

Submit 1 Copy To Appropriate District Office
District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised August 1, 2011

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

WELL API NO. 30-015-42881
5. Indicate Type of Lease STATE ☒ FEE ☐
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name Halberd 27 State
8. Well Number 2H
9. OGRID Number 229137
10. Pool name or Wildcat Red Lake; Glorieta Yeso, Northeast 96836

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)	
1. Type of Well: Oil Well ☒ Gas Well ☐ Other	
2. Name of Operator COG Operating LLC	
3. Address of Operator One Concho Center - 600 W Illinois Ave Midland, TX 79701	
4. Well Location Unit Letter L : 2182 feet from the SOUTH line and 39 feet from the WEST line Section 26 Township 17S Range 28E NMPM County EDDY	
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3630'	

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐

OTHER: **Change TVD**

OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

NM OIL CONSERVATION

ARTESIA DISTRICT

MAR 10 2015

COG Operating LLC respectfully requests permission to change TVD:

FROM: 3962' TVD; 8715' MD

TO: 3882' TVD; 8635' MD

A revised directional plan is attached for your review.

RECEIVED

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE [Signature] TITLE Permitting Tech DATE 03/10/2015

Type or print name Kelly J. Holly E-mail address: kholly@concho.com PHONE: 432-685-4384

For State Use Only

APPROVED BY: [Signature] TITLE Dist. Engineer DATE 3/10/15

Conditions of Approval (if any):



Project: Eddy County, NM (NAD27 NME)
Site: Halberd 27 State
Well: #2H
Wellbore: WB1
Design: Plan #4 03-09-15
Rig: Silver Oak 3



Azimuths to Grid North
True North: -0.10°
Magnetic North: 7.41°
Magnetic Field
Strength: 48453.1nT
Dip Angle: 60.53°
Date: 3/9/2015
Model: IGRF2015

WELL DETAILS

+N/-S	+E/-W	Northing	Ground Level	Easting	Latitude	Longitude
0.00	0.00	656421.50	3630.00	554854.30	32° 48' 16.07208 N	104° 9' 17.29733 W

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3920.43	4219.90	TL 3925 TVD @ 0 VZ 90.5° Inc	-0.50	270.38

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001

Local Origin: Well #2H, Grid North

Latitude: 32° 48' 16.07208 N
Longitude: 104° 9' 17.29733 W

Grid East: 554854.30
Grid North: 656421.50
Scale Factor: 1.000

Geomagnetic Model: IGRF2015
Sample Date: 09-Mar-15
Magnetic Declination: 7.51°
Dip Angle from Horizontal: 60.53°
Magnetic Field Strength: 48453

To convert a Magnetic Direction to a Grid Direction, Add 7.41°
To convert a Magnetic Direction to a True Direction, Add 7.51° East
To convert a True Direction to a Grid Direction, Subtract 0.10°

SECTION DETAILS

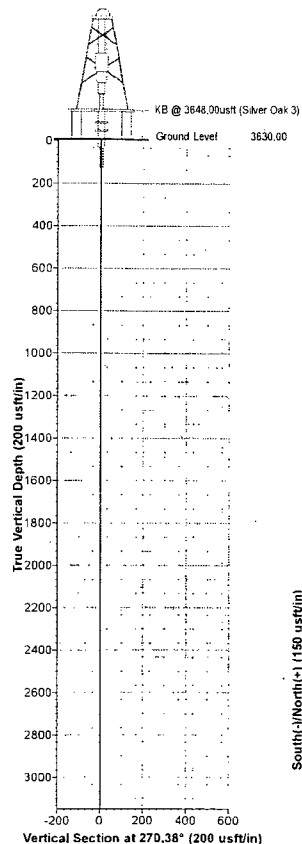
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Diag	TFace	VSec	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	3399.57	0.00	0.00	3399.57	0.00	0.00	0.96	0.00	0.00		KOP, Begin 11°/100' Build
3	4272.30	90.50	270.38	3920.42	3.52	-525.40	11.00	270.38	525.42		LP, Hold 90.5° Inc, 270.38° Azm
4	8635.26	90.50	270.38	3881.91	33.10	-4938.10	0.00	0.00	4938.21	BHL-Halberd 27 St #2H v4	TD at 8635.26' MD

