

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-101

August 1, 2011

Permit 276547

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701		2. OGRID Number 229137
		3. API Number 30-015-46598
4. Property Code 325001	5. Property Name DAISY 24 STATE COM	6. Well No. 506H

7. Surface Location

UL - Lot A	Section 24	Township 25S	Range 27E	Lot Idn	Feet From 221	N/S Line N	Feet From 681	E/W Line E	County Eddy
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8. Proposed Bottom Hole Location

UL - Lot P	Section 25	Township 25S	Range 27E	Lot Idn P	Feet From 50	N/S Line S	Feet From 330	E/W Line E	County Eddy
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9. Pool Information

HAY HOLLOW;BONE SPRING, NORTH	30216
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3088
16. Multiple N	17. Proposed Depth 18180	18. Formation 2nd Bone Spring Sand	19. Contractor	20. Spud Date 3/6/2020
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits**21. Proposed Casing and Cement Program**

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	54.5	500	400	0
Int1	12.25	9.625	40	2300	700	0
Prod	8.75	5.5	17	18180	3200	1800

Casing/Cement Program: Additional Comments

Drill 17-1/2" hole to 500' into the Rustler. Run 13-3/8" 54.5# J55 STC casing to TD and cement to surface in one stage. Will set in Rustler and cover water depth. Drill 12-1/4" hole to ~2,300' with Brine. Run 9-5/8" 40# J-55 casing to TD and cement to surface in one stage. Drill 8-3/4" vertical hole, curve & lateral to 18,180' with Cut Brine. Run 5-1/2" 17# P110 BTC casing to TD and cement to 1,800' in one stage.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	3000	3000	Cameron

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable.

Signature:

Printed Name: Electronically filed by Diane Kuykendall

Title: Production Accounting Director

Email Address: dkuykendall@concho.com

Date: 1/6/2020

Phone: 432-685-4372

OIL CONSERVATION DIVISION

Approved By: Raymond Podany

Title: Geologist

Approved Date: 1/15/2020

Expiration Date: 1/15/2022

Conditions of Approval Attached

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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-015-	2 Pool Code 30216	3 Pool Name Hay Hollow; Bone Spring, North
4 Property Code 325001	5 Property Name DAISY 24 STATE COM	6 Well Number 506H
7 OGRID No. 229137	8 Operator Name COG OPERATING LLC	9 Elevation 3088'

" Surface Location

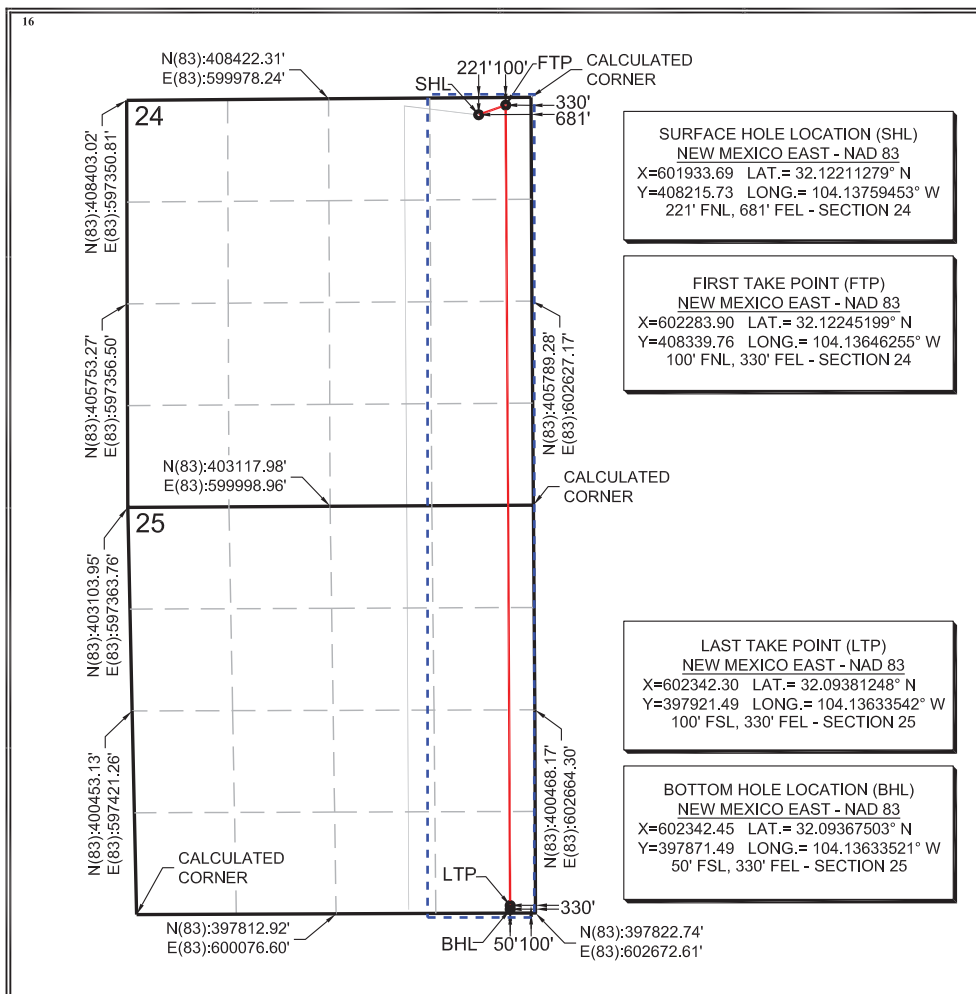
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	24	25-S	27-E		221'	NORTH	681'	EAST	EDDY

" Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	25	25-S	27-E		50'	SOUTH	330'	EAST	EDDY

12 Dedicated Acres 320	13 Joint or Infill	14 Consolidation Code	15 Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature *[Signature]* Date 01/06/2020

Robyn M. Russell

Printed Name

Russell@concho.com

E-mail Address

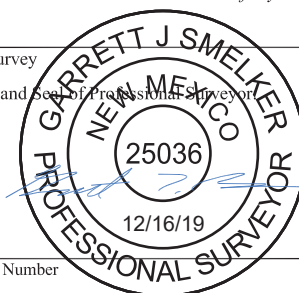
18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey

Signature and Seal of Professional Surveyor

Certificate Number



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GAS CAPTURE PLAN

Date: 1/15/2020

☒ Original

Operator & OGRID No.: [229137] COG OPERATING LLC

☐ Amended - Reason for
Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
DAISY 24 STATE COM #506H	30-015-46598	A-24-25S-27E	0221N 0681E	2494	None	Processing Plant Location: Sec 35, Blk 57, T2S, Culberson County, TX

