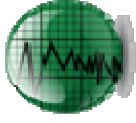




Weatherford[®]



END OF WELL REPORT

FINAL SURVEYS

SECTION 1

DAILY ACTIVITIES

SECTION 2

BHA REPORTS

SECTION 3

MOTOR REPORTS

SECTION 4

SLIDE SHEET REPORTS

SECTION 5



FINAL SURVEYS





Weatherford®

Weatherford
2000 Oil Drive
Casper, WY 82604

Survey Certification

Operating Company:	Anadarko Petroleum Corp.
Well Name:	GRIFFITHS 35N-20HZ
State:	CO
County:	WELD
API Number:	512336635
Datum:	NAD 83
Survey Calculation Method:	Minimum Curvature
North Reference:	True North

I, Matt Maydew, hereby certify the attached
directional survey run from the measure depth of 1,144.00 feet
to the measured depth of 17,317.00 feet as accurate and true
to the best of my knowledge.

Signature

26-Aug-13

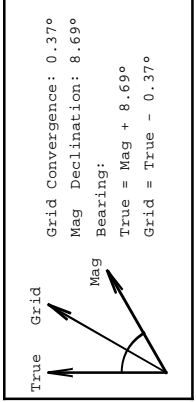
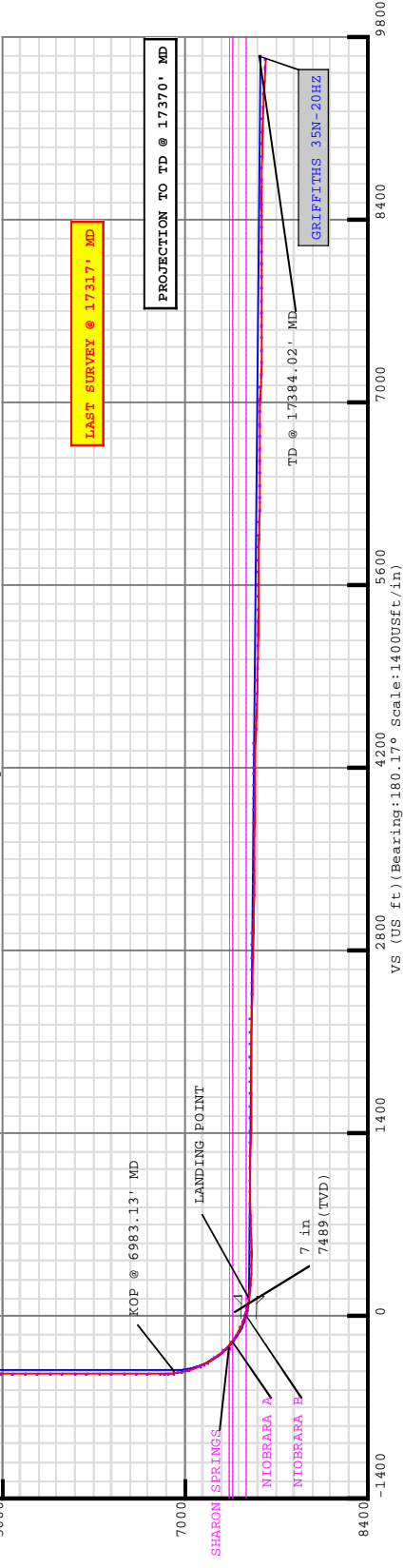
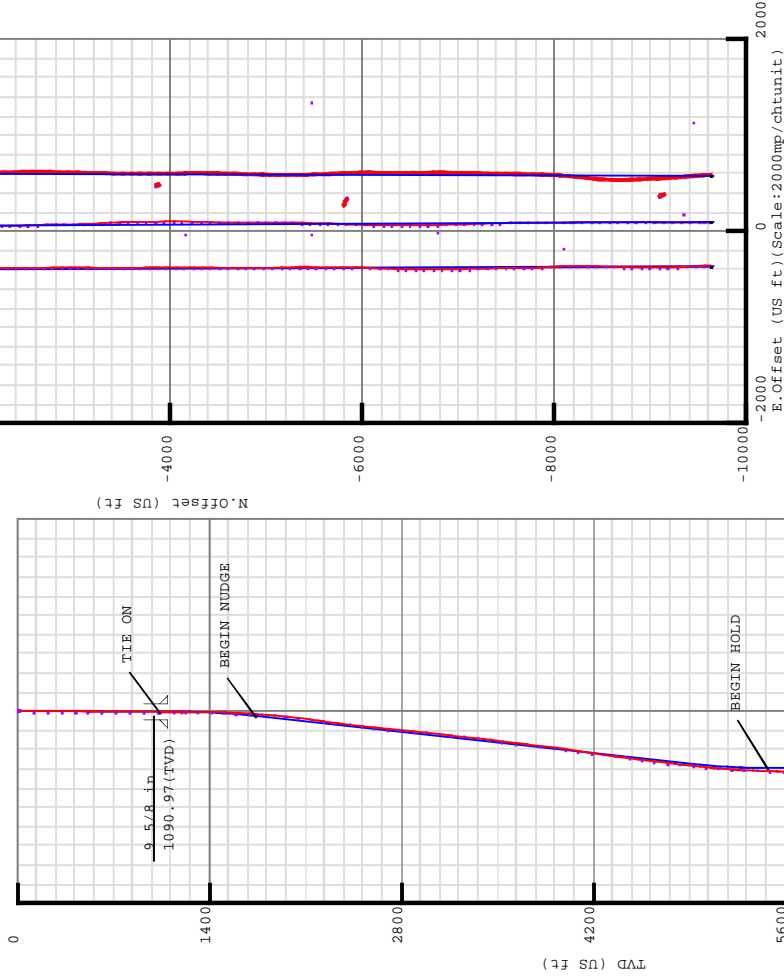
Date

