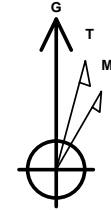




Company: B.P.
Project: Archuleta County, CO NAD83
Site: Carmelita Gallegos A3
Well: Carmelita Gallegos A3
Wellbore: Lateral 1 (Ignacio)
Design: Plan #1

PROJECT DETAILS: Archuleta 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



Azimuths to Grid North
True North: 1.17°
Magnetic North: 10.39°

Magnetic Field
Strength: 50307.7snT
Dip Angle: 63.64°
Date: 10/17/2016
Model: IGRF2015

WELL DETAILS: Carmelita Gallegos A3

GL 6143.85' & RKB 11' @ 6154.85ft (Aztec 507)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1131854.11	2441795.87	37.0130911	-107.4118164

Plan: Plan #1 (Carmelita Gallegos A3/Lateral 1 (Ignacio))

Created By: Janie Collins Date: 17:02, October 26 2016

DESIGN TARGET DETAILS

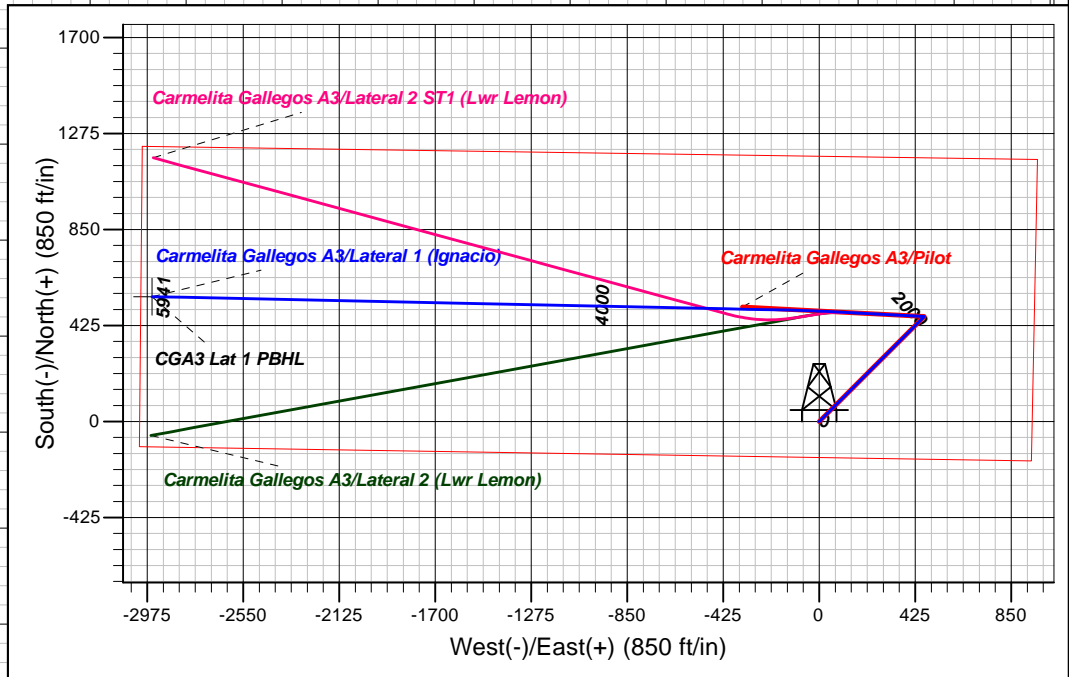
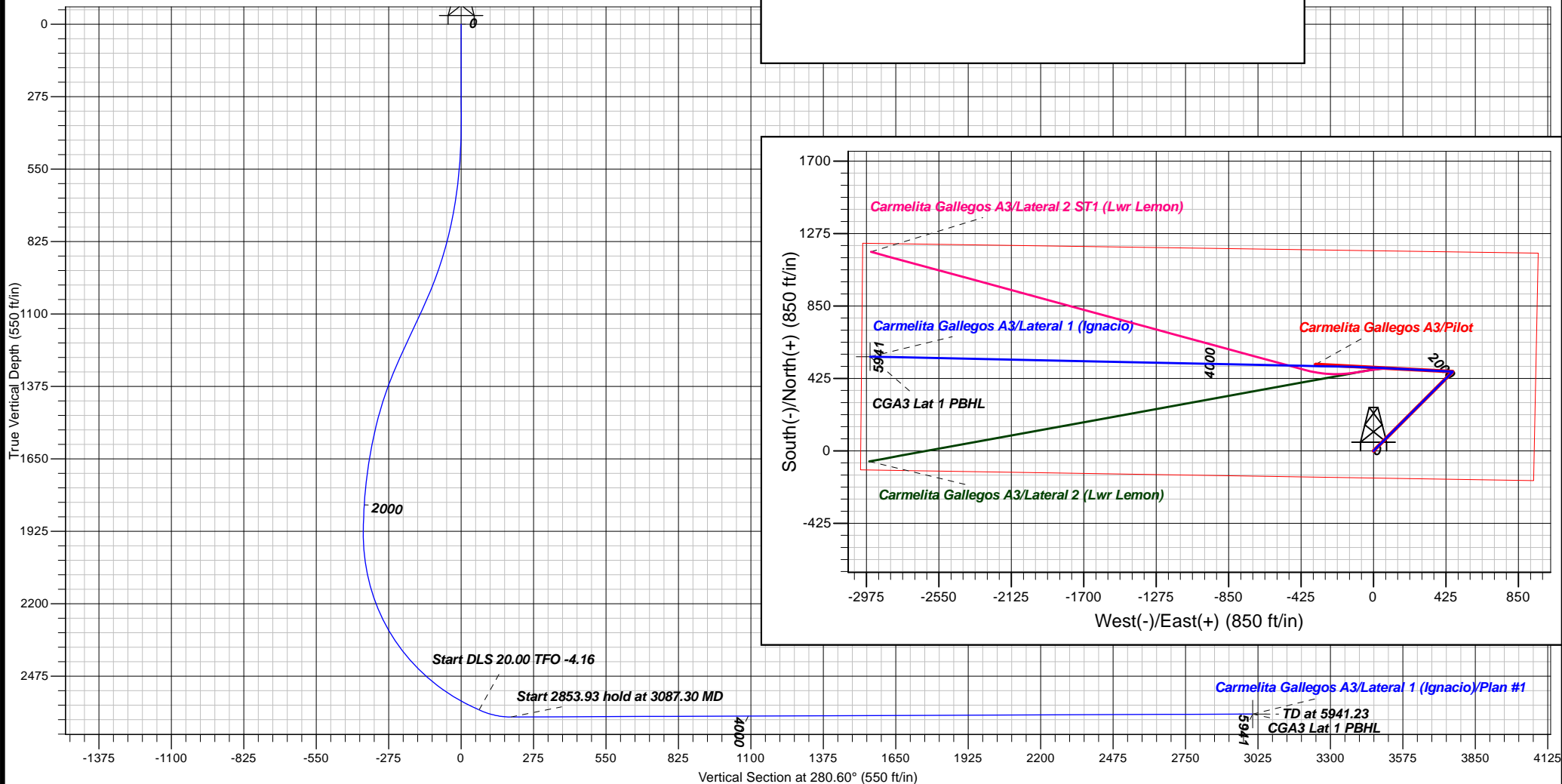
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
CGA3 Lat 1 PBHL	2619.00	552.85	-2953.79	1132406.96	2438842.09	37.0144426	-107.4219690

