

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_CARTER 10 PAD

Carter 16-32

Carter 16-32

Plan: Carter 16-32 (wp01)

Standard Planning Report

28 January, 2011

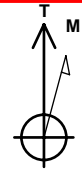


Project: COLORADO NORTHERN ZONE - 83
Site: WELD_CARTER 10 PAD
Well: Carter 16-32
Wellbore: Carter 16-32
Section:
SHL:
Design: Carter 16-32 (wp01)
Latitude: 40.093727
Longitude: -104.797164
GL: 4912.00
KB: WELL @ 4912.00ft (Original Well Elev)

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3980.00	4168.62	PK Depth
4482.00	4701.93	SX Depth
7127.00	7434.26	NIO Depth
7452.00	7759.26	CD Depth
7542.00	7849.26	GH Depth
7892.00	8199.26	J Depth

Weatherford



Azimuths to True North
Magnetic North: 8.93°
Magnetic Field
Strength: 53022.0snT
Dip Angle: 66.82°
Date: 12/3/2010
Model: IGRF2010

WELL DETAILS: Carter 16-32

+N/-S	+E/-W	Northing	Ground Level: Easting	4912.00 Latitude	Longitude	Slot
0.00	0.00	1277768.51	3196629.36	40.093727	-104.797164	

CASING DETAILS

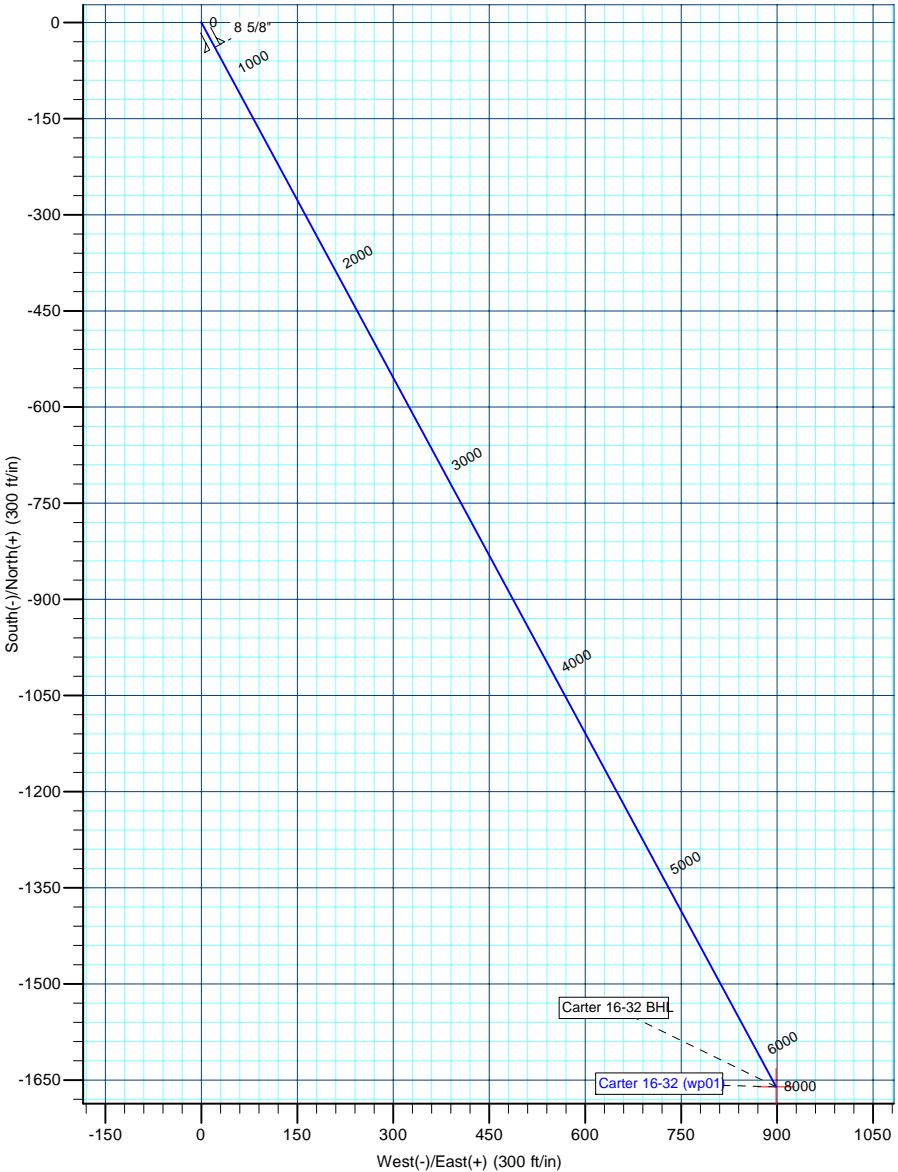
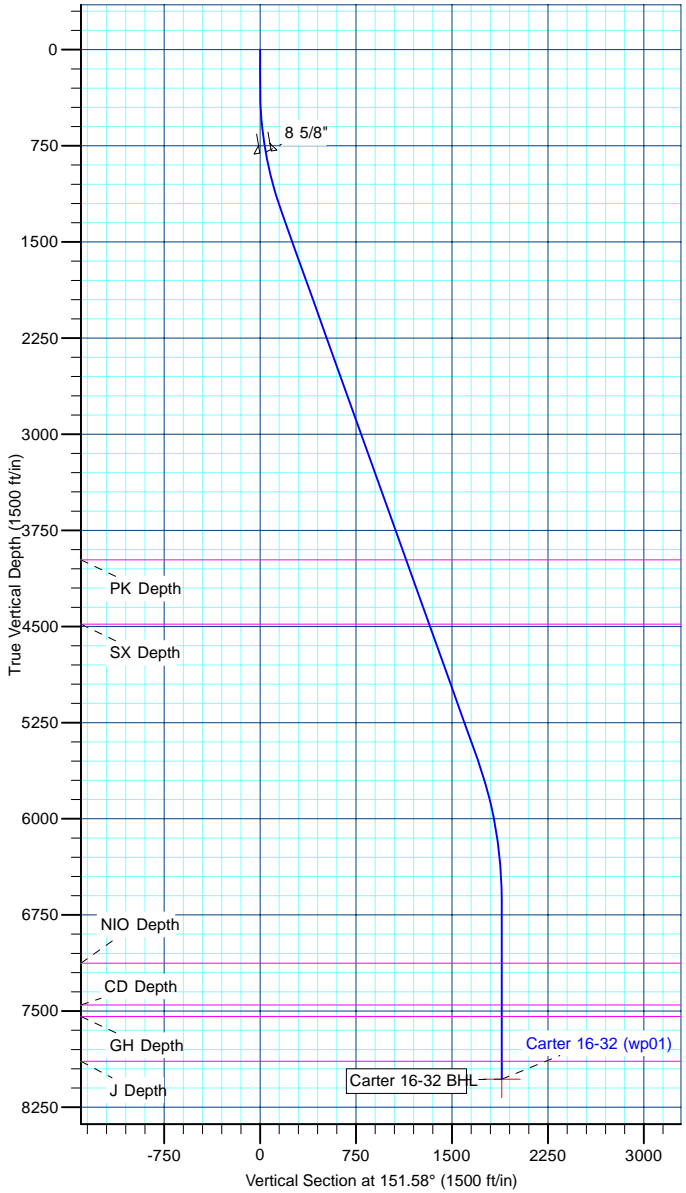
TVD	MD	Name	Size
800.00	802.57	8 5/8"	8-5/8

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
Carter 16-32 BHL	8032.00	-1660.69	898.68	1276114.99	3197541.17	40.089168	-104.793952	

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
1286.62	19.73	151.58	1267.23	-147.95	80.06	2.00	151.58	168.22
5811.70	19.73	151.58	5526.60	-1491.61	807.18	0.00	0.00	1696.01
6939.26	0.00	0.00	6632.00	-1660.69	898.68	1.75	180.00	1888.26
8339.26	0.00	0.00	8032.00	-1660.69	898.68	0.00	0.00	1888.26



