

Form 3160-5 (June 2019)	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT	FORM APPROVED OMB No. 1004-0137 Expires: October 31, 2021
SUNDRY NOTICES AND REPORTS ON WELLS <i>Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.</i>		5. Lease Serial No. NMNM138868
		6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2		7. If Unit of CA/Agreement, Name and/or No.
1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other	8. Well Name and No. PHANTOM BANK 31 FED COM/505H	
2. Name of Operator FLAT CREEK RESOURCES LLC	9. API Well No. 3001555290	
3a. Address 777 MAIN STREET, SUITE 3600, FORT WORTH	3b. Phone No. (include area code) (817) 310-8570	10. Field and Pool or Exploratory Area WOLFCAMP/null
4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description) SEC 32/T26S/R31E/NMP		11. Country or Parish, State EDDY/NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA				
TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☒ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleation in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

SHL: no change. BHL was at 330 FSL & 30 FWL 31-26s-31e. BHL has now moved to 330 FNL & 280 FWL 31-26s-31e. TVD has changed from 10496' to 11871'. MD has changed from 16040' to 17009'. Well type has changed from oil to gas. Field and pool have changed from Wildcat; Bone Spring to Purple Sage; Wolfcamp (Gas) Pad has been built. No change in pad footprint. Revised drilling documents, including well control plan, attached.

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) BRIAN WOOD / Ph: (505) 466-8120	Title Permitting Agent
Signature (Electronic Submission)	Date 12/09/2024

THE SPACE FOR FEDERAL OR STATE OFFICE USE		
Approved by LONG VO / Ph: (575) 988-5402 / Approved	Title Petroleum Engineer	Date 12/11/2024
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office CARLSBAD	

Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

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 Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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
CHANGE POOL & BHL

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-55290	² Pool Code 98220	³ Pool Name PURPLE SAGE; WOLFCAMP (GAS)
⁴ Property Code 327168	⁵ Property Name PHANTOM BANK 31 FED COM	⁶ Well Number 505H
⁷ OGRID No. 374034	⁸ Operator Name FLAT CREEK RESOURCES, LLC	⁹ Elevation 3115'

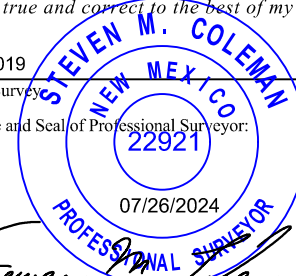
¹⁰ Surface Location

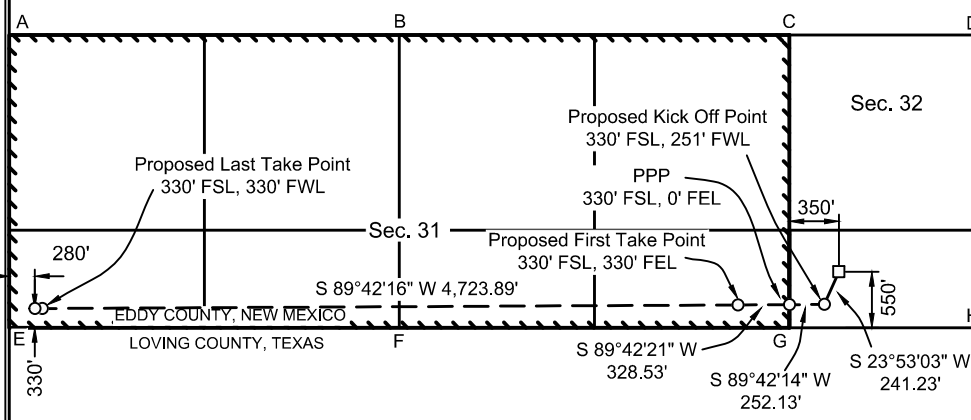
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L4	32	26 SOUTH	31 EAST, N.M.P.M.		550'	SOUTH	350'	WEST	EDDY

¹¹ 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
L2	31	26 SOUTH	31 EAST, N.M.P.M.		330'	SOUTH	280'	WEST	EDDY
¹² Dedicated Acres 259.65	¹³ Joint or Infill	¹⁴ Consolidation Code C	¹⁵ Order No.						

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.

¹⁶ PROPOSED LAST TAKE POINT X = 657,710' (NAD27 NM E) Y = 364,441' LAT. 32.000943° N (NAD27) LONG. 103.824581° W X = 698,897' (NAD83/86 NM E) Y = 364,499' LAT. 32.001068° N (NAD83/86) LONG. 103.825055° W PROPOSED FIRST TAKE POINT X = 662,384' (NAD27 NM E) Y = 364,466' LAT. 32.000948° N (NAD27) LONG. 103.809504° W X = 703,571' (NAD83/86 NM E) Y = 364,523' LAT. 32.001073° N (NAD83/86) LONG. 103.809978° W PPP X = 662,713' (NAD27 NM E) Y = 364,467' LAT. 32.000948° N (NAD27) LONG. 103.808440° W X = 703,900' (NAD83/86 NM E) Y = 364,524' LAT. 32.001074° N (NAD83/86) LONG. 103.808914° W PROPOSED KICK OFF POINT X = 662,965' (NAD27 NM E) Y = 364,469' LAT. 32.000948° N (NAD27) LONG. 103.807630° W X = 704,152' (NAD83/86 NM E) Y = 364,526' LAT. 32.001074° N (NAD83/86) LONG. 103.808104° W											
PROPOSED BOTTOM HOLE LOCATION X = 657,660' (NAD27 NM E) Y = 364,441' LAT. 32.000943° N (NAD27) LONG. 103.824742° W X = 698,847' (NAD83/86 NM E) Y = 364,498' LAT. 32.001068° N (NAD83/86) LONG. 103.825217° W CORNER COORDINATES TABLE (NAD 27) <table><tr><td>A - Y=366245.06, X=657370.11</td></tr><tr><td>B - Y=366283.60, X=660040.51</td></tr><tr><td>C - Y=366321.04, X=662703.16</td></tr><tr><td>D - Y=366332.89, X=665368.25</td></tr><tr><td>E - Y=364109.66, X=657381.51</td></tr><tr><td>F - Y=364123.23, X=660052.17</td></tr><tr><td>G - Y=364137.17, X=662715.32</td></tr><tr><td>H - Y=364152.16, X=665379.32</td></tr></table> PHANTOM BANK 31 FED COM NO. 505H WELL X = 663,062' (NAD27 NM E) Y = 364,689' LAT. 32.001553° N (NAD27) LONG. 103.807311° W X = 704,249' (NAD83/86 NM E) Y = 364,746' LAT. 32.001679° N (NAD83/86) LONG. 103.807785° W				A - Y=366245.06, X=657370.11	B - Y=366283.60, X=660040.51	C - Y=366321.04, X=662703.16	D - Y=366332.89, X=665368.25	E - Y=364109.66, X=657381.51	F - Y=364123.23, X=660052.17	G - Y=364137.17, X=662715.32	H - Y=364152.16, X=665379.32
A - Y=366245.06, X=657370.11											
B - Y=366283.60, X=660040.51											
C - Y=366321.04, X=662703.16											
D - Y=366332.89, X=665368.25											
E - Y=364109.66, X=657381.51											
F - Y=364123.23, X=660052.17											
G - Y=364137.17, X=662715.32											
H - Y=364152.16, X=665379.32											
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. <u>Rodney Littleton</u> 07/26/2024 Signature Date <u>Rodney Littleton</u> Printed Name rodney.littleton@flatcreekresources.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. 02/26/2019 Date of Survey Signature and Seal of Professional Surveyor:  <u>Steven M. Coleman</u> Certificate Number											



Flat Creek Resources, LLC
 Phantom Bank 31 Federal 505H
 SHL 550' FSL & 350' FWL 32-26S-31E
 BHL 330' FSL & 280' FWL 31-26S-31E
 Eddy County, NM

DRILL PLAN PAGE 1

30-015-55290

"fee/fee/Fed"

No change in SHL. BHL was at 330' FSL and 30' FWL 31-26s-31e. BHL has now moved 250' east to 330' FNL & 280' FWL 31-26s-31e. Well type has changed from oil to gas. Field and pool have changed from Wildcat; Bone Spring to Purple Sage; Wolfcamp (Gas). TVD has changed from 10496' to 11871'. MD has changed from 16040' to 17009'. Pad is built. No change in pad footprint.

1. ESTIMATED TOPS

Formation	TVD	MD	Bearing
Quaternary caliche	0'	0'	water
Rustler anhydrite	778'	778'	N/A
Salt top	1510'	1510'	N/A
Salt base	3582'	3582'	water
Lamar limestone	3786'	3786'	N/A
Bell Canyon sandstone	3827'	3827'	N/A
Cherry Canyon sandstone	4739'	4745'	hydrocarbons
Brushy Canyon sandstone	6081'	6095'	hydrocarbons
Bone Spring limestone	7702'	7716'	hydrocarbons
Upper Avalon shale	7844'	7858'	N/A
Lower Avalon shale	8375'	8389'	N/A
First Bone Spring sandstone	8693'	8707'	hydrocarbons
Second Bone Spring shale	9012'	9026'	hydrocarbons
Second Bone Spring sandstone	9314'	9328'	hydrocarbons
Third Bone Spring shale	9790'	9804'	hydrocarbons
Third Bone Spring sandstone	10607'	10621'	hydrocarbons
Wolfcamp XY sandstone	10976'	10990'	hydrocarbons
Wolfcamp A siltstone	11149'	11163'	hydrocarbons
(KOP	11363'	11377'	hydrocarbons
Wolfcamp B siltstone	11592'	11613'	hydrocarbons
Wolfcamp C siltstone	11786'	11853'	hydrocarbons
TD (toe-up)	11871'	17009'	hydrocarbons

Flat Creek Resources, LLC
Phantom Bank 31 Federal 505H
SHL 550' FSL & 350' FWL 32-26S-31E
BHL 330' FSL & 280' FWL 31-26S-31E
Eddy County, NM

DRILL PLAN PAGE 2

30-015-55290

"fee/fee/Fed"

2. NOTABLE ZONES

Wolfcamp C is the goal. Depth to water was 318' in C 02165 (24-26s-30e).

3. PRESSURE CONTROL

Equipment

The minimum blowout preventer equipment (BOPE) will consist of a single ram, mud cross and double-ram type (10,000 psi WP) preventer and an annular preventer (5,000 psi WP). Both units will be hydraulically operated and the ram type will be equipped with blind rams on bottom and drill pipe rams on top.

Flat Creek will utilize wing unions on BOPE connections that can be isolated from wellbore pressure through means of a choke. All wing unions will be rated to a pressure that meets or exceeds the pressure rating of the BOPE system.

Variance

Variance is requested to use a co-flex line between the BOP and choke manifold instead of using a 4" OD steel line.

Variance is requested to use a 5,000-psi annular BOP with the 10,000 psi BOP stack.

Testing

Pipe rams and blind rams will be operationally checked on each trip out of the hole. These checks will be noted on daily tour sheets. A hydraulically operated choke will be installed prior to drilling out the surface casing shoe.

Flat Creek Resources, LLC
 Phantom Bank 31 Federal 505H
 SHL 550' FSL & 350' FWL 32-26S-31E
 BHL 330' FSL & 280' FWL 31-26S-31E
 Eddy County, NM

DRILL PLAN PAGE 3

30-015-55290

"fee/fee/Fed"

4. CASING & CEMENT

All casing will be new and API.

Hole OD	Set MD	Set TVD	Casing OD	Weight (lb/ft)	Grade	Joint	Collapse	Burst	Tension
17.5"	0' – 950'	0' – 950'	13.375" surface	54.5	J-55	BTC	2.6	6.3	16.5
12.25"	0' – 3700'	0' – 3700'	10.75" intermed. 1	45.5	J-55	BTC	1.1	1.9	4.2
9.875"	0' – 11300'	0' – 11286'	7.625" intermed. 2	29.7	P-110 HC	BTC	1.2	1.8	2.8
6.75"	0' – 12285'	0' – 11396'	5.5" production	20	P-110 HP	TCBC-HT	1.8	1.6	3.1
	12285' – 17009'	11396' – 11871'				TCBC-HT	1.8	1.6	HZ

Name	Type	Sacks	Yield	Cu. Ft.	Weight	Blend
Surface	Lead GL – 650'	540	1.68	907	12.8	35/65 Poz Premium C + 5% salt + 6% bentonite gel + 0.4% CPT-503P + 1/8 #/sk Dura-fiber
	Tail 650' – 950'	315	1.34	422	14.8	Class C + 1% CaCl ₂ + ¼ #/sk cellophane flakes
TOC = GL		100% Excess			Centralizers per 43 CFR 3172.7(b)(5)	
Intermediate 1	Lead GL – 3000'	505	1.68	848	12.8	35/65 Poz Premium C + 5% salt + 6% bentonite gel + 0.4% CPT-503P + 1/8 #/sk Dura-fiber
	Tail 3000' – 3700'	115	1.74	200	13.5	Class C + 1% CaCl ₂ + 4% bentonite gel + 0.4% CPT-503P + 1/8 #/sk Dura-fiber
TOC = GL		35% excess			Bow spring centralizers	
Intermediate 2	Lead GL – 7290'	750	2.82	2115	10.4	Class C +10% bwoc light weight bead + 5% silica fume alternative + 0.2% suspension aid + 0.3% fluid loss additive + 0.3%

Flat Creek Resources, LLC
 Phantom Bank 31 Federal 505H
 SHL 550' FSL & 350' FWL 32-26S-31E
 BHL 330' FSL & 280' FWL 31-26S-31E
 Eddy County, NM

DRILL PLAN PAGE 4

30-015-55290

"fee/fee/Fed"

						dispersant + 0.2% retarder
	Tail 7290' – 11300'	820	1.42	1164	13.5	35/65 Poz Premium H + 0.2% CPT-23
TOC = GL		35% excess			Bow spring centralizers	
Production	Lead GL – 9000'	310	2.82	874	10.4	Class C + 10% light weight bead + 5% silica fume alternative + 0.2% suspension aid + 0.3% fluid loss additive + 0.3% dispersant + 0.2% retarder
	Tail 9000' – 17009'	545	1.42	773	13.2	35/65 Poz Premium H + 0.2% CPT-23
TOC = GL		15% Excess			Bow & solid body centralizers	

5. MUD PROGRAM

A closed loop system will be used. An electronic pit volume totalizer (PVT) mud system complying with 43 CFR 3172 will monitor pit volumes for gains or losses, flow rate, pump pressures, and stroke rate. Sufficient mud materials (e. g., barite, bentonite, LCM) to maintain mud properties and meet minimum lost circulation and weight increase requirements will always be on site.

Hole	Type	Interval (MD)	lb/gal	Viscosity	Fluid Loss
Surface	fresh water	0' - 950'	8.4	28 - 36	NC
Intermediate 1	brine	950' – 3700'	10.0	28 - 29	NC
Intermediate 2	cut brine	3700' – 11300'	9.5	28 - 30	NC
Production	oil base	11300' – 17009'	12.0	32 – 30	NC

6. CORES, TESTS, & LOGS

No core or DST is planned. GR, resistivity, directional survey, MWD, and mud logs will be run.

Flat Creek Resources, LLC
Phantom Bank 31 Federal 505H
SHL 550' FSL & 350' FWL 32-26S-31E
BHL 330' FSL & 280' FWL 31-26S-31E
Eddy County, NM

DRILL PLAN PAGE 5

30-015-55290

"fee/fee/Fed"

7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is ≈ 6804 psi. Expected bottom hole temperature is $\approx 209^\circ$ F.

An H2S plan was attached to the APD per 43 CFR 3176. H2S monitoring equipment will be used from surface casing setting point to TD per 43 CFR 3176.

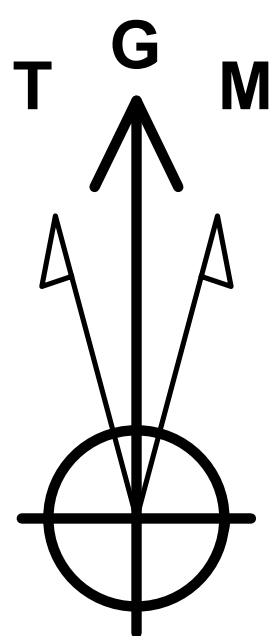
8. OTHER INFORMATION

Anticipated spud date is upon approval. It is expected it will take ≈ 2 months to drill and complete the well.



