

Results of Directional Survey

API number:	30-025-40472		
OGRID:		Operator:	YATES PETROLEUM CORPORATION
		Property:	AVOCADO BRO STATE # 1H

surface	ULSTR:	D	32	T	20S	R	35E
				150	FNL	660	FWL

BH Loc	ULSTR:	D	29	T	20S	R	35E
15667	MD	10934.4	TVD	477	FNL	624	FWL
				4803	FSL		

Top Perf/OH	ULSTR:	D	32	T	20S	R	35E
11195	MD	10918.6	TVD	331	FSL	667	FWL

Bot Perf/OH	ULSTR:	D	29	T	20S	R	35E
15600	MD	10933.6	TVD	544	FNL	625	FWL
				4736	FSL		

	MD	N/S	E/W	VD
	11194	480.40	6.90	10918.6
TOP PERFS/OH	11195	481.40	6.89	10918.61
	11243	529.30	6.30	10919.30
	15467	4752.50	-32.20	10931.90
BOT PERFS/OH	15600	4885.50	-34.73	10933.56
	15667	4952.50	-36.00	10934.40

NEXT TO LAST	15467	4752.50	-32.20	10931.90
LAST READING	15667	4952.50	-36.00	10934.40
TD	15667	4952.50	-36.00	10934.40

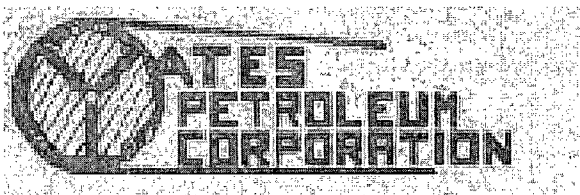
Surface Location	150	FN	660	FW
Projected BHL	4803	FS	624	FW
Location of				
Top Perfs/OH	331	FS	667	FW
Bottom Perfs/OH	4736	FS	625	FW

SUMMARY of Subsurface Locations

Surface Location	D-32-20S-35E	150	FN	660	FW	Vert. Depth
Top Perfs/OH	D-32-20S-35E	331	FS	667	FW	10918.61
Bottom Perfs/OH	D-29-20S-35E	4736	FS	625	FW	10933.56
Projected TD	D-29-20S-35E	4803	FS	624	FW	10934.40

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ONE/RADMS TEST 03/21/14



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Yates Petroleum

Lea County, NM (NAD-83)

Avocado BRO State

#1H

OH

Design: OH

Standard Survey Report

23 September, 2013

CRESCENT
DIRECTIONAL DRILLING



Survey Report



Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD-83)	TVD Reference:	WELL @ 3696.0usft (Cactus #124 - 25' KB)
Site:	Avocado BRO State	MD Reference:	WELL @ 3696.0usft (Cactus #124 - 25' KB)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Project	Lea County, NM (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Avocado BRO State		
Site Position:		Northing:	559,956.90 usft
From:	Map	Easting:	802,490.44 usft
Position Uncertainty:	2.0 usft	Slot Radius:	12-1/4 "
		Latitude:	32° 32' 11.487 N
		Longitude:	103° 29' 9.288 W
		Grid Convergence:	0.46 °

Well	#1H		
Well Position	+N/-S	0.0 usft	Northing: 559,956.90 usft
	+E/-W	0.0 usft	Easting: 802,490.44 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 32' 11.487 N
		Longitude:	103° 29' 9.288 W
		Ground Level:	3,696.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	7/11/2013	7.31
			Dip Angle (°)
			60.44
			Field Strength (nT)
			48,604

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction (°)
			359.54

Survey Program	Date 9/23/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
200.0	5,775.0	Survey #1 - MS Gyro1 (OH)	CB-GYRO-MS
5,946.0	15,467.0	Survey #2 - MWD1 (OH)	MWD
15,667.0	15,667.0	Survey #3 - PTB (OH)	BLIND
			Description
			Camera based gyro multishot
			MWD - Standard
			Blind drilling, where no tool is applied

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)
	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	200.0	0.29	290.11	200.0	0.2	-0.5	0.2	0.15	0.15	0.00
	400.0	0.30	290.61	400.0	0.5	-1.4	0.5	0.01	0.01	0.25
	600.0	0.18	260.04	600.0	0.7	-2.2	0.7	0.09	-0.06	-15.29
	800.0	0.23	203.58	800.0	0.2	-2.7	0.3	0.10	0.03	-28.23
	1,000.0	0.23	217.43	1,000.0	-0.4	-3.1	-0.4	0.03	0.00	6.93
	1,200.0	0.28	258.65	1,200.0	-0.9	-3.8	-0.8	0.09	0.03	20.61
	1,400.0	0.25	256.69	1,400.0	-1.1	-4.7	-1.0	0.02	-0.02	-0.98
	1,600.0	0.30	249.08	1,600.0	-1.3	-5.7	-1.3	0.03	0.03	-3.81

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Site:	Avocado BRO State	MD Reference:	WELL @ 3696.0usft (Cactus #124 - 25' KB)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