DESIGN TARGET DETAILS

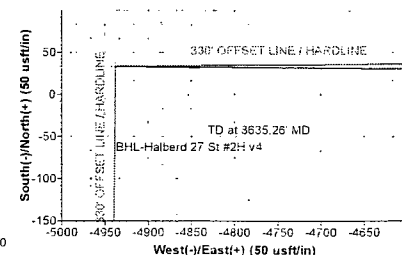
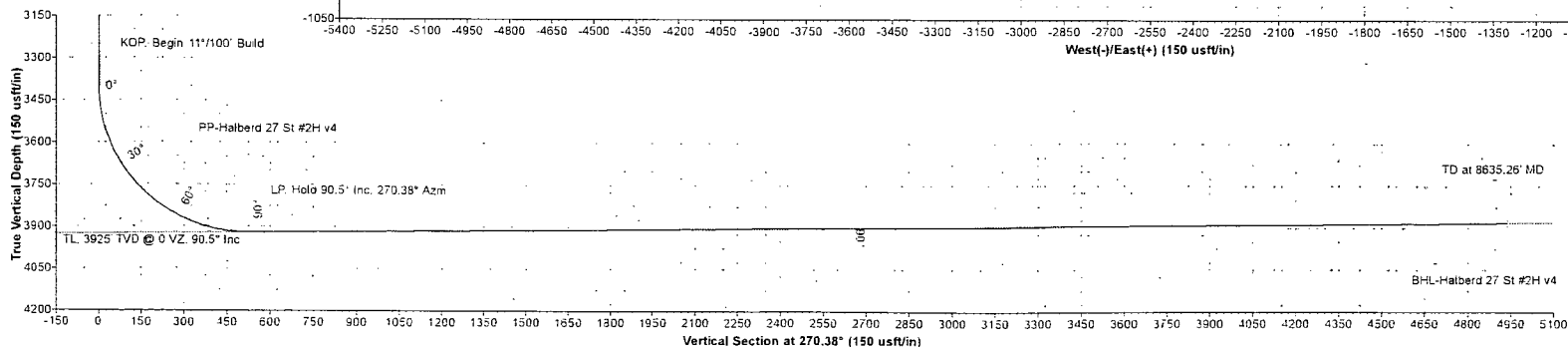
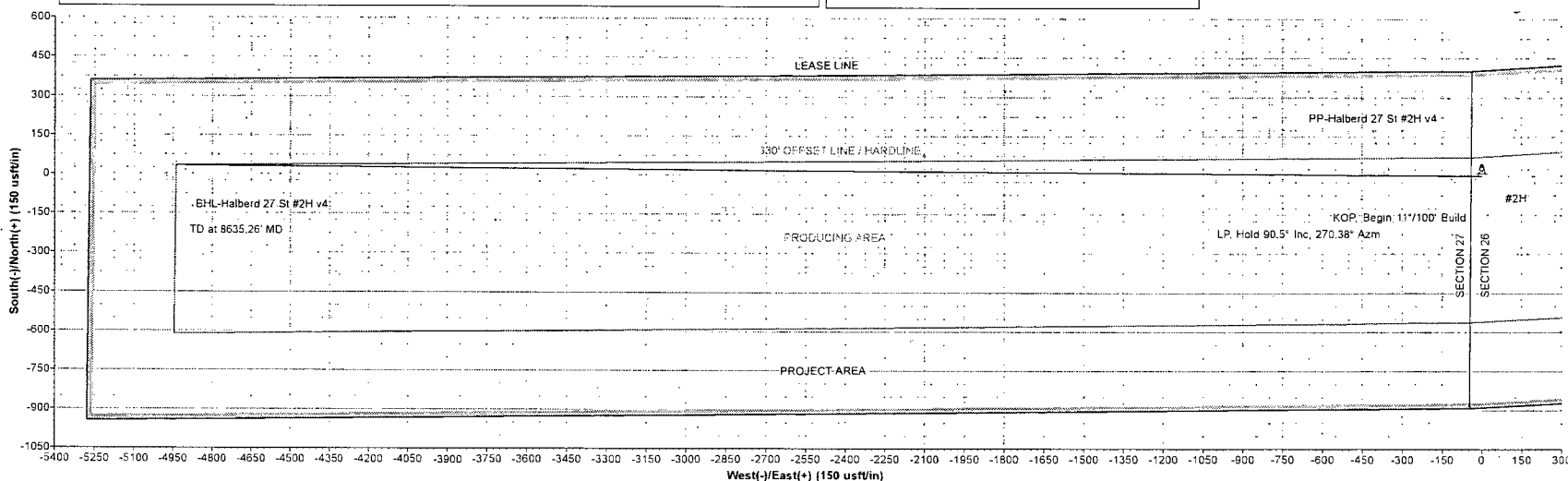
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BHL-Halberd 27 St #2H v4	3881.91	33.10	-4938.10	656454.60	549916.20	32° 48' 16.47839 N	104° 10' 15.15398 W	Point
PP-Halberd 27 St #2H v4								
- plan hits target center								
PP-Halberd 27 St #2H v4								
- plan hits target center								