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target
2960.90	65.00	272.99	2603.10	487.95	21.86	0.00	0.00	68.28	
3087.30	90.22	271.21	2630.00	492.35	-100.52	20.00	-4.16	189.38	
5941.23	90.22	271.21	2619.00	552.85	-2953.79	0.00	0.00	3005.08	CGA3 Lat 1 PBHL

FORMATION TOP DETAILS

No formation data is available



Carmelita Gallegos A3/Lateral 1 (Ignacio)/Plan #1

TD at 5941.23
CGA3 Lat 1 PBHL



B.P.

Archuleta County, CO NAD83

Carmelita Gallegos A3

Carmelita Gallegos A3

Lateral 1 (Ignacio)

Plan: Plan #1

Standard Planning Report

26 October, 2016





Database:	Grand Junction District	Local Co-ordinate Reference:	Well Carmelita Gallegos A3
Company:	B.P.	TVD Reference:	GL 6143.85' & RKB 11' @ 6154.85ft (Aztec 507)
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6143.85' & RKB 11' @ 6154.85ft (Aztec 507)
Site:	Carmelita Gallegos A3	North Reference:	Grid
Well:	Carmelita Gallegos A3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1 (Ignacio)		
Design:	Plan #1		

Project	Archuleta 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	Carmelita Gallegos A3			
Site Position:		Northing:	1,131,854.11 usft	Latitude: 37.0130910
From: Map		Easting:	2,441,795.87 usft	Longitude: -107.4118165
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: -1.17 °

Well	Carmelita Gallegos A3			
Well Position	+N/-S	0.00 ft	Northing:	1,131,854.11 usft
	+E/-W	0.00 ft	Easting:	2,441,795.87 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level: 6,143.85 ft

Wellbore	Lateral 1 (Ignacio)				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/17/2016	9.21	63.64	50,308

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	2,960.90
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	280.60

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
2,960.90	65.00	272.99	2,603.10	487.95	21.86	0.00	0.00	0.00	0.00	
3,087.30	90.22	271.21	2,630.00	492.35	-100.52	20.00	19.95	-1.40	-4.16	
5,941.23	90.22	271.21	2,619.00	552.85	-2,953.79	0.00	0.00	0.00	0.00	CGA3 Lat 1 PBHL



