



Actual Wellpath Report

No.2H AWP

Page 1 of 5



30-015-39230

REFERENCE WELLPATH IDENTIFICATION

Operator	Devon Energy	Slot	No.2H SHL
Area	Eddy County, NM	Well	No.2H
Field	(Cotton) Sec 10, T25S, R31E	Wellbore	No.2H AWB
Facility	Cotton Draw 10 Fed No.2H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Gentbry
Scale	0.999945	Report Generated	2/21/2012 at 8:43:02 AM
Convergence at slot	0.31° East	Database/Source file	WA Midland/No.2H_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	718969.84	419273.98	32°09'04.900"N	103°45'33.707"W
Facility Reference Pt			718969.84	419273.98	32°09'04.900"N	103°45'33.707"W
Field Reference Pt			718969.84	419273.98	32°09'04.900"N	103°45'33.707"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No.2H SHL (KB) to Facility Vertical Datum	26.20ft
Horizontal Reference Pt	Slot	Rig on No.2H SHL (KB) to Mean Sea Level	3448.50ft
Vertical Reference Pt	Rig on No.2H SHL (KB)	Rig on No.2H SHL (KB) to Mud Line at Slot (No.2H SHL)	26.20ft
MD Reference Pt	Rig on No.2H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.64°



DEVON ENERGY

Cotton Draw
Eddy County, NM
Cotton Draw 10 Federal Com #2H
VH - Job #32K0212150

Survey: Gyro

SDI Standard Survey Report

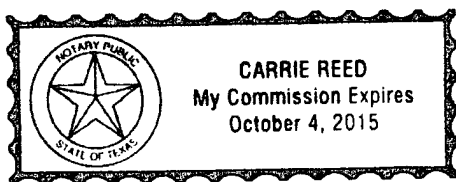
This survey is correct to the best of my knowledge and is supported by actual field data.

Michael

Notarized this date 15th of March, 2012.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Cotton Draw 10 Federal Com #2H
Project:	Cotton Draw	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Cotton Draw 10 Federal Com #2H	North Reference:	Grid
Wellbore:	VH - Job #32K0212150	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0212150	Database:	EDM-Regulatory

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

Site	Eddy County, NM				
Site Position:		Northing:	425,181 39 usft	Latitude:	32° 10' 3 550 N
From:	Lat/Long	Easting:	676,632 12 usft	Longitude:	103° 45' 45 020 W
Position Uncertainty:	0 0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0 30 °

Well:	Cotton Draw 10 Federal Com #2H, Directional (Baker)					
Well Position	+N/-S	0 0 usft	Northing:	419,260 04 usft	Latitude:	32° 9' 4 900 N
	+E/-W	0 0 usft	Easting:	677,636 15 usft	Longitude:	103° 45' 33 707 W
Position Uncertainty		0 0 usft	Wellhead Elevation:	usft	Ground Level:	0 0 usft

Wellbore	VH - Job #32K0212150				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/11/2012	7 59	60 07	48,511

Design	VH - Job #32K0212150			
Audit Notes:				
Version:	1 0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0 0	0 0	0 0	179.64

Survey Program		Date		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100 0	7,532.0	Gyro (VH - Job #32K0212150)	Keeper	Keeper Gyro

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
0 0	0 00	0 00	0 0	0 0	0 0	0 00	0 0
100 0	0 82	11 35	100 0	0 7	0 1	11 35	0 7
200 0	0 99	13 23	200 0	2 2	0 5	12 06	2 3
300 0	0 85	13 34	300 0	3 8	0 8	12 56	3 9
400 0	0 63	22 10	400 0	5 0	1 2	13 68	5 2
500 0	0 23	11 09	500 0	5 7	1 5	14 37	5 9
600 0	0 71	216 60	600 0	5 4	1 1	11 84	5 6
700 0	1 08	216 25	699 9	4 2	0 2	2 93	4 2
800 0	1 27	217 66	799 9	2 5	-1 0	338 19	2 7
900 0	1 72	211 99	899 9	0 4	-2 5	279 09	2 5
1,000 0	1 36	220 71	999 9	-1 8	-4 1	246 41	4 4
1,100 0	0 83	230 43	1,099 8	-3 1	-5 4	239 84	6 2

