



HOBBSOCD
APR 16 2015
RECEIVED

OXY

Lea County, New Mexico
Speakeasy Federal Unit 5H
SFU-5H

Original Wellbore

Survey: SDI MWD

30-025-42269

Standard Survey Report

19 December, 2014

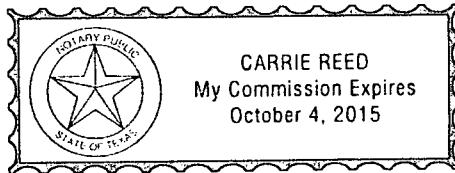
This survey is correct to the best of my knowledge and is supported by actual field data.

Richard

Notarized this date 4th of March, 2015.

Carrie Reed

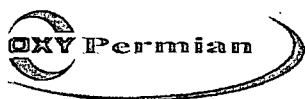
Notary Signature
County of Midland
State of Texas



Scientific Drilling

www.scientificdrilling.com

APR 22 2015



Scientific Drilling, Int'l
Survey Report



HOBBSOCD
APR 16 2015
RECEIVED

Company:	OXY	Local Co-ordinate Reference:	Well SFU-5H
Project:	Lea County, New Mexico	TVD Reference:	KB @ 3685.80usft
Site:	Speakeasy Federal Unit 5H	MD Reference:	KB @ 3685.80usft
Well:	SFU-5H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	EDM 5000.1 Single User Db

Project	Lea County, New Mexico		
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	Speakeasy Federal Unit 5H				
Site Position:		Northing:	519,451.10 usft	Latitude:	32.42615
From:	Map	Easting:	715,354.40 usft	Longitude:	-103.63539
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.37 °

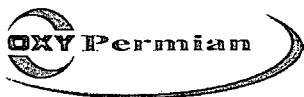
Well	SFU-5H					
Well Position	+N/-S	0.00 usft	Northing:	519,451.10 usft	Latitude:	32.42615
	+E/-W	0.00 usft	Easting:	715,354.40 usft	Longitude:	-103.63539
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,661.80 usft

Wellbore	Original Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	01/30/14	7.31	60.30	48,466

Design	Original Wellbore				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	269.37	

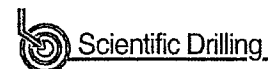
Survey Program	Date 12/19/14				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
233.00	13,699.00	SDI MWD (Original Wellbore)	SDI MWD	SDI MWD - Standard ver 1.0.1	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
233.00	0.99	7.55	232.99	2.00	0.26	-0.29	0.42	0.42	0.00
502.00	0.55	338.78	501.96	5.50	0.10	-0.16	0.21	-0.16	-10.70
777.00	0.64	280.15	776.95	7.00	-1.89	1.81	0.21	0.03	-21.32
1,019.00	0.60	248.99	1,018.94	6.79	-4.40	4.33	0.14	-0.02	-12.88
1,051.00	0.34	262.07	1,050.94	6.71	-4.65	4.58	0.87	-0.81	40.88
1,336.00	0.38	179.71	1,335.93	5.65	-5.48	5.42	0.17	0.01	-28.90
1,619.00	0.17	133.77	1,618.93	4.42	-5.18	5.13	0.10	-0.07	-16.23
1,903.00	0.60	80.37	1,902.92	4.38	-3.41	3.36	0.18	0.15	-18.80
2,186.00	0.94	88.68	2,185.90	4.68	0.38	-0.43	0.13	0.12	2.94