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)	
1,800.0	0.23	233.84	1,800.0	-1.8	-6.5	-1.7	0.05	-0.04	-7.62	
2,000.0	0.29	191.11	2,000.0	-2.5	-6.9	-2.4	0.10	0.03	-21.37	
2,200.0	0.23	139.31	2,200.0	-3.3	-6.7	-3.2	0.12	-0.03	-25.90	
2,400.0	0.26	150.78	2,400.0	-4.0	-6.2	-4.0	0.03	0.02	5.74	
2,600.0	0.27	142.81	2,600.0	-4.8	-5.7	-4.7	0.02	0.01	-3.99	
2,800.0	0.19	142.65	2,800.0	-5.4	-5.3	-5.4	0.04	-0.04	-0.08	
3,000.0	0.33	86.78	3,000.0	-5.6	-4.5	-5.6	0.14	0.07	-27.94	
3,200.0	0.68	78.94	3,200.0	-5.4	-2.7	-5.4	0.18	0.18	-3.92	
3,400.0	0.27	8.89	3,400.0	-4.7	-1.5	-4.7	0.32	-0.21	-35.03	
3,600.0	0.39	359.75	3,600.0	-3.5	-1.4	-3.5	0.07	0.06	-4.57	
3,800.0	0.15	325.27	3,800.0	-2.7	-1.6	-2.6	0.14	-0.12	-17.24	
4,000.0	0.06	14.23	4,000.0	-2.3	-1.7	-2.3	0.06	-0.05	24.48	
4,200.0	0.41	66.94	4,200.0	-2.0	-1.0	-1.9	0.19	0.18	26.36	
4,400.0	0.35	115.56	4,399.9	-1.9	0.2	-1.9	0.16	-0.03	24.31	
4,600.0	0.61	75.89	4,599.9	-1.9	1.8	-2.0	0.20	0.13	-19.84	
4,800.0	0.72	60.41	4,799.9	-1.1	3.9	-1.1	0.10	0.06	-7.74	
5,000.0	0.83	76.53	4,999.9	-0.1	6.4	-0.2	0.12	0.06	8.06	
5,200.0	0.79	97.15	5,199.9	0.1	9.2	0.0	0.15	-0.02	10.31	
5,400.0	1.10	95.26	5,399.9	-0.3	12.5	-0.4	0.16	0.16	-0.95	
5,600.0	0.82	85.25	5,599.8	-0.3	15.8	-0.5	0.16	-0.14	-5.01	
5,775.0	0.86	85.04	5,774.8	-0.1	18.4	-0.3	0.02	0.02	-0.12	
Tie into Gyro @ 5775' MD										
5,946.0	1.20	79.60	5,945.8	0.3	21.4	0.1	0.21	0.20	-3.18	
6,041.0	0.30	233.90	6,040.8	0.3	22.2	0.2	1.55	-0.95	162.42	
6,136.0	0.20	246.30	6,135.8	0.1	21.8	0.0	0.12	-0.11	13.05	
6,230.0	0.00	237.30	6,229.8	0.1	21.7	-0.1	0.21	-0.21	0.00	
6,325.0	0.20	66.50	6,324.8	0.1	21.8	0.0	0.21	0.21	0.00	
6,419.0	0.20	138.60	6,418.8	0.1	22.1	-0.1	0.25	0.00	76.70	
6,513.0	1.30	246.50	6,512.8	-0.5	21.2	-0.6	1.46	1.17	114.79	
6,607.0	1.20	245.00	6,606.7	-1.3	19.3	-1.5	0.11	-0.11	-1.60	
6,702.0	1.10	249.60	6,701.7	-2.1	17.6	-2.2	0.14	-0.11	4.84	
6,796.0	1.20	255.50	6,795.7	-2.6	15.8	-2.7	0.16	0.11	6.28	
6,891.0	1.10	254.50	6,890.7	-3.1	13.9	-3.2	0.11	-0.11	-1.05	
6,985.0	0.90	247.80	6,984.7	-3.6	12.4	-3.7	0.25	-0.21	-7.13	
7,080.0	1.20	250.90	7,079.7	-4.2	10.8	-4.3	0.32	0.32	3.26	
7,174.0	1.40	253.20	7,173.6	-4.9	8.7	-5.0	0.22	0.21	2.45	
7,269.0	0.60	237.70	7,268.6	-5.5	7.2	-5.5	0.88	-0.84	-16.32	
7,363.0	0.60	208.70	7,362.6	-6.2	6.5	-6.2	0.32	0.00	-30.85	
7,457.0	1.30	284.30	7,456.6	-6.4	5.3	-6.4	1.37	0.74	80.43	
7,552.0	0.80	22.60	7,551.6	-5.5	4.5	-5.5	1.71	-0.53	103.47	
7,646.0	0.50	9.20	7,645.6	-4.5	4.8	-4.5	0.36	-0.32	-14.26	
7,741.0	0.60	24.40	7,740.6	-3.6	5.1	-3.6	0.19	0.11	16.00	
7,835.0	0.60	29.10	7,834.6	-2.7	5.5	-2.8	0.05	0.00	5.00	



