

Form 3160-3
(June 2015)FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No. NMNM070200 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No. ASTEROID 20-29 FED COM WCA 4H
2. Name of Operator CHISHOLM ENERGY OPERATING LLC		9. API Well No. 30 015 48209 Pruple Sage Wolfcamp
3a. Address 801 Cherry St., Suite 1200 Unit 20 Fort Worth TX 76102	3b. Phone No. (include area code) (817)469-1104	10. Field and Pool, or Exploratory WC015G04S23268M / BONE SPRING
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface LOT A / 120 FNL / 1300 FEL / LAT 32.296558 / LONG -104.311176 At proposed prod. zone LOT P / 330 FSL / 500 FEL / LAT 32.26877 / LONG -104.308504		11. Sec., T. R. M. or Blk. and Survey or Area SEC 20 / T23S / R26E / NMP
14. Distance in miles and direction from nearest town or post office* 3 miles		12. County or Parish EDDY
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 120 feet	16. No of acres in lease	17. Spacing Unit dedicated to this well 640
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 30 feet	19. Proposed Depth 8635 feet / 18657 feet	20. BLM/BIA Bond No. in file FED: NMB001468
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3386 feet	22. Approximate date work will start* 02/01/2020	23. Estimated duration 30 days
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- | | |
|---|---|
| 1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM. |
|---|---|

25. Signature (Electronic Submission)	Name (Printed/Typed)	Date
Title	Cody Layton / Ph: (575)234-5959	07/16/2019
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed)	Date
Title Assistant Field Manager Lands & Minerals	Office CARLSBAD	04/16/2021

Application approval 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.
 Conditions of approval, if any, are attached.

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.



(Continued on page 2)

*(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

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30 015 48209	² Pool Code 98220	³ Pool Name PURPLE SAGE; WOLFCAMP
⁴ Property Code 325385	⁵ Property Name ASTEROID 20-29 FED COM WCA	⁶ Well Number 4H
⁷ OGRID No. 372137	⁸ Operator Name CHISHOLM ENERGY OPERATING, LLC	⁹ Elevation 3386.2

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
A	20	23 S	26 E		120	NORTH	1300	EAST	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
P	29	23 S	26 E		330	SOUTH	500	EAST	EDDY

¹² Dedicated Acres 640	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

<p>NMSP EAST (FT) N = 471733.80 E = 544118.64</p> <p>NMSP EAST (FT) N = 471738.57 E = 546799.97</p> <p>NMSP EAST (FT) N = 471743.64 E = 549483.02</p> <p>ASTEROID 20-29 FED COM WCA 4H ELEV. = 3386.2' LAT. = 32.2965583°N (NAD83) LONG. = 104.3111761°W NMSP EAST (FT) N = 471621.19 E = 548183.76</p> <p>Lat.=32.28963 Long.=104.308227 400 FEL 2640 FNL</p> <p>NMSP EAST (FT) N = 466407.57 E = 544152.07</p> <p>NMSP EAST (FT) N = 466437.61 E = 546828.79</p> <p>NMSP EAST (FT) N = 466468.32 E = 549504.75</p> <p>NMSP EAST (FT) N = 461139.82 E = 546847.05</p> <p>NMSP EAST (FT) N = 461192.40 E = 549511.96</p> <p>NOT FOUND SCALED</p>	<p>¹⁷ OPERATOR CERTIFICATION</p> <p>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.</p> <p><i>Jennifer Elrod</i> 7/16/19 Signature Date</p> <p>Jennifer Elrod Printed Name</p> <p>jelrod@chisholmenergy.com E-mail Address</p> <p>¹⁸ SURVEYOR CERTIFICATION</p> <p>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.</p> <p>JUNE 11, 2019 Date of Survey</p> <p><i>FILMON F. JARAMILLO</i> Signature and Seal of Professional Surveyor</p> <p>Certificate Number: FILMON F. JARAMILLO, PLS 12797 SURVEY NO. 7323</p>
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Intent ☒ As Drilled ☐

API #

Operator Name: CHISHOLM ENERGY OPERATING, LLC	Property Name: ASTEROID 20-29 FED COM WCA	Well Number 4H
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Kick Off Point (KOP)

UL A	Section 20	Township 23S	Range 26E	Lot	Feet 120	From N/S NORTH	Feet 1300	From E/W EAST	County EDDY
Latitude 32.2965583					Longitude 104.3111761				NAD 83

First Take Point (FTP)

UL A	Section 20	Township 23S	Range 26E	Lot	Feet 330	From N/S NORTH	Feet 500	From E/W EAST	County EDDY
Latitude 32.2959849					Longitude 104.3085846				NAD 83

Last Take Point (LTP)

UL P	Section 29	Township 23S	Range 26E	Lot	Feet 330	From N/S SOUTH	Feet 500	From E/W EAST	County EDDY
Latitude 32.2687700					Longitude 104.3085040				NAD 83

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

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

API #
30-015-45877

Operator Name: CHISHOLM ENERGY OPERATING,LLC	Property Name: ASTEROID 20-29 FED COM WCA	Well Number 2H
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KZ 06/29/2018

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

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: 07/16/2019

☒ Original

Operator & OGRID No.: Chisholm Energy Operating, LLC/372137

☐ Amended - Reason for Amendment: _____

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

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

Well(s)/Production Facility – Name of facility

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

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
ASTEROID 20-29 FED COM WCA 4H	015-	A-20-23S-26E	120 FNL 1300 FEL	1900	FLARED	PIPELINE IN PLACE; FLARE ONLY WHEN NEEDED

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to LUCID and will be connected to LUCID low/high pressure gathering system located in EDDY County, New Mexico. It will require FLOWLINES to connect the facility to low/high pressure gathering system. Chisholm Energy Operating, LLC provides (periodically) to LUCID a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Chisholm Energy Operating, LLC and LUCID have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at LUCID Processing Plant located in Sec. 13, Twn. 24S, Rng. 33E, EDDY County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

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

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

Alternatives to Reduce Flaring

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

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

Operator Name: CHISHOLM ENERGY OPERATING LLC**Well Name:** ASTEROID 20-29 FED COM WCA**Well Number:** 4H**Section 3 - Casing**

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	420	0	420			420	J-55	48	ST&C	3.85	12.33	BUOY	18.45	BUOY	24.82
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	1900	0	1900			1900	J-55	36	ST&C	3.01	3.49	BUOY	9.77	BUOY	9.77
3	PRODUCTION	8.75	5.5	NEW	API	N	0	18657	0	8635			18657	P-110	20	BUTT	2.86	2.96	BUOY	4.34	BUOY	4.34

Casing Attachments**Casing ID:** 1 **String Type:** SURFACE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**

Casing_Calculator_20190716141725.xlsx

Operator Name: CHISHOLM ENERGY OPERATING LLC**Well Name:** ASTEROID 20-29 FED COM WCA**Well Number:** 4H**Casing Attachments****Casing ID:** 2 **String Type:** INTERMEDIATE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**

Casing_Calculator_20190716141716.xlsx

Casing ID: 3 **String Type:** PRODUCTION**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**

Casing_Calculator_20190716141707.xlsx

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	420	455	1.24	14.8	564	85	Class C Premium Plus	Cellophane Flakes

INTERMEDIATE	Lead		0	1550	560	2.28	11.5	1277	150	Class C Premium Plus	Sodium Metasilicate, Defoamer, KCL, Kol-Seal, Cellophane Flakes, ROF SealCheck
INTERMEDIATE	Tail		1550	1900	300	1.33	14.8	399	150	Class C Premium Plus	NA

Operator Name: CHISHOLM ENERGY OPERATING LLC**Well Name:** ASTEROID 20-29 FED COM WCA**Well Number:** 4H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Lead		0	7900	875	2.28	11.5	1995	10	Liteweight	Fluid Loss, Expanding Agent, Retarder, Defoamer, Dispersant, Extender, Viscosifier
PRODUCTION	Tail		7900	18657	2305	1.18	14.5	2720	10	Class H Premium	Extender, Fluid Loss, Retarder, Defoamer, Dispersant

Section 5 - Circulating Medium

Mud System Type: Closed**Will an air or gas system be Used?** NO**Description of the equipment for the circulating system in accordance with Onshore Order #2:****Diagram of the equipment for the circulating system in accordance with Onshore Order #2:****Describe what will be on location to control well or mitigate other conditions:** Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times**Describe the mud monitoring system utilized:** PVT, Pason/CanRig, Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	420	WATER-BASED MUD	8.4	8.6							
420	1900	SALT SATURATED	9.8	10.1							
1900	19086	OIL-BASED MUD	9	9.5							

Casing Program: Lea South 1BS/2BS/3BS/UWC (13 3/8" x 9 5/8" x 5 1/2")