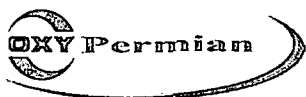
Scientific Drilling, Int'l

Survey Report



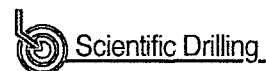
Company:	OXY	Local Co-ordinate Reference:	Well SFU-5H
Project:	Lea County, New Mexico	TVD Reference:	KB @ 3685.80usft
Site:	Speakeasy Federal Unit 5H	MD Reference:	KB @ 3685.80usft
Well:	SFU-5H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,469.00	1.72	79.44	2,468.82	5.51	6.87	-6.93	0.28	0.28	-3.27
2,753.00	0.87	94.03	2,752.75	6.14	13.21	-13.28	0.32	-0.30	5.14
3,036.00	1.73	71.45	3,035.67	7.35	19.41	-19.49	0.35	0.30	-7.98
3,319.00	0.52	86.85	3,318.61	8.78	24.74	-24.83	0.44	-0.43	5.44
3,603.00	0.60	150.47	3,602.60	7.56	26.76	-26.84	0.21	0.03	22.40
3,887.00	0.55	220.82	3,886.59	5.23	26.60	-26.66	0.23	-0.02	24.77
4,170.00	0.12	212.36	4,169.58	3.96	25.55	-25.60	0.15	-0.15	-2.99
4,454.00	0.46	99.54	4,453.58	3.51	26.52	-26.56	0.18	0.12	-39.73
4,689.00	0.12	146.00	4,688.58	3.15	27.59	-27.62	0.16	-0.14	19.77
4,832.00	0.42	297.32	4,831.58	3.27	27.21	-27.24	0.37	0.21	105.82
4,927.00	0.37	303.12	4,926.57	3.60	26.64	-26.68	0.07	-0.05	6.11
5,021.00	0.50	299.81	5,020.57	3.97	26.03	-26.07	0.14	0.14	-3.52
5,116.00	0.38	309.81	5,115.57	4.38	25.43	-25.47	0.15	-0.13	10.53
5,210.00	0.41	352.97	5,209.57	4.91	25.15	-25.20	0.31	0.03	45.91
5,305.00	0.58	351.35	5,304.56	5.72	25.03	-25.09	0.18	0.18	-1.71
5,399.00	0.43	336.08	5,398.56	6.51	24.82	-24.89	0.21	-0.16	-16.24
5,494.00	0.38	354.48	5,493.56	7.15	24.64	-24.72	0.15	-0.05	19.37
5,588.00	0.37	5.43	5,587.56	7.77	24.64	-24.73	0.08	-0.01	11.65
5,683.00	0.47	21.74	5,682.55	8.43	24.82	-24.91	0.16	0.11	17.17
5,777.00	0.28	19.78	5,776.55	9.01	25.04	-25.13	0.20	-0.20	-2.09
5,872.00	0.45	15.49	5,871.55	9.59	25.21	-25.32	0.18	0.18	-4.52
5,966.00	0.46	15.56	5,965.55	10.31	25.41	-25.53	0.01	0.01	0.07
6,061.00	0.33	7.95	6,060.54	10.94	25.55	-25.67	0.15	-0.14	-8.01
6,155.00	0.36	53.03	6,154.54	11.39	25.83	-25.95	0.28	0.03	47.96
6,250.00	0.36	8.74	6,249.54	11.86	26.11	-26.24	0.29	0.00	-46.62
6,344.00	0.24	16.73	6,343.54	12.34	26.21	-26.35	0.13	-0.13	8.50
6,439.00	0.29	59.26	6,438.54	12.66	26.48	-26.61	0.21	0.05	44.77
6,533.00	0.32	37.43	6,532.54	12.99	26.84	-26.98	0.13	0.03	-23.22
6,628.00	0.48	19.43	6,627.54	13.57	27.13	-27.28	0.21	0.17	-18.95
6,723.00	0.50	46.65	6,722.53	14.23	27.57	-27.72	0.24	0.02	28.65
6,817.00	0.73	23.24	6,816.53	15.07	28.10	-28.27	0.36	0.24	-24.90
6,912.00	0.48	32.08	6,911.52	15.96	28.55	-28.73	0.28	-0.26	9.31
7,006.00	0.46	34.90	7,005.52	16.60	28.98	-29.16	0.03	-0.02	3.00
7,101.00	0.20	85.91	7,100.52	16.93	29.36	-29.55	0.39	-0.27	53.69
7,196.00	0.14	310.11	7,195.52	17.01	29.44	-29.62	0.33	-0.06	-142.95
7,290.00	0.10	253.08	7,289.52	17.06	29.27	-29.46	0.13	-0.04	-60.67
7,384.00	0.23	137.80	7,383.52	16.90	29.32	-29.50	0.31	0.14	-122.64
7,479.00	0.35	139.31	7,478.51	16.54	29.64	-29.82	0.13	0.13	1.59
7,574.00	0.43	155.96	7,573.51	15.99	29.97	-30.15	0.15	0.08	17.53
7,668.00	0.40	162.59	7,667.51	15.36	30.21	-30.38	0.06	-0.03	7.05
7,737.00	0.60	139.71	7,736.51	14.85	30.52	-30.68	0.40	0.29	-33.16
7,845.00	3.03	281.53	7,844.46	14.99	28.09	-28.25	3.26	2.25	131.31
7,939.00	11.45	271.40	7,937.63	15.72	16.30	-16.48	9.03	8.96	-10.78
8,034.00	18.45	272.43	8,029.36	16.59	-8.17	7.99	7.37	7.37	1.08