Survey Report



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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)	
7,930.0	0.60	46.70	7,929.6	-1.9	6.1	-2.0	0.19	0.00	18.53	
8,025.0	0.50	50.00	8,024.6	-1.3	6.8	-1.4	0.11	-0.11	3.47	
8,119.0	0.40	60.20	8,118.6	-0.9	7.4	-1.0	0.14	-0.11	10.85	
8,308.0	0.70	66.80	8,307.6	-0.1	9.0	-0.2	0.16	0.16	3.49	
8,403.0	0.60	316.40	8,402.6	0.5	9.2	0.4	1.13	-0.11	-116.21	
8,498.0	0.50	325.50	8,497.6	1.2	8.6	1.1	0.14	-0.11	9.58	
8,593.0	0.80	311.00	8,592.5	1.9	7.9	1.9	0.36	0.32	-15.26	
8,687.0	0.70	314.20	8,686.5	2.8	7.0	2.7	0.12	-0.11	3.40	
8,781.0	0.60	314.60	8,780.5	3.5	6.2	3.5	0.11	-0.11	0.43	
8,876.0	0.50	354.00	8,875.5	4.3	5.8	4.2	0.40	-0.11	41.47	
8,971.0	0.80	329.90	8,970.5	5.3	5.5	5.2	0.42	0.32	-25.37	
9,065.0	0.90	325.60	9,064.5	6.4	4.7	6.4	0.13	0.11	-4.57	
9,160.0	0.40	232.00	9,159.5	6.8	4.0	6.8	1.06	-0.53	-98.53	
9,255.0	0.40	211.90	9,254.5	6.4	3.6	6.3	0.15	0.00	-21.16	
9,444.0	1.10	193.10	9,443.5	4.0	2.8	4.0	0.39	0.37	-9.95	
9,539.0	1.50	205.40	9,538.5	2.0	2.1	2.0	0.51	0.42	12.95	
9,633.0	0.70	271.70	9,632.4	0.9	1.0	0.9	1.46	-0.85	70.53	
9,728.0	0.90	226.70	9,727.4	0.4	-0.1	0.4	0.67	0.21	-47.37	
9,835.0	0.50	172.40	9,834.4	-0.6	-0.7	-0.6	0.68	-0.37	-50.75	
9,930.0	0.50	150.70	9,929.4	-1.4	-0.4	-1.4	0.20	0.00	-22.84	
10,024.0	0.50	153.30	10,023.4	-2.1	0.0	-2.1	0.02	0.00	2.77	
10,118.0	0.50	160.40	10,117.4	-2.9	0.3	-2.9	0.07	0.00	7.55	
10,213.0	0.40	162.80	10,212.4	-3.6	0.5	-3.6	0.11	-0.11	2.53	
10,308.0	0.60	179.00	10,307.4	-4.4	0.6	-4.4	0.26	0.21	17.05	
10,378.0	0.70	172.50	10,377.4	-5.2	0.7	-5.2	0.18	0.14	-9.29	
10,431.0	0.50	46.90	10,430.4	-5.3	0.9	-5.3	2.02	-0.38	-236.98	
KOP - 10431.0 MD, 10430.4 TVD, 0.50° INC, -5.3° VS										
10,463.0	4.00	16.50	10,462.4	-4.2	1.3	-4.2	11.18	10.94	-95.00	
10,494.0	8.30	13.70	10,493.2	-1.0	2.2	-1.0	13.90	13.87	-9.03	
10,526.0	12.00	11.50	10,524.7	4.6	3.4	4.5	11.62	11.56	-6.88	
10,557.0	15.70	10.10	10,554.8	11.8	4.8	11.8	11.98	11.94	-4.52	
10,588.0	18.90	6.60	10,584.4	21.0	6.1	20.9	10.85	10.32	-11.29	
10,620.0	22.10	4.10	10,614.3	32.1	7.1	32.1	10.37	10.00	-7.81	
10,651.0	26.10	2.70	10,642.6	44.8	7.8	44.7	13.03	12.90	-4.52	
10,683.0	30.40	3.40	10,670.8	59.9	8.6	59.8	13.48	13.44	2.19	
10,714.0	35.10	3.80	10,696.9	76.6	9.7	76.5	15.18	15.16	1.29	
10,745.0	38.80	3.80	10,721.7	95.2	10.9	95.1	11.94	11.94	0.00	
10,777.0	41.60	3.30	10,746.1	115.8	12.2	115.7	8.81	8.75	-1.56	
10,806.0	44.40	3.20	10,767.3	135.6	13.3	135.4	9.66	9.66	-0.34	
10,838.0	48.50	2.00	10,789.3	158.7	14.4	158.6	13.10	12.81	-3.75	
10,862.0	50.90	0.80	10,804.9	177.0	14.8	176.9	10.70	10.00	-5.00	
10,893.0	52.60	0.30	10,824.1	201.4	15.1	201.2	5.63	5.48	-1.61	
10,924.0	54.90	359.10	10,842.4	226.4	14.9	226.2	8.05	7.42	-3.87	
10,955.0	58.20	357.80	10,859.5	252.2	14.2	252.1	11.21	10.65	-4.19	

