

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_SHUTT 39-34 PAD

SHUTT 39-34

SHUTT 39-34

Plan: SHUTT 39-34 (wp01)

Standard Planning Report

01 August, 2011



Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_SHUTT 39-34 PAD
 Well: SHUTT 39-34
 Wellbore: SHUTT 39-34
 Section:
 SHL:
 Design: SHUTT 39-34 (wp01)
 Latitude: 40.265337
 Longitude: -104.758539
 GL: 4813.00
 KB: 15' rkb + 4813' gl @ 4828.00ft

TVDPPath	MDPath	Formation
4147.00	4314.65	PK Depth
4208.00	4378.80	SX Depth
6956.00	7150.25	NIO Depth
7255.00	7449.25	CD Depth
7332.00	7526.25	GH Depth
7698.00	7892.25	J Depth



Azimuths to True North
 Magnetic North: 8.83°

Magnetic Field
 Strength: 53047.9snT
 Dip Angle: 66.94°
 Date: 8/1/2011
 Model: IGRF2010

WELL DETAILS: SHUTT 39-34

+N/-S	+E/-W	Northing	Ground Level: Easting	4813.00 Latitude	Longitude	Slot
0.00	0.00	1340368.81	3206912.35	40.265337	-104.758539	

CASING DETAILS

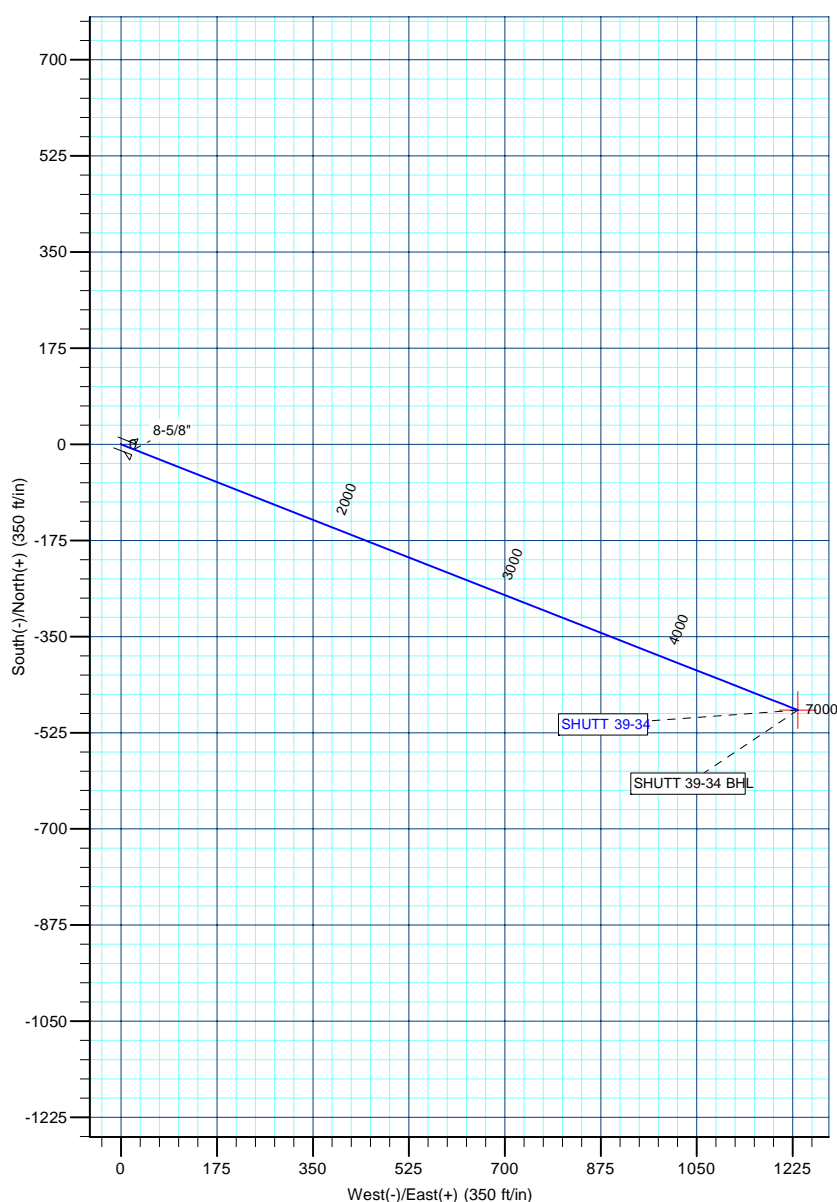
