



CARRIZO

CARRIZO OIL & GAS, INC.

Field: Niobrara CONZ'83

Site: Bringelson Ranch 13-20-9-58 Pad

Well: 13-20-9-58

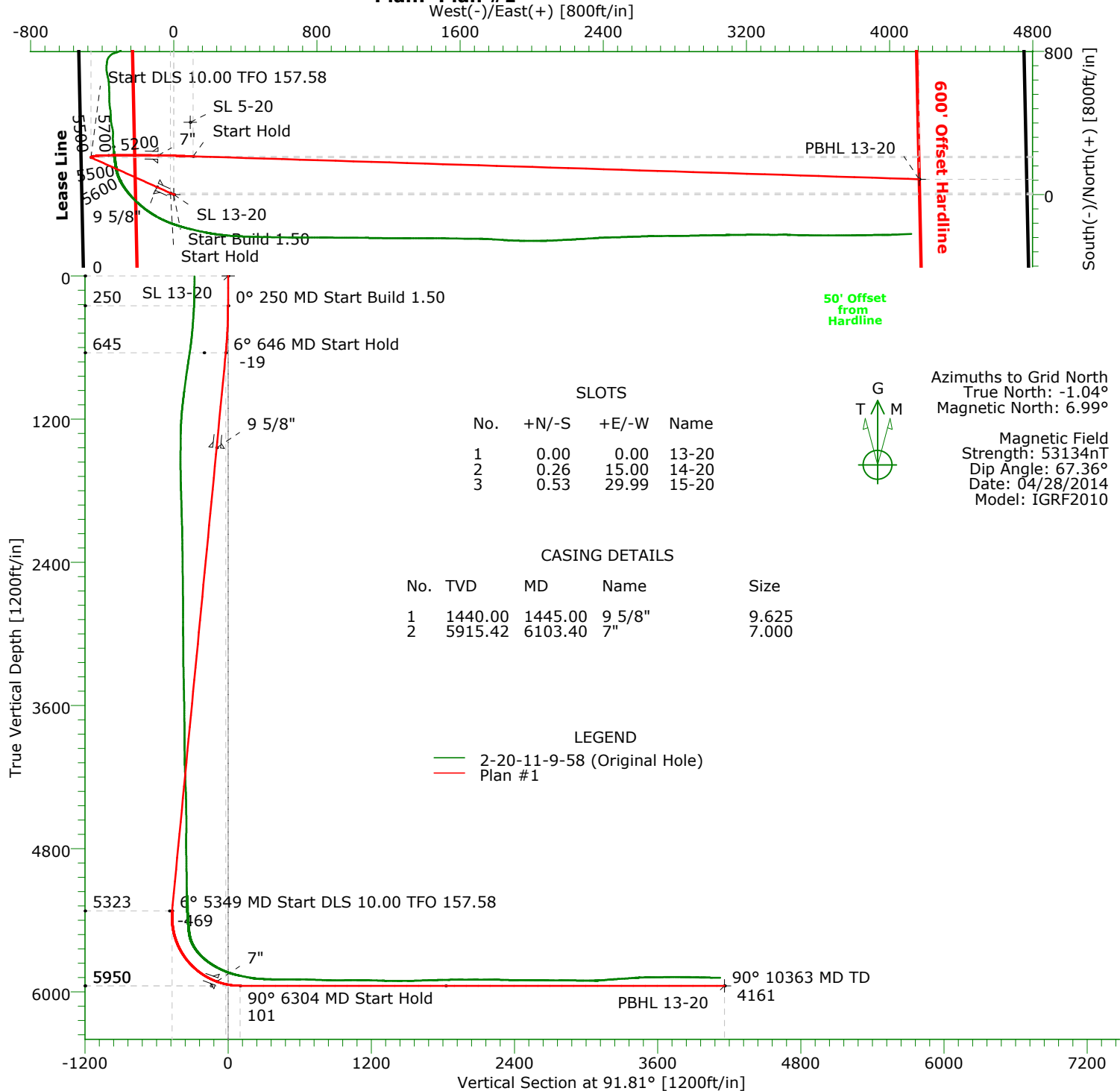
Wellpath: Original Hole

Plan: Plan #1



Precision

Directional Services



Azimuths to Grid North
True North: -1.04°
Magnetic North: 6.99°

Magnetic Field
Strength: 53134nT
Dip Angle: 67.36°
Date: 04/28/2014
Model: IGRF2010