Freedom Energy

Company: Freedom Energy
Field: NAD83 Eddy County, NM
Location: Phantom Bank 31 Fed
Well: Phantom Bank 313 Fed Com 505H
OH
Plan: Plan 1
GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)



Azimuth to Grid North
True North: -0.28°
Magnetic North: 6.01°

Magnetic Field
Strength: 47055.7nT
Dip Angle: 59.56°
Date: 5/29/2024
Model: IGRF2020

PROJECT DETAILS: NAD83 Eddy County, NM

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level



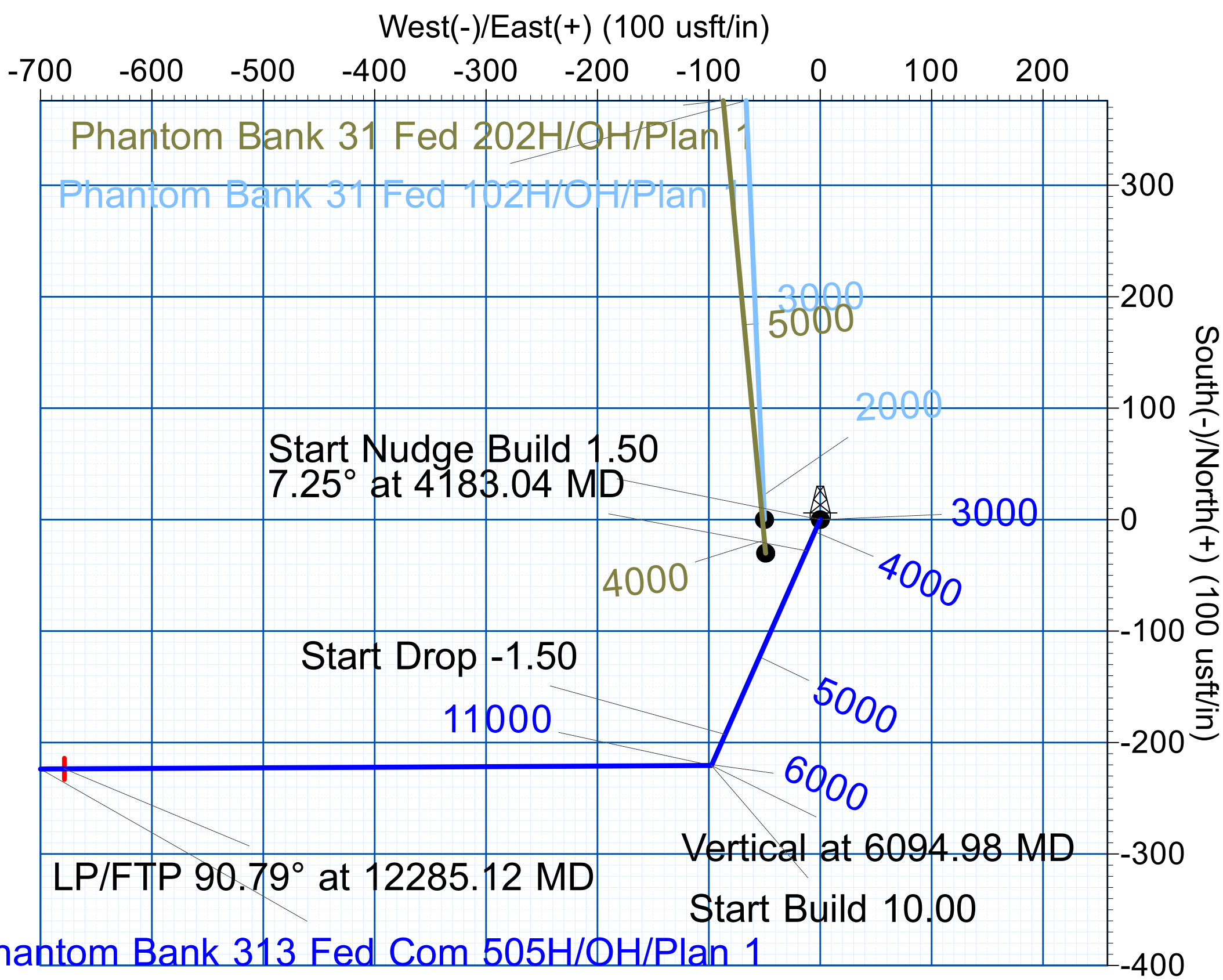
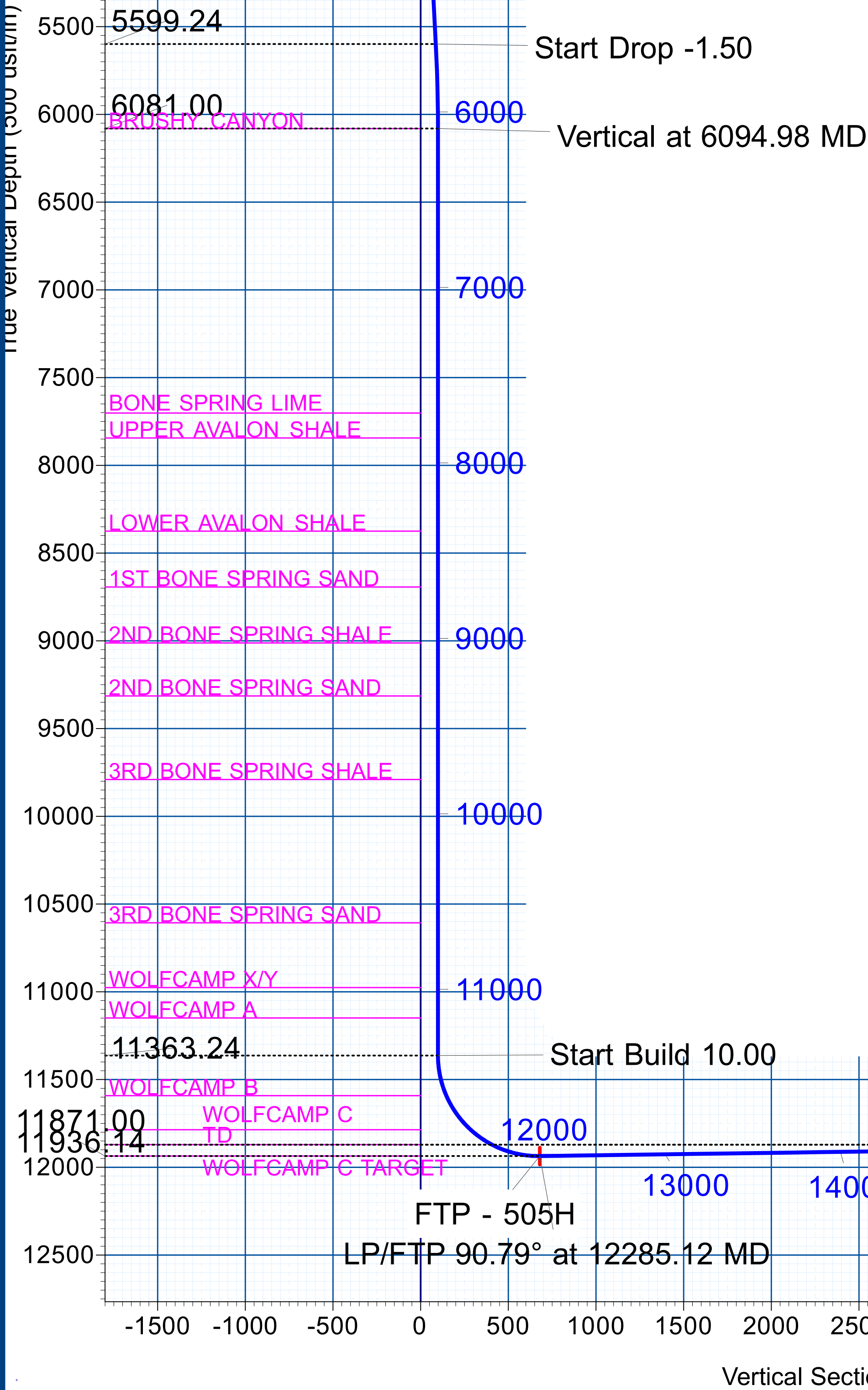
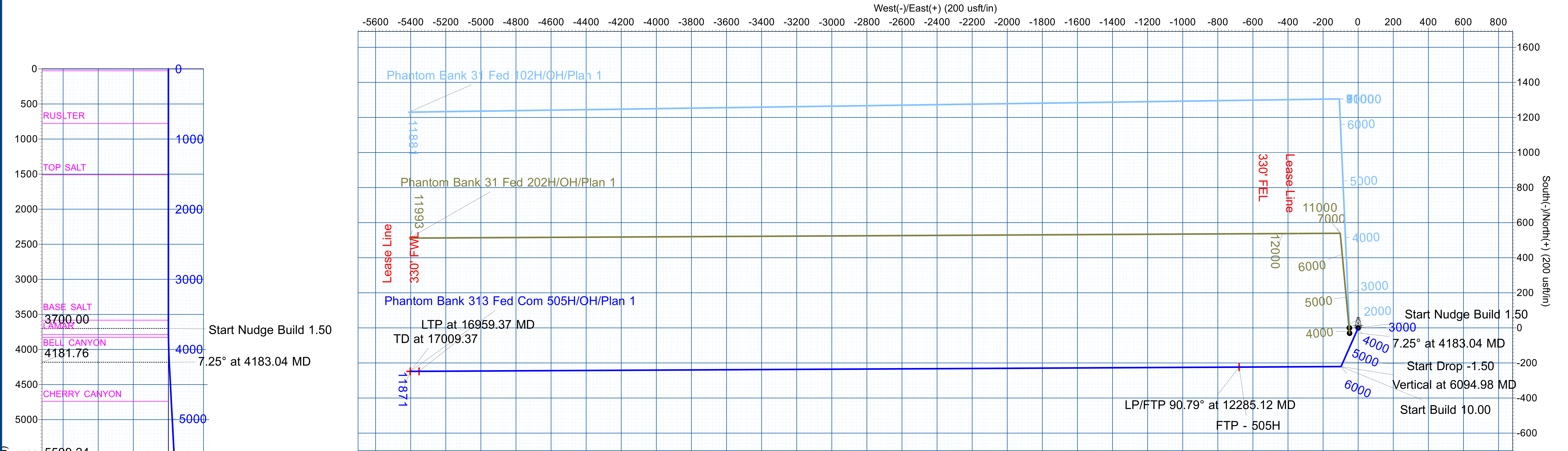
To convert a Magnetic Direction to a Grid Direction, Add 6.01°

WELL DETAILS: Phantom Bank 313 Fed Com 505H

GL 3115 + 26.5' KB @ 3141.50usft (H&P 651) 3115.00
Northing 364746.08 Easting 704248.92 Latitude 32.00167851 Longitude -103.80778606

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL - 505H	11871.00	-247.91	-5402.35	364498.17	698846.58	32.00106804	-103.82521703
LTP - 505H	11871.69	-247.65	-5352.35	364498.43	698896.58	32.00106809	-103.82505573
FTP - 505H	11936.14	-223.56	-678.52	364522.51	703570.41	32.00107300	-103.80997835



Phantom Bank 313 Fed Com 505H/OH/Plan 1

Phantom Bank 313 Fed Com 505H/Plan 1

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	3700.00	0.00	0.00	3700.00	0.00	0.00	0.00	0.00	0.00	
3	4183.05	7.25	203.88	4181.77	-27.89	-12.35	1.50	203.88	12.50	
4	5611.93	7.25	203.88	5599.23	-192.68	-85.32	0.00	0.00	86.32	
5	6094.98	0.00	269.70	6081.00	-220.57	-97.67	1.50	180.00	98.82	
6	11377.22	0.00	269.70	11363.24	-220.57	-97.67	0.00	0.00	98.82	
7	12285.12	90.79	269.70	11936.14	-223.56	-678.52	10.00	0.00	679.68	FTP - 505H
8	16959.46	90.79	269.70	11871.69	-247.67	-5352.35	0.00	0.00	5353.57	LTP - 505H
9	17009.46	90.79	269.70	11871.00	-247.92	-5402.35	0.00	0.00	5403.57	BHL - 505H

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
26.50	26.50	ALLUVIUM
778.00	778.00	RUSLTER
1510.00	1510.00	TOP SALT
3582.00	3582.00	BASE SALT
3786.00	3786.01	LAMAR
3827.00	3827.02	BELL CANYON
4739.00	4744.77	CHERRY CANYON
6081.00	6094.98	BRUSHY CANYON
7702.00	7715.98	BONE SPRING LIME
7844.00	7857.98	UPPER AVALON SHALE
8375.00	8388.98	LOWER AVALON SHALE
8693.00	8706.98	1ST BONE SPRING SAND
9012.00	9025.98	2ND BONE SPRING SHALE
9314.00	9327.98	2ND BONE SPRING SAND
9790.00	9803.98	3RD BONE SPRING SHALE
10607.00	10620.98	3RD BONE SPRING SAND
10976.00	10989.98	WOLF CAMP X/Y
11149.00	11162.98	WOLF CAMP A
11592.00	11612.54	WOLF CAMP B
11786.00	11852.72	WOLF CAMP C
11871.00	12001.23	TD
11936.00	12262.29	WOLF CAMP C TARGET

Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Company:	Freedom Energy	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Project:	NAD83 Eddy County, NM	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site:	Phantom Bank 31 Fed	North Reference:	Grid
Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

Project	NAD83 Eddy County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Phantom Bank 31 Fed				
Site Position:		Northing:	364,746.08 usft	Latitude:	32.00167918
From:	Map	Easting:	704,198.92 usft	Longitude:	-103.80794736
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "		

Well	Phantom Bank 313 Fed Com 505H					
Well Position	+N/-S	0.00 usft	Northing:	364,746.08 usft	Latitude:	32.00167851
	+E/-W	0.00 usft	Easting:	704,248.92 usft	Longitude:	-103.80778606
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,115.00 usft
Grid Convergence:		0.28 °				

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	5/29/2024	6.29	59.56	47,055.72165452

Design	Plan 1			
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	269.70

Plan Survey Tool Program			Date	
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,009.35	Plan 1 (OH)	MWD
				OWSG MWD - Standard

Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Company:	Freedom Energy	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Project:	NAD83 Eddy County, NM	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site:	Phantom Bank 31 Fed	North Reference:	Grid
Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

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	
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,183.05	7.25	203.88	4,181.77	-27.89	-12.35	1.50	1.50	0.00	203.88	
5,611.93	7.25	203.88	5,599.23	-192.68	-85.32	0.00	0.00	0.00	0.00	
6,094.98	0.00	269.70	6,081.00	-220.57	-97.67	1.50	-1.50	0.00	180.00	
11,377.22	0.00	269.70	11,363.24	-220.57	-97.67	0.00	0.00	0.00	0.00	
12,285.12	90.79	269.70	11,936.14	-223.56	-678.52	10.00	10.00	0.00	0.00	FTP - 505H
16,959.46	90.79	269.70	11,871.69	-247.67	-5,352.35	0.00	0.00	0.00	0.00	LTP - 505H
17,009.46	90.79	269.70	11,871.00	-247.92	-5,402.35	0.00	0.00	0.00	0.00	BHL - 505H

Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Company:	Freedom Energy	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Project:	NAD83 Eddy County, NM	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site:	Phantom Bank 31 Fed	North Reference:	Grid
Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

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
26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	0.00	0.00
ALLUVIUM									
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	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
778.00	0.00	0.00	778.00	0.00	0.00	0.00	0.00	0.00	0.00
RUSLTER									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,510.00	0.00	0.00	1,510.00	0.00	0.00	0.00	0.00	0.00	0.00
TOP SALT									
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,582.00	0.00	0.00	3,582.00	0.00	0.00	0.00	0.00	0.00	0.00
BASE SALT									
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Nudge Build 1.50									
3,786.01	1.29	203.88	3,786.00	-0.89	-0.39	0.40	1.50	1.50	0.00
LAMAR									
3,800.00	1.50	203.88	3,799.99	-1.20	-0.53	0.54	1.50	1.50	0.00
3,827.02	1.91	203.88	3,827.00	-1.93	-0.86	0.87	1.50	1.50	0.00
BELL CANYON									
3,900.00	3.00	203.88	3,899.91	-4.79	-2.12	2.14	1.50	1.50	0.00

Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Company:	Freedom Energy	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Project:	NAD83 Eddy County, NM	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site:	Phantom Bank 31 Fed	North Reference:	Grid
Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

