.080
11,000.00	10,539.00	-478.09	1,195.31	32.25	11,304.24	10,535.05	-521.06	-33.51	24.89	1,229.58	1,179.11	89.82	24.363
11,100.00	10,539.00	-578.09	1,196.40	32.77	11,404.20	10,536.45	-620.95	-30.03	25.74	1,227.17	1,175.13	89.88	23.580
11,200.00	10,539.00	-678.08	1,197.49	33.38	11,504.16	10,537.84	-720.84	-26.54	26.69	1,224.77	1,170.95	89.95	22.756
11,300.00	10,539.00	-778.07	1,198.58	34.08	11,604.12	10,539.24	-820.73	-23.05	27.72	1,222.37	1,166.59	90.01	21.912
11,400.00	10,539.00	-878.07	1,199.67	34.86	11,704.08	10,540.64	-920.62	-19.56	28.84	1,219.97	1,162.06	90.08	21.065
11,500.00	10,539.00	-978.06	1,200.76	35.73	11,802.29	10,542.01	-1,018.76	-16.13	30.00	1,217.58	1,157.42	90.14	20.241
11,596.04	10,539.00	-1,074.10	1,201.81	36.63	11,870.92	10,542.97	-1,087.36	-14.56	30.78	1,216.45	1,154.67	90.19	19.690
11,600.00	10,539.00	-1,078.06	1,201.85	36.67	11,873.70	10,543.00	-1,090.14	-14.53	30.81	1,216.45	1,154.60	90.19	19.670

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Plan 6

141-MWD, 6041-MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
11,700.00	10,539.00	-1,178.05	1,202.94	37.68	11,967.92	10,544.32	-1,184.35	-14.01	31.99	1,216.97	1,152.80	90.25	18.965
11,800.00	10,539.00	-1,278.05	1,204.03	38.75	12,067.90	10,545.72	-1,284.33	-13.48	33.31	1,217.55	1,150.79	90.32	18.238
11,900.00	10,539.00	-1,378.04	1,205.12	39.88	12,167.89	10,547.11	-1,384.30	-12.96	34.69	1,218.12	1,148.68	90.38	17.542
12,000.00	10,539.00	-1,478.03	1,206.21	41.06	12,267.88	10,548.51	-1,484.28	-12.44	36.10	1,218.70	1,146.49	90.45	16.877
12,100.00	10,539.00	-1,578.03	1,207.30	42.29	12,367.87	10,549.90	-1,584.26	-11.91	37.55	1,219.28	1,144.22	90.51	16.245
12,200.00	10,539.00	-1,678.02	1,208.39	43.56	12,467.86	10,551.30	-1,684.24	-11.39	39.03	1,219.86	1,141.89	90.58	15.645
12,300.00	10,539.00	-1,778.02	1,209.48	44.87	12,567.85	10,552.70	-1,784.21	-10.87	40.54	1,220.44	1,139.49	90.64	15.077
12,400.00	10,539.00	-1,878.01	1,210.57	46.22	12,667.84	10,554.09	-1,884.19	-10.34	42.07	1,221.02	1,137.05	90.71	14.540
12,500.00	10,539.00	-1,978.00	1,211.66	47.60	12,767.83	10,555.49	-1,984.17	-9.82	43.63	1,221.61	1,134.56	90.77	14.033
12,600.00	10,539.00	-2,078.00	1,212.75	49.01	12,867.81	10,556.88	-2,084.15	-9.29	45.21	1,222.19	1,132.02	90.84	13.554
12,700.00	10,539.00	-2,177.99	1,213.84	50.45	12,967.80	10,558.28	-2,184.12	-8.77	46.80	1,222.78	1,129.45	90.90	13.102
12,800.00	10,539.00	-2,277.99	1,214.93	51.91	13,067.79	10,559.68	-2,284.10	-8.25	48.42	1,223.37	1,126.85	90.97	12.674
12,900.00	10,539.00	-2,377.98	1,216.02	53.40	13,167.78	10,561.07	-2,384.08	-7.72	50.04	1,223.96	1,124.21	91.03	12.270
13,000.00	10,539.00	-2,477.97	1,217.11	54.90	13,267.77	10,562.47	-2,484.06	-7.20	51.68	1,224.56	1,121.55	91.10	11.888
13,100.00	10,539.00	-2,577.97	1,218.20	56.43	13,368.09	10,563.37	-2,584.37	-6.68	53.34	1,225.14	1,118.85	91.14	11.526
13,200.00	10,539.00	-2,677.96	1,219.30	57.97	13,468.09	10,563.19	-2,684.37	-6.16	55.00	1,225.71	1,116.11	91.13	11.184
13,300.00	10,539.00	-2,777.96	1,220.39	59.53	13,568.09	10,563.01	-2,784.37	-5.64	56.68	1,226.28	1,113.35	91.12	10.859
13,400.00	10,539.00	-2,877.95	1,221.48	61.11	13,668.09	10,562.83	-2,884.36	-5.12	58.36	1,226.84	1,110.58	91.11	10.552
13,500.00	10,539.00	-2,977.94	1,222.57	62.70	13,768.08	10,562.65	-2,984.36	-4.60	60.05	1,227.41	1,107.78	91.10	10.260
13,600.00	10,539.00	-3,077.94	1,223.66	64.30	13,868.08	10,562.47	-3,084.36	-4.08	61.75	1,227.98	1,104.97	91.10	9.983
13,700.00	10,539.00	-3,177.93	1,224.75	65.91	13,968.08	10,562.29	-3,184.35	-3.56	63.45	1,228.55	1,102.14	91.09	9.719
13,800.00	10,539.00	-3,277.93	1,225.84	67.54	14,068.08	10,562.12	-3,284.35	-3.04	65.17	1,229.11	1,099.30	91.08	9.468
13,900.00	10,539.00	-3,377.92	1,226.93	69.17	14,168.08	10,561.94	-3,384.35	-2.52	66.88	1,229.68	1,096.45	91.07	9.230
14,000.00	10,539.00	-3,477.91	1,228.02	70.82	14,268.07	10,561.76	-3,484.34	-2.00	68.61	1,230.25	1,093.58	91.06	9.002
14,100.00	10,539.00	-3,577.91	1,229.11	72.47	14,368.07	10,561.58	-3,584.34	-1.48	70.34	1,230.82	1,090.70	91.05	8.784
14,200.00	10,539.00	-3,677.90	1,230.20	74.13	14,468.07	10,561.40	-3,684.34	-0.96	72.07	1,231.38	1,087.81	91.04	8.577
14,300.00	10,539.00	-3,777.90	1,231.29	75.80	14,568.07	10,561.22	-3,784.33	-0.45	73.81	1,231.95	1,084.92	91.03	8.379
14,400.00	10,539.00	-3,877.89	1,232.38	77.48	14,668.07	10,561.04	-3,884.33	0.07	75.55	1,232.52	1,082.01	91.02	8.189
14,500.00	10,539.00	-3,977.88	1,233.47	79.16	14,768.07	10,560.86	-3,984.33	0.59	77.30	1,233.09	1,079.09	91.02	8.007
14,600.00	10,539.00	-4,077.88	1,234.56	80.85	14,868.06	10,560.68	-4,084.32	1.11	79.05	1,233.66	1,076.17	91.01	7.834