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to ETC Texas Pipeline, Ltd. and will be connected to ETC Texas Pipeline, Ltd. Low Pressure gathering system located in Eddy County, New Mexico. It will require 0' of pipeline to connect the facility to Low Pressure gathering system. COG OPERATING LLC provides (periodically) to ETC Texas Pipeline, Ltd. a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, COG OPERATING LLC and ETC Texas Pipeline, Ltd. have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at ETC Texas Pipeline, Ltd. Processing Plant located in Sec. 24, Twn. 25S, Rng. 27E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on ETC Texas Pipeline, Ltd. system at that time. Based on current information, it is COG OPERATING LLC's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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Form APD Comments

Permit 276547

PERMIT COMMENTS

Operator Name and Address: COG OPERATING LLC [229137] 600 W Illinois Ave Midland, TX 79701		API Number: 30-015-46598
		Well: DAISY 24 STATE COM #506H

Created By	Comment	Comment Date
rodrom	H2S concentrations of wells in this area from surface to TD are low enough that a contingency plan is not required.	1/6/2020

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Form APD Conditions

Permit 276547

PERMIT CONDITIONS OF APPROVAL

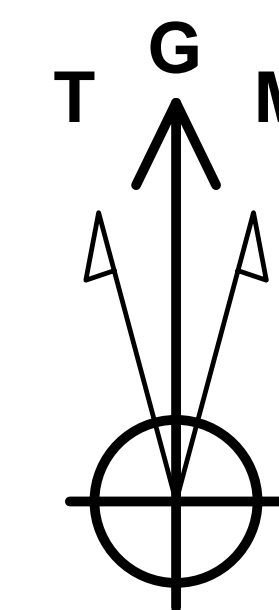
Operator Name and Address: COG OPERATING LLC [229137] 600 W Illinois Ave Midland, TX 79701		API Number: 30-015-46598
		Well: DAISY 24 STATE COM #506H
OCD Reviewer	Condition	
rpodany	Will require a directional survey with the C-104	
rpodany	Cement is required to circulate on both surface and intermediate1 strings of casing	



Project: Eddy County, NM (NAD27 NME)
Site: Daisy 24 State Com
Well: 506H
Wellbore: OH
Design: Plan 1 01-03-20
Rig: Pioneer 84