SLOTS

No.	+N/-S	+E/-W	Name
1	0.00	0.00	13-20
2	0.26	15.00	14-20
3	0.53	29.99	15-20

CASING DETAILS

No.	TVD	MD	Name	Size
1	1440.00	1445.00	9 5/8"	9.625
2	5915.42	6103.40	7"	7.000

LEGEND

— 2-20-11-9-58 (Original Hole)
— Plan #1

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SL 5-20	-1.00	403.87	92.11	1516171.76	3444626.70	40°44'21.227N103°53'43.665W		Point
SL 13-20	0.00	0.00	0.00	1515767.89	3444534.59	40°44'17.253N103°53'44.956W		Point
PBHL 13-20	5950.00	85.95	4165.88	1515853.84	3448700.47	40°44'17.354N103°52'50.827W		Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	294.11	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	294.11	250.00	0.00	0.00	0.00	294.11	0.00	
3	645.92	5.94	294.11	645.22	8.38	-18.71	1.50	0.00	-18.97	
4	5348.63	5.94	294.11	5322.69	207.17	-462.82	0.00	0.00	-469.14	
5	6303.56	90.00	91.81	5950.00	213.95	108.00	10.00	157.58	101.19	
6	10363.46	90.00	91.81	5950.00	85.95	4165.88	0.00	0.00	4161.09	PBHL 13-20

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Bringelson Ranch 13-20-9-58 Pad Well: 13-20-9-58 Wellpath: Original Hole	Date: 03/28/2014 Co-ordinate(NE) Reference: Well: 13-20-9-58, Grid North Vertical (TVD) Reference: 4872'GL+17'KB 4889.0 Section (VS) Reference: Well (0.00N,0.00E,91.81Azi) Plan: Plan #1	Time: 11:16:35 Page: 1
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Field: Niobrara CONZ'83 Map System: US State Plane Coordinate System 1983 Geo Datum: GRS 1980 Sys Datum: Mean Sea Level	Map Zone: Colorado, Northern Zone Coordinate System: Well Centre Geomagnetic Model: IGRF2010
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Site: Bringelson Ranch 13-20-9-58 Pad renamed 3-28-14 from 14-20			
Site Position:	Northing: 1517204.39 ft	Latitude: 40 44 31.425 N	
From: Map	Easting: 3444648.82 ft	Longitude: 103 53 43.135 W	
Position Uncertainty: 0.00 ft		North Reference: Grid	
Ground Level: 4872.00 ft		Grid Convergence: 1.04 deg	

Well: 13-20-9-58 offset from site 3-28 Well Position: +N/-S -1436.50 ft +E/-W -114.23 ft Position Uncertainty: 0.00 ft	Slot Name: 13-20 Latitude: 40 44 17.253 N Longitude: 103 53 44.956 W
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Wellpath: Original Hole Current Datum: 4872'GL+17'KB Magnetic Data: 04/28/2014 Field Strength: 53134 nT Vertical Section: Depth From (TVD) ft	Height 4889.00 ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.03 deg Mag Dip Angle: 67.36 deg +E/-W ft Direction deg
0.00	0.00	0.00 91.81

