



Deviation Report

Name of Company

CDX Rio, LLC

Address

2010 Afton Place Farmington, NM 87401

Lease Name and No.

Jicarilla 102 #8F

API Number

30-039-29665

Surface
Bottom**Location (Ftg)**

430'FSL, 965'FEL

654'FSL, 2091'FEL

Sec, Twn-Rng

Sec 3, T-26-N, R-4-W

Sec 3, T-26-N, R-4-W

Pool and Formation

Blanco Mesaverde/Basin Dakota

County

Rio Arriba

State

New Mexico

Survey Depth (ft)**Deviation (degrees)**

Please see attached survey calculation for deviation of well from 471' to 4278'

MD 8170'
TVD 7977'

0.75

Air Hammer Used?

☒ Yes

No

I, the undersigned, certify that I, acting in my capacity as Petroleum Engineer for CDX Rio, LLC, am authorized by said Company to make this report; and that this report was prepared under my supervision and directions, and the facts stated herein are true and to the best of my knowledge and belief.

Project Engineer 8/8/06

Subscribed and sworn to before me on

Notary Public in and for San Juan County, New Mexico

My Commission expires on September 22, 2008

Company: CDX GAS, LLC.

WellName: JICARILLA 102 NO. 8F

Location: ARRIBA COUNTY, NEW MEXICO

S CURVE

JOB # DD-316080

Vertical Section calculated on an Azimuth of: 281.5000

Survey Calculation Method: Minimum Curvature

FileName: C:\Documents and Settings\cdx\My Documents\JICARILLA 102 #8F\SURVEY FILES\JICARILLA 102 #8F.srs

#	Depth Feet	Inc Degrees	Azimuth Degrees	TVD Feet	SubSea Feet	North Feet	East Feet	Section Feet	Dogleg /100f	BldRate /100f	Trnrate /100f	Comme
4	571.00	5.40	276.00	570.89	6321.11	-0.12	-3.49	3.40	8.88	8.80	16.40	
3	546.00	3.20	271.90	545.96	6346.04	-0.27	-1.63	1.54	5.65	5.69	22.94	
2	512.00	1.30	264.10	511.98	6380.01	-0.26	-0.29	0.24	4.44	2.67	276.00	
1	482.00	0.50	181.30	481.99	6410.01	-0.09	0.05	-0.07	4.82	1.82	446.36	
5	601.00	7.30	277.60	600.70	6291.30	0.28	-6.79	6.71	6.36	6.33	5.33	
6	632.00	9.30	279.80	631.38	6280.63	0.97	-11.21	11.17	6.53	6.45	7.10	