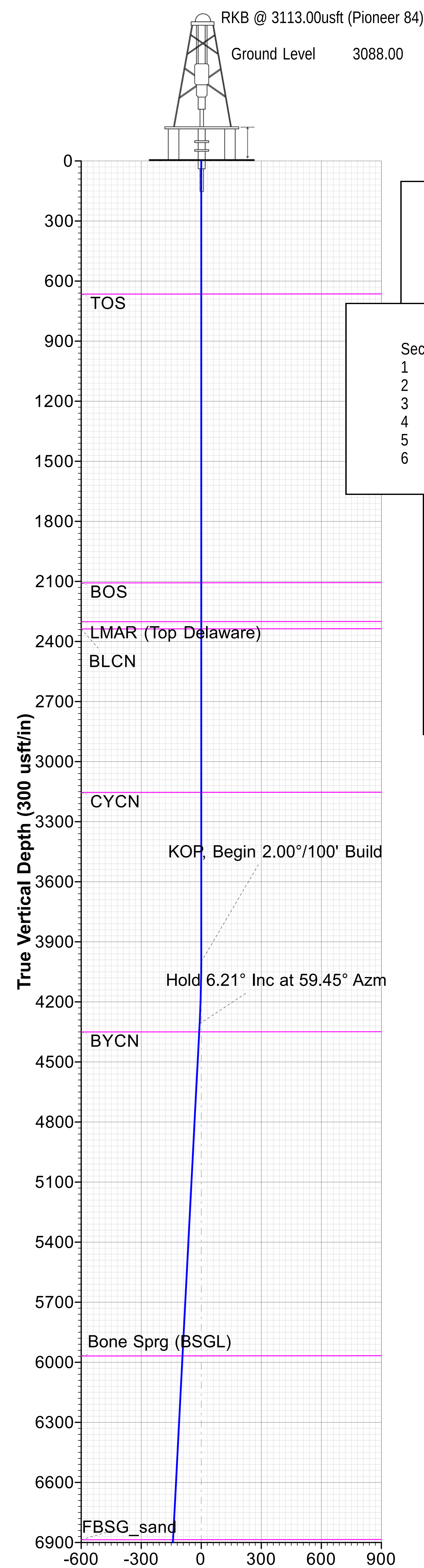


PHOENIX
TECHNOLOGY SERVICES



Azimuths to Grid North
True North: -0.10°
Magnetic North: 6.88°

Magnetic Field
Strength: 47785.8nT
Dip Angle: 59.78°
Date: 3/2/2020
Model: MVHD

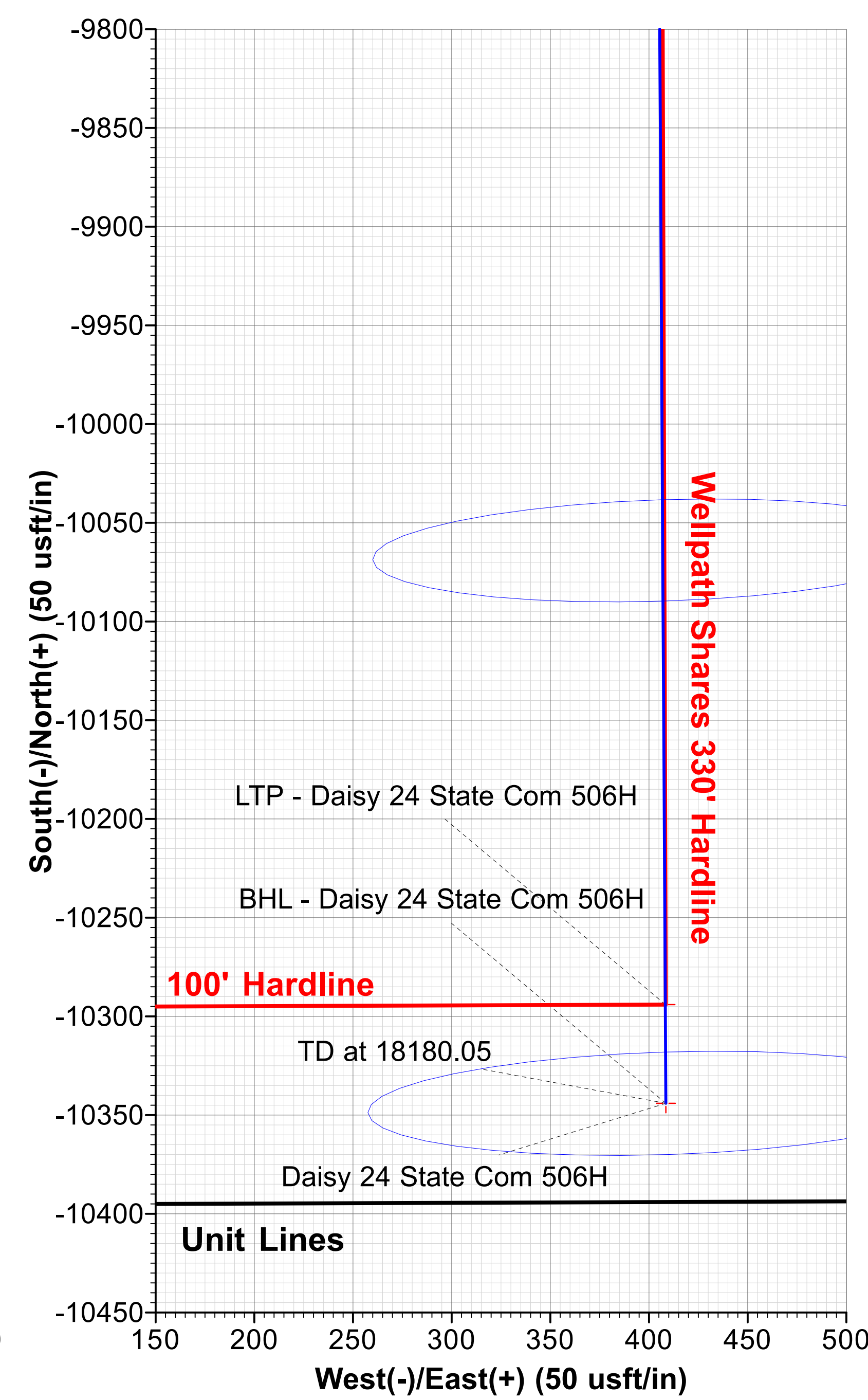
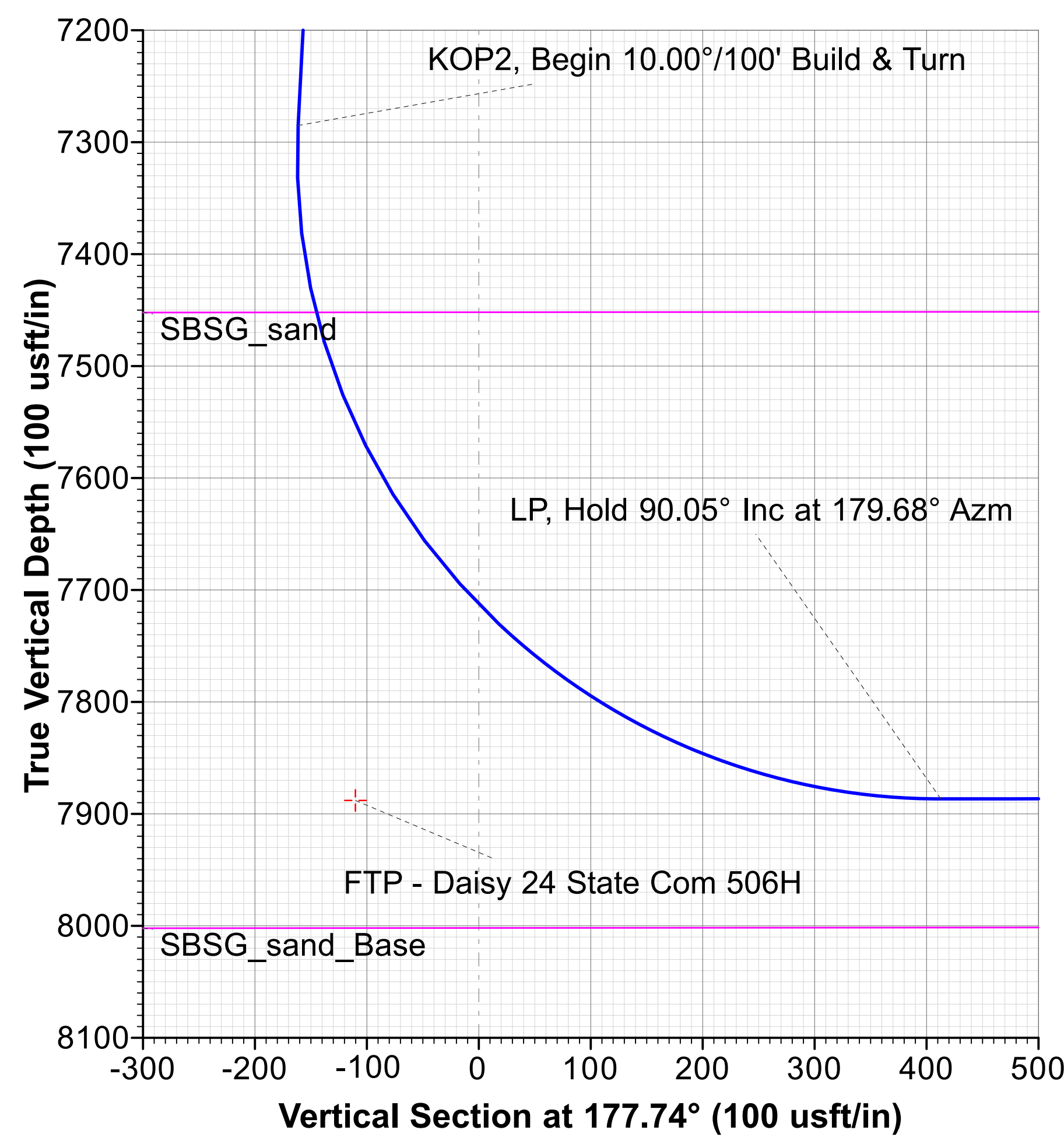


WELL DETAILS						
			3088.00			
	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
	0.00	0.00	408158.06	560749.91	32° 7' 19.167132 N	104° 8' 13.568748 W