Scientific Drilling, Int'l

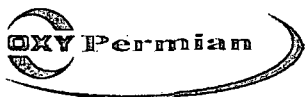
Survey Report



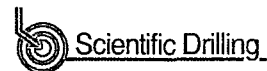
Company:	OXY	Local Co-ordinate Reference:	Well SFU-5H
Project:	Lea County, New Mexico	TVD Reference:	KB @ 3685.80usft
Site:	Speakeasy Federal Unit 5H	MD Reference:	KB @ 3685.80usft
Well:	SFU-5H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,128.00	23.46	267.20	8,117.12	16.30	-41.75	41.56	5.68	5.33	-5.56
8,223.00	29.86	269.88	8,201.98	15.33	-84.33	84.16	6.85	6.74	2.82
8,317.00	40.63	270.83	8,278.64	15.72	-138.49	138.31	11.47	11.46	1.01
8,412.00	51.97	270.04	8,344.17	16.20	-207.06	206.87	11.95	11.94	-0.83
8,506.00	56.82	267.29	8,398.88	14.36	-283.43	283.25	5.68	5.16	-2.93
8,601.00	61.18	267.18	8,447.80	10.43	-364.74	364.61	4.59	4.59	-0.12
8,695.00	68.16	266.40	8,487.99	5.66	-449.52	449.43	7.46	7.43	-0.83
8,790.00	72.99	265.48	8,519.58	-0.69	-538.86	538.83	5.17	5.08	-0.97
8,884.00	80.69	268.44	8,540.97	-5.50	-630.18	630.21	8.75	8.19	3.15
8,915.27	82.36	269.00	8,545.57	-6.19	-661.10	661.13	5.63	5.35	1.78
SFU-5H PP									
8,979.00	85.77	270.12	8,552.16	-6.68	-724.48	724.51	5.63	5.35	1.76
9,073.00	92.22	271.19	8,553.81	-5.60	-818.41	818.42	6.96	6.86	1.14
9,168.00	92.76	270.88	8,549.68	-3.89	-913.30	913.29	0.66	0.57	-0.33
9,262.00	91.68	269.51	8,546.04	-3.57	-1,007.23	1,007.21	1.85	-1.15	-1.46
9,357.00	89.23	266.76	8,545.29	-6.66	-1,102.16	1,102.16	3.88	-2.58	-2.89
9,451.00	88.32	263.78	8,547.30	-14.41	-1,195.80	1,195.89	3.31	-0.97	-3.17
9,546.00	89.02	266.12	8,549.50	-22.77	-1,290.40	1,290.58	2.57	0.74	2.46
9,640.00	89.53	268.65	8,550.69	-27.06	-1,384.29	1,384.50	2.75	0.54	2.69
9,735.00	88.39	269.75	8,552.42	-28.38	-1,479.26	1,479.48	1.67	-1.20	1.16
9,829.00	88.29	270.44	8,555.14	-28.23	-1,573.22	1,573.44	0.74	-0.11	0.73
9,924.00	88.69	269.28	8,557.64	-28.46	-1,668.19	1,668.40	1.29	0.42	-1.22
10,018.00	90.44	272.14	8,558.36	-27.30	-1,762.16	1,762.36	3.57	1.86	3.04
10,113.00	90.07	268.82	8,557.93	-26.50	-1,857.15	1,857.32	3.52	-0.39	-3.49
10,208.00	89.80	269.43	8,558.04	-27.95	-1,952.13	1,952.32	0.70	-0.28	0.64
10,302.00	89.66	270.63	8,558.48	-27.90	-2,046.13	2,046.31	1.29	-0.15	1.28
10,396.00	90.74	273.24	8,558.16	-24.73	-2,140.07	2,140.21	3.00	1.15	2.78
10,491.00	91.24	273.50	8,556.51	-19.14	-2,234.89	2,234.96	0.59	0.53	0.27
10,586.00	90.03	270.54	8,555.46	-15.80	-2,329.81	2,329.84	3.37	-1.27	-3.12
10,680.00	91.35	271.24	8,554.33	-14.34	-2,423.79	2,423.80	1.59	1.40	0.74
10,775.00	91.28	269.71	8,552.15	-13.55	-2,518.76	2,518.76	1.61	-0.07	-1.61
10,869.00	88.92	266.46	8,551.98	-16.69	-2,612.69	2,612.71	4.27	-2.51	-3.46
10,964.00	88.65	265.60	8,554.00	-23.27	-2,707.44	2,707.53	0.95	-0.28	-0.91
11,059.00	89.63	266.60	8,555.43	-29.73	-2,802.20	2,802.36	1.47	1.03	1.05
11,153.00	88.72	264.93	8,556.78	-36.67	-2,895.93	2,896.16	2.02	-0.97	-1.78
11,248.00	87.65	265.26	8,559.79	-44.79	-2,990.54	2,990.85	1.18	-1.13	0.35
11,342.00	87.85	267.54	8,563.48	-50.68	-3,084.27	3,084.64	2.43	0.21	2.43
11,437.00	88.55	269.59	8,566.46	-53.06	-3,179.19	3,179.58	2.28	0.74	2.16
11,531.00	89.87	267.10	8,567.76	-55.77	-3,273.13	3,273.55	3.00	1.40	-2.65
11,626.00	89.53	270.72	8,568.26	-57.58	-3,368.10	3,368.53	3.83	-0.36	3.81
11,720.00	90.44	270.28	8,568.28	-56.76	-3,462.09	3,462.51	1.08	0.97	-0.47
11,815.00	91.21	270.48	8,566.91	-56.13	-3,557.08	3,557.48	0.84	0.81	0.21
11,909.00	91.81	269.29	8,564.44	-56.32	-3,651.05	3,651.44	1.42	0.64	-1.27



