

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_NORTHGLENN STATE PAD**

**Northglenn State 36-36**

**Northglenn State 36-36**

**Plan: Northglenn State 36-36 (wp01)**

## **Standard Planning Report**

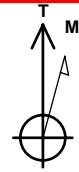
**25 April, 2011**



Project: COLORADO NORTHERN ZONE - 83  
Site: WELD\_NORTHGLENN STATE PAD  
Well: Northglenn State 36-36  
Wellbore: Northglenn State 36-36  
Section:  
SHL:  
Design: Northglenn State 36-36 (wp01)  
Latitude: 40.003655  
Longitude: -104.951437  
GL: 5120.00  
KB: WELL @ 5120.00ft (Original Well Elev)

## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4105.00	4281.12	PK Depth
4855.00	5034.70	SX Depth
7465.00	7644.70	NIO Depth
7911.00	8090.70	CD Depth
7981.00	8160.70	GH Depth
8332.00	8511.70	J Depth



Azimuths to True North  
Magnetic North: 8.95°

Magnetic Field  
Strength: 52916.4snT  
Dip Angle: 66.70°  
Date: 4/18/2011  
Model: IGRF2010

## WELL DETAILS: Northglenn State 36-36

+N/-S	+E/-W	Northing	Ground Level: Easting	5120.00 Latitude	Longitude	Slot
0.00	0.00	1244653.51	3153672.71	40.003655	-104.951437	

## CASING DETAILS

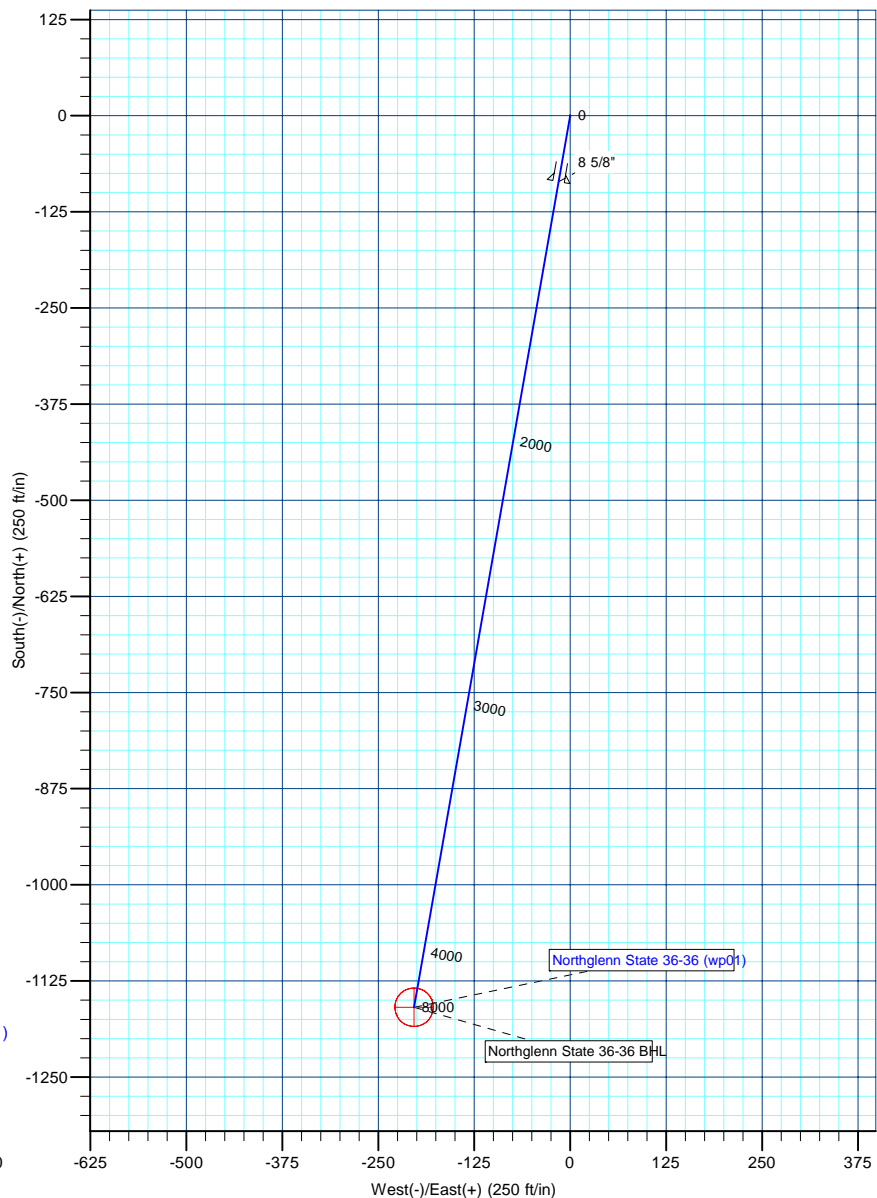
TVD	MD	Name	Size
1000.00	1007.16	8 5/8"	8-5/8

