



PHOENIX

TECHNOLOGY SERVICES USA INC.

3610 Elkins Road, Midland, Texas 79705 T. 432.684.0057 F. 432.686.7964 www.phxtech.com

Celebrating 20 Years of Focused Solutions

October 6, 2016

Mewbourne Oil
Attention: Regulatory Department
701 S Cecil St
Hobbs, New Mexico 88240

NM OIL CONSERVATION
ARTESIA DISTRICT

JAN 09 2017

RECEIVED

Re: Mewbourne Oil
Annabelle 13/18 W2BA Federal Com 1H
Eddy County, NM
API #30-015-42765
Job No. 60375

Dear Regulatory Department;

Phoenix Technology Services, Inc. has filed the Survey Data Certification, Surveys, and Lease Plat for the above referenced Well with the State of New Mexico Oil Conservation Division – District 2 via certified mail. A copy of the filing is attached for your records.

Name of Surveyor	Drain Hole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Andy Askew	1H	0	8000	09/22/16	09/22/16	Gyro

Thank you for the opportunity to be of service. Please contact me if you have any questions or require additional information.

Best Regards,

Claudia Carreon
Operations Administrator

SURVEY CERTIFICATION FORM

3610 Elkins Road Midland, TX 79705 t:432-684-0057 f: 432-686-7964



Company: Mewbourne Oil

Job #: 60375

Well Name: Annabelle 13/18 W2BA Federal Com 1H

County/State: Eddy/ NM

Survey Instrument Type: North Seek Rate Gyro

API # 30-015-42765

TIE-IN DATA

Measure Depth (ft)	Vertical Depth (ft)	Inclination (°)	Azimuth (°)	N-S Coordinates	E-W Coordinates	Data Source
0	0	0	0	0	0	Surface

First Survey

Date	Depth (ft)	Inclination (°)	Azimuth (°)
2016-09-22	0	0	0

Last Survey

Date	Depth (ft)	Inclination (°)	Azimuth (°)
2016-09-22	8000	1.04	134.56

Projected TD Survey

Date	Depth (ft)	Inclination (°)	Azimuth (°)
0	0	0	0

Grid Correction
-0.05

Gyro Operator: Phoenix Technology Services USA Ltd.

Gyro Supervisor: Jaime Stephenson

To the best of my knowledge I certify this survey data to be correct and true

Date:

9-23-16

Print Name: Andy Askew

Signature:

Andy Askew



PHOENIX
TECHNOLOGY SERVICES

Company: Mewbourne Oil
Well: Annabelle 13/18 W2BA Federal Com 1H
Location: Eddy Co., NM
Rig: Patterson 270

Date: 09-22-16
Job Number: 60375
Grid Corr.: -0.05
Lat: 32.22
Long: -104.24
Calculation Method: Minimum Curvature
Proposed Azimuth: 93.45
RKB - MSL in feet: 28
Tie Into: Surface

Survey Tool Type	Survey Depth (ft)	Inclina- tion (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
FIELD COPY, NON-DEFINITIVE													
Enter Tie-In Survey on Line 10													
TIE IN	0			0	0	0	0	0					
Gyro	100.00	0.89	101.50	100	100.00	0.77	0.15 S	0.76 E	0.78	101.50	0.89	0.89	101.50
	200.00	0.97	113.10	100	199.98	2.34	0.64 S	2.30 E	2.39	105.59	0.20	0.08	11.60
	300.00	1.09	116.73	100	299.97	4.01	1.40 S	3.93 E	4.17	109.63	0.14	0.12	3.63
	400.00	0.95	127.36	100	399.95	5.57	2.33 S	5.44 E	5.92	113.22	0.23	-0.14	10.63
	500.00	1.40	136.08	100	499.93	7.15	3.72 S	6.94 E	7.88	118.15	0.48	0.45	8.72
	600.00	1.53	85.28	100	599.90	9.37	4.49 S	9.12 E	10.16	116.19	1.26	0.13	-50.80
	700.00	1.74	89.34	100	699.86	12.21	4.36 S	11.97 E	12.74	110.01	0.24	0.21	4.06
	800.00	1.57	94.81	100	799.82	15.09	4.46 S	14.85 E	15.51	106.70	0.23	-0.17	5.47
	900.00	1.45	92.36	100	899.78	17.73	4.62 S	17.48 E	18.08	104.81	0.14	-0.12	-2.45
	1000.00	1.31	100.09	100	999.75	20.13	4.88 S	19.87 E	20.46	103.78	0.23	-0.14	7.73
	1100.00	0.81	121.90	100	1099.74	21.89	5.45 S	21.60 E	22.27	104.16	0.63	-0.50	21.81
	1200.00	1.46	113.05	100	1199.72	23.71	6.32 S	23.37 E	24.21	105.14	0.67	0.65	-8.85
	1300.00	1.44	114.92	100	1299.69	26.08	7.35 S	25.68 E	26.71	105.97	0.05	-0.02	1.87
	1400.00	1.46	115.27	100	1399.65	28.43	8.42 S	27.97 E	29.21	106.76	0.02	0.02	0.35
	1500.00	1.86	100.33	100	1499.61	31.22	9.26 S	30.72 E	32.09	106.77	0.59	0.40	-14.94
	1600.00	2.14	94.93	100	1599.55	34.70	9.71 S	34.18 E	35.53	105.86	0.34	0.28	-5.40
	1700.00	2.27	98.91	100	1699.48	38.54	10.18 S	38.00 E	39.33	104.99	0.20	0.13	3.98
	1800.00	1.89	103.44	100	1799.41	42.13	10.87 S	41.56 E	42.95	104.65	0.41	-0.38	4.53
	1900.00	1.55	95.77	100	1899.37	45.11	11.39 S	44.51 E	45.94	104.35	0.41	-0.34	-7.67
	2000.00	1.38	88.18	100	1999.33	47.66	11.48 S	47.05 E	48.44	103.71	0.26	-0.17	-7.59
	2100.00	1.24	95.65	100	2099.31	49.94	11.55 S	49.33 E	50.67	103.18	0.22	-0.14	7.47
	2200.00	1.07	104.03	100	2199.29	51.94	11.88 S	51.32 E	52.68	103.04	0.24	-0.17	8.38
	2300.00	0.97	109.64	100	2299.27	53.67	12.40 S	53.02 E	54.45	103.16	0.14	-0.10	5.61
	2400.00	1.22	135.37	100	2399.25	55.28	13.44 S	54.57 E	56.20	103.83	0.55	0.25	25.73
	2500.00	1.04	126.28	100	2499.23	56.83	14.73 S	56.04 E	57.95	104.73	0.25	-0.18	-9.09
	2600.00	1.18	114.62	100	2599.21	58.55	15.70 S	57.71 E	59.81	105.22	0.27	0.14	-11.66
	2700.00	0.79	139.38	100	2699.20	59.99	16.65 S	59.10 E	61.40	105.73	0.57	-0.39	24.76