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Plan 6

141-MWD, 6041-MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
14,700.00	10,539.00	-4,177.87	1,235.65	82.55	14,968.06	10,560.51	-4,184.32	1.63	80.81	1,234.22	1,073.24	91.00	7.667
14,800.00	10,539.00	-4,277.87	1,236.74	84.25	15,068.06	10,560.33	-4,284.32	2.15	82.56	1,234.79	1,070.30	90.99	7.507
14,900.00	10,539.00	-4,377.86	1,237.83	85.95	15,168.06	10,560.15	-4,384.31	2.67	84.32	1,235.36	1,067.36	90.98	7.353
15,000.00	10,539.00	-4,477.85	1,238.92	87.67	15,268.06	10,559.97	-4,484.31	3.19	86.09	1,235.93	1,064.41	90.97	7.206
15,100.00	10,539.00	-4,577.85	1,240.01	89.38	15,368.06	10,559.79	-4,584.31	3.71	87.85	1,236.50	1,061.45	90.96	7.064
15,200.00	10,539.00	-4,677.84	1,241.10	91.10	15,468.05	10,559.61	-4,684.30	4.23	89.62	1,237.06	1,058.49	90.95	6.928
15,300.00	10,539.00	-4,777.84	1,242.19	92.83	15,568.05	10,559.43	-4,784.30	4.75	91.39	1,237.63	1,055.53	90.95	6.796
15,400.00	10,539.00	-4,877.83	1,243.28	94.56	15,668.05	10,559.25	-4,884.30	5.27	93.16	1,238.20	1,052.56	90.94	6.670
15,500.00	10,539.00	-4,977.83	1,244.37	96.29	15,768.05	10,559.08	-4,984.29	5.79	94.94	1,238.77	1,049.58	90.93	6.548
15,600.00	10,539.00	-5,077.82	1,245.46	98.03	15,868.05	10,558.90	-5,084.29	6.30	96.71	1,239.34	1,046.60	90.92	6.430
15,700.00	10,539.00	-5,177.81	1,246.55	99.76	15,968.04	10,558.72	-5,184.29	6.82	98.49	1,239.90	1,043.62	90.91	6.317
15,800.00	10,539.00	-5,277.81	1,247.64	101.51	16,068.04	10,558.54	-5,284.28	7.34	100.27	1,240.47	1,040.63	90.90	6.207
15,900.00	10,539.00	-5,377.80	1,248.73	103.25	16,168.04	10,558.36	-5,384.28	7.86	102.06	1,241.04	1,037.64	90.89	6.101
16,000.00	10,539.00	-5,477.80	1,249.83	105.00	16,268.04	10,558.18	-5,484.28	8.38	103.84	1,241.61	1,034.64	90.89	5.999
16,100.00	10,539.00	-5,577.79	1,250.92	106.75	16,368.04	10,558.00	-5,584.27	8.90	105.62	1,242.18	1,031.65	90.88	5.900
16,200.00	10,539.00	-5,677.78	1,252.01	108.51	16,468.04	10,557.82	-5,684.27	9.42	107.41	1,242.74	1,028.65	90.87	5.805
16,300.00	10,539.00	-5,777.78	1,253.10	110.26	16,568.03	10,557.64	-5,784.27	9.94	109.20	1,243.31	1,025.64	90.86	5.712
16,400.00	10,539.00	-5,877.77	1,254.19	112.02	16,668.03	10,557.47	-5,884.26	10.46	110.99	1,243.88	1,022.64	90.85	5.622
16,500.00	10,539.00	-5,977.77	1,255.28	113.78	16,768.03	10,557.29	-5,984.26	10.98	112.78	1,244.45	1,019.63	90.84	5.535
16,600.00	10,539.00	-6,077.76	1,256.37	115.55	16,868.03	10,557.11	-6,084.26	11.50	114.57	1,245.02	1,016.62	90.83	5.451
16,700.00	10,539.00	-6,177.75	1,257.46	117.31	16,968.03	10,556.93	-6,184.25	12.02	116.36	1,245.59	1,013.60	90.82	5.369
16,800.00	10,539.00	-6,277.75	1,258.55	119.08	17,068.02	10,556.75	-6,284.25	12.54	118.16	1,246.16	1,010.59	90.82	5.290
16,900.00	10,539.00	-6,377.74	1,259.64	120.85	17,168.02	10,556.57	-6,384.25	13.06	119.95	1,246.72	1,007.57	90.81	5.213
17,000.00	10,539.00	-6,477.74	1,260.73	122.62	17,268.02	10,556.39	-6,484.24	13.57	121.75	1,247.29	1,004.55	90.80	5.138
17,100.00	10,539.00	-6,577.73	1,261.82	124.39	17,368.02	10,556.21	-6,584.24	14.09	123.55	1,247.86	1,001.53	90.79	5.066
17,200.00	10,539.00	-6,677.72	1,262.91	126.16	17,468.02	10,556.03	-6,684.24	14.61	125.34	1,248.43	998.50	90.78	4.995
17,300.00	10,539.00	-6,777.72	1,264.00	127.94	17,568.02	10,555.86	-6,784.23	15.13	127.14	1,249.00	995.48	90.77	4.927
17,400.00	10,539.00	-6,877.71	1,265.09	129.72	17,668.01	10,555.68	-6,884.23	15.65	128.94	1,249.57	992.45	90.76	4.860
17,500.00	10,539.00	-6,977.71	1,266.18	131.49	17,768.01	10,555.50	-6,984.23	16.17	130.74	1,250.14	989.42	90.76	4.795