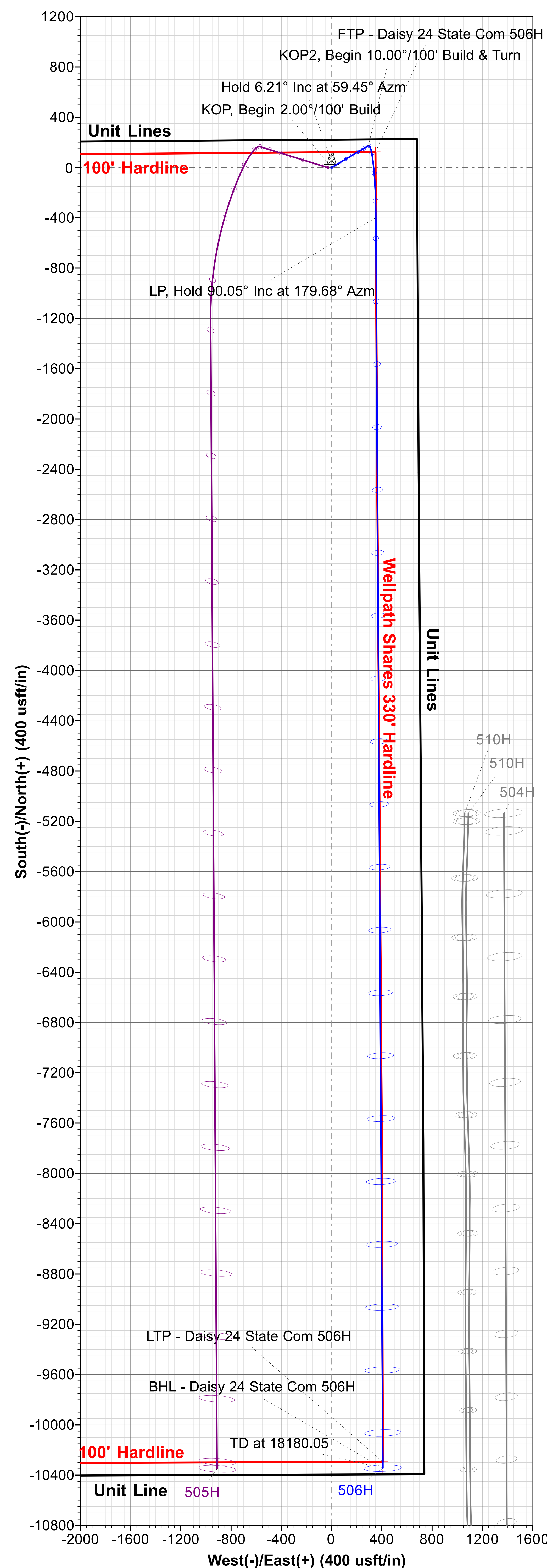
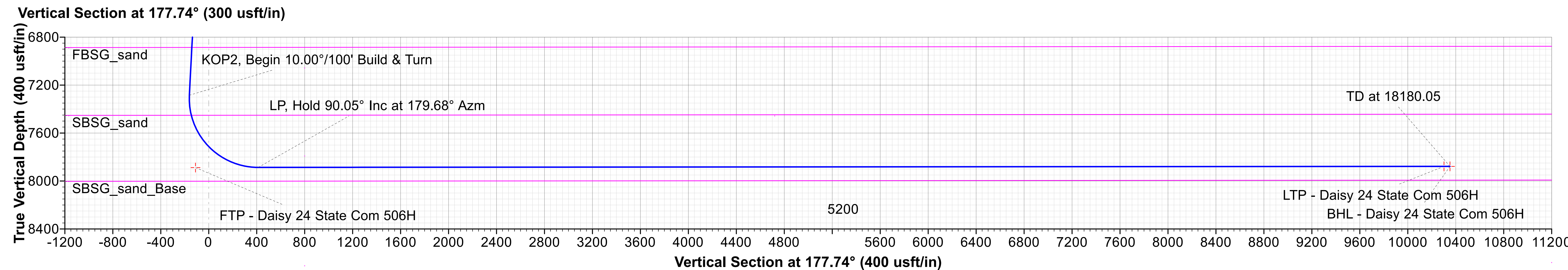
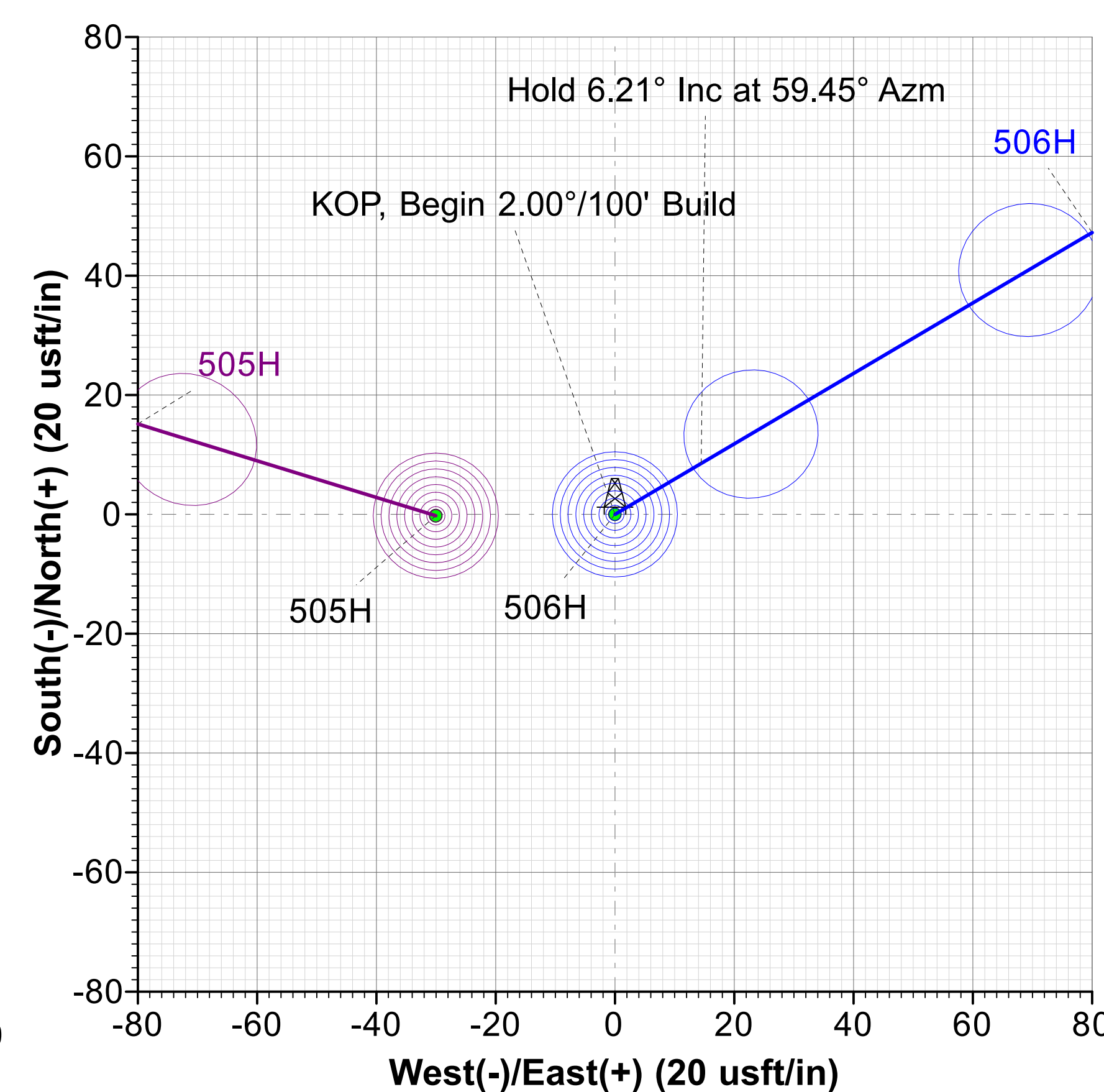
DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL - Daisy 24 State Com 506H	7878.00	-10344.04	408.56	397814.02	561158.47	32° 5' 36.789869 N	104° 8' 9.038234 W
LTP - Daisy 24 State Com 506H	7878.00	-10294.05	408.40	397864.01	561158.31	32° 5' 37.284599 N	104° 8' 9.039030 W
FTP - Daisy 24 State Com 506H	7888.00	124.02	350.21	408282.08	561100.12	32° 7' 20.388168 N	104° 8' 9.493745 W

