



Pacific Energy
DEVELOPMENT

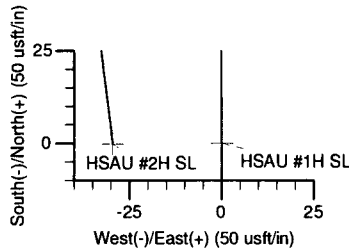
Ridgeway Arizona Oil Corp.
Project: Permian NM E'83
County: Roosevelt
Site: Haley SAU 1-2 Pad
Well: HSAU #1H
Wellbore: #1H OH
Design: Plan #1a



TITAN
Directional Drilling

CASING DETAILS

TVD	MD	Name
2000.00	2019.37	9 5/8"

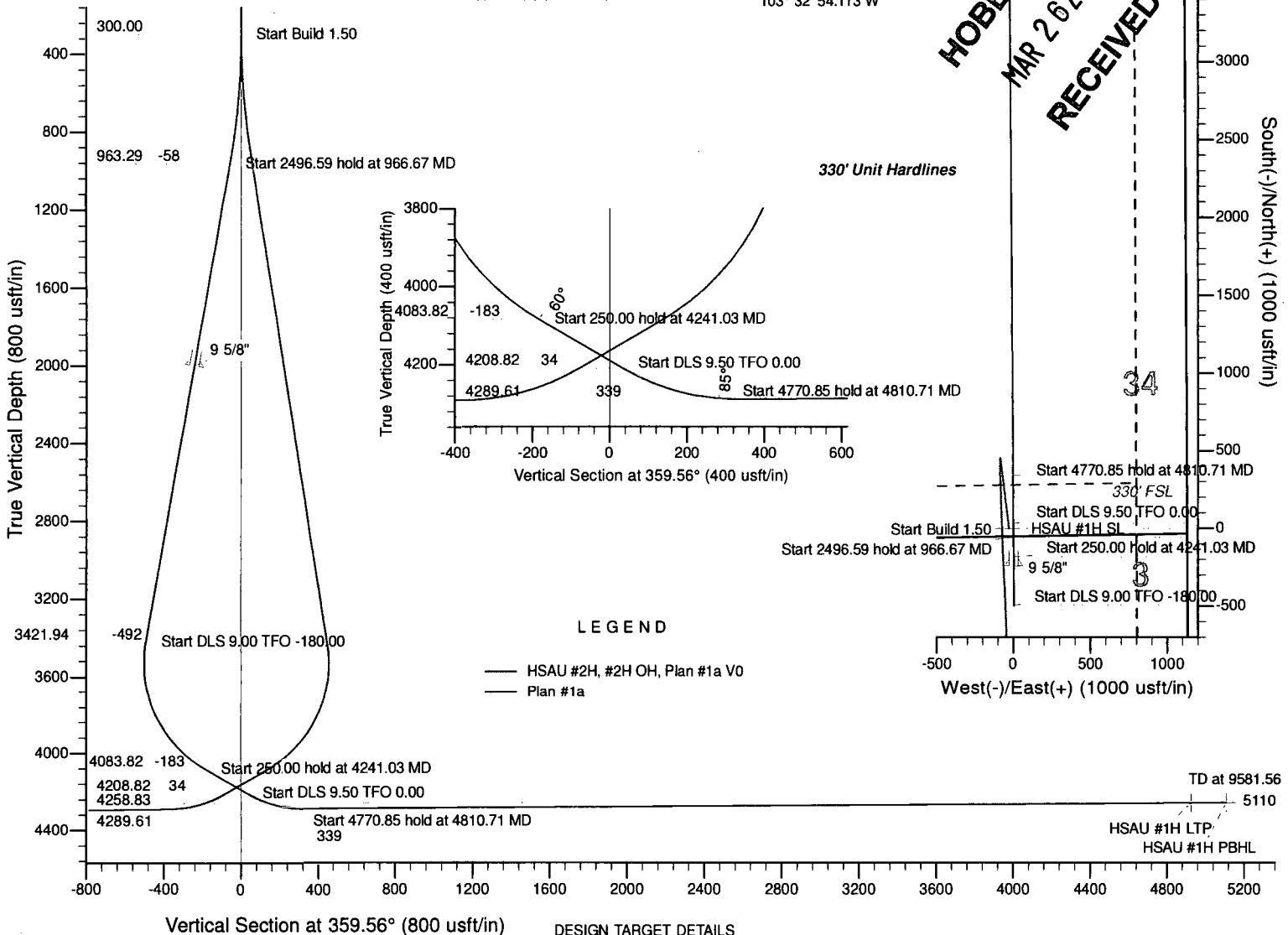
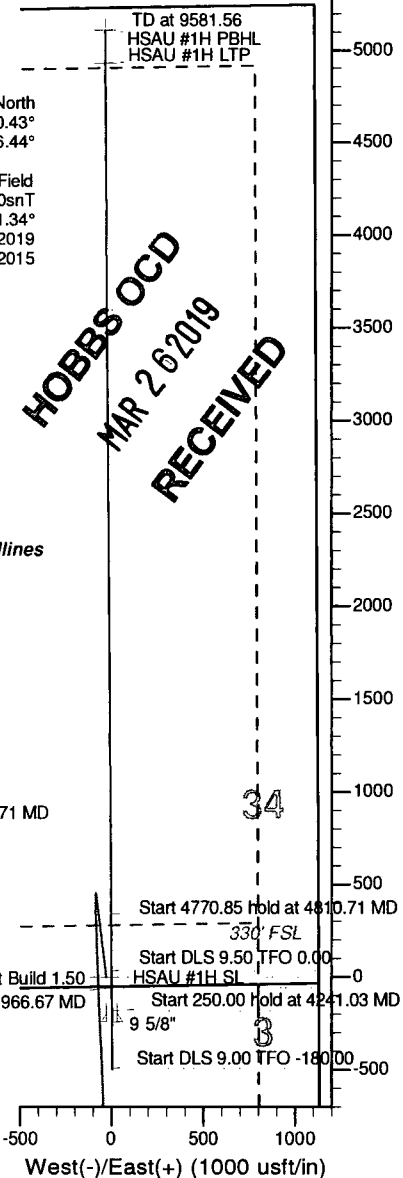