Matt Maydew

Directional Planning
Weatherford - Rockies District



Weatherford®



Survey Data for GRIFFITHS 35N-20HZ

Field: WATTENBERG_ANADARKO_NAD83
Map Unit: USFt Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: NAD83 / Colorado North (ftUS)

Site: GRIFFITHS PAD
Unit: USFeet TVD Reference:
Company Name: ANADARKO
Position: Northing: 1264176.37USft Latitude: 40.057105°
Easting: 3161841.59USft Longitude: -104.921823°
North Reference: True Grid Convergence: 0.37°
Elevation Above VRD: 5071.00USft

Slot: GRIFFITHS 35N-20HZ
Position:
Offset is from Site centre
+N/-S: -0.37USft Northing: 1264176.40USft Latitude: 40.057104°
+E/-W: 60.18USft Easting: 3161901.77USft Longitude: -104.921608°
Elevation Above VRD: 5070.00USft

Well: GRIFFITHS 35N-20HZ
Type: Main-Well
File Number:
Vertical Section: Position offset of origin from Slot centre:
+N/-S: -0.00USft Azimuth: 90.00°
+E/-W: 0.00USft
Magnetic Parameters:
Model: Field Strength: Declination: Dip: Date:
BGGM 52701(nT) 8.69° 66.67° 2013-05-29

Survey Point Information:									
DogLeg Severity Unit: °/100.00ft									
MD	Inc	Az	TVD	+N/-S	+E/-W	VSec	DLS Toolface	Build	Turn
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(°)	(DLSU)	(DLSU)
17317.00	87.04	175.62	7614.70	-9580.21	581.33	9578.44	0.94	303.7	0.52
17370.00	87.04	175.62	7617.43	-9632.98	585.38	9631.20	0.00	0.00	0.00



5D Survey Report

ANADARKO

Field Name:

WATTENBERG_ANADARKO_NAD83

Site Name:

GRIFFITHS PAD

Well Name:

GRIFFITHS 35N-20HZ

Survey:

Definitive Survey



Weatherford®

DEFINITIVE SURVEYS FOR THE GRIFFITHS 35N-20HZ

Site Name GRIFFITHS PAD	Units : US ft	North Reference : True	Convergence Angle : 0.37
	Position	Northing : 1264176.37 US ft	Latitude : 40.057105
	Elevation above:5071.00 US ft	Eastng : 3161841.59 US ft	Longitude : -104.921823
Comment :			

Slot Name GRIFFITHS 35N-20HZ	Position (Offsets relative to Site Centre)		
	+ N / - S : -0.37 US ft	Northing :1264176.40 US ft	Latitude : 40.057104
	+ E / - W : 50.18 US ft	Eastng :3161901.77 US ft	Longitude : -104.921608
Slot TVD Reference : Ground Elevation			
Elevation above : 5070.00 US ft			
Comment :			

Well Name GRIFFITHS 35N-20HZ	Type : Main well	UWI :
	Rig Height Drill Floor : 25.00 US ft	Comment :
	Relative to : 5095.00 US ft	Closure Azimuth : 176.523°
Closure Distance : 9650.75 US ft		+ E / -W : 0.00 US ft
Vertical Section (Position of Origin Relative to Slot)		Az :180.17°
+ N / -S : -0.00 US ft		

Target Set
Name : 35N-20HZ
Number of Targets : 1

Comment :	
TargetName:	Position (Relative to centre)
PBHL	Northing : 1254521.93 US ft
Shape:	Eastng : 3162535.18US ft
Cuboid	Latitude : 40°1'50.124000"
	Longitude : -104°55'10.455600"
TVD (Drill Floor) : 7578.00 US ft	
Orientation	Inclination : 0.00°
Dimensions	Breadth : 1.00 US ft
	Height : 1.00 US ft

Survey Name :Definitive Survey				
Date : 29/May/2013		Survey Tool :		Company :
Magnetic Model				
Model Name: BGGM		Date: 29/May/2013	Field Strength: 52701.8 nT	Dip: 66.67°
Survey Tool Ranges				
Name		Start MD (us ft)		End MD (us ft)
NSG Static GMS		0.00		1037.00
MWD + IFR		1037.00		17370.00
				GYRO - SURFACE
				MWD+IFR SURVEYS