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Plan 6

141-MWD, 6041-MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
17,600.00	10,539.00	-7,077.70	1,267.27	133.27	17,868.01	10,555.32	-7,084.22	16.69	132.54	1,250.70	986.39	90.75	4.732
17,700.00	10,539.00	-7,177.69	1,268.36	135.06	17,968.01	10,555.14	-7,184.22	17.21	134.34	1,251.27	983.36	90.74	4.670
17,800.00	10,539.00	-7,277.69	1,269.45	136.84	18,068.01	10,554.96	-7,284.22	17.73	136.15	1,251.84	980.32	90.73	4.610
17,900.00	10,539.00	-7,377.68	1,270.54	138.62	18,168.01	10,554.78	-7,384.21	18.25	137.95	1,252.41	977.29	90.72	4.552
18,000.00	10,539.00	-7,477.68	1,271.63	140.41	18,268.00	10,554.60	-7,484.21	18.77	139.75	1,252.98	974.25	90.71	4.495
18,100.00	10,539.00	-7,577.67	1,272.72	142.19	18,368.00	10,554.42	-7,584.21	19.29	141.56	1,253.55	971.21	90.71	4.440
18,200.00	10,539.00	-7,677.66	1,273.81	143.98	18,468.00	10,554.25	-7,684.20	19.81	143.36	1,254.12	968.17	90.70	4.386
18,300.00	10,539.00	-7,777.66	1,274.90	145.77	18,568.00	10,554.07	-7,784.20	20.32	145.17	1,254.69	965.13	90.69	4.333
18,400.00	10,539.00	-7,877.65	1,275.99	147.56	18,668.00	10,553.89	-7,884.20	20.84	146.97	1,255.25	962.09	90.68	4.282
18,500.00	10,539.00	-7,977.65	1,277.08	149.35	18,767.99	10,553.71	-7,984.19	21.36	148.78	1,255.82	959.05	90.67	4.232
18,600.00	10,539.00	-8,077.64	1,278.17	151.14	18,867.99	10,553.53	-8,084.19	21.88	150.59	1,256.39	956.00	90.66	4.183
18,700.00	10,539.00	-8,177.63	1,279.26	152.93	18,967.99	10,553.35	-8,184.19	22.40	152.40	1,256.96	952.96	90.65	4.135
18,800.00	10,539.00	-8,277.63	1,280.35	154.72	19,067.99	10,553.17	-8,284.18	22.92	154.20	1,257.53	949.91	90.65	4.088
18,900.00	10,539.00	-8,377.62	1,281.45	156.52	19,167.99	10,552.99	-8,384.18	23.44	156.01	1,258.10	946.86	90.64	4.042
19,000.00	10,539.00	-8,477.62	1,282.54	158.31	19,267.99	10,552.81	-8,484.18	23.96	157.82	1,258.67	943.82	90.63	3.998
19,100.00	10,539.00	-8,577.61	1,283.63	160.11	19,367.98	10,552.64	-8,584.17	24.48	159.63	1,259.24	940.77	90.62	3.954
19,200.00	10,539.00	-8,677.61	1,284.72	161.90	19,467.98	10,552.46	-8,684.17	25.00	161.44	1,259.81	937.72	90.61	3.911
19,300.00	10,539.00	-8,777.60	1,285.81	163.70	19,567.98	10,552.28	-8,784.17	25.52	163.25	1,260.38	934.67	90.60	3.870
19,400.00	10,539.00	-8,877.59	1,286.90	165.50	19,667.98	10,552.10	-8,884.16	26.04	165.06	1,260.95	931.62	90.60	3.829
19,500.00	10,539.00	-8,977.59	1,287.99	167.30	19,767.98	10,551.92	-8,984.16	26.56	166.87	1,261.51	928.56	90.59	3.789
19,600.00	10,539.00	-9,077.58	1,289.08	169.09	19,867.97	10,551.74	-9,084.16	27.08	168.68	1,262.08	925.51	90.58	3.750
19,700.00	10,539.00	-9,177.58	1,290.17	170.89	19,967.97	10,551.56	-9,184.15	27.59	170.50	1,262.65	922.46	90.57	3.712
19,800.00	10,539.00	-9,277.57	1,291.26	172.69	20,067.97	10,551.38	-9,284.15	28.11	172.31	1,263.22	919.40	90.56	3.674
19,900.00	10,539.00	-9,377.56	1,292.35	174.50	20,167.97	10,551.20	-9,384.15	28.63	174.12	1,263.79	916.35	90.55	3.637
20,000.00	10,539.00	-9,477.56	1,293.44	176.30	20,267.97	10,551.03	-9,484.14	29.15	175.93	1,264.36	913.29	90.54	3.601
20,100.00	10,539.00	-9,577.55	1,294.53	178.10	20,367.97	10,550.85	-9,584.14	29.67	177.75	1,264.93	910.24	90.54	3.566
20,200.00	10,539.00	-9,677.55	1,295.62	179.90	20,467.96	10,550.67	-9,684.14	30.19	179.56	1,265.50	907.18	90.53	3.532
20,300.00	10,539.00	-9,777.54	1,296.71	181.70	20,567.96	10,550.49	-9,784.13	30.71	181.37	1,266.07	904.12	90.52	3.498
20,400.00	10,539.00	-9,877.53	1,297.80	183.51	20,667.96	10,550.31	-9,884.13	31.23	183.19	1,266.64	901.06	90.51	3.465
20,500.00	10,539.00	-9,977.53	1,298.89	185.31	20,767.96	10,550.13	-9,984.13	31.75	185.00	1,267.21	898.01	90.50	3.432

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Plan 6

141-MWD. 6041-MWD

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	+E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	+E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
20,600.00	10,539.00	-10,077.52	1,299.98	187.12	20,867.96	10,549.95	-10,084.12	32.27	186.82	1,267.78	894.95	90.49	3.400
20,700.00	10,539.00	-10,177.52	1,301.07	188.92	20,967.95	10,549.77	-10,184.12	32.79	188.63	1,268.35	891.89	90.49	3.369
20,800.00	10,539.00	-10,277.51	1,302.16	190.73	21,067.95	10,549.59	-10,284.12	33.31	190.45	1,268.92	888.83	90.48	3.338
20,850.24	10,539.00	-10,327.75	1,302.71	191.50	21,118.19	10,549.50	-10,334.36	33.57	191.36	1,269.20	887.46	90.47	3.325