Azimuths to Grid North
True North: -0.43°
Magnetic North: 6.44°

Magnetic Field
Strength: 48613.0nT
Dip Angle: 61.34°
Date: 01/15/2019
Model: IGRF2015

US State Plane 1983
New Mexico Eastern Zone
33° 39' 25.549 N
103° 32' 54.113 W

Section Lines



LEGEND

— HSAU #2H, #2H OH, Plan #1a V0
— Plan #1a

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
HSAU #1H SL	0.00	0.00	0.00	967524.90	780193.70	33° 39' 25.549 N	103° 32' 54.113 W	Point
HSAU #1H PBHL	4258.83	5109.63	-39.40	972634.40	780154.30	33° 40' 16.100 N	103° 32' 54.120 W	Point
HSAU #1H LTP	4260.00	4927.73	-38.00	972452.50	780155.70	33° 40' 14.300 N	103° 32' 54.120 W	Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	966.67	10.00	179.56	963.29	-58.03	0.45	1.50	179.56	-58.03	
4	3463.25	10.00	179.56	3421.94	-491.54	3.79	0.00	0.00	-491.56	
5	4241.03	60.00	359.56	4083.82	-182.91	1.41	9.00	-180.00	-182.92	
6	4491.03	60.00	359.56	4208.82	33.59	-0.26	0.00	0.00	33.59	
7	4810.71	90.37	359.56	4289.61	339.03	-2.61	9.50	0.00	339.04	
8	9581.56	90.37	359.56	4258.83	5109.63	-39.40	0.00	0.00	5109.78	