7	663.00	11.10	280.20	661.88	6230.12	1.92	-16.61	16.66	6.81	6.81	1.29	
8	696.00	13.20	280.40	694.14	6197.86	3.16	-23.45	23.61	6.36	6.36	0.61	
9	726.00	14.80	281.60	723.25	6168.76	4.55	-30.57	30.86	5.41	5.33	3.67	
10	756.00	16.50	283.80	754.06	6137.94	6.44	-38.99	39.49	5.65	5.31	7.19	
11	790.00	17.80	281.40	784.64	6107.36	8.50	-48.20	48.92	4.62	4.06	7.50	
12	821.00	19.00	281.10	814.06	6077.94	10.40	-57.79	58.71	3.88	3.87	0.97	
13	853.00	20.40	282.40	844.18	6047.82	12.60	-68.35	69.49	4.58	4.37	4.06	
14	884.00	20.80	282.90	873.20	6018.80	14.99	-79.00	80.40	1.41	1.29	1.61	
15	916.00	20.50	281.60	903.14	5988.86	17.39	-90.02	91.68	1.71	0.94	4.06	
16	948.00	20.90	280.90	933.08	5956.92	19.59	-101.12	102.99	1.47	1.25	2.19	
17	979.00	20.40	281.50	962.09	5928.91	21.72	-111.84	113.93	1.75	1.61	1.94	
18	1011.00	20.80	281.00	992.04	5899.96	24.00	-122.87	125.18	1.33	1.25	1.25	
19	1043.00	20.50	280.80	1021.98	5870.02	26.22	-133.93	136.47	1.53	0.94	3.44	
20	1074.00	20.30	281.00	1051.04	5840.96	28.27	-144.54	147.27	0.68	0.65	0.65	
21	1106.00	20.00	280.70	1081.08	5810.92	30.34	-155.37	158.30	0.99	0.94	0.94	
22	1137.00	19.80	281.80	1110.23	5781.77	32.40	-165.71	168.85	1.37	0.65	3.55	
23	1169.00	19.60	279.90	1140.36	5751.64	34.43	-176.31	179.63	2.10	0.62	5.94	
24	1201.00	19.90	281.80	1170.48	5721.52	36.47	-186.93	190.44	2.21	0.94	5.94	
25	1232.00	20.60	285.20	1199.56	5692.44	38.98	-197.35	201.16	4.42	2.26	10.97	
26	1264.00	20.70	285.90	1228.50	5662.50	42.00	-208.23	212.42	0.83	0.31	2.19	
27	1296.00	20.60	284.30	1259.45	5632.55	44.94	-219.12	223.68	1.79	0.31	5.00	
28	1327.00	20.50	285.80	1288.48	5603.52	47.75	-229.63	234.54	1.51	0.32	4.19	
29	1359.00	20.30	284.70	1318.47	5573.53	50.66	-240.40	245.67	1.16	0.63	2.81	
30	1391.00	20.20	282.50	1348.49	5543.51	53.27	-251.16	256.74	2.40	0.31	6.88	
31	1422.00	20.30	282.90	1377.58	5514.42	55.63	-261.63	267.47	0.55	0.31	6.88	
32	1454.00	19.80	281.10	1407.64	5484.36	57.91	-272.26	277.26	0.55	0.31	6.88	