HALLIBURTON**Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1**

Offset Design: Sec 28 T. 25 S., R.32E. - Cotton Draw Unit #035 (PA) - Wellbore #1 - No Surveys

100-Blind - assumed vertical

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
100.00	100.00	0.00	0.00	0.51	86.00	86.00	2,156.03	235.88	164.01	2,168.90	2,004.39	6.24	13.184
200.00	200.00	0.00	0.00	0.58	186.00	186.00	2,156.03	235.88	164.05	2,168.90	2,004.26	6.24	13.174
300.00	300.00	0.00	0.00	0.72	286.00	286.00	2,156.03	235.88	164.16	2,168.90	2,004.02	6.24	13.154
400.00	400.00	0.00	0.00	0.90	386.00	386.00	2,156.03	235.88	164.32	2,168.90	2,003.68	6.24	13.127
500.00	500.00	0.00	0.00	1.10	486.00	486.00	2,156.03	235.88	164.53	2,168.90	2,003.27	6.24	13.095
600.00	600.00	0.00	0.00	1.30	586.00	586.00	2,156.03	235.88	164.81	2,168.90	2,002.79	6.24	13.057
700.00	700.00	0.00	0.00	1.51	686.00	686.00	2,156.03	235.88	165.13	2,168.90	2,002.26	6.24	13.015
800.00	800.00	0.00	0.00	1.72	786.00	786.00	2,156.03	235.88	165.52	2,168.90	2,001.66	6.24	12.969
900.00	900.00	0.00	0.00	1.94	886.00	886.00	2,156.03	235.88	165.95	2,168.90	2,001.01	6.24	12.918
1,000.00	1,000.00	0.00	0.00	2.16	986.00	986.00	2,156.03	235.88	166.45	2,168.90	2,000.30	6.24	12.864
1,100.00	1,100.00	0.00	0.00	2.38	1,086.00	1,086.00	2,156.03	235.88	166.99	2,168.90	1,999.53	6.24	12.806
1,200.00	1,200.00	0.00	0.00	2.60	1,186.00	1,186.00	2,156.03	235.88	167.59	2,168.90	1,998.71	6.24	12.744
1,300.00	1,300.00	0.00	0.00	2.82	1,286.00	1,286.00	2,156.03	235.88	168.24	2,168.90	1,997.84	6.24	12.679
1,400.00	1,400.00	0.00	0.00	3.04	1,386.00	1,386.00	2,156.03	235.88	168.94	2,168.90	1,996.92	6.24	12.611
1,500.00	1,500.00	0.00	0.00	3.26	1,486.00	1,486.00	2,156.03	235.88	169.70	2,168.90	1,995.94	6.24	12.540
1,600.00	1,600.00	0.00	0.00	3.48	1,586.00	1,586.00	2,156.03	235.88	170.50	2,168.90	1,994.91	6.24	12.466
1,700.00	1,700.00	0.00	0.00	3.71	1,686.00	1,686.00	2,156.03	235.88	171.36	2,168.90	1,993.83	6.24	12.389
1,800.00	1,800.00	0.00	0.00	3.93	1,786.00	1,786.00	2,156.03	235.88	172.27	2,168.90	1,992.70	6.24	12.310
1,900.00	1,900.00	0.00	0.00	4.15	1,886.00	1,886.00	2,156.03	235.88	173.22	2,168.90	1,991.53	6.24	12.228
2,000.00	2,000.00	0.00	0.00	4.37	1,986.00	1,986.00	2,156.03	235.88	174.22	2,168.90	1,990.30	6.24	12.144
2,100.00	2,099.99	0.08	0.87	4.59	2,085.99	2,085.99	2,156.03	235.88	175.27	2,168.73	1,988.88	-78.78	12.058
2,200.00	2,199.96	0.30	3.48	4.79	2,185.96	2,185.96	2,156.03	235.88	176.36	2,168.22	1,987.07	-78.85	11.969
2,300.00	2,299.86	0.68	7.82	4.99	2,285.86	2,285.86	2,156.03	235.88	177.50	2,167.38	1,984.89	-78.97	11.877
2,400.00	2,399.68	1.22	13.90	5.20	2,385.68	2,385.68	2,156.03	235.88	178.68	2,166.22	1,982.34	-79.14	11.781
2,500.00	2,499.37	1.90	21.72	5.41	2,485.37	2,485.37	2,156.03	235.88	179.91	2,164.75	1,979.43	-79.36	11.681
2,600.00	2,598.90	2.74	31.27	5.64	2,584.90	2,584.90	2,156.03	235.88	181.17	2,163.00	1,976.19	-79.63	11.579
2,700.00	2,698.26	3.72	42.54	5.87	2,684.26	2,684.26	2,156.03	235.88	182.47	2,160.98	1,972.64	-79.94	11.474
2,800.00	2,797.40	4.86	55.55	6.11	2,783.40	2,783.40	2,156.03	235.88	183.81	2,158.72	1,968.79	-80.30	11.366
2,900.00	2,896.30	6.15	70.27	6.37	2,882.30	2,882.30	2,156.03	235.88	185.19	2,156.26	1,964.70	-80.71	11.256
3,000.00	2,994.93	7.59	86.71	6.65	2,980.93	2,980.93	2,156.03	235.88	186.60	2,153.62	1,960.38	-81.16	11.145

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Cotton Draw Unit #035 (PA) - Wellbore #1 - No Surveys

