



Company: B.P.
Project: La Plata County, CO NAD83
Site: East Sauls Creek Pad
Well: East Sauls Creek 35 3-2
Wellbore: Lateral 1 (Drainage)
Design: Plan #2

PROJECT DETAILS:La Plata County, CO NAD83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Southern Zone
System Datum: Mean Sea Level
Local North: Grid



Plan: Plan #2 (East Sauls Creek 35 3-2/Lateral 1 (Drainage))

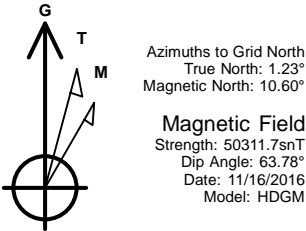
Created By: Janie Collins Date: 15:39, December 14 2016

WELL DETAILS: East Sauls Creek 35 3-2

+N/-S +E/-W GL 7326' & RKB 11' @ 7337.00usft (Aztec 507) 7326.00
0.00 0.00 Northing Easting Latitude Longitude Slot
1222379.39 2414802.13 37.2600972 -107.5109141

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2491.28	0.00	0.00	2491.28	0.00	0.00	0.00	0.00	0.00	
3303.78	65.00	90.00	3140.38	0.00	413.52	8.00	90.00	413.38	
3503.78	65.00	90.00	3224.90	0.00	594.78	0.00	0.00	594.58	
3816.28	90.00	90.00	3292.00	0.00	897.46	8.00	0.00	897.15	
4116.28	90.00	90.00	3292.00	0.00	1197.46	0.00	0.00	1197.05	
4186.99	91.00	89.00	3291.38	0.62	1268.16	2.00	-45.00	1267.74	
6186.99	91.00	89.00	3256.48	35.52	3267.55	0.00	0.00	3267.36	
6330.80	93.36	87.36	3251.01	40.08	3411.17	2.00	-34.76	3411.05	
8820.37	93.36	87.36	3105.00	154.66	5893.81	0.00	0.00	5895.84	ESC 35 3-2 Lat 1 PBHL