Open Hole Size (Inches)	Casing Depth; From (ft)	Casing Setting Depth (ft) MD	Casing Setting Depth (ft) TVD	Casing Size (inches)	Casing Weight (lb/ft)	Casing Grade	Thread	Condition	Anticipated Mud Weight (ppg)	Burst (psi)	Burst SF (1.125)	Collapse (psi)	Collapse SF (1.125)	Tension (klbs)	Air Weight (lbs)	Bouyant Weight (lbs)	Tension SF (1.8)
Surface																	
17.5"	0'	1,850'	1,850'	13 3/8"	54.5	J-55	STC	New	8.4	2740	3.39	1130	1.40	514,000	100,825	87,883	5.85
Intermediate																	
12.25"	0'	5,350'	5,350'	9 5/8"	40	J-55	LTC	New	10.2	3950	1.39	2570	1.36	452,000	214,000	180,644	2.50
Production																	
8.75"	0'	16,030'	9,210'	5 1/2"	17	P-110	BTC	New	10.5	10640	2.12	7480	1.49	568,000	156,570	131,448	4.32

Casing Design Criteria and Casing Loading Assumptions:	
<u>Surface</u>	
Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of:	8.4 ppg
Collapse A 1.125 design factor with full internal evacuation and collapse force equal to a mud gradient of:	8.4 ppg
Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	8.4 ppg
<u>Intermediate</u>	
Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of:	10.2 ppg
Collapse A 1.125 design factor with 1/3 TVD internal evacuation and collapse force equal to a mud gradient of:	10.2 ppg
Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	10.2 ppg
<u>Production</u>	
Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of:	10.5 ppg
Collapse A 1.125 design factor with full internal evacuation and collapse force equal to a mud gradient of:	10.5 ppg
Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	10.5 ppg

Asteroid 20-29 Fed Com WCA 4H

API # 30-015-XXXXX

TVD ft-RKB	Geological Tops	Wellbore Sketch	Hole Size	Casing	Drilling Fluids	Cement	OH Logs/Evaluation
500'			17-1/2"	Surface: 13-3/8" 48.0# J55 STC	FW Spud Mud	Top of Cement: Surface 14.8 ppg, 1.24 cuft/sk Class C - 455sks	
1,000'			12-1/4"	Intermediate: 9-5/8"36# J55 LTC	Saturated Brine (420' - 2,600') 10.0 - 10.2 ppg	Top of Lead: Surface 11.5 ppg, 2.28 cuft/sk Class C - 560 sks Top of Tail: 1,550' 14.8 ppg 1.33 cuft/sk Class C - 235 sks	
2,000'	1,843 Delaware Mtn						
3,000'			8-3/4" Thru Curve 8-1/2" Lateral	Production: 5-1/2" 20# P110 CDC	Oil Based Mud 9. - 9.5 ppg	Top of Lead: Surface 11.5 ppg 2.28 cuft/sk Class C - 875 sks Top of Tail: 7,900' 14.5 ppg, 1.18 cuft/sk Class H - 2,305 sks	
4,000'							
5,000'	5,108 Bone Spring						
6,000'	6,049 1st BS SS 6,333 2nd BS SS		8-3/4" Thru Curve 8-1/2" Lateral	Production: 5-1/2" 20# P110 CDC	Oil Based Mud 9. - 9.5 ppg	Top of Lead: Surface 11.5 ppg 2.28 cuft/sk Class C - 875 sks Top of Tail: 7,900' 14.5 ppg, 1.18 cuft/sk Class H - 2,305 sks	
7,000'							
8,000'	8,172 3rd BS SS						
9,000'	8,546 Wolfcamp 8,644 Wolfcamp A						
							18,657' MD 8,635' TVD



Chisholm Asteroid 20-29 Fed Com WCA 4H Rev0 BT 12JULY19 Proposal Geodetic Report (Def Plan)



Report Date: July 12, 2019 - 01:08 PM
Client: Chisholm
Field: NM Eddy County (NAD 83)
Structure / Slot: Chisholm Asteroid 20-29 Fed Com WCA 4H / New Slot
Well: Chisholm Asteroid 20-29 Fed Com WCA 4H
Borehole: Chisholm Asteroid 20-29 Fed Com WCA 4H
UWI / API#: Unknown / Unknown
Survey Name: Chisholm Asteroid 20-29 Fed Com WCA 4H Rev0 BT 12JULY19
Survey Date: July 12, 2019
Tort / AHD / DDI / ERD Ratio: 113.841 ° / 10860.950 ft / 6.425 / 1.253
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 17' 47.60971", W 104° 18' 40.23418"
Location Grid N/E Y/X: N 471621.190 ftUS, E 548183.760 ftUS
CRS Grid Convergence Angle: 0.0118 °
Grid Scale Factor: 0.99990914
Version / Patch: 2.10.760.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.850 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3418.200 ft above MSL
Seabed / Ground Elevation: 3386.200 ft above MSL
Magnetic Declination: 7.279 °
Total Gravity Field Strength: 998.4603mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47837.423 nT
Magnetic Dip Angle: 59.929 °
Declination Date: July 12, 2019
Magnetic Declination Model: HDGM 2019
North Reference: Grid North
Grid Convergence Used: 0.0118 °
Total Corr Mag North->Grid North: 7.2670 °
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL	0.00	0.00	175.32	0.00	0.00	0.00	0.00	N/A	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
Build 1° DLS	1500.00	0.00	83.39	1500.00	0.00	0.00	0.00	0.00	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
Hold	2100.27	6.00	83.39	2099.17	-3.53	3.62	31.21	1.00	471624.81	548214.96	N 32 17 47.65	W 104 18 39.87
Drop 1° DLS	7439.02	6.00	83.39	7408.65	-66.35	67.88	585.79	0.00	471689.07	548769.50	N 32 17 48.28	W 104 18 33.41
Hold	8039.29	0.00	83.39	8007.82	-69.88	71.50	617.00	1.00	471692.68	548800.70	N 32 17 48.32	W 104 18 33.05
KOP Build & Turn 10° DLS	8040.29	0.00	83.39	8008.82	-69.88	71.50	617.00	0.00	471692.68	548800.70	N 32 17 48.32	W 104 18 33.05
	8240.29	20.00	115.00	8204.78	-55.20	56.90	648.32	10.00	471678.08	548832.02	N 32 17 48.17	W 104 18 32.68
Landing Point Chisholm Asteroid 20-29 Fed Com WCA 4H - PBHL	9058.65	90.20	179.85	8669.70	513.61	-511.51	803.53	10.00	471109.73	548987.21	N 32 17 42.55	W 104 18 30.87
	18656.91	90.20	179.85	8635.70	10111.81	-10109.68	828.09	0.00	461512.45	549011.77	N 32 16 7.57	W 104 18 30.61

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	32.000	1/100.000	30.000	30.000		NAL_MWD_1.0_DEG-Depth Only	Chisholm Asteroid 20-29 Fed Com WCA 4H / Chisholm Asteroid 20-29 Fed Com WCA 4H Rev0 BT
	1	32.000	18656.908	1/100.000	30.000	30.000		NAL_MWD_1.0_DEG	Chisholm Asteroid 20-29 Fed Com WCA 4H / Chisholm Asteroid 20-



Chisholm Asteroid 20-29 Fed Com WCA 4H Rev0 BT 12JULY19 Proposal Geodetic Report (Def Plan)