100-Blind - assumed vertical

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
3,100.00	3,093.26	9.17	104.87	6.94	3,079.26	3,079.26	2,156.03	235.88	188.04	2,150.85	1,955.88	-81.66	11.031
3,200.00	3,191.25	10.91	124.73	7.25	3,177.25	3,177.25	2,156.03	235.88	189.51	2,148.00	1,951.24	-82.21	10.917
3,300.00	3,288.87	12.80	146.29	7.59	3,274.87	3,274.87	2,156.03	235.88	191.02	2,145.11	1,946.51	-82.79	10.801
3,400.00	3,386.31	14.76	168.70	7.94	3,372.31	3,372.31	2,156.03	235.88	192.55	2,142.33	1,941.84	-83.38	10.685
3,500.00	3,483.75	16.72	191.11	8.31	3,469.75	3,469.75	2,156.03	235.88	194.12	2,139.78	1,937.36	-83.96	10.571
3,600.00	3,581.19	18.68	213.52	8.69	3,567.19	3,567.19	2,156.03	235.88	195.72	2,137.47	1,933.07	-84.54	10.457
3,700.00	3,678.62	20.64	235.93	9.07	3,664.62	3,664.62	2,156.03	235.88	197.35	2,135.39	1,928.98	-85.13	10.345
3,800.00	3,776.06	22.60	258.34	9.47	3,762.06	3,762.06	2,156.03	235.88	199.01	2,133.55	1,925.08	-85.72	10.234
3,900.00	3,873.50	24.56	280.75	9.87	3,859.50	3,859.50	2,156.03	235.88	200.70	2,131.94	1,921.38	-86.30	10.125
4,000.00	3,970.93	26.52	303.16	10.28	3,956.93	3,956.93	2,156.03	235.88	202.42	2,130.57	1,917.88	-86.89	10.017
4,100.00	4,068.37	28.48	325.57	10.69	4,054.37	4,054.37	2,156.03	235.88	204.17	2,129.44	1,914.59	-87.48	9.911
4,200.00	4,165.81	30.44	347.98	11.11	4,151.81	4,151.81	2,156.03	235.88	205.94	2,128.54	1,911.49	-88.07	9.807
4,300.00	4,263.24	32.40	370.38	11.53	4,249.24	4,249.24	2,156.03	235.88	207.75	2,127.88	1,908.61	-88.66	9.704
4,400.00	4,360.68	34.37	392.79	11.95	4,346.68	4,346.68	2,156.03	235.88	209.58	2,127.46	1,905.93	-89.25	9.604
4,500.00	4,458.12	36.33	415.20	12.38	4,444.12	4,444.12	2,156.03	235.88	211.43	2,127.28	1,903.47	-89.84	9.505
4,527.13	4,484.55	36.86	421.28	12.50	4,470.55	4,470.55	2,156.03	235.88	211.94	2,127.27	1,902.83	-90.00	9.478
4,600.00	4,555.56	38.29	437.61	12.82	4,541.56	4,541.56	2,156.03	235.88	213.31	2,127.33	1,901.21	-90.43	9.408
4,700.00	4,652.99	40.25	460.02	13.25	4,638.99	4,638.99	2,156.03	235.88	215.22	2,127.63	1,899.16	-91.02	9.313
4,800.00	4,750.43	42.21	482.43	13.69	4,734.00	4,734.00	2,156.03	235.88	217.10	2,128.16	1,897.38	-91.60	9.222
4,900.00	4,847.87	44.17	504.84	14.13	4,734.00	4,734.00	2,156.03	235.88	217.10	2,131.27	1,900.30	-91.60	9.228
5,000.00	4,945.30	46.13	527.25	14.57	4,734.00	4,734.00	2,156.03	235.88	217.10	2,139.05	1,908.37	-91.60	9.273
5,100.00	5,042.74	48.09	549.66	15.02	4,734.00	4,734.00	2,156.03	235.88	217.10	2,151.46	1,921.52	-91.60	9.357
5,200.00	5,140.18	50.05	572.07	15.46	4,734.00	4,734.00	2,156.03	235.88	217.10	2,168.41	1,939.65	-91.60	9.479
5,300.00	5,237.61	52.01	594.48	15.91	4,734.00	4,734.00	2,156.03	235.88	217.10	2,189.80	1,962.63	-91.60	9.639
5,400.00	5,335.05	53.97	616.89	16.36	4,734.00	4,734.00	2,156.03	235.88	217.10	2,215.51	1,990.30	-91.60	9.838
5,500.00	5,432.49	55.93	639.30	16.81	4,734.00	4,734.00	2,156.03	235.88	217.10	2,245.37	2,022.47	-91.60	10.073
5,600.00	5,529.93	57.89	661.71	17.26	4,734.00	4,734.00	2,156.03	235.88	217.10	2,279.24	2,058.92	-91.60	10.345
5,700.00	5,627.36	59.85	684.12	17.72	4,734.00	4,734.00	2,156.03	235.88	217.10	2,316.93	2,099.46	-91.60	10.654

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Cotton Draw Unit #045 (PA) - Wellbore #1 - No Surveys