Well path created using minimum curvature

Survey Points (Relative to centre, TVD relative to Drill Floor)														
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	Latitude (°)	Longitude (°)	DLS (°/100 US ft)	T. Face (°)	CL (US ft)	VS (US ft)	High to Plan (US ft)	Right to Plan (US ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	40.057104	-104.921608	0.00	0.00	0.00	-0.00	0.00	0.00	
25.00	0.00	0.00	25.00	0.00	0.00	40.057104	-104.921608	0.00	0.00	25.00	-0.00	0.00	0.00	
125.00	0.57	304.47	125.00	0.28	-0.41	40.057105	-104.921609	0.57	304.47	100.00	-0.28	-0.00	0.00	
225.00	0.33	281.05	225.00	0.62	-1.10	40.057106	-104.921612	0.30	206.15	100.00	-0.62	-0.00	0.00	
325.00	0.25	322.06	324.99	0.85	-1.52	40.057106	-104.921613	0.22	130.75	100.00	-0.84	-0.00	0.00	
425.00	0.60	339.89	424.99	1.51	-1.83	40.057108	-104.921615	0.37	29.77	100.00	-1.51	-0.00	0.00	
525.00	0.70	326.82	524.98	2.51	-2.35	40.057111	-104.921616	0.18	297.35	100.00	-2.51	-0.00	0.00	
625.00	0.54	343.56	624.98	3.48	-2.82	40.057114	-104.921618	0.24	139.62	100.00	-3.47	-0.00	0.00	
725.00	0.43	4.74	724.98	4.30	-2.92	40.057116	-104.921618	0.21	131.83	100.00	-4.30	-0.00	0.00	
825.00	0.53	349.60	824.97	5.13	-2.97	40.057118	-104.921619	0.16	300.52	100.00	-5.13	-0.00	0.00	
925.00	0.54	356.08	924.97	6.06	-3.07	40.057121	-104.921619	0.08	87.05	100.00	-6.05	-0.00	0.00	
1025.00	0.27	45.39	1024.97	6.69	-2.92	40.057122	-104.921618	0.41	150.93	100.00	-6.69	-0.00	0.00	
1037.00	0.09	27.03	1036.97	6.72	-2.89	40.057122	-104.921618	1.56	188.73	12.00	-6.72	-0.00	0.00	FIRST WFT
1144.00	0.30	71.85	1143.96	6.88	-2.59	40.057123	-104.921617	0.23	59.86	107.00	-6.88	-0.22	-0.06	MWD+IFR SURVEY
1235.00	1.94	76.91	1234.94	7.31	-0.86	40.057124	-104.921611	1.80	5.98	91.00	-7.31	-1.71	-0.20	
1327.00	1.69	73.55	1326.90	8.04	1.96	40.057126	-104.921601	0.30	201.39	92.00	-8.05	-2.02	-1.28	
1419.00	3.19	75.74	1418.81	9.06	5.74	40.057129	-104.921588	1.63	4.65	92.00	-9.08	-0.66	-3.12	
1511.00	4.87	66.61	1510.58	11.24	11.80	40.057135	-104.921566	1.95	334.50	92.00	-11.28	1.89	-5.22	
1602.00	6.95	61.35	1601.09	15.41	20.18	40.057146	-104.921536	2.36	342.78	91.00	-15.48	4.38	-6.49	
1694.00	7.63	67.64	1692.35	20.40	30.71	40.057160	-104.921498	1.14	52.72	92.00	-20.50	6.17	-9.25	
1786.00	9.36	63.61	1783.34	26.05	43.07	40.057176	-104.921454	1.99	339.01	92.00	-26.19	10.25	-11.52	
1878.00	10.35	61.90	1873.98	33.27	57.06	40.057195	-104.921404	1.12	342.69	92.00	-33.45	12.43	-13.27	
1970.00	11.52	59.10	1964.31	41.88	72.23	40.057219	-104.921350	1.40	334.20	92.00	-42.10	13.24	-14.05	
2062.00	12.71	56.91	2054.26	52.13	88.59	40.057247	-104.921292	1.39	337.81	92.00	-52.39	12.06	-14.20	
2154.00	13.11	51.34	2143.94	64.17	105.22	40.057280	-104.921232	1.42	285.09	92.00	-64.49	10.37	-12.55	
2249.00	11.24	46.34	2236.80	77.29	120.33	40.057316	-104.921178	2.26	206.99	95.00	-77.65	9.36	-9.52	
2344.00	10.73	49.79	2330.06	89.40	133.79	40.057349	-104.921130	0.88	129.49	95.00	-89.80	8.82	-7.56	