SECTION DETAILS												
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	Annotation	
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
2	4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	0.00	0.00			
3	4310.45	6.21	59.45	4309.84	8.54	14.47	2.00	59.45	-7.96			
4	7303.34	6.21	59.45	7285.18	173.08	293.23	0.00	0.00	-161.37			
5	8235.05	90.05	179.68	7886.68	-399.20	353.01	10.00	120.08	412.82			
6	18180.05	90.05	179.68	7878.00	-10344.04	408.56	0.00	0.00	10352.10	BHL - Daisy 24 State Com 506H	TD at 18180.05	

LEGEND	
—	510H, ST01 / 65026, Surveys (Ensign 155) V0
—	510H, OH / 65026, Surveys (Ensign 155) V0
—	510H, ST01 / 65026, Surveys (Ensign 155) V0
—	504H, OH, Plan 1 12-11-19 V0
—	505H, OH, Plan 1 01-03-20 V0
—	Plan 1 01-03-20



FORMATION TOP DETAILS				
TVDPath	MDPath	Formation	DipAngle	DipDir
665.00	665.00	TOS	-0.05	177.74
2107.00	2107.00	BOS	-0.05	177.74
2301.00	2301.00	LMAR (Top Delaware)	-0.05	177.74
2337.00	2337.00	BLCN	-0.05	177.74
3154.00	3154.00	CYCN	-0.05	177.74
4350.00	4350.84	BYCN	-0.05	177.74
5968.00	5978.39	Bone Sprg (BSGL)	-0.05	177.74
6886.00	6901.81	FBSG_sand	-0.05	177.74
7452.00	7472.24	SBSG_sand	-0.05	177.74





COG Operating LLC

Eddy County, NM (NAD27 NME)

Daisy 24 State Com

506H

OH

Plan: Plan 1 01-03-20

Standard Planning Report

03 January, 2020





Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 506H
Company:	COG Operating LLC	TVD Reference:	RKB @ 3113.00usft (Pioneer 84)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	RKB @ 3113.00usft (Pioneer 84)
Site:	Daisy 24 State Com	North Reference:	Grid
Well:	506H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 01-03-20		

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	Daisy 24 State Com				
Site Position:		Northing:	408,073.20 usft	Latitude:	32° 7' 18.400350 N
From:	Map	Easting:	556,552.70 usft	Longitude:	104° 9' 2.377557 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.10 °

Well	506H					
Well Position	+N/-S	84.86 usft	Northing:	408,158.06 usft	Latitude:	32° 7' 19.167132 N
	+E/-W	4,197.21 usft	Easting:	560,749.92 usft	Longitude:	104° 8' 13.568748 W
Position Uncertainty		1.00 usft	Wellhead Elevation:		Ground Level:	3,088.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	3/2/2020	6.99	59.78	47,785.79945144

Design	Plan 1 01-03-20			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	177.74

Plan Survey Tool Program	Date	1/3/2020		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	4,000.00	Plan 1 01-03-20 (OH)	NS-GYRO-MS North sensing gyrocompass
2	4,000.00	18,180.05	Plan 1 01-03-20 (OH)	MWD+HRGM OWSG MWD + HRGM

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,310.45	6.21	59.45	4,309.84	8.54	14.47	2.00	2.00	0.00	59.45	
7,303.34	6.21	59.45	7,285.18	173.08	293.23	0.00	0.00	0.00	0.00	
8,235.05	90.05	179.68	7,886.68	-399.20	353.01	10.00	9.00	12.90	120.08	
18,180.05	90.05	179.68	7,878.00	-10,344.04	408.56	0.00	0.00	0.00	0.00	BHL - Daisy 24 Stal



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 506H
Company:	COG Operating LLC	TVD Reference:	RKB @ 3113.00usft (Pioneer 84)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	RKB @ 3113.00usft (Pioneer 84)
Site:	Daisy 24 State Com	North Reference:	Grid
Well:	506H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 01-03-20		