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Cotton Draw 10 Federal Com #2H
Project:	Cotton Draw	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Cotton Draw 10 Federal Com #2H	North Reference:	Grid
Wellbore:	VH - Job #32K0212150	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0212150	Database:	EDM-Regulatory

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
1,200 0	0 14	240 71	1,199 8	-3 7	-6 1	238.89	7 1	
1,300 0	0 35	37 50	1,299 8	-3 5	-6 0	239 85	6 9	
1,400 0	0 80	52 74	1,399 8	-2 8	-5 2	241 80	5 9	
1,500 0	1 06	58 59	1,499 8	-1 9	-3 9	243 94	4 3	
1,600 0	1 70	62 71	1,599 8	-0 7	-1 8	247 45	1 9	
1,700 0	2 37	61 62	1,699 7	0 9	1 4	55 73	1 6	
1,800 0	2 97	68 07	1,799 6	2 9	5 6	62 74	6 3	
1,900 0	3 23	71 62	1,899 5	4 7	10 7	66 07	11 7	
2,000 0	3 30	75 91	1,999 3	6 3	16 1	68 60	17 3	
2,100 0	3 44	76 45	2,099 1	7 7	21 8	70 52	23 2	
2,200 0	3 54	77 26	2,198 9	9 1	27 8	71 84	29 2	
2,300 0	3 63	82 13	2,298 7	10 2	33 9	73 23	35 4	
2,400 0	3 75	86 92	2,398 5	10 8	40 3	74 96	41 7	
2,500 0	3 68	105 73	2,498 3	10 1	46 7	77 75	47 7	
2,600 0	3 79	111 86	2,598 1	8 0	52 8	81 35	53 4	
2,700 0	3 46	119 57	2,697 9	5 3	58 5	84 81	58 7	
2,800 0	3 47	120 50	2,797 7	2 3	63 7	87 94	63 8	
2,900 0	2 82	125 03	2,897 6	-0 7	68 4	90 55	68 4	
3,000 0	2 06	142 67	2,997 5	-3 5	71 5	92 81	71 5	
3,100 0	1 78	141 02	3,097 4	-6 1	73 5	94 77	73 8	
3,200 0	1 45	127 52	3,197 4	-8 1	75 5	96 13	75 9	
3,300 0	2 05	109 32	3,297 4	-9 5	78 2	96 91	78 8	
3,400 0	1 40	100 50	3,397 3	-10 3	81 1	97 23	81 7	
3,500 0	1 05	90 67	3,497 3	-10 5	83 2	97 21	83 9	
3,600 0	1 06	89 19	3,597 3	-10 5	85 0	97 05	85 7	
3,700 0	2 12	92 55	3,697 2	-10 6	87 8	96 88	88 5	
3,800 0	3 36	113 91	3,797 1	-11 9	92 3	97 32	93 1	
3,900 0	3 19	122 36	3,897 0	-14 5	97 4	98 49	98 5	
4,000 0	5 07	143 84	3,996 7	-19 6	102 3	100 84	104 2	
4,100 0	6 31	145 60	4,096 2	-27 7	108 0	104 38	111 5	
4,200 0	5 18	143 78	4,195 7	-35 9	113 8	107 49	119 3	
4,300 0	3 90	143 06	4,295 4	-42 2	118 5	109 61	125 8	
4,400 0	3 51	142 12	4,395 2	-47 4	122 5	111 15	131 3	
4,500 0	3 45	141 31	4,495 0	-52 1	126 2	112 44	136 6	
4,600 0	3 48	141 42	4,594 8	-56 9	130 0	113 62	141 9	
4,700 0	3 07	140 93	4,694 6	-61 3	133 6	114 65	147 0	
4,800 0	2 92	137 10	4,794 5	-65 3	137 0	115 47	151 7	
4,900 0	2 92	135 38	4,894 4	-68 9	140 5	116 13	156 5	
5,000 0	2 94	141 80	4,994 2	-72 8	143 9	116 82	161 2	
5,100 0	2 58	139 45	5,094 1	-76 5	146 9	117 50	165 7	
5,200 0	2 84	143 08	5,194 0	-80 2	149 9	118 14	170 0	
5,300 0	2 33	141 12	5,293 9	-83 7	152 7	118 75	174 1	
5,400 0	2 17	140 96	5,393 8	-86 8	155 1	119 23	177 8	
5,500 0	2 20	139 15	5,493 8	-89 7	157 6	119 66	181 3	