Company: CDX GAS, LLC.
WellName: JICARILLA 102 NO. 8F
Location: ARRIBA COUNTY, NEW MEXICO

S CURVE
JOB # DD-316080

Vertical Section calculated on an Azimuth of: 281.5000
Survey Calculation Method: Minimum Curvature
FileName: C:\Documents and Settings\cdx\My Documents\JICARILLA 102 # 8F\SURVEY FILES\JICARILLA 102 #8F.srf

#	Depth Feet	Inc Degrees	Azimuth Degrees	TVD Feet	SubSea Feet	North Feet	East Feet	Section Feet	Dogleg /100f	BldRate /100f	TrnRate /100f	Com
34	1485.00	19.90	281.10	1436.79	6456.21	59.94	-282.69	286.96	0.32	0.32	0.00	
35	1517.00	20.00	280.40	1466.87	5425.13	61.97	-293.41	299.88	0.81	0.31	2.19	
36	1549.00	20.20	280.30	1496.93	5396.07	63.95	-304.23	310.87	0.63	0.63	0.31	
37	1580.00	20.10	279.90	1526.03	5365.97	65.82	-314.75	321.55	0.55	0.32	1.29	
38	1612.00	20.00	277.50	1556.09	5335.91	67.48	-325.59	332.51	2.59	0.31	7.50	
39	1643.00	20.10	277.50	1586.21	5306.79	68.87	-336.13	343.11	0.32	0.32	0.00	
40	1675.00	20.10	278.00	1616.26	5276.74	70.35	-347.02	354.08	0.54	0.00	1.56	
41	1707.00	20.50	278.90	1646.27	5246.73	71.98	-358.00	365.17	1.59	1.25	2.81	
42	1738.00	20.00	280.50	1674.36	5217.64	73.79	-368.58	375.89	2.41	1.61	5.16	
43	1770.00	19.70	280.80	1704.46	5187.54	75.80	-379.26	386.75	0.99	0.94	0.94	
44	1802.00	20.10	280.70	1734.55	5157.45	77.83	-389.96	397.65	1.25	1.25	0.31	
45	1833.00	20.20	280.40	1763.65	5126.35	79.78	-400.46	408.32	0.46	0.32	0.97	
46	1865.00	19.90	277.90	1793.71	5096.29	81.53	-411.29	419.28	2.84	0.94	7.81	
47	1896.00	20.50	279.70	1822.80	5069.20	83.17	-421.86	429.97	2.79	1.94	5.81	
48	1928.00	20.40	278.90	1852.79	5039.21	84.98	-432.90	441.15	0.93	0.31	2.50	
49	1960.00	20.50	279.40	1882.77	5009.23	86.75	-443.93	452.32	0.63	0.31	1.56	
50	1990.00	20.60	280.60	1910.66	4981.14	88.58	-454.30	462.84	1.44	0.33	4.00	
51	2021.00	20.60	279.30	1939.88	4952.12	90.47	-465.05	473.75	1.48	0.00	4.19	
52	2053.00	20.80	281.10	1969.81	4922.19	92.47	-476.18	485.05	2.08	0.62	5.63	
53	2084.00	20.80	281.90	1998.79	4893.21	94.66	-486.96	496.06	0.92	0.00	2.58	
54	2118.00	20.70	282.20	2028.72	4863.28	97.03	-498.05	507.40	0.46	0.31	0.94	
55	2146.00	21.10	283.80	2056.74	4835.26	99.44	-508.48	518.10	2.32	1.33	5.33	
56	2178.00	20.70	281.20	2086.64	4805.36	101.91	-519.62	529.51	3.16	1.25	8.12	
57	2209.00	20.10	281.40	2115.69	4776.31	104.03	-530.22	540.31	1.95	1.94	0.65	
58	2241.00	20.40	281.60	2145.72	4746.28	106.24	-541.07	551.39	0.96	0.94	0.63	
59	2273.00	20.10	279.30	2175.74	4716.26	108.25	-551.96	562.46	2.66	0.94	7.19	
60	2304.00	20.40	278.90	2204.82	4687.18	109.94	-562.55	573.18	1.07	0.97	1.29	
61	2336.00	20.70	281.90	2234.79	4657.21	111.97	-573.60	584.41	3.42	0.94	9.38	
62	2367.00	20.60	281.90	2263.80	4628.20	114.23	-584.30	595.34	0.32	0.32	0.00	
63	2399.00	20.70	281.60	2293.74	4598.26	116.53	-595.34	606.62	0.45	0.31	0.94	
64	2431.00	20.90	282.60	2323.65	4568.35	118.91	-606.45	617.99	1.27	0.62	3.13	
65	2462.00	20.50	280.70	2352.65	4539.35	121.12	-617.18	628.94	2.52	1.29	6.13	
66	2494.00	20.50	280.40	2382.63	4509.37	123.17	-628.20	640.15	0.33			

Company: CDX GAS, LLC.
WellName: JICARILLA 102 NO. 8F
Location: ARRIABA COUNTY, NEW MEXICO

S CURVE
JOB # DD-316080

Vertical Section calculated on an Azimuth of: 281.5000

Survey Calculation Method: Minimum Curvature

FileName: C:\Documents and Settings\cddt4\My Documents\JICARILLA 102 # 8F\SURVEY FILES\JICARILLA 102 #8F.srf