Scientific Drilling, Int'l
Survey Report



Company:	OXY	Local Co-ordinate Reference:	Well SFU-5H
Project:	Lea County, New Mexico	TVD Reference:	KB @ 3685.80usft
Site:	Speakeasy Federal Unit 5H	MD Reference:	KB @ 3685.80usft
Well:	SFU-5H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,004.00	92.12	271.44	8,561.18	-55.71	-3,745.98	3,746.37	2.29	0.33	2.26
12,098.00	91.48	269.47	8,558.23	-54.97	-3,839.93	3,840.30	2.20	-0.68	-2.10
12,193.00	89.70	270.25	8,557.25	-55.20	-3,934.92	3,935.29	2.05	-1.87	0.82
12,287.00	88.55	271.27	8,558.68	-53.95	-4,028.90	4,029.25	1.64	-1.22	1.09
12,382.00	89.53	273.40	8,560.27	-50.08	-4,123.80	4,124.10	2.47	1.03	2.24
12,476.00	89.53	272.86	8,561.05	-44.95	-4,217.65	4,217.89	0.57	0.00	-0.57
12,571.00	89.36	269.97	8,561.97	-42.61	-4,312.61	4,312.82	3.05	-0.18	-3.04
12,666.00	90.03	271.05	8,562.47	-41.76	-4,407.60	4,407.80	1.34	0.71	1.14
12,760.00	90.70	271.55	8,561.87	-39.63	-4,501.58	4,501.74	0.89	0.71	0.53
12,855.00	90.57	271.70	8,560.82	-36.93	-4,596.53	4,596.66	0.21	-0.14	0.16
12,949.00	90.64	269.61	8,559.83	-35.86	-4,690.52	4,690.63	2.22	0.07	-2.22
13,044.00	91.24	268.11	8,558.27	-37.75	-4,785.48	4,785.61	1.70	0.63	-1.58
13,138.00	90.97	268.50	8,556.46	-40.53	-4,879.42	4,879.57	0.50	-0.29	0.41
13,232.00	91.65	267.30	8,552.14	-47.45	-5,068.24	5,068.46	0.73	0.36	-0.63
13,422.00	91.68	266.73	8,549.37	-52.40	-5,163.07	5,163.34	0.60	0.03	-0.60
13,516.00	92.01	266.69	8,546.35	-57.79	-5,256.87	5,257.19	0.35	0.35	-0.04
13,537.44	92.19	266.94	8,545.56	-58.98	-5,278.26	5,278.59	1.45	0.85	1.18
SFU-5H LTP									
13,611.00	92.82	267.81	8,542.35	-62.34	-5,351.67	5,352.03	1.45	0.85	1.18
13,641.00	93.12	265.97	8,540.79	-63.97	-5,381.59	5,381.96	6.21	1.00	-6.13
MWD Survey									
13,687.44	93.12	265.97	8,538.26	-67.23	-5,427.85	5,428.26	0.00	0.00	0.00
SFU-5H BHL									
13,699.00	93.12	265.97	8,537.63	-68.04	-5,439.36	5,439.78	0.00	0.00	0.00
Projection to Bit/TD									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
13,641.00	8,540.79	-63.97	-5,381.59	MWD Survey
13,699.00	8,537.63	-68.04	-5,439.36	Projection to Bit/TD