Scientific Drilling
Directional Drilling Operations

Project Cotton Draw
Eddy County, NM
Well: Cotton Draw 10 Federal Com #2H
Wellbore: VH - Job #32K0212150
Design: VH - Job #32K0212150



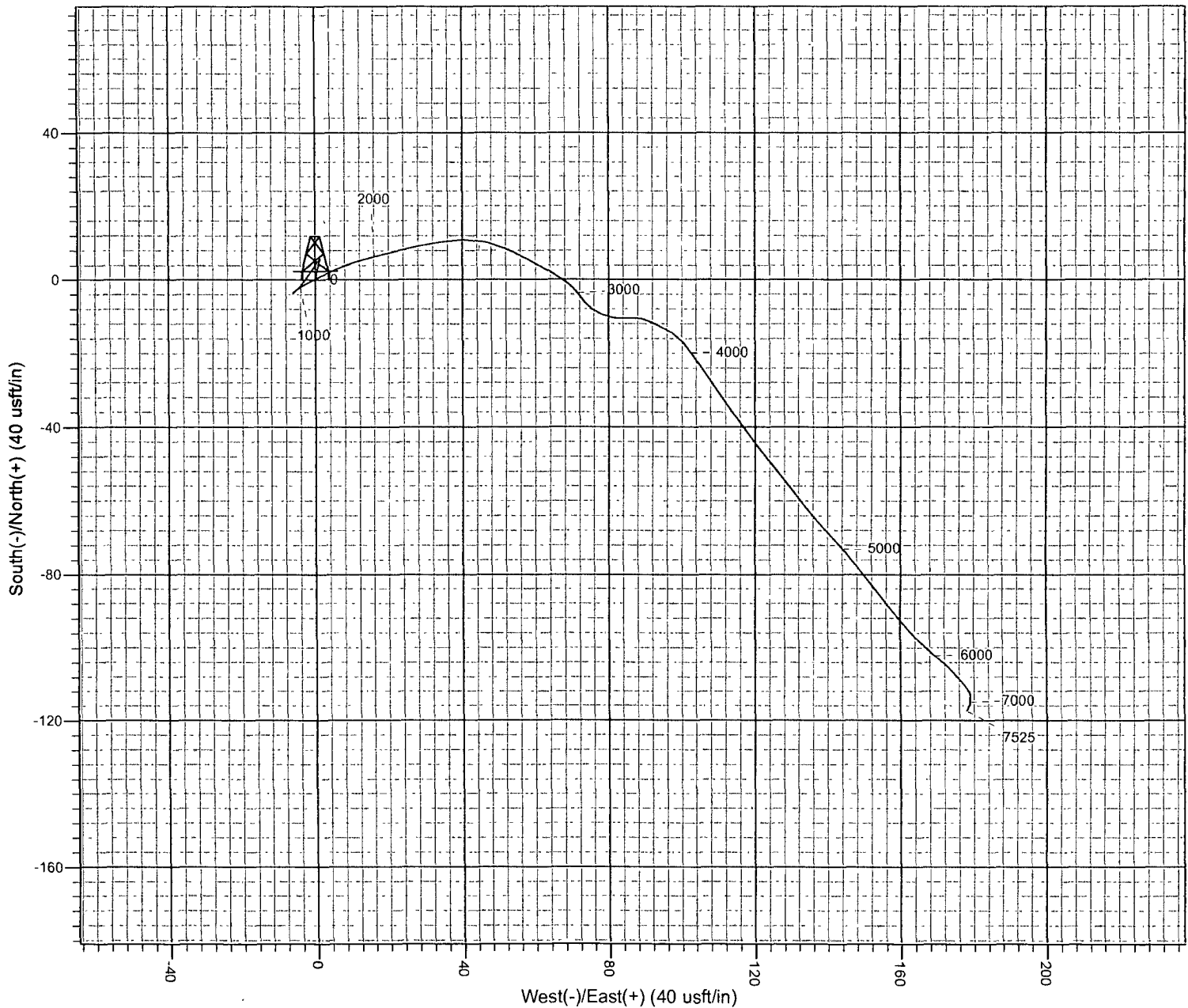
Azimuths to Grid North
True North: -0.30°
Magnetic North: 7.28°