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Location Grid N/E Y/X: N 471621.190 ftUS, E 548183.760 ftUS
CRS Grid Convergence Angle: 0.0118 °
Grid Scale Factor: 0.99990914
Version / Patch: 2.10.760.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.850 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3418.200 ft above MSL
Seabed / Ground Elevation: 3386.200 ft above MSL
Magnetic Declination: 7.279 °
Total Gravity Field Strength: 998.4603mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47837.423 nT
Magnetic Dip Angle: 59.929 °
Declination Date: July 12, 2019
Magnetic Declination Model: HDGM 2019
North Reference: Grid North
Grid Convergence Used: 0.0118 °
Total Corr Mag North->Grid North: 7.2670 °
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL	0.00	0.00	175.32	0.00	0.00	0.00	0.00	N/A	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
	100.00	0.00	83.39	100.00	0.00	0.00	0.00	0.00	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
	200.00	0.00	83.39	200.00	0.00	0.00	0.00	0.00	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
	300.00	0.00	83.39	300.00	0.00	0.00	0.00	0.00	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
	400.00	0.00	83.39	400.00	0.00	0.00	0.00	0.00	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
	500.00	0.00	83.39	500.00	0.00	0.00	0.00	0.00	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
	600.00	0.00	83.39	600.00	0.00	0.00	0.00	0.00	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
	700.00	0.00	83.39	700.00	0.00	0.00	0.00	0.00	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
	800.00	0.00	83.39	800.00	0.00	0.00	0.00	0.00	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
	900.00	0.00	83.39	900.00	0.00	0.00	0.00	0.00	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
	1000.00	0.00	83.39	1000.00	0.00	0.00	0.00	0.00	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
	1100.00	0.00	83.39	1100.00	0.00	0.00	0.00	0.00	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
	1200.00	0.00	83.39	1200.00	0.00	0.00	0.00	0.00	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
	1300.00	0.00	83.39	1300.00	0.00	0.00	0.00	0.00	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
	1400.00	0.00	83.39	1400.00	0.00	0.00	0.00	0.00	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
Build 1" DLS	1500.00	0.00	83.39	1500.00	0.00	0.00	0.00	0.00	471621.19	548183.76	N 32 17 47.61	W 104 18 40.23
	1600.00	1.00	83.39	1599.99	-0.10	0.10	0.87	1.00	471621.29	548184.63	N 32 17 47.61	W 104 18 40.22
	1700.00	2.00	83.39	1699.96	-0.39	0.40	3.47	1.00	471621.59	548187.23	N 32 17 47.61	W 104 18 40.19
	1800.00	3.00	83.39	1799.86	-0.88	0.90	7.80	1.00	471622.09	548191.56	N 32 17 47.62	W 104 18 40.14
Delaware Mtn Gr	1843.21	3.43	83.39	1843.00	-1.16	1.18	10.21	1.00	471622.37	548193.97	N 32 17 47.62	W 104 18 40.12
	1900.00	4.00	83.39	1899.68	-1.57	1.61	13.86	1.00	471622.80	548197.62	N 32 17 47.63	W 104 18 40.07
	2000.00	5.00	83.39	1999.37	-2.45	2.51	21.66	1.00	471623.70	548205.42	N 32 17 47.63	W 104 18 39.98
	2100.00	6.00	83.39	2098.90	-3.53	3.61	31.18	1.00	471624.80	548214.94	N 32 17 47.65	W 104 18 39.87
Hold	2100.27	6.00	83.39	2099.17	-3.53	3.62	31.21	1.00	471624.81	548214.96	N 32 17 47.65	W 104 18 39.87
	2200.00	6.00	83.39	2198.36	-4.71	4.82	41.57	0.00	471626.01	548225.32	N 32 17 47.66	W 104 18 39.75
	2300.00	6.00	83.39	2297.81	-5.88	6.02	51.95	0.00	471627.21	548235.71	N 32 17 47.67	W 104 18 39.63
	2400.00	6.00	83.39	2397.26	-7.06	7.22	62.34	0.00	471628.41	548246.10	N 32 17 47.68	W 104 18 39.51
	2500.00	6.00	83.39	2496.71	-8.24	8.43	72.73	0.00	471629.62	548256.48	N 32 17 47.69	W 104 18 39.39
	2600.00	6.00	83.39	2596.16	-9.41	9.63	83.12	0.00	471630.82	548266.87	N 32 17 47.70	W 104 18 39.27
	2700.00	6.00	83.39	2695.61	-10.59	10.84	93.51	0.00	471632.02	548277.26	N 32 17 47.72	W 104 18 39.14
	2800.00	6.00	83.39	2795.07	-11.77	12.04	103.89	0.00	471633.23	548287.64	N 32 17 47.73	W 104 18 39.02
	2900.00	6.00	83.39	2894.52	-12.94	13.24	114.28	0.00	471634.43	548298.03	N 32 17 47.74	W 104 18 38.90
	3000.00	6.00	83.39	2993.97	-14.12	14.45	124.67	0.00	471635.64	548308.42	N 32 17 47.75	W 104 18 38.78
	3100.00	6.00	83.39	3093.42	-15.30	15.65	135.06	0.00	471636.84	548318.81	N 32 17 47.76	W 104 18 38.66
	3200.00	6.00	83.39	3192.87	-16.47	16.85	145.45	0.00	471638.04	548329.19	N 32 17 47.78	W 104 18 38.54
	3300.00	6.00	83.39	3292.32	-17.65	18.06	155.83	0.00	471639.25	548339.58	N 32 17 47.79	W 104 18 38.42
	3400.00	6.00	83.39	3391.78	-18.83	19.26	166.22	0.00	471640.45	548349.97	N 32 17 47.80	W 104 18 38.30
	3500.00	6.00	83.39	3491.23	-20.00	20.47	176.61	0.00	471641.65	548360.35	N 32 17 47.81	W 104 18 38.18
	3600.00	6.00	83.39	3590.68	-21.18	21.67	187.00	0.00	471642.86	548370.74	N 32 17 47.82	W 104 18 38.06
	3700.00	6.00	83.39	3690.13	-22.36	22.87	197.39	0.00	471644.06	548381.13	N 32 17 47.84	W 104 18 37.93
	3800.00	6.00	83.39	3789.58	-23.53	24.08	207.77	0.00	471645.27	548391.51	N 32 17 47.85	W 104 18 37.81
	3900.00	6.00	83.39	3889.03	-24.71	25.28	218.16	0.00	471646.47	548401.90	N 32 17 47.86	W 104 18 37.69
	4000.00	6.00	83.39	3988.49	-25.89	26.49	228.55	0.00	471647.67	548412.29	N 32 17 47.87	W 104 18 37.57
	4100.00	6.00	83.39	4087.94	-27.06	27.69	238.94	0.00	471648.88	548422.68	N 32 17 47.88	W 104 18 37.45
	4200.00	6.00	83.39	4187.39	-28.24	28.89	249.33	0.00	471650.08	548433.06	N 32 17 47.90	W 104 18 37.33
	4300.00	6.00	83.39	4286.84	-29.42	30.10	259.71	0.00	471651.28	548443.45	N 32 17 47.91	W 104 18 37.21
	4400.00	6.00	83.39	4386.29	-30.59	31.30	270.10	0.00	471652.49	548453.84	N 32 17 47.92	W 104 18 37.09
	4500.00	6.00	83.39	4485.74	-31.77	32.50	280.49	0.00	471653.69	548464.22	N 32 17 47.93	W 104 18 36.97
	4600.00	6.00	83.39	4585.20	-32.95	33.71	290.88	0.00	471654.89	548474.61	N 32 17 47.94	W 104 18 36.85
	4700.00	6.00	83.39	4684.65	-34.12	34.91	301.27	0.00	471656.10	548485.00	N 32 17 47.95	W 104 18 36.72
	4800.00	6.00	83.39	4784.10	-35.30	36.12	311.65	0.00	471657.30	548495.38	N 32 17 47.97	W 104 18 36.60
	4900.00	6.00	83.39	4883.55	-36.48	37.32	322.04	0.00	471658.51	548505.77	N 32 17 47.98	W 104 18 36.48
	5000.00	6.00	83.39	4983.00	-37.65	38.52	332.43	0.00	471659.71	548516.16	N 32 17 47.99	W 104 18 36.36
	5100.00	6.00	83.39	5082.46	-38.83	39.73	342.82	0.00	471660.91	548526.55	N 32 17 48.00	W 104 18 36.24
Bone Spring	5125.69	6.00	83.39	5108.00	-39.13	40.04	345.49	0.00	471661.22	548529.21	N 32 17 48.01	W 104 18 36.21
	5200.00	6.00	83.39	5181.91	-40.01	40.93	353.21	0.00	471662.12	548536.93	N 32 17 48.01	W 104 18 36.12
	5300.00	6.00	83.39	5281.36	-41.18	42.13	363.59	0.00	471663.32	548547.32	N 32 17 48.03	W 104 18 36.00
	5400.00	6.00	83.39	5380.81	-42.36	43.34	373.98	0.00	471664.52	548557.71	N 32 17 48.04	W 104 18 35.88
	5500.00	6.00	83.39	5480.26	-43.54	44.54	384.37	0.00	471665.73	548568.09	N 32 17 48.05	W 104 18 35.76
	5600.00	6.00	83.39	5579.71	-44.71	45.75	394.76	0.00	471666.93	548578.48	N 32 17 48.06	W 104 18 35.64
	5700.00	6.00	83.39	5679.17	-45.89	46.95	405.15	0.00	471668.14	548588.87	N 32 17 48.07	W 104 18 35.51
	5800.00	6.00	83.39	5778.62	-47.07	48.15	415.53	0.00	471669.34	548599.25	N 32 17 48.09	W 104 18 35.39
	5900.00	6.00	83.39	5878.07	-48.24	49.36	425.92	0.00	471670.54	548609.64	N 32 17 48.10	W 104 18 35.27
	6000.00	6.00	83.39	5977.52	-49.42	50.56	436.31	0.00	471671.75	548620.03	N 32 17 48.11	W 104 18 35.15
1st Bone Spring SS	6071.87	6.00	83.39	6049.00	-50.26	51.43	443.78	0.00	471672.61	548627.49	N 32 17 48.12	W 104 18 35.06
	6100.00	6.00	83.39	6076.97	-50.60	51.76	446.70	0.00	471672.95	548630.42	N 32 17 48.12	W 104 18 35.03
	6200.00	6.00	83.39	6176.42	-51.77	52.97	457.08	0.00	471674.15	548640.80	N 32 17 48.13	W 104 18 34.91
	6300.00	6.00	83.39	6275.88	-52.95	54.17	467.47	0.00	471675.36	548651.19	N 32 17 48.14	W 104 18 34.79
2nd Bone Spring SS	6357.44	6.00	83.39	6333.00	-53.62	54.86	473.44	0.00	471676.05	548657.16	N 32 17 48.15	W 104 18 34.72
	6400.00	6.00	83.39	6375.33	-54.12	55.38	477.86	0.00	471676.56	548661.58	N 32 17 48.16	W 104 18 34.67
	6500.00	6.00	83.39	6474.78	-55.30	56.58	488.25	0.00	471677.76	548671.96	N 32 17 48.17	W 104 18 34.55
	6600.00	6.00	83.39	6574.23	-56.48	57.78	498.64	0.00	471678.97	548682.35	N 32 17 48.18	W 104 18 34.42
	6700.00	6.00	83.39	6673.68	-57.65	58.99	509.02	0.00	471680.17	548692.74	N 32 17 48.19	W 104 18 34.30
	6800.00	6.00	83.39	6773.13	-58.83	60.19	519.41	0.00	471681.			