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TECHNOLOGY SERVICES

Company:

Mewbourne Oil

Well:

Annabelle 13/18 W2BA Federal Com 1H

Location:

Eddy Co., NM

Rig:

Patterson 270

Job Number:

60375

Calculation Method:

Minimum Curvature

Grid Corr.:

-0.05

Proposed Azimuth:

93.45

Lat:

32.22

RKB - MSL in feet:

28

Long:

-104.24

Tie Into:

Surface

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	2800.00	0.55	169.96	100	2799.19	60.58	17.65 S	59.63 E	62.19	106.48	0.42	-0.24	30.58
	2900.00	0.33	160.76	100	2899.19	60.81	18.39 S	59.81 E	62.57	107.09	0.23	-0.22	-9.20
	3000.00	0.50	357.37	100	2999.19	60.87	18.23 S	59.88 E	62.60	106.93	0.82	0.17	196.61
	3100.00	0.33	166.96	100	3099.19	60.91	18.07 S	59.93 E	62.59	106.78	0.83	-0.17	-190.41
	3200.00	1.02	249.64	100	3199.18	60.17	18.66 S	59.16 E	62.03	107.51	1.03	0.69	82.68
	3300.00	1.33	245.09	100	3299.16	58.34	19.46 S	57.27 E	60.49	108.77	0.32	0.31	-4.55
	3400.00	1.17	249.38	100	3399.14	56.39	20.31 S	55.26 E	58.88	110.18	0.19	-0.16	4.29
	3500.00	1.13	230.11	100	3499.12	54.74	21.30 S	53.55 E	57.63	111.69	0.39	-0.04	-19.27
	3600.00	1.17	270.92	100	3599.10	53.00	21.92 S	51.77 E	56.22	112.94	0.80	0.04	40.81
	3700.00	1.03	230.49	100	3699.08	51.32	22.47 S	50.06 E	54.87	114.18	0.77	-0.14	-40.43
	3800.00	1.23	228.93	100	3799.06	49.90	23.75 S	48.56 E	54.05	116.06	0.20	0.20	-1.56
	3900.00	0.93	262.79	100	3899.05	48.34	24.56 S	46.94 E	52.98	117.61	0.69	-0.30	33.86
	4000.00	0.79	290.15	100	3999.03	46.88	24.42 S	45.49 E	51.63	118.23	0.43	-0.14	27.36
	4100.00	0.99	257.08	100	4099.02	45.39	24.38 S	44.00 E	50.30	118.99	0.54	0.20	-33.07
	4200.00	0.56	301.64	100	4199.01	44.13	24.31 S	42.74 E	49.17	119.63	0.71	-0.43	44.56
	4300.00	0.91	272.13	100	4299.01	42.90	24.03 S	41.53 E	47.98	120.05	0.50	0.35	-29.51
	4400.00	0.95	270.18	100	4398.99	41.28	23.99 S	39.91 E	46.57	121.01	0.05	0.04	-1.95
	4500.00	1.05	253.20	100	4498.98	39.60	24.26 S	38.21 E	45.25	122.41	0.31	0.10	-16.98
	4600.00	0.88	250.15	100	4598.96	38.03	24.78 S	36.61 E	44.21	124.10	0.18	-0.17	-3.05
	4700.00	0.62	253.70	100	4698.95	36.82	25.19 S	35.36 E	43.42	125.47	0.26	-0.26	3.55
	4800.00	0.56	233.38	100	4798.95	35.93	25.64 S	34.45 E	42.95	126.66	0.22	-0.06	-20.32
	4900.00	0.44	279.66	100	4898.95	35.18	25.87 S	33.68 E	42.47	127.52	0.41	-0.12	46.28
	5000.00	0.61	230.80	100	4998.94	34.40	26.14 S	32.89 E	42.01	128.47	0.46	0.17	-48.86
	5100.00	0.71	227.58	100	5098.94	33.58	26.89 S	32.02 E	41.82	130.02	0.11	0.10	-3.22
	5200.00	0.52	225.34	100	5198.93	32.85	27.63 S	31.24 E	41.71	131.49	0.19	-0.19	-2.24
	5300.00	0.75	180.63	100	5298.92	32.58	28.60 S	30.91 E	42.11	132.78	0.53	0.23	-44.71
	5400.00	0.75	187.94	100	5398.92	32.56	29.90 S	30.81 E	42.94	134.14	0.10	0.00	7.31
	5500.00	1.06	227.27	100	5498.90	31.87	31.18 S	30.04 E	43.30	136.06	0.68	0.31	39.33
	5600.00	1.45	250.75	100	5598.88	30.06	32.23 S	28.17 E	42.80	138.84	0.64	0.39	23.48
	5700.00	1.05	252.14	100	5698.86	28.04	32.92 S	26.10 E	42.02	141.59	0.40	-0.40	1.39