Database:	edm5000p	Local Co-ordinate Reference:	Well Carter 16-32
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4912.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4912.00ft (Original Well Elev)
Site:	WELD_CARTER 10 PAD	North Reference:	True
Well:	Carter 16-32	Survey Calculation Method:	Minimum Curvature
Wellbore:	Carter 16-32		
Design:	Carter 16-32 (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_CARTER 10 PAD			
Site Position: From:	Lat/Long	Northing:	1,277,768.43 ft	Latitude:	40.093728
		Easting:	3,196,569.49 ft	Longitude:	-104.797378
		Position Uncertainty:	0.00 ft	Slot Radius:	0 "

Well	Carter 16-32					
Well Position	+N-S	-0.40 ft	Northing:	1,277,768.51 ft	Latitude:	40.093727
	+E-W	59.87 ft	Easting:	3,196,629.36 ft	Longitude:	-104.797164
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,912.00 ft

Wellbore	Carter 16-32				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/3/2010	8.93	66.82	53,022

Design	Carter 16-32 (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	151.58

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	
1,286.62	19.73	151.58	1,267.23	-147.95	80.06	2.00	2.00	0.00	151.58	
5,811.70	19.73	151.58	5,526.60	-1,491.61	807.18	0.00	0.00	0.00	0.00	
6,939.26	0.00	0.00	6,632.00	-1,660.69	898.68	1.75	-1.75	0.00	180.00	
8,339.26	0.00	0.00	8,032.00	-1,660.69	898.68	0.00	0.00	0.00	0.00	Carter 16-32 BHL