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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)
10,986.0	63.00	357.50	10,874.7	279.2	13.1	279.1	15.51	15.48	-0.97
11,018.0	67.70	357.40	10,888.0	308.2	11.8	308.1	14.69	14.69	-0.31
11,049.0	72.80	357.60	10,898.5	337.4	10.5	337.3	16.46	16.45	0.65
11,081.0	77.20	357.70	10,906.8	368.2	9.3	368.2	13.75	13.75	0.31
11,105.0	80.10	358.10	10,911.5	391.8	8.4	391.7	12.19	12.08	1.67
11,131.0	83.40	359.00	10,915.2	417.5	7.8	417.4	13.15	12.69	3.46
11,163.0	87.70	359.30	10,917.7	449.4	7.3	449.3	13.47	13.44	0.94
11,194.0	89.20	359.10	10,918.6	480.4	6.9	480.3	4.88	4.84	-0.65
EOC: 11194.0' MD, 10918.6' TVD, 89.20° INC, 480.3' VS									
11,243.0	89.00	359.50	10,919.3	529.3	6.3	529.3	0.91	-0.41	0.82
11,288.0	88.50	359.60	10,920.3	574.3	5.9	574.3	1.13	-1.11	0.22
11,382.0	89.10	359.50	10,922.3	668.3	5.2	668.2	0.65	0.64	-0.11
11,476.0	89.30	359.40	10,923.6	762.3	4.3	762.2	0.24	0.21	-0.11
11,571.0	90.70	359.00	10,923.6	857.3	2.9	857.2	1.53	1.47	-0.42
11,666.0	90.30	358.90	10,922.8	952.3	1.2	952.2	0.43	-0.42	-0.11
11,760.0	90.20	358.70	10,922.3	1,046.2	-0.8	1,046.2	0.24	-0.11	-0.21
11,855.0	90.60	358.60	10,921.7	1,141.2	-3.0	1,141.2	0.43	0.42	-0.11
11,949.0	90.80	358.60	10,920.5	1,235.2	-5.3	1,235.2	0.21	0.21	0.00
12,044.0	90.70	358.60	10,919.3	1,330.1	-7.6	1,330.2	0.11	-0.11	0.00
12,138.0	89.30	359.20	10,919.3	1,424.1	-9.4	1,424.1	1.62	-1.49	0.64
12,233.0	89.10	359.70	10,920.6	1,519.1	-10.3	1,519.1	0.57	-0.21	0.53
12,328.0	89.20	359.50	10,922.0	1,614.1	-11.0	1,614.1	0.24	0.11	-0.21
12,423.0	89.50	0.30	10,923.1	1,709.1	-11.2	1,709.1	0.90	0.32	0.84
12,517.0	90.00	0.30	10,923.5	1,803.1	-10.7	1,803.1	0.53	0.53	0.00
12,612.0	90.90	0.00	10,922.8	1,898.1	-10.4	1,898.1	1.00	0.95	-0.32
12,707.0	90.70	359.80	10,921.4	1,993.1	-10.6	1,993.1	0.30	-0.21	-0.21
12,802.0	90.40	359.50	10,920.5	2,088.1	-11.2	2,088.1	0.45	-0.32	-0.32
12,896.0	90.00	358.70	10,920.2	2,182.0	-12.7	2,182.1	0.95	-0.43	-0.85
12,990.0	90.10	359.40	10,920.1	2,276.0	-14.2	2,276.1	0.75	0.11	0.74
13,085.0	89.40	358.10	10,920.5	2,371.0	-16.3	2,371.1	1.55	-0.74	-1.37
13,179.0	89.30	357.60	10,921.6	2,464.9	-19.8	2,465.0	0.54	-0.11	-0.53
13,274.0	89.10	357.70	10,922.9	2,559.8	-23.7	2,560.0	0.24	-0.21	0.11
13,368.0	89.30	359.00	10,924.2	2,653.8	-26.4	2,653.9	1.40	0.21	1.38
13,464.0	89.60	359.40	10,925.2	2,749.8	-27.8	2,749.9	0.52	0.31	0.42
13,558.0	90.10	359.40	10,925.4	2,843.8	-28.7	2,843.9	0.53	0.53	0.00
13,652.0	89.60	359.60	10,925.7	2,937.8	-29.6	2,937.9	0.57	-0.53	0.21
13,763.0	89.80	359.80	10,926.2	3,048.8	-30.1	3,048.9	0.25	0.18	0.18
13,856.0	89.00	359.50	10,927.2	3,141.8	-30.7	3,141.9	0.92	-0.86	-0.32
13,951.0	88.60	359.50	10,929.2	3,236.7	-31.5	3,236.9	0.42	-0.42	0.00
14,046.0	89.20	359.50	10,931.0	3,331.7	-32.4	3,331.9	0.63	0.63	0.00
14,141.0	89.40	359.70	10,932.2	3,426.7	-33.0	3,426.9	0.30	0.21	0.21
14,235.0	90.50	0.00	10,932.3	3,520.7	-33.3	3,520.9	1.21	1.17	0.32
14,330.0	90.70	359.90	10,931.3	3,615.7	-33.4	3,615.9	0.24	0.21	-0.11



Survey Report



Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD-83)	TVD Reference:	WELL @ 3696.0usft (Cactus #124 - 25' KB)
Site:	Avocado BRO State	MD Reference:	WELL @ 3696.0usft (Cactus #124 - 25' KB)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