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Drop 1" DLS	7000.00	6.00	83.39	6972.04	-61.18	62.60	540.19	0.00	471683.78	548723.90	N 32 17 48.23	W 104 18 33.94
	7100.00	6.00	83.39	7071.49	-62.36	63.80	550.58	0.00	471684.99	548734.29	N 32 17 48.24	W 104 18 33.82
	7200.00	6.00	83.39	7170.94	-63.54	65.01	560.96	0.00	471686.19	548744.67	N 32 17 48.25	W 104 18 33.70
	7300.00	6.00	83.39	7270.39	-64.71	66.21	571.35	0.00	471687.39	548755.06	N 32 17 48.26	W 104 18 33.58
	7400.00	6.00	83.39	7369.84	-65.89	67.41	581.74	0.00	471688.60	548765.45	N 32 17 48.28	W 104 18 33.46
	7439.02	6.00	83.39	7408.65	-66.35	67.88	585.79	0.00	471689.07	548769.50	N 32 17 48.28	W 104 18 33.41
	7500.00	5.39	83.39	7469.33	-67.03	68.58	591.81	1.00	471689.76	548775.51	N 32 17 48.29	W 104 18 33.34
	7600.00	4.39	83.39	7568.96	-67.99	69.56	600.28	1.00	471690.75	548783.98	N 32 17 48.30	W 104 18 33.24
	7700.00	3.39	83.39	7668.73	-68.75	70.34	607.02	1.00	471691.53	548790.73	N 32 17 48.30	W 104 18 33.16
	7800.00	2.39	83.39	7768.60	-69.32	70.92	612.04	1.00	471692.11	548795.74	N 32 17 48.31	W 104 18 33.10
Hold KOP Build & Turn 10" DLS	7900.00	1.39	83.39	7868.55	-69.69	71.31	615.32	1.00	471692.49	548799.02	N 32 17 48.31	W 104 18 33.07
	8000.00	0.39	83.39	7968.53	-69.87	71.48	616.87	1.00	471692.67	548800.57	N 32 17 48.32	W 104 18 33.05
	8039.29	0.00	83.39	8007.82	-69.88	71.50	617.00	1.00	471692.68	548800.70	N 32 17 48.32	W 104 18 33.05
	8040.29	0.00	83.39	8008.82	-69.88	71.50	617.00	0.00	471692.68	548800.70	N 32 17 48.32	W 104 18 33.05
	8100.00	5.97	115.00	8068.42	-68.56	70.19	619.82	10.00	471691.37	548803.52	N 32 17 48.30	W 104 18 33.01
	8200.00	15.97	115.00	8166.47	-60.49	62.15	637.04	10.00	471683.34	548820.75	N 32 17 48.22	W 104 18 32.81
	8205.76	16.55	115.00	8172.00	-59.80	61.47	638.51	10.00	471682.66	548822.21	N 32 17 48.22	W 104 18 32.80
	8240.29	20.00	115.00	8204.78	-55.20	56.90	648.32	10.00	471678.08	548832.02	N 32 17 48.17	W 104 18 32.68
	8300.00	23.05	129.07	8260.36	-43.46	45.21	666.66	10.00	471666.39	548850.36	N 32 17 48.06	W 104 18 32.47
	8400.00	30.08	145.14	8349.87	-10.40	12.23	696.26	10.00	471633.41	548879.95	N 32 17 47.73	W 104 18 32.12
Wolfcamp	8500.00	38.35	155.19	8432.55	38.52	-36.62	723.67	10.00	471584.57	548907.36	N 32 17 47.25	W 104 18 31.80
	8600.00	47.22	162.04	8505.91	101.81	-99.86	748.06	10.00	471521.34	548931.75	N 32 17 46.62	W 104 18 31.52
	8662.47	52.92	165.38	8546.00	147.82	-145.82	761.43	10.00	471475.38	548945.12	N 32 17 46.17	W 104 18 31.36
	8700.00	56.39	167.14	8567.71	177.57	-175.55	768.69	10.00	471445.65	548952.38	N 32 17 45.87	W 104 18 31.28
	8800.00	65.72	171.24	8616.07	263.47	-261.41	784.94	10.00	471359.80	548968.62	N 32 17 45.02	W 104 18 31.09
Wolfcamp A	8879.71	73.23	174.09	8644.00	337.48	-335.40	794.41	10.00	471285.82	548978.10	N 32 17 44.29	W 104 18 30.98
	8900.00	75.15	174.78	8649.53	356.91	-354.83	796.30	10.00	471266.40	548979.99	N 32 17 44.10	W 104 18 30.96
Landing Point	9000.00	84.63	178.01	8667.06	455.06	-452.96	802.44	10.00	471168.27	548986.13	N 32 17 43.13	W 104 18 30.89
	9058.65	90.20	179.85	8669.70	513.61	-511.51	803.53	10.00	471109.73	548987.21	N 32 17 42.55	W 104 18 30.87
	9100.00	90.20	179.85	8669.55	554.96	-552.86	803.63	0.00	471068.38	548987.32	N 32 17 42.14	W 104 18 30.87
	9200.00	90.20	179.85	8669.20	654.96	-652.86	803.89	0.00	470968.39	548987.58	N 32 17 41.15	W 104 18 30.87
	9300.00	90.20	179.85	8668.85	754.96	-752.86	804.15	0.00	470868.40	548987.83	N 32 17 40.16	W 104 18 30.87
	9400.00	90.20	179.85	8668.49	854.96	-852.86	804.40	0.00	470768.41	548988.09	N 32 17 39.17	W 104 18 30.87
	9500.00	90.20	179.85	8668.14	954.96	-952.86	804.66	0.00	470668.42	548988.34	N 32 17 38.18	W 104 18 30.86
	9600.00	90.20	179.85	8667.78	1054.96	-1052.86	804.91	0.00	470568.43	548988.60	N 32 17 37.19	W 104 18 30.86
	9700.00	90.20	179.85	8667.43	1154.96	-1152.86	805.17	0.00	470468.44	548988.86	N 32 17 36.20	W 104 18 30.86
	9800.00	90.20	179.85	8667.07	1254.96	-1252.86	805.43	0.00	470368.45	548989.11	N 32 17 35.21	W 104 18 30.85
	9900.00	90.20	179.85	8666.72	1354.96	-1352.85	805.68	0.00	470268.46	548989.37	N 32 17 34.22	W 104 18 30.85
	10000.00	90.20	179.85	8666.37	1454.96	-1452.85	805.94	0.00	470168.47	548989.62	N 32 17 33.23	W 104 18 30.85
	10100.00	90.20	179.85	8666.01	1554.96	-1552.85	806.19	0.00	470068.48	548989.88	N 32 17 32.24	W 104 18 30.85
	10200.00	90.20	179.85	8665.66	1654.96	-1652.85	806.45	0.00	469968.49	548990.13	N 32 17 31.25	W 104 18 30.84
	10300.00	90.20	179.85	8665.30	1754.96	-1752.85	806.71	0.00	469868.50	548990.39	N 32 17 30.26	W 104 18 30.84
	10400.00	90.20	179.85	8664.95	1854.96	-1852.85	806.96	0.00	469768.51	548990.65	N 32 17 29.27	W 104 18 30.84
	10500.00	90.20	179.85	8664.59	1954.96	-1952.85	807.22	0.00	469668.52	548990.90	N 32 17 28.28	W 104 18 30.84
	10600.00	90.20	179.85	8664.24	2054.95	-2052.85	807.47	0.00	469568.53	548991.16	N 32 17 27.29	W 104 18 30.83
	10700.00	90.20	179.85	8663.89	2154.95	-2152.85	807.73	0.00	469468.54	548991.41	N 32 17 26.31	W 104 18 30.83
	10800.00	90.20	179.85	8663.53	2254.95	-2252.85	807.98	0.00	469368.55	548991.67	N 32 17 25.32	W 104 18 30.83
	10900.00	90.20	179.85	8663.18	2354.95	-2352.84	808.24	0.00	469268.56	548991.93	N 32 17 24.33	W 104 18 30.82
	11000.00	90.20	179.85	8662.82	2454.95	-2452.84	808.50	0.00	469168.57	548992.18	N 32 17 23.34	W 104 18 30.82
	11100.00	90.20	179.85	8662.47	2554.95	-2552.84	808.75	0.00	469068.58	548992.44	N 32 17 22.35	W 104 18 30.82
	11200.00	90.20	179.85	8662.11	2654.95	-2652.84	809.01	0.00	468968.59	548992.69	N 32 17 21.36	W 104 18 30.82
	11300.00	90.20	179.85	8661.76	2754.95	-2752.84	809.26	0.00	468868.60	548992.95	N 32 17 20.37	W 104 18 30.81
	11400.00	90.20	179.85	8661.41	2854.95	-2852.84	809.52	0.00	468768.62	548993.20	N 32 17 19.38	W 104 18 30.81
	11500.00	90.20	179.85	8661.05	2954.95	-2952.84	809.78	0.00	468668.63	548993.46	N 32 17 18.39	W 104 18 30.81
	11600.00	90.20	179.85	8660.70	3054.95	-3052.84	810.03	0.00	468568.64	548993.72	N 32 17 17.40	W 104 18 30.81
	11700.00	90.20	179.85	8660.34	3154.95	-3152.84	810.29	0.00	468468.65	548993.97	N 32 17 16.41	W 104 18 30.80
	11800.00	90.20	179.85	8659.99	3254.95	-3252.84	810.54	0.00	468368.66	548994.23	N 32 17 15.42	W 104 18 30.80
	11900.00	90.20	179.85	8659.64	3354.95	-3352.84	810.80	0.00	468268.67	548994.48	N 32 17 14.43	W 104 18 30.80
	12000.00	90.20	179.85	8659.28	3454.95	-3452.83	811.05	0.00	468168.68	548994.74	N 32 17 13.44	W 104 18 30.79
	12100.00	90.20	179.85	8658.93	3554.94	-3552.83	811.31	0.00	468068.69	548995.00	N 32 17 12.45	W 104 18 30.79
	12200.00	90.20	179.85	8658.57	3654.94	-3652.83	811.57	0.00	467968.70	548995.25	N 32 17 11.46	W 104 18 30.79
	12300.00	90.20	179.85	8658.22	3754.94	-3752.83	811.82	0.00	467868.71	548995.51	N 32 17 10.47	W 104 18 30.79
	12400.00	90.20	179.85	8657.86	3854.94	-3852.83	812.08	0.00	467768.72	548995.76	N 32 17 9.48	W 104 18 30.78
	12500.00	90.20	179.85	8657.51	3954.94	-3952.83	812.33	0.00	467668.73	548996.02	N 32 17 8.49	W 104 18 30.78
	12600.00	90.20	179.85	8657.16	4054.94</							