5D Survey Report

Survey Points (Relative to centre, TVD relative to Drill Floor)														
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N Offset (US ft)	E Offset (US ft)	Latitude (°)	-Longitude (°)	DLS (°/100 US ft)	T.Face (°)	CL (US ft)	VS (US ft)	High to Plan (US ft)	Right to Plan (US ft)	Comment
2438.00	11.08	53.87	2422.36	100.37	147.77	40.057380	-104.921080	0.90	67.62	94.00	-100.81	8.53	-6.89	
2533.00	11.75	56.56	2515.48	111.08	163.21	40.057409	-104.921025	0.90	39.79	95.00	-111.57	7.62	-7.05	
2628.00	12.33	57.56	2608.39	121.86	179.84	40.057439	-104.920966	0.65	20.27	95.00	-122.39	5.87	-7.53	
2722.00	10.12	54.56	2700.59	132.03	195.04	40.057466	-104.920911	2.43	193.33	94.00	-132.61	5.98	-7.32	
2818.00	10.28	58.65	2795.07	141.38	209.23	40.057492	-104.920861	0.77	79.56	96.00	-142.00	6.90	-8.00	
2913.00	10.34	60.15	2888.54	150.03	223.86	40.057516	-104.920808	0.29	78.14	95.00	-150.70	7.88	-9.29	
3008.00	11.42	60.31	2981.83	158.93	239.43	40.057540	-104.920753	1.14	1.68	95.00	-159.65	8.10	-10.68	
3103.00	12.45	57.80	3074.78	169.05	256.27	40.057568	-104.920693	1.21	332.02	95.00	-169.81	7.10	-11.34	
3197.00	9.51	52.10	3167.05	179.22	270.97	40.057596	-104.920640	3.33	197.49	94.00	-180.03	8.31	-10.40	
3292.00	9.92	56.21	3260.69	188.59	283.96	40.057622	-104.920594	0.85	61.45	95.00	-189.44	9.81	-10.48	
3387.00	10.10	55.68	3354.24	197.84	297.65	40.057647	-104.920545	0.21	332.64	95.00	-198.73	11.64	-10.39	
3481.00	11.90	49.70	3446.51	208.76	311.85	40.057677	-104.920494	2.26	324.67	94.00	-209.68	12.68	-8.05	
3576.00	11.72	46.09	3539.50	221.78	326.27	40.057713	-104.920442	0.80	254.55	95.00	-222.75	11.66	-4.76	
3670.00	10.79	48.45	3631.70	234.24	339.73	40.057747	-104.920394	1.10	154.81	94.00	-235.25	11.00	-2.49	
3765.00	10.63	54.48	3725.04	245.23	353.52	40.057777	-104.920345	1.19	101.08	95.00	-246.28	11.31	-2.22	
3859.00	11.06	53.38	3817.36	255.65	367.81	40.057806	-104.920294	0.51	333.76	94.00	-256.74	11.68	-1.37	
3954.00	11.10	50.98	3910.59	266.84	382.23	40.057837	-104.920242	0.49	273.78	95.00	-267.98	11.63	0.30	
4049.00	12.45	50.45	4003.59	279.12	397.23	40.057870	-104.920189	1.43	355.16	95.00	-280.30	10.36	2.05	
4143.00	12.67	48.27	4095.34	292.43	412.74	40.057907	-104.920134	0.56	293.83	94.00	-293.66	7.67	4.45	
4238.00	12.64	50.20	4188.04	306.02	428.50	40.057944	-104.920077	0.45	95.00	95.00	-307.29	5.08	6.36	
4332.00	12.30	50.40	4279.82	318.98	444.11	40.057980	-104.920021	0.36	172.86	94.00	-320.30	2.71	8.11	
4427.00	13.28	50.94	4372.46	332.31	460.38	40.058016	-104.919963	1.04	7.22	95.00	-333.68	-0.15	9.77	
4522.00	12.62	52.07	4465.04	345.57	477.04	40.058053	-104.919904	0.74	159.56	95.00	-346.98	-3.14	11.21	
4616.00	11.13	51.54	4557.03	357.52	492.25	40.058085	-104.919849	1.59	183.93	94.00	-358.98	-4.63	12.46	
4711.00	9.51	53.82	4650.49	367.86	505.76	40.058114	-104.919801	1.76	166.97	95.00	-369.36	-2.92	13.66	
4806.00	10.51	50.71	4744.04	377.98	518.80	40.058142	-104.919755	1.20	330.07	95.00	-379.52	-1.97	14.71	
4900.00	12.23	53.77	4836.20	389.29	533.47	40.058173	-104.919702	1.94	20.83	94.00	-390.88	-1.70	15.93	
4995.00	10.58	50.55	4929.32	400.78	548.32	40.058204	-104.919649	1.86	195.53	95.00	-402.41	-3.22	16.95	
5089.00	8.62	48.22	5022.00	410.96	560.24	40.058232	-104.919607	2.13	190.07	94.00	-412.62	-3.34	18.65	
5184.00	6.97	53.65	5116.12	419.12	570.19	40.058255	-104.919571	1.90	158.62	95.00	-420.81	-0.98	20.09	
5279.00	5.62	50.02	5210.54	425.53	576.40	40.058272	-104.919542	1.48	194.63	95.00	-427.24	-2.37	20.69	
5373.00	4.87	47.31	5304.15	431.19	584.86	40.058288	-104.919519	0.84	196.93	94.00	-432.93	-4.87	21.40	
5468.00	3.20	51.10	5398.91	435.59	589.89	40.058300	-104.919501	1.78	172.81	95.00	-437.34	-6.06	22.29	
5563.00	2.24	47.68	5493.80	438.50	593.32	40.058308	-104.919488	1.02	187.89	95.00	-440.27	-10.88	21.87	
5657.00	0.22	9.51	5587.78	439.92	594.71	40.058312	-104.919483	2.20	183.76	94.00	-441.68	-23.70	9.33	
5752.00	0.21	327.17	5682.78	440.24	594.65	40.058313	-104.919484	0.16	245.39	95.00	-442.01	-24.11	-9.19	
5846.00	0.29	290.93	5776.78	440.47	594.33	40.058313	-104.919485	0.18	277.94	94.00	-442.24	-14.39	-21.77	
5941.00	0.49	286.82	5871.77	440.68	593.72	40.058314	-104.919487	0.21	349.98	95.00	-442.44	-13.44	-22.76	
6035.00	0.51	277.35	5965.77	440.85	592.92	40.058314	-104.919490	0.09	278.84	94.00	-442.61	-10.33	-24.73	
6130.00	0.47	272.62	6060.77	440.92	592.11	40.058314	-104.919493	0.06	222.97	95.00	-442.68	-9.06	-25.53	
6225.00	0.44	264.84	6155.76	440.90	591.36	40.058314	-104.919495	0.07	240.24	95.00	-442.66	-6.28	-26.58	