LEGEND

— Plan #4 03-09-15



Vertical Section at 270.38° (200 usf/in)





COG Operating LLC

Eddy County, NM (NAD27 NME)

Halberd 27 State

#2H

WB1

Plan: Plan #4 03-09-15

Surface: 2182' FSL, 39' FWL, Sec 26, T17S, R28E, Unit L

PP: 2184' FSL, 330' FEL, Sec 27, T17S, R28E, Unit I

BHL: 2281' FSL, 330' FWL, Sec 27, T17S, R28E, Unit L

Standard Planning Report

09 March, 2015





Planning Report



Database:	Compass 5000 GCR	Local Co-ordinate Reference:	Well #2H
Company:	COG Operating LLC	TVD Reference:	KB @ 3648.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27-NME)	MD Reference:	KB @ 3648.00usft (Silver Oak 3)
Site:	Halberd 27 State	North Reference:	Grid
Well:	#2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #4 03-09-15		

Project:	Eddy County, NM (NAD27-NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	Halberd 27 State		
Site Position:		Northing:	657,322.00 usft
From:	Map	Easting:	554,777.30 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Grid Convergence:	0.10 °

Well:	#2H		
Well Position	+N/-S	-900.50 usft	Northing:
	+E/-W	77.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Ground Level:	3,630.00 usft

Wellbore:	WB1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2015	3/9/2015	7.51
			Dip Angle
			(°)
			60.53
			Field Strength
			(nT)
			48.453

Design:	Plan #4 03-09-15		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			270.38

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,399.57	0.00	0.00	3,399.57	0.00	0.00	0.00	0.00	0.00	0.00	
4,222.30	90.50	270.38	3,920.42	3.52	-525.40	11.00	11.00	0.00	270.38	
8,635.26	90.50	270.38	3,881.91	33.10	-4,938.10	0.00	0.00	0.00	0.00	BHL-Halberd 27 St #2



Planning Report



Database:	Compass 5000 GCR	Local Co-ordinate Reference:	Well #2H
Company:	COG Operating LLC	TVD Reference:	KB @ 3648.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3648.00usft (Silver Oak 3)
Site:	Halberd 27 State	North Reference:	Grid
Well:	#2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #4-03-09-15		