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Company: **Mewbourne Oil**
 Well: Annabelle 13/18 W2BA Federal Com 1H
 Location: Eddy Co., NM
 Rig: Patterson 270

Job Number: 60375
 Grid Corr.: -0.05
 Lat: 32.22
 Long: -104.24

Calculation Method: Minimum Curvature
 Proposed Azimuth: 93.45
 RKB - MSL in feet: 28
 Tie Into: Surface

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	5800.00	1.24	271.51	100	5798.84	26.10	33.18 S	24.15 E	41.03	143.95	0.43	0.19	19.37
	5900.00	1.64	301.46	100	5898.81	23.76	32.40 S	21.85 E	39.08	146.01	0.84	0.40	29.95
	6000.00	1.85	311.24	100	5998.76	21.22	30.59 S	19.41 E	36.23	147.60	0.36	0.21	9.78
	6100.00	1.93	304.58	100	6098.71	18.50	28.57 S	16.81 E	33.15	149.53	0.23	0.08	-6.66
	6200.00	1.89	319.64	100	6198.65	15.92	26.36 S	14.36 E	30.01	151.42	0.50	-0.04	15.06
	6300.00	2.29	311.99	100	6298.58	13.21	23.76 S	11.80 E	26.53	153.58	0.49	0.40	-7.65
	6400.00	2.48	296.55	100	6398.50	9.66	21.46 S	8.38 E	23.04	158.66	0.67	0.19	-15.44
	6500.00	2.43	293.54	100	6498.41	5.68	19.65 S	4.51 E	20.16	167.08	0.14	-0.05	-3.01
	6600.00	1.46	314.69	100	6598.35	2.73	17.90 S	1.66 E	17.98	174.71	1.19	-0.97	21.15
	6700.00	1.58	20.55	100	6698.32	2.18	15.72 S	1.23 E	15.77	175.51	1.66	0.12	-294.14
	6800.00	1.93	51.75	100	6798.28	3.84	13.38 S	3.04 E	13.72	167.20	1.00	0.35	31.20
	6900.00	0.96	355.33	100	6898.25	4.98	11.51 S	4.30 E	12.28	159.53	1.61	-0.97	303.58
	7000.00	0.62	316.09	100	6998.24	4.46	10.28 S	3.85 E	10.98	159.46	0.62	-0.34	-39.24
	7100.00	1.00	342.24	100	7098.23	3.75	9.06 S	3.21 E	9.61	160.49	0.52	0.38	26.15
	7200.00	0.44	331.86	100	7198.22	3.23	7.89 S	2.76 E	8.36	160.70	0.57	-0.56	-10.38
	7300.00	0.83	313.02	100	7298.21	2.47	7.06 S	2.05 E	7.35	163.79	0.44	0.39	-18.84
	7400.00	0.98	318.71	100	7398.20	1.31	5.92 S	0.96 E	6.00	170.80	0.17	0.15	5.69
	7500.00	0.82	329.87	100	7498.19	0.32	4.66 S	0.04 E	4.66	179.57	0.24	-0.16	11.16
	7600.00	2.19	331.99	100	7598.15	-1.08	2.35 S	1.22 W	2.65	207.42	1.37	1.37	2.12
	7700.00	0.74	327.37	100	7698.12	-2.46	0.12 S	2.47 W	2.47	267.13	1.45	-1.45	-4.62
	7800.00	1.28	100.25	100	7798.11	-1.73	0.22 N	1.72 W	1.73	277.36	1.86	0.54	-227.12
	7900.00	0.90	121.18	100	7898.09	0.08	0.38 S	0.06 E	0.39	171.84	0.54	-0.38	20.93
	8000.00	1.04	134.56	100	7998.08	1.46	1.43 S	1.37 E	1.98	136.10	0.27	0.14	13.38



Mewbourne Oil Company
Annabelle 13-18 W2BA Federal Com #1H
Eddy Co, NM



Plan Data for Annabelle 13-18 W2BA Federal Com #1H

Field: Mewbourne Eddy Co, NM (Nad 27 NMEZ)
Map Unit: USFt Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: NAD27 / New Mexico East

Site: Annabelle 13-18 W2BA Federal Com #1H
Unit: USFt TVD Reference:
Company Name: Mewbourn Oil Company
Position: Northing: 445533.00USft Latitude: 32.224859°
Easting: 526323.40USft Longitude: -104.248209°
North Reference: Grid Grid Convergence: 0.05°
Elevation Above VRD: 3257.00USft

Slot: Annabelle 13-18 W2BA Federal Com #1H
Position:
Offset is from Site centre
+N/-S: 0.00USft Northing: 445533.00USft Latitude: 32.224859°
+E/-W: 0.00USft Easting: 526323.40USft Longitude: -104.248209°
Elevation Above VRD: 3257.00USft

Well: Annabelle 13-18 W2BA Federal Com #1H
Type: Main-Well
File Number:

Plan Folder: P2 Plan: P2:V1
Vertical Section: Position offset of origin from Slot centre:
+N/-S: 0.00USft Azimuth: 93.45°
+E/-W: 0.00USft
Magnetic Parameters:
Model: Field Strength: Declination: Dip: Date:
bgge2016 48047(nT) 7.40° 59.95° 2016-09-30