5D Survey Report

Survey Points (Relative to centre, TVD relative to Drill Floor)														Comment
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N Offset (US ft)	E Offset (US ft)	Latitude (°)	-Longitude (°)	DLS (°/100 US ft)	T.Face (°)	CL (US ft)	VS (US ft)	High to Plan (US ft)	Right to Plan (US ft)	
6319.00	0.56	294.39	6249.76	441.06	590.58	40.058315	-104.919498	0.30	80.31	94.00	-442.82	-19.34	-19.85	
6414.00	0.63	305.58	6344.75	441.56	589.73	40.058316	-104.919501	0.14	64.61	95.00	-443.31	-23.80	-15.63	
6509.00	0.47	269.32	6439.75	441.86	588.92	40.058317	-104.919504	0.39	227.92	95.00	-443.61	-10.76	-26.99	
6603.00	0.38	141.92	6533.75	441.61	588.73	40.058316	-104.919505	0.81	203.31	94.00	-443.35	27.90	7.54	
6698.00	0.49	110.07	6628.75	441.22	589.30	40.058315	-104.919503	0.27	277.97	95.00	-442.97	19.05	20.96	
6792.00	0.41	69.41	6722.74	441.20	589.99	40.058315	-104.919500	0.34	236.18	95.00	-442.95	0.15	28.04	
6887.00	0.69	93.06	6817.74	441.29	590.88	40.058315	-104.919497	0.37	51.26	94.00	-443.04	10.51	25.76	
6919.00	0.51	100.58	6849.74	441.25	591.22	40.058315	-104.919496	0.61	160.10	32.00	-443.01	13.45	24.19	
6950.00	2.20	144.13	6880.73	440.74	591.70	40.058314	-104.919494	6.01	54.41	31.00	-442.50	25.71	8.36	
6982.00	5.75	155.29	6912.65	438.79	592.73	40.058309	-104.919490	11.30	17.90	32.00	-440.55	24.53	3.34	
7013.00	9.95	160.91	6943.35	434.85	594.26	40.058298	-104.919485	13.76	13.15	31.00	-436.61	21.05	1.26	
7045.00	13.42	161.59	6974.68	428.71	596.33	40.058281	-104.919478	10.85	2.61	32.00	-430.48	16.78	1.75	
7076.00	16.29	162.97	7004.64	421.14	598.74	40.058260	-104.919469	9.33	7.70	31.00	-422.91	12.57	2.54	
7108.00	18.27	164.64	7035.20	412.01	601.39	40.058235	-104.919460	6.38	14.86	32.00	-413.79	8.60	3.79	
7139.00	19.88	169.44	7064.50	402.14	603.64	40.058208	-104.919451	7.25	46.54	31.00	-403.93	5.71	4.78	
7171.00	22.41	169.62	7094.34	390.79	605.74	40.058177	-104.919444	7.91	1.55	32.00	-392.59	2.98	6.41	
7203.00	24.73	171.94	7123.67	378.16	607.77	40.058142	-104.919437	7.81	22.86	32.00	-379.96	0.92	8.06	
7234.00	27.03	174.86	7151.56	364.72	609.32	40.058105	-104.919431	8.48	30.31	31.00	-366.53	-0.44	9.45	
7266.00	29.87	177.55	7179.69	349.51	510.31	40.058063	-104.919428	9.73	25.48	32.00	-351.33	-1.49	10.45	
7297.00	32.58	180.99	7206.20	333.45	610.49	40.058019	-104.919427	10.46	34.83	31.00	-335.27	-2.13	10.76	
7328.00	35.09	183.65	7231.95	316.21	609.78	40.057972	-104.919430	9.40	31.66	31.00	-318.02	-2.68	10.21	
7360.00	37.41	184.60	7257.75	297.34	608.42	40.057920	-104.919434	7.46	14.00	32.00	-299.15	-3.14	8.96	
7391.00	40.43	184.06	7281.87	277.92	606.95	40.057867	-104.919440	9.80	353.38	31.00	-279.73	-3.52	7.54	
7423.00	43.64	184.10	7305.63	256.55	605.42	40.057808	-104.919445	10.03	0.49	32.00	-258.35	-3.81	6.08	
7454.00	47.19	184.17	7327.39	234.54	603.83	40.057748	-104.919451	11.45	0.83	31.00	-236.33	-4.20	4.56	
7501.00	52.94	183.38	7357.55	198.59	601.47	40.057649	-104.919455	12.30	353.73	47.00	-200.38	-5.40	2.30	
7548.00	57.29	181.07	7384.43	160.08	600.00	40.057543	-104.919465	10.09	335.79	47.00	-161.86	-6.82	0.80	
7595.00	51.09	179.76	7408.50	119.72	599.71	40.057433	-104.919466	8.43	343.17	47.00	-121.50	-7.64	0.55	
7643.00	56.48	179.28	7429.69	76.68	600.08	40.057314	-104.919464	11.26	355.32	48.00	-78.46	-8.28	1.02	
7690.00	71.42	180.17	7446.57	32.83	600.28	40.057194	-104.919464	10.66	9.71	47.00	-34.61	-9.19	1.40	
7737.00	72.54	179.71	7461.11	-11.87	600.33	40.057071	-104.919463	2.56	338.59	47.00	10.08	-8.68	1.56	
7768.00	75.37	179.18	7469.68	-41.66	600.62	40.056990	-104.919462	9.28	349.72	31.00	39.87	-7.27	1.93	
7800.00	77.60	179.45	7477.15	-72.76	600.99	40.056904	-104.919461	7.02	6.75	32.00	70.98	-5.44	2.41	
7831.00	79.81	179.29	7483.22	-103.16	601.32	40.056821	-104.919460	7.15	355.92	31.00	101.37	-3.16	2.84	
7863.00	80.59	180.08	7488.67	-134.69	601.50	40.056734	-104.919459	3.44	45.01	32.00	132.90	0.11	3.11	
7894.00	82.07	180.16	7493.34	-165.34	601.43	40.056650	-104.919459	4.78	3.06	31.00	163.55	4.19	3.14	
7926.00	84.26	180.45	7497.15	-197.11	601.26	40.056563	-104.919460	6.90	7.51	32.00	195.32	7.70	3.06	
8121.00	89.01	180.60	7508.60	-391.71	599.48	40.056029	-104.919466	2.44	1.81	195.00	389.92	17.35	1.85	
8215.00	90.31	180.82	7509.15	-485.70	596.32	40.055771	-104.919471	1.40	9.61	94.00	483.92	17.03	0.96	
8309.00	91.61	180.59	7507.58	-579.67	597.16	40.055513	-104.919475	1.40	349.97	94.00	577.90	14.57	0.08	
8404.00	92.59	180.58	7504.10	-674.60	596.19	40.055252	-104.919478	1.03	359.42	95.00	672.83	10.19	-0.61	