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)
14,424.0	89.90	358.90	10,930.8	3,709.7	-34.3	3,709.8	1.36	-0.85	-1.06
14,520.0	90.00	358.80	10,930.9	3,805.7	-36.3	3,805.8	0.15	0.10	-0.10
14,614.0	88.50	359.40	10,932.1	3,899.6	-37.7	3,899.8	1.72	-1.60	0.64
14,708.0	88.80	0.40	10,934.3	3,993.6	-37.9	3,993.8	1.11	0.32	1.06
14,803.0	90.00	0.90	10,935.3	4,088.6	-36.8	4,088.8	1.37	1.26	0.53
14,898.0	90.90	0.40	10,934.6	4,183.6	-35.8	4,183.8	1.08	0.95	-0.53
14,992.0	90.80	0.80	10,933.2	4,277.6	-34.8	4,277.7	0.44	-0.11	0.43
15,088.0	90.50	1.20	10,932.1	4,373.6	-33.1	4,373.7	0.52	-0.31	0.42
15,182.0	90.50	0.50	10,931.3	4,467.5	-31.7	4,467.7	0.74	0.00	-0.74
15,277.0	90.00	0.10	10,930.8	4,562.5	-31.2	4,562.6	0.67	-0.53	-0.42
15,372.0	89.70	359.90	10,931.1	4,657.5	-31.2	4,657.6	0.38	-0.32	-0.21
15,467.0	89.30	358.90	10,931.9	4,752.5	-32.2	4,752.6	1.13	-0.42	-1.05
15,667.0	89.30	358.90	10,934.4	4,952.5	-36.0	4,952.6	0.00	0.00	0.00
BHL - 15667.0' MD, 10934.4' TVD, 89.30° INC, 358.90° AZI, 4952.5' N, -36.0° E, 4952.6' VS									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,775.0	5,774.8	-0.1	18.4	Tie into Gyro @ 5775' MD
10,431.0	10,430.4	-5.3	0.9	KOP - 10431.0' MD, 10430.4' TVD, 0.50° INC, -5.3' VS
11,194.0	10,918.6	480.4	6.9	EOC - 11194.0' MD, 10918.6' TVD, 89.20° INC, 480.3' VS
15,667.0	10,934.4	4,952.5	-36.0	BHL - 15667.0' MD, 10934.4' TVD, 89.30° INC, 358.90° AZI, 4952.5' N, -36.0° E

Checked By: _____ Approved By: _____ Date: _____



WELL DETAILS: #1H

Ground Elevation:: 3696.0
RKB Elevation: WELL @ 3696.0usft (Cactus #124 - 25' KB)
Rig Name: Cactus #124 - 25' KB

Yates Petroleum
Project: Lea County, NM (NAD-83)
Site: Avocado BRO State
Well: #1H
Wellbore: OH
Plan: Plan #2 (#1H/OH)

Surface Hole Location
Northing Easting Latitude Longitude
559956.90 802490.44 32° 32' 11.487 N 103° 29' 9.288 W



Azimuths to Grid North
True North: -0.46°
Magnetic North: 6.86°
Magnetic Field
Strength: 48604.5snT
Dip Angle: 60.44°
Date: 7/11/2013
Model: IGRF2010

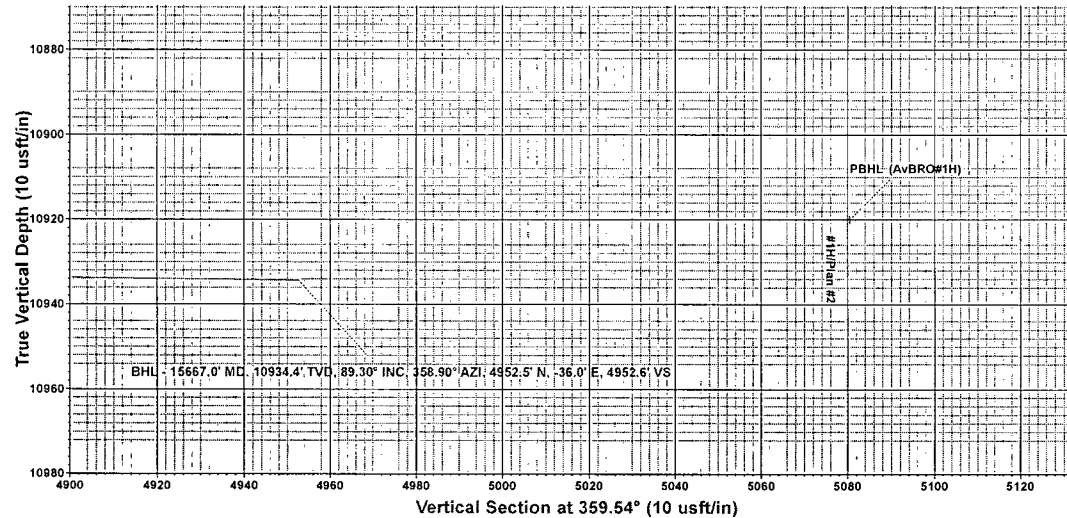
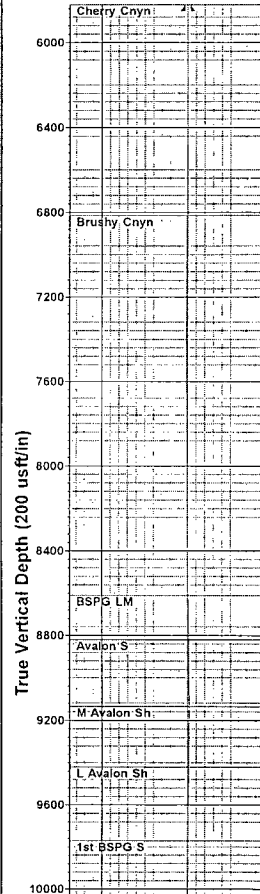
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1740.0	1740.0	Rustler
1945.0	1945.0	T of Salt
3410.0	3410.0	B of Salt
3445.0	3445.0	Tansill
3605.0	3605.0	Yates
3820.0	3820.0	Capitan Reef
5660.0	5660.0	B of Capitan
5820.0	5820.0	Cherry Cnyn
6815.0	6815.0	Brushy Cnyn
8610.0	8610.0	BSPG LM
8820.0	8820.0	Avalon S
9135.0	9135.0	M Avalon Sh
9420.0	9420.0	L Avalon Sh
9770.0	9770.0	1st BSPG S
10670.0	10679.6	2nd BSPG S
10920.0	11192.6	*Target SBSG*