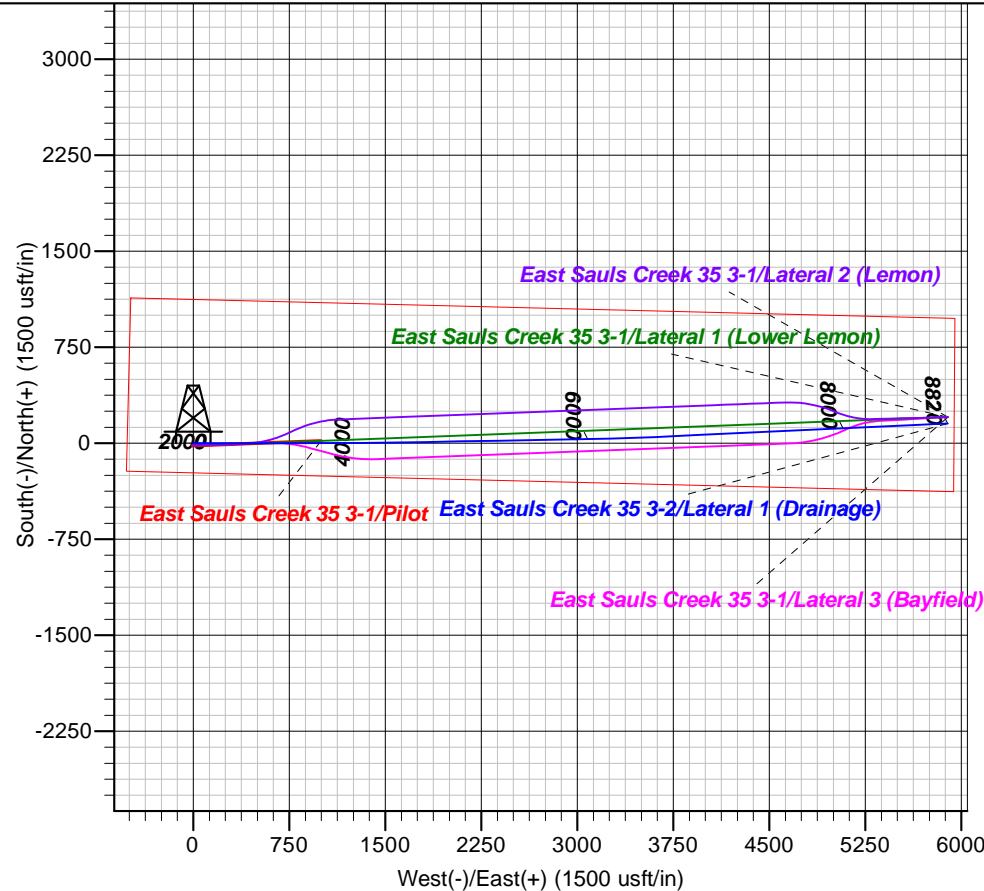
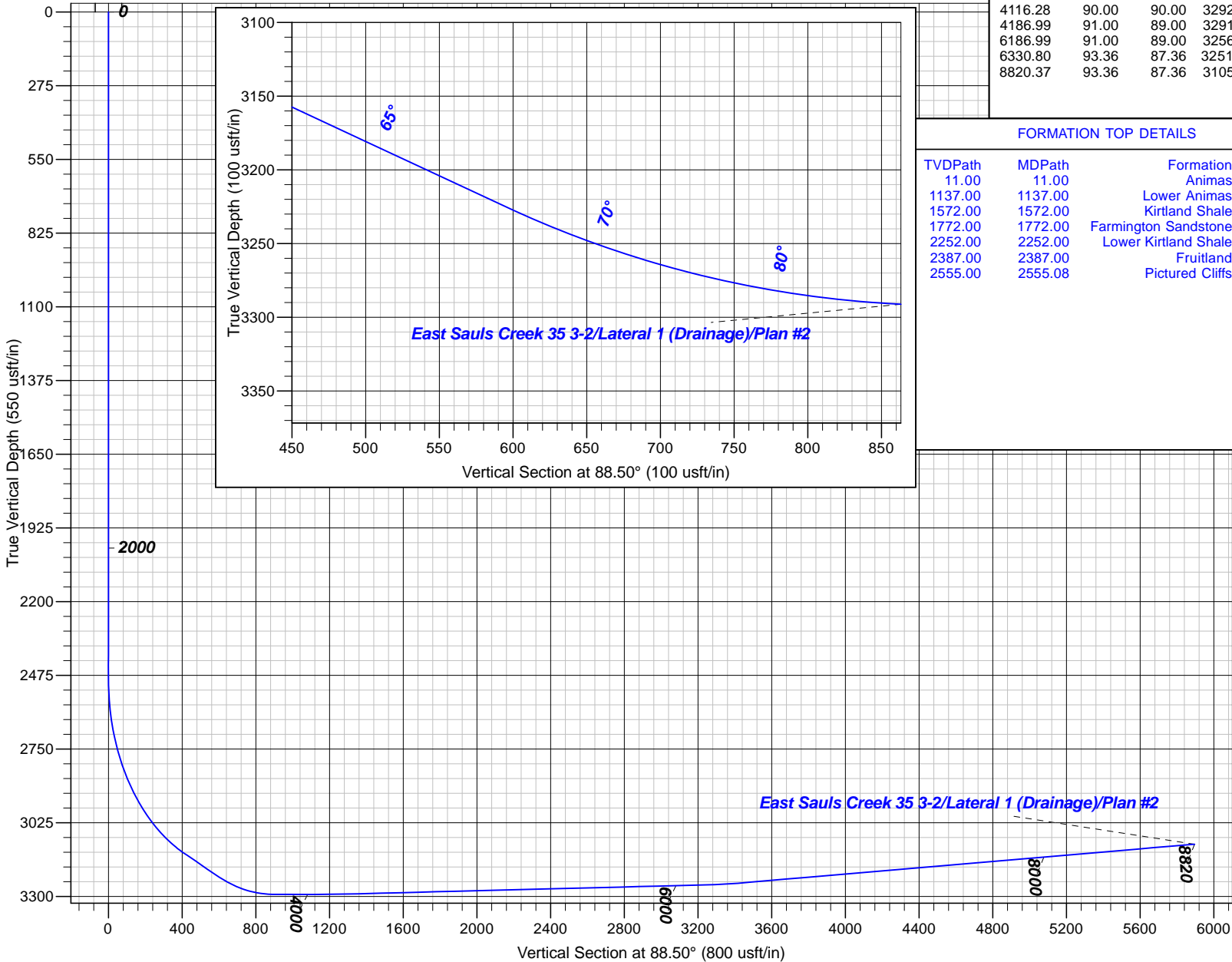


FORMATION TOP DETAILS

TVDPath	MDPath	Formation
11.00	11.00	Animas
1137.00	1137.00	Lower Animas
1572.00	1572.00	Kirtland Shale
1772.00	1772.00	Farmington Sandstone
2252.00	2252.00	Lower Kirtland Shale
2387.00	2387.00	Fruitland
2555.00	2555.08	Pictured Cliffs

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
ESC 35 3-2 Lat 1 PBHL	3105.00	154.66	5893.81	1222534.05	2420695.94	37.2608686	-107.4906787





B.P.