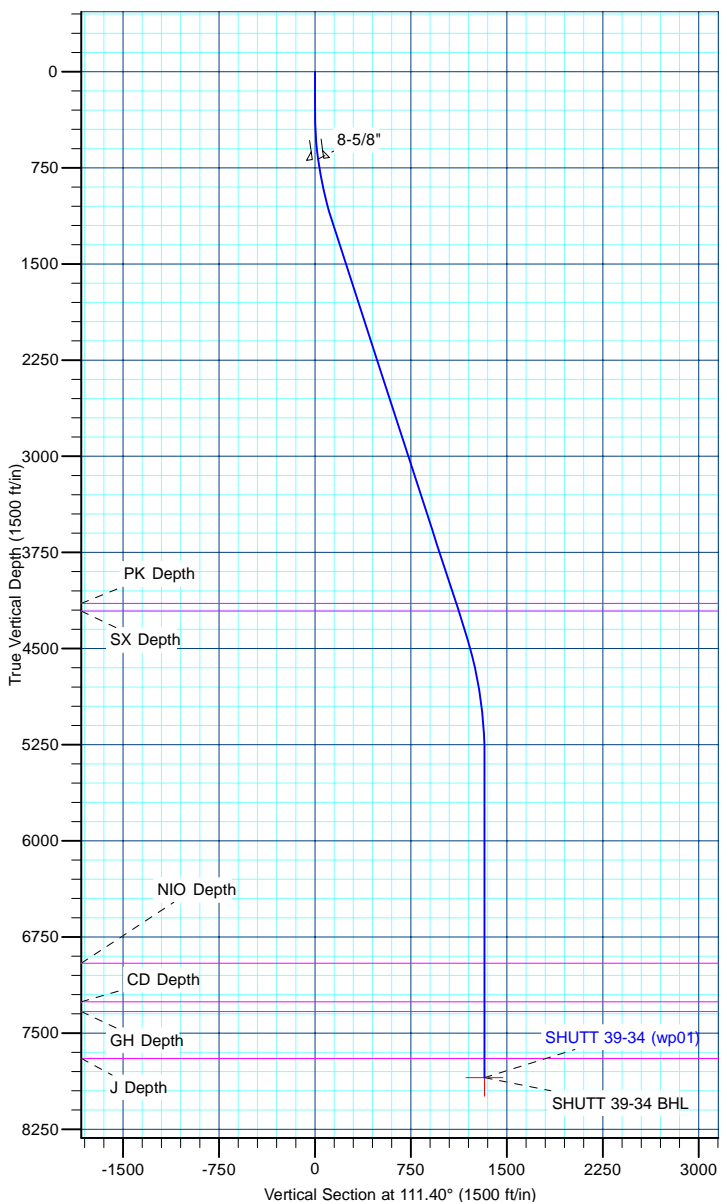
TVD	MD	Name	Size
681.00	682.13	8-5/8"	8-5/8

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
SHUTT 39-34 BHL	7848.00	-483.74	1234.60	1339895.42	3208150.95	40.264009	-104.754115	

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	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
1201.41	18.03	111.40	1186.61	-51.31	130.95	2.00	111.40	140.65
4512.07	18.03	111.40	4334.73	-425.10	1084.94	0.00	0.00	1165.25
5542.25	0.00	0.00	5348.00	-483.74	1234.60	1.75	180.00	1325.99
8042.25	0.00	0.00	7848.00	-483.74	1234.60	0.00	0.00	1325.99



Database:	edm5000p	Local Co-ordinate Reference:	Well SHUTT 39-34
Company:	US ROCKIES REGION PLANNING	TVD Reference:	15' rkb + 4813' gl @ 4828.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' rkb + 4813' gl @ 4828.00ft
Site:	WELD_SHUTT 39-34 PAD	North Reference:	True
Well:	SHUTT 39-34	Survey Calculation Method:	Minimum Curvature
Wellbore:	SHUTT 39-34		
Design:	SHUTT 39-34 (wp01)		