Plan: Plan #1 Principal: No	Date Composed: 03/28/2014 Version: 1 Tied-to: From Surface
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Plan Section Information										
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	294.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	294.11	250.00	0.00	0.00	0.00	0.00	0.00	294.11	
645.92	5.94	294.11	645.22	8.38	-18.71	1.50	1.50	0.00	0.00	
5348.63	5.94	294.11	5322.69	207.17	-462.82	0.00	0.00	0.00	0.00	
6303.56	90.00	91.81	5950.00	213.95	108.00	10.00	8.80	16.51	157.58	
10363.46	90.00	91.81	5950.00	85.95	4165.88	0.00	0.00	0.00	0.00	PBHL 13-20

Survey										
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
0.00	0.00	294.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	294.11	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	294.11	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	294.11	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.75	294.11	300.00	0.13	-0.30	-0.30	1.50	1.50	0.00	
400.00	2.25	294.11	399.96	1.20	-2.69	-2.72	1.50	1.50	0.00	
500.00	3.75	294.11	499.82	3.34	-7.46	-7.57	1.50	1.50	0.00	
600.00	5.25	294.11	599.51	6.55	-14.63	-14.83	1.50	1.50	0.00	
645.92	5.94	294.11	645.22	8.38	-18.71	-18.97	1.50	1.50	0.00	
700.00	5.94	294.11	699.00	10.66	-23.82	-24.14	0.00	0.00	0.00	
800.00	5.94	294.11	798.46	14.89	-33.26	-33.72	0.00	0.00	0.00	
900.00	5.94	294.11	897.93	19.12	-42.71	-43.29	0.00	0.00	0.00	
1000.00	5.94	294.11	997.39	23.34	-52.15	-52.86	0.00	0.00	0.00	
1100.00	5.94	294.11	1096.85	27.57	-61.59	-62.43	0.00	0.00	0.00	
1200.00	5.94	294.11	1196.32	31.80	-71.04	-72.01	0.00	0.00	0.00	

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Bringelson Ranch 13-20-9-58 Pad
Well: 13-20-9-58
Wellpath: Original Hole

Date: 03/28/2014
Co-ordinate(NE) Reference: Well: 13-20-9-58, Grid North
Vertical (TVD) Reference: 4872'GL+17'KB 4889.0
Section (VS) Reference: Well (0.00N,0.00E,91.81Azi)
Plan: Plan #1