Titan Directional Drilling

Survey Report

Company:	Ridgeway Arizona Oil Corp.	Local Co-ordinate Reference:	Well HSAU #1H
Project:	Permian NM E'83	TVD Reference:	GL+KB @ 4391.00usft (planning)
Site:	Haley SAU 1-2 Pad	MD Reference:	GL+KB @ 4391.00usft (planning)
Well:	HSAU #1H	North Reference:	Grid
Wellbore:	#1H OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1a	Database:	EDM 5k-14

Project	Permian NM E'83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone	Using geodetic scale factor	

Site		Haley SAU 1-2 Pad, Centered on Haley SAU #1H			
Site Position:		Northing:	967,524.90 usft	Latitude:	33° 39' 25.549 N
From:	Map	Easting:	780,193.70 usft	Longitude:	103° 32' 54.113 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.44 °

Well	HSAU #1H					
Well Position	+N/-S	0.00 usft	Northing:	967,524.90 usft	Latitude:	33° 39' 25.549 N
	+E/-W	0.00 usft	Easting:	780,193.70 usft	Longitude:	103° 32' 54.113 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,375.00 usft

Wellbore	#1H OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	01/15/19	6.88	61.34	48,613.00800626

Design	Plan #1a				
Audit Notes:					
Version:		Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	359.56	

Planned 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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	1.50	179.56	399.99	-1.31	0.01	-1.31	1.50	1.50	0.00
500.00	3.00	179.56	499.91	-5.23	0.04	-5.23	1.50	1.50	0.00
600.00	4.50	179.56	599.69	-11.77	0.09	-11.77	1.50	1.50	0.00
700.00	6.00	179.56	699.27	-20.92	0.16	-20.92	1.50	1.50	0.00
800.00	7.50	179.56	798.57	-32.68	0.25	-32.68	1.50	1.50	0.00
900.00	9.00	179.56	897.54	-47.03	0.36	-47.03	1.50	1.50	0.00
966.67	10.00	179.56	963.29	-58.03	0.45	-58.03	1.50	1.50	0.00
1,000.00	10.00	179.56	996.11	-63.82	0.49	-63.82	0.00	0.00	0.00
1,100.00	10.00	179.56	1,094.59	-81.18	0.63	-81.18	0.00	0.00	0.00
1,200.00	10.00	179.56	1,193.08	-98.55	0.76	-98.55	0.00	0.00	0.00
1,300.00	10.00	179.56	1,291.56	-115.91	0.89	-115.91	0.00	0.00	0.00
1,400.00	10.00	179.56	1,390.04	-133.27	1.03	-133.28	0.00	0.00	0.00
1,500.00	10.00	179.56	1,488.52	-150.64	1.16	-150.64	0.00	0.00	0.00

Titan Directional Drilling

Survey Report

Company:	Ridgeway Arizona Oil Corp.	Local Co-ordinate Reference:	Well HSAU #1H
Project:	Permian NM E'83	TVD Reference:	GL+KB @ 4391.00usft (planning)
Site:	Haley SAU 1-2 Pad	MD Reference:	GL+KB @ 4391.00usft (planning)
Well:	HSAU #1H	North Reference:	Grid
Wellbore:	#1H OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1a	Database:	EDM 5k-14

