

WELL DETAILS						
+N-S	+E-W	North	Ground Level	3482.00	Latitude	Longitude
0.00	0.00	540647.20	Easting	859914.90	32° 28' 51.37814 N	103° 9' 58.31589 W

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1394.00	0.00	0.00	1394.00	0.00	0.00	0.00	0.00	0.00
3	1502.55	2.17	149.07	1502.52	-1.76	1.06	2.00	149.07	2.06
4	6953.94	2.17	149.07	6950.00	-178.90	107.20	0.00	0.00	208.56

Annotation: KOP, Start 2 1/100' Build
Begin 2 1/17" Inc Hold
TD at 6953.94' MD
BHL-WBDU #168W

DESIGN TARGET DETAILS									
Name	TVD	+N-S	+E-W	North	Easting	Latitude	Longitude	Shape	
BHL-WBDU #168W	6950.00	-178.90	107.20	540468.30	860022.10	32° 28' 49.58652 N	103° 9' 57.08750 W	Circle (Radius: 20.00)	

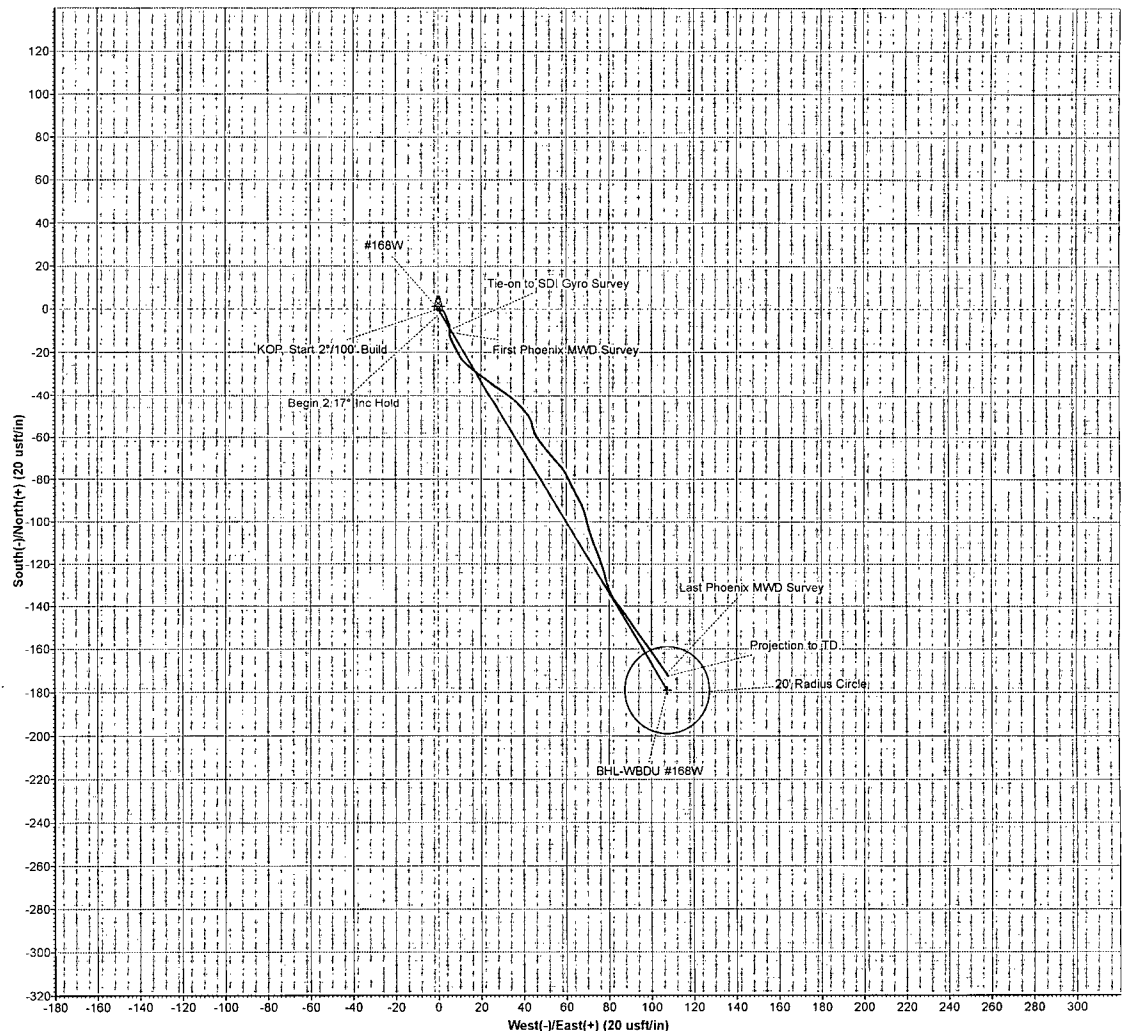
- plan hits target center

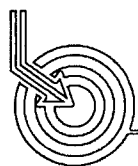
FORMATION TOP DETAILS				
TVDPath	MDPath	Formation	DipAngle	DipDir
1264.00	1264.00	Rustler		
1354.00	1354.00	T. Salt		
2496.00	2496.74	Tansil		
2667.00	2667.86	Yates		
2889.00	2889.02	Seven Rivers		
3440.00	3441.42	Queen		
3726.00	3727.82	Grayburg		
4005.00	4006.82	San Andres		
5188.00	5190.67	Glorieta		
5258.00	5260.72	Paddock		
5678.00	5681.03	Blinberry		
6155.00	6158.37	Tubb		
6483.00	6486.60	Drinkard		
6727.00	6730.78	Abo		

Map System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone Name: New Mexico East 3001
 Local Origin: Well #168W, Grid North
 Latitude: 32° 28' 51.37814 N
 Longitude: 103° 9' 58.31589 W
 Grid East: 859914.90
 Grid North: 540647.20
 Scale Factor: 1.000
 Geomagnetic Model: BGGM2014
 Sample Date: 14-Nov-14
 Magnetic Declination: 7.15°
 Dip Angle from Horizontal: 60.40°
 Magnetic Field Strength: 48434
 To convert a Magnetic Direction to a Grid Direction, Add 6.53°
 To convert a Magnetic Direction to a True Direction, Add 7.15° East