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Northglenn State 36-36 BHL	8465.00	-1159.04	-203.42	1243493.23	3153476.46	40.000473	-104.952163	Circle (Radius: 25.00)

## 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
1260.93	19.22	189.95	1243.01	-157.25	-27.60	2.00	189.95	159.66
3796.50	19.22	189.95	3637.27	-979.33	-171.88	0.00	0.00	994.30
4894.70	0.00	0.00	4715.00	-1159.04	-203.42	1.75	180.00	1176.76
8644.70	0.00	0.00	8465.00	-1159.04	-203.42	0.00	0.00	1176.76



<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Northglenn State 36-36
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 5120.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 5120.00ft (Original Well Elev)
<b>Site:</b>	WELD_NORTHGLENN STATE PAD	<b>North Reference:</b>	True
<b>Well:</b>	Northglenn State 36-36	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Northglenn State 36-36		
<b>Design:</b>	Northglenn State 36-36 (wp01)		

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

Site		WELD_NORTHGLENN STATE PAD			
Site Position:		Northing:	1,244,823.33 ft	Latitude:	40.004121
From:	Lat/Long	Easting:	3,153,671.35 ft	Longitude:	-104.951438
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.35

Well	Northglenn State 36-36					
Well Position	+N-S	-169.83 ft	Northing:	1,244,653.50 ft	Latitude:	40.003655
	+E-W	0.31 ft	Easting:	3,153,672.71 ft	Longitude:	-104.951437
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,120.00 ft

<b>Wellbore</b>	Northglenn State 36-36				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	4/18/2011	8.95	66.70	52,916

<b>Design</b>	Northglenn State 36-36 (wp01)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	189.95

<b>Plan Sections</b>										
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	
1,260.93	19.22	189.95	1,243.01	-157.25	-27.60	2.00	2.00	0.00	189.95	
3,796.50	19.22	189.95	3,637.27	-979.33	-171.88	0.00	0.00	0.00	0.00	
4,894.70	0.00	0.00	4,715.00	-1,159.04	-203.42	1.75	-1.75	0.00	180.00	
8,644.70	0.00	0.00	8,465.00	-1,159.04	-203.42	0.00	0.00	0.00	0.00	Northglenn State 36