**La Plata County, CO NAD83
East Sauls Creek Pad
East Sauls Creek 35 3-2**

Lateral 1 (Drainage)

Plan: Plan #2

Standard Planning Report

14 December, 2016





Database:	Grand Junction District	Local Co-ordinate Reference:	Well East Sauls Creek 35 3-2
Company:	B.P.	TVD Reference:	GL 7326' & RKB 11' @ 7337.00usft (Aztec 507)
Project:	La Plata County, CO NAD83	MD Reference:	GL 7326' & RKB 11' @ 7337.00usft (Aztec 507)
Site:	East Sauls Creek Pad	North Reference:	Grid
Well:	East Sauls Creek 35 3-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1 (Drainage)		
Design:	Plan #2		

Project	La Plata County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Southern Zone		

Site		East Sauls Creek Pad			
Site Position:		Northing:	1,227,806.45 usft	Latitude:	37.2749933
From:	Map	Easting:	2,414,712.24 usft	Longitude:	-107.5116245
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.23 °

Well	East Sauls Creek 35 3-2					
Well Position	+N/-S	-5,427.06 usft	Northing:	1,222,379.39 usft	Latitude:	37.2600972
	+E/-W	89.89 usft	Easting:	2,414,802.13 usft	Longitude:	-107.5109141
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	7,326.00 usft

Wellbore	Lateral 1 (Drainage)				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/16/2016	9.37	63.78	50,312

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	88.50

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,491.28	0.00	0.00	2,491.28	0.00	0.00	0.00	0.00	0.00	0.00	
3,303.78	65.00	90.00	3,140.38	0.00	413.52	8.00	8.00	0.00	90.00	
3,503.78	65.00	90.00	3,224.90	0.00	594.78	0.00	0.00	0.00	0.00	
3,816.28	90.00	90.00	3,292.00	0.00	897.46	8.00	8.00	0.00	0.00	
4,116.28	90.00	90.00	3,292.00	0.00	1,197.46	0.00	0.00	0.00	0.00	
4,186.99	91.00	89.00	3,291.38	0.62	1,268.16	2.00	1.41	-1.41	-45.00	
6,186.99	91.00	89.00	3,256.48	35.52	3,267.55	0.00	0.00	0.00	0.00	
6,330.80	93.36	87.36	3,251.01	40.08	3,411.17	2.00	1.64	-1.14	-34.76	
8,820.37	93.36	87.36	3,105.00	154.66	5,893.81	0.00	0.00	0.00	0.00	ESC 35 3-2 Lat 1 PBT



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Site:	East Sauls Creek Pad	North Reference:	Grid
Well:	East Sauls Creek 35 3-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1 (Drainage)		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11.00	0.00	0.00	11.00	0.00	0.00	0.00	0.00	0.00	0.00
Animas									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,137.00	0.00	0.00	1,137.00	0.00	0.00	0.00	0.00	0.00	0.00
Lower Animas									
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,572.00	0.00	0.00	1,572.00	0.00	0.00	0.00	0.00	0.00	0.00
Kirtland Shale									
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,772.00	0.00	0.00	1,772.00	0.00	0.00	0.00	0.00	0.00	0.00
Farmington Sandstone									
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,252.00	0.00	0.00	2,252.00	0.00	0.00	0.00	0.00	0.00	0.00
Lower Kirtland Shale									
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,387.00	0.00	0.00	2,387.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruitland									
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,491.28	0.00	0.00	2,491.28	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.70	90.00	2,500.00	0.00	0.05	0.05	8.00	8.00	0.00
2,555.08	5.10	90.00	2,555.00	0.00	2.84	2.84	8.00	8.00	0.00
Pictured Cliffs									
2,600.00	8.70	90.00	2,599.58	0.00	8.24	8.23	8.00	8.00	0.00
2,700.00	16.70	90.00	2,697.06	0.00	30.20	30.19	8.00	8.00	0.00
2,800.00	24.70	90.00	2,790.53	0.00	65.51	65.49	8.00	8.00	0.00
2,900.00	32.70	90.00	2,878.17	0.00	113.49	113.45	8.00	8.00	0.00
3,000.00	40.70	90.00	2,958.29	0.00	173.20	173.14	8.00	8.00	0.00
3,100.00	48.70	90.00	3,029.31	0.00	243.48	243.40	8.00	8.00	0.00
3,200.00	56.70	90.00	3,089.87	0.00	322.96	322.85	8.00	8.00	0.00
3,300.00	64.70	90.00	3,138.77	0.00	410.10	409.96	8.00	8.00	0.00
3,303.78	65.00	90.00	3,140.38	0.00	413.52	413.38	8.00	8.00	0.00
3,400.00	65.00	90.00	3,181.04	0.00	500.72	500.55	0.00	0.00	0.00
3,500.00	65.00	90.00	3,223.30	0.00	591.35	591.15	0.00	0.00	0.00