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
3,399.57	0.00	0.00	3,399.57	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 11°/100' Build									
3,400.00	0.05	270.38	3,400.00	0.00	0.00	0.00	11.03	11.03	0.00
3,500.00	11.05	270.38	3,499.38	0.06	-9.65	9.65	11.00	11.00	0.00
3,600.00	22.05	270.38	3,595.09	0.26	-38.09	38.09	11.00	11.00	0.00
3,700.00	33.05	270.38	3,683.62	0.56	-84.26	84.27	11.00	11.00	0.00
3,800.00	44.05	270.38	3,761.71	0.98	-146.48	146.49	11.00	11.00	0.00
3,900.00	55.05	270.38	3,826.49	1.49	-222.46	222.46	11.00	11.00	0.00
4,000.00	66.05	270.38	3,875.58	2.07	-309.40	309.41	11.00	11.00	0.00
4,100.00	77.05	270.38	3,907.19	2.71	-404.11	404.12	11.00	11.00	0.00
4,200.00	88.05	270.38	3,920.14	3.37	-503.11	503.12	11.00	11.00	0.00
4,219.99	90.25	270.38	3,920.43	3.51	-523.10	523.11	11.00	11.00	0.00
TL, 3925' TVD @ 0 VZ, 90.5° Inc									
4,222.30	90.50	270.38	3,920.42	3.52	-525.41	525.42	10.98	10.98	0.00
LP, Hold 90.5° Inc, 270.38° Azm									
4,300.00	90.50	270.38	3,919.74	4.04	-603.10	603.12	0.00	0.00	0.00
4,400.00	90.50	270.38	3,918.87	4.71	-703.10	703.11	0.00	0.00	0.00
4,500.00	90.50	270.38	3,918.00	5.38	-803.09	803.11	0.00	0.00	0.00
4,600.00	90.50	270.38	3,917.12	6.05	-903.09	903.11	0.00	0.00	0.00
4,700.00	90.50	270.38	3,916.25	6.72	-1,003.08	1,003.10	0.00	0.00	0.00
4,800.00	90.50	270.38	3,915.38	7.39	-1,103.07	1,103.10	0.00	0.00	0.00
4,900.00	90.50	270.38	3,914.51	8.06	-1,203.07	1,203.09	0.00	0.00	0.00
5,000.00	90.50	270.38	3,913.63	8.73	-1,303.06	1,303.09	0.00	0.00	0.00
5,100.00	90.50	270.38	3,912.76	9.40	-1,403.05	1,403.09	0.00	0.00	0.00
5,200.00	90.50	270.38	3,911.89	10.07	-1,503.05	1,503.08	0.00	0.00	0.00
5,300.00	90.50	270.38	3,911.02	10.75	-1,603.04	1,603.08	0.00	0.00	0.00
5,400.00	90.50	270.38	3,910.14	11.42	-1,703.04	1,703.08	0.00	0.00	0.00
5,500.00	90.50	270.38	3,909.27	12.09	-1,803.03	1,803.07	0.00	0.00	0.00
5,600.00	90.50	270.38	3,908.40	12.76	-1,903.02	1,903.07	0.00	0.00	0.00
5,700.00	90.50	270.38	3,907.52	13.43	-2,003.02	2,003.06	0.00	0.00	0.00
5,800.00	90.50	270.38	3,906.65	14.10	-2,103.01	2,103.06	0.00	0.00	0.00
5,900.00	90.50	270.38	3,905.78	14.77	-2,203.01	2,203.06	0.00	0.00	0.00
6,000.00	90.50	270.38	3,904.91	15.44	-2,303.00	2,303.05	0.00	0.00	0.00
6,100.00	90.50	270.38	3,904.03	16.11	-2,402.99	2,403.05	0.00	0.00	0.00
6,200.00	90.50	270.38	3,903.16	16.78	-2,502.99	2,503.04	0.00	0.00	0.00
6,300.00	90.50	270.38	3,902.29	17.45	-2,602.98	2,603.04	0.00	0.00	0.00
6,400.00	90.50	270.38	3,901.42	18.12	-2,702.98	2,703.04	0.00	0.00	0.00
6,500.00	90.50	270.38	3,900.54	18.79	-2,802.97	2,803.03	0.00	0.00	0.00
6,600.00	90.50	270.38	3,899.67	19.46	-2,902.96	2,903.03	0.00	0.00	0.00
6,700.00	90.50	270.38	3,898.80	20.13	-3,002.96	3,003.03	0.00	0.00	0.00
6,800.00	90.50	270.38	3,897.93	20.80	-3,102.95	3,103.02	0.00	0.00	0.00
6,900.00	90.50	270.38	3,897.05	21.47	-3,202.95	3,203.02	0.00	0.00	0.00
7,000.00	90.50	270.38	3,896.18	22.14	-3,302.94	3,303.01	0.00	0.00	0.00
7,100.00	90.50	270.38	3,895.31	22.81	-3,402.93	3,403.01	0.00	0.00	0.00
7,200.00	90.50	270.38	3,894.43	23.48	-3,502.93	3,503.01	0.00	0.00	0.00
7,300.00	90.50	270.38	3,893.56	24.15	-3,602.92	3,603.00	0.00	0.00	0.00
7,400.00	90.50	270.38	3,892.69	24.82	-3,702.92	3,703.00	0.00	0.00	0.00
7,500.00	90.50	270.38	3,891.82	25.49	-3,802.91	3,803.00	0.00	0.00	0.00
7,600.00	90.50	270.38	3,890.94	26.16	-3,902.90	3,902.99	0.00	0.00	0.00
7,700.00	90.50	270.38	3,890.07	26.83	-4,002.90	4,002.99	0.00	0.00	0.00
7,800.00	90.50	270.38	3,889.20	27.50	-4,102.89	4,102.98	0.00	0.00	0.00
7,900.00	90.50	270.38	3,888.33	28.17	-4,202.89	4,202.98	0.00	0.00	0.00