Formation
Rustler
T of Salt
B of Salt
Tansill
Yates
Capitan Reef
B of Capitan
Cherry Cnyn
Brushy Cnyn
BSPG LM
Avalon S
M Avalon Sh
L Avalon Sh
1st BSPG S
2nd BSPG S
Target SBSG

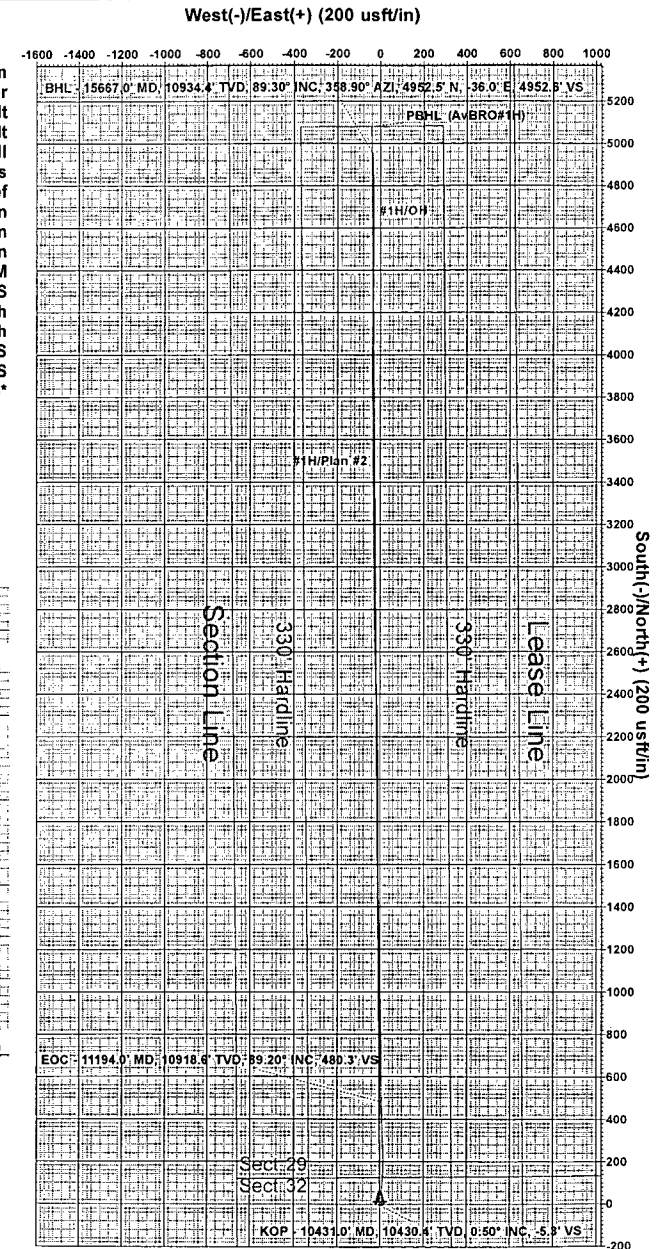
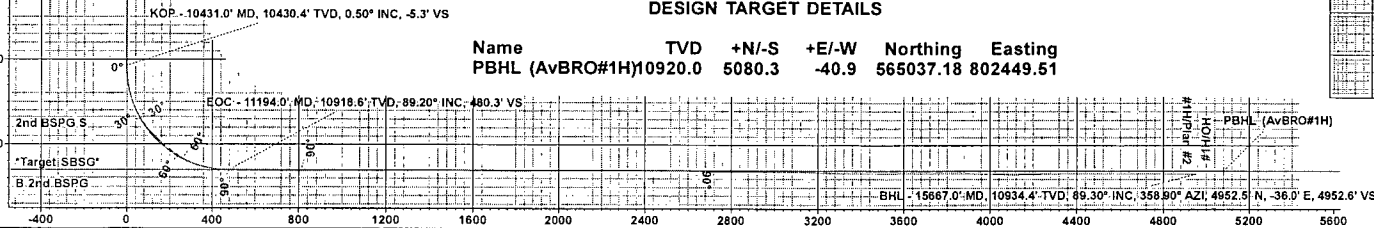
Section Details