Plan Data for Annabelle 13-18 W2BA Federal Com #1H

Plan Point Information:

MD	Inc	Az	TVD	+N/-S	+E/-W	Northing	Easting	VSec	DLS	Comments
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(DLSU)	
8000.00	1.04	134.56	7998.08	-1.38	1.16	445531.62	526324.56	1.24	0.27	
8153.00	2.26	214.15	8151.03	-4.85	0.45	445528.15	526323.85	0.74	1.51	Tie-on Svy
8379.00	0.00	0.00	8376.97	-8.54	-2.05	445524.46	526321.35	-1.53	1.00	Hold
9062.37	0.00	0.00	9060.34	-8.54	-2.05	445524.46	526321.35	-1.53	0.00	KOP
9937.88	87.55	123.91	9632.78	-314.49	453.16	445218.51	526776.56	471.28	10.00	Build/Turn
10527.32	89.20	90.10	9650.00	-484.20	1008.47	445048.80	527331.87	1035.80	5.74	LP
17745.37	89.20	90.10	9751.00	-496.30	8225.80	445036.70	534549.20	8240.76	0.00	PBHL 1H

Target Set Information:

Name: Annabelle 13-18 W2BA Federal Com #1H
Position offsets from Slot centre

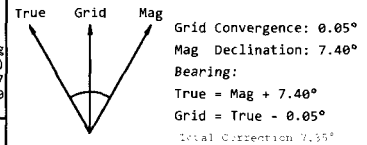
Name	TVD	Elevation	+N/-S	+E/-W	Northing	Easting
(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)
LP 9650.00	-6364.50	-484.20	1008.47	445048.80	527331.87	
PBHL 1H 9751.00	-6465.50	-496.30	8225.80	445036.70	534549.20	

Plan Data for Annabelle 13-18 W2BA Federal Com #1H

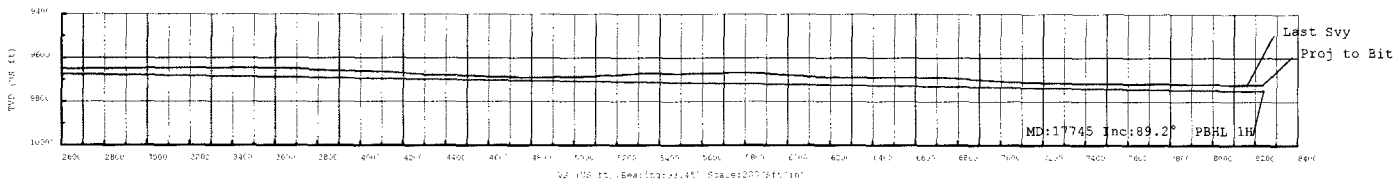
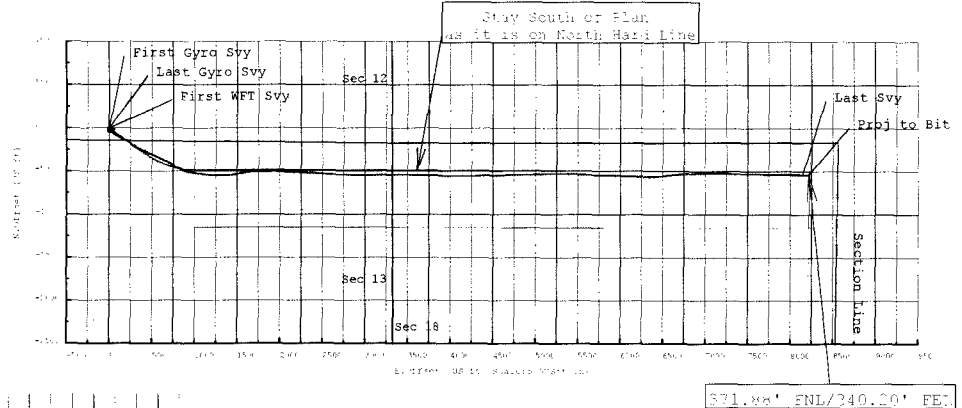
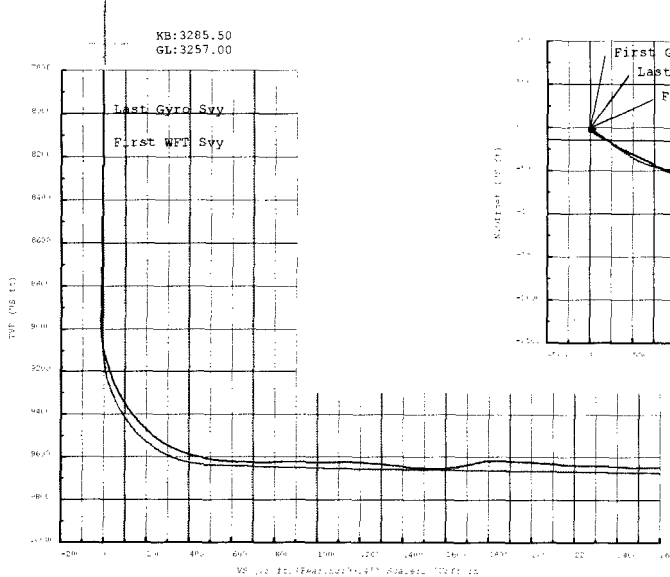
Casing Point Information:

Position offsets from Slot centre

Name	MD	TVD	+N/-S	+E/-W	Northing	Easting
(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)
13 3/8 in	440.00	439.95	-2.75	5.78	445530.25	526329.18
9 5/8 in	1950.00	1949.35	-11.43	45.60	445521.57	526369.00