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	WELD_SHUTT 39-34 PAD			
Site Position:		Northing:	1,340,368.82 ft	Latitude: 40.265337
From:	Lat/Long	Easting:	3,206,912.35 ft	Longitude: -104.758539
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence: 0.48 °

Well	SHUTT 39-34			
Well Position	+N/-S	0.00 ft	Northing:	1,340,368.81 ft
	+E/-W	0.00 ft	Easting:	3,206,912.35 ft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Ground Level: 4,813.00 ft

Wellbore	SHUTT 39-34				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/1/2011	8.83	66.94	53,048

Design	SHUTT 39-34 (wp01)			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	111.40

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
0.00	0.00	0.00	0.00	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	
1,201.41	18.03	111.40	1,186.61	-51.31	130.95	2.00	2.00	0.00	111.40	
4,512.07	18.03	111.40	4,334.73	-425.10	1,084.94	0.00	0.00	0.00	0.00	
5,542.25	0.00	0.00	5,348.00	-483.74	1,234.60	1.75	-1.75	0.00	180.00	
8,042.25	0.00	0.00	7,848.00	-483.74	1,234.60	0.00	0.00	0.00	0.00	SHUTT 39-34 BHL

Database:	edm5000p	Local Co-ordinate Reference:	Well SHUTT 39-34
Company:	US ROCKIES REGION PLANNING	TVD Reference:	15' rkb + 4813' gl @ 4828.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' rkb + 4813' gl @ 4828.00ft
Site:	WELD_SHUTT 39-34 PAD	North Reference:	True
Well:	SHUTT 39-34	Survey Calculation Method:	Minimum Curvature
Wellbore:	SHUTT 39-34		
Design:	SHUTT 39-34 (wp01)		