Magnetic Field
Strength: 48511.4 nT
Dip Angle: 60.07°
Date: 2/11/2012
Model: IGRF2010

WELL DETAILS: Cotton Draw 10 Federal Com #2H
WELL @ 0.0usft (Original Well Elev)

Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	419260.04	677636.15	32° 9' 4.900 N	103° 45' 33.707 W	



PROJECT DETAILS: Cotton Draw
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

SITE DETAILS: Eddy County, NM
Site Centre Latitude: 32° 10' 3.550 N
Longitude: 103° 45' 45.020 W
Positional Uncertainty: 0.0
Convergence: 0.30
Local North: Grid



Stimulations Summary

District PERMIAN BASIN		County EDDY		Field Name PADUCA		Project Group PB NEW MEXICO		State/Province NM		
Surface Legal Location SEC10 T25S R31E		API/UWI 3001539230		Latitude (DMS) 32° 9' 4.9" N	Longitude (DMS) 103° 45' 33.707" ...	Ground Elev 3,422.30	KB - GL (ft) 26.20	Ong KB Elev (ft) 3,448.50	TH Elev (ft)	
VIKING D 2800, 3/19/2012 07:18, DELAWARE, OH, 11,958.0 ftKB - 12,432.0 ftKB, BHI, Ottawa 7315 LBS; 336455 LBS										
Proppant De	V (pumped) (bbl)	Pre Trt S/I Prs (psi)	Pst Trt S/I Prs (psi)	P(break) (psi)	ISIP (psi)	P (avg) (psi)	Rate (avg) (bbl/m)	P (max) (psi)	Rate (max) (bbl/m)	Max Conc
310,625.0	6558.50		940.0	8,063.0		5,155.0	74	7,987.0	81	4.00
VIKING D 2800, 3/19/2012 19:04, DELAWARE, OH, 11,250.0 ftKB - 11,724.0 ftKB, BHI, 306958 LBS; Ottawa 4781 LBS										
Proppant De	V (pumped) (bbl)	Pre Trt S/I Prs (psi)	Pst Trt S/I Prs (psi)	P(break) (psi)	ISIP (psi)	P (avg) (psi)	Rate (avg) (bbl/m)	P (max) (psi)	Rate (max) (bbl/m)	Max Conc
310,625.0	5315.70		1,061.0	4,512.0		4,706.0	79	7,253.0	81	4.00
VIKING D 2800, 3/20/2012 05:57, DELAWARE, OH, 10,542.0 ftKB - 11,016.0 ftKB, BHI, Ottawa 4766 LBS; 293863 LBS										
Proppant De	V (pumped) (bbl)	Pre Trt S/I Prs (psi)	Pst Trt S/I Prs (psi)	P(break) (psi)	ISIP (psi)	P (avg) (psi)	Rate (avg) (bbl/m)	P (max) (psi)	Rate (max) (bbl/m)	Max Conc
310,625.0	4985 00		864.0	4,273.0		4,319.0	78	6,622.0	81	4.00
VIKING D 2800, 3/20/2012 13:27, DELAWARE, OH, 9,834.0 ftKB - 10,308.0 ftKB, BHI, Ottawa 4760 LBS; 300785 LBS										
Proppant De	V (pumped) (bbl)	Pre Trt S/I Prs (psi)	Pst Trt S/I Prs (psi)	P(break) (psi)	ISIP (psi)	P (avg) (psi)	Rate (avg) (bbl/m)	P (max) (psi)	Rate (max) (bbl/m)	Max Conc
310,625.0	5543 00			5,074.0		4,380.0	77	7,569.0	81	4.00
VIKING D 2800, 3/20/2012 16:53, DELAWARE, OH, 9,126.0 ftKB - 9,600.0 ftKB, BHI, 298075 LBS; Ottawa 4779 LBS										
Proppant De	V (pumped) (bbl)	Pre Trt S/I Prs (psi)	Pst Trt S/I Prs (psi)	P(break) (psi)	ISIP (psi)	P (avg) (psi)	Rate (avg) (bbl/m)	P (max) (psi)	Rate (max) (bbl/m)	Max Conc
310,625.0	5161.10		856.0	5,949 0		4,145.0	76	7,515.0	81	4.00
VIKING D 2800, 3/20/2012 20:03, DELAWARE, OH, 8,418.0 ftKB - 8,892.0 ftKB, BHI, Ottawa 6668 LBS; 329761 LBS										
Proppant De	V (pumped) (bbl)	Pre Trt S/I Prs (psi)	Pst Trt S/I Prs (psi)	P(break) (psi)	ISIP (psi)	P (avg) (psi)	Rate (avg) (bbl/m)	P (max) (psi)	Rate (max) (bbl/m)	Max Conc
310,625.0	5430 20		802 0	4,862.0		3,605 0	75	6,291.0	81	4.00