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Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1300.00	5.94	294.11	1295.78	36.03	-80.48	-81.58	0.00	0.00	0.00	9 5/8"
1400.00	5.94	294.11	1395.24	40.25	-89.92	-91.15	0.00	0.00	0.00	
1445.00	5.94	294.11	1440.00	42.16	-94.17	-95.46	0.00	0.00	0.00	
1500.00	5.94	294.11	1494.71	44.48	-99.37	-100.72	0.00	0.00	0.00	
1600.00	5.94	294.11	1594.17	48.71	-108.81	-110.30	0.00	0.00	0.00	
1700.00	5.94	294.11	1693.63	52.93	-118.26	-119.87	0.00	0.00	0.00	
1800.00	5.94	294.11	1793.10	57.16	-127.70	-129.44	0.00	0.00	0.00	
1900.00	5.94	294.11	1892.56	61.39	-137.14	-139.01	0.00	0.00	0.00	
2000.00	5.94	294.11	1992.02	65.62	-146.59	-148.59	0.00	0.00	0.00	
2100.00	5.94	294.11	2091.49	69.84	-156.03	-158.16	0.00	0.00	0.00	
2200.00	5.94	294.11	2190.95	74.07	-165.47	-167.73	0.00	0.00	0.00	
2300.00	5.94	294.11	2290.41	78.30	-174.92	-177.30	0.00	0.00	0.00	
2400.00	5.94	294.11	2389.88	82.53	-184.36	-186.88	0.00	0.00	0.00	
2500.00	5.94	294.11	2489.34	86.75	-193.81	-196.45	0.00	0.00	0.00	
2600.00	5.94	294.11	2588.80	90.98	-203.25	-206.02	0.00	0.00	0.00	
2700.00	5.94	294.11	2688.27	95.21	-212.69	-215.59	0.00	0.00	0.00	
2800.00	5.94	294.11	2787.73	99.44	-222.14	-225.17	0.00	0.00	0.00	
2900.00	5.94	294.11	2887.19	103.66	-231.58	-234.74	0.00	0.00	0.00	
3000.00	5.94	294.11	2986.66	107.89	-241.02	-244.31	0.00	0.00	0.00	
3100.00	5.94	294.11	3086.12	112.12	-250.47	-253.88	0.00	0.00	0.00	
3200.00	5.94	294.11	3185.58	116.34	-259.91	-263.46	0.00	0.00	0.00	
3300.00	5.94	294.11	3285.05	120.57	-269.36	-273.03	0.00	0.00	0.00	
3400.00	5.94	294.11	3384.51	124.80	-278.80	-282.60	0.00	0.00	0.00	
3500.00	5.94	294.11	3483.97	129.03	-288.24	-292.18	0.00	0.00	0.00	
3600.00	5.94	294.11	3583.44	133.25	-297.69	-301.75	0.00	0.00	0.00	
3700.00	5.94	294.11	3682.90	137.48	-307.13	-311.32	0.00	0.00	0.00	
3800.00	5.94	294.11	3782.36	141.71	-316.57	-320.89	0.00	0.00	0.00	
3900.00	5.94	294.11	3881.83	145.94	-326.02	-330.47	0.00	0.00	0.00	
4000.00	5.94	294.11	3981.29	150.16	-335.46	-340.04	0.00	0.00	0.00	
4100.00	5.94	294.11	4080.75	154.39	-344.91	-349.61	0.00	0.00	0.00	
4200.00	5.94	294.11	4180.22	158.62	-354.35	-359.18	0.00	0.00	0.00	
4300.00	5.94	294.11	4279.68	162.84	-363.79	-368.76	0.00	0.00	0.00	
4400.00	5.94	294.11	4379.14	167.07	-373.24	-378.33	0.00	0.00	0.00	
4500.00	5.94	294.11	4478.61	171.30	-382.68	-387.90	0.00	0.00	0.00	
4600.00	5.94	294.11	4578.07	175.53	-392.13	-397.47	0.00	0.00	0.00	
4700.00	5.94	294.11	4677.53	179.75	-401.57	-407.05	0.00	0.00	0.00	
4800.00	5.94	294.11	4777.00	183.98	-411.01	-416.62	0.00	0.00	0.00	
4900.00	5.94	294.11	4876.46	188.21	-420.46	-426.19	0.00	0.00	0.00	
5000.00	5.94	294.11	4975.92	192.44	-429.90	-435.76	0.00	0.00	0.00	
5100.00	5.94	294.11	5075.39	196.66	-439.34	-445.34	0.00	0.00	0.00	
5200.00	5.94	294.11	5174.85	200.89	-448.79	-454.91	0.00	0.00	0.00	
5300.00	5.94	294.11	5274.31	205.12	-458.23	-464.48	0.00	0.00	0.00	
5348.63	5.94	294.11	5322.69	207.17	-462.82	-469.14	0.00	0.00	0.00	
5350.00	5.81	294.63	5324.04	207.23	-462.95	-469.27	10.00	-9.23	37.65	
5400.00	2.29	352.85	5373.93	209.28	-465.38	-471.76	10.00	-7.05	116.44	
5450.00	5.16	65.90	5423.84	211.19	-463.45	-469.89	10.00	5.75	146.10	
5500.00	9.90	78.73	5473.40	212.95	-457.17	-463.67	10.00	9.48	25.67	
5550.00	14.81	83.22	5522.22	214.54	-446.60	-453.16	10.00	9.82	8.97	
5600.00	19.77	85.50	5569.95	215.96	-431.82	-438.42	10.00	9.91	4.56	
5650.00	24.74	86.89	5616.21	217.20	-412.93	-419.58	10.00	9.94	2.78	
5700.00	29.72	87.84	5660.65	218.23	-390.08	-396.78	10.00	9.96	1.90	
5750.00	34.71	88.54	5702.94	219.06	-363.45	-370.19	10.00	9.97	1.40	
5800.00	39.70	89.08	5742.76	219.68	-333.23	-340.00	10.00	9.98	1.08	
5850.00	44.69	89.52	5779.79	220.09	-299.66	-306.47	10.00	9.98	0.88	