#	Depth Feet	Inc Degrees	Azimuth Degrees	TVD Feet	SubSea Feet	North Feet	East Feet	Section Feet	Dogleg /100f	BldRate /100f	TmrRate /100f	Comment
68	2526.00	20.80	280.40	2412.57	4479.43	125.21	-639.30	651.43	0.94	0.94	0.00	
69	2557.00	20.80	280.50	2441.55	4450.45	127.21	-650.13	662.44	0.11	0.00	0.32	
70	2589.00	20.90	281.10	2471.45	4420.54	129.34	-661.32	673.83	0.74	0.31	1.88	
71	2620.00	20.40	281.20	2500.46	4391.54	131.46	-672.04	684.76	1.62	1.61	0.32	
72	2652.00	20.20	280.20	2530.48	4361.52	133.52	-682.95	695.86	1.25	0.62	3.13	
73	2684.00	20.20	281.30	2560.51	4331.49	135.58	-693.80	706.91	1.19	0.00	3.44	
74	2715.00	19.90	280.40	2589.63	4302.37	137.58	-704.24	717.53	1.39	0.97	2.90	
75	2746.00	20.00	281.30	2618.77	4273.23	139.57	-714.63	728.11	1.04	0.32	2.90	
76	2778.00	20.00	281.40	2648.84	4243.16	141.73	-725.36	739.05	0.11	0.00	0.31	
77	2810.00	20.00	279.10	2678.91	4213.09	143.67	-736.13	749.99	2.46	0.00	7.19	
78	2841.00	19.80	280.60	2708.06	4183.94	145.48	-746.52	760.54	1.77	0.65	4.84	
79	2873.00	19.60	281.10	2738.19	4153.81	147.51	-757.12	771.33	0.82	0.62	1.56	
80	2905.00	19.60	281.40	2768.33	4123.67	149.60	-767.65	782.06	0.31	0.00	0.94	
81	2936.00	19.50	280.60	2797.54	4094.46	151.58	-777.83	792.43	0.92	0.32	2.58	
82	2968.00	20.00	281.90	2827.66	4064.34	153.69	-788.43	803.25	2.08	1.56	4.06	
83	2999.00	19.50	281.80	2856.84	4035.16	155.84	-798.69	813.72	1.62	1.61	0.32	
84	3031.00	19.40	281.30	2887.01	4004.99	157.98	-809.13	824.38	0.61	0.31	1.56	
85	3063.00	19.90	283.10	2917.15	3974.85	160.25	-819.64	835.14	2.45	1.56	5.63	
86	3094.00	19.80	284.20	2946.31	3945.69	162.74	-829.87	845.65	1.25	0.32	3.55	
87	3126.00	19.80	284.30	2976.42	3915.58	165.40	-840.38	856.48	0.11	0.00	0.31	
88	3157.00	19.30	282.50	3005.63	3886.37	167.81	-850.47	866.85	2.53	1.61	5.81	
89	3189.00	19.60	283.60	3035.80	3856.20	170.22	-860.85	877.50	1.48	0.94	3.44	
90	3221.00	20.00	283.10	3065.91	3826.09	172.72	-871.39	888.33	1.36	1.25	1.56	
91	3252.00	19.90	282.30	3095.05	3796.95	175.04	-881.71	898.91	0.94	0.32	2.58	
92	3284.00	19.80	282.30	3125.15	3766.85	177.36	-892.33	909.77	0.31	0.31	0.00	
93	3315.00	19.90	284.00	3154.31	3737.69	179.75	-902.58	920.29	1.89	0.32	5.48	
94	3347.00	19.90	283.10	3184.40	3707.60	182.31	-913.16	931.18	0.96	0.00	2.81	
95	3379.00	19.70	283.20	3214.50	3677.50	184.77	-923.72	942.01	0.63	0.62	0.31	
96	3410.00	19.30	282.20	3243.73	3648.27	187.05	-933.81	952.36	1.68	1.29	3.23	
97	3440.00	19.00	281.30	3272.07	3619.93	189.05	-943.45	962.20	1.40	1.00	3.00	
98	3469.00	19.40	281.10	3299.45	3592.55	190.90	-952.80	971.74	1.40	1.38	0.69	
99	3501.00	19.60	282.40	3329.62	3562.38	193.08	-963.26	982.42	1.49	0.63	4.06	
100	3533.00	19.60	282.30	3359.76	3532.24	195.38	-973.75	993.15	0.10	0.00	0.31	