devon

Devon Energy

Location Eddy County, NM
Field (Cotton) Sec 10, T25S, R31E
Facility Cotton Draw 10 Fed No 2H

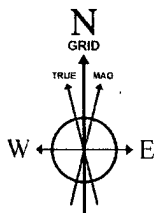
Slot No 2H SHL
Well No 2H
Wellbore No 2H PWB



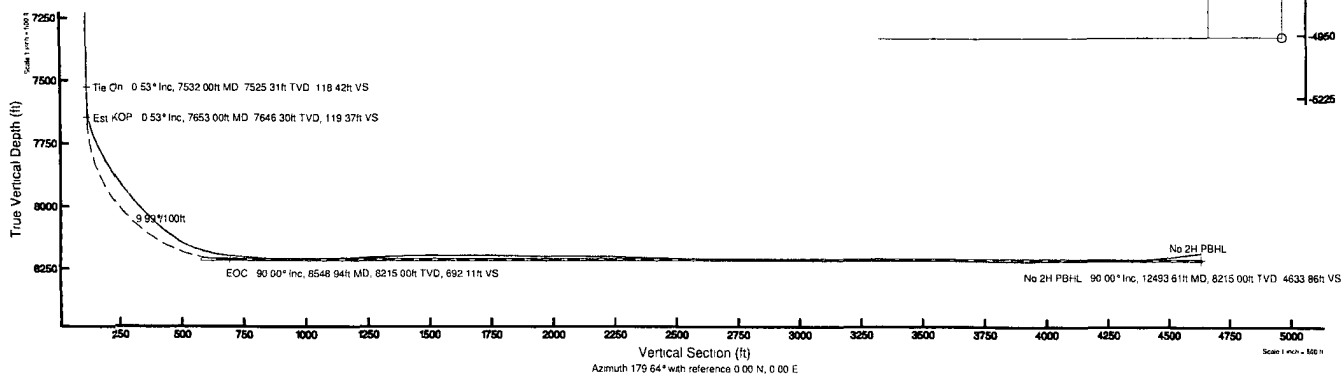
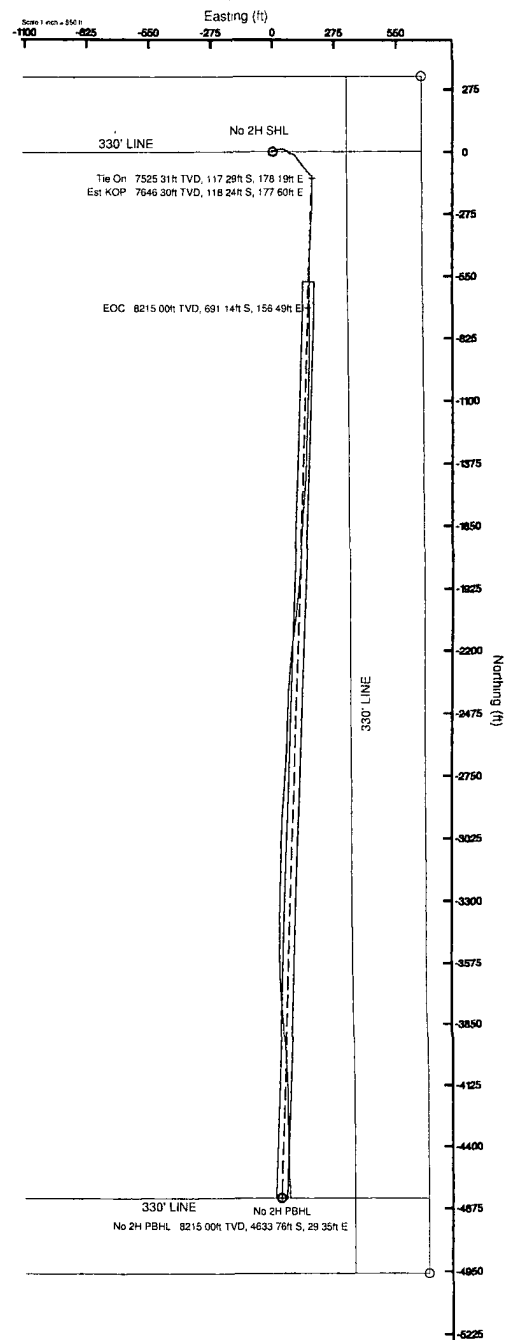
Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (%100ft)	VS (ft)
Tie On	7532.00	0.530	211.890	7525.31	-117.29	178.19	0.00	118.42
Est KOP	7653.00	0.530	211.890	7646.30	-118.24	177.60	0.00	119.37
EOC	8548.94	90.000	181.847	8215.00	-691.14	158.49	9.99	692.11
No 2H PBHL	12493.61	90.000	181.847	8215.00	-4633.76	29.35	0.00	4633.86