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	16800.00	90.20	179.85	8642.28	8254.92	-8252.79	823.34	0.00	463369.17	549007.02	N 32 16 25.95	W 104 18 30.66
	16900.00	90.20	179.85	8641.92	8354.91	-8352.79	823.59	0.00	463269.18	549007.28	N 32 16 24.96	W 104 18 30.66
	17000.00	90.20	179.85	8641.57	8454.91	-8452.79	823.85	0.00	463169.19	549007.53	N 32 16 23.97	W 104 18 30.66
	17100.00	90.20	179.85	8641.22	8554.91	-8552.79	824.10	0.00	463069.20	549007.79	N 32 16 22.98	W 104 18 30.66
	17200.00	90.20	179.85	8640.86	8654.91	-8652.78	824.36	0.00	462969.21	549008.04	N 32 16 21.99	W 104 18 30.65
	17300.00	90.20	179.85	8640.51	8754.91	-8752.78	824.62	0.00	462869.22	549008.30	N 32 16 21.00	W 104 18 30.65
	17400.00	90.20	179.85	8640.15	8854.91	-8852.78	824.87	0.00	462769.23	549008.55	N 32 16 20.01	W 104 18 30.65
	17500.00	90.20	179.85	8639.80	8954.91	-8952.78	825.13	0.00	462669.24	549008.81	N 32 16 19.02	W 104 18 30.65
	17600.00	90.20	179.85	8639.44	9054.91	-9052.78	825.38	0.00	462569.25	549009.07	N 32 16 18.03	W 104 18 30.64
	17700.00	90.20	179.85	8639.09	9154.91	-9152.78	825.64	0.00	462469.26	549009.32	N 32 16 17.04	W 104 18 30.64
	17800.00	90.20	179.85	8638.74	9254.91	-9252.78	825.89	0.00	462369.27	549009.58	N 32 16 16.05	W 104 18 30.64
	17900.00	90.20	179.85	8638.38	9354.91	-9352.78	826.15	0.00	462269.28	549009.83	N 32 16 15.06	W 104 18 30.63
	18000.00	90.20	179.85	8638.03	9454.91	-9452.78	826.41	0.00	462169.29	549010.09	N 32 16 14.07	W 104 18 30.63
	18100.00	90.20	179.85	8637.67	9554.91	-9552.78	826.66	0.00	462069.30	549010.35	N 32 16 13.08	W 104 18 30.63
	18200.00	90.20	179.85	8637.32	9654.91	-9652.77	826.92	0.00	461969.31	549010.60	N 32 16 12.09	W 104 18 30.63
	18300.00	90.20	179.85	8636.96	9754.91	-9752.77	827.17	0.00	461869.32	549010.86	N 32 16 11.10	W 104 18 30.62
	18400.00	90.20	179.85	8636.61	9854.91	-9852.77	827.43	0.00	461769.33	549011.11	N 32 16 10.11	W 104 18 30.62
	18500.00	90.20	179.85	8636.26	9954.90	-9952.77	827.69	0.00	461669.34	549011.37	N 32 16 9.12	W 104 18 30.62
	18600.00	90.20	179.85	8635.90	10054.90	-10052.77	827.94	0.00	461569.35	549011.62	N 32 16 8.14	W 104 18 30.62
Chisholm Asteroid 20-29 Fed Com WCA 4H - PBHL	18656.91	90.20	179.85	8635.70	10111.81	-10109.68	828.09	0.00	461512.45	549011.77	N 32 16 7.57	W 104 18 30.61

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	32.000	1/100.000	30.000	30.000		NAL_MWD_1.0_DEG-Depth Only	Chisholm Asteroid 20-29 Fed Com WCA 4H / Chisholm Asteroid 20- 29 Fed Com WCA 4H Rev0 BT
	1	32.000	18656.908	1/100.000	30.000	30.000		NAL_MWD_1.0_DEG	Chisholm Asteroid 20-29 Fed Com WCA 4H / Chisholm Asteroid 20-



Chisholm

Rev0



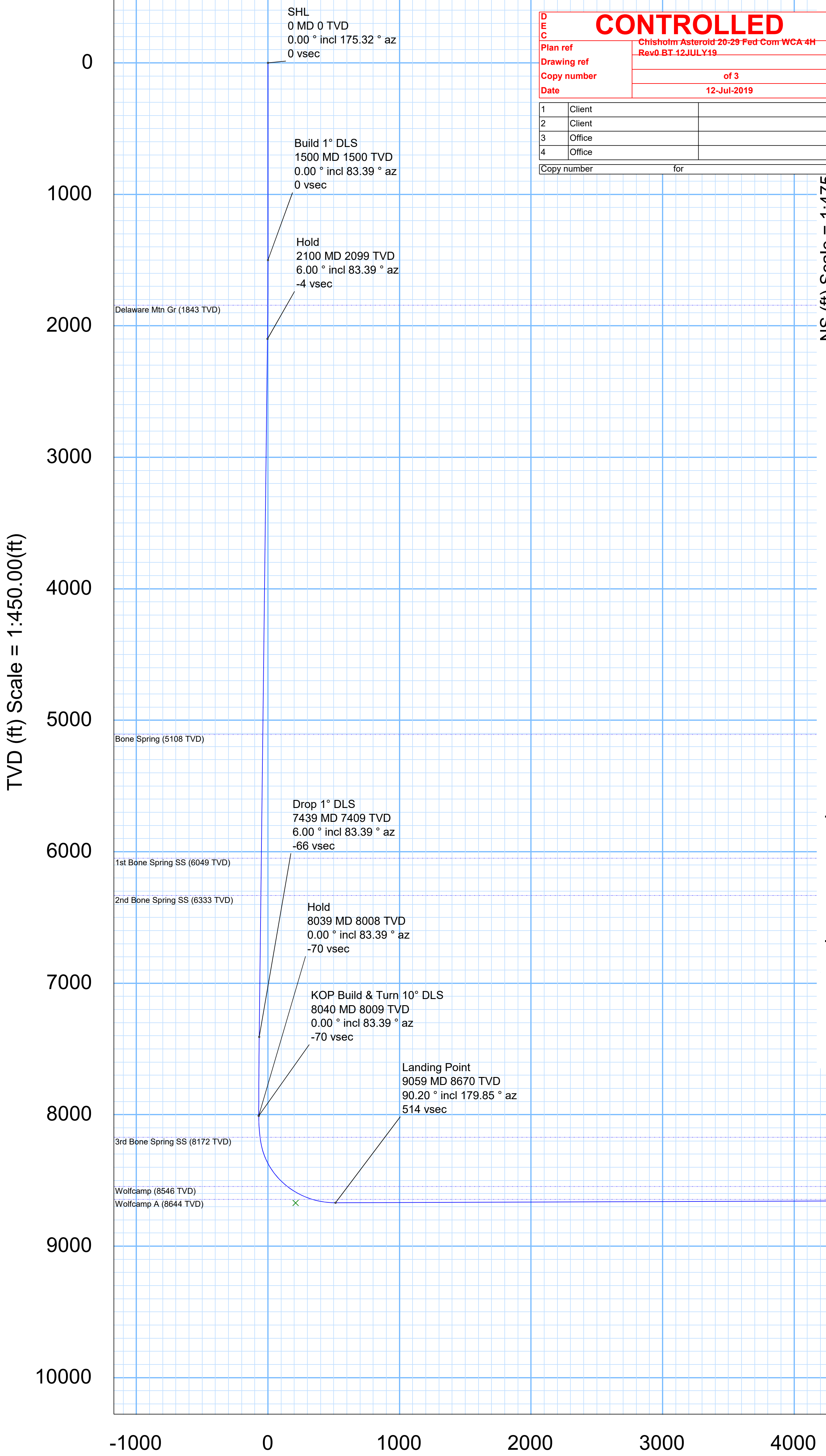
Borehole:	Well:	Field:	Structure:
Chisholm Asteroid 20-29 Fed Com WCA 4H	Chisholm Asteroid 20-29 Fed Com WCA 4H	NM Eddy County (NAD 83)	Chisholm Asteroid 20-29 Fed Com WCA 4H