5D Survey Report

Survey Points (Relative to centre, TVD relative to Drill Floor)														
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N Offset (US ft)	E Offset (US ft)	Latitude (°)	-Longitude (°)	DLS (°/100 US ft)	T.Face (°)	CL (US ft)	VS (US ft)	High to Plan (US ft)	Right to Plan (US ft)	Comment
8498.00	91.48	179.42	7500.76	-768.54	596.19	40.054994	-104.919478	1.71	226.27	94.00	766.77	5.99	-0.34	
8592.00	91.73	179.41	7498.13	-862.50	597.15	40.054736	-104.919475	0.27	357.71	94.00	860.72	2.48	0.90	
8686.00	90.43	176.23	7496.35	-956.46	599.09	40.054478	-104.919468	1.87	222.24	94.00	954.67	-0.17	3.11	
8780.00	89.81	179.08	7496.16	-1050.43	601.29	40.054220	-104.919460	1.12	126.11	94.00	1048.64	-1.25	5.59	
8874.00	88.77	176.70	7497.32	-1144.41	603.11	40.053962	-104.919454	1.18	200.07	94.00	1142.61	-0.97	7.69	
8969.00	88.52	178.64	7499.57	-1239.35	605.32	40.053702	-104.919446	0.27	193.49	95.00	1237.55	0.38	10.17	
9063.00	87.90	179.13	7502.50	-1333.29	607.15	40.053444	-104.919439	0.84	141.70	94.00	1331.48	2.44	12.27	
9157.00	88.77	179.49	7505.24	-1427.24	608.28	40.053186	-104.919435	1.00	22.48	94.00	1425.43	4.30	13.68	
9252.00	89.63	179.28	7506.56	-1522.23	609.30	40.052925	-104.919431	0.93	346.28	95.00	1520.41	4.74	14.98	
9346.00	89.14	179.40	7507.57	-1616.21	610.38	40.052667	-104.919428	0.54	166.24	94.00	1614.39	4.86	16.34	
9440.00	90.25	179.73	7508.07	-1710.21	611.09	40.052409	-104.919425	1.23	16.56	94.00	1708.38	4.49	17.33	
9534.00	89.69	180.15	7508.12	-1804.21	611.19	40.052151	-104.919425	0.74	143.13	94.00	1802.38	3.66	17.70	
9629.00	90.00	180.26	7508.38	-1899.21	610.85	40.051890	-104.919426	0.35	19.54	95.00	1897.38	3.02	17.64	
9723.00	90.25	180.79	7508.17	-1993.20	609.99	40.051632	-104.919429	0.62	64.75	94.00	1991.38	1.94	17.05	
9818.00	89.88	180.14	7508.07	-2088.20	609.22	40.051372	-104.919432	0.79	240.35	95.00	2086.38	0.94	16.56	
9912.00	89.63	179.31	7508.47	-2182.20	609.67	40.051113	-104.919430	0.92	253.24	94.00	2180.37	0.46	17.29	
10007.00	88.83	179.42	7509.74	-2277.18	610.72	40.050853	-104.919426	0.85	172.17	95.00	2275.35	0.85	18.62	
10102.00	88.34	179.13	7512.09	-2372.14	611.92	40.050592	-104.919422	0.60	210.61	95.00	2370.31	2.30	20.10	
10197.00	88.58	179.74	7514.64	-2467.10	612.86	40.050331	-104.919419	0.69	68.52	95.00	2465.27	3.97	21.32	
10291.00	89.14	179.68	7516.51	-2561.08	613.34	40.050073	-104.919417	0.60	353.89	94.00	2559.25	4.96	22.07	
10386.00	89.26	179.90	7517.84	-2656.07	613.68	40.049813	-104.919416	0.26	61.39	95.00	2654.24	5.40	22.70	
10482.00	88.83	180.64	7519.44	-2752.06	613.23	40.049549	-104.919418	0.89	120.17	96.00	2750.22	6.10	22.52	
10577.00	89.01	181.03	7521.23	-2847.03	611.85	40.049288	-104.919422	0.45	65.22	95.00	2845.20	7.01	21.42	
10671.00	88.52	181.26	7523.26	-2940.99	609.97	40.049030	-104.919429	0.58	154.86	94.00	2939.16	8.16	19.81	
10766.00	89.20	181.23	7525.15	-3035.95	607.91	40.048770	-104.919437	0.72	357.47	95.00	3034.13	9.15	18.03	
10861.00	88.64	181.49	7526.94	-3130.90	605.65	40.048509	-104.919445	0.65	155.10	95.00	3129.09	10.06	16.05	
10955.00	89.38	181.34	7528.56	-3224.86	603.33	40.048251	-104.919453	0.80	348.54	94.00	3223.05	10.80	14.01	
11050.00	89.57	181.64	7529.43	-3319.82	600.86	40.047990	-104.919462	0.37	57.65	95.00	3318.02	10.78	11.81	
11144.00	90.25	181.62	7529.58	-3413.79	598.19	40.047733	-104.919471	0.72	358.32	94.00	3411.99	10.04	9.42	
11239.00	90.25	180.91	7529.16	-3508.76	596.09	40.047472	-104.919479	0.75	270.00	95.00	3506.97	8.74	7.60	
11334.00	89.57	180.07	7529.31	-3603.76	595.28	40.047211	-104.919482	1.14	231.01	95.00	3601.97	8.00	7.07	
11428.00	88.46	179.44	7530.93	-3697.74	595.68	40.046953	-104.919480	1.36	209.57	94.00	3695.95	8.73	7.75	
11523.00	89.57	179.69	7532.56	-3792.72	596.40	40.046692	-104.919478	1.20	12.69	95.00	3790.93	9.48	8.75	
11617.00	89.75	179.28	7533.12	-3886.72	597.25	40.046434	-104.919475	0.48	293.70	94.00	3884.92	9.16	9.87	
11712.00	89.07	179.63	7534.10	-3981.71	598.15	40.046174	-104.919472	0.81	152.77	95.00	3979.91	9.24	11.05	
11806.00	89.26	179.19	7535.47	-4075.69	599.12	40.045915	-104.919468	0.51	293.35	94.00	4073.89	9.73	12.29	
11901.00	90.18	178.69	7535.93	-4170.67	600.87	40.045655	-104.919462	1.10	331.48	95.00	4168.87	9.31	14.33	
11946.00	90.53	178.69	7535.65	-4215.66	601.90	40.045531	-104.919458	0.78	0.00	45.00	4213.85	8.61	15.49	
12040.00	89.14	180.99	7535.92	-4309.65	602.17	40.045273	-104.919457	2.86	121.15	94.00	4307.84	8.01	16.03	
12134.00	88.15	180.72	7538.15	-4403.61	600.76	40.045015	-104.919462	1.09	195.25	94.00	4401.81	9.35	14.90	
12229.00	87.22	180.58	7541.98	-4498.53	599.69	40.044755	-104.919466	0.99	188.55	95.00	4496.72	12.29	14.10	