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
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 2.00°/100' Build									
4,100.00	2.00	59.45	4,099.98	0.89	1.50	-0.83	2.00	2.00	0.00
4,200.00	4.00	59.45	4,199.84	3.55	6.01	-3.31	2.00	2.00	0.00
4,300.00	6.00	59.45	4,299.45	7.98	13.51	-7.44	2.00	2.00	0.00
4,310.45	6.21	59.45	4,309.84	8.54	14.47	-7.96	2.00	2.00	0.00
Hold 6.21° Inc at 59.45° Azm									
4,400.00	6.21	59.45	4,398.87	13.47	22.81	-12.55	0.00	0.00	0.00
4,500.00	6.21	59.45	4,498.28	18.96	32.13	-17.68	0.00	0.00	0.00
4,600.00	6.21	59.45	4,597.69	24.46	41.44	-22.81	0.00	0.00	0.00
4,700.00	6.21	59.45	4,697.11	29.96	50.75	-27.93	0.00	0.00	0.00
4,800.00	6.21	59.45	4,796.52	35.46	60.07	-33.06	0.00	0.00	0.00
4,900.00	6.21	59.45	4,895.93	40.95	69.38	-38.18	0.00	0.00	0.00
5,000.00	6.21	59.45	4,995.35	46.45	78.70	-43.31	0.00	0.00	0.00
5,100.00	6.21	59.45	5,094.76	51.95	88.01	-48.44	0.00	0.00	0.00
5,200.00	6.21	59.45	5,194.17	57.45	97.32	-53.56	0.00	0.00	0.00
5,300.00	6.21	59.45	5,293.59	62.94	106.64	-58.69	0.00	0.00	0.00
5,400.00	6.21	59.45	5,393.00	68.44	115.95	-63.81	0.00	0.00	0.00
5,500.00	6.21	59.45	5,492.42	73.94	125.27	-68.94	0.00	0.00	0.00
5,600.00	6.21	59.45	5,591.83	79.44	134.58	-74.06	0.00	0.00	0.00
5,700.00	6.21	59.45	5,691.24	84.94	143.89	-79.19	0.00	0.00	0.00
5,800.00	6.21	59.45	5,790.66	90.43	153.21	-84.32	0.00	0.00	0.00
5,900.00	6.21	59.45	5,890.07	95.93	162.52	-89.44	0.00	0.00	0.00
6,000.00	6.21	59.45	5,989.48	101.43	171.84	-94.57	0.00	0.00	0.00
6,100.00	6.21	59.45	6,088.90	106.93	181.15	-99.69	0.00	0.00	0.00
6,200.00	6.21	59.45	6,188.31	112.42	190.46	-104.82	0.00	0.00	0.00
6,300.00	6.21	59.45	6,287.72	117.92	199.78	-109.95	0.00	0.00	0.00
6,400.00	6.21	59.45	6,387.14	123.42	209.09	-115.07	0.00	0.00	0.00
6,500.00	6.21	59.45	6,486.55	128.92	218.41	-120.20	0.00	0.00	0.00
6,600.00	6.21	59.45	6,585.96	134.41	227.72	-125.32	0.00	0.00	0.00
6,700.00	6.21	59.45	6,685.38	139.91	237.03	-130.45	0.00	0.00	0.00
6,800.00	6.21	59.45	6,784.79	145.41	246.35	-135.57	0.00	0.00	0.00
6,900.00	6.21	59.45	6,884.20	150.91	255.66	-140.70	0.00	0.00	0.00
7,000.00	6.21	59.45	6,983.62	156.41	264.97	-145.83	0.00	0.00	0.00
7,100.00	6.21	59.45	7,083.03	161.90	274.29	-150.95	0.00	0.00	0.00
7,200.00	6.21	59.45	7,182.44	167.40	283.60	-156.08	0.00	0.00	0.00
7,300.00	6.21	59.45	7,281.86	172.90	292.92	-161.20	0.00	0.00	0.00
7,303.34	6.21	59.45	7,285.18	173.08	293.23	-161.37	0.00	0.00	0.00
KOP2, Begin 10.00°/100' Build & Turn									
7,400.00	8.46	140.47	7,381.26	170.25	302.28	-158.19	10.00	2.33	83.82
7,500.00	17.37	162.19	7,478.68	150.31	311.55	-137.90	10.00	8.91	21.72
7,600.00	27.04	169.06	7,571.17	113.69	320.45	-100.95	10.00	9.67	6.88
7,700.00	36.88	172.48	7,655.91	61.48	328.71	-48.46	10.00	9.84	3.41
7,800.00	46.78	174.61	7,730.33	-4.71	336.08	17.97	10.00	9.90	2.13
7,900.00	56.71	176.14	7,792.17	-82.89	342.34	96.34	10.00	9.93	1.53
8,000.00	66.65	177.35	7,839.54	-170.67	347.29	184.24	10.00	9.94	1.21
8,100.00	76.61	178.39	7,871.02	-265.39	350.78	279.03	10.00	9.95	1.04
8,200.00	86.56	179.35	7,885.64	-364.17	352.72	377.80	10.00	9.96	0.96
8,235.05	90.05	179.68	7,886.68	-399.20	353.01	412.82	10.00	9.96	0.94
LP, Hold 90.05° Inc at 179.68° Azm									
8,300.00	90.05	179.68	7,886.62	-464.14	353.38	477.73	0.00	0.00	0.00
8,400.00	90.05	179.68	7,886.53	-564.14	353.93	577.67	0.00	0.00	0.00



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 506H
Company:	COG Operating LLC	TVD Reference:	RKB @ 3113.00usft (Pioneer 84)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	RKB @ 3113.00usft (Pioneer 84)
Site:	Daisy 24 State Com	North Reference:	Grid
Well:	506H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 01-03-20		

