

State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd E. Leahy, JD, PhD
Deputy Secretary

Adrienne Sandoval, Division Director
Oil Conservation Division



3/31/2020

**Operator Notice Regarding
C-104 Denial and Request for Information**

OCD is providing notice to operators that it will deny your C-104 – *Request for Allowable and Authorization to Transport* if it fails to provide complete and accurate information, including:

30-015-45876

****Test Allowable, New Well and Recompleted Well **Amend C-104**

- ☐ C-103 (or BLM equivalent) for all casing strings
 - ☐ Spud Notice
 - ☐ Surface Casing
 - ☐ Intermediate Casing (if applicable)
 - ☐ Additional Intermediate Casing (if applicable)
 - ☐ Production Casing or Liner

☐ Applicable Order (NSL, NSP, Other _____)

☐ Deviation Survey for Vertical Wells

XX Directional Survey **Certified**

XX C-102 (As-Drilled Plat for Horizontal Well) **Certified**

New Well and Recompleted Well Only

- ☐ C-103 Completion Sundry (or BLM equivalent)
- ☐ C-105 Completion Report (or BLM equivalent)
- ☐ All Logs Run on Well

The sale or transport of product without an approved C-104 violates the Oil and Gas Act and the implementing rules, including 19.15.7.15 and 19.15.16.19 NMAC. If OCD determines that your C-104 is incomplete or inaccurate, it will give you notice to resubmit your C-104 within 30 days. Failure to comply with this notice may result in enforcement action.

If you have any questions, please contact the local OCD District Office.

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

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Submit one copy to appropriate District Office

Form C-104
Revised August 1, 2011

EMNRD-OCD ARTESIA DENIED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

¹ Operator name and Address CHISHOLM ENERGY OPERATING, LLC 801 CHERRY STREET, SUITE 1200-UNIT 20 FORT WORTH, TX 76102		² OGRID Number 372137
		³ Reason for Filing Code/ Effective Date RT-02/06/2020
⁴ API Number 30 - 0 15-45876	⁵ Pool Name PURPLE SAGE; WOLFCAMP	⁶ Pool Code 98220
⁷ Property Code	⁸ Property Name ASTEROID 20-29 FED COM WCA	⁹ Well Number 1H

II. 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
B	20	23S	26E		120	NORTH	1390	EAST	EDDY

¹¹ Bottom Hole Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	29	23S	26E		322	SOUTH	2234	EAST	EDDY
¹² Lse Code F	¹³ Producing Method Code F	¹⁴ Gas Connection Date	¹⁵ C-129 Permit Number	¹⁶ C-129 Effective Date	¹⁷ C-129 Expiration Date				

III. Oil and Gas Transporters

¹⁸ Transporter OGRID	¹⁹ Transporter Name and Address	²⁰ O/G/W
371960	LUCID ENERGY DELAWARE, LLC	G
35246	SHELL TRADING US COMPANY	O

IV. Well Completion Data

²¹ Spud Date 12/14/2019	²² Ready Date 02/06/2020	²³ TD 18580'MD/8686'TVD	²⁴ PBDT 18551'MD/8686'TVD	²⁵ Perforations 18520'-8890'	²⁶ DHC, MC
²⁷ Hole Size	²⁸ Casing & Tubing Size	²⁹ Depth Set	³⁰ Sacks Cement		
17.5"	13.375", 48#, J-55	456'	465		
12.25"	9.625", 36#, J-55	1913'	790		
8.75"	5.5", 20# P-110	18560'	2610		

V. Well Test Data

³¹ Date New Oil	³² Gas Delivery Date	³³ Test Date	³⁴ Test Length	³⁵ Tbg. Pressure	³⁶ Csg. Pressure
³⁷ Choke Size	³⁸ Oil	³⁹ Water	⁴⁰ Gas		⁴¹ Test Method

⁴² I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief. Signature: <i>Jennifer Elrod</i>		OIL CONSERVATION DIVISION Approved by: <i>Denied</i>	
Printed name: JENNIFER ELROD		Title:	
Title: SR. REGULATORY ANALYST		Approval Date:	
E-mail Address: JELROD@CHISHOLMENERY.COM			
Date: 02/06/2020	Phone: 817-953-3728		

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Form C-102

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

Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT
AS DRILLED

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-45876	² Pool Code 98220	³ Pool Name PURPLE SAGE ; WOLFCAMP
⁴ Property Code	⁵ Property Name ASTEROID 20-29 FED COM WCA	⁶ Well Number 1H
⁷ OGRID No. 372137	⁸ Operator Name CHISHOLM ENERGY OPERATING, LLC	⁹ Elevation 3387

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
B	20	23S	26E		120	NORTH	1390	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
O	29	23S	26E		322	SOUTH	2234	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.