Planned 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)
1,600.00	10.00	179.56	1,587.00	-168.00	1.30	-168.01	0.00	0.00	0.00
1,700.00	10.00	179.56	1,685.48	-185.37	1.43	-185.37	0.00	0.00	0.00
1,800.00	10.00	179.56	1,783.96	-202.73	1.56	-202.74	0.00	0.00	0.00
1,900.00	10.00	179.56	1,882.44	-220.10	1.70	-220.10	0.00	0.00	0.00
2,000.00	10.00	179.56	1,980.92	-237.46	1.83	-237.47	0.00	0.00	0.00
2,019.37	10.00	179.56	2,000.00	-240.82	1.86	-240.83	0.00	0.00	0.00
9 5/8"									
2,100.00	10.00	179.56	2,079.40	-254.82	1.96	-254.83	0.00	0.00	0.00
2,200.00	10.00	179.56	2,177.88	-272.19	2.10	-272.20	0.00	0.00	0.00
2,300.00	10.00	179.56	2,276.36	-289.55	2.23	-289.56	0.00	0.00	0.00
2,400.00	10.00	179.56	2,374.85	-306.92	2.37	-306.93	0.00	0.00	0.00
2,500.00	10.00	179.56	2,473.33	-324.28	2.50	-324.29	0.00	0.00	0.00
2,600.00	10.00	179.56	2,571.81	-341.65	2.63	-341.66	0.00	0.00	0.00
2,700.00	10.00	179.56	2,670.29	-359.01	2.77	-359.02	0.00	0.00	0.00
2,800.00	10.00	179.56	2,768.77	-376.37	2.90	-376.39	0.00	0.00	0.00
2,900.00	10.00	179.56	2,867.25	-393.74	3.04	-393.75	0.00	0.00	0.00
3,000.00	10.00	179.56	2,965.73	-411.10	3.17	-411.11	0.00	0.00	0.00
3,100.00	10.00	179.56	3,064.21	-428.47	3.30	-428.48	0.00	0.00	0.00
3,200.00	10.00	179.56	3,162.69	-445.83	3.44	-445.84	0.00	0.00	0.00
3,300.00	10.00	179.56	3,261.17	-463.20	3.57	-463.21	0.00	0.00	0.00
3,400.00	10.00	179.56	3,359.65	-480.56	3.71	-480.57	0.00	0.00	0.00
3,463.25	10.00	179.56	3,421.94	-491.54	3.79	-491.56	0.00	0.00	0.00
3,500.00	6.69	179.56	3,458.30	-496.88	3.83	-496.89	9.00	-9.00	0.00
3,550.00	2.19	179.56	3,508.13	-500.75	3.86	-500.76	9.00	-9.00	0.00
3,600.00	2.31	359.56	3,558.12	-500.70	3.86	-500.71	9.00	0.23	-360.00
3,650.00	6.81	359.56	3,607.95	-496.73	3.83	-496.74	9.00	9.00	0.00
3,700.00	11.31	359.56	3,657.31	-488.86	3.77	-488.87	9.00	9.00	0.00
3,750.00	15.81	359.56	3,705.91	-477.14	3.68	-477.15	9.00	9.00	0.00
3,800.00	20.31	359.56	3,753.43	-461.65	3.56	-461.66	9.00	9.00	0.00
3,850.00	24.81	359.56	3,799.60	-442.47	3.41	-442.48	9.00	9.00	0.00
3,900.00	29.31	359.56	3,844.11	-419.73	3.24	-419.75	9.00	9.00	0.00
3,950.00	33.81	359.56	3,886.71	-393.57	3.03	-393.59	9.00	9.00	0.00
4,000.00	38.31	359.56	3,927.12	-364.15	2.81	-364.16	9.00	9.00	0.00
4,050.00	42.81	359.56	3,965.10	-331.65	2.56	-331.66	9.00	9.00	0.00
4,100.00	47.31	359.56	4,000.41	-296.27	2.28	-296.28	9.00	9.00	0.00
4,150.00	51.81	359.56	4,032.83	-258.23	1.99	-258.24	9.00	9.00	0.00
4,200.00	56.31	359.56	4,062.18	-217.76	1.68	-217.77	9.00	9.00	0.00
4,241.03	60.00	359.56	4,083.82	-182.91	1.41	-182.92	9.00	9.00	0.00
4,300.00	60.00	359.56	4,113.31	-131.85	1.02	-131.85	0.00	0.00	0.00
4,400.00	60.00	359.56	4,163.31	-45.25	0.35	-45.25	0.00	0.00	0.00
4,491.03	60.00	359.56	4,208.82	33.59	-0.26	33.59	0.00	0.00	0.00
4,500.00	60.85	359.56	4,213.25	41.39	-0.32	41.39	9.50	9.50	0.00
4,550.00	65.60	359.56	4,235.76	86.01	-0.66	86.02	9.50	9.50	0.00
4,600.00	70.35	359.56	4,254.51	132.35	-1.02	132.35	9.50	9.50	0.00