Plot reference wellpath is Plan #1	
True vertical depths are referenced to Rig on No 2H SHL (KB)	Grid System NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No 2H SHL (KB)	North Reference Grid north
Rig on No 2H SHL (KB) to Mean Sea Level 3448.5 feet	Scale True distance
Mean Sea Level to Mud line (At Slot No 2H SHL) -3422.3 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by genlbry on 2/11/2012

RECEIVED
AUG 03 2012
NMOCD ARTESIA



BGGM (1945.0 to 2013.0) Dip: 60.04° Field: 48496.9 nT
 Magnetic North is 7.67 degrees East of True North (at 1/26/2012)
 Grid North is 0.31 degrees East of True North
 To correct azimuth from True to Grid subtract 0.31 degrees
 To correct azimuth from Magnetic to Grid add 7.36 degrees
 For example if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.36 = 97.36

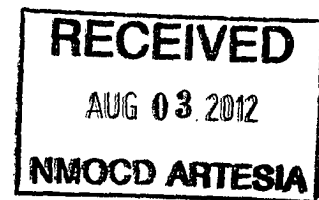


2105 MARKET STREET
MIDLAND, TX 79703
24 HR (432) 694-9517

STATE OF NEW MEXICO

COUNTY OF Eddy

I, John Hollis, Directional Driller certify that I am employed by Baker Hughes INTEQ; did conduct or supervise on the day(s) of 2/12/2012 through 2/17/2012 the taking of MWD surveys from a depth of 7,532 to a depth of 12,443 that the data is true, correct, complete and within the limitations of the tool as set forth by Baker Hughes INTEQ; that I am authorized and qualified to make this report; that this survey was conducted at the request of Devon for the Cotton Draw 10 Fed #2H in Eddy County, NM; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by INTEQ.



Tony Hise *Ops. Coordinator*
Ronny Hise

Field Service Engineer: John Hollis