Annabelle 13-18 W2BA Federal Com #1H
Annabelle 13-18 W2BA Federal Com #1H





Weatherford®

SURVEY REPORT

Report Date: 10/28/2016

Customer: Mewbourne Oil Company

Job Name: 12062056

Well Name: Annabelle 13-18 W2BA

Field: Black River

Rig: Patterson / UTI 270

Rig Loc: Eddy Co., NM

Survey Calculation Method: Minimum Curvature						
Magnetic Reference	Target Direction	Total Magnetic Field	Magnetic Dip Angle	Magnetic Declination	Grid Convergence	Total Correction
Grid North	93.45 deg	48047 nT	59.95 deg	7.40 deg	0.05 deg	7.35 deg
Survey Tie-On	Depth	INC	AZ	TVD	NS	EW
	0.00 ft	0.00 deg	0.00 deg	0.00 ft	0.00 ft	0.00 ft

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28.50	0.00	0.00	28.50	0.00	0.00	0.00	0.00
100.00	0.89	101.50	100.00	-0.11	0.54	0.55	1.24
200.00	0.97	113.10	199.98	-0.60	2.08	2.12	0.20
300.00	1.09	116.73	299.97	-1.36	3.71	3.79	0.14
400.00	0.95	127.36	399.95	-2.29	5.22	5.35	0.23
500.00	1.40	136.08	499.93	-3.67	6.73	6.94	0.48
600.00	1.53	85.28	599.90	-4.44	8.90	9.16	1.26
700.00	1.74	89.34	699.86	-4.31	11.75	11.99	0.24
800.00	1.57	94.81	799.82	-4.41	14.64	14.88	0.23
900.00	1.45	92.36	899.78	-4.58	17.27	17.51	0.14
1000.00	1.31	100.09	999.76	-4.83	19.66	19.91	0.23
1100.00	0.81	121.90	1099.74	-5.40	21.38	21.67	0.63
1200.00	1.46	113.05	1199.72	-6.28	23.15	23.49	0.67
1300.00	1.44	114.92	1299.69	-7.31	25.46	25.86	0.05
1400.00	1.46	115.27	1399.65	-8.38	27.76	28.21	0.02
1500.00	1.86	100.33	1499.61	-9.21	30.50	31.00	0.59
1600.00	2.14	94.93	1599.55	-9.66	33.96	34.48	0.34
1700.00	2.27	98.91	1699.48	-10.13	37.78	38.32	0.20
1800.00	1.89	103.44	1799.41	-10.82	41.34	41.92	0.41
1900.00	1.55	95.77	1899.37	-11.34	44.29	44.89	0.41
2000.00	1.38	88.18	1999.33	-11.44	46.84	47.44	0.26
2100.00	1.24	95.65	2099.31	-11.51	49.12	49.72	0.22
2200.00	1.07	104.03	2199.29	-11.84	51.10	51.72	0.24
2300.00	0.97	109.64	2299.27	-12.35	52.80	53.45	0.14
2400.00	1.22	135.37	2399.25	-13.39	54.35	55.06	0.55
2500.00	1.04	126.28	2499.23	-14.69	55.83	56.61	0.25
2600.00	1.18	114.62	2599.22	-15.65	57.50	58.33	0.27
2700.00	0.79	139.38	2699.20	-16.61	58.88	59.77	0.57
2800.00	0.55	169.96	2799.19	-17.60	59.41	60.36	0.42
2900.00	0.33	160.76	2899.19	-18.35	59.59	60.59	0.23
3000.00	0.50	357.37	2999.19	-18.18	59.67	60.65	0.82
3100.00	0.33	166.96	3099.19	-18.03	59.71	60.69	0.83
3200.00	1.02	249.64	3199.18	-18.62	58.94	59.96	1.03
3300.00	1.33	245.09	3299.16	-19.42	57.05	58.12	0.32