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Well:	East Sauls Creek 35 3-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1 (Drainage)		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,503.78	65.00	90.00	3,224.90	0.00	594.78	594.58	0.00	0.00	0.00
3,600.00	72.70	90.00	3,259.59	0.00	684.45	684.22	8.00	8.00	0.00
3,700.00	80.70	90.00	3,282.58	0.00	781.69	781.42	8.00	8.00	0.00
3,800.00	88.70	90.00	3,291.82	0.00	881.18	880.88	8.00	8.00	0.00
3,816.28	90.00	90.00	3,292.00	0.00	897.46	897.15	8.00	8.00	0.00
3,900.00	90.00	90.00	3,292.00	0.00	981.18	980.84	0.00	0.00	0.00
4,000.00	90.00	90.00	3,292.00	0.00	1,081.18	1,080.81	0.00	0.00	0.00
4,100.00	90.00	90.00	3,292.00	0.00	1,181.18	1,180.77	0.00	0.00	0.00
4,116.28	90.00	90.00	3,292.00	0.00	1,197.46	1,197.05	0.00	0.00	0.00
4,186.99	91.00	89.00	3,291.38	0.62	1,268.16	1,267.74	2.00	1.41	-1.41
4,200.00	91.00	89.00	3,291.16	0.84	1,281.17	1,280.75	0.00	0.00	0.00
4,300.00	91.00	89.00	3,289.41	2.59	1,381.14	1,380.73	0.00	0.00	0.00
4,400.00	91.00	89.00	3,287.67	4.33	1,481.11	1,480.71	0.00	0.00	0.00
4,500.00	91.00	89.00	3,285.92	6.08	1,581.08	1,580.69	0.00	0.00	0.00
4,600.00	91.00	89.00	3,284.18	7.82	1,681.05	1,680.67	0.00	0.00	0.00
4,700.00	91.00	89.00	3,282.43	9.57	1,781.02	1,780.65	0.00	0.00	0.00
4,800.00	91.00	89.00	3,280.69	11.31	1,880.98	1,880.63	0.00	0.00	0.00
4,900.00	91.00	89.00	3,278.94	13.06	1,980.95	1,980.62	0.00	0.00	0.00
5,000.00	91.00	89.00	3,277.19	14.80	2,080.92	2,080.60	0.00	0.00	0.00
5,100.00	91.00	89.00	3,275.45	16.55	2,180.89	2,180.58	0.00	0.00	0.00
5,200.00	91.00	89.00	3,273.70	18.29	2,280.86	2,280.56	0.00	0.00	0.00
5,300.00	91.00	89.00	3,271.96	20.04	2,380.83	2,380.54	0.00	0.00	0.00
5,400.00	91.00	89.00	3,270.21	21.78	2,480.80	2,480.52	0.00	0.00	0.00
5,500.00	91.00	89.00	3,268.47	23.53	2,580.77	2,580.50	0.00	0.00	0.00
5,600.00	91.00	89.00	3,266.72	25.27	2,680.74	2,680.48	0.00	0.00	0.00
5,700.00	91.00	89.00	3,264.98	27.02	2,780.71	2,780.46	0.00	0.00	0.00
5,800.00	91.00	89.00	3,263.23	28.76	2,880.68	2,880.44	0.00	0.00	0.00
5,900.00	91.00	89.00	3,261.49	30.51	2,980.65	2,980.42	0.00	0.00	0.00
6,000.00	91.00	89.00	3,259.74	32.25	3,080.62	3,080.41	0.00	0.00	0.00
6,100.00	91.00	89.00	3,258.00	34.00	3,180.59	3,180.39	0.00	0.00	0.00
6,186.99	91.00	89.00	3,256.48	35.52	3,267.55	3,267.36	0.00	0.00	0.00
6,200.00	91.21	88.85	3,256.23	35.76	3,280.56	3,280.37	2.00	1.64	-1.14
6,300.00	92.86	87.71	3,252.68	38.76	3,380.44	3,380.30	2.00	1.64	-1.14
6,330.80	93.36	87.36	3,251.01	40.08	3,411.17	3,411.05	2.00	1.64	-1.14
6,400.00	93.36	87.36	3,246.95	43.27	3,480.18	3,480.12	0.00	0.00	0.00
6,500.00	93.36	87.36	3,241.08	47.87	3,579.90	3,579.92	0.00	0.00	0.00
6,600.00	93.36	87.36	3,235.22	52.47	3,679.62	3,679.73	0.00	0.00	0.00
6,700.00	93.36	87.36	3,229.35	57.07	3,779.34	3,779.54	0.00	0.00	0.00
6,800.00	93.36	87.36	3,223.49	61.68	3,879.07	3,879.35	0.00	0.00	0.00
6,900.00	93.36	87.36	3,217.62	66.28	3,978.79	3,979.16	0.00	0.00	0.00
7,000.00	93.36	87.36	3,211.76	70.88	4,078.51	4,078.96	0.00	0.00	0.00
7,100.00	93.36	87.36	3,205.89	75.48	4,178.23	4,178.77	0.00	0.00	0.00
7,200.00	93.36	87.36	3,200.03	80.09	4,277.95	4,278.58	0.00	0.00	0.00
7,300.00	93.36	87.36	3,194.17	84.69	4,377.67	4,378.39	0.00	0.00	0.00
7,400.00	93.36	87.36	3,188.30	89.29	4,477.40	4,478.20	0.00	0.00	0.00
7,500.00	93.36	87.36	3,182.44	93.89	4,577.12	4,578.01	0.00	0.00	0.00
7,600.00	93.36	87.36	3,176.57	98.49	4,676.84	4,677.81	0.00	0.00	0.00
7,700.00	93.36	87.36	3,170.71	103.10	4,776.56	4,777.62	0.00	0.00	0.00
7,800.00	93.36	87.36	3,164.84	107.70	4,876.28	4,877.43	0.00	0.00	0.00
7,900.00	93.36	87.36	3,158.98	112.30	4,976.00	4,977.24	0.00	0.00	0.00
8,000.00	93.36	87.36	3,153.11	116.90	5,075.73	5,077.05	0.00	0.00	0.00
8,100.00	93.36	87.36	3,147.25	121.51	5,175.45	5,176.85	0.00	0.00	0.00