Database:	edm5000p	Local Co-ordinate Reference:	Well Carter 16-32
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4912.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4912.00ft (Original Well Elev)
Site:	WELD_CARTER 10 PAD	North Reference:	True
Well:	Carter 16-32	Survey Calculation Method:	Minimum Curvature
Wellbore:	Carter 16-32		
Design:	Carter 16-32 (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
400.00	2.00	151.58	399.98	-1.53	0.83	1.75	2.00	2.00	0.00
500.00	4.00	151.58	499.84	-6.14	3.32	6.98	2.00	2.00	0.00
600.00	6.00	151.58	599.45	-13.80	7.47	15.69	2.00	2.00	0.00
700.00	8.00	151.58	698.70	-24.52	13.27	27.88	2.00	2.00	0.00
800.00	10.00	151.58	797.47	-38.28	20.71	43.52	2.00	2.00	0.00
802.57	10.05	151.58	800.00	-38.67	20.93	43.97	2.00	2.00	0.00
8 5/8"									
900.00	12.00	151.58	895.62	-55.06	29.79	62.60	2.00	2.00	0.00
1,000.00	14.00	151.58	993.06	-74.84	40.50	85.10	2.00	2.00	0.00
1,100.00	16.00	151.58	1,089.64	-97.60	52.82	110.98	2.00	2.00	0.00
1,200.00	18.00	151.58	1,185.27	-123.31	66.73	140.21	2.00	2.00	0.00
1,286.62	19.73	151.58	1,267.23	-147.95	80.06	168.22	2.00	2.00	0.00
1,300.00	19.73	151.58	1,279.83	-151.92	82.21	172.74	0.00	0.00	0.00
1,400.00	19.73	151.58	1,373.95	-181.61	98.28	206.50	0.00	0.00	0.00
1,500.00	19.73	151.58	1,468.08	-211.31	114.35	240.26	0.00	0.00	0.00
1,600.00	19.73	151.58	1,562.21	-241.00	130.42	274.03	0.00	0.00	0.00
1,700.00	19.73	151.58	1,656.34	-270.70	146.49	307.79	0.00	0.00	0.00
1,800.00	19.73	151.58	1,750.47	-300.39	162.55	341.55	0.00	0.00	0.00
1,900.00	19.73	151.58	1,844.59	-330.08	178.62	375.31	0.00	0.00	0.00
2,000.00	19.73	151.58	1,938.72	-359.78	194.69	409.08	0.00	0.00	0.00
2,100.00	19.73	151.58	2,032.85	-389.47	210.76	442.84	0.00	0.00	0.00
2,200.00	19.73	151.58	2,126.98	-419.16	226.83	476.60	0.00	0.00	0.00
2,300.00	19.73	151.58	2,221.11	-448.86	242.90	510.36	0.00	0.00	0.00
2,400.00	19.73	151.58	2,315.23	-478.55	258.97	544.13	0.00	0.00	0.00
2,500.00	19.73	151.58	2,409.36	-508.25	275.03	577.89	0.00	0.00	0.00
2,600.00	19.73	151.58	2,503.49	-537.94	291.10	611.65	0.00	0.00	0.00
2,700.00	19.73	151.58	2,597.62	-567.63	307.17	645.42	0.00	0.00	0.00
2,800.00	19.73	151.58	2,691.75	-597.33	323.24	679.18	0.00	0.00	0.00
2,900.00	19.73	151.58	2,785.87	-627.02	339.31	712.94	0.00	0.00	0.00
3,000.00	19.73	151.58	2,880.00	-656.71	355.38	746.70	0.00	0.00	0.00
3,100.00	19.73	151.58	2,974.13	-686.41	371.45	780.47	0.00	0.00	0.00
3,200.00	19.73	151.58	3,068.26	-716.10	387.52	814.23	0.00	0.00	0.00
3,300.00	19.73	151.58	3,162.39	-745.79	403.58	847.99	0.00	0.00	0.00
3,400.00	19.73	151.58	3,256.51	-775.49	419.65	881.75	0.00	0.00	0.00
3,500.00	19.73	151.58	3,350.64	-805.18	435.72	915.52	0.00	0.00	0.00
3,600.00	19.73	151.58	3,444.77	-834.88	451.79	949.28	0.00	0.00	0.00
3,700.00	19.73	151.58	3,538.90	-864.57	467.86	983.04	0.00	0.00	0.00
3,800.00	19.73	151.58	3,633.03	-894.26	483.93	1,016.80	0.00	0.00	0.00
3,900.00	19.73	151.58	3,727.15	-923.96	500.00	1,050.57	0.00	0.00	0.00
4,000.00	19.73	151.58	3,821.28	-953.65	516.06	1,084.33	0.00	0.00	0.00
4,100.00	19.73	151.58	3,915.41	-983.34	532.13	1,118.09	0.00	0.00	0.00
4,168.62	19.73	151.58	3,980.00	-1,003.72	543.16	1,141.26	0.00	0.00	0.00
PK Depth									
4,200.00	19.73	151.58	4,009.54	-1,013.04	548.20	1,151.86	0.00	0.00	0.00
4,300.00	19.73	151.58	4,103.67	-1,042.73	564.27	1,185.62	0.00	0.00	0.00
4,400.00	19.73	151.58	4,197.79	-1,072.43	580.34	1,219.38	0.00	0.00	0.00
4,500.00	19.73	151.58	4,291.92	-1,102.12	596.41	1,253.14	0.00	0.00	0.00
4,600.00	19.73	151.58	4,386.05	-1,131.81	612.48	1,286.91	0.00	0.00	0.00
4,700.00	19.73	151.58	4,480.18	-1,161.51	628.54	1,320.67	0.00	0.00	0.00
4,701.93	19.73	151.58	4,482.00	-1,162.08	628.86	1,321.32	0.00	0.00	0.00