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
3400.00	1.17	249.38	3399.14	-20.26	55.05	56.17	0.19
3500.00	1.13	230.11	3499.12	-21.26	53.33	54.52	0.39
3600.00	1.17	270.92	3599.10	-21.87	51.56	52.78	0.80
3700.00	1.03	230.49	3699.08	-22.43	49.84	51.10	0.77
3800.00	1.23	228.93	3799.06	-23.70	48.34	49.68	0.20
3900.00	0.93	262.79	3899.05	-24.51	46.73	48.12	0.69
4000.00	0.79	290.15	3999.04	-24.38	45.27	46.66	0.43
4100.00	0.99	257.08	4099.02	-24.33	43.78	45.17	0.54
4200.00	0.56	301.64	4199.02	-24.27	42.53	43.91	0.71
4300.00	0.91	272.13	4299.01	-23.98	41.32	42.69	0.50
4400.00	0.95	270.18	4398.99	-23.95	39.69	41.06	0.05
4500.00	1.05	253.20	4498.98	-24.21	37.99	39.38	0.31
4600.00	0.88	250.15	4598.96	-24.74	36.39	37.81	0.18
4700.00	0.62	253.70	4698.96	-25.15	35.15	36.60	0.26
4800.00	0.56	233.38	4798.95	-25.59	34.24	35.71	0.22
4900.00	0.44	279.66	4898.95	-25.82	33.46	34.96	0.41
5000.00	0.61	230.80	4998.94	-26.09	32.67	34.18	0.46
5100.00	0.71	227.58	5098.94	-26.85	31.80	33.36	0.11
5200.00	0.52	225.34	5198.93	-27.58	31.02	32.63	0.19
5300.00	0.75	180.63	5298.93	-28.56	30.69	32.36	0.53
5400.00	0.75	187.94	5398.92	-29.86	30.60	32.34	0.10
5500.00	1.06	227.27	5498.91	-31.14	29.83	31.65	0.68
5600.00	1.45	250.75	5598.88	-32.18	27.95	29.84	0.64
5700.00	1.05	252.14	5698.86	-32.88	25.89	27.82	0.40
5800.00	1.24	271.51	5798.84	-33.13	23.93	25.88	0.43
5900.00	1.64	301.46	5898.81	-32.36	21.63	23.54	0.84
6000.00	1.85	311.24	5998.76	-30.55	19.20	21.00	0.36
6100.00	1.93	304.58	6098.71	-28.53	16.60	18.28	0.23
6200.00	1.89	319.64	6198.65	-26.31	14.14	15.70	0.50
6300.00	2.29	311.99	6298.59	-23.72	11.59	12.99	0.49
6400.00	2.48	296.55	6398.50	-21.42	8.17	9.44	0.67
6500.00	2.43	293.54	6498.41	-19.60	4.29	5.46	0.14
6600.00	1.46	314.69	6598.35	-17.86	1.44	2.51	1.19
6700.00	1.58	20.55	6698.32	-15.67	1.02	1.96	1.66
6800.00	1.93	51.75	6798.28	-13.34	2.82	3.62	1.00
6900.00	0.96	355.33	6898.25	-11.46	4.08	4.76	1.61
7000.00	0.62	316.09	6998.24	-10.24	3.63	4.24	0.62
7100.00	1.00	342.24	7098.23	-9.02	2.99	3.53	0.52
7200.00	0.44	331.86	7198.22	-7.85	2.55	3.01	0.57
7300.00	0.83	313.02	7298.22	-7.01	1.84	2.25	0.44
7400.00	0.98	318.71	7398.20	-5.88	0.74	1.09	0.17
7500.00	0.82	329.87	7498.19	-4.62	-0.18	0.10	0.24
7600.00	2.19	331.99	7598.15	-2.31	-1.44	-1.30	1.37
7700.00	0.74	327.37	7698.12	-0.08	-2.68	-2.67	1.45
7800.00	1.28	100.25	7798.11	0.27	-1.93	-1.95	1.86
7900.00	0.90	121.18	7898.09	-0.34	-0.16	-0.14	0.54
8000.00	1.04	134.56	7998.08	-1.38	1.16	1.24	0.27
8153.00	2.26	214.15	8151.03	-4.85	0.45	0.74	1.51
8246.00	1.75	209.52	8243.97	-7.61	-1.28	-0.82	0.57
8340.00	1.74	219.50	8337.93	-9.96	-2.89	-2.29	0.32

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
8433.00	1.49	219.39	8430.89	-11.98	-4.56	-3.83	0.27
8527.00	1.19	208.32	8524.86	-13.79	-5.80	-4.96	0.42
8620.00	1.65	222.11	8617.83	-15.63	-7.15	-6.20	0.61
8808.00	1.93	209.79	8805.74	-20.38	-10.54	-9.29	0.25
8901.00	1.00	214.42	8898.71	-22.41	-11.78	-10.41	1.01
8932.00	1.00	207.00	8929.71	-22.88	-12.05	-10.65	0.42
8963.00	1.60	157.73	8960.70	-23.52	-12.01	-10.57	3.91
8995.00	3.95	138.23	8992.66	-24.75	-11.11	-9.60	7.81
9026.00	6.99	141.62	9023.52	-27.03	-9.22	-7.58	9.86
9057.00	9.56	138.50	9054.19	-30.44	-6.35	-4.50	8.41
9088.00	11.31	125.50	9084.68	-34.13	-2.17	-0.11	9.43
9119.00	15.32	121.41	9114.84	-38.03	3.81	6.09	13.28
9150.00	18.41	118.84	9144.51	-42.53	11.59	14.13	10.25
9182.00	20.21	119.28	9174.70	-47.67	20.84	23.67	5.64
9212.00	21.19	116.13	9202.77	-52.59	30.23	33.34	4.94
9244.00	23.60	118.43	9232.35	-58.19	41.06	44.48	8.01
9275.00	26.31	118.55	9260.46	-64.43	52.55	56.33	8.74
9306.00	29.20	118.75	9287.89	-71.35	65.22	69.39	9.33
9337.00	32.29	120.55	9314.53	-79.20	78.98	83.60	10.40
9368.00	33.85	118.14	9340.51	-87.48	93.73	98.82	6.58
9399.00	35.75	117.45	9365.96	-95.73	109.38	114.94	6.26
9430.00	39.08	117.91	9390.58	-104.48	126.05	132.11	10.78
9462.00	42.64	117.82	9414.78	-114.26	144.56	151.17	11.13
9493.00	46.37	118.73	9436.88	-124.56	163.69	170.89	12.21
9524.00	49.79	120.40	9457.59	-135.94	183.74	191.59	11.74
9555.00	51.79	122.28	9477.19	-148.44	204.25	212.82	7.98
9586.00	54.15	122.42	9495.86	-161.68	225.16	234.48	7.62
9617.00	57.00	122.53	9513.38	-175.41	246.73	256.84	9.20
9648.00	59.67	119.67	9529.65	-189.03	269.32	280.21	11.65
9679.00	63.75	119.39	9544.34	-202.48	293.07	304.72	13.19
9710.00	66.24	118.78	9557.45	-216.13	317.62	330.05	8.23
9742.00	69.11	118.44	9569.60	-230.31	343.60	356.84	9.02
9773.00	71.34	117.18	9580.09	-243.91	369.40	383.41	8.15
9791.00	73.10	116.50	9585.58	-251.65	384.70	399.14	10.42
9889.00	81.45	114.19	9607.15	-292.50	471.02	487.77	8.82
9928.00	82.14	116.02	9612.72	-308.88	505.97	523.64	4.97
9959.00	84.38	116.56	9616.36	-322.51	533.57	552.01	7.43
9990.00	87.84	115.89	9618.46	-336.18	561.31	580.52	11.37
10021.00	86.48	114.64	9620.00	-349.39	589.31	609.27	5.96
10052.00	87.59	114.75	9621.60	-362.33	617.44	638.12	3.60
10083.00	88.64	115.51	9622.62	-375.48	645.49	666.91	4.18
10114.00	89.26	116.20	9623.19	-389.00	673.38	695.57	2.99
10145.00	89.51	117.18	9623.52	-402.92	701.07	724.05	3.26
10177.00	90.93	118.70	9623.40	-417.92	729.34	753.17	6.50
10208.00	90.68	118.97	9622.96	-432.87	756.50	781.17	1.19
10235.00	90.71	118.77	9622.64	-445.90	780.14	805.56	0.75
10270.00	90.80	116.73	9622.17	-462.20	811.11	837.45	5.83
10301.00	90.25	113.40	9621.89	-475.33	839.18	866.27	10.89
10332.00	89.26	110.32	9622.02	-486.87	867.95	895.68	10.44
10394.00	88.70	104.28	9623.13	-505.29	927.11	955.84	9.78

