

Ryan Energy Technologies

Survey Report



Company: ConocoPhillips		Date: 7/17/2006	Time: 16:50:21	Page: 1
Field: Rio Arriba County, NM		Co-ordinate(NE) Reference: Site: San Juan 31-6 No. 219A, Grid North		
Site: San Juan 31-6 No. 219A		Vertical (TVD) Reference: SITE 0.0		
Well: Well #219A		Section (VS) Reference: Well (0.00N,0.00E,21.80Azi)		
Wellpath: Original Hole		Survey Calculation Method: Minimum Curvature Db: Sybase		

Field: Rio Arriba County, NM		30 039 29483	
USA			
Map System: US State Plane Coordinate System 1927		Map Zone: New Mexico, Western Zone	
Geo Datum: NAD27 (Clarke 1866)		Coordinate System: Site Centre	
Sys Datum: Mean Sea Level		Geomagnetic Model: igrf2005	

Site: San Juan 31-6 No. 219A		Surface 2480/S 1940/W	
Sec. 34 T31N R6W		BTL 1866/N 2306/W	
Rio Arriba County			
Site Position:	Northing:	ft	Latitude:
From: Local Only	Easting:	ft	Longitude:
Position Uncertainty:	0.00 ft		North Reference: Grid
Ground Level:	0.00 ft		Grid Convergence: deg

Well: Well #219A		Slot Name:	
Well Position:	+N/-S 0.00 ft	Northing:	ft
	+E/-W 0.00 ft	Easting:	ft
Position Uncertainty:	0.00 ft		

Wellpath: Original Hole		Drilled From: Surface	
Current Datum: SITE	Height 0.00 ft	Tie-on Depth:	0.00 ft
Magnetic Data: 3/30/2006		Above System Datum:	Mean Sea Level
Field Strength: 0 nT		Declination:	0.00 deg
Vertical Section: Depth From (TVD)	+N/-S ft	Mag Dip Angle:	0.00 deg
	ft	+E/-W	ft
	0.00		0.00
			21.80

Survey Program for Definitive Wellpath			
Date: 7/17/2006	Validated: No	Version: 0	
Actual From ft	To ft	Survey	Tool Name
257.00	3722.00	MWD Survey (257.00-3722.00)	MWD
3777.00	3777.00	Projection (3777.00-3777.00)	Standard MWD Projection

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
257.00	0.70	159.10	256.99	-1.47	0.56	-1.15	0.27	0.27	0.00	MWD
349.00	2.30	76.90	348.97	-1.57	2.56	-0.51	2.51	1.74	-89.35	MWD
441.00	4.90	54.70	440.78	1.12	7.56	3.85	3.16	2.83	-24.13	MWD
533.00	6.90	51.20	532.29	6.85	15.08	11.96	2.21	2.17	-3.80	MWD
628.00	8.60	48.10	626.42	15.17	24.81	23.30	1.84	1.79	-3.26	MWD
723.00	11.50	43.50	719.95	26.79	36.62	38.47	3.17	3.05	-4.84	MWD
818.00	13.50	38.20	812.70	42.37	50.00	57.91	2.42	2.11	-5.58	MWD
913.00	16.10	34.70	904.54	61.92	64.36	81.39	2.89	2.74	-3.68	MWD
1006.00	18.00	31.20	993.45	84.81	79.15	108.14	2.32	2.04	-3.76	MWD
1101.00	20.70	30.50	1083.08	111.84	95.27	139.23	2.85	2.84	-0.74	MWD
1196.00	23.00	28.70	1171.25	142.59	112.71	174.25	2.52	2.42	-1.89	MWD
1291.00	24.70	30.10	1258.13	176.05	131.58	212.32	1.89	1.79	1.47	MWD
1386.00	26.50	28.70	1343.80	211.81	151.71	253.01	2.00	1.89	-1.47	MWD
1481.00	28.30	24.90	1428.15	250.84	171.38	296.54	2.64	1.89	-4.00	MWD
1576.00	29.80	22.40	1511.20	293.09	189.85	342.64	2.03	1.58	-2.63	MWD
1671.00	29.90	18.90	1593.60	337.32	206.52	389.89	1.84	0.11	-3.68	MWD
1765.00	29.40	16.10	1675.30	381.66	220.51	436.25	1.57	-0.53	-2.98	MWD
1860.00	29.00	16.10	1758.22	426.18	233.36	482.37	0.42	-0.42	0.00	MWD
1955.00	27.90	15.70	1841.75	469.71	245.76	527.39	1.18	-1.16	-0.42	MWD
2050.00	27.40	15.40	1925.90	512.18	257.58	571.21	0.55	-0.53	-0.32	MWD
2145.00	26.60	16.40	2010.55	553.66	269.39	614.11	0.97	-0.84	1.05	MWD

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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
2240.00	27.30	16.80	2095.23	594.92	281.69	656.99	0.76	0.74	0.42	MWD
2334.00	26.40	16.80	2179.09	635.56	293.97	699.28	0.96	-0.96	0.00	MWD
2430.00	23.90	17.10	2265.99	674.59	305.85	739.93	2.61	-2.60	0.31	MWD
2524.00	21.90	15.70	2352.57	709.67	316.20	776.34	2.21	-2.13	-1.49	MWD
2619.00	19.70	14.30	2441.38	742.24	324.95	809.84	2.37	-2.32	-1.47	MWD
2714.00	16.70	11.50	2531.62	771.14	331.63	839.15	3.29	-3.16	-2.95	MWD
2809.00	15.20	13.60	2622.96	796.62	337.28	864.91	1.69	-1.58	2.21	MWD
2904.00	13.40	14.30	2715.01	819.40	342.92	888.15	1.90	-1.89	0.74	MWD
2999.00	11.80	14.00	2807.72	839.49	347.99	908.69	1.69	-1.68	-0.32	MWD
3093.00	10.20	12.20	2899.99	856.95	352.08	926.42	1.74	-1.70	-1.91	MWD
3187.00	8.20	12.90	2992.78	871.62	355.33	941.25	2.13	-2.13	0.74	MWD
3281.00	6.20	14.00	3086.03	883.09	358.06	952.90	2.13	-2.13	1.17	MWD
3376.00	3.30	21.30	3180.69	890.61	360.29	960.72	3.11	-3.05	7.68	MWD
3471.00	1.90	32.60	3275.59	894.49	362.14	965.00	1.56	-1.47	11.89	MWD
3565.00	1.90	26.60	3369.54	897.19	363.67	968.09	0.21	0.00	-6.38	MWD
3660.00	1.90	12.60	3464.49	900.14	364.72	971.21	0.49	0.00	-14.74	MWD
3722.00	1.90	16.10	3526.46	902.13	365.23	973.25	0.19	0.00	5.65	MWD
3777.00	1.90	16.10	3581.43	903.88	365.74	975.06	0.00	0.00	0.00	Projected to TD

Annotation

MD ft	TVD ft	
3777.00	3581.43	Projected to TD

S2DR

10/2/06

DRILLING ENGINEER