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)
4,000.00	4.50	203.88	3,999.69	-10.77	-4.77	4.82	1.50	1.50	0.00
4,100.00	6.00	203.88	4,099.27	-19.13	-8.47	8.57	1.50	1.50	0.00
4,183.04	7.25	203.88	4,181.76	-27.89	-12.35	12.50	1.50	1.50	0.00
7.25° at 4183.04 MD									
4,183.05	7.25	203.88	4,181.77	-27.89	-12.35	12.50	1.50	1.50	0.00
4,200.00	7.25	203.88	4,198.58	-29.85	-13.22	13.37	0.00	0.00	0.00
4,300.00	7.25	203.88	4,297.78	-41.38	-18.32	18.54	0.00	0.00	0.00
4,400.00	7.25	203.88	4,396.98	-52.91	-23.43	23.71	0.00	0.00	0.00
4,500.00	7.25	203.88	4,496.18	-64.44	-28.54	28.87	0.00	0.00	0.00
4,600.00	7.25	203.88	4,595.38	-75.98	-33.64	34.04	0.00	0.00	0.00
4,700.00	7.25	203.88	4,694.59	-87.51	-38.75	39.21	0.00	0.00	0.00
4,744.77	7.25	203.88	4,739.00	-92.67	-41.03	41.52	0.00	0.00	0.00
CHERRY CANYON									
4,800.00	7.25	203.88	4,793.79	-99.04	-43.86	44.37	0.00	0.00	0.00
4,900.00	7.25	203.88	4,892.99	-110.57	-48.96	49.54	0.00	0.00	0.00
5,000.00	7.25	203.88	4,992.19	-122.11	-54.07	54.71	0.00	0.00	0.00
5,100.00	7.25	203.88	5,091.39	-133.64	-59.17	59.87	0.00	0.00	0.00
5,200.00	7.25	203.88	5,190.59	-145.17	-64.28	65.04	0.00	0.00	0.00
5,300.00	7.25	203.88	5,289.79	-156.70	-69.39	70.21	0.00	0.00	0.00
5,400.00	7.25	203.88	5,389.00	-168.24	-74.49	75.37	0.00	0.00	0.00
5,500.00	7.25	203.88	5,488.20	-179.77	-79.60	80.54	0.00	0.00	0.00
5,600.00	7.25	203.88	5,587.40	-191.30	-84.71	85.71	0.00	0.00	0.00
5,611.93	7.25	203.88	5,599.23	-192.68	-85.32	86.32	0.00	0.00	0.00
5,611.94	7.25	203.88	5,599.24	-192.68	-85.32	86.33	0.00	0.00	0.00
Start Drop -1.50									
5,700.00	5.92	203.88	5,686.72	-201.91	-89.41	90.46	1.50	-1.50	0.00
5,800.00	4.42	203.88	5,786.31	-210.16	-93.06	94.16	1.50	-1.50	0.00
5,900.00	2.92	203.88	5,886.10	-216.02	-95.65	96.78	1.50	-1.50	0.00
6,000.00	1.42	203.88	5,986.03	-219.49	-97.19	98.34	1.50	-1.50	0.00
6,094.98	0.00	269.70	6,081.00	-220.57	-97.67	98.82	1.50	-1.50	0.00
Vertical at 6094.98 MD - BRUSHY CANYON									
6,100.00	0.00	0.00	6,086.02	-220.57	-97.67	98.82	0.00	0.00	0.00
6,200.00	0.00	0.00	6,186.02	-220.57	-97.67	98.82	0.00	0.00	0.00
6,300.00	0.00	0.00	6,286.02	-220.57	-97.67	98.82	0.00	0.00	0.00
6,400.00	0.00	0.00	6,386.02	-220.57	-97.67	98.82	0.00	0.00	0.00
6,500.00	0.00	0.00	6,486.02	-220.57	-97.67	98.82	0.00	0.00	0.00
6,600.00	0.00	0.00	6,586.02	-220.57	-97.67	98.82	0.00	0.00	0.00
6,700.00	0.00	0.00	6,686.02	-220.57	-97.67	98.82	0.00	0.00	0.00
6,800.00	0.00	0.00	6,786.02	-220.57	-97.67	98.82	0.00	0.00	0.00
6,900.00	0.00	0.00	6,886.02	-220.57	-97.67	98.82	0.00	0.00	0.00
7,000.00	0.00	0.00	6,986.02	-220.57	-97.67	98.82	0.00	0.00	0.00
7,100.00	0.00	0.00	7,086.02	-220.57	-97.67	98.82	0.00	0.00	0.00
7,200.00	0.00	0.00	7,186.02	-220.57	-97.67	98.82	0.00	0.00	0.00
7,300.00	0.00	0.00	7,286.02	-220.57	-97.67	98.82	0.00	0.00	0.00
7,400.00	0.00	0.00	7,386.02	-220.57	-97.67	98.82	0.00	0.00	0.00
7,500.00	0.00	0.00	7,486.02	-220.57	-97.67	98.82	0.00	0.00	0.00
7,600.00	0.00	0.00	7,586.02	-220.57	-97.67	98.82	0.00	0.00	0.00
7,700.00	0.00	0.00	7,686.02	-220.57	-97.67	98.82	0.00	0.00	0.00
7,715.98	0.00	0.00	7,702.00	-220.57	-97.67	98.82	0.00	0.00	0.00
BONE SPRING LIME									
7,800.00	0.00	0.00	7,786.02	-220.57	-97.67	98.82	0.00	0.00	0.00
7,857.98	0.00	0.00	7,844.00	-220.57	-97.67	98.82	0.00	0.00	0.00
UPPER AVALON SHALE									

Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Company:	Freedom Energy	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Project:	NAD83 Eddy County, NM	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site:	Phantom Bank 31 Fed	North Reference:	Grid
Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

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)
7,900.00	0.00	0.00	7,886.02	-220.57	-97.67	98.82	0.00	0.00	0.00
8,000.00	0.00	0.00	7,986.02	-220.57	-97.67	98.82	0.00	0.00	0.00
8,100.00	0.00	0.00	8,086.02	-220.57	-97.67	98.82	0.00	0.00	0.00
8,200.00	0.00	0.00	8,186.02	-220.57	-97.67	98.82	0.00	0.00	0.00
8,300.00	0.00	0.00	8,286.02	-220.57	-97.67	98.82	0.00	0.00	0.00
8,388.98	0.00	0.00	8,375.00	-220.57	-97.67	98.82	0.00	0.00	0.00
LOWER AVALON SHALE									
8,400.00	0.00	0.00	8,386.02	-220.57	-97.67	98.82	0.00	0.00	0.00
8,500.00	0.00	0.00	8,486.02	-220.57	-97.67	98.82	0.00	0.00	0.00
8,600.00	0.00	0.00	8,586.02	-220.57	-97.67	98.82	0.00	0.00	0.00
8,700.00	0.00	0.00	8,686.02	-220.57	-97.67	98.82	0.00	0.00	0.00
8,706.98	0.00	0.00	8,693.00	-220.57	-97.67	98.82	0.00	0.00	0.00
1ST BONE SPRING SAND									
8,800.00	0.00	0.00	8,786.02	-220.57	-97.67	98.82	0.00	0.00	0.00
8,900.00	0.00	0.00	8,886.02	-220.57	-97.67	98.82	0.00	0.00	0.00
9,000.00	0.00	0.00	8,986.02	-220.57	-97.67	98.82	0.00	0.00	0.00
9,025.98	0.00	0.00	9,012.00	-220.57	-97.67	98.82	0.00	0.00	0.00
2ND BONE SPRING SHALE									
9,100.00	0.00	0.00	9,086.02	-220.57	-97.67	98.82	0.00	0.00	0.00
9,200.00	0.00	0.00	9,186.02	-220.57	-97.67	98.82	0.00	0.00	0.00
9,300.00	0.00	0.00	9,286.02	-220.57	-97.67	98.82	0.00	0.00	0.00
9,327.98	0.00	0.00	9,314.00	-220.57	-97.67	98.82	0.00	0.00	0.00
2ND BONE SPRING SAND									
9,400.00	0.00	0.00	9,386.02	-220.57	-97.67	98.82	0.00	0.00	0.00
9,500.00	0.00	0.00	9,486.02	-220.57	-97.67	98.82	0.00	0.00	0.00
9,600.00	0.00	0.00	9,586.02	-220.57	-97.67	98.82	0.00	0.00	0.00
9,700.00	0.00	0.00	9,686.02	-220.57	-97.67	98.82	0.00	0.00	0.00
9,800.00	0.00	0.00	9,786.02	-220.57	-97.67	98.82	0.00	0.00	0.00
9,803.98	0.00	0.00	9,790.00	-220.57	-97.67	98.82	0.00	0.00	0.00
3RD BONE SPRING SHALE									
9,900.00	0.00	0.00	9,886.02	-220.57	-97.67	98.82	0.00	0.00	0.00
10,000.00	0.00	0.00	9,986.02	-220.57	-97.67	98.82	0.00	0.00	0.00
10,100.00	0.00	0.00	10,086.02	-220.57	-97.67	98.82	0.00	0.00	0.00
10,200.00	0.00	0.00	10,186.02	-220.57	-97.67	98.82	0.00	0.00	0.00
10,300.00	0.00	0.00	10,286.02	-220.57	-97.67	98.82	0.00	0.00	0.00
10,400.00	0.00	0.00	10,386.02	-220.57	-97.67	98.82	0.00	0.00	0.00
10,500.00	0.00	0.00	10,486.02	-220.57	-97.67	98.82	0.00	0.00	0.00
10,600.00	0.00	0.00	10,586.02	-220.57	-97.67	98.82	0.00	0.00	0.00
10,620.98	0.00	0.00	10,607.00	-220.57	-97.67	98.82	0.00	0.00	0.00
3RD BONE SPRING SAND									
10,700.00	0.00	0.00	10,686.02	-220.57	-97.67	98.82	0.00	0.00	0.00
10,800.00	0.00	0.00	10,786.02	-220.57	-97.67	98.82	0.00	0.00	0.00
10,900.00	0.00	0.00	10,886.02	-220.57	-97.67	98.82	0.00	0.00	0.00
10,989.98	0.00	0.00	10,976.00	-220.57	-97.67	98.82	0.00	0.00	0.00
WOLFCAMP X/Y									
11,000.00	0.00	0.00	10,986.02	-220.57	-97.67	98.82	0.00	0.00	0.00
11,100.00	0.00	0.00	11,086.02	-220.57	-97.67	98.82	0.00	0.00	0.00
11,162.98	0.00	0.00	11,149.00	-220.57	-97.67	98.82	0.00	0.00	0.00
WOLFCAMP A									
11,200.00	0.00	0.00	11,186.02	-220.57	-97.67	98.82	0.00	0.00	0.00
11,300.00	0.00	0.00	11,286.02	-220.57	-97.67	98.82	0.00	0.00	0.00
11,377.22	0.00	0.00	11,363.24	-220.57	-97.67	98.82	0.00	0.00	0.00
Start Build 10.00									

Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Company:	Freedom Energy	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Project:	NAD83 Eddy County, NM	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site:	Phantom Bank 31 Fed	North Reference:	Grid
Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

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)	
11,400.00	2.28	269.70	11,386.01	-220.57	-98.12	99.27	10.00	10.00	0.00	
11,450.00	7.28	269.70	11,435.82	-220.59	-102.28	103.44	10.00	10.00	0.00	
11,500.00	12.28	269.70	11,485.08	-220.64	-110.77	111.93	10.00	10.00	0.00	
11,550.00	17.28	269.70	11,533.41	-220.70	-123.52	124.68	10.00	10.00	0.00	
11,600.00	22.28	269.70	11,580.45	-220.79	-140.43	141.59	10.00	10.00	0.00	
11,612.54	23.53	269.70	11,592.00	-220.82	-145.32	146.47	10.00	10.00	0.00	
WOLFCAMP B										
11,650.00	27.28	269.70	11,625.83	-220.90	-161.38	162.54	10.00	10.00	0.00	
11,700.00	32.28	269.70	11,669.21	-221.03	-186.21	187.36	10.00	10.00	0.00	
11,750.00	37.28	269.70	11,710.27	-221.17	-214.72	215.87	10.00	10.00	0.00	
11,800.00	42.28	269.70	11,748.68	-221.34	-246.70	247.85	10.00	10.00	0.00	
11,850.00	47.28	269.70	11,784.16	-221.52	-281.90	283.06	10.00	10.00	0.00	
11,852.72	47.55	269.70	11,786.00	-221.53	-283.90	285.06	10.00	10.00	0.00	
WOLFCAMP C										
11,900.00	52.28	269.70	11,816.44	-221.72	-320.07	321.23	10.00	10.00	0.00	
11,950.00	57.28	269.70	11,845.27	-221.93	-360.90	362.06	10.00	10.00	0.00	
12,000.00	62.28	269.70	11,870.43	-222.15	-404.09	405.25	10.00	10.00	0.00	
12,001.23	62.40	269.70	11,871.00	-222.16	-405.18	406.34	10.00	10.00	0.00	
TD										
12,050.00	67.28	269.70	11,891.73	-222.38	-449.31	450.47	10.00	10.00	0.00	
12,100.00	72.28	269.70	11,909.00	-222.62	-496.21	497.37	10.00	10.00	0.00	
12,150.00	77.28	269.70	11,922.13	-222.87	-544.44	545.60	10.00	10.00	0.00	
12,200.00	82.28	269.70	11,931.00	-223.13	-593.63	594.79	10.00	10.00	0.00	
12,250.00	87.28	269.70	11,935.55	-223.38	-643.41	644.57	10.00	10.00	0.00	
12,262.29	88.51	269.70	11,936.00	-223.45	-655.69	656.85	10.00	10.00	0.00	
WOLFCAMP C TARGET										
12,285.12	90.79	269.70	11,936.14	-223.56	-678.52	679.68	10.00	10.00	0.00	
LP/FTP 90.79° at 12285.12 MD										
12,300.00	90.79	269.70	11,935.94	-223.64	-693.40	694.56	0.00	0.00	0.00	
12,400.00	90.79	269.70	11,934.56	-224.16	-793.38	794.55	0.00	0.00	0.00	
12,500.00	90.79	269.70	11,933.18	-224.67	-893.37	894.54	0.00	0.00	0.00	
12,600.00	90.79	269.70	11,931.80	-225.19	-993.36	994.53	0.00	0.00	0.00	
12,700.00	90.79	269.70	11,930.42	-225.70	-1,093.35	1,094.52	0.00	0.00	0.00	
12,800.00	90.79	269.70	11,929.04	-226.22	-1,193.34	1,194.51	0.00	0.00	0.00	
12,900.00	90.79	269.70	11,927.66	-226.74	-1,293.33	1,294.50	0.00	0.00	0.00	
13,000.00	90.79	269.70	11,926.28	-227.25	-1,393.32	1,394.49	0.00	0.00	0.00	
13,100.00	90.79	269.70	11,924.90	-227.77	-1,493.31	1,494.48	0.00	0.00	0.00	
13,200.00	90.79	269.70	11,923.53	-228.28	-1,593.30	1,594.47	0.00	0.00	0.00	
13,300.00	90.79	269.70	11,922.15	-228.80	-1,693.29	1,694.46	0.00	0.00	0.00	
13,400.00	90.79	269.70	11,920.77	-229.31	-1,793.28	1,794.45	0.00	0.00	0.00	
13,500.00	90.79	269.70	11,919.39	-229.83	-1,893.27	1,894.44	0.00	0.00	0.00	
13,600.00	90.79	269.70	11,918.01	-230.34	-1,993.25	1,994.43	0.00	0.00	0.00	
13,700.00	90.79	269.70	11,916.63	-230.86	-2,093.24	2,094.42	0.00	0.00	0.00	
13,800.00	90.79	269.70	11,915.25	-231.38	-2,193.23	2,194.41	0.00	0.00	0.00	
13,900.00	90.79	269.70	11,913.87	-231.89	-2,293.22	2,294.40	0.00	0.00	0.00	
14,000.00	90.79	269.70	11,912.49	-232.41	-2,393.21	2,394.39	0.00	0.00	0.00	
14,100.00	90.79	269.70	11,911.12	-232.92	-2,493.20	2,494.39	0.00	0.00	0.00	
14,200.00	90.79	269.70	11,909.74	-233.44	-2,593.19	2,594.38	0.00	0.00	0.00	
14,300.00	90.79	269.70	11,908.36	-233.95	-2,693.18	2,694.37	0.00	0.00	0.00	
14,400.00	90.79	269.70	11,906.98	-234.47	-2,793.17	2,794.36	0.00	0.00	0.00	
14,500.00	90.79	269.70	11,905.60	-234.99	-2,893.16	2,894.35	0.00	0.00	0.00	
14,600.00	90.79	269.70	11,904.22	-235.50	-2,993.15	2,994.34	0.00	0.00	0.00	
14,700.00	90.79	269.70	11,902.84	-236.02	-3,093.14	3,094.33	0.00	0.00	0.00	

Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Company:	Freedom Energy	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Project:	NAD83 Eddy County, NM	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site:	Phantom Bank 31 Fed	North Reference:	Grid
Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

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)	
14,800.00	90.79	269.70	11,901.46	-236.53	-3,193.12	3,194.32	0.00	0.00	0.00	
14,900.00	90.79	269.70	11,900.09	-237.05	-3,293.11	3,294.31	0.00	0.00	0.00	
15,000.00	90.79	269.70	11,898.71	-237.56	-3,393.10	3,394.30	0.00	0.00	0.00	
15,100.00	90.79	269.70	11,897.33	-238.08	-3,493.09	3,494.29	0.00	0.00	0.00	
15,200.00	90.79	269.70	11,895.95	-238.59	-3,593.08	3,594.28	0.00	0.00	0.00	
15,300.00	90.79	269.70	11,894.57	-239.11	-3,693.07	3,694.27	0.00	0.00	0.00	
15,400.00	90.79	269.70	11,893.19	-239.63	-3,793.06	3,794.26	0.00	0.00	0.00	
15,500.00	90.79	269.70	11,891.81	-240.14	-3,893.05	3,894.25	0.00	0.00	0.00	
15,600.00	90.79	269.70	11,890.43	-240.66	-3,993.04	3,994.24	0.00	0.00	0.00	
15,700.00	90.79	269.70	11,889.05	-241.17	-4,093.03	4,094.23	0.00	0.00	0.00	
15,800.00	90.79	269.70	11,887.68	-241.69	-4,193.02	4,194.22	0.00	0.00	0.00	
15,900.00	90.79	269.70	11,886.30	-242.20	-4,293.01	4,294.21	0.00	0.00	0.00	
16,000.00	90.79	269.70	11,884.92	-242.72	-4,392.99	4,394.20	0.00	0.00	0.00	
16,100.00	90.79	269.70	11,883.54	-243.24	-4,492.98	4,494.20	0.00	0.00	0.00	
16,200.00	90.79	269.70	11,882.16	-243.75	-4,592.97	4,594.19	0.00	0.00	0.00	
16,300.00	90.79	269.70	11,880.78	-244.27	-4,692.96	4,694.18	0.00	0.00	0.00	
16,400.00	90.79	269.70	11,879.40	-244.78	-4,792.95	4,794.17	0.00	0.00	0.00	
16,500.00	90.79	269.70	11,878.02	-245.30	-4,892.94	4,894.16	0.00	0.00	0.00	
16,600.00	90.79	269.70	11,876.64	-245.81	-4,992.93	4,994.15	0.00	0.00	0.00	
16,700.00	90.79	269.70	11,875.27	-246.33	-5,092.92	5,094.14	0.00	0.00	0.00	
16,800.00	90.79	269.70	11,873.89	-246.84	-5,192.91	5,194.13	0.00	0.00	0.00	
16,900.00	90.79	269.70	11,872.51	-247.36	-5,292.90	5,294.12	0.00	0.00	0.00	
16,959.37	90.79	269.70	11,871.69	-247.67	-5,352.26	5,353.48	0.00	0.00	0.00	
LTP at 16959.37 MD										
16,959.46	90.79	269.70	11,871.69	-247.67	-5,352.35	5,353.57	0.00	0.00	0.00	
17,009.38	90.79	269.70	11,871.00	-247.92	-5,402.26	5,403.48	0.00	0.00	0.00	
TD at 17009.37										
17,009.46	90.79	269.70	11,871.00	-247.92	-5,402.35	5,403.57	0.00	0.00	0.00	