5D Survey Report

Survey Points (Relative to centre, TVD relative to Drill Floor)														Comment
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N Offset (US ft)	E Offset (US ft)	Latitude (°)	-Longitude (°)	DLS (°/100 US ft)	T.Face (°)	CL (US ft)	VS (US ft)	High to Plan (US ft)	Right to Plan (US ft)	
12323.00	87.16	182.07	7546.59	-4592.39	597.52	40.044497	-104.919474	1.58	92.35	94.00	4590.59	16.03	12.20	
12418.00	88.71	181.52	7550.02	-4687.27	594.54	40.044237	-104.919484	1.73	340.46	95.00	4685.49	18.56	9.51	
12512.00	89.26	181.91	7551.68	-4781.22	591.73	40.043979	-104.919495	0.72	35.34	94.00	4779.44	19.35	6.97	
12607.00	89.14	181.26	7553.01	-4876.17	589.10	40.043718	-104.919504	0.70	259.53	95.00	4874.40	19.78	4.62	
12702.00	87.97	181.40	7555.40	-4971.11	586.90	40.043457	-104.919512	1.24	173.18	95.00	4969.35	21.28	2.70	
12775.00	88.02	181.85	7557.96	-5044.04	584.83	40.043257	-104.919519	0.62	83.66	73.00	5042.28	23.15	0.84	
12870.00	89.44	181.24	7560.06	-5138.98	582.27	40.042997	-104.919528	1.63	336.75	95.00	5137.22	24.37	-1.44	
12964.00	90.12	180.18	7560.42	-5232.97	581.10	40.042739	-104.919533	1.34	302.68	94.00	5231.22	23.85	-2.32	
13059.00	89.38	179.29	7560.84	-5327.97	581.54	40.042478	-104.919531	1.22	230.26	95.00	5326.21	23.38	-1.60	
13153.00	89.88	177.03	7561.45	-5421.91	584.56	40.042220	-104.919520	2.46	282.47	94.00	5420.15	23.11	1.70	
13248.00	89.44	178.25	7562.01	-5516.82	588.47	40.041959	-104.919506	1.37	109.84	95.00	5515.05	22.78	5.88	
13343.00	89.94	178.46	7562.52	-5611.78	591.20	40.041699	-104.919496	0.57	22.78	95.00	5610.00	22.41	8.89	
13437.00	89.12	176.92	7563.29	-5705.70	594.99	40.041441	-104.919483	1.86	241.96	94.00	5703.91	22.29	12.94	
13532.00	89.88	176.95	7564.12	-5800.56	600.07	40.041180	-104.919465	0.80	2.26	95.00	5798.75	22.24	18.29	
13626.00	89.51	178.09	7564.62	-5894.47	604.13	40.040923	-104.919450	1.28	107.98	94.00	5892.65	21.86	22.64	
13721.00	88.83	179.56	7566.00	-5989.44	606.08	40.040662	-104.919443	1.70	114.84	95.00	5987.61	22.34	24.87	
13815.00	88.15	180.70	7568.48	-6083.40	605.87	40.040404	-104.919444	1.41	120.84	94.00	6081.57	23.95	24.93	
13910.00	88.70	180.25	7571.09	-6178.36	605.08	40.040143	-104.919447	0.75	320.71	95.00	6176.53	25.67	24.43	
14005.00	90.37	180.28	7571.86	-6273.35	604.64	40.039883	-104.919449	1.76	1.03	95.00	6271.53	25.55	24.27	
14099.00	90.25	179.78	7571.35	-6367.35	604.59	40.039624	-104.919449	0.55	256.51	94.00	6365.53	24.16	24.50	
14194.00	89.91	179.22	7571.22	-6462.35	605.42	40.039364	-104.919446	0.69	238.74	95.00	6460.52	23.14	25.60	
14289.00	90.53	180.45	7570.85	-6557.34	605.70	40.039103	-104.919445	1.45	63.25	95.00	6555.51	21.88	26.15	
14383.00	90.12	179.68	7570.32	-6651.34	605.59	40.038845	-104.919445	0.93	241.97	94.00	6649.51	20.47	26.32	
14478.00	89.69	179.20	7570.48	-6746.34	606.52	40.038584	-104.919442	0.68	228.14	95.00	6744.50	19.74	27.53	
14572.00	89.47	180.63	7571.17	-6840.33	606.66	40.038326	-104.919441	1.54	98.75	94.00	6838.50	19.55	27.94	
14667.00	89.51	180.64	7572.01	-6935.32	505.61	40.038065	-104.919445	0.04	14.04	95.00	6933.49	19.51	27.17	
14762.00	87.59	180.72	7574.42	-7030.28	604.48	40.037805	-104.919449	2.02	177.62	95.00	7028.45	21.02	26.32	
14856.00	85.99	180.98	7579.68	-7124.12	603.09	40.037547	-104.919454	1.72	170.79	94.00	7122.29	25.38	25.20	
14951.00	88.83	182.07	7583.97	-7218.98	600.56	40.037287	-104.919463	3.20	21.00	95.00	7217.16	28.82	22.94	
15045.00	89.82	181.41	7585.08	-7312.93	597.71	40.037029	-104.919473	1.27	326.31	94.00	7311.12	29.04	20.37	
15140.00	90.00	180.81	7585.23	-7407.91	595.87	40.036768	-104.919480	0.66	286.70	95.00	7406.10	28.30	18.81	
15234.00	89.75	180.68	7585.43	-7501.90	594.64	40.036510	-104.919484	0.30	207.47	94.00	7500.10	27.62	17.87	
15329.00	89.51	180.61	7586.05	-7596.89	593.57	40.036249	-104.919488	0.26	196.26	95.00	7595.09	27.35	17.08	
15423.00	90.26	182.04	7586.24	-7690.86	591.40	40.035991	-104.919496	1.72	62.33	94.00	7689.07	26.65	15.17	
15517.00	89.69	181.64	7586.28	-7784.81	588.38	40.035733	-104.919507	0.74	215.06	94.00	7783.03	25.82	12.43	
15612.00	89.32	181.04	7587.10	-7879.78	586.16	40.035473	-104.919515	0.74	238.34	95.00	7878.01	25.75	10.49	
15705.00	90.12	181.91	7587.55	-7972.75	583.77	40.035217	-104.919523	1.27	47.40	93.00	7970.98	25.33	8.37	
15800.00	90.55	184.07	7587.00	-8067.61	578.81	40.034957	-104.919541	2.32	78.74	95.00	8065.86	23.88	3.68	
15891.00	90.43	184.88	7586.22	-8158.33	571.71	40.034708	-104.919566	0.90	98.42	91.00	8156.60	22.26	-3.14	
15985.00	90.62	186.34	7585.36	-8251.87	562.52	40.034451	-104.919595	1.57	82.58	94.00	8250.17	20.53	-12.00	
16080.00	90.19	186.88	7584.69	-8346.24	551.59	40.034192	-104.919638	0.73	128.53	95.00	8344.56	18.98	-22.57	