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Carmelita Gallegos A3
Company:	B.P.	TVD Reference:	GL 6143.85' & RKB 11' @ 6154.85ft (Aztec 507)
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6143.85' & RKB 11' @ 6154.85ft (Aztec 507)
Site:	Carmelita Gallegos A3	North Reference:	Grid
Well:	Carmelita Gallegos A3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1 (Ignacio)		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,960.90	65.00	272.99	2,603.10	487.95	21.86	68.28	0.00	0.00	0.00
3,000.01	72.80	272.40	2,617.17	489.66	-14.56	104.39	20.00	19.95	-1.51
3,087.30	90.22	271.21	2,630.00	492.35	-100.52	189.38	20.00	19.96	-1.36
3,100.01	90.22	271.21	2,629.96	492.62	-113.22	201.92	0.00	0.00	0.00
3,200.01	90.22	271.21	2,629.57	494.74	-213.20	300.58	0.00	0.00	0.00
3,300.01	90.22	271.21	2,629.18	496.86	-313.18	399.24	0.00	0.00	0.00
3,400.01	90.22	271.21	2,628.80	498.98	-413.15	497.90	0.00	0.00	0.00
3,500.01	90.22	271.21	2,628.41	501.10	-513.13	596.56	0.00	0.00	0.00
3,600.01	90.22	271.21	2,628.03	503.22	-613.11	695.22	0.00	0.00	0.00
3,700.01	90.22	271.21	2,627.64	505.34	-713.09	793.88	0.00	0.00	0.00
3,800.01	90.22	271.21	2,627.26	507.46	-813.06	892.54	0.00	0.00	0.00
3,900.01	90.22	271.21	2,626.87	509.58	-913.04	991.20	0.00	0.00	0.00
4,000.01	90.22	271.21	2,626.49	511.70	-1,013.02	1,089.86	0.00	0.00	0.00
4,100.01	90.22	271.21	2,626.10	513.82	-1,112.99	1,188.52	0.00	0.00	0.00
4,200.01	90.22	271.21	2,625.71	515.94	-1,212.97	1,287.18	0.00	0.00	0.00
4,300.01	90.22	271.21	2,625.33	518.06	-1,312.95	1,385.85	0.00	0.00	0.00
4,400.01	90.22	271.21	2,624.94	520.18	-1,412.92	1,484.51	0.00	0.00	0.00
4,500.01	90.22	271.21	2,624.56	522.30	-1,512.90	1,583.17	0.00	0.00	0.00
4,582.15	90.22	271.21	2,624.24	524.04	-1,595.02	1,664.20	0.00	0.00	0.00
CGA3 Lat 1 MP									
4,600.01	90.22	271.21	2,624.17	524.42	-1,612.88	1,681.83	0.00	0.00	0.00
4,700.01	90.22	271.21	2,623.79	526.54	-1,712.86	1,780.49	0.00	0.00	0.00
4,800.01	90.22	271.21	2,623.40	528.66	-1,812.83	1,879.15	0.00	0.00	0.00
4,900.01	90.22	271.21	2,623.01	530.78	-1,912.81	1,977.81	0.00	0.00	0.00
5,000.01	90.22	271.21	2,622.63	532.90	-2,012.79	2,076.47	0.00	0.00	0.00
5,100.01	90.22	271.21	2,622.24	535.02	-2,112.76	2,175.13	0.00	0.00	0.00
5,200.01	90.22	271.21	2,621.86	537.14	-2,212.74	2,273.79	0.00	0.00	0.00
5,300.01	90.22	271.21	2,621.47	539.26	-2,312.72	2,372.45	0.00	0.00	0.00
5,400.01	90.22	271.21	2,621.09	541.38	-2,412.69	2,471.11	0.00	0.00	0.00
5,500.01	90.22	271.21	2,620.70	543.50	-2,512.67	2,569.77	0.00	0.00	0.00
5,600.01	90.22	271.21	2,620.32	545.62	-2,612.65	2,668.43	0.00	0.00	0.00
5,700.01	90.22	271.21	2,619.93	547.74	-2,712.63	2,767.09	0.00	0.00	0.00
5,800.01	90.22	271.21	2,619.54	549.86	-2,812.60	2,865.75	0.00	0.00	0.00
5,900.01	90.22	271.21	2,619.16	551.98	-2,912.58	2,964.41	0.00	0.00	0.00
5,941.23	90.22	271.21	2,619.00	552.85	-2,953.79	3,005.08	0.00	0.00	0.00
CGA3 Lat 1 PBHL									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
CGA3 Lat 1 PBHL - plan hits target center - Point	0.00	360.00	2,619.00	552.85	-2,953.79	1,132,406.96	2,438,842.09	37.0144426	-107.4219691