	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	10442.5	0.00	0.00	10442.5	0.0	0.0	0.00	0.00	0.0	
3	11192.6	90.00	359.54	10920.0	477.5	-3.8	12.00	359.54	477.5	PBHL (AvBRO#1H)
4	15795.5	90.00	359.54	10920.0	5080.3	-40.8	0.00	0.00	5080.5	PBHL (AvBRO#1H)



DESIGN TARGET DETAILS

Name TVD +N/-S +E/-W Northing Easting
PBHL (AvBRO#1H) 10920.0 5080.3 -40.9 565037.18 802449.51



PROJECT DETAILS: Lea County, NM (NAD-83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid



Crescent Directional Drilling
7715 West Industrial Ave. Midland, Tx 79706
Phone: 432-618-1135

Plan: Plan #2 (#1H/OH)
Created By: Matt Higgins Date: 9:36, September 23 2013



Job Number: SVMO-130677
 Company: Yates Petroleum Corporation
 Lease/Well: Avocado Bro State Com 1H
 Location: Lea County, NM
 Rig Name: Cactus #124
 RKB: 25'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 6.87°
 Grid: East To Grid North
 File name: F:\SURVEY\2013SU~1\YATES\MO\AVOCAD~1\1H.SVY
 Date/Time: 03-Sep-13 / 12:46
 Curve Name: Surface - 5775' M.D. (Rate Gyro)

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 359.54
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
200.00	.29	290.11	200.00	.17	-.48	.18	.51	290.11	.15
400.00	.30	290.61	400.00	.53	-1.44	.54	1.54	290.28	.01
600.00	.18	260.04	599.99	.66	-2.24	.68	2.34	286.47	.09
800.00	.23	203.58	799.99	.24	-2.71	.26	2.72	275.06	.10
1000.00	.23	217.43	999.99	-.45	-3.11	-.42	3.15	261.84	.03
1200.00	.28	258.65	1199.99	-.86	-3.84	-.83	3.93	257.35	.09
1400.00	.25	256.69	1399.99	-1.06	-4.74	-1.02	4.86	257.42	.02
1600.00	.30	249.08	1599.99	-1.35	-5.66	-1.30	5.81	256.62	.03
1800.00	.23	233.84	1799.98	-1.77	-6.47	-1.72	6.71	254.70	.05

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
2000.00	.29	191.11	1999.98	-2.50	-6.89	-2.45	7.33	250.04	.10
2200.00	.23	139.31	2199.98	-3.30	-6.73	-3.25	7.49	243.84	.12
2400.00	.26	150.78	2399.98	-4.00	-6.24	-3.95	7.42	237.32	.03
2600.00	.27	142.81	2599.98	-4.78	-5.74	-4.73	7.46	230.22	.02
2800.00	.19	142.65	2799.97	-5.41	-5.25	-5.37	7.54	224.12	.04
3000.00	.33	86.78	2999.97	-5.65	-4.47	-5.61	7.20	218.39	.14
3200.00	.68	78.94	3199.96	-5.39	-2.73	-5.36	6.04	206.91	.18
3400.00	.27	8.89	3399.96	-4.69	-1.50	-4.68	4.93	197.69	.32
3600.00	.39	359.75	3599.96	-3.55	-1.43	-3.53	3.82	201.92	.07
3800.00	.15	325.27	3799.95	-2.65	-1.58	-2.64	3.09	210.78	.14
4000.00	.06	14.23	3999.95	-2.33	-1.70	-2.32	2.89	216.10	.06
4200.00	.41	66.94	4199.95	-1.95	-1.02	-1.94	2.20	207.54	.19
4400.00	.35	115.56	4399.95	-1.94	.19	-1.94	1.94	174.36	.16
4600.00	.61	75.89	4599.94	-1.94	1.77	-1.95	2.63	137.54	.20
4800.00	.72	60.41	4799.93	-1.06	3.90	-1.09	4.04	105.20	.10
5000.00	.83	76.53	4999.91	-.10	6.40	-.15	6.40	90.91	.12
5200.00	.79	97.15	5199.89	.06	9.18	-.01	9.18	89.60	.15
5400.00	1.10	95.26	5399.86	-.28	12.46	-.38	12.46	91.30	.16
5600.00	.82	85.25	5599.83	-.34	15.80	-.47	15.80	91.24	.16
Last Survey Depth Recorded									
5775.00	.86	85.04	5774.81	-.12	18.35	-.27	18.35	90.39	.02

WELL NAME: Avocado BRO St #1H **FIELD**
LOCATION: Unit D, 150' FNL and 660' FWL (Surf) Sec 32-20S-35E Lea County