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Northglenn State 36-36
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 5120.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 5120.00ft (Original Well Elev)
<b>Site:</b>	WELD_NORTHGLENN STATE PAD	<b>North Reference:</b>	True
<b>Well:</b>	Northglenn State 36-36	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Northglenn State 36-36		
<b>Design:</b>	Northglenn State 36-36 (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	189.95	399.98	-1.72	-0.30	1.75	2.00	2.00	0.00
500.00	4.00	189.95	499.84	-6.87	-1.21	6.98	2.00	2.00	0.00
600.00	6.00	189.95	599.45	-15.46	-2.71	15.69	2.00	2.00	0.00
700.00	8.00	189.95	698.70	-27.46	-4.82	27.88	2.00	2.00	0.00
800.00	10.00	189.95	797.47	-42.87	-7.52	43.52	2.00	2.00	0.00
900.00	12.00	189.95	895.62	-61.66	-10.82	62.60	2.00	2.00	0.00
1,000.00	14.00	189.95	993.06	-83.82	-14.71	85.10	2.00	2.00	0.00
1,007.16	14.14	189.95	1,000.00	-85.53	-15.01	86.84	2.00	2.00	0.00
8 5/8"									
1,100.00	16.00	189.95	1,089.64	-109.31	-19.18	110.98	2.00	2.00	0.00
1,200.00	18.00	189.95	1,185.27	-138.10	-24.24	140.21	2.00	2.00	0.00
1,260.93	19.22	189.95	1,243.01	-157.25	-27.60	159.66	2.00	2.00	0.00
1,300.00	19.22	189.95	1,279.90	-169.92	-29.82	172.52	0.00	0.00	0.00
1,400.00	19.22	189.95	1,374.33	-202.34	-35.51	205.43	0.00	0.00	0.00
1,500.00	19.22	189.95	1,468.76	-234.76	-41.20	238.35	0.00	0.00	0.00
1,600.00	19.22	189.95	1,563.19	-267.18	-46.89	271.27	0.00	0.00	0.00
1,700.00	19.22	189.95	1,657.61	-299.61	-52.58	304.19	0.00	0.00	0.00
1,800.00	19.22	189.95	1,752.04	-332.03	-58.27	337.10	0.00	0.00	0.00
1,900.00	19.22	189.95	1,846.47	-364.45	-63.96	370.02	0.00	0.00	0.00
2,000.00	19.22	189.95	1,940.89	-396.87	-69.65	402.94	0.00	0.00	0.00
2,100.00	19.22	189.95	2,035.32	-429.29	-75.34	435.85	0.00	0.00	0.00
2,200.00	19.22	189.95	2,129.75	-461.72	-81.03	468.77	0.00	0.00	0.00
2,300.00	19.22	189.95	2,224.17	-494.14	-86.72	501.69	0.00	0.00	0.00
2,400.00	19.22	189.95	2,318.60	-526.56	-92.41	534.61	0.00	0.00	0.00
2,500.00	19.22	189.95	2,413.03	-558.98	-98.10	567.52	0.00	0.00	0.00
2,600.00	19.22	189.95	2,507.46	-591.40	-103.79	600.44	0.00	0.00	0.00
2,700.00	19.22	189.95	2,601.88	-623.82	-109.48	633.36	0.00	0.00	0.00
2,800.00	19.22	189.95	2,696.31	-656.25	-115.17	666.28	0.00	0.00	0.00
2,900.00	19.22	189.95	2,790.74	-688.67	-120.86	699.19	0.00	0.00	0.00
3,000.00	19.22	189.95	2,885.16	-721.09	-126.55	732.11	0.00	0.00	0.00
3,100.00	19.22	189.95	2,979.59	-753.51	-132.24	765.03	0.00	0.00	0.00
3,200.00	19.22	189.95	3,074.02	-785.93	-137.94	797.94	0.00	0.00	0.00
3,300.00	19.22	189.95	3,168.44	-818.35	-143.63	830.86	0.00	0.00	0.00
3,400.00	19.22	189.95	3,262.87	-850.78	-149.32	863.78	0.00	0.00	0.00
3,500.00	19.22	189.95	3,357.30	-883.20	-155.01	896.70	0.00	0.00	0.00
3,600.00	19.22	189.95	3,451.72	-915.62	-160.70	929.61	0.00	0.00	0.00
3,700.00	19.22	189.95	3,546.15	-948.04	-166.39	962.53	0.00	0.00	0.00
3,796.50	19.22	189.95	3,637.27	-979.33	-171.88	994.30	0.00	0.00	0.00
3,800.00	19.16	189.95	3,640.58	-980.46	-172.08	995.45	1.75	-1.75	0.00
3,900.00	17.41	189.95	3,735.53	-1,011.36	-177.50	1,026.82	1.75	-1.75	0.00
4,000.00	15.66	189.95	3,831.39	-1,039.38	-182.42	1,055.27	1.75	-1.75	0.00
4,100.00	13.91	189.95	3,928.08	-1,064.51	-186.83	1,080.78	1.75	-1.75	0.00
4,200.00	12.16	189.95	4,025.50	-1,086.72	-190.73	1,103.33	1.75	-1.75	0.00
4,281.12	10.74	189.95	4,105.00	-1,102.58	-193.51	1,119.43	1.75	-1.75	0.00
PK Depth									
4,300.00	10.41	189.95	4,123.56	-1,105.99	-194.11	1,122.90	1.75	-1.75	0.00
4,400.00	8.66	189.95	4,222.18	-1,122.30	-196.97	1,139.46	1.75	-1.75	0.00
4,500.00	6.91	189.95	4,321.25	-1,135.64	-199.31	1,153.00	1.75	-1.75	0.00
4,600.00	5.16	189.95	4,420.69	-1,145.99	-201.13	1,163.50	1.75	-1.75	0.00
4,700.00	3.41	189.95	4,520.41	-1,153.34	-202.42	1,170.97	1.75	-1.75	0.00