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BHL - 505H	0.00	0.08	11,871.00	-247.91	-5,402.35	364,498.17	698,846.57	32.00106804	-103.82521703
- hit/miss target									
- plan misses target center by 0.02usft at 17009.46usft MD (11871.00 TVD, -247.92 N, -5402.35 E)									
- Point									
LTP - 505H	0.00	0.08	11,871.69	-247.65	-5,352.35	364,498.42	698,896.57	32.00106809	-103.82505573
- hit/miss target									
- plan misses target center by 0.02usft at 16959.46usft MD (11871.69 TVD, -247.67 N, -5352.35 E)									
- Point									
FTP - 505H	0.00	0.08	11,936.14	-223.56	-678.52	364,522.51	703,570.40	32.00107301	-103.80997835
- hit/miss target									
- plan hits target center									
- Point									

Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Company:	Freedom Energy	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Project:	NAD83 Eddy County, NM	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site:	Phantom Bank 31 Fed	North Reference:	Grid
Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
26.50	26.50	ALLUVIUM				
778.00	778.00	RUSLTER				
1,510.00	1,510.00	TOP SALT				
3,582.00	3,582.00	BASE SALT				
3,786.01	3,786.00	LAMAR				
3,827.02	3,827.00	BELL CANYON				
4,744.77	4,739.00	CHERRY CANYON				
6,094.98	6,081.00	BRUSHY CANYON				
7,715.98	7,702.00	BONE SPRING LIME				
7,857.98	7,844.00	UPPER AVALON SHALE				
8,388.98	8,375.00	LOWER AVALON SHALE				
8,706.98	8,693.00	1ST BONE SPRING SAND				
9,025.98	9,012.00	2ND BONE SPRING SHALE				
9,327.98	9,314.00	2ND BONE SPRING SAND				
9,803.98	9,790.00	3RD BONE SPRING SHALE				
10,620.98	10,607.00	3RD BONE SPRING SAND				
10,989.98	10,976.00	WOLFCAMP X/Y				
11,162.98	11,149.00	WOLFCAMP A				
11,612.54	11,592.00	WOLFCAMP B				
11,852.72	11,786.00	WOLFCAMP C				
12,001.23	11,871.00	TD				
12,262.29	11,936.00	WOLFCAMP C TARGET				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
3,700.00	3,700.00	0.00	0.00	Start Nudge Build 1.50	
4,183.04	4,181.76	-27.89	-12.35	7.25° at 4183.04 MD	
5,611.94	5,599.24	-192.68	-85.32	Start Drop -1.50	
6,094.98	6,081.00	-220.57	-97.67	Vertical at 6094.98 MD	
11,377.22	11,363.24	-220.57	-97.67	Start Build 10.00	
12,285.12	11,936.14	-223.56	-678.52	LP/FTP 90.79° at 12285.12 MD	
16,959.37	11,871.69	-247.67	-5,352.26	LTP at 16959.37 MD	
17,009.38	11,871.00	-247.92	-5,402.26	TD at 17009.37	

Freedom Energy

NAD83 Eddy County, NM

Phantom Bank 31 Fed

Phantom Bank 313 Fed Com 505H

OH

Plan 1

Anticollision Report

08 July, 2024

Legacy Directional Drilling
Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Project:	NAD83 Eddy County, NM	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Reference Site:	Phantom Bank 31 Fed	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Reference	Plan 1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 1,435.05usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date 7/8/2024	
From (usft)	To (usft)	Survey (Wellbore)
0.00	17,009.35	Plan 1 (OH)
		Tool Name
		MWD
		Description
		OWSG MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Cardigan Fed Com						
Cardigan Fed Com 132H - OH - Plan 1						Out of range
Cardigan Fed Com 133H - OH - Plan 1						Out of range
Cardigan Fed Com 134H - OH - Plan 1						Out of range
Jawbone Fed Com LW						
Jawbone Fed Com LW 22H - OH - Plan 1						Out of range
Jurnegan BS Pad						
Jurnegan BS #1H - OH - Plan 1						Out of range
Jurnegan BS #2H - OH - Plan 1						Out of range
Jurnegan BS Fed Com #3H - OH - Plan 1						Out of range
Jurnegan BS Fed Com #4H - OH - Plan 1						Out of range
Phantom Bank 31 Fed						
Phantom Bank 31 Fed 102H - OH - Plan 1	1,500.00	1,499.00	50.00	39.44	4.735	CC
Phantom Bank 31 Fed 102H - OH - Plan 1	1,800.00	1,798.61	50.94	38.23	4.009	ES
Phantom Bank 31 Fed 102H - OH - Plan 1	1,900.00	1,898.20	52.47	39.05	3.910	SF
Phantom Bank 31 Fed 202H - OH - Plan 1	4,086.14	4,084.02	43.49	14.52	1.501	Collision Risk Procedures R
Phantom Bank 31 Fed 202H - OH - Plan 1	4,100.00	4,097.56	43.57	14.51	1.499	Collision Risk Procedures R

Offset Design:	Phantom Bank 31 Fed - Phantom Bank 31 Fed 102H - OH - Plan 1											Offset Site Error:	0.00 usft
Survey Program:	0-MWD											Offset Well Error:	0.00 usft
Reference	Vertical	Offset	Semi Major Axis	Highside	Offset Wellbore Centre		Rule Assigned:		Distance	Minimum	Separation	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)		
0.00	0.00	0.00	0.00	0.00	0.00	-90.00	0.00	-50.00	50.01				
100.00	100.00	99.00	99.00	0.26	0.26	-90.00	0.00	-50.00	50.00	49.48	0.52	95.364	
200.00	200.00	199.00	199.00	0.62	0.62	-90.00	0.00	-50.00	50.00	48.76	1.24	40.313	
300.00	300.00	299.00	299.00	0.98	0.98	-90.00	0.00	-50.00	50.00	48.04	1.96	25.546	
400.00	400.00	399.00	399.00	1.34	1.34	-90.00	0.00	-50.00	50.00	47.33	2.67	18.698	
500.00	500.00	499.00	499.00	1.70	1.69	-90.00	0.00	-50.00	50.00	46.61	3.39	14.745	
600.00	600.00	599.00	599.00	2.06	2.05	-90.00	0.00	-50.00	50.00	45.89	4.11	12.171	
700.00	700.00	699.00	699.00	2.41	2.41	-90.00	0.00	-50.00	50.00	45.18	4.83	10.363	
800.00	800.00	799.00	799.00	2.77	2.77	-90.00	0.00	-50.00	50.00	44.46	5.54	9.022	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Legacy Directional Drilling
Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Project:	NAD83 Eddy County, NM	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Reference Site:	Phantom Bank 31 Fed	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: Phantom Bank 31 Fed - Phantom Bank 31 Fed 102H - OH - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
900.00	900.00	899.00	899.00	3.13	3.13	-90.00	0.00	-50.00	50.00	43.74	6.26	7.989	
1,000.00	1,000.00	999.00	999.00	3.49	3.49	-90.00	0.00	-50.00	50.00	43.03	6.98	7.168	
1,100.00	1,100.00	1,099.00	1,099.00	3.85	3.84	-90.00	0.00	-50.00	50.00	42.31	7.69	6.500	
1,200.00	1,200.00	1,199.00	1,199.00	4.21	4.20	-90.00	0.00	-50.00	50.00	41.59	8.41	5.946	
1,300.00	1,300.00	1,299.00	1,299.00	4.57	4.56	-90.00	0.00	-50.00	50.00	40.87	9.13	5.479	
1,400.00	1,400.00	1,399.00	1,399.00	4.92	4.92	-90.00	0.00	-50.00	50.00	40.16	9.84	5.080	
1,500.00	1,500.00	1,499.00	1,499.00	5.28	5.28	-90.00	0.00	-50.00	50.00	39.44	10.56	4.735 CC	
1,600.00	1,600.00	1,598.95	1,598.95	5.64	5.64	-89.02	0.85	-50.04	50.05	38.77	11.28	4.438	
1,700.00	1,700.00	1,698.84	1,698.80	6.00	6.00	-86.07	3.45	-50.15	50.27	38.28	11.99	4.192	
1,800.00	1,800.00	1,798.61	1,798.48	6.36	6.35	-81.22	7.77	-50.34	50.94	38.23	12.71	4.009 ES	
1,900.00	1,900.00	1,898.20	1,897.88	6.72	6.71	-74.73	13.82	-50.61	52.47	39.05	13.42	3.910 SF	
2,000.00	2,000.00	1,997.55	1,996.93	7.07	7.07	-67.05	21.57	-50.95	55.36	41.23	14.13	3.918	
2,100.00	2,100.00	2,096.61	2,095.53	7.43	7.42	-58.88	31.00	-51.36	60.10	45.26	14.84	4.050	
2,200.00	2,200.00	2,195.30	2,193.59	7.79	7.79	-50.93	42.10	-51.85	67.01	51.47	15.53	4.314	
2,300.00	2,300.00	2,293.58	2,291.05	8.15	8.15	-43.71	54.82	-52.41	76.26	60.04	16.22	4.701	
2,400.00	2,400.00	2,391.39	2,387.80	8.51	8.52	-37.49	69.13	-53.04	87.85	70.95	16.90	5.199	
2,500.00	2,500.00	2,488.69	2,483.79	8.87	8.89	-32.30	85.01	-53.74	101.71	84.15	17.57	5.790	
2,600.00	2,600.00	2,585.41	2,578.93	9.23	9.27	-28.02	102.40	-54.50	117.73	99.50	18.23	6.459	
2,700.00	2,700.00	2,681.50	2,673.15	9.58	9.66	-24.52	121.27	-55.33	135.78	116.90	18.88	7.192	
2,800.00	2,800.00	2,776.93	2,766.39	9.94	10.05	-21.66	141.57	-56.22	155.78	136.25	19.52	7.979	
2,900.00	2,900.00	2,871.65	2,858.58	10.30	10.45	-19.30	163.24	-57.17	177.63	157.46	20.16	8.810	
3,000.00	3,000.00	2,965.60	2,949.67	10.66	10.85	-17.35	186.25	-58.18	201.26	180.47	20.79	9.679	
3,100.00	3,100.00	3,058.76	3,039.60	11.02	11.27	-15.72	210.53	-59.25	226.63	205.21	21.42	10.582	
3,200.00	3,200.00	3,151.08	3,128.32	11.38	11.70	-14.35	236.02	-60.37	253.67	231.64	22.03	11.514	
3,300.00	3,300.00	3,242.52	3,215.78	11.73	12.13	-13.19	262.69	-61.54	282.34	259.70	22.64	12.471	
3,400.00	3,400.00	3,335.39	3,304.21	12.09	12.58	-12.17	291.01	-62.78	312.43	289.14	23.29	13.415	
3,500.00	3,500.00	3,430.55	3,394.77	12.45	13.06	-11.31	320.23	-64.07	342.81	318.81	23.99	14.287	
3,600.00	3,600.00	3,525.71	3,485.32	12.81	13.54	-10.59	349.45	-65.35	373.24	348.54	24.70	15.110	
3,700.00	3,700.00	3,620.87	3,575.88	13.17	14.03	-9.98	378.67	-66.64	403.72	378.31	25.41	15.887	
3,800.00	3,799.99	3,715.66	3,666.08	13.51	14.52	-146.49	407.77	-67.91	435.27	409.17	26.10	16.674	
3,900.00	3,899.91	3,809.66	3,755.53	13.83	15.01	-146.92	436.63	-69.18	468.94	442.16	26.78	17.511	
4,000.00	3,999.69	3,902.81	3,844.18	14.16	15.50	-147.40	465.23	-70.44	504.74	477.29	27.45	18.386	
4,100.00	4,099.27	3,995.05	3,931.95	14.49	16.00	-147.92	493.56	-71.68	542.69	514.56	28.12	19.297	
4,200.00	4,198.58	4,086.33	4,018.81	14.82	16.49	-148.51	521.58	-72.91	582.75	553.96	28.79	20.241	
4,300.00	4,297.78	4,177.26	4,105.34	15.15	16.98	-149.33	549.50	-74.14	623.62	594.17	29.46	21.172	
4,400.00	4,396.98	4,268.18	4,191.86	15.49	17.48	-150.04	577.42	-75.37	664.59	634.46	30.12	22.062	
4,500.00	4,496.18	4,359.11	4,278.39	15.83	17.97	-150.67	605.34	-76.59	705.63	674.83	30.80	22.913	
4,600.00	4,595.38	4,450.04	4,364.92	16.18	18.48	-151.23	633.26	-77.82	746.74	715.27	31.47	23.728	
4,700.00	4,694.59	4,540.97	4,451.45	16.53	18.98	-151.74	661.17	-79.05	787.90	755.75	32.15	24.507	
4,800.00	4,793.79	4,631.90	4,537.97	16.88	19.48	-152.19	689.09	-80.27	829.10	796.27	32.83	25.254	
4,900.00	4,892.99	4,722.82	4,624.50	17.23	19.99	-152.60	717.01	-81.50	870.35	836.83	33.51	25.970	
5,000.00	4,992.19	4,813.75	4,711.03	17.59	20.50	-152.98	744.93	-82.72	911.63	877.43	34.20	26.656	
5,100.00	5,091.39	4,904.68	4,797.56	17.95	21.01	-153.32	772.85	-83.95	952.94	918.05	34.89	27.315	
5,200.00	5,190.59	4,995.61	4,884.08	18.31	21.52	-153.63	800.77	-85.18	994.27	958.69	35.58	27.947	
5,300.00	5,289.79	5,086.54	4,970.61	18.67	22.04	-153.92	828.69	-86.40	1,035.63	999.36	36.27	28.554	
5,400.00	5,389.00	5,177.46	5,057.14	19.04	22.55	-154.19	856.61	-87.63	1,077.01	1,040.04	36.96	29.138	
5,500.00	5,488.20	5,268.39	5,143.66	19.41	23.07	-154.43	884.52	-88.86	1,118.40	1,080.74	37.66	29.699	
5,600.00	5,587.40	5,359.32	5,230.19	19.78	23.59	-154.66	912.44	-90.08	1,159.81	1,121.46	38.35	30.239	
5,700.00	5,686.72	5,450.64	5,317.09	20.15	24.11	-155.10	940.48	-91.31	1,200.40	1,161.34	39.05	30.737	
5,800.00	5,786.31	5,542.93	5,404.91	20.51	24.64	-155.48	968.82	-92.56	1,238.83	1,199.07	39.76	31.159	
5,900.00	5,886.10	5,636.12	5,493.60	20.87	25.17	-155.79	997.43	-93.82	1,275.05	1,234.58	40.47	31.508	
6,000.00	5,986.03	5,730.17	5,583.09	21.22	25.71	-156.02	1,026.31	-95.08	1,309.03	1,267.85	41.18	31.787	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Legacy Directional Drilling

Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Project:	NAD83 Eddy County, NM	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Reference Site:	Phantom Bank 31 Fed	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Offset Design:		Phantom Bank 31 Fed - Phantom Bank 31 Fed 102H - OH - Plan 1											Offset Site Error:		0.00 usft	
Survey Program:		0-MWD											Offset Well Error:		0.00 usft	
Reference		Offset		Semi Major Axis		Offset Wellbore Centre			Rule Assigned:				Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
6,100.00	6,086.02	5,824.99	5,673.33	21.56	26.25	0.06	1,055.42	-96.36	1,340.76	1,298.86	41.90	31.998				
6,200.00	6,186.02	5,920.15	5,763.88	21.91	26.80	0.00	1,084.64	-97.65	1,371.47	1,328.84	42.63	32.171				
6,300.00	6,286.02	6,015.32	5,854.44	22.26	27.35	-0.05	1,113.86	-98.93	1,402.18	1,358.82	43.36	32.337				
6,400.00	6,386.02	6,110.48	5,944.99	22.60	27.90	-0.11	1,143.08	-100.21	1,432.89	1,388.79	44.09	32.498				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Legacy Directional Drilling
Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Project:	NAD83 Eddy County, NM	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Reference Site:	Phantom Bank 31 Fed	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: Phantom Bank 31 Fed - Phantom Bank 31 Fed 202H - OH - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	-121.48	-30.00	-49.00	57.46				
100.00	100.00	99.00	99.00	0.26	0.26	-121.48	-30.00	-49.00	57.45	56.93	0.52	109.579	
200.00	200.00	199.00	199.00	0.62	0.62	-121.48	-30.00	-49.00	57.45	56.21	1.24	46.323	
300.00	300.00	299.00	299.00	0.98	0.98	-121.48	-30.00	-49.00	57.45	55.50	1.96	29.355	
400.00	400.00	399.00	399.00	1.34	1.34	-121.48	-30.00	-49.00	57.45	54.78	2.67	21.485	
500.00	500.00	499.00	499.00	1.70	1.69	-121.48	-30.00	-49.00	57.45	54.06	3.39	16.943	
600.00	600.00	599.00	599.00	2.06	2.05	-121.48	-30.00	-49.00	57.45	53.35	4.11	13.986	
700.00	700.00	699.00	699.00	2.41	2.41	-121.48	-30.00	-49.00	57.45	52.63	4.83	11.908	
800.00	800.00	799.00	799.00	2.77	2.77	-121.48	-30.00	-49.00	57.45	51.91	5.54	10.367	
900.00	900.00	899.00	899.00	3.13	3.13	-121.48	-30.00	-49.00	57.45	51.20	6.26	9.180	
1,000.00	1,000.00	999.00	999.00	3.49	3.49	-121.48	-30.00	-49.00	57.45	50.48	6.98	8.236	
1,100.00	1,100.00	1,099.00	1,099.00	3.85	3.84	-121.48	-30.00	-49.00	57.45	49.76	7.69	7.469	
1,200.00	1,200.00	1,199.00	1,199.00	4.21	4.20	-121.48	-30.00	-49.00	57.45	49.04	8.41	6.832	
1,300.00	1,300.00	1,299.00	1,299.00	4.57	4.56	-121.48	-30.00	-49.00	57.45	48.33	9.13	6.295	
1,400.00	1,400.00	1,399.00	1,399.00	4.92	4.92	-121.48	-30.00	-49.00	57.45	47.61	9.84	5.837	
1,500.00	1,500.00	1,499.00	1,499.00	5.28	5.28	-121.48	-30.00	-49.00	57.45	46.89	10.56	5.440	
1,600.00	1,600.00	1,599.00	1,599.00	5.64	5.64	-121.48	-30.00	-49.00	57.45	46.18	11.28	5.095	
1,700.00	1,700.00	1,699.00	1,699.00	6.00	6.00	-121.48	-30.00	-49.00	57.45	45.46	11.99	4.790	
1,800.00	1,800.00	1,799.00	1,799.00	6.36	6.35	-121.48	-30.00	-49.00	57.45	44.74	12.71	4.520	
1,900.00	1,900.00	1,899.00	1,899.00	6.72	6.71	-121.48	-30.00	-49.00	57.45	44.03	13.43	4.279	
2,000.00	2,000.00	1,999.00	1,999.00	7.07	7.07	-121.48	-30.00	-49.00	57.45	43.31	14.15	4.062	
2,100.00	2,100.00	2,099.00	2,099.00	7.43	7.43	-121.48	-30.00	-49.00	57.45	42.59	14.86	3.866	
2,200.00	2,200.00	2,199.00	2,199.00	7.79	7.79	-121.48	-30.00	-49.00	57.45	41.88	15.58	3.688	
2,300.00	2,300.00	2,299.00	2,299.00	8.15	8.15	-121.48	-30.00	-49.00	57.45	41.16	16.30	3.526	
2,400.00	2,400.00	2,399.00	2,399.00	8.51	8.50	-121.48	-30.00	-49.00	57.45	40.44	17.01	3.377	
2,500.00	2,500.00	2,499.00	2,499.00	8.87	8.86	-121.48	-30.00	-49.00	57.45	39.72	17.73	3.241	
2,600.00	2,600.00	2,599.00	2,599.00	9.23	9.22	-121.48	-30.00	-49.00	57.45	39.01	18.45	3.115	
2,700.00	2,700.00	2,699.00	2,699.00	9.58	9.58	-121.48	-30.00	-49.00	57.45	38.29	19.16	2.998	
2,800.00	2,800.00	2,799.00	2,799.00	9.94	9.94	-121.48	-30.00	-49.00	57.45	37.57	19.88	2.890	
2,900.00	2,900.00	2,899.00	2,899.00	10.30	10.30	-121.48	-30.00	-49.00	57.45	36.86	20.60	2.789	
3,000.00	3,000.00	2,999.00	2,999.00	10.66	10.66	-121.48	-30.00	-49.00	57.45	36.14	21.31	2.696	
3,100.00	3,100.00	3,099.00	3,099.00	11.02	11.01	-121.48	-30.00	-49.00	57.45	35.42	22.03	2.608	
3,200.00	3,200.00	3,199.00	3,199.00	11.38	11.37	-121.48	-30.00	-49.00	57.45	34.71	22.75	2.526	
3,300.00	3,300.00	3,299.00	3,299.00	11.73	11.73	-121.48	-30.00	-49.00	57.45	33.99	23.47	2.448	
3,400.00	3,400.00	3,399.00	3,399.00	12.09	12.09	-121.48	-30.00	-49.00	57.45	33.27	24.18	2.376	
3,500.00	3,500.00	3,499.00	3,499.00	12.45	12.45	-121.48	-30.00	-49.00	57.45	32.56	24.90	2.307	
3,600.00	3,600.00	3,599.00	3,599.00	12.81	12.81	-121.48	-30.00	-49.00	57.45	31.84	25.62	2.243	
3,700.00	3,700.00	3,699.00	3,699.00	13.17	13.16	-121.48	-30.00	-49.00	57.45	31.12	26.33	2.182	
3,800.00	3,799.99	3,799.60	3,799.58	13.51	13.53	36.62	-28.71	-49.12	55.84	28.81	27.03	2.066	
3,900.00	3,899.91	3,899.81	3,899.72	13.83	13.88	43.29	-24.80	-49.49	51.43	23.71	27.71	1.856 Collision Risk Procedures Req.	
4,000.00	3,999.69	3,999.26	3,998.95	14.16	14.24	56.74	-18.33	-50.09	45.95	17.56	28.39	1.618 Collision Risk Procedures Req.	
4,086.14	4,085.48	4,084.02	4,083.37	14.44	14.54	75.36	-10.80	-50.80	43.49	14.52	28.97	1.501 Collision Risk Procedures Req., CC	
4,100.00	4,099.27	4,097.56	4,096.85	14.49	14.59	78.87	-9.42	-50.93	43.57	14.51	29.06	1.499 Collision Risk Procedures Req., ES, SF	
4,200.00	4,198.58	4,194.38	4,193.01	14.82	14.94	104.60	1.81	-51.98	50.25	20.60	29.65	1.695 Collision Risk Procedures Req.	
4,300.00	4,297.78	4,289.84	4,287.50	15.15	15.28	123.40	15.25	-53.24	67.17	36.99	30.18	2.225	
4,400.00	4,396.98	4,384.01	4,380.36	15.49	15.62	134.51	30.81	-54.69	90.73	60.02	30.71	2.955	
4,500.00	4,496.18	4,476.83	4,471.48	15.83	15.96	141.12	48.38	-56.34	118.59	87.36	31.22	3.798	
4,600.00	4,595.38	4,568.20	4,560.74	16.18	16.30	145.28	67.82	-58.15	149.70	117.97	31.73	4.718	
4,700.00	4,694.59	4,659.80	4,649.78	16.53	16.65	148.06	89.25	-60.16	183.36	151.08	32.28	5.680	
4,800.00	4,793.79	4,753.50	4,740.76	16.88	17.01	150.04	111.54	-62.25	217.69	184.75	32.94	6.609	
4,900.00	4,892.99	4,847.20	4,831.74	17.23	17.38	151.47	133.84	-64.33	252.20	218.59	33.60	7.505	
5,000.00	4,992.19	4,940.89	4,922.72	17.59	17.76	152.57	156.13	-66.42	286.81	252.54	34.27	8.370	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Legacy Directional Drilling
Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Project:	NAD83 Eddy County, NM	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Reference Site:	Phantom Bank 31 Fed	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: Phantom Bank 31 Fed - Phantom Bank 31 Fed 202H - OH - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.00	5,091.39	5,034.59	5,013.71	17.95	18.14	153.42	178.43	-68.51	321.49	286.55	34.94	9.202	
5,200.00	5,190.59	5,128.29	5,104.69	18.31	18.52	154.12	200.72	-70.59	356.22	320.61	35.61	10.004	
5,300.00	5,289.79	5,221.98	5,195.67	18.67	18.91	154.68	223.02	-72.68	390.99	354.71	36.28	10.777	
5,400.00	5,389.00	5,315.68	5,286.65	19.04	19.30	155.16	245.31	-74.77	425.79	388.83	36.96	11.522	
5,500.00	5,488.20	5,409.37	5,377.63	19.41	19.70	155.56	267.61	-76.85	460.60	422.97	37.63	12.239	
5,600.00	5,587.40	5,503.07	5,468.61	19.78	20.10	155.91	289.90	-78.94	495.44	457.13	38.31	12.931	
5,700.00	5,686.72	5,597.09	5,559.91	20.15	20.50	156.36	312.27	-81.03	529.42	490.42	39.00	13.576	
5,800.00	5,786.31	5,691.92	5,651.99	20.51	20.92	156.67	334.84	-83.15	561.15	521.47	39.68	14.141	
5,900.00	5,886.10	5,787.48	5,744.78	20.87	21.34	156.84	357.57	-85.27	590.60	550.23	40.37	14.629	
6,000.00	5,986.03	5,883.72	5,838.23	21.22	21.76	156.91	380.47	-87.42	617.74	576.67	41.07	15.042	
6,100.00	6,086.02	5,980.57	5,932.27	21.56	22.19	0.74	403.52	-89.57	642.56	600.79	41.77	15.384	
6,200.00	6,186.02	6,077.67	6,026.56	21.91	22.63	0.52	426.62	-91.74	666.33	623.86	42.48	15.687	
6,300.00	6,286.02	6,193.65	6,139.51	22.26	23.14	0.30	452.82	-94.19	688.94	645.48	43.46	15.854	
6,400.00	6,386.02	6,313.52	6,257.04	22.60	23.66	0.11	476.31	-96.39	708.54	664.09	44.45	15.941	
6,500.00	6,486.02	6,434.81	6,376.64	22.95	24.17	-0.05	496.33	-98.26	725.04	679.63	45.41	15.966	
6,600.00	6,586.02	6,557.27	6,497.99	23.30	24.67	-0.17	512.70	-99.79	738.42	692.07	46.34	15.934	
6,700.00	6,686.02	6,680.67	6,620.74	23.65	25.15	-0.25	525.26	-100.97	748.60	701.37	47.24	15.848	
6,800.00	6,786.02	6,804.77	6,744.53	24.00	25.61	-0.31	533.91	-101.78	755.58	707.49	48.09	15.712	
6,900.00	6,886.02	6,929.31	6,868.97	24.35	26.05	-0.34	538.56	-102.21	759.32	710.42	48.90	15.528	
7,000.00	6,986.02	7,045.36	6,985.02	24.70	26.44	-0.35	539.42	-102.29	760.00	710.36	49.64	15.309	
7,100.00	7,086.02	7,145.36	7,085.02	25.05	26.78	-0.35	539.42	-102.29	760.00	709.66	50.35	15.096	
7,200.00	7,186.02	7,245.36	7,185.02	25.40	27.11	-0.35	539.42	-102.29	760.00	708.95	51.05	14.887	
7,300.00	7,286.02	7,345.36	7,285.02	25.75	27.45	-0.35	539.42	-102.29	760.00	708.24	51.76	14.684	
7,400.00	7,386.02	7,445.36	7,385.02	26.10	27.79	-0.35	539.42	-102.29	760.00	707.54	52.46	14.486	
7,500.00	7,486.02	7,545.36	7,485.02	26.45	28.13	-0.35	539.42	-102.29	760.00	706.83	53.17	14.294	
7,600.00	7,586.02	7,645.36	7,585.02	26.80	28.46	-0.35	539.42	-102.29	760.00	706.13	53.88	14.106	
7,700.00	7,686.02	7,745.36	7,685.02	27.15	28.80	-0.35	539.42	-102.29	760.00	705.42	54.58	13.924	
7,800.00	7,786.02	7,845.36	7,785.02	27.50	29.14	-0.35	539.42	-102.29	760.00	704.71	55.29	13.745	
7,900.00	7,886.02	7,945.36	7,885.02	27.85	29.48	-0.35	539.42	-102.29	760.00	704.00	56.00	13.572	
8,000.00	7,986.02	8,045.36	7,985.02	28.20	29.82	-0.35	539.42	-102.29	760.00	703.30	56.71	13.402	
8,100.00	8,086.02	8,145.36	8,085.02	28.55	30.16	-0.35	539.42	-102.29	760.00	702.59	57.41	13.237	
8,200.00	8,186.02	8,245.36	8,185.02	28.91	30.51	-0.35	539.42	-102.29	760.00	701.88	58.12	13.076	
8,300.00	8,286.02	8,345.36	8,285.02	29.26	30.85	-0.35	539.42	-102.29	760.00	701.17	58.83	12.918	
8,400.00	8,386.02	8,445.36	8,385.02	29.61	31.19	-0.35	539.42	-102.29	760.00	700.46	59.54	12.765	
8,500.00	8,486.02	8,545.36	8,485.02	29.96	31.53	-0.35	539.42	-102.29	760.00	699.75	60.25	12.614	
8,600.00	8,586.02	8,645.36	8,585.02	30.31	31.87	-0.35	539.42	-102.29	760.00	699.04	60.96	12.468	
8,700.00	8,686.02	8,745.36	8,685.02	30.67	32.22	-0.35	539.42	-102.29	760.00	698.33	61.67	12.324	
8,800.00	8,786.02	8,845.36	8,785.02	31.02	32.56	-0.35	539.42	-102.29	760.00	697.63	62.38	12.184	
8,900.00	8,886.02	8,945.36	8,885.02	31.37	32.91	-0.35	539.42	-102.29	760.00	696.92	63.09	12.047	
9,000.00	8,986.02	9,045.36	8,985.02	31.73	33.25	-0.35	539.42	-102.29	760.00	696.21	63.80	11.913	
9,100.00	9,086.02	9,145.36	9,085.02	32.08	33.59	-0.35	539.42	-102.29	760.00	695.50	64.51	11.782	
9,200.00	9,186.02	9,245.36	9,185.02	32.43	33.94	-0.35	539.42	-102.29	760.00	694.79	65.22	11.654	
9,300.00	9,286.02	9,345.36	9,285.02	32.78	34.28	-0.35	539.42	-102.29	760.00	694.08	65.93	11.528	
9,400.00	9,386.02	9,445.36	9,385.02	33.14	34.63	-0.35	539.42	-102.29	760.00	693.37	66.64	11.405	
9,500.00	9,486.02	9,545.36	9,485.02	33.49	34.97	-0.35	539.42	-102.29	760.00	692.65	67.35	11.285	
9,600.00	9,586.02	9,645.36	9,585.02	33.85	35.32	-0.35	539.42	-102.29	760.00	691.94	68.06	11.167	
9,700.00	9,686.02	9,745.36	9,685.02	34.20	35.67	-0.35	539.42	-102.29	760.00	691.23	68.77	11.052	
9,800.00	9,786.02	9,845.36	9,785.02	34.55	36.01	-0.35	539.42	-102.29	760.00	690.52	69.48	10.939	
9,900.00	9,886.02	9,945.36	9,885.02	34.91	36.36	-0.35	539.42	-102.29	760.00	689.81	70.19	10.828	
10,000.00	9,986.02	10,045.36	9,985.02	35.26	36.71	-0.35	539.42	-102.29	760.00	689.10	70.90	10.719	
10,100.00	10,086.02	10,145.36	10,085.02	35.62	37.05	-0.35	539.42	-102.29	760.00	688.39	71.61	10.613	
10,200.00	10,186.02	10,245.36	10,185.02	35.97	37.40	-0.35	539.42	-102.29	760.00	687.68	72.32	10.508	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Legacy Directional Drilling
Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Project:	NAD83 Eddy County, NM	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Reference Site:	Phantom Bank 31 Fed	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: Phantom Bank 31 Fed - Phantom Bank 31 Fed 202H - OH - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,300.00	10,286.02	10,345.36	10,285.02	36.32	37.75	-0.35	539.42	-102.29	760.00	686.97	73.04	10.406	
10,400.00	10,386.02	10,445.36	10,385.02	36.68	38.09	-0.35	539.42	-102.29	760.00	686.25	73.75	10.305	
10,500.00	10,486.02	10,545.36	10,485.02	37.03	38.44	-0.35	539.42	-102.29	760.00	685.54	74.46	10.207	
10,600.00	10,586.02	10,645.36	10,585.02	37.39	38.79	-0.35	539.42	-102.29	760.00	684.83	75.17	10.110	
10,700.00	10,686.02	10,745.36	10,685.02	37.74	39.14	-0.35	539.42	-102.29	760.00	684.12	75.88	10.015	
10,800.00	10,786.02	10,845.36	10,785.02	38.10	39.49	-0.35	539.42	-102.29	760.00	683.41	76.59	9.922	
10,900.00	10,886.02	10,945.36	10,885.02	38.45	39.84	-0.35	539.42	-102.29	760.00	682.70	77.31	9.831	
11,000.00	10,986.02	11,045.36	10,985.02	38.81	40.18	-0.35	539.42	-102.29	760.00	681.98	78.02	9.741	
11,100.00	11,086.02	11,145.36	11,085.02	39.16	40.53	-0.35	539.42	-102.29	760.00	681.27	78.73	9.653	
11,200.00	11,186.02	11,245.36	11,185.02	39.52	40.88	-0.35	539.42	-102.29	760.00	680.56	79.44	9.567	
11,300.00	11,286.02	11,345.36	11,285.02	39.87	41.23	-0.35	539.42	-102.29	760.00	679.85	80.16	9.482	
11,400.00	11,386.01	11,445.35	11,385.01	40.23	41.58	89.98	539.42	-102.29	760.00	679.01	80.99	9.384	
11,405.70	11,391.70	11,451.05	11,390.70	40.25	41.60	90.00	539.42	-102.29	760.00	678.97	81.03	9.379	
11,500.00	11,485.08	11,544.49	11,484.15	40.58	41.93	90.91	539.42	-102.30	760.10	678.34	81.76	9.296	
11,600.00	11,580.45	11,646.40	11,585.47	40.95	42.27	92.43	539.37	-111.91	760.72	678.25	82.47	9.224	
11,700.00	11,669.21	11,752.36	11,687.28	41.32	42.62	93.91	539.22	-140.74	761.84	678.66	83.18	9.159	
11,800.00	11,748.68	11,862.64	11,785.71	41.71	42.97	95.29	538.97	-190.08	763.36	679.48	83.88	9.101	
11,900.00	11,816.44	11,977.28	11,876.06	42.13	43.31	96.52	538.60	-260.33	765.07	680.48	84.59	9.045	
12,000.00	11,870.43	12,096.04	11,952.99	42.60	43.70	97.55	538.14	-350.53	766.74	681.39	85.35	8.983	
12,100.00	11,909.00	12,218.32	12,011.05	43.15	44.20	98.31	537.58	-457.88	768.12	681.85	86.27	8.904	
12,200.00	11,931.00	12,343.12	12,045.50	43.79	44.87	98.76	536.97	-577.57	768.99	681.57	87.42	8.796	
12,300.00	11,935.94	12,464.90	12,053.63	44.50	45.66	98.88	536.34	-698.87	769.22	680.37	88.85	8.658	
12,400.00	11,934.56	12,564.90	12,052.32	45.32	46.44	98.88	535.83	-798.86	769.23	678.80	90.42	8.507	
12,500.00	11,933.18	12,664.90	12,051.01	46.25	47.32	98.89	535.31	-898.85	769.24	677.02	92.21	8.342	
12,600.00	11,931.80	12,764.90	12,049.70	47.29	48.31	98.89	534.80	-998.84	769.25	675.03	94.22	8.164	
12,700.00	11,930.42	12,864.90	12,048.39	48.43	49.40	98.90	534.28	-1,098.83	769.26	672.83	96.43	7.978	
12,800.00	11,929.04	12,964.90	12,047.08	49.66	50.58	98.90	533.76	-1,198.82	769.27	670.45	98.82	7.784	
12,900.00	11,927.66	13,064.90	12,045.77	50.98	51.86	98.91	533.25	-1,298.81	769.28	667.89	101.39	7.587	
13,000.00	11,926.28	13,164.90	12,044.47	52.38	53.22	98.91	532.73	-1,398.80	769.29	665.17	104.12	7.389	
13,100.00	11,924.90	13,264.90	12,043.16	53.86	54.65	98.92	532.22	-1,498.79	769.30	662.31	106.99	7.190	
13,200.00	11,923.53	13,364.90	12,041.85	55.40	56.15	98.92	531.70	-1,598.78	769.31	659.30	110.01	6.993	
13,300.00	11,922.15	13,464.90	12,040.54	57.01	57.72	98.93	531.19	-1,698.77	769.32	656.17	113.15	6.799	
13,400.00	11,920.77	13,564.90	12,039.23	58.68	59.34	98.93	530.67	-1,798.76	769.33	652.93	116.41	6.609	
13,500.00	11,919.39	13,664.90	12,037.92	60.39	61.02	98.94	530.15	-1,898.75	769.35	649.58	119.77	6.424	
13,600.00	11,918.01	13,764.90	12,036.61	62.16	62.76	98.94	529.64	-1,998.74	769.36	646.13	123.23	6.243	
13,700.00	11,916.63	13,864.90	12,035.30	63.97	64.53	98.95	529.12	-2,098.73	769.37	642.59	126.78	6.069	
13,800.00	11,915.25	13,964.90	12,033.99	65.82	66.35	98.95	528.61	-2,198.72	769.38	638.97	130.41	5.900	
13,900.00	11,913.87	14,064.90	12,032.68	67.71	68.21	98.96	528.09	-2,298.71	769.39	635.27	134.12	5.737	
14,000.00	11,912.49	14,164.90	12,031.38	69.64	70.11	98.96	527.58	-2,398.70	769.40	631.50	137.90	5.580	
14,100.00	11,911.12	14,264.90	12,030.07	71.59	72.04	98.97	527.06	-2,498.69	769.41	627.67	141.74	5.428	
14,200.00	11,909.74	14,364.90	12,028.76	73.58	73.99	98.97	526.55	-2,598.68	769.42	623.78	145.64	5.283	
14,300.00	11,908.36	14,464.90	12,027.45	75.59	75.98	98.98	526.03	-2,698.67	769.43	619.84	149.59	5.144	
14,400.00	11,906.98	14,564.90	12,026.14	77.62	77.99	98.99	525.51	-2,798.66	769.44	615.85	153.60	5.010	
14,500.00	11,905.60	14,664.90	12,024.83	79.68	80.03	98.99	525.00	-2,898.65	769.45	611.81	157.65	4.881	
14,600.00	11,904.22	14,764.90	12,023.52	81.76	82.09	99.00	524.48	-2,998.64	769.47	607.73	161.74	4.757	
14,700.00	11,902.84	14,864.90	12,022.21	83.86	84.17	99.00	523.97	-3,098.63	769.48	603.60	165.87	4.639	
14,800.00	11,901.46	14,964.90	12,020.90	85.98	86.27	99.01	523.45	-3,198.62	769.49	599.44	170.04	4.525	
14,900.00	11,900.09	15,064.90	12,019.59	88.12	88.39	99.01	522.94	-3,298.61	769.50	595.25	174.25	4.416	
15,000.00	11,898.71	15,164.90	12,018.28	90.27	90.52	99.02	522.42	-3,398.60	769.51	591.03	178.48	4.311	
15,100.00	11,897.33	15,264.90	12,016.98	92.43	92.67	99.02	521.90	-3,498.59	769.52	586.77	182.75	4.211	
15,200.00	11,895.95	15,364.90	12,015.67	94.61	94.83	99.03	521.39	-3,598.58	769.53	582.49	187.04	4.114	
15,300.00	11,894.57	15,464.90	12,014.36	96.80	97.01	99.03	520.87	-3,698.57	769.54	578.19	191.35	4.022	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Legacy Directional Drilling

Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Project:	NAD83 Eddy County, NM	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Reference Site:	Phantom Bank 31 Fed	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: Phantom Bank 31 Fed - Phantom Bank 31 Fed 202H - OH - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,400.00	11,893.19	15,564.90	12,013.05	99.00	99.20	99.04	520.36	-3,798.56	769.55	573.86	195.70	3.932	
15,500.00	11,891.81	15,664.90	12,011.74	101.22	101.40	99.04	519.84	-3,898.55	769.56	569.50	200.06	3.847	
15,600.00	11,890.43	15,764.90	12,010.43	103.44	103.61	99.05	519.33	-3,998.54	769.58	565.13	204.44	3.764	
15,700.00	11,889.05	15,864.90	12,009.12	105.68	105.83	99.05	518.81	-4,098.53	769.59	560.74	208.85	3.685	
15,800.00	11,887.68	15,964.90	12,007.81	107.92	108.06	99.06	518.30	-4,198.52	769.60	556.33	213.27	3.609	
15,900.00	11,886.30	16,064.90	12,006.50	110.17	110.30	99.06	517.78	-4,298.51	769.61	551.90	217.71	3.535	
16,000.00	11,884.92	16,164.90	12,005.19	112.43	112.55	99.07	517.26	-4,398.50	769.62	547.45	222.16	3.464	
16,100.00	11,883.54	16,264.90	12,003.89	114.70	114.81	99.07	516.75	-4,498.49	769.63	542.99	226.64	3.396	
16,200.00	11,882.16	16,364.90	12,002.58	116.97	117.07	99.08	516.23	-4,598.48	769.64	538.52	231.12	3.330	
16,300.00	11,880.78	16,464.90	12,001.27	119.25	119.34	99.08	515.72	-4,698.47	769.65	534.03	235.62	3.267	
16,400.00	11,879.40	16,564.90	11,999.96	121.54	121.62	99.09	515.20	-4,798.46	769.66	529.53	240.13	3.205	
16,500.00	11,878.02	16,664.90	11,998.65	123.83	123.90	99.09	514.69	-4,898.45	769.67	525.02	244.65	3.146	
16,600.00	11,876.64	16,764.90	11,997.34	126.13	126.20	99.10	514.17	-4,998.44	769.69	520.50	249.19	3.089	
16,700.00	11,875.27	16,864.90	11,996.03	128.44	128.49	99.10	513.65	-5,098.43	769.70	515.96	253.73	3.034	
16,800.00	11,873.89	16,964.90	11,994.72	130.75	130.79	99.11	513.14	-5,198.42	769.71	511.42	258.29	2.980	
16,900.00	11,872.51	17,064.90	11,993.41	133.06	133.10	99.11	512.62	-5,298.41	769.72	506.87	262.85	2.928	
17,000.00	11,871.13	17,164.90	11,992.10	135.38	135.41	99.12	512.11	-5,398.40	769.73	502.31	267.42	2.878	
17,000.05	11,871.13	17,164.95	11,992.10	135.38	135.41	99.12	512.11	-5,398.45	769.73	502.30	267.43	2.878	
17,009.46	11,871.00	17,172.81	11,992.00	135.60	135.59	99.12	512.07	-5,406.31	769.73	501.91	267.83	2.874	

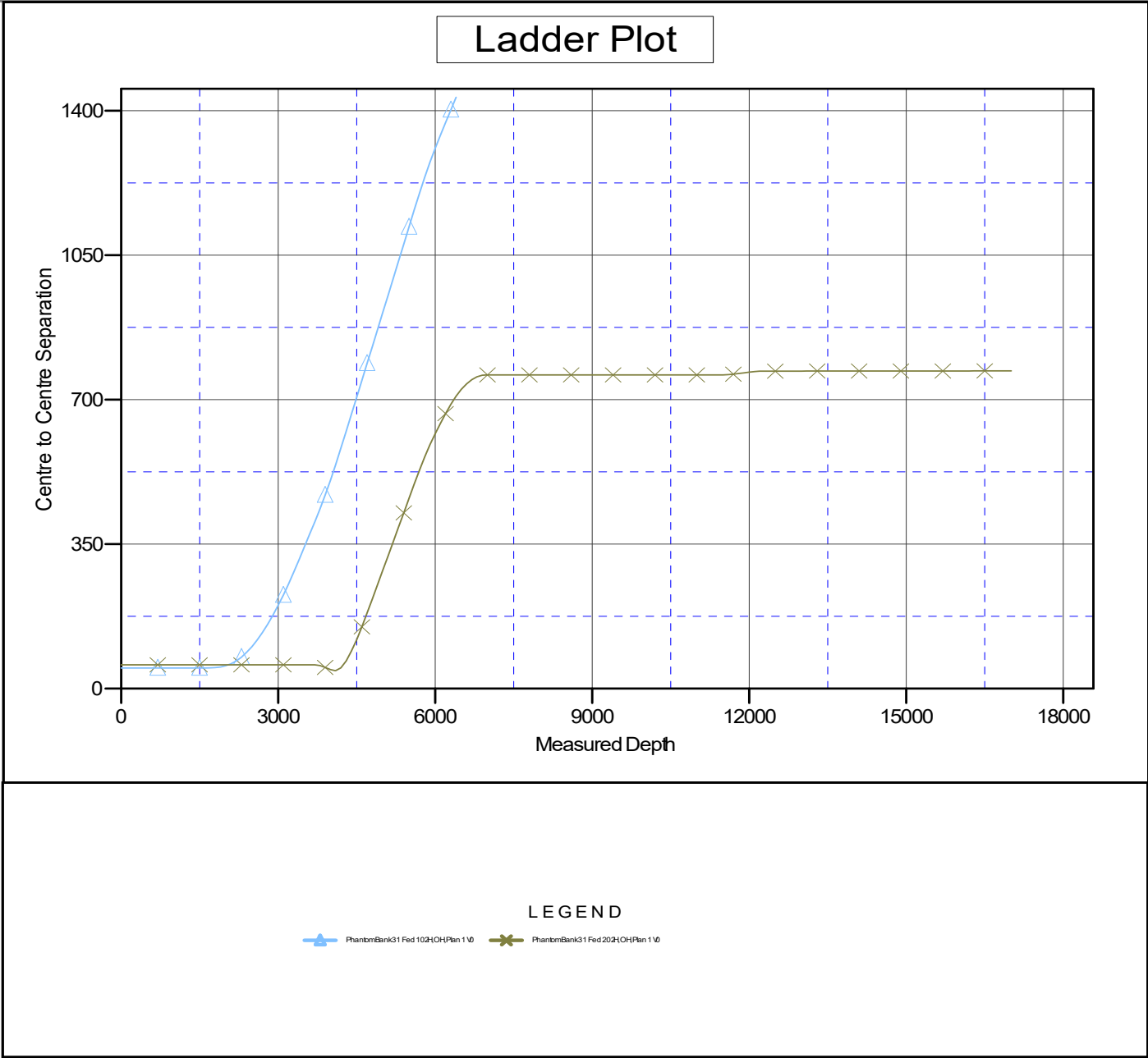
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Legacy Directional Drilling
Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Project:	NAD83 Eddy County, NM	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Reference Site:	Phantom Bank 31 Fed	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL 3115 + 26.5' KB @ 3141.50usft (H
Offset Depths are relative to Offset Datum
Central Meridian is -104.33333334

Coordinates are relative to: Phantom Bank 313 Fed Com 505H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.28°



Legacy Directional Drilling

Anticollision Report

Company:	Freedom Energy	Local Co-ordinate Reference:	Well Phantom Bank 313 Fed Com 505H
Project:	NAD83 Eddy County, NM	TVD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Reference Site:	Phantom Bank 31 Fed	MD Reference:	GL 3115 + 26.5' KB @ 3141.50usft (H&P 651)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Phantom Bank 313 Fed Com 505H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM_WA
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL 3115 + 26.5' KB @ 3141.50usft (H

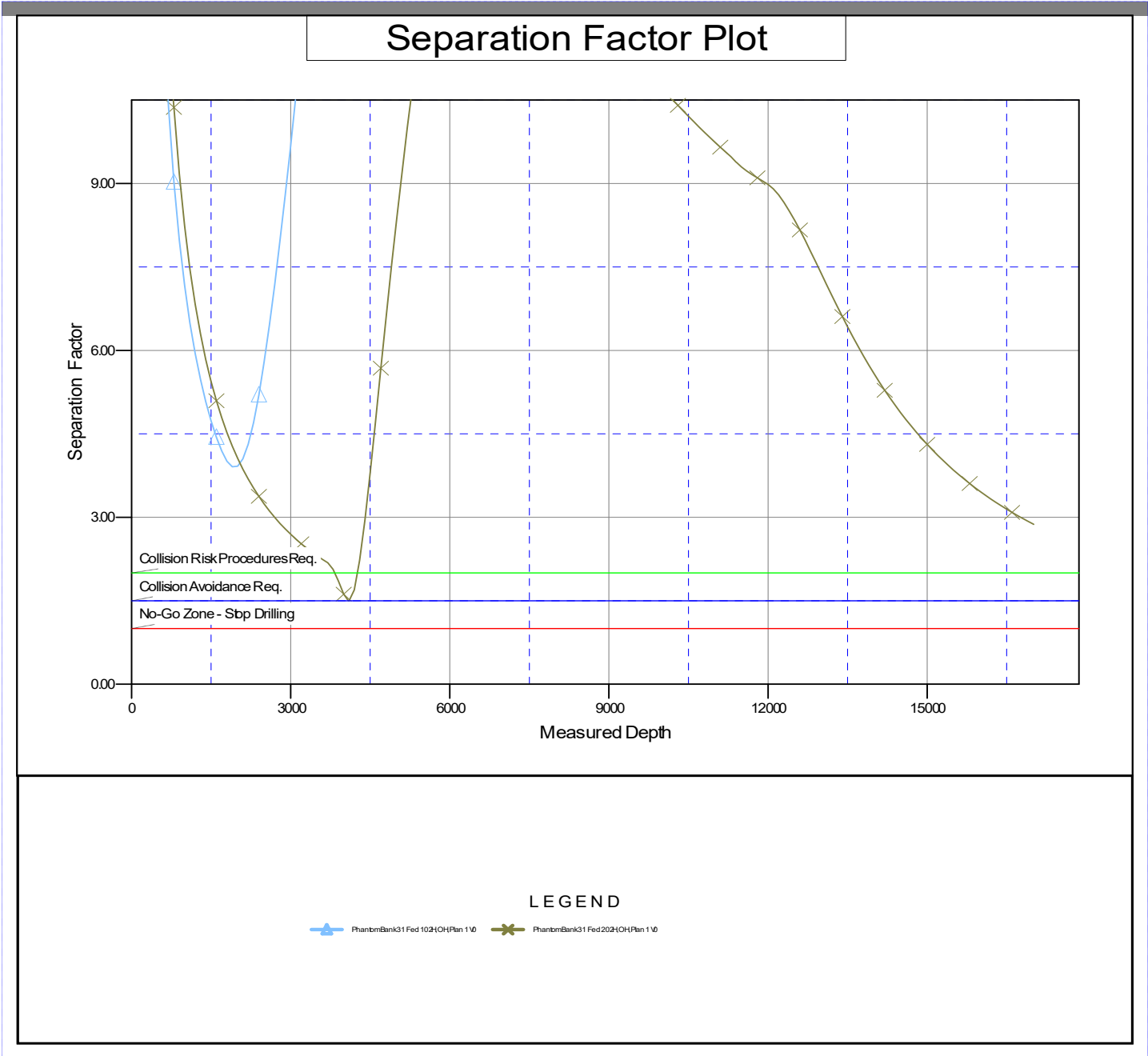
Offset Depths are relative to Offset Datum

Central Meridian is -104.33333334

Coordinates are relative to: Phantom Bank 313 Fed Com 505H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.28°



Well Control Plan:**A. Component and Preventer Compatibility Table**

The table below, which covers the drilling and casing of the 10M MASP portion of the well, outlines the tubulars and the compatible preventers in use. This table, combined with the mud program, documents that two barriers to flow can be always maintained, independent of the rating of the annular preventer.