Company: CDX GAS, LLC.
WellName: JICARILLA 102 NO. 8F
Location: ARriba COUNTY, NEW MEXICO

S CURVE
JOB # DD-316080

Vertical Section calculated on an Azimuth of: 281.5000

Survey Calculation Method: Minimum Curvature

FileName: C:\Documents and Settings\cdx\My Documents\JICARILLA 102 # 8F\SURVEY FILES\JICARILLA 102 #8F.srf

#	Depth Feet	Inc Degrees	Azimuth Degrees	TVD Feet	SubSea Feet	North Feet	East Feet	Section Feet	Dogleg /100f	BidRate /100f	Trnrate /100f	Comment
103	3564.00	19.10	282.80	3389.01	3502.99	197.61	-983.77	1003.42	1.70	1.61	1.61	
101	3596.00	19.00	280.90	3419.26	3472.74	199.75	-993.99	1013.86	1.96	0.31	5.94	
102	3630.00	19.00	280.60	3451.41	3440.59	201.82	-1004.87	1024.93	0.29	0.00	0.88	
103	3659.00	18.20	281.10	3478.89	3413.11	203.56	-1013.95	1034.18	2.81	2.76	1.72	
104	3691.00	17.60	282.20	3509.34	3382.66	205.54	-1023.59	1044.02	2.15	1.88	3.44	
105	3723.00	17.00	281.00	3539.90	3352.10	207.46	-1032.91	1053.53	2.18	1.88	3.75	
106	3754.00	16.10	279.20	3569.61	3322.39	209.01	-1041.60	1062.36	3.34	2.90	5.81	
107	3786.00	14.50	279.70	3600.48	3291.52	210.39	-1049.93	1070.80	5.02	5.00	1.56	
108	3817.00	12.40	281.90	3630.62	3261.38	211.73	-1057.01	1078.00	6.97	6.77	7.10	
109	3849.00	11.70	280.30	3661.92	3230.08	213.02	-1063.57	1084.68	2.42	2.19	5.00	
110	3881.00	11.60	277.30	3693.26	3198.74	214.01	-1069.95	1091.14	1.92	0.31	9.38	
111	3912.00	11.60	276.70	3723.63	3168.37	214.77	-1076.14	1097.35	0.39	0.00	1.94	
112	3944.00	11.70	280.30	3754.97	3137.03	215.73	-1082.52	1103.80	2.29	0.31	11.25	
113	3975.00	11.60	281.80	3785.33	3106.67	216.93	-1088.67	1110.06	1.03	0.32	4.84	
114	3990.00	11.50	279.70	3800.03	3081.97	217.49	-1091.62	1113.06	2.88	0.67	14.00	
115	4023.00	11.00	280.40	3832.39	3059.61	218.61	-1097.96	1119.50	1.57	1.52	2.12	
116	4055.00	10.50	280.70	3863.83	3028.17	219.70	-1103.82	1125.47	1.57	1.56	0.94	
117	4086.00	9.60	277.70	3893.37	2998.63	220.54	-1108.99	1130.70	3.47	3.00	10.00	
118	4117.00	8.70	276.20	3924.96	2967.04	221.16	-1114.04	1135.77	2.91	2.81	4.69	
119	4148.00	6.80	281.30	3955.68	2936.32	221.78	-1118.17	1139.94	6.51	6.13	16.45	
120	4180.00	4.80	283.30	3987.61	2904.49	222.46	-1121.33	1143.17	6.28	6.25	6.25	
121	4212.00	3.70	287.10	4019.42	2872.88	223.07	-1123.62	1145.54	3.55	3.44	11.88	
Ext	4243.00	1.90	289.10	4050.39	2841.61	223.53	-1125.06	1147.04	5.81	5.81	6.45	
Ext	4278.00	0.13	288.00	4085.38	2806.62	223.73	-1125.65	1147.66	5.05	5.05	3.14	

Closure is 1147.6694 feet on an Azimuth of 281.2415