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
10488.00	89.75	98.15	9624.40	-523.56	1019.26	1048.92	6.62
10582.00	91.11	96.92	9623.69	-535.89	1112.44	1142.67	1.95
10609.00	90.31	96.44	9623.36	-539.03	1139.26	1169.63	3.46
10672.00	85.24	94.72	9625.81	-545.15	1201.89	1232.52	8.50
10766.00	84.00	91.40	9634.62	-550.15	1295.32	1326.08	3.76
10859.00	83.63	85.23	9644.65	-547.43	1387.70	1418.13	6.61
10953.00	87.10	81.20	9652.25	-536.36	1480.70	1510.29	5.65
11046.00	93.89	79.68	9651.45	-520.93	1572.35	1600.85	7.48
11078.00	97.55	80.77	9648.26	-515.52	1603.72	1631.84	11.93
11109.00	100.74	83.72	9643.33	-511.39	1634.04	1661.85	13.93
11140.00	102.44	86.86	9637.10	-508.89	1664.30	1691.91	11.34
11202.00	99.60	90.77	9625.25	-507.64	1725.12	1752.55	7.70
11234.00	96.37	89.65	9620.80	-507.76	1756.81	1784.18	10.67
11265.00	92.53	88.40	9618.40	-507.23	1787.70	1814.99	13.02
11296.00	88.21	88.80	9618.20	-506.47	1818.69	1845.87	14.00
11327.00	87.78	89.00	9619.28	-505.88	1849.66	1876.75	1.53
11358.00	87.78	89.18	9620.48	-505.39	1880.63	1907.64	0.58
11390.00	87.34	89.17	9621.84	-504.93	1912.60	1939.52	1.38
11421.00	87.22	91.08	9623.31	-504.99	1943.57	1970.43	6.17
11452.00	87.41	91.34	9624.77	-505.65	1974.53	2001.38	1.04
11483.00	87.65	91.65	9626.10	-506.46	2005.49	2032.33	1.26
11515.00	86.17	91.21	9627.83	-507.25	2037.43	2064.26	4.82
11608.00	85.99	91.16	9634.19	-509.17	2130.19	2156.97	0.20
11702.00	88.77	94.25	9638.48	-513.61	2223.97	2250.84	4.42
11795.00	88.40	93.38	9640.78	-519.79	2316.73	2343.81	1.02
11889.00	85.74	92.17	9645.58	-524.34	2410.49	2437.67	3.11
11982.00	90.12	93.21	9648.94	-528.70	2503.30	2530.58	4.84
12076.00	88.77	93.12	9649.85	-533.89	2597.15	2624.57	1.44
12170.00	90.19	92.35	9650.71	-538.37	2691.04	2718.56	1.72
12263.00	90.99	91.13	9649.75	-541.20	2783.99	2811.51	1.57
12358.00	90.25	90.54	9648.72	-542.58	2878.97	2906.40	1.00
12451.00	91.91	90.08	9646.97	-543.09	2971.95	2999.24	1.85
12545.00	88.77	89.68	9646.41	-542.89	3065.94	3093.05	3.37
12632.00	90.14	89.68	9647.24	-542.40	3152.93	3179.85	1.57
12725.00	90.07	89.58	9647.07	-541.80	3245.93	3272.65	0.13
12819.00	91.19	89.99	9646.03	-541.45	3339.92	3366.45	1.27
12913.00	88.67	89.54	9646.15	-541.06	3433.91	3460.25	2.72
13007.00	89.65	90.51	9647.53	-541.10	3527.90	3554.07	1.47
13076.00	90.28	91.12	9647.57	-542.09	3596.89	3622.99	1.27
13100.00	89.30	91.33	9647.66	-542.60	3620.88	3646.97	4.18
13194.00	86.71	91.97	9650.93	-545.30	3714.78	3740.86	2.84
13288.00	86.85	90.60	9656.21	-547.41	3808.60	3834.64	1.46
13381.00	89.51	92.64	9659.16	-550.04	3901.51	3927.54	3.60
13475.00	88.39	92.21	9660.88	-554.01	3995.41	4021.50	1.28
13568.00	87.13	89.58	9664.52	-555.47	4088.31	4114.33	3.13
13660.00	86.36	89.56	9669.74	-554.78	4180.16	4205.97	0.84
13744.00	87.06	89.27	9674.56	-553.92	4264.02	4289.62	0.90
13754.00	87.41	88.81	9675.05	-553.75	4274.00	4299.58	5.78
13847.00	87.90	89.10	9678.85	-552.06	4366.91	4392.22	0.61
13941.00	89.09	89.00	9681.32	-550.50	4460.86	4485.91	1.27