Gravity & Magnetic Parameters				Surface Location				Miscellaneous			
Model:	HDGM 2019	Dip:	59.929°	Date:	12-Jul-2019	Lat:	N 32 17 47.61	Northing:	471621.19ftUS	Grid Conv:	0.0118°
MagDec:	7.279°	FS:	47837.423nT	Gravity FS:	998.46mgn (9.80665 Based)	Lon:	W 104 18 40.23	Easting:	548183.76ftUS	Scale Fact:	0.99990914
								Slot:	New Slot	TVD Ref:	RKB(3418.2ft above MSL)
								Plan:	Chisholm Asteroid 20-29 Fed Com WCA 4H Rev0 BT 12JULY19		

Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL	0.00	0.00	175.32	0.00	0.00	0.00	0.00	
Build 1° DLS	1500.00	0.00	83.39	1500.00	0.00	0.00	0.00	0.00
Delaware Mtn Gr	1843.21	3.43	83.39	1843.00	-1.16	1.18	10.21	1.00
Hold	2100.27	6.00	83.39	2099.17	-3.53	3.62	31.21	1.00
Bone Spring	5125.69	6.00	83.39	5108.00	-39.13	40.04	345.49	0.00
1st Bone Spring SS	6071.87	6.00	83.39	6049.00	-50.26	51.43	443.78	0.00
2nd Bone Spring SS	6357.44	6.00	83.39	6333.00	-53.62	54.86	473.44	0.00
Drop 1° DLS	7439.02	6.00	83.39	7408.65	-66.35	67.88	585.79	0.00
Hold	8039.29	0.00	83.39	8007.82	-69.88	71.50	617.00	1.00
KOP Build & Turn 10° DLS	8040.29	0.00	83.39	8008.82	-69.88	71.50	617.00	0.00
3rd Bone Spring SS	8205.76	16.55	115.00	8172.00	-59.80	61.47	638.51	10.00
Wolfcamp	8662.47	52.92	165.38	8546.00	147.82	-145.82	761.43	10.00
Wolfcamp A	8879.71	73.23	174.09	8644.00	337.48	-335.40	794.41	10.00
Landing Point	9058.65	90.20	179.85	8669.70	513.61	-511.51	803.53	10.00
Wolfcamp A	16313.83	90.20	179.85	8644.00	7768.75	-7766.62	822.09	0.00
Chisholm Asteroid 20-29 Fed Com WCA 4H - PBHL	18656.91	90.20	179.85	8635.70	10111.81	-10109.68	828.09	0.00



Grid
True
Mag
Grid North
Tot Corr (M>G 7.267")
Mag Dec (7.279")
Grid Conv (0.012")

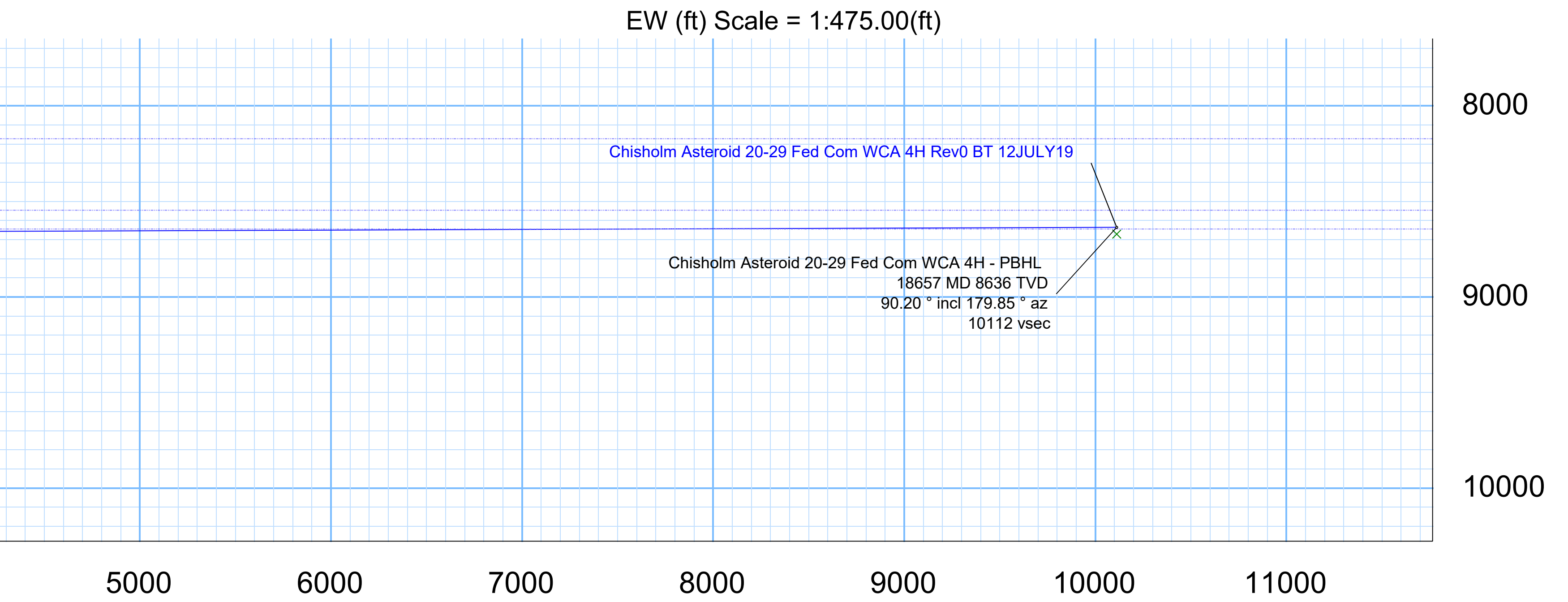
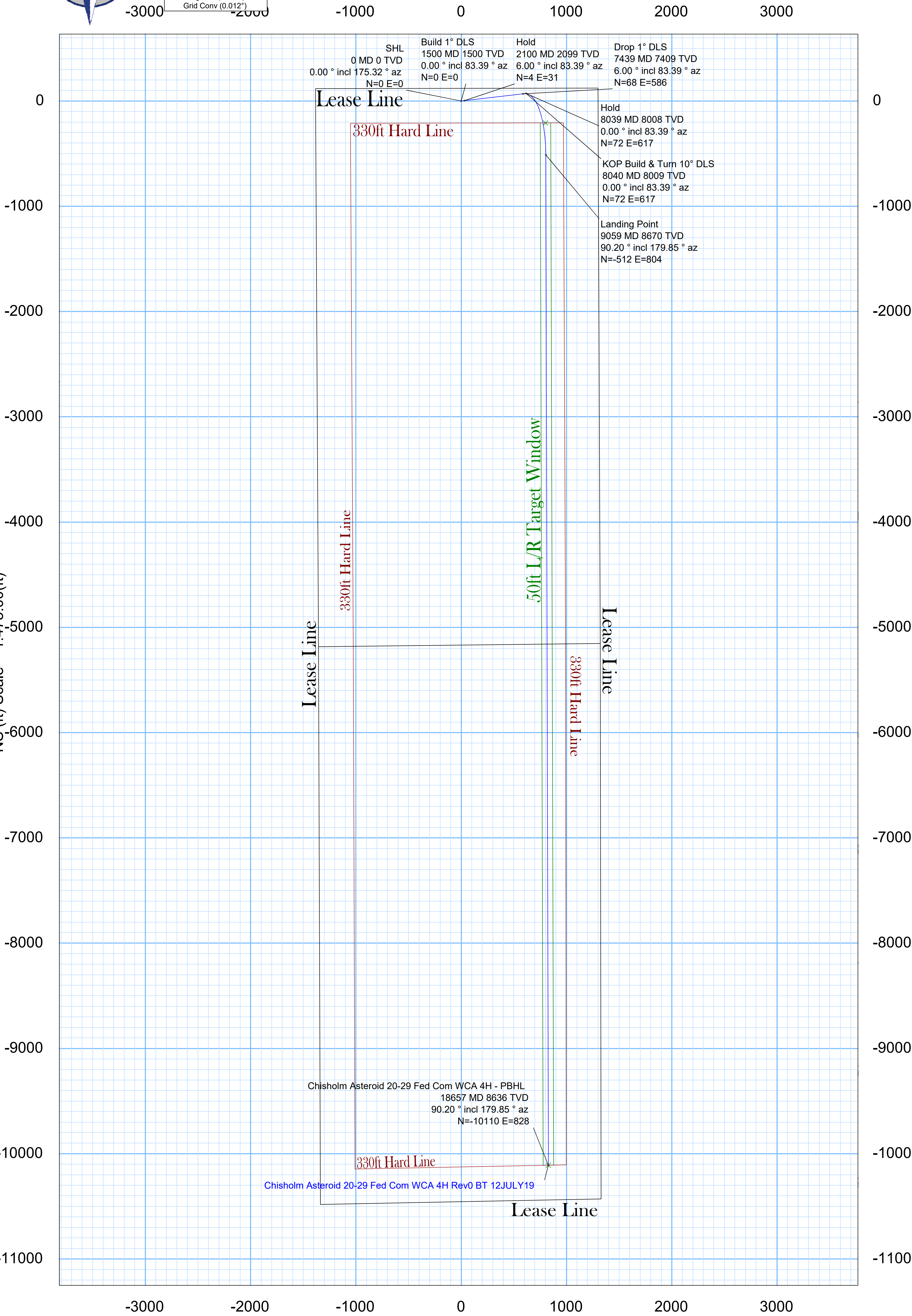