5D Survey Report

Survey Points (Relative to centre, TVD relative to Drill Floor)														
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	Latitude (°)	-Longitude (°)	DLS (°/100 US ft)	T. Face (°)	CL (US ft)	VS (US ft)	High to Plan (US ft)	Right to Plan (US ft)	Comment
16175.00	90.19	185.62	7584.37	-8440.67	541.25	40.033933	-104.919675	1.33	270.00	95.00	8439.03	17.78	-32.64	
16254.00	90.37	182.47	7583.98	-8519.47	535.67	40.033717	-104.919695	3.99	273.28	79.00	8517.84	16.65	-38.09	
16349.00	89.69	181.67	7583.93	-8614.40	532.24	40.033456	-104.919707	1.11	229.64	95.00	8612.78	15.70	-41.25	
16443.00	88.58	179.39	7585.35	-8708.38	531.37	40.033198	-104.919710	2.70	244.02	94.00	8706.76	16.26	-41.85	
16538.00	88.64	178.49	7587.66	-8803.33	533.13	40.032937	-104.919704	0.95	273.80	95.00	8801.71	17.69	-39.80	
16632.00	88.64	177.36	7589.89	-8897.25	536.53	40.032679	-104.919692	1.20	269.99	94.00	8895.61	19.05	-36.09	
16727.00	88.89	176.92	7591.94	-8992.10	541.27	40.032419	-104.919675	0.53	299.61	95.00	8990.46	20.21	-31.07	
16822.00	89.26	175.90	7593.47	-9086.90	547.22	40.032159	-104.919654	1.14	289.93	95.00	9085.24	20.84	-24.82	
16916.00	88.58	176.63	7595.24	-9180.69	553.34	40.031901	-104.919632	1.06	132.98	94.00	9179.00	21.74	-18.46	
17011.00	87.84	175.87	7598.21	-9275.44	559.55	40.031641	-104.919610	1.12	225.74	95.00	9273.73	23.82	-11.96	
17105.00	86.73	175.76	7602.66	-9369.08	566.40	40.031384	-104.919585	1.19	185.65	94.00	9367.35	27.36	-4.85	
17200.00	86.61	176.19	7608.18	-9463.68	573.06	40.031125	-104.919562	0.47	105.63	95.00	9461.94	31.95	2.06	
17294.00	86.92	175.80	7613.49	-9557.30	579.62	40.030868	-104.919538	0.53	308.51	94.00	9555.54	36.36	8.88	
17317.00	87.04	175.62	7614.70	-9580.21	581.33	40.030805	-104.919532	0.94	303.72	23.00	9578.44	37.35	10.65	LAST WFT MWD+IFR SURVEY
17370.00	87.04	175.62	7617.43	-9632.98	585.38	40.030660	-104.919518	0.00	0.00	53.00	9631.20	39.57	14.84	PROJECTION TO TD

Formation Points (Relative to centre, TVD relative to Drill Floor)				MD (US ft)	TVD (US ft)
Name				4626.16	4567.00
SUSSEX				5226.17	5158.00
SHANNON				7466.86	7336.00
SHARON SPRINGS				7522.14	7370.00
NIOBRARA A				7785.87	7474.00
NIOBRARA B					