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		Vsect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
14034.00	86.01	86.98	9685.30	-547.24	4553.71	4578.38	3.96
14128.00	89.58	86.43	9688.91	-541.85	4647.47	4671.65	3.84
14221.00	89.23	91.09	9689.88	-539.83	4740.41	4764.31	5.02
14315.00	90.84	89.45	9689.82	-540.28	4834.41	4858.16	2.44
14409.00	89.93	87.92	9689.19	-538.12	4928.37	4951.83	1.89
14502.00	92.31	87.06	9687.37	-534.05	5021.26	5044.30	2.72
14595.00	94.20	88.58	9682.09	-530.52	5114.04	5136.69	2.61
14690.00	93.43	89.89	9675.77	-529.25	5208.81	5231.22	1.60
14784.00	90.91	89.82	9672.21	-529.01	5302.74	5324.96	2.68
14877.00	88.88	89.70	9672.38	-528.62	5395.73	5417.77	2.19
14971.00	90.49	91.92	9672.90	-529.95	5489.71	5511.66	2.92
15064.00	90.49	93.57	9672.10	-534.41	5582.60	5604.64	1.77
15158.00	92.59	93.40	9669.58	-540.12	5676.39	5698.60	2.24
15251.00	89.30	90.94	9668.04	-543.64	5769.29	5791.55	4.42
15282.00	89.09	90.34	9668.48	-543.98	5800.28	5822.51	2.05
15313.00	88.81	90.67	9669.05	-544.26	5831.28	5853.46	1.40
15344.00	87.76	91.16	9669.97	-544.75	5862.26	5884.42	3.74
15376.00	86.15	91.62	9671.67	-545.53	5894.20	5916.35	5.23
15407.00	86.00	91.52	9673.80	-546.37	5925.12	5947.26	0.58
15438.00	86.92	92.79	9675.71	-547.54	5956.04	5978.19	5.05
15469.00	86.15	93.30	9677.58	-549.18	5986.93	6009.13	2.98
15493.00	85.52	93.35	9679.33	-550.57	6010.83	6033.07	2.63
15531.00	84.47	93.24	9682.64	-552.74	6048.62	6070.92	2.78
15563.00	85.10	92.41	9685.55	-554.31	6080.45	6102.79	3.25
15594.00	87.20	91.62	9687.63	-555.40	6111.36	6133.71	7.24
15625.00	87.20	91.32	9689.15	-556.20	6142.31	6164.65	0.97
15656.00	90.70	91.56	9689.72	-556.97	6173.29	6195.62	11.32
15687.00	90.14	91.00	9689.49	-557.67	6204.28	6226.60	2.55
15719.00	89.44	90.70	9689.61	-558.14	6236.28	6258.57	2.38
15812.00	90.28	90.62	9689.83	-559.21	6329.27	6351.45	0.91
15906.00	89.23	87.05	9690.23	-557.30	6423.24	6445.13	3.96
15999.00	89.44	83.98	9691.31	-550.03	6515.93	6537.22	3.31
16093.00	90.28	84.44	9691.54	-540.55	6609.45	6630.00	1.02
16186.00	90.07	86.85	9691.26	-533.49	6702.18	6722.14	2.60
16280.00	86.08	87.65	9694.42	-528.98	6796.00	6815.51	4.33
16373.00	85.44	88.44	9701.29	-525.82	6888.69	6907.84	1.09
16466.00	86.63	89.42	9707.72	-524.08	6981.45	7000.33	1.66
16560.00	88.18	90.09	9711.98	-523.68	7075.34	7094.04	1.80
16654.00	88.81	90.79	9714.45	-524.40	7169.31	7187.87	1.00
16747.00	89.09	90.46	9716.15	-525.42	7262.29	7280.74	0.47
16841.00	89.72	90.58	9717.13	-526.27	7356.28	7374.62	0.68
16934.00	88.81	90.63	9718.32	-527.25	7449.26	7467.49	0.98
17028.00	89.30	90.84	9719.87	-528.46	7543.24	7561.37	0.57
17121.00	90.56	91.12	9719.99	-530.05	7636.23	7654.29	1.39
17215.00	90.21	91.75	9719.35	-532.40	7730.19	7748.22	0.77
17308.00	88.25	89.81	9720.60	-533.67	7823.17	7841.11	2.97
17402.00	89.58	90.15	9722.38	-533.64	7917.15	7934.91	1.46
17496.00	89.79	90.75	9722.90	-534.38	8011.15	8028.78	0.68
17589.00	89.93	91.70	9723.13	-536.36	8104.12	8121.71	1.03
17626.00	88.95	90.89	9723.49	-537.20	8141.11	8158.68	3.44

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
Projected to Total Depth:							
17700.00	88.95	90.89	9724.85	-538.35	8215.09	8232.60	0.00

Vertical Section is 8232.60 ft along the target direction of 93.45 deg at a measured depth of 17700.00 ft.
Horizontal Displacement is 8232.71 ft along the well bore azimuth of 93.75 deg.
The total correction is 7.35 deg relative to Grid North.