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)
8,500.00	90.05	179.68	7,886.45	-664.14	354.49	677.61	0.00	0.00	0.00
8,600.00	90.05	179.68	7,886.36	-764.14	355.05	777.56	0.00	0.00	0.00
8,700.00	90.05	179.68	7,886.27	-864.14	355.61	877.50	0.00	0.00	0.00
8,800.00	90.05	179.68	7,886.19	-964.14	356.17	977.44	0.00	0.00	0.00
8,900.00	90.05	179.68	7,886.10	-1,064.13	356.73	1,077.38	0.00	0.00	0.00
9,000.00	90.05	179.68	7,886.01	-1,164.13	357.29	1,177.33	0.00	0.00	0.00
9,100.00	90.05	179.68	7,885.92	-1,264.13	357.84	1,277.27	0.00	0.00	0.00
9,200.00	90.05	179.68	7,885.84	-1,364.13	358.40	1,377.21	0.00	0.00	0.00
9,300.00	90.05	179.68	7,885.75	-1,464.13	358.96	1,477.15	0.00	0.00	0.00
9,400.00	90.05	179.68	7,885.66	-1,564.13	359.52	1,577.10	0.00	0.00	0.00
9,500.00	90.05	179.68	7,885.57	-1,664.12	360.08	1,677.04	0.00	0.00	0.00
9,600.00	90.05	179.68	7,885.49	-1,764.12	360.64	1,776.98	0.00	0.00	0.00
9,700.00	90.05	179.68	7,885.40	-1,864.12	361.20	1,876.92	0.00	0.00	0.00
9,800.00	90.05	179.68	7,885.31	-1,964.12	361.75	1,976.87	0.00	0.00	0.00
9,900.00	90.05	179.68	7,885.23	-2,064.12	362.31	2,076.81	0.00	0.00	0.00
10,000.00	90.05	179.68	7,885.14	-2,164.12	362.87	2,176.75	0.00	0.00	0.00
10,100.00	90.05	179.68	7,885.05	-2,264.12	363.43	2,276.69	0.00	0.00	0.00
10,200.00	90.05	179.68	7,884.96	-2,364.11	363.99	2,376.64	0.00	0.00	0.00
10,300.00	90.05	179.68	7,884.88	-2,464.11	364.55	2,476.58	0.00	0.00	0.00
10,400.00	90.05	179.68	7,884.79	-2,564.11	365.10	2,576.52	0.00	0.00	0.00
10,500.00	90.05	179.68	7,884.70	-2,664.11	365.66	2,676.46	0.00	0.00	0.00
10,600.00	90.05	179.68	7,884.62	-2,764.11	366.22	2,776.41	0.00	0.00	0.00
10,700.00	90.05	179.68	7,884.53	-2,864.11	366.78	2,876.35	0.00	0.00	0.00
10,800.00	90.05	179.68	7,884.44	-2,964.10	367.34	2,976.29	0.00	0.00	0.00
10,900.00	90.05	179.68	7,884.35	-3,064.10	367.90	3,076.23	0.00	0.00	0.00
11,000.00	90.05	179.68	7,884.27	-3,164.10	368.46	3,176.18	0.00	0.00	0.00
11,100.00	90.05	179.68	7,884.18	-3,264.10	369.01	3,276.12	0.00	0.00	0.00
11,200.00	90.05	179.68	7,884.09	-3,364.10	369.57	3,376.06	0.00	0.00	0.00
11,300.00	90.05	179.68	7,884.00	-3,464.10	370.13	3,476.00	0.00	0.00	0.00
11,400.00	90.05	179.68	7,883.92	-3,564.09	370.69	3,575.95	0.00	0.00	0.00
11,500.00	90.05	179.68	7,883.83	-3,664.09	371.25	3,675.89	0.00	0.00	0.00
11,600.00	90.05	179.68	7,883.74	-3,764.09	371.81	3,775.83	0.00	0.00	0.00
11,700.00	90.05	179.68	7,883.66	-3,864.09	372.37	3,875.77	0.00	0.00	0.00
11,800.00	90.05	179.68	7,883.57	-3,964.09	372.92	3,975.72	0.00	0.00	0.00
11,900.00	90.05	179.68	7,883.48	-4,064.09	373.48	4,075.66	0.00	0.00	0.00
12,000.00	90.05	179.68	7,883.39	-4,164.08	374.04	4,175.60	0.00	0.00	0.00
12,100.00	90.05	179.68	7,883.31	-4,264.08	374.60	4,275.55	0.00	0.00	0.00
12,200.00	90.05	179.68	7,883.22	-4,364.08	375.16	4,375.49	0.00	0.00	0.00
12,300.00	90.05	179.68	7,883.13	-4,464.08	375.72	4,475.43	0.00	0.00	0.00
12,400.00	90.05	179.68	7,883.04	-4,564.08	376.27	4,575.37	0.00	0.00	0.00
12,500.00	90.05	179.68	7,882.96	-4,664.08	376.83	4,675.32	0.00	0.00	0.00
12,600.00	90.05	179.68	7,882.87	-4,764.08	377.39	4,775.26	0.00	0.00	0.00
12,700.00	90.05	179.68	7,882.78	-4,864.07	377.95	4,875.20	0.00	0.00	0.00
12,800.00	90.05	179.68	7,882.70	-4,964.07	378.51	4,975.14	0.00	0.00	0.00
12,900.00	90.05	179.68	7,882.61	-5,064.07	379.07	5,075.09	0.00	0.00	0.00
13,000.00	90.05	179.68	7,882.52	-5,164.07	379.63	5,175.03	0.00	0.00	0.00
13,100.00	90.05	179.68	7,882.43	-5,264.07	380.18	5,274.97	0.00	0.00	0.00
13,200.00	90.05	179.68	7,882.35	-5,364.07	380.74	5,374.91	0.00	0.00	0.00
13,300.00	90.05	179.68	7,882.26	-5,464.06	381.30	5,474.86	0.00	0.00	0.00
13,400.00	90.05	179.68	7,882.17	-5,564.06	381.86	5,574.80	0.00	0.00	0.00
13,500.00	90.05	179.68	7,882.08	-5,664.06	382.42	5,674.74	0.00	0.00	0.00
13,600.00	90.05	179.68	7,882.00	-5,764.06	382.98	5,774.68	0.00	0.00	0.00
13,700.00	90.05	179.68	7,881.91	-5,864.06	383.54	5,874.63	0.00	0.00	0.00
13,800.00	90.05	179.68	7,881.82	-5,964.06	384.09	5,974.57	0.00	0.00	0.00



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 506H
Company:	COG Operating LLC	TVD Reference:	RKB @ 3113.00usft (Pioneer 84)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	RKB @ 3113.00usft (Pioneer 84)
Site:	Daisy 24 State Com	North Reference:	Grid
Well:	506H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 01-03-20		