100-Blind - assumed vertical

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
100.00	100.00	0.00	0.00	0.51	70.00	70.00	-483.97	251.88	164.00	545.59	381.08	152.51	3.316
200.00	200.00	0.00	0.00	0.58	170.00	170.00	-483.97	251.88	164.04	545.59	380.96	152.51	3.314
300.00	300.00	0.00	0.00	0.72	270.00	270.00	-483.97	251.88	164.14	545.59	380.73	152.51	3.309
400.00	400.00	0.00	0.00	0.90	370.00	370.00	-483.97	251.88	164.29	545.59	380.40	152.51	3.303
500.00	500.00	0.00	0.00	1.10	470.00	470.00	-483.97	251.88	164.50	545.59	380.00	152.51	3.295
600.00	600.00	0.00	0.00	1.30	570.00	570.00	-483.97	251.88	164.76	545.59	379.53	152.51	3.286
700.00	700.00	0.00	0.00	1.51	670.00	670.00	-483.97	251.88	165.08	545.59	379.00	152.51	3.275
800.00	800.00	0.00	0.00	1.72	770.00	770.00	-483.97	251.88	165.45	545.59	378.41	152.51	3.264
900.00	900.00	0.00	0.00	1.94	870.00	870.00	-483.97	251.88	165.88	545.59	377.77	152.51	3.251
1,000.00	1,000.00	0.00	0.00	2.16	970.00	970.00	-483.97	251.88	166.36	545.59	377.07	152.51	3.238
1,100.00	1,100.00	0.00	0.00	2.38	1,070.00	1,070.00	-483.97	251.88	166.90	545.59	376.31	152.51	3.223
1,200.00	1,200.00	0.00	0.00	2.60	1,170.00	1,170.00	-483.97	251.88	167.49	545.59	375.50	152.51	3.208
1,300.00	1,300.00	0.00	0.00	2.82	1,270.00	1,270.00	-483.97	251.88	168.13	545.59	374.64	152.51	3.192
1,400.00	1,400.00	0.00	0.00	3.04	1,370.00	1,370.00	-483.97	251.88	168.83	545.59	373.72	152.51	3.174
1,500.00	1,500.00	0.00	0.00	3.26	1,470.00	1,470.00	-483.97	251.88	169.57	545.59	372.75	152.51	3.157
1,600.00	1,600.00	0.00	0.00	3.48	1,570.00	1,570.00	-483.97	251.88	170.37	545.59	371.73	152.51	3.138
1,700.00	1,700.00	0.00	0.00	3.71	1,670.00	1,670.00	-483.97	251.88	171.22	545.59	370.66	152.51	3.119
1,800.00	1,800.00	0.00	0.00	3.93	1,770.00	1,770.00	-483.97	251.88	172.12	545.59	369.54	152.51	3.099
1,900.00	1,900.00	0.00	0.00	4.15	1,870.00	1,870.00	-483.97	251.88	173.06	545.59	368.37	152.51	3.079
2,000.00	2,000.00	0.00	0.00	4.37	1,970.00	1,970.00	-483.97	251.88	174.06	545.59	367.16	152.51	3.058
2,100.00	2,099.99	0.08	0.87	4.59	2,069.99	2,069.99	-483.97	251.88	175.10	545.25	365.57	67.59	3.035
2,200.00	2,199.96	0.30	3.48	4.79	2,169.96	2,169.96	-483.97	251.88	176.18	544.26	363.29	67.86	3.007
2,300.00	2,299.86	0.68	7.82	4.99	2,269.86	2,269.86	-483.97	251.88	177.32	542.63	360.33	68.30	2.977
2,400.00	2,399.68	1.22	13.90	5.20	2,369.68	2,369.68	-483.97	251.88	178.49	540.40	356.72	68.92	2.942
2,500.00	2,499.37	1.90	21.72	5.41	2,469.37	2,469.37	-483.97	251.88	179.71	537.62	352.51	69.72	2.904
2,600.00	2,598.90	2.74	31.27	5.64	2,568.90	2,568.90	-483.97	251.88	180.96	534.37	347.77	70.71	2.864
2,700.00	2,698.26	3.72	42.54	5.87	2,668.26	2,668.26	-483.97	251.88	182.26	530.72	342.60	71.90	2.821
2,800.00	2,797.40	4.86	55.55	6.11	2,767.40	2,767.40	-483.97	251.88	183.59	526.78	337.08	73.27	2.777
2,900.00	2,896.30	6.15	70.27	6.37	2,866.30	2,866.30	-483.97	251.88	184.96	522.68	331.36	74.85	2.732
3,000.00	2,994.93	7.59	86.71	6.65	2,964.93	2,964.93	-483.97	251.88	186.37	518.56	325.56	76.63	2.687

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Cotton Draw Unit #045 (PA) - Wellbore #1 - No Surveys

100-Blind - assumed vertical

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Scan Range: 0.00 to 20,850.28 usft. Measured Depth.

Scan Radius is Unlimited. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is 1,000.00 usft

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
3,100.00	3,093.26	9.17	104.87	6.94	3,063.26	3,063.26	-483.97	251.88	187.80	514.59	319.86	78.61	2.643
3,200.00	3,191.25	10.91	124.73	7.25	3,161.25	3,161.25	-483.97	251.88	189.27	510.95	314.44	80.79	2.600
3,300.00	3,288.87	12.80	146.29	7.59	3,258.87	3,258.87	-483.97	251.88	190.77	507.86	309.52	83.18	2.561
3,400.00	3,386.31	14.76	168.70	7.94	3,356.31	3,356.31	-483.97	251.88	192.30	505.61	305.38	85.65	2.525
3,500.00	3,483.75	16.72	191.11	8.31	3,453.75	3,453.75	-483.97	251.88	193.86	504.36	302.20	88.13	2.495
3,575.14	3,556.96	18.19	207.95	8.59	3,526.96	3,526.96	-483.97	251.88	195.05	504.08	300.43	90.00	2.475
3,600.00	3,581.19	18.68	213.52	8.69	3,551.19	3,551.19	-483.97	251.88	195.45	504.11	299.97	90.62	2.469
3,700.00	3,678.62	20.64	235.93	9.07	3,648.62	3,648.62	-483.97	251.88	197.08	504.86	298.71	93.11	2.449
3,800.00	3,776.06	22.60	258.34	9.47	3,746.06	3,746.06	-483.97	251.88	198.73	506.61	298.41	95.58	2.433
3,900.00	3,873.50	24.56	280.75	9.87	3,843.50	3,843.50	-483.97	251.88	200.42	509.35	299.08	98.04	2.422
4,000.00	3,970.93	26.52	303.16	10.28	3,940.93	3,940.93	-483.97	251.88	202.13	513.06	300.68	100.47	2.416
4,100.00	4,068.37	28.48	325.57	10.69	4,038.37	4,038.37	-483.97	251.88	203.88	517.72	303.21	102.86	2.414
4,200.00	4,165.81	30.44	347.98	11.11	4,135.81	4,135.81	-483.97	251.88	205.65	523.31	306.65	105.20	2.415
4,300.00	4,263.24	32.40	370.38	11.53	4,233.24	4,233.24	-483.97	251.88	207.45	529.79	310.96	107.49	2.421
4,400.00	4,360.68	34.37	392.79	11.95	4,330.68	4,330.68	-483.97	251.88	209.27	537.14	316.12	109.73	2.430
4,500.00	4,458.12	36.33	415.20	12.38	4,428.12	4,428.12	-483.97	251.88	211.13	545.32	322.09	111.91	2.443
4,600.00	4,555.56	38.29	437.61	12.82	4,525.56	4,525.56	-483.97	251.88	213.00	554.30	328.84	114.02	2.459
4,700.00	4,652.99	40.25	460.02	13.25	4,622.99	4,622.99	-483.97	251.88	214.90	564.02	336.32	116.06	2.477
4,800.00	4,750.43	42.21	482.43	13.69	4,720.43	4,720.43	-483.97	251.88	216.83	574.47	344.51	118.04	2.498
4,900.00	4,847.87	44.17	504.84	14.13	4,744.00	4,744.00	-483.97	251.88	217.29	590.23	361.31	118.51	2.578
5,000.00	4,945.30	46.13	527.25	14.57	4,744.00	4,744.00	-483.97	251.88	217.29	621.43	399.27	118.51	2.797
5,100.00	5,042.74	48.09	549.66	15.02	4,744.00	4,744.00	-483.97	251.88	217.29	666.32	454.42	118.51	3.145
5,200.00	5,140.18	50.05	572.07	15.46	4,744.00	4,744.00	-483.97	251.88	217.29	722.34	522.29	118.51	3.611
5,300.00	5,237.61	52.01	594.48	15.91	4,744.00	4,744.00	-483.97	251.88	217.29	787.14	599.10	118.51	4.186
5,400.00	5,335.05	53.97	616.89	16.36	4,744.00	4,744.00	-483.97	251.88	217.29	858.71	682.08	118.51	4.862
5,500.00	5,432.49	55.93	639.30	16.81	4,744.00	4,744.00	-483.97	251.88	217.29	935.52	769.29	118.51	5.628
5,600.00	5,529.93	57.89	661.71	17.26	4,744.00	4,744.00	-483.97	251.88	217.29	1,016.36	859.43	118.51	6.477
5,700.00	5,627.36	59.85	684.12	17.72	4,744.00	4,744.00	-483.97	251.88	217.29	1,100.36	951.66	118.51	7.400
5,800.00	5,724.80	61.81	706.53	18.17	4,744.00	4,744.00	-483.97	251.88	217.29	1,186.84	1,045.38	118.51	8.390