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Bringelson Ranch 13-20-9-58 Pad
Well: 13-20-9-58
Wellpath: Original Hole

Date: 03/28/2014
Co-ordinate(NE) Reference: Well: 13-20-9-58, Grid North
Vertical (TVD) Reference: 4872'GL+17'KB 4889.0
Section (VS) Reference: Well (0.00N,0.00E,91.81Azi)
Plan: Plan #1

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Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
5900.00	49.68	89.89	5813.76	220.27	-263.00	-269.82	10.00	9.99	0.73	
5950.00	54.68	90.20	5844.41	220.24	-223.51	-230.36	10.00	9.99	0.63	
6000.00	59.67	90.48	5871.51	219.98	-181.51	-188.37	10.00	9.99	0.56	
6050.00	64.66	90.74	5894.85	219.51	-137.31	-144.18	10.00	9.99	0.51	
6100.00	69.66	90.97	5914.24	218.82	-91.25	-98.12	10.00	9.99	0.46	
6103.40	70.00	90.98	5915.42	218.77	-88.06	-94.93	10.00	9.99	0.45	7"
6150.00	74.66	91.19	5929.56	217.93	-43.68	-50.54	10.00	9.99	0.43	
6200.00	79.65	91.39	5940.67	216.83	5.04	-1.81	10.00	9.99	0.42	
6250.00	84.65	91.59	5947.50	215.54	54.54	47.70	10.00	9.99	0.40	
6303.56	90.00	91.81	5950.00	213.95	108.00	101.19	10.00	9.99	0.40	
6400.00	90.00	91.81	5950.00	210.91	204.39	197.62	0.00	0.00	0.00	
6500.00	90.00	91.81	5950.00	207.76	304.34	297.62	0.00	0.00	0.00	
6600.00	90.00	91.81	5950.00	204.60	404.29	397.62	0.00	0.00	0.00	
6700.00	90.00	91.81	5950.00	201.45	504.24	497.62	0.00	0.00	0.00	
6800.00	90.00	91.81	5950.00	198.30	604.19	597.62	0.00	0.00	0.00	
6900.00	90.00	91.81	5950.00	195.15	704.14	697.62	0.00	0.00	0.00	
7000.00	90.00	91.81	5950.00	191.99	804.09	797.62	0.00	0.00	0.00	
7100.00	90.00	91.81	5950.00	188.84	904.04	897.62	0.00	0.00	0.00	
7200.00	90.00	91.81	5950.00	185.69	1003.99	997.62	0.00	0.00	0.00	
7300.00	90.00	91.81	5950.00	182.53	1103.94	1097.62	0.00	0.00	0.00	
7400.00	90.00	91.81	5950.00	179.38	1203.89	1197.62	0.00	0.00	0.00	
7500.00	90.00	91.81	5950.00	176.23	1303.84	1297.62	0.00	0.00	0.00	
7600.00	90.00	91.81	5950.00	173.08	1403.79	1397.62	0.00	0.00	0.00	
7700.00	90.00	91.81	5950.00	169.92	1503.74	1497.62	0.00	0.00	0.00	
7800.00	90.00	91.81	5950.00	166.77	1603.69	1597.62	0.00	0.00	0.00	
7900.00	90.00	91.81	5950.00	163.62	1703.64	1697.62	0.00	0.00	0.00	
8000.00	90.00	91.81	5950.00	160.46	1803.59	1797.62	0.00	0.00	0.00	
8100.00	90.00	91.81	5950.00	157.31	1903.54	1897.62	0.00	0.00	0.00	
8200.00	90.00	91.81	5950.00	154.16	2003.49	1997.62	0.00	0.00	0.00	