Database:	Compass 5000 GCR	Local Co-ordinate Reference:	Well #2H
Company:	COG Operating LLC	TVD Reference:	KB @ 3648.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3648.00usft (Silver Oak 3)
Site:	Halberd 27 State	North Reference:	Grid
Well:	#2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #4 03-09-15		

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)	
8,000.00	90.50	270.38	3,887.45	28.84	-4,302.88	4,302.98	0.00	0.00	0.00	
8,100.00	90.50	270.38	3,886.58	29.51	-4,402.87	4,402.97	0.00	0.00	0.00	
8,200.00	90.50	270.38	3,885.71	30.18	-4,502.87	4,502.97	0.00	0.00	0.00	
8,300.00	90.50	270.38	3,884.84	30.85	-4,602.86	4,602.96	0.00	0.00	0.00	
8,400.00	90.50	270.38	3,883.96	31.52	-4,702.86	4,702.96	0.00	0.00	0.00	
8,500.00	90.50	270.38	3,883.09	32.19	-4,802.85	4,802.96	0.00	0.00	0.00	
8,600.00	90.50	270.38	3,882.22	32.86	-4,902.84	4,902.95	0.00	0.00	0.00	
8,635.26	90.50	270.38	3,881.91	33.10	-4,938.10	4,938.21	0.00	0.00	0.00	
TD at 8635.26' MD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
BHL-Halberd 27 St #2H - hit/miss target - Shape - Point	0.00	0.00	3,881.91	33.10	-4,938.10	656,454.60	549,916.20	32° 48' 16.47839 N	104° 10' 15.15398 W	
PP-Halberd 27 St #2H v. - plan misses target center by 0.02usft at 4063.67usft MD (3897.82 TVD, 2.47 N, -369.02 E) - Point	0.00	0.00	3,897.81	2.47	-369.00	656,423.98	554,485.30	32° 48' 16.10270 N	104° 9' 21.62067 W	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,219.99	3,920.43	TL, 3925' TVD @ 0 VZ, 90.5° Inc		-0.50	270.38	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
3,399.57	3,399.57	0.00	0.00	KOP, Begin 11"/100' Build
4,222.30	3,920.42	3.52	-525.41	LP, Hold 90.5° Inc, 270.38° Azm
8,635.26	3,881.91	33.10	-4,938.10	TD at 8635.26' MD