Checked By: _____ Approved By: _____ Date: _____



Speakeasy Federal Unit 5H
Lea County, New Mexico
Northing: 519451.10
Easting: 715354.40
Plan #4

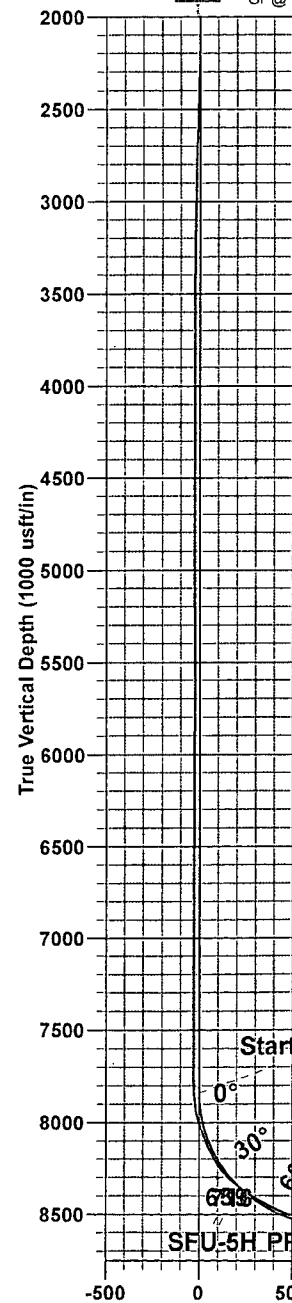


Azimuths to Grid North
True North: -0.37°
Magnetic North: 6.93°

Magnetic Field
Strength: 48466.4nT
Dip Angle: 60.30°
Date: 01/30/2014
Model: IGRF2010

To convert Magnetic North to Grid, Add 6.93°
To convert True North to Grid, Subtract 0.37°