Titan Directional Drilling

Survey Report

Company:	Ridgeway Arizona Oil Corp.	Local Co-ordinate Reference:	Well HSAU #1H
Project:	Permian NM E'83	TVD Reference:	GL+KB @ 4391.00usft (planning)
Site:	Haley SAU 1-2 Pad	MD Reference:	GL+KB @ 4391.00usft (planning)
Well:	HSAU #1H	North Reference:	Grid
Wellbore:	#1H OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1a	Database:	EDM 5k-14

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
4,650.00	75.10	359.56	4,269.35	180.08	-1.39	180.09	9.50	9.50	0.00
4,700.00	79.85	359.56	4,280.19	228.88	-1.76	228.88	9.50	9.50	0.00
4,750.00	84.60	359.56	4,286.95	278.40	-2.15	278.41	9.50	9.50	0.00
4,800.00	89.35	359.56	4,289.58	328.31	-2.53	328.32	9.50	9.50	0.00
4,810.71	90.37	359.56	4,289.61	339.03	-2.61	339.04	9.50	9.50	0.00
4,900.00	90.37	359.56	4,289.03	428.31	-3.30	428.32	0.00	0.00	0.00
5,000.00	90.37	359.56	4,288.39	528.30	-4.07	528.32	0.00	0.00	0.00
5,100.00	90.37	359.56	4,287.74	628.30	-4.84	628.32	0.00	0.00	0.00
5,200.00	90.37	359.56	4,287.10	728.29	-5.62	728.32	0.00	0.00	0.00
5,300.00	90.37	359.56	4,286.45	828.29	-6.39	828.31	0.00	0.00	0.00
5,400.00	90.37	359.56	4,285.81	928.28	-7.16	928.31	0.00	0.00	0.00
5,500.00	90.37	359.56	4,285.16	1,028.28	-7.93	1,028.31	0.00	0.00	0.00
5,600.00	90.37	359.56	4,284.52	1,128.27	-8.70	1,128.31	0.00	0.00	0.00
5,700.00	90.37	359.56	4,283.87	1,228.27	-9.47	1,228.31	0.00	0.00	0.00
5,800.00	90.37	359.56	4,283.23	1,328.26	-10.24	1,328.30	0.00	0.00	0.00
5,900.00	90.37	359.56	4,282.58	1,428.26	-11.01	1,428.30	0.00	0.00	0.00
6,000.00	90.37	359.56	4,281.94	1,528.25	-11.78	1,528.30	0.00	0.00	0.00
6,100.00	90.37	359.56	4,281.29	1,628.25	-12.56	1,628.30	0.00	0.00	0.00
6,200.00	90.37	359.56	4,280.65	1,728.24	-13.33	1,728.30	0.00	0.00	0.00
6,300.00	90.37	359.56	4,280.00	1,828.24	-14.10	1,828.29	0.00	0.00	0.00
6,400.00	90.37	359.56	4,279.36	1,928.23	-14.87	1,928.29	0.00	0.00	0.00
6,500.00	90.37	359.56	4,278.71	2,028.23	-15.64	2,028.29	0.00	0.00	0.00
6,600.00	90.37	359.56	4,278.06	2,128.22	-16.41	2,128.29	0.00	0.00	0.00
6,700.00	90.37	359.56	4,277.42	2,228.22	-17.18	2,228.29	0.00	0.00	0.00
6,800.00	90.37	359.56	4,276.77	2,328.21	-17.95	2,328.28	0.00	0.00	0.00
6,900.00	90.37	359.56	4,276.13	2,428.21	-18.72	2,428.28	0.00	0.00	0.00
7,000.00	90.37	359.56	4,275.48	2,528.20	-19.50	2,528.28	0.00	0.00	0.00
7,100.00	90.37	359.56	4,274.84	2,628.20	-20.27	2,628.28	0.00	0.00	0.00
7,200.00	90.37	359.56	4,274.19	2,728.19	-21.04	2,728.27	0.00	0.00	0.00
7,300.00	90.37	359.56	4,273.55	2,828.19	-21.81	2,828.27	0.00	0.00	0.00
7,400.00	90.37	359.56	4,272.90	2,928.18	-22.58	2,928.27	0.00	0.00	0.00
7,500.00	90.37	359.56	4,272.26	3,028.18	-23.35	3,028.27	0.00	0.00	0.00
7,600.00	90.37	359.56	4,271.61	3,128.17	-24.12	3,128.27	0.00	0.00	0.00
7,700.00	90.37	359.56	4,270.97	3,228.17	-24.89	3,228.26	0.00	0.00	0.00
7,800.00	90.37	359.56	4,270.32	3,328.16	-25.66	3,328.26	0.00	0.00	0.00
7,900.00	90.37	359.56	4,269.68	3,428.16	-26.43	3,428.26	0.00	0.00	0.00
8,000.00	90.37	359.56	4,269.03	3,528.15	-27.21	3,528.26	0.00	0.00	0.00
8,100.00	90.37	359.56	4,268.39	3,628.15	-27.98	3,628.26	0.00	0.00	0.00
8,200.00	90.37	359.56	4,267.74	3,728.14	-28.75	3,728.25	0.00	0.00	0.00
8,300.00	90.37	359.56	4,267.10	3,828.14	-29.52	3,828.25	0.00	0.00	0.00
8,400.00	90.37	359.56	4,266.45	3,928.13	-30.29	3,928.25	0.00	0.00	0.00
8,500.00	90.37	359.56	4,265.80	4,028.13	-31.06	4,028.25	0.00	0.00	0.00
8,600.00	90.37	359.56	4,265.16	4,128.12	-31.83	4,128.25	0.00	0.00	0.00