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Well:	East Sauls Creek 35 3-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1 (Drainage)		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,200.00	93.36	87.36	3,141.38	126.11	5,275.17	5,276.66	0.00	0.00	0.00
8,300.00	93.36	87.36	3,135.52	130.71	5,374.89	5,376.47	0.00	0.00	0.00
8,400.00	93.36	87.36	3,129.65	135.31	5,474.61	5,476.28	0.00	0.00	0.00
8,500.00	93.36	87.36	3,123.79	139.92	5,574.33	5,576.09	0.00	0.00	0.00
8,600.00	93.36	87.36	3,117.92	144.52	5,674.06	5,675.89	0.00	0.00	0.00
8,700.00	93.36	87.36	3,112.06	149.12	5,773.78	5,775.70	0.00	0.00	0.00
8,800.00	93.36	87.36	3,106.19	153.72	5,873.50	5,875.51	0.00	0.00	0.00
8,820.37	93.36	87.36	3,105.00	154.66	5,893.81	5,895.84	0.00	0.00	0.00
ESC 35 3-2 Lat 1 PBHL									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
ESC 35 3-2 Lat 1 PBHL - plan hits target center - Point	0.00	360.00	3,105.00	154.66	5,893.81	1,222,534.05	2,420,695.94	37.2608685	-107.4906787

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
11.00	11.00	Animas		0.00	360.00
1,137.00	1,137.00	Lower Animas		0.00	360.00
1,572.00	1,572.00	Kirtland Shale		0.00	360.00
1,772.00	1,772.00	Farmington Sandstone		0.00	360.00
2,252.00	2,252.00	Lower Kirtland Shale		0.00	360.00
2,387.00	2,387.00	Fruitland		0.00	360.00
2,555.08	2,555.00	Pictured Cliffs		0.00	360.00