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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
Start Build 2.00									
400.00	2.00	111.40	399.98	-0.64	1.62	1.75	2.00	2.00	0.00
500.00	4.00	111.40	499.84	-2.55	6.50	6.98	2.00	2.00	0.00
600.00	6.00	111.40	599.45	-5.73	14.61	15.69	2.00	2.00	0.00
682.13	7.64	111.40	681.00	-9.28	23.69	25.45	2.00	2.00	0.00
8-5/8"									
700.00	8.00	111.40	698.70	-10.17	25.96	27.88	2.00	2.00	0.00
800.00	10.00	111.40	797.47	-15.88	40.52	43.52	2.00	2.00	0.00
900.00	12.00	111.40	895.62	-22.84	58.29	62.60	2.00	2.00	0.00
1,000.00	14.00	111.40	993.06	-31.04	79.23	85.10	2.00	2.00	0.00
1,100.00	16.00	111.40	1,089.64	-40.49	103.33	110.98	2.00	2.00	0.00
1,200.00	18.00	111.40	1,185.27	-51.15	130.55	140.21	2.00	2.00	0.00
1,201.41	18.03	111.40	1,186.61	-51.31	130.95	140.65	2.00	2.00	0.00
Start 3310.67 hold at 1201.41 MD									
1,300.00	18.03	111.40	1,280.36	-62.44	159.36	171.16	0.00	0.00	0.00
1,400.00	18.03	111.40	1,375.45	-73.73	188.18	202.11	0.00	0.00	0.00
1,500.00	18.03	111.40	1,470.54	-85.02	217.00	233.06	0.00	0.00	0.00
1,600.00	18.03	111.40	1,565.63	-96.31	245.81	264.01	0.00	0.00	0.00
1,700.00	18.03	111.40	1,660.72	-107.60	274.63	294.95	0.00	0.00	0.00
1,800.00	18.03	111.40	1,755.81	-118.89	303.44	325.90	0.00	0.00	0.00
1,900.00	18.03	111.40	1,850.90	-130.18	332.26	356.85	0.00	0.00	0.00
2,000.00	18.03	111.40	1,945.99	-141.47	361.07	387.80	0.00	0.00	0.00
2,100.00	18.03	111.40	2,041.08	-152.77	389.89	418.75	0.00	0.00	0.00
2,200.00	18.03	111.40	2,136.17	-164.06	418.70	449.70	0.00	0.00	0.00
2,300.00	18.03	111.40	2,231.26	-175.35	447.52	480.65	0.00	0.00	0.00
2,400.00	18.03	111.40	2,326.35	-186.64	476.33	511.59	0.00	0.00	0.00
2,500.00	18.03	111.40	2,421.44	-197.93	505.15	542.54	0.00	0.00	0.00
2,600.00	18.03	111.40	2,516.54	-209.22	533.97	573.49	0.00	0.00	0.00
2,700.00	18.03	111.40	2,611.63	-220.51	562.78	604.44	0.00	0.00	0.00
2,800.00	18.03	111.40	2,706.72	-231.80	591.60	635.39	0.00	0.00	0.00
2,900.00	18.03	111.40	2,801.81	-243.09	620.41	666.34	0.00	0.00	0.00
3,000.00	18.03	111.40	2,896.90	-254.38	649.23	697.28	0.00	0.00	0.00
3,100.00	18.03	111.40	2,991.99	-265.67	678.04	728.23	0.00	0.00	0.00
3,200.00	18.03	111.40	3,087.08	-276.96	706.86	759.18	0.00	0.00	0.00
3,300.00	18.03	111.40	3,182.17	-288.25	735.67	790.13	0.00	0.00	0.00
3,400.00	18.03	111.40	3,277.26	-299.54	764.49	821.08	0.00	0.00	0.00
3,500.00	18.03	111.40	3,372.35	-310.83	793.31	852.03	0.00	0.00	0.00
3,600.00	18.03	111.40	3,467.44	-322.12	822.12	882.97	0.00	0.00	0.00
3,700.00	18.03	111.40	3,562.53	-333.41	850.94	913.92	0.00	0.00	0.00
3,800.00	18.03	111.40	3,657.62	-344.70	879.75	944.87	0.00	0.00	0.00
3,900.00	18.03	111.40	3,752.71	-355.99	908.57	975.82	0.00	0.00	0.00
4,000.00	18.03	111.40	3,847.80	-367.28	937.38	1,006.77	0.00	0.00	0.00
4,100.00	18.03	111.40	3,942.89	-378.57	966.20	1,037.72	0.00	0.00	0.00
4,200.00	18.03	111.40	4,037.98	-389.86	995.01	1,068.67	0.00	0.00	0.00
4,300.00	18.03	111.40	4,133.07	-401.15	1,023.83	1,099.61	0.00	0.00	0.00
4,314.65	18.03	111.40	4,147.00	-402.81	1,028.05	1,104.15	0.00	0.00	0.00
PK Depth									
4,378.80	18.03	111.40	4,208.00	-410.05	1,046.53	1,124.00	0.00	0.00	0.00
SX Depth									
4,400.00	18.03	111.40	4,228.16	-412.44	1,052.64	1,130.56	0.00	0.00	0.00

Database:	edm5000p	Local Co-ordinate Reference:	Well SHUTT 39-34
Company:	US ROCKIES REGION PLANNING	TVD Reference:	15' rkb + 4813' gl @ 4828.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' rkb + 4813' gl @ 4828.00ft
Site:	WELD_SHUTT 39-34 PAD	North Reference:	True
Well:	SHUTT 39-34	Survey Calculation Method:	Minimum Curvature
Wellbore:	SHUTT 39-34		
Design:	SHUTT 39-34 (wp01)		