 To convert a True Direction to a Grid Direction, Subtract 0.63°

LEGEND

— #168W, WB1 / Job #1411970, Surveys (Capstar 118) V0
 — Plan #1 10-07-14





Scientific Drilling

Gyroscopic Survey Report
for
APACHE

30-02S-41548

UL 6 16-21S-37E

1860' FUL + 2230' FEL

Well Location	LEA COUNTY, NEW MEXICO
Well Name	WEST BLINEBRY DRINKARD UNIT# 168-W
Rig Number	CAPSTART 118
Survey Date	11/15/2014
Latitude	32.4810000°N
Longitude	103.1670000°W
North Reference	Grid North
Grid Correction	-0.63 deg
Depth Reference	RKB (11.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 0.00Azim (deg)
Definitive Survey	FINAL GYRO SURVEY
Operator(s)	BRANDON PITTMAN

Well Notes



30-025-41548

UL G 16-21S-37E

1860' FUL + 2230' FEL

Well Name: WEST BLINEBRY DRINKARD UNIT# 168-W

Survey: FINAL GYRO SURVEY

Survey Date: 11/15/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft	Closure Distance ft	Closure Direction deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
100.00	0.52	122.39	100.00	-0.24	-0.24	0.38	0.52	0.45	122.39
189.00	0.36	102.58	189.00	-0.52	-0.52	1.00	0.24	1.13	117.54
279.00	0.43	99.82	278.99	-0.64	-0.64	1.61	0.08	1.73	111.71
369.00	0.31	101.03	368.99	-0.74	-0.74	2.18	0.14	2.30	108.88
459.00	0.18	136.58	458.99	-0.89	-0.89	2.51	0.21	2.66	109.58
549.00	0.30	158.38	548.99	-1.21	-1.21	2.69	0.16	2.95	114.22
649.00	0.49	168.13	648.99	-1.87	-1.87	2.88	0.20	3.43	122.99
734.00	0.60	152.59	733.98	-2.61	-2.61	3.15	0.22	4.10	129.64
819.00	0.76	154.05	818.98	-3.51	-3.51	3.60	0.19	5.03	134.27
904.00	0.91	156.10	903.97	-4.64	-4.64	4.12	0.18	6.21	138.35
989.00	0.96	160.04	988.96	-5.92	-5.92	4.64	0.09	7.52	141.92
1074.00	0.87	156.62	1073.95	-7.19	-7.19	5.14	0.12	8.84	144.42
1159.00	0.87	179.05	1158.94	-8.43	-8.43	5.41	0.40	10.02	147.31
1244.00	0.79	186.32	1243.93	-9.66	-9.66	5.36	0.16	11.04	150.99