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<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 5120.00ft (Original Well Elev)
<b>Site:</b>	WELD_NORTHGLENN STATE PAD	<b>North Reference:</b>	True
<b>Well:</b>	Northglenn State 36-36	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Northglenn State 36-36		
<b>Design:</b>	Northglenn State 36-36 (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)
4,800.00	1.66	189.95	4,620.31	-1,157.70	-203.18	1,175.39	1.75	-1.75	0.00
4,894.70	0.00	0.00	4,715.00	-1,159.04	-203.42	1,176.76	1.75	-1.75	0.00
4,900.00	0.00	0.00	4,720.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
5,000.00	0.00	0.00	4,820.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
5,034.70	0.00	0.00	4,855.00	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
<b>SX Depth</b>									
5,100.00	0.00	0.00	4,920.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
5,200.00	0.00	0.00	5,020.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
5,300.00	0.00	0.00	5,120.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
5,400.00	0.00	0.00	5,220.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
5,500.00	0.00	0.00	5,320.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
5,600.00	0.00	0.00	5,420.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
5,700.00	0.00	0.00	5,520.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
5,800.00	0.00	0.00	5,620.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
5,900.00	0.00	0.00	5,720.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
6,000.00	0.00	0.00	5,820.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
6,100.00	0.00	0.00	5,920.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
6,200.00	0.00	0.00	6,020.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
6,300.00	0.00	0.00	6,120.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
6,400.00	0.00	0.00	6,220.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
6,500.00	0.00	0.00	6,320.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
6,600.00	0.00	0.00	6,420.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
6,700.00	0.00	0.00	6,520.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
6,800.00	0.00	0.00	6,620.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
6,900.00	0.00	0.00	6,720.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
7,000.00	0.00	0.00	6,820.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
7,100.00	0.00	0.00	6,920.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
7,200.00	0.00	0.00	7,020.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
7,300.00	0.00	0.00	7,120.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
7,400.00	0.00	0.00	7,220.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
7,500.00	0.00	0.00	7,320.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
7,600.00	0.00	0.00	7,420.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
7,644.70	0.00	0.00	7,465.00	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
<b>NIO Depth</b>									
7,700.00	0.00	0.00	7,520.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
7,800.00	0.00	0.00	7,620.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
7,900.00	0.00	0.00	7,720.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
8,000.00	0.00	0.00	7,820.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
8,090.70	0.00	0.00	7,911.00	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
<b>CD Depth</b>									
8,100.00	0.00	0.00	7,920.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
8,160.70	0.00	0.00	7,981.00	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
<b>GH Depth</b>									
8,200.00	0.00	0.00	8,020.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
8,300.00	0.00	0.00	8,120.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
8,400.00	0.00	0.00	8,220.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
8,500.00	0.00	0.00	8,320.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
8,511.70	0.00	0.00	8,332.00	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
<b>J Depth</b>									
8,600.00	0.00	0.00	8,420.30	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
8,644.70	0.00	0.00	8,465.00	-1,159.04	-203.42	1,176.76	0.00	0.00	0.00
<b>Northglenn State 36-36 BHL</b>									

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Northglenn State 36-36
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 5120.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 5120.00ft (Original Well Elev)
<b>Site:</b>	WELD_NORTHGLENN STATE PAD	<b>North Reference:</b>	True
<b>Well:</b>	Northglenn State 36-36	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Northglenn State 36-36		
<b>Design:</b>	Northglenn State 36-36 (wp01)		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Northglenn State 36-3	0.00	0.00	8,465.00	-1,159.04	-203.42	1,243,493.22	3,153,476.46	40.000473	-104.952163
- plan hits target center									
- Circle (radius 25.00)									

Casing Points					
Measured Depth	Vertical Depth			Casing Diameter	Hole Diameter
(ft)	(ft)		Name	(")	(")
1,007.16	1,000.00	8 5/8"		8-5/8	11

Formations						
Measured Depth	Vertical Depth				Dip	Dip Direction
(ft)	(ft)		Name	Lithology	(°)	(°)
4,281.12	4,105.00	PK Depth				
5,034.70	4,855.00	SX Depth				
7,644.70	7,465.00	NIO Depth				
8,090.70	7,911.00	CD Depth				
8,160.70	7,981.00	GH Depth				
8,511.70	8,332.00	J Depth				