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Offset Design: Sec 28 T. 25 S., R.32E. - Cotton Draw Unit #045 (PA) - Wellbore #1 - No Surveys

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5,900.00	5,822.24	63.77	728.94	18.63	4,744.00	4,744.00	-483.97	251.88	217.29	1,275.30	1,140.20	118.51	9.439
6,000.00	5,919.67	65.73	751.35	19.08	4,744.00	4,744.00	-483.97	251.88	217.29	1,365.36	1,235.84	118.51	10.542
6,100.00	6,017.11	67.69	773.76	19.54	4,744.00	4,744.00	-483.97	251.88	217.29	1,456.71	1,332.12	118.51	11.692
6,200.00	6,114.55	69.66	796.17	20.00	4,744.00	4,744.00	-483.97	251.88	217.29	1,549.13	1,428.90	118.51	12.884
6,300.00	6,211.98	71.62	818.58	20.45	4,744.00	4,744.00	-483.97	251.88	217.29	1,642.44	1,526.07	118.51	14.113
6,400.00	6,309.42	73.58	840.98	20.91	4,744.00	4,744.00	-483.97	251.88	217.29	1,736.50	1,623.55	118.51	15.375
6,500.00	6,406.86	75.54	863.39	21.37	4,744.00	4,744.00	-483.97	251.88	217.29	1,831.18	1,721.29	118.51	16.664
6,600.00	6,504.30	77.50	885.80	21.83	4,744.00	4,744.00	-483.97	251.88	217.29	1,926.40	1,819.25	118.51	17.978
6,700.00	6,601.73	79.46	908.21	22.30	4,744.00	4,744.00	-483.97	251.88	217.29	2,022.08	1,917.39	118.51	19.313
6,800.00	6,699.17	81.42	930.62	22.76	4,744.00	4,744.00	-483.97	251.88	217.29	2,118.17	2,015.67	118.51	20.666
6,900.00	6,796.61	83.38	953.03	23.22	4,744.00	4,744.00	-483.97	251.88	217.29	2,214.60	2,114.09	118.51	22.034
7,000.00	6,894.04	85.34	975.44	23.68	4,744.00	4,744.00	-483.97	251.88	217.29	2,311.33	2,212.61	118.51	23.414

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	20,849.47	Plan 1	MWD

Error Model:	ISCWSA	Output errors are at	2.00 sigma
Scan Method:	Closest Approach 3D		

All station coordinates were calculated using the Minimum Curvature method.

Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

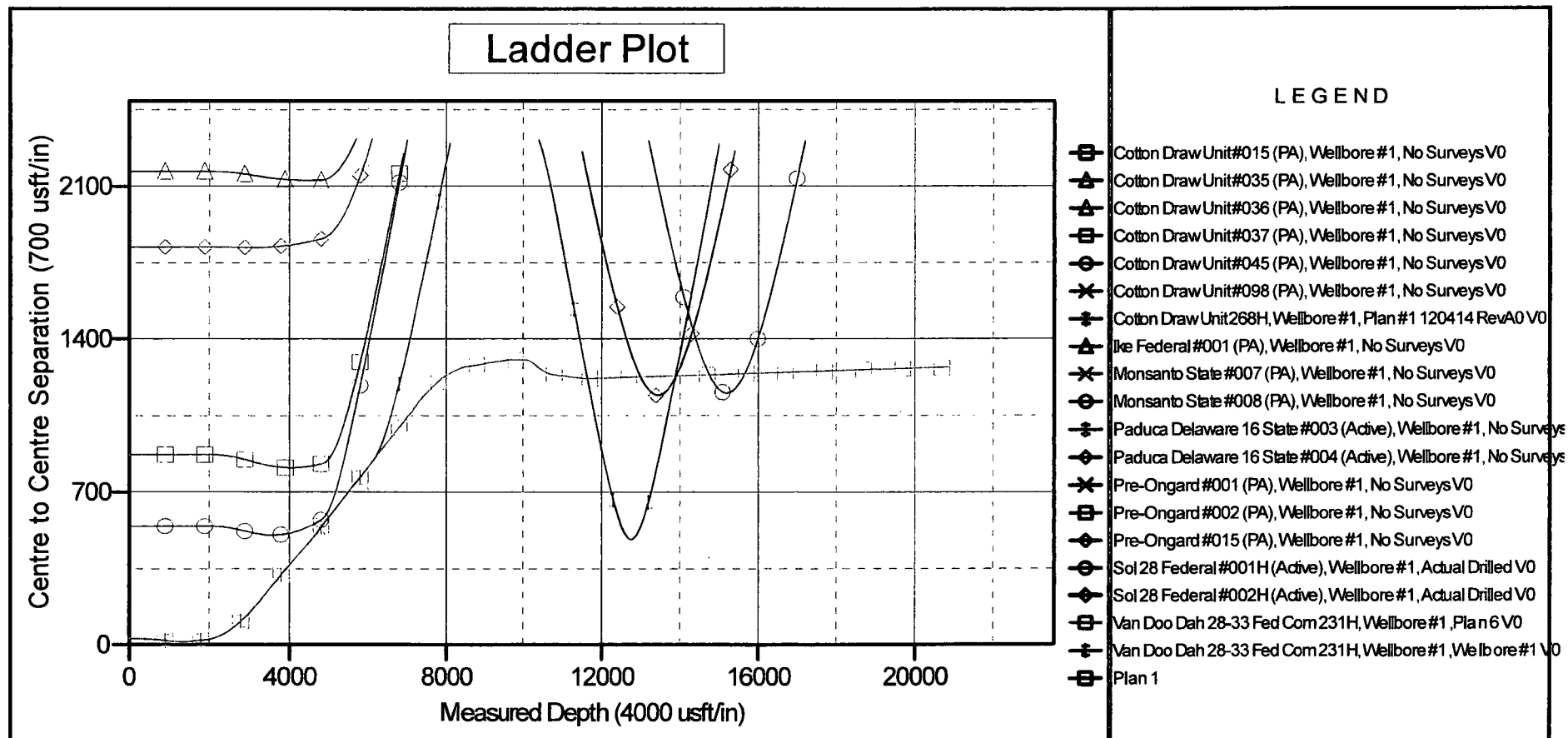
Direction and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to RKB (Nabors X05) 33' + GL @ 3410.00usft. Northing and Easting are relative to Marwari 28-16 STATE FED COM 232H.