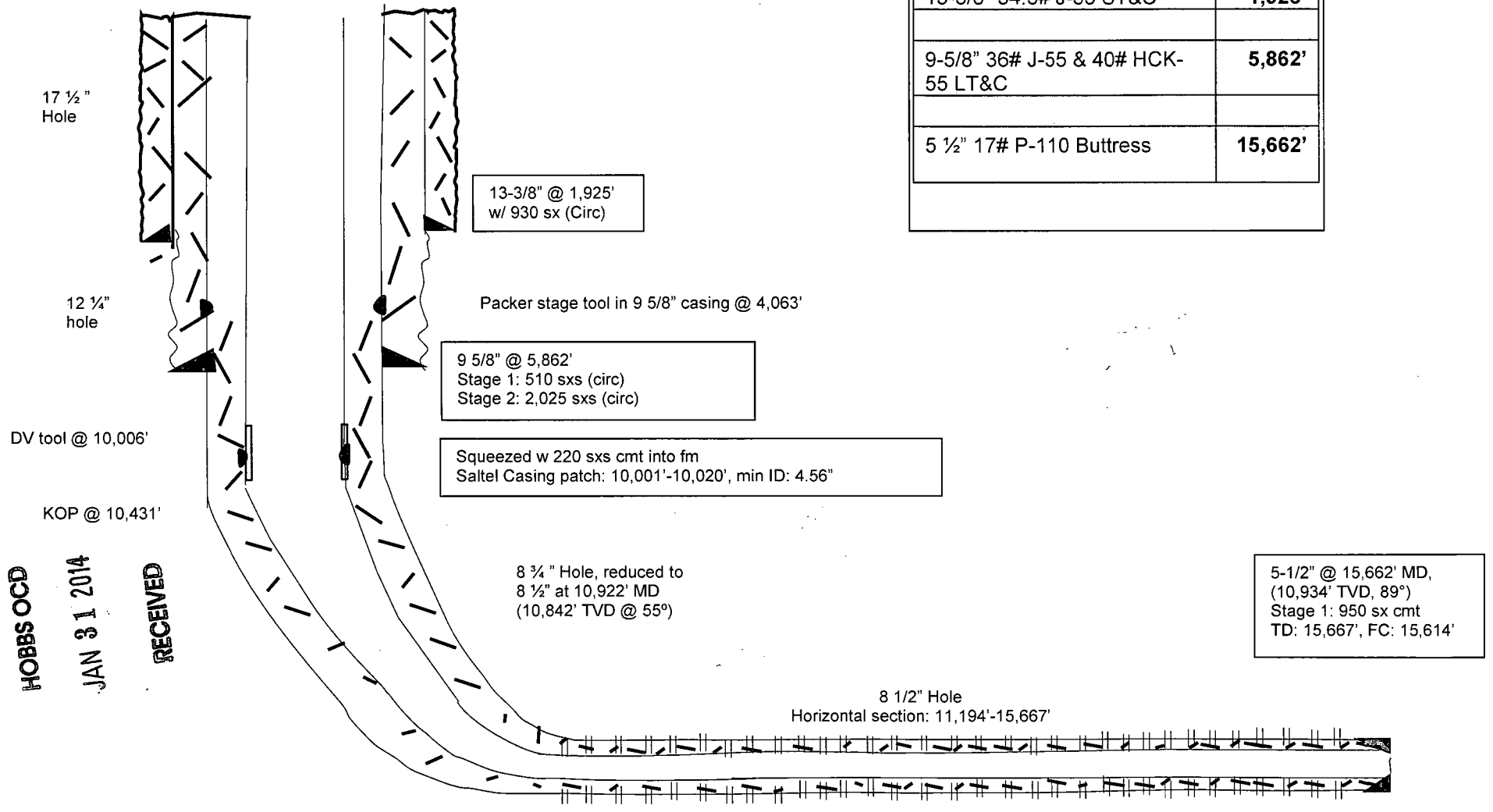
GL: 3,696' **ZERO:** **KB:** 3,721'

SPUD DATE: 8/10/13 **COMPLETION DATE:**

COMMENTS: API No.: 30-025-40472. Resume drilling date: 8/21/13

CASING PROGRAM

13-3/8" 54.5# J-55 ST&C	1,925'
9-5/8" 36# J-55 & 40# HCK-55 LT&C	5,862'
5 1/2" 17# P-110 Buttruss	15,662'



HOBBS OCD
 JAN 31 2014
 RECEIVED

STAGE 12				STAGE 11				STAGE 10				STAGE 9				STAGE 8				STAGE 7				STAGE 6				STAGE 5				STAGE 4				STAGE 3				STAGE 2				STAGE 1			
11195	11306	11416	11535	11658	11788	11908	12025	12153	12291	12398	12516	12639	12756	12869	12987	13073	13177	13269	13393	13516	13638	13784	13908	14012	14130	14261	14380	14499	14607	14745	14875	15006	15106	15224	15353	15454	15600										
11197	11308	11418	11537	11660	11790	11910	12027	12155	12293	12400	12518	12641	12758	12871	12989	13075	13179	13271	13395	13518	13640	13786	13910	14014	14132	14263	14382	14501	14609	14747	14877	15008	15108	15226	15355	15456	15602										

Not to Scale
 11/1/13
 MMFH