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Site:	WELD_CARTER 10 PAD	North Reference:	True
Well:	Carter 16-32	Survey Calculation Method:	Minimum Curvature
Wellbore:	Carter 16-32		
Design:	Carter 16-32 (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)
SX Depth									
4,800.00	19.73	151.58	4,574.31	-1,191.20	644.61	1,354.43	0.00	0.00	0.00
4,900.00	19.73	151.58	4,668.43	-1,220.89	660.68	1,388.19	0.00	0.00	0.00
5,000.00	19.73	151.58	4,762.56	-1,250.59	676.75	1,421.96	0.00	0.00	0.00
5,100.00	19.73	151.58	4,856.69	-1,280.28	692.82	1,455.72	0.00	0.00	0.00
5,200.00	19.73	151.58	4,950.82	-1,309.97	708.89	1,489.48	0.00	0.00	0.00
5,300.00	19.73	151.58	5,044.95	-1,339.67	724.96	1,523.24	0.00	0.00	0.00
5,400.00	19.73	151.58	5,139.08	-1,369.36	741.02	1,557.01	0.00	0.00	0.00
5,500.00	19.73	151.58	5,233.20	-1,399.06	757.09	1,590.77	0.00	0.00	0.00
5,600.00	19.73	151.58	5,327.33	-1,428.75	773.16	1,624.53	0.00	0.00	0.00
5,700.00	19.73	151.58	5,421.46	-1,458.44	789.23	1,658.29	0.00	0.00	0.00
5,800.00	19.73	151.58	5,515.59	-1,488.14	805.30	1,692.06	0.00	0.00	0.00
5,811.70	19.73	151.58	5,526.60	-1,491.61	807.18	1,696.01	0.00	0.00	0.00
5,900.00	18.19	151.58	5,610.11	-1,516.84	820.83	1,724.70	1.75	-1.75	0.00
6,000.00	16.44	151.58	5,705.57	-1,543.01	834.99	1,754.45	1.75	-1.75	0.00
6,100.00	14.69	151.58	5,801.90	-1,566.61	847.76	1,781.28	1.75	-1.75	0.00
6,200.00	12.94	151.58	5,899.01	-1,587.60	859.12	1,805.15	1.75	-1.75	0.00
6,300.00	11.19	151.58	5,996.80	-1,605.98	869.07	1,826.05	1.75	-1.75	0.00
6,400.00	9.44	151.58	6,095.18	-1,621.72	877.59	1,843.95	1.75	-1.75	0.00
6,500.00	7.69	151.58	6,194.06	-1,634.82	884.67	1,858.84	1.75	-1.75	0.00
6,600.00	5.94	151.58	6,293.35	-1,645.25	890.32	1,870.70	1.75	-1.75	0.00
6,700.00	4.19	151.58	6,392.96	-1,653.01	894.52	1,879.52	1.75	-1.75	0.00
6,800.00	2.44	151.58	6,492.78	-1,658.09	897.27	1,885.30	1.75	-1.75	0.00
6,900.00	0.69	151.58	6,592.74	-1,660.48	898.56	1,888.02	1.75	-1.75	0.00
6,939.26	0.00	0.00	6,632.00	-1,660.69	898.68	1,888.26	1.75	-1.75	0.00
7,000.00	0.00	0.00	6,692.74	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
7,100.00	0.00	0.00	6,792.74	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
7,200.00	0.00	0.00	6,892.74	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
7,300.00	0.00	0.00	6,992.74	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
7,400.00	0.00	0.00	7,092.74	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
7,434.26	0.00	0.00	7,127.00	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
NIO Depth									
7,500.00	0.00	0.00	7,192.74	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
7,600.00	0.00	0.00	7,292.74	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
7,700.00	0.00	0.00	7,392.74	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
7,759.26	0.00	0.00	7,452.00	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
CD Depth									
7,800.00	0.00	0.00	7,492.74	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
7,849.26	0.00	0.00	7,542.00	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
GH Depth									
7,900.00	0.00	0.00	7,592.74	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
8,000.00	0.00	0.00	7,692.74	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
8,100.00	0.00	0.00	7,792.74	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
8,199.26	0.00	0.00	7,892.00	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
J Depth									
8,200.00	0.00	0.00	7,892.74	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
8,300.00	0.00	0.00	7,992.74	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
8,339.26	0.00	0.00	8,032.00	-1,660.69	898.68	1,888.26	0.00	0.00	0.00
Carter 16-32 BHL									

Database:	edm5000p	Local Co-ordinate Reference:	Well Carter 16-32
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Well:	Carter 16-32	Survey Calculation Method:	Minimum Curvature
Wellbore:	Carter 16-32		
Design:	Carter 16-32 (wp01)		

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
Carter 16-32 BHL	0.00	0.00	8,032.00	-1,660.69	898.68	1,276,114.99	3,197,541.17	40.089168	-104.793952
- plan hits target center									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
802.57	800.00	8 5/8"	8-5/8	11

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,168.62	3,980.00	PK Depth			
4,701.93	4,482.00	SX Depth			
7,434.26	7,127.00	NIO Depth			
7,759.26	7,452.00	CD Depth			
7,849.26	7,542.00	GH Depth			
8,199.26	7,892.00	J Depth			