Coordinate System is US State Plane 1983, New Mexico Eastern Zone.

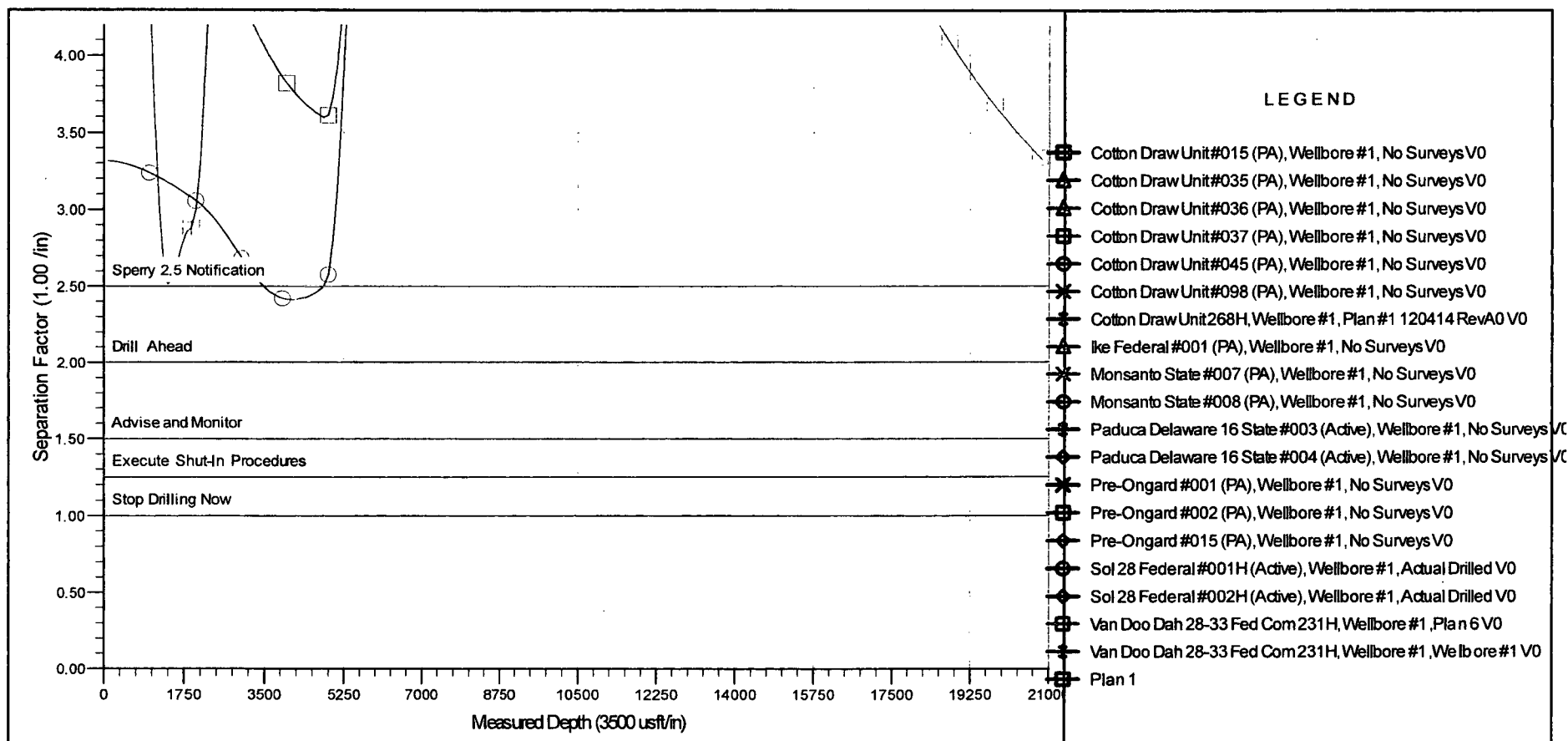
Central Meridian is -104.00°, Grid Convergence at Surface is: 0.34°.

Summary is based on Minimum Ellipse Separation Distance



Anticollision Report for Marwari 28-16 STATE FED COM 232H - Plan 1

Clearance Factor Plot: Measured Depth versus Separation(Clearance) Factor



PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production Company LP
LEASE NO.:	NMLC062300
WELL NAME & NO.:	Marwari 28-16 State Fed Com 232H
SURFACE HOLE FOOTAGE:	175'/N & 410'/W
BOTTOM HOLE FOOTAGE:	330'/N & 330'/W
LOCATION:	Section 28, T25S, R32E, NMPM
COUNTY:	Lea County, New Mexico

Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst Potential	☒ Low	☐ Medium	☐ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☒ Multibowl	
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

All previous COAs still apply except for the following:

A. CASING

1. The 13 3/8 inch surface casing shall be set at approximately 900 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
Excess calculates to 24% - additional cement might be required.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of 8 hours or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

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

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

MHH 11062018

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
393-3612

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.