CONTROLLED

Plan ref: Chisholm Asteroid 20-29 Fed Com WCA 4H
Drawing ref: Rev0 BT 12JULY19
Copy number: of 3
Date: 12-Jul-2019

1	Client	
2	Client	
3	Office	
4	Office	

Copy number for



PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CHISHOLM ENERGY OPERATING LLC
LEASE NO.:	NMNM070200
WELL NAME & NO.:	ASTEROID 20-29 FED COM WCA 4H
SURFACE HOLE FOOTAGE:	120'/N & 1300'/E
BOTTOM HOLE FOOTAGE:	330'/S & 500'/E
LOCATION:	Section 20, T.23 S., R.26 E., NMPM
COUNTY:	Eddy County, New Mexico

COA

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input type="radio"/> Low	<input checked="" type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **420 feet** (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8**

- hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The **9-5/8** inch intermediate casing shall be set at approximately **1900 feet**. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.
- ❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

Option 1 (Single Stage):

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2. BOP REQUIREMENTS

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **3000 (3M)** psi.

Option 2:

Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

- a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- c. Manufacturer representative shall install the test plug for the initial BOP test.
- d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not

hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

RI01312021

Chisholm Energy Operating, LLC

801 Cherry St., Suite 1200-Unit 20

Fort Worth, TX 76102

H2S Contingency Plan

Eddy County, NM

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crew should then block entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are NO homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'
100 ppm H₂S concentration shall trigger activation of this plan

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must:

- « Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- « Evacuate any public places encompassed by the 100 ppm ROE.
- « Be equipped with H₂S monitors and air packs in order to control the release.
- « Use the "buddy system" to ensure no injuries occur during the response.
- « Take precautions to avoid personal injury during this operation.
- « Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- « Have received training
 - in the: Detection of
 - H₂S, and
 - Measures for protection against the gas,
 - Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air=1	10 ppm	100 ppm/hr	600 ppm

Sulfur Dioxide	SO ₂	2.21 Air=1	2 ppm	N/A	1000 ppm
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Contacting Authorities

Chisholm Energy Operating personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Chisholm Energy Operating, LLC response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMERP).

Hydrogen Sulfide Drilling Operations Plan

- 1 All Company and Contract personnel admitted on location must be trained by a qualified H₂S safety instructor to the following:
 - A. Characteristics of H₂S
 - B. Physical effects and hazards
 - C. Principal and operation of H₂S detectors, warning system and briefing areas.
 - D. Evacuation procedure, routes and first aid.
 - E. Proper use of safety equipment & life support systems
 - F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30-minute pressure demand air packs.
- 2 H₂S Detection and Alarm Systems:
 - A. H₂S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H₂S detectors may be placed as deemed necessary.
 - B. An audio alarm system will be installed on the derrick floor and in the top doghouse.
- 3 Windsock and/or wind streamers:
 - A. Windsock at mudpit area should be high enough to be visible.
 - B. Windsock on the rig floor and/ or top doghouse should be high enough to be visible.
- 4 Condition Flags and Signs
 - A. Warning sign on access road to location.
 - B. Flags to be displayed on sign at entrance to location. Green flag

indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H2S present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

5 Well control equipment:

A. See exhibit BOP and Choke Diagrams

6 Communication:

- A. While working under masks chalkboards will be used for communication.
- B. Hand signals will be used where chalk board is inappropriate.
- C. Two-way radio will be used to communicate off location in case of emergency help is required. In most cases, cellular telephones will be available at most drilling foreman's trailer or living quarters.

7 Drill stem Testing:

No DSTs are planned at this time.

8 Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubular goods and other mechanical equipment.

9 If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

Emergency Assistance Telephone List

Chisholm Energy Holdings, LLC

Chisholm Energy Operating, LLC

Vice President of Operations-Brad Grandstaff

Office: (817)953-6063

Office: (817)953-3150

Cell: (972)977-9221

Drilling Superintendent-Russell Simons

Cell: (830)285-7501

Production Superintendent-Paul Martinez

Cell: (325)206-1722

Public Safety:		911 or
Eddy County Sheriff's Department	Number:	(575)887-7551
Eddy County Emergency Management	Number:	(575)628-5450
Lea County Fire Service	Number:	(575)628-5450
Fire Department:		
Artesia Fire Department	Number:	(575)746-5060
Sun Country Volunteer Fire Department	Number:	(505)484-3599
Riverside Volunteer Fire Department	Number:	(505)365-7900
Cottonwood Volunteer Fire Department	Number:	(505)748-7344
Atoka Fire Department	Number:	(505)746-9562
Queen Volunteer Fire Department	Number:	(505)981-2498
Joel Volunteer Fire Department	Number:	(505)885-4966
Otis Fire Rescue	Number:	(575)236-6113
La Huerta Volunteer Fire Department	Number:	(505)887-6353
Carlsbad Fire Department	Number:	(575)885-3125
Hope Volunteer Fire Department	Number:	(505)484-3351
Loco Hills Fire Department	Number:	(505)677-2349
Loving Fire Department	Number:	(505)745-3600
White's City Fire Department	Number:	(505)785-2219
Hospital:		
Artesia General Hospital	Number:	(575)748-3333
Carlsbad Medical Center	Number:	(575)887-4100
AirMed: Medevac	Number:	(888)303-9112
Dept. of Public Safety	Number:	(505)827-9000
New Mexico OCD-Dist. 2-Artesia	Office	Number: (575)748-1283
	Emergency	Number: (575)626-0830
Eddy County Road Department-South	Number:	(575)885-4835
Eddy County Road Department-North	Number:	(575)746-9540
NMDOT	Number:	(505)827-5100

Chisholm Energy Operating, LLC plans to operate a Closed Loop System.



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Drilling Plan Data Report

04/19/2021

APD ID: 10400043512

Submission Date: 07/16/2019

Highlighted data
reflects the most
recent changes

Operator Name: CHISHOLM ENERGY OPERATING LLC

Well Name: ASTEROID 20-29 FED COM WCA

Well Number: 4H

[Show Final Text](#)

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
494657	DELAWARE	3364	1843	1843	SANDSTONE, SHALE, SILTSTONE	NONE	N
494659	BONE SPRING	-1744	5108	5108	LIMESTONE, SHALE	NATURAL GAS, OIL	N
494660	BONE SPRING 1ST	-2685	6049	6049	SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	N
494661	BONE SPRING 2ND	-2969	6333	6333	SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	N
494662	BONE SPRING 3RD	-4808	8172	8172	SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	N
494667	WOLFCAMP	-5182	8546	8546	LIMESTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	N
494668	WOLFCAMP	-5280	8644	8644	LIMESTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 12500

Equipment: Rotating head, Mud Gas Separator, Flare Line, Remote Kill Line

Requesting Variance? YES

Variance request: WE PROPOSE UTILIZING A CACTUS SPEED HEAD MULTI-BOWL WELLHEAD FOR THIS WELL. PLEASE SEE ATTACHED DIAGRAM AND PRESSURE TESTING STATEMENT. ALSO WE REQUEST TO USE A FLEX CHOKE HOSE; PLEASE SEE ATTACHMENT.

Testing Procedure: As per Onshore Order #2 BOP testing procedure -N/U the rig's BOP. Use 3rd party testers to perform the following: -Test the pipe rams, blind rams, floor valves (IBOP and/or upper Kelly valve), choke lines and manifold to 250 psi/5,000 psi with a test plug and a test pump. -Test the Hyrdil annular to 250 psi/2,500 psi with same as above.