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)
4,500.00	18.03	111.40	4,323.25	-423.73	1,081.46	1,161.51	0.00	0.00	0.00
4,512.07	18.03	111.40	4,334.73	-425.10	1,084.94	1,165.25	0.00	0.00	0.00
Start Drop -1.75									
4,600.00	16.49	111.40	4,418.70	-434.61	1,109.23	1,191.33	1.75	-1.75	0.00
4,700.00	14.74	111.40	4,515.01	-444.43	1,134.29	1,218.25	1.75	-1.75	0.00
4,800.00	12.99	111.40	4,612.09	-453.18	1,156.60	1,242.21	1.75	-1.75	0.00
4,900.00	11.24	111.40	4,709.86	-460.83	1,176.14	1,263.20	1.75	-1.75	0.00
5,000.00	9.49	111.40	4,808.22	-467.39	1,192.89	1,281.19	1.75	-1.75	0.00
5,100.00	7.74	111.40	4,907.09	-472.86	1,206.83	1,296.16	1.75	-1.75	0.00
5,200.00	5.99	111.40	5,006.37	-477.22	1,217.96	1,308.12	1.75	-1.75	0.00
5,300.00	4.24	111.40	5,105.97	-480.47	1,226.26	1,317.03	1.75	-1.75	0.00
5,400.00	2.49	111.40	5,205.79	-482.61	1,231.72	1,322.90	1.75	-1.75	0.00
5,500.00	0.74	111.40	5,305.75	-483.64	1,234.35	1,325.72	1.75	-1.75	0.00
5,542.25	0.00	0.00	5,348.00	-483.74	1,234.60	1,325.99	1.75	-1.75	0.00
Start 2500.00 hold at 5542.25 MD									
5,600.00	0.00	0.00	5,405.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
5,700.00	0.00	0.00	5,505.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
5,800.00	0.00	0.00	5,605.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
5,900.00	0.00	0.00	5,705.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
6,000.00	0.00	0.00	5,805.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
6,100.00	0.00	0.00	5,905.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
6,200.00	0.00	0.00	6,005.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
6,300.00	0.00	0.00	6,105.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
6,400.00	0.00	0.00	6,205.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
6,500.00	0.00	0.00	6,305.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
6,600.00	0.00	0.00	6,405.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
6,700.00	0.00	0.00	6,505.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
6,800.00	0.00	0.00	6,605.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
6,900.00	0.00	0.00	6,705.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
7,000.00	0.00	0.00	6,805.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
7,100.00	0.00	0.00	6,905.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
7,150.25	0.00	0.00	6,956.00	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
NIO Depth									
7,200.00	0.00	0.00	7,005.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
7,300.00	0.00	0.00	7,105.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
7,400.00	0.00	0.00	7,205.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
7,449.25	0.00	0.00	7,255.00	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
CD Depth									
7,500.00	0.00	0.00	7,305.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
7,526.25	0.00	0.00	7,332.00	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
GH Depth									
7,600.00	0.00	0.00	7,405.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
7,700.00	0.00	0.00	7,505.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
7,800.00	0.00	0.00	7,605.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
7,892.25	0.00	0.00	7,698.00	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
J Depth									
7,900.00	0.00	0.00	7,705.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
8,000.00	0.00	0.00	7,805.75	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
8,042.25	0.00	0.00	7,848.00	-483.74	1,234.60	1,325.99	0.00	0.00	0.00
TD at 8042.25 - SHUTT 39-34 BHL									

Database:	edm5000p	Local Co-ordinate Reference:	Well SHUTT 39-34
Company:	US ROCKIES REGION PLANNING	TVD Reference:	15' rkb + 4813' gl @ 4828.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' rkb + 4813' gl @ 4828.00ft
Site:	WELD_SHUTT 39-34 PAD	North Reference:	True
Well:	SHUTT 39-34	Survey Calculation Method:	Minimum Curvature
Wellbore:	SHUTT 39-34		
Design:	SHUTT 39-34 (wp01)		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
SHUTT 39-34 BHL	0.00	0.00	7,848.00	-483.74	1,234.60	1,339,895.42	3,208,150.95	40.264009	-104.754115
- plan hits target center									
- Point									

Casing Points				
Measured Depth	Vertical Depth	Name		
(ft)	(ft)			
		Casing Diameter	Hole Diameter	
		(")	(")	
682.13	681.00	8-5/8"	11	

Formations					
Measured Depth	Vertical Depth	Name		Lithology	Dip
(ft)	(ft)				(°)
					Dip Direction
					(°)
4,314.65	4,147.00	PK Depth			
4,378.80	4,208.00	SX Depth			
7,150.25	6,956.00	NIO Depth			
7,449.25	7,255.00	CD Depth			
7,526.25	7,332.00	GH Depth			
7,892.25	7,698.00	J Depth			

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		
(ft)	(ft)	+N/-S	+E/-W	
		(ft)	(ft)	Comment
300.00	300.00	0.00	0.00	Start Build 2.00
1,201.41	1,186.61	-51.31	130.95	Start 3310.67 hold at 1201.41 MD
4,512.07	4,334.73	-425.10	1,084.94	Start Drop -1.75
5,542.25	5,348.00	-483.74	1,234.60	Start 2500.00 hold at 5542.25 MD
8,042.25	7,848.00	-483.74	1,234.60	TD at 8042.25