Component	OD	Preventer	RWP
Drill pipe	4.5"	Fixed lower 4.5" Upper 4.5-7" VBR	10M
HWDP	4.5"	Fixed lower 4.5" Upper 4.5-7" VBR	10M
Jars	4.5"	Fixed lower 5" Upper 4.5-7" VBR	10M
Drill collars and MWD tools	4.5-4.75"	Upper 4.5-7" VBR	10M
Mud Motor	5.0"	Upper 4.5-7" VBR	10M
Production casing	5.5"	Upper 4.5-7" VBR	10M
ALL	0-13-5/8"	Annular	5M
Open hole	-	Blind Rams	10M

6-3/4" Production hole section, 10M requirement

VBR = Variable Bore Ram. Compatible range listed in chart.

HWDP = Heavy Weight Drill Pipe

MWD = Measurement While Drilling

B. Well Control Procedures

Below are the actions and steps that will be taken in a well control situation. The topics covered are tripping, shut in while drilling, running casing, no pipe in hole, and BHA handling. In no situation will the RWP (rated working pressure) be exceeded in any operation. The operator may choose an operating pressure less than or equal to RWP.

- A minimum of one well control drill per week and it must be recorded in the daily drilling log.
- Well control plan will be available and posted at multiple locations on the rig for review.

General Procedure While Drilling

1. Sound alarm (alert crew).
2. Space out drill string.
3. Shut down pumps (stop pumps and rotary).
4. Shut-in Well (uppermost applicable BOP, typically the annular preventer first. The Hydraulic Control Remote (HCR) valve and choke will already be in the closed position).
5. Confirm shut in.

6. Notify tool pusher/company representative.
7. Read and record the following:
 - a. SIDDP and SICP
 - b. Pit gain
 - c. Time
8. Regroup and identify forward plan.
9. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to the upper pipe ram.

General Procedure While Tripping

1. Sound alarm (alert crew).
2. Stab full opening safety valve and close.
3. Space out drill string.
4. Shut-in (uppermost applicable BOP, typically annular preventer first. The HCR and choke will already be in the closed position).
5. Confirm shut in.
6. Notify tool pusher/company representative.
7. Read and record the following:
 - a. SIDPP and SICP
 - b. Pit gain
 - c. Time
 - d. Regroup and identify forward plan.
 - e. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to the upper pipe ram.

General Procedure While Running Casing

1. Sound alarm (alert crew).
2. Stab crossover and full opening safety valve and close.
3. Space out string.
4. Shut-in (uppermost applicable BOP, typically annular preventer first. The HCR and choke will already be in the closed position).
5. Confirm shut in.
6. Notify tool pusher/company representative.
7. Read and record the following:
 - a. SIDPP and SICP
 - b. Pit gain
 - c. Time
 - d. Regroup and identify forward plan.
 - e. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to compatible pipe ram.

General Procedure with No Pipe in Hole (Open Hole)

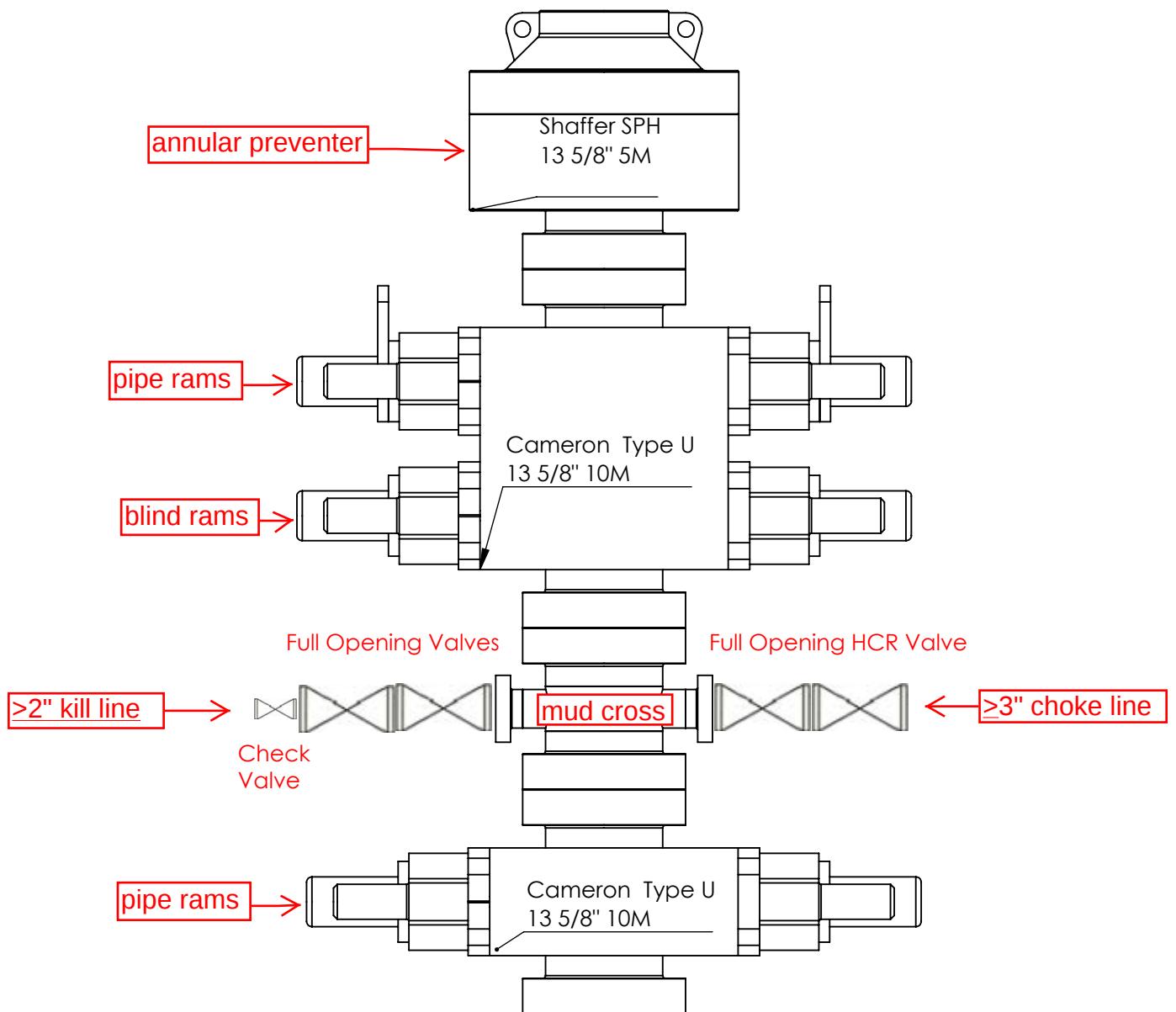
1. Sound alarm (alert crew).
2. Shut-in with blind rams or BSR. (The HCR and choke will already be in the closed position).

3. Confirm shut in.
4. Notify tool pusher/company representative.
5. Read and record the following:
 - a. SICP
 - b. Pit gain
 - c. Time
6. Regroup and identify forward plan.

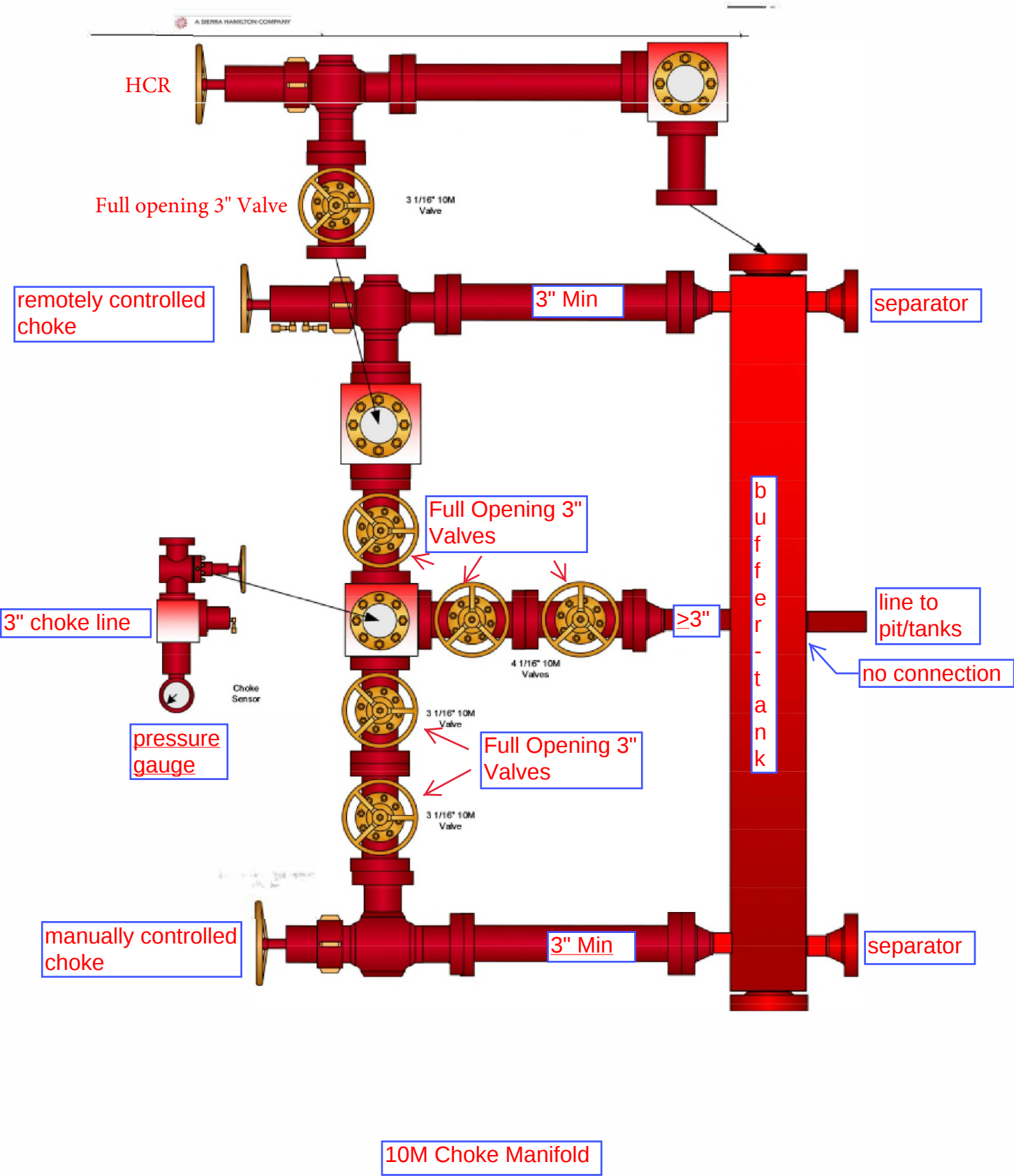
General Procedures While Pulling BHA thru Stack

1. PRIOR to pulling the last joint of drill pipe thru the stack.
 - a. Perform flow check, if flowing:
 - b. Sound alarm (alert crew).
 - c. Stab full opening safety valve and close.
 - d. Space out drill string with tool joint just beneath the upper pipe ram.
 - e. Shut-in using upper pipe ram. (The HCR and choke will already be in the closed position).
 - f. Confirm shut in.
 - g. Notify tool pusher/company representative.
 - h. Read and record the following:
 - i. SIDPP and SICP
 - ii. Pit gain
 - iii. Time
 - i. Regroup and identify forward plan
2. With BHA in the stack and compatible ram preventer and pipe combo immediately available.
 - a. Sound alarm (alert crew).
 - b. Stab crossover and full opening safety valve and close
 - c. Space out drill string with upset just beneath the compatible pipe ram.
 - d. Shut-in using compatible pipe ram. (The HCR and choke will already be in the closed position.)
 - e. Confirm shut in.
 - f. Notify tool pusher/company representative
 - g. Read and record the following:
 - i. SIDPP and SICP
 - ii. Pit gain
 - iii. Time
 - h. Regroup and identify forward plan
3. With BHA in the stack and NO compatible ram preventer and pipe combo immediately available.
 - a. Sound alarm (alert crew).
 - b. If possible to pick up high enough, pull string clear of the stack and follow "Open Hole" scenario.

- c. If impossible to pick up high enough to pull the string clear of the stack, stab crossover, make up one joint/stand of drill pipe, and full opening safety valve and close.
- d. Space out drill string with tool joint just beneath the upper pipe ram.
- e. Shut in using the upper pipe ram (the HCR and choke will already be in the closed position).
- f. Confirm shut in.
- g. Notify tool pusher/company representative.
- h. Read and record the following:
 - a. SIDPP and SICP
 - b. Pit gain
 - c. Time
- i. Regroup and identify forward plan



13-5/8" 10M Cameron Full Stack





ContiTech Fluid Technology

ContiTech Oil & Marine Corp. # 11535 Brittmoore Park Dr., Houston, TX 77041-6916 USA CONSIGNEE / Ship-to address: HELMERICH & PAYNE INT'L DRILLING CO 210 Magnolia Drive Galena Park TX 77547		Packing list / Delivery note Document No. 72502468 Document Date 28.12.2023 Customer Number 11697 Customer VAT No. Supplier Number Purchase Order No. 740474580 Purchase Order Date 07.11.2023 Sales Order Number 1564028 Sales Order Date 07.11.2023 Unloading Point RAN-No.	
Buyer: HELMERICH & PAYNE INT'L DRILLING CO 1437 SOUTH BOULDER 74119 TULSA		Page 1 of 2 Weights (Gross / Net) Total Gross Weight 2,606.000 LB Total Net Weight 2,606.000 LB	
Conditions Incoterms EXW Houston Ex Works			

Item	Material/Description	Quantity	Net Weight	Gross Weight
	Name: Jack Wayne Peebles Email: Jackie.Peebles@hpinc.com Telephone: 832-782-6800 Rig/ Warehouse: HOW			
10	00RECERTIFY Recert of HP Hoses Serial# 60193 Commodity Code: 3" X 35 FT 10K Choke & Kill Hoses API 16C SN60193 End A: 4 - 1/16" 10K API Flange End B: 4 - 1/16" 10K API Flange c/w BX155 ring groove each end Standard: API Spec 16C - Monogrammed Working Pressure: 10,000psi Test Pressure: 15,000psi Inspection & Certification includes: SHIPPING CRATE 114" x 31" x 114" OD Included External inspection of the hose & couplings Internal boroscopic inspection of hose liner Hydrostatic pressure test of hose assembly Repair of any external damage to hose body and end connections (limited to minor repairs). Clean & protect end connections Inspection Report Disposal of hose assembly if hose fails inspection and recertification process	1 PC	2,606.000 LB	2,606.000 LB

RECEIVED
H&P HOUSTON WHSE
DEC 21 2023
SUBJECT TO COUNT
AND INSPECTION

ContiTech Oil & Marine Corp.
 11535 Brittmoore Park Drive
 Houston, TX 77041
 USA

Phone: (832)-327-0141
 Fax: (832)-327-0148
 www.contitech-oil-gas.com
 US Tax ID: 22-3088345
 EU Community VAT: HU26958817
 HU Tax ID: 26958817-2-51

Managing Director
 (President)
 Jeremy McKay

Bank: Bank of America, N.A.,
 100 North Tryon Street, Charlotte, NC 28255
 Account #: 4451331049
 Routing # (ACH/EFT): 111000012
 Routing # (Dom. Wires): 026009593
 SWIFT #: BOFAUS3N



ContiTech Fluid Technology

Conditions		Packing list / Delivery note	
Incoterms	EXW Houston Ex Works	Delivery no.	72502468
		Document Date	12/28/2023
		Page 2 of 2	
Please flush hoses before sending them to our facility. SHIPPING CRATE 114" x 31" x 114" OD Included Name: Jack Wayne Peebles Email: Jackie.Peebles@hpinc.com Telephone: 832-782-6800 Rig/ Warehouse: HOW			
Packages			
Quantity	Packaging	Material	Packed Quantity
1	114"X31"X114" -Wooden crate	00RECERTIFY	1
Package number 172133063			

ContiTech Oil & Marine Corp
11535 Brittmoores Park Drive
Houston, TX 77041
USA

Phone: (832)-327-0141
Fax: (832)-327-0148
www.contitech-oil-gas.com
US Tax ID: 22-3088345
EU Community VAT: HU26958817
HU Tax ID: 26958817-2-51

Managing Director
(President)
Jeremy McKay

Bank: Bank of America, N.A.,
100 North Tryon Street, Charlotte, NC 28255
Account #: 4451331049
Routing # (ACH/EFT): 111000012
Routing # (Dom. Wires): 026009593
SWIFT #: BOFAUS3N



Certificate of Conformity

ContiTech

Certificate Number H100317	COM Order Reference 1564028	Customer Name & Address HELMERICH & PAYNE DRILLING CO 1434 SOUTH BOULDER AVE TULSA, OK 74119 USA	
Customer Purchase Order No: 740474580			
Project:			
Test Center Address ContiTech Oil & Marine Corp. 11535 Brittmoore Park Drive Houston, TX 77041 USA	Accepted by COM Inspection Signed: Bonita Simonds Date: 12/18/23	Accepted by Client Inspection	

We certify that the items detailed below meet the requirements of the customer's Purchase Order referenced above, and are in conformance with the specifications given below.