Choke Diagram Attachment:

5M_Choke_Manifold_Diagram_20180726115802.pdf

BOP Diagram Attachment:

5m_BOP_Diagram_20180726115810.pdf

Patriot Drilling, LLC

RIG NO. 5

Annular Preventer

13-3/8 5,000 PSI WP

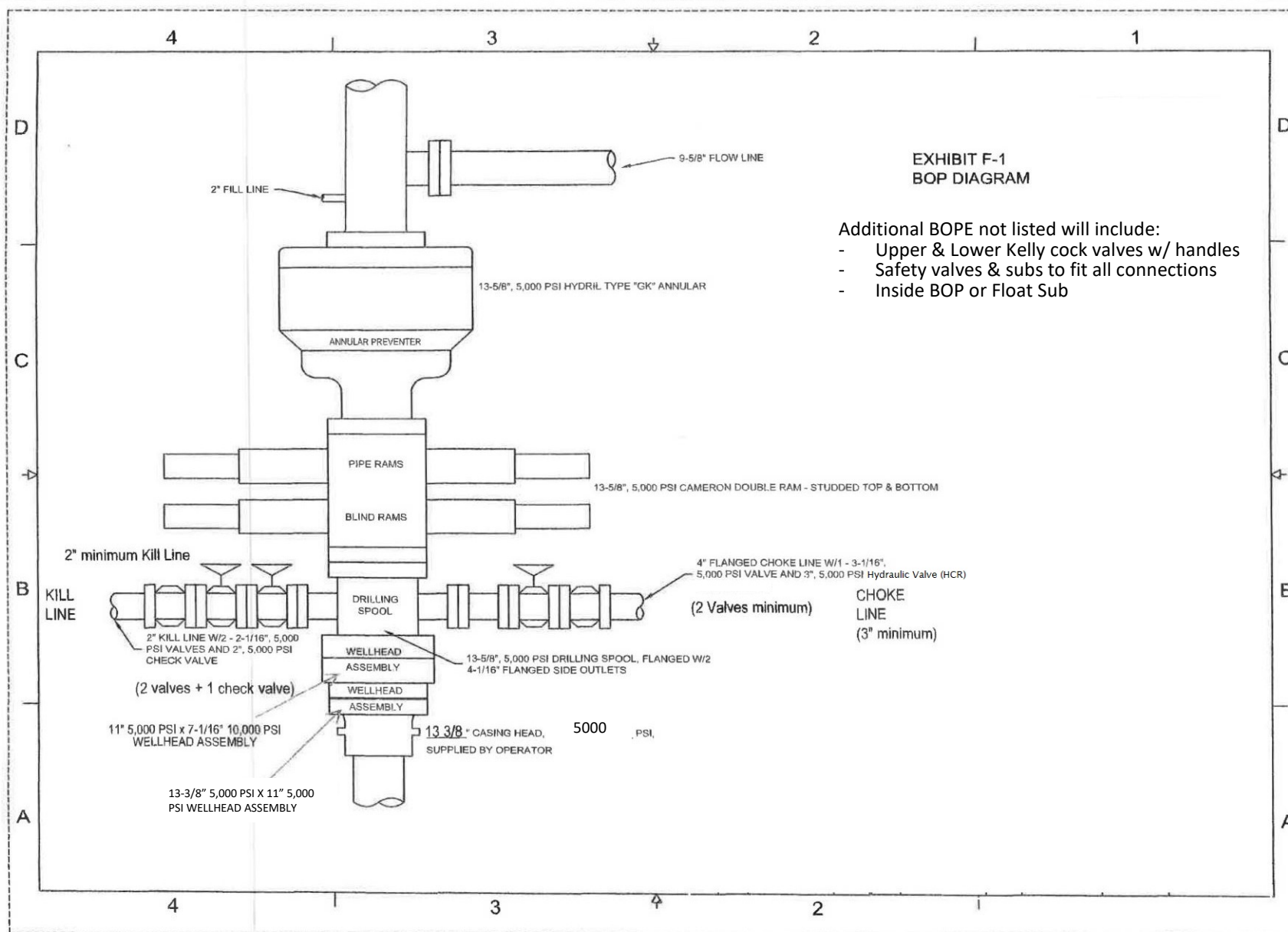
Ram Preventers

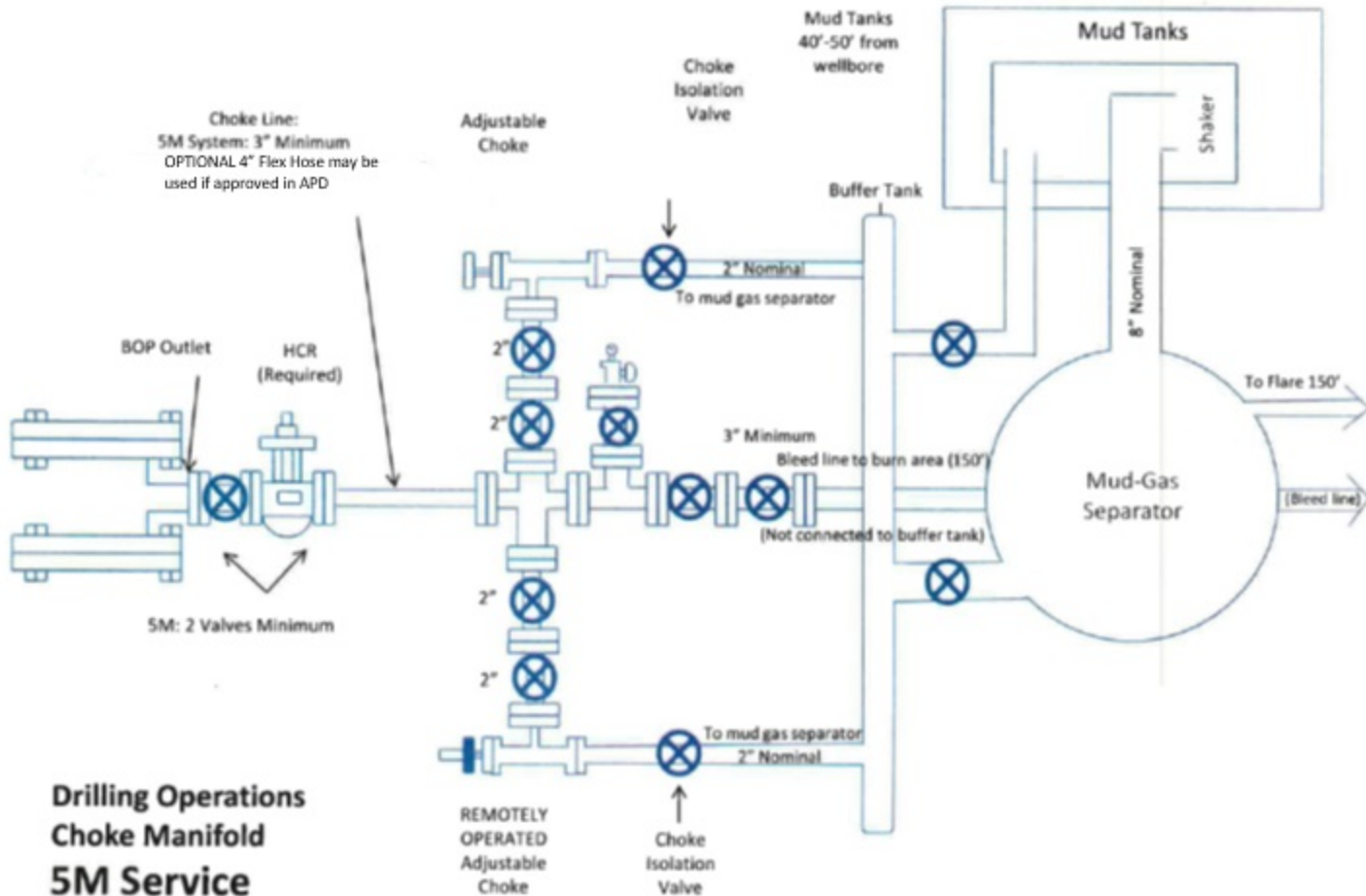
13-3/8" 5,000 PSI WP Double Ram

13-3/8" 5,000 PSI WP Single Ram

Test the pipe rams, blind rams, floor valves (IBOP and/or upper Kelly valve), choke lines and manifold to 250 psi/5,000 psi with a test plug and a test pump.

Test the annular to 250 psi/2,500 psi with same as above.





District I

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

District II

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

District III

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

District IV

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

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

COMMENTS

Action 24985

COMMENTS

Operator:	CHISHOLM ENERGY OPERATING, LLC	801 Cherry Street	Fort Worth, TX76102	OGRID:	372137	Action Number:	24985	Action Type:	FORM 3160-3
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Created By	Comment	Comment Date
kpickford	KP GEO Review 4/22/2021	04/23/2021

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CONDITIONS

Action 24985

CONDITIONS OF APPROVAL

Operator:	CHISHOLM ENERGY OPERATING, LLC	801 Cherry Street	Fort Worth, TX76102	OGRID:	372137	Action Number:	24985	Action Type:	FORM 3160-3
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OCD Reviewer	Condition
kpickford	Notify OCD 24 hours prior to casing & cement
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104
kpickford	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system