8300.00	90.00	91.81	5950.00	151.01	2103.44	2097.62	0.00	0.00	0.00	
8400.00	90.00	91.81	5950.00	147.85	2203.39	2197.62	0.00	0.00	0.00	
8500.00	90.00	91.81	5950.00	144.70	2303.34	2297.62	0.00	0.00	0.00	
8600.00	90.00	91.81	5950.00	141.55	2403.29	2397.62	0.00	0.00	0.00	
8700.00	90.00	91.81	5950.00	138.39	2503.24	2497.62	0.00	0.00	0.00	
8800.00	90.00	91.81	5950.00	135.24	2603.20	2597.62	0.00	0.00	0.00	
8900.00	90.00	91.81	5950.00	132.09	2703.15	2697.62	0.00	0.00	0.00	
9000.00	90.00	91.81	5950.00	128.94	2803.10	2797.62	0.00	0.00	0.00	
9100.00	90.00	91.81	5950.00	125.78	2903.05	2897.62	0.00	0.00	0.00	
9200.00	90.00	91.81	5950.00	122.63	3003.00	2997.62	0.00	0.00	0.00	
9300.00	90.00	91.81	5950.00	119.48	3102.95	3097.62	0.00	0.00	0.00	
9400.00	90.00	91.81	5950.00	116.32	3202.90	3197.62	0.00	0.00	0.00	
9500.00	90.00	91.81	5950.00	113.17	3302.85	3297.62	0.00	0.00	0.00	
9600.00	90.00	91.81	5950.00	110.02	3402.80	3397.62	0.00	0.00	0.00	
9700.00	90.00	91.81	5950.00	106.87	3502.75	3497.62	0.00	0.00	0.00	
9800.00	90.00	91.81	5950.00	103.71	3602.70	3597.62	0.00	0.00	0.00	
9900.00	90.00	91.81	5950.00	100.56	3702.65	3697.62	0.00	0.00	0.00	
10000.00	90.00	91.81	5950.00	97.41	3802.60	3797.62	0.00	0.00	0.00	
10100.00	90.00	91.81	5950.00	94.25	3902.55	3897.62	0.00	0.00	0.00	
10200.00	90.00	91.81	5950.00	91.10	4002.50	3997.62	0.00	0.00	0.00	
10300.00	90.00	91.81	5950.00	87.95	4102.45	4097.62	0.00	0.00	0.00	
10363.46	90.00	91.81	5950.00	85.95	4165.88	4161.09	0.00	0.00	0.00	PBHL 13-20

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Bringelson Ranch 13-20-9-58 Pad
Well: 13-20-9-58
Wellpath: Original Hole

Date: 03/28/2014
Co-ordinate(NE) Reference: Well: 13-20-9-58, Grid North
Vertical (TVD) Reference: 4872'GL+17'KB 4889.0
Section (VS) Reference: Well (0.00N,0.00E,91.81Azi)
Plan: Plan #1

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Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ---->			<--- Longitude --->		
								Deg	Min	Sec	Deg	Min	Sec
SL 5-20			-1.00	403.87	92.11	1516171.76	3444626.70	40	44	21.227 N	103	53	43.665 W
SL 13-20			0.00	0.00	0.00	1515767.89	3444534.59	40	44	17.253 N	103	53	44.956 W
PBHL 13-20			5950.00	85.95	4165.88	1515853.84	3448700.47	40	44	17.354 N	103	52	50.827 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
1445.00	1440.00	9.625	12.250	9 5/8"
6103.40	5915.42	7.000	8.500	7"