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)
13,900.00	90.05	179.68	7,881.74	-6,064.05	384.65	6,074.51	0.00	0.00	0.00
14,000.00	90.05	179.68	7,881.65	-6,164.05	385.21	6,174.45	0.00	0.00	0.00
14,100.00	90.05	179.68	7,881.56	-6,264.05	385.77	6,274.40	0.00	0.00	0.00
14,200.00	90.05	179.68	7,881.47	-6,364.05	386.33	6,374.34	0.00	0.00	0.00
14,300.00	90.05	179.68	7,881.39	-6,464.05	386.89	6,474.28	0.00	0.00	0.00
14,400.00	90.05	179.68	7,881.30	-6,564.05	387.44	6,574.22	0.00	0.00	0.00
14,500.00	90.05	179.68	7,881.21	-6,664.04	388.00	6,674.17	0.00	0.00	0.00
14,600.00	90.05	179.68	7,881.12	-6,764.04	388.56	6,774.11	0.00	0.00	0.00
14,700.00	90.05	179.68	7,881.04	-6,864.04	389.12	6,874.05	0.00	0.00	0.00
14,800.00	90.05	179.68	7,880.95	-6,964.04	389.68	6,973.99	0.00	0.00	0.00
14,900.00	90.05	179.68	7,880.86	-7,064.04	390.24	7,073.94	0.00	0.00	0.00
15,000.00	90.05	179.68	7,880.78	-7,164.04	390.80	7,173.88	0.00	0.00	0.00
15,100.00	90.05	179.68	7,880.69	-7,264.04	391.35	7,273.82	0.00	0.00	0.00
15,200.00	90.05	179.68	7,880.60	-7,364.03	391.91	7,373.76	0.00	0.00	0.00
15,300.00	90.05	179.68	7,880.51	-7,464.03	392.47	7,473.71	0.00	0.00	0.00
15,400.00	90.05	179.68	7,880.43	-7,564.03	393.03	7,573.65	0.00	0.00	0.00
15,500.00	90.05	179.68	7,880.34	-7,664.03	393.59	7,673.59	0.00	0.00	0.00
15,600.00	90.05	179.68	7,880.25	-7,764.03	394.15	7,773.53	0.00	0.00	0.00
15,700.00	90.05	179.68	7,880.16	-7,864.03	394.71	7,873.48	0.00	0.00	0.00
15,800.00	90.05	179.68	7,880.08	-7,964.02	395.26	7,973.42	0.00	0.00	0.00
15,900.00	90.05	179.68	7,879.99	-8,064.02	395.82	8,073.36	0.00	0.00	0.00
16,000.00	90.05	179.68	7,879.90	-8,164.02	396.38	8,173.30	0.00	0.00	0.00
16,100.00	90.05	179.68	7,879.82	-8,264.02	396.94	8,273.25	0.00	0.00	0.00
16,200.00	90.05	179.68	7,879.73	-8,364.02	397.50	8,373.19	0.00	0.00	0.00
16,300.00	90.05	179.68	7,879.64	-8,464.02	398.06	8,473.13	0.00	0.00	0.00
16,400.00	90.05	179.68	7,879.55	-8,564.01	398.61	8,573.07	0.00	0.00	0.00
16,500.00	90.05	179.68	7,879.47	-8,664.01	399.17	8,673.02	0.00	0.00	0.00
16,600.00	90.05	179.68	7,879.38	-8,764.01	399.73	8,772.96	0.00	0.00	0.00
16,700.00	90.05	179.68	7,879.29	-8,864.01	400.29	8,872.90	0.00	0.00	0.00
16,800.00	90.05	179.68	7,879.20	-8,964.01	400.85	8,972.84	0.00	0.00	0.00
16,900.00	90.05	179.68	7,879.12	-9,064.01	401.41	9,072.79	0.00	0.00	0.00
17,000.00	90.05	179.68	7,879.03	-9,164.00	401.97	9,172.73	0.00	0.00	0.00
17,100.00	90.05	179.68	7,878.94	-9,264.00	402.52	9,272.67	0.00	0.00	0.00
17,200.00	90.05	179.68	7,878.86	-9,364.00	403.08	9,372.61	0.00	0.00	0.00
17,300.00	90.05	179.68	7,878.77	-9,464.00	403.64	9,472.56	0.00	0.00	0.00
17,400.00	90.05	179.68	7,878.68	-9,564.00	404.20	9,572.50	0.00	0.00	0.00
17,500.00	90.05	179.68	7,878.59	-9,664.00	404.76	9,672.44	0.00	0.00	0.00
17,600.00	90.05	179.68	7,878.51	-9,764.00	405.32	9,772.38	0.00	0.00	0.00
17,700.00	90.05	179.68	7,878.42	-9,863.99	405.88	9,872.33	0.00	0.00	0.00
17,800.00	90.05	179.68	7,878.33	-9,963.99	406.43	9,972.27	0.00	0.00	0.00
17,900.00	90.05	179.68	7,878.24	-10,063.99	406.99	10,072.21	0.00	0.00	0.00
18,000.00	90.05	179.68	7,878.16	-10,163.99	407.55	10,172.15	0.00	0.00	0.00
18,100.00	90.05	179.68	7,878.07	-10,263.99	408.11	10,272.10	0.00	0.00	0.00
18,180.05	90.05	179.68	7,878.00	-10,344.04	408.56	10,352.11	0.00	0.00	0.00
TD at 18180.05									



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 506H
Company:	COG Operating LLC	TVD Reference:	RKB @ 3113.00usft (Pioneer 84)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	RKB @ 3113.00usft (Pioneer 84)
Site:	Daisy 24 State Com	North Reference:	Grid
Well:	506H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 01-03-20		

Design Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BHL - Daisy 24 State - plan hits target center - Point	0.00	0.00	7,878.00	-10,344.04	408.56	397,814.02	561,158.47	32° 5' 36.789869 N 104° 8' 9.038234 W	
LTP - Daisy 24 State - plan misses target center by 30.06usft at 18100.00usft MD (7878.07 TVD, -10263.99 N, 408.11 E) - Point	0.00	0.00	7,878.00	-10,294.05	408.40	397,864.01	561,158.31	32° 5' 37.284599 N 104° 8' 9.039030 W	
FTP - Daisy 24 State - plan misses target center by 204.04usft at 7800.00usft MD (7730.33 TVD, -4.71 N, 336.08 E) - Point	0.00	0.00	7,888.00	124.02	350.21	408,282.08	561,100.12	32° 7' 20.388168 N 104° 8' 9.493745 W	

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
665.00	665.00	TOS		-0.05	177.74
2,107.00	2,107.00	BOS		-0.05	177.74
2,301.00	2,301.00	LMAR (Top Delaware)		-0.05	177.74
2,337.00	2,337.00	BLCN		-0.05	177.74
3,154.00	3,154.00	CYCN		-0.05	177.74
4,350.84	4,350.00	BYCN		-0.05	177.74
5,978.39	5,968.00	Bone Sprg (BSGL)		-0.05	177.74
6,901.81	6,886.00	FBSG_sand		-0.05	177.74
7,472.24	7,452.00	SBSG_sand		-0.05	177.74

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,000.00	4,000.00	0.00	0.00	KOP, Begin 2.00°/100' Build
4,310.45	4,309.84	8.54	14.47	Hold 6.21° Inc at 59.45° Azm
7,303.34	7,285.18	173.08	293.23	KOP2, Begin 10.00°/100' Build & Turn
8,235.05	7,886.68	-399.20	353.01	LP, Hold 90.05° Inc at 179.68° Azm
18,180.05	7,878.00	-10,344.04	408.56	TD at 18180.05

Intent ☐ As Drilled ☐

API #		
Operator Name:	Property Name:	Well Number

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Is this well the defining well for the Horizontal Spacing Unit? ☐Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018