Item	Part No.	Description	Qty	Serial Number	Specifications
10	RECERTIFICATION	3" ID 10Kpsi Choke and Kill Hose x 35ft OAL	1	60193	ContiTech Standard



Hydrostatic Test Certificate

ContiTech

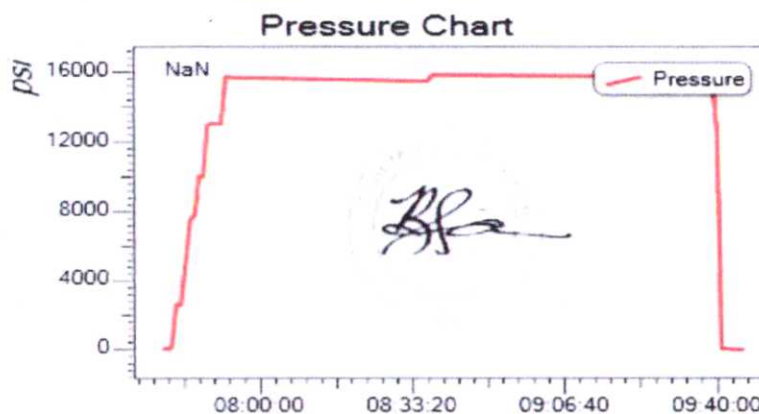
Certificate Number H100317	COM Order Reference 1564028	Customer Name & Address HELMERICH & PAYNE DRILLING CO 1434 SOUTH BOULDER AVE TULSA, OK 74119 USA
Customer Purchase Order No: 740474580		
Project:		
Test Center Address ContiTech Oil & Marine Corp. 11535 Brittmoore Park Drive Houston, TX 77041 USA	Accepted by COM Inspection Signed: Bonita Simonds Date: 12/18/23	Accepted by Client Inspection

We certify that the goods detailed hereon have been inspected as described below by our Quality Management System, and to the best of our knowledge are found to conform the requirements of the above referenced purchase order as issued to ContiTech Oil & Marine Corporation.

Item	Part No.	Description	Qty	Serial Number	Work. Press. (psi)	Test Press. (psi)	Test Time (minutes)
10	RECERTIFICATION	3" ID 10Kpsi Choke and Kill Hose x 35ft OAL	1	60193	10,000	15,000	60

Record Information	
Start Time	10/31/2023 07:38:38
End Time	10/31/2023 09:45:47
Interval	00:01:00
Number	128
MaxValue	16068
MinValue	-6
AvgValue	14085
RecordName	60193-JT
RecordNumber	21

Gauge Information	
Model	ADT680
SN	21817380014
Range	(0-40000)psi
Unit	psi



(1) Ship to party HELMERICH & PAYNE INT'L DRILLING CO 210 Magnolia Drive Galena Park TX 77547		(2) Unloading point - storage location - usage	
(3) Delivery note no. 72502468 		(4) Vendor address (short name, plant, ZIP, city) ContiTech Oil & Marine Corp. 11535 Brittmoore Park Drive Houston TX 77041-6916	
(8) Supplier ref. no. 00RECERTIFY 			
(9) Quantity 1 		(5) Net weight 2,606 LB	(6) Gross weight 2,606 LB
(12) ContiTech Sales order no. 1564028 		(7) Number of packages 1	
(10) Description of delivery, service Recert of HP Hoses Serial# 60193			
(13) Packing date 12/28/23		(14) Engineering change status	
(15) Package no. 172133063 		(16) Customer PO no. 740474580 	

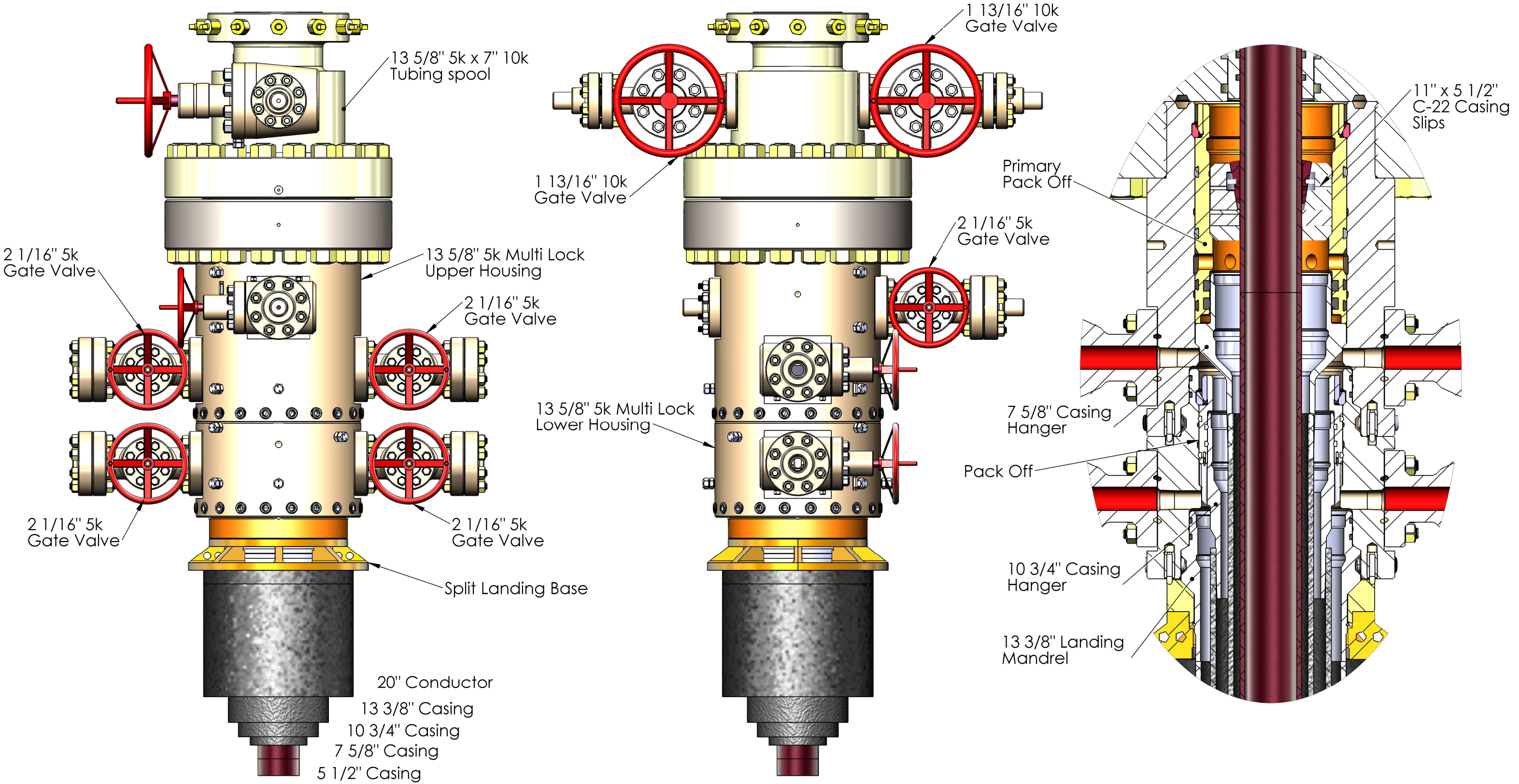
Material label VDA 4902 Vers. 4

Sender/Vendor ContiTech Oil & Marine Corp. 11535 Brittmoore Park Drive 77041-6916 Houston		Vendor-no. 		Recipient 	
Loading point 3301 / CT O&M Corp Houston		Date 12-19-2023		Relation-no. 	
Sending-/loading-ref.number 32895026		Shipping carrier EIPS#1885614		Carrier-no. 	
Recipient Cust.-no. 11697 HELMERICH & PAYNE INT'L DRILLING CO 210 Magnolia Drive GALENA PARK TX 77547 USA		Incoming date 		Incoming time 	
Deliv./Uploading point 		Sender comment for the shipping carrier 			
Delivery-note-no. Packaging number 72502468 172133063	Quan. 	Packaging 114"X31"X114"	S 	Contents Recert of HP Hoses Serial# 60193	Net-weight LB 1182
Gross-weight LB 1,182					
Total:		1	Volume / working width approx		Total: 2606 2,606
Prepayment of charges Ex Works					
Sales order no. / PO no. SO: 1564028 / PO: 740474580		Cust. order number 740474580		Acctt assignmt 	
Driver's confirmation of reception Shipment above complete and in Taken over in correct state. Date Time Signature		Means of transp. no. Truck code Disp. type Truck (Subco)		Acknowledgmt of receipt of the gds recipient: Shipment above complete and in Received in correct state. Company stamp/signature RECEIVED H&P HOUSTON WHSE DEC 20 2023 SUBJECT TO COUNT AND INSPECTION	
Vendor-no.		Sending-/Loading-Ref.number			





13 5/8" 5k Multi-Lock 4X Wellhead System



Phantom Bank 31 Federal 102H Casing Design Worksheet

Casing	13-3/8" 54.5#, J55, BTC	10-3/4" 45.5#, J-55, BTC	7-5/8" 29.7#, P-110HC BTC	5-1/2" 20#, P-110 HP, TCBC-HT	5-1/2" 20#, P-110 HP, TCBC-HT
	14.375" OD Coupling	11.25" OD Coupling	8.5" OD Coupling	5.9" OD Coupling	5.9" OD Coupling
Collapse, psi	1130	2090	6700	14360	14360
Internal Yield Pressure, psi	2730	3580	9460	12770	12770
Body Yield, lbs.	853000	715000	940000	729000	729000
Joint Strength, lbs.	909000	796000	960000	656000	656000
<u>Collapse Load</u>	<u>Surface</u>	<u>Intermediate 1</u>	<u>Intermediate 2</u>	<u>Production Top</u>	<u>Production Bottom</u>
Depth, feet	950	3700	11216	11935	11935
Mud Weight, ppg	8.8	10	9.2	13	13
Pressure, psi	434.7	1924	5366	8068	8068
Design Safety Factor	2.6	1.1	1.2	1.8	1.8
<u>Burst Load</u>					
Depth, feet	950	3700	11216	11935	11935
Mud Weight, ppg	8.8	10	9.2	13	13
Pressure, psi	434.7	1924	5365.7	8068	8068
Design Safety Factor	6.3	1.9	1.8	1.6	1.6
<u>Body Tensile</u>					
Depth, feet	950	3700	11216	11935	Horizontal
Pipe Weight, ppf	54.5	45.5	29.7	20	
String Weight, lbs.	51775	168350	333115	238700	
Design Safety Factor	16.5	4.2	2.8	3.1	
<u>Joint Tensile</u>					
Depth, feet	950	3700	11216	11935	Horizontal
Pipe Weight, ppf	54.5	45.5	29.7	20	
String Weight, lbs.	51775	168350	333115	238700	
Design Safety Factor	17.6	4.7	2.9	2.7	



API BTC -Special Clearance

Coupling	Pipe Body
Grade: J55 (Casing)	Grade: J55 (Casing)
Body: Bright Green	1st Band: Bright Green
1st Band: White	2nd Band: -
2nd Band: -	3rd Band: -
3rd Band: -	4th Band: -

Outside Diameter	10.750 in.	Wall Thickness	0.400 in.	Grade	J55 (Casing)
Min. Wall Thickness	87.50 %	Pipe Body Drift	API Standard	Type	Casing
Connection OD Option	Special Clearance				

Pipe Body Data

Geometry			Performance		
Nominal OD	10.750 in.	Drift	9.794 in.	SMYS	55,000 psi
Wall Thickness	0.400 in.	Plain End Weight	44.26 lb/ft	Min UTS	75,000 psi
Nominal Weight	45.500 lb/ft	OD Tolerance	API	Body Yield Strength	715 x1000 lb
Nominal ID	9.950 in.			Min. Internal Yield Pressure	3580 psi
				Collapse Pressure	2090 psi
				Max. Allowed Bending	23 °/100 ft

Connection Data

Geometry		Performance	
Thread per In	5	Joint Strength	796 x1000 lb
Connection OD	11.250 in.	Coupling Face Load	329 x1000 lb
Hand Tight Stand Off	1 in.	Internal Pressure Capacity	3290 psi

Notes

For products according to API Standards 5CT & 5B; Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.
Tenaris has issued this document for general information only, and the information in this document, including, without limitation, any pictures, drawings or designs ("Information") is not intended to constitute professional or any other type of advice or recommendation and is provided on an "as is" basis. No warranty is given. Tenaris has not independently verified any information—if any- provided by the user in connection with, or for the purpose of, the Information contained hereunder. The use of the Information is at user's own risk and Tenaris does not assume any responsibility or liability of any kind for any loss, damage or injury resulting from, or in connection with any Information contained hereunder or any use thereof. The Information in this document is subject to change or modification without notice. Tenaris's products and services are subject to Tenaris's standard terms and conditions or otherwise to the terms resulting from the respective contracts of sale or services, as the case may be, between petitioner and Tenaris. For more complete information please contact a Tenaris's representative or visit our website at www.tenaris.com . ©Tenaris 2022. All rights reserved.



Houston International Specialty Inc.

Size	5.5
Grade	P110
Weight	20

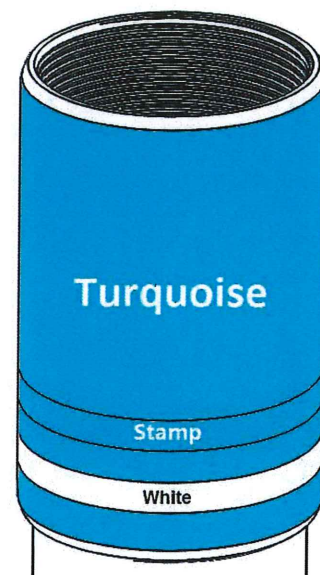
TCBC-HT

Coupling and Pipe Dimensions (in)						
Coupling	Outer Diameter	Inner Diameter	Coupling Length	Make-up Loss	Wall Thickness	Drift Diameter
Pipe	6.300	5.410	8.250	4.125	0.361	4.653
Pin		4.778				

Torque Values (ft-lbs)				
Field End Make-Up			Max. Working Torque ¹	Yield Torque
Minimum	Optimum ²	Maximum		
10,000	13,500	18,500	22,250	25,200

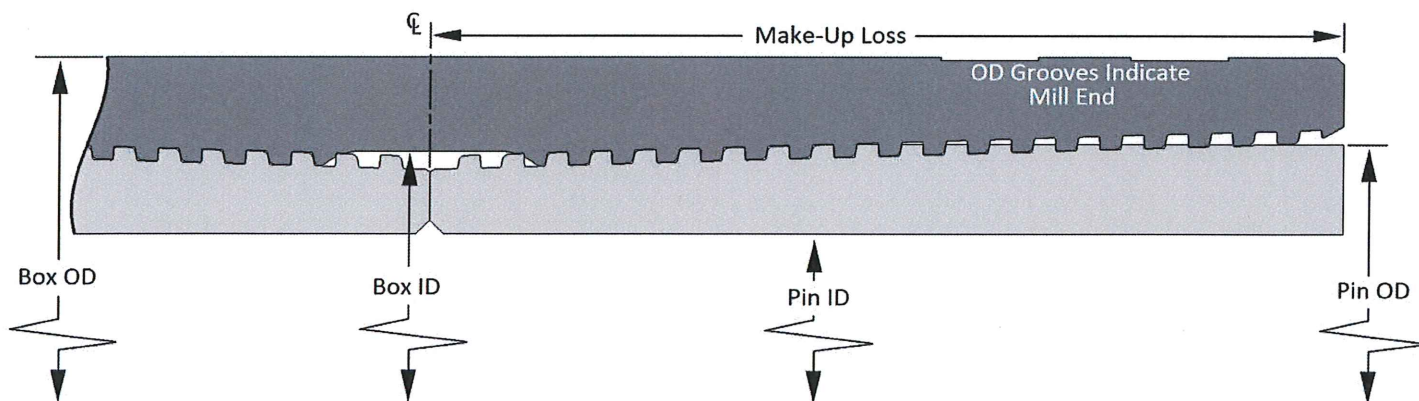
Yield Stress (x1000 lbs.)	
Tensile	Compressive
641	641

Maximum Pressure (psi)	
Internal	External
12,640	11,100



¹ Max. Working Torque value is not to be exceeded during operation.

² If Optimum Torque does not meet the Base of Triangle Stamp, M/U to the Base of Triangle.



*Data are for information purposes only. Though HIS has made efforts to ensure accuracy, HIS makes no warranty for loss or damage due to its use.

rev E

19996 Hickory Twig Way Spring, TX 77388
Phone: (281) 602-7550
Fax: (281) 602-7557

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

CONDITIONS

Action 411769

CONDITIONS

Operator: Flat Creek Resources, LLC 777 Main St. Fort Worth, TX 76102	OGRID: 374034
	Action Number: 411769
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing.	4/29/2025
ward.rikala	If cement is not circulated to surface during cementing operations, a Cement Bond Log (CBL) is required.	4/29/2025
ward.rikala	Any previous COA's not addressed within the updated COA's still apply.	4/29/2025