KB @ 3685.80usft
Gr @ 3661.80

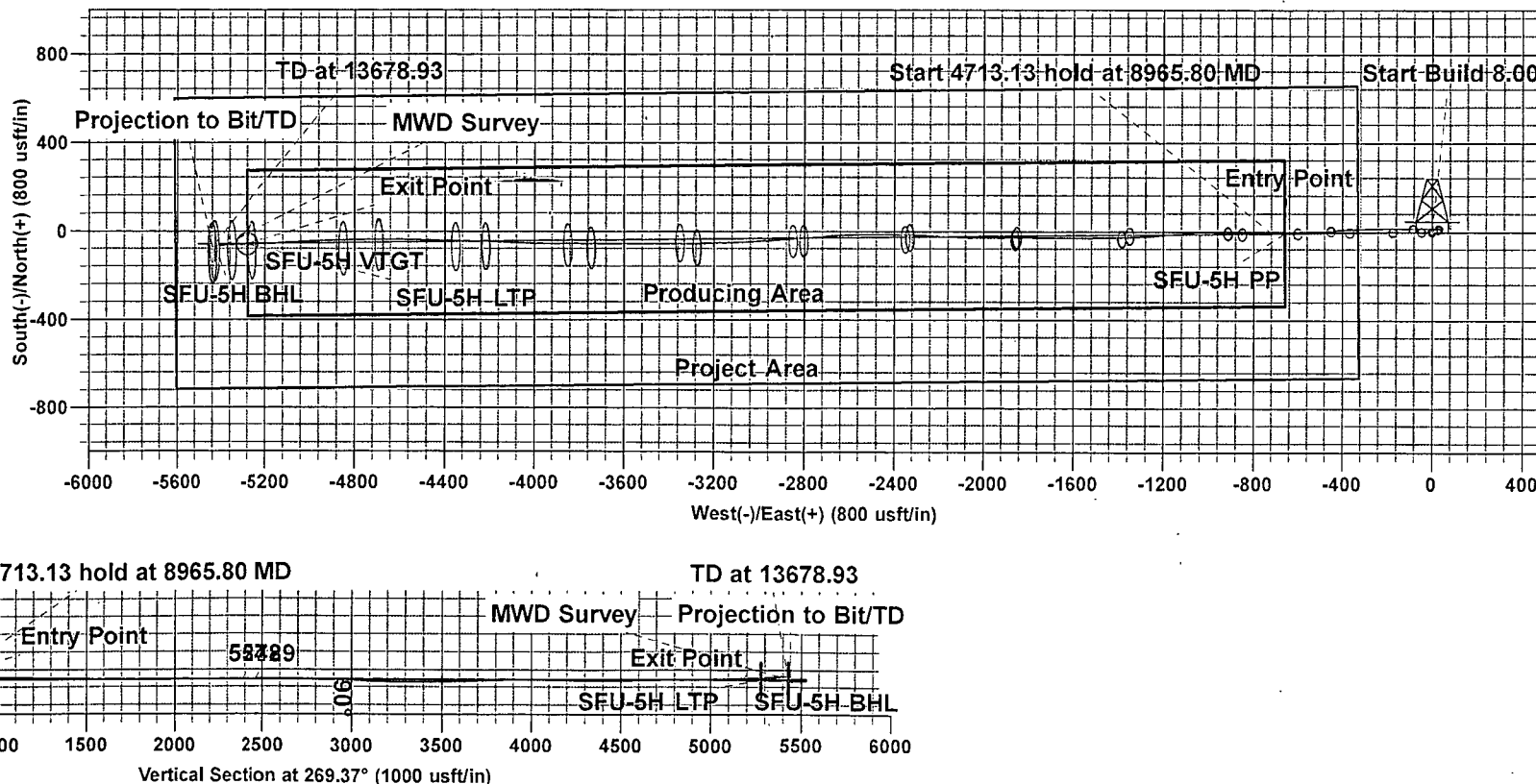


WELL DETAILS SFU-5H									
Ground Level: 3661.80									
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
0.00	0.00	519451.10	715354.40	32.42615	-103.63539				

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7840.80	0.00	0.00	7840.80	0.00	0.00	0.00	0.00	0.00	
8965.80	90.00	269.37	8557.00	-7.87	-716.15	8.00	269.37	716.20	
13679.33	90.00	269.37	8557.00	-59.70	-5429.40	0.00	0.00	5429.73	

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting		
SFU-5H PP	8554.80	-7.20	-660.00	519443.90	714694.40		
SFU-5H BHL	8557.00	-59.70	-5429.40	519391.40	709925.00		
SFU-5H LTP	8557.00	-57.90	-5278.80	519393.20	710075.60		

PROJECT DETAILS:		SITE DETAILS:	
Lea County, New Mexico		Speakeasy Federal Unit 5H	
Geodetic System: US State Plane 1927 (Exact solution)		Site Centre Northing: 519451.10	
Datum: NAD 1927 (NADCON CONUS)		Easting: 715354.40	
Ellipsoid: Clarke 1866		Positional Uncertainty: 0.00	
Zone: New Mexico East 3001		Convergence: 0.37	
System Datum: Mean Sea Level		Local North: Grid	



OXY USA INC.
Speak Easy Federal Unit 5H
API No. 30-025-42267

14-3/4" hole @ 1112'
11-3/4" csg @ 1112'
w/1030sx-TOC-Surf-Circ.

HOBBSOCD
APR 16 2015
RECEIVED

10-5/8" hole @ 4760'
8-5/8" csg @ 4758'
w/ 1280sx-TOC-Surf-Circ.

2-7/8" tbg & ESP @ 7603'

7-7/8" hole @ 13699'
5-1/2" csg @ 13699'
w/ 1700sx-TOC-Surf-Circ.

Perfs @ 9055-13512'

TD- 13699'M 8538'V