Titan Directional Drilling

Survey Report

Company:	Ridgeway Arizona Oil Corp.	Local Co-ordinate Reference:	Well HSAU #1H
Project:	Permian NM E'83	TVD Reference:	GL+KB @ 4391.00usft (planning)
Site:	Haley SAU 1-2 Pad	MD Reference:	GL+KB @ 4391.00usft (planning)
Well:	HSAU #1H	North Reference:	Grid
Wellbore:	#1H OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1a	Database:	EDM 5k-14

Planned 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)
8,700.00	90.37	359.56	4,264.51	4,228.12	-32.60	4,228.24	0.00	0.00	0.00
8,800.00	90.37	359.56	4,263.87	4,328.11	-33.37	4,328.24	0.00	0.00	0.00
8,900.00	90.37	359.56	4,263.22	4,428.11	-34.15	4,428.24	0.00	0.00	0.00
9,000.00	90.37	359.56	4,262.58	4,528.10	-34.92	4,528.24	0.00	0.00	0.00
9,100.00	90.37	359.56	4,261.93	4,628.10	-35.69	4,628.24	0.00	0.00	0.00
9,200.00	90.37	359.56	4,261.29	4,728.09	-36.46	4,728.23	0.00	0.00	0.00
9,300.00	90.37	359.56	4,260.64	4,828.09	-37.23	4,828.23	0.00	0.00	0.00
9,400.00	90.37	359.56	4,260.00	4,928.08	-38.00	4,928.23	0.00	0.00	0.00
9,500.00	90.37	359.56	4,259.35	5,028.08	-38.77	5,028.23	0.00	0.00	0.00
9,581.56	90.37	359.56	4,258.83	5,109.63	-39.40	5,109.78	0.00	0.00	0.00

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
2,019.37	2,000.00	9 5/8"	9-5/8	13-1/2