The diagram shows a well location plat for Section 20 and 29, Township 23S, Range 26E, Eddy County. It includes coordinates for the KOP (122' FNL, 2041' FEL), TOP PERF. (599' FNL, 2178' FEL), SHL (120' FNL, 1390' FEL), BHL (322' FSL, 2234' FEL), and TOE PERF. (382' FSL, 2234' FEL). The well is located in Section 29, Township 23S, Range 26E, Eddy County.	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. <i>Jennifer Elrod</i> 02/06/2020 Signature Date JENNIFER ELROD Printed Name JELROD@CHISHOLMENERGY.COM E-mail Address ¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date of Survey Signature and Seal of Professional Surveyor: Certificate Number
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Intent ☐ As Drilled ☒

API # 30-015-45876		
Operator Name: CHISHOLM ENERGY OPERATING, LLC	Property Name: ASTEROID 20-29 FED COM WCA	Well Number 1H

Kick Off Point (KOP)

UL B	Section 20	Township 23S	Range 26E	Lot 122	Feet 120	From N/S NORTH	Feet 2041	From E/W EAST	County EDDY
Latitude 32.29655					Longitude -104.313574			NAD 83	

First Take Point (FTP)

UL B	Section 20	Township 23S	Range 26E	Lot	Feet 599	From N/S NORTH	Feet 2178	From E/W EAST	County EDDY
Latitude 32.295238					Longitude -104.314001			NAD 83	

Last Take Point (LTP)

UL O	Section 29	Township 23S	Range 26E	Lot	Feet 322	From N/S SOUTH	Feet 2234	From E/W EAST	County EDDY
Latitude 32.268655					Longitude -104.314116			NAD 83	

Is this well the defining well for the Horizontal Spacing Unit?

☐ NO

Is 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

KZ 06/29/2018

Chisholm Asteroid 20-29 Fed Com WC A 1H MWD Surveys 0ft to 18580ft MD Survey Geodetic Report (Def Survey)

Report Date: January 07, 2020 - 01:37 PM
Client: Chisholm
Field: NM Eddy County (NAD 83)
Structure / Slot: Chisholm Asteroid 20-29 WC A 1H / New Slot
Well: Asteroid 20-29 Fed Com WC A 1H
Borehole: Asteroid 20-29 Fed Com WC A 1H
UWI / API#: Unknown / Unknown
Survey Name: Chisholm Asteroid 20-29 Fed Com WC A 1H MWD Surveys 0ft to 18580ft MD
Survey Date: December 12, 2019
Tort / AHD / DDI / ERD Ratio: 265.143 * / 10866.810 ft / 6.790 / 1.251
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 17' 47.60890", W 104° 18' 41.28149"
Location Grid N/E Y/X: N 471621.090 ftUS, E 548093.870 ftUS
CRS Grid Convergence Angle: 0.0117 *
Grid Scale Factor: 0.99990914
Version / Patch: 2.10.787.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.840 * (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3417.900 ft above MSL
Seabed / Ground Elevation: 3386.900 ft above MSL
Magnetic Declination: 7.236 *
Total Gravity Field Strength: 998.4604mgm (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47792.056 nT
Magnetic Dip Angle: 59.912 *
Declination Date: December 12, 2019
Magnetic Declination Model: HDGM 2019
North Reference: Grid North
Grid Convergence Used: 0.0117 *
Total Corr Mag North->Grid: 7.2242 *
North: 7.2242 *
Local Coord Referenced To: Well Head

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FEB 10 2020

EMNRD-OCDA RTESIA

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	0.00	0.00	0.00	0.00	0.00	N/A	471621.09	548093.87	N 32 17 47.61	W 104 18 41.28
First SLB MWD Survey	159.00	1.63	302.45	158.98	-1.22	1.21	-1.91	1.03	471622.30	548091.96	N 32 17 47.62	W 104 18 41.30
	254.00	1.39	293.95	253.95	-2.42	2.41	-4.10	0.34	471623.50	548089.77	N 32 17 47.63	W 104 18 41.33
	348.00	1.47	291.31	347.92	-3.32	3.31	-6.27	0.11	471624.40	548087.60	N 32 17 47.64	W 104 18 41.35
	404.00	1.42	296.09	403.90	-3.89	3.87	-7.56	0.23	471624.96	548086.31	N 32 17 47.65	W 104 18 41.37
	559.00	1.90	319.20	558.83	-6.69	6.66	-10.96	0.53	471627.75	548082.91	N 32 17 47.67	W 104 18 41.41
	623.00	1.66	316.89	622.80	-8.18	8.14	-12.29	0.39	471629.23	548081.58	N 32 17 47.69	W 104 18 41.42
	710.00	1.60	319.01	709.77	-10.02	9.98	-13.95	0.10	471631.07	548079.92	N 32 17 47.71	W 104 18 41.44
	805.00	1.43	318.71	804.74	-11.92	11.87	-15.60	0.18	471632.96	548078.27	N 32 17 47.73	W 104 18 41.46
	899.00	1.11	326.19	898.71	-13.56	13.51	-16.88	0.38	471634.60	548076.99	N 32 17 47.74	W 104 18 41.48
	994.00	1.02	320.84	993.70	-14.98	14.93	-17.93	0.14	471636.02	548075.95	N 32 17 47.76	W 104 18 41.49
	1089.00	0.73	8.05	1088.69	-16.24	16.18	-18.38	0.79	471637.27	548075.50	N 32 17 47.77	W 104 18 41.50
	1183.00	1.35	63.95	1182.67	-17.31	17.26	-17.30	1.19	471638.35	548076.57	N 32 17 47.78	W 104 18 41.48
	1278.00	1.58	70.32	1277.64	-18.24	18.20	-15.06	0.30	471639.28	548078.81	N 32 17 47.79	W 104 18 41.46
	1373.00	0.28	132.67	1372.63	-18.52	18.48	-13.65	1.55	471639.57	548080.22	N 32 17 47.79	W 104 18 41.44
	1467.00	1.81	226.65	1466.61	-17.35	17.31	-14.57	1.97	471638.39	548079.31	N 32 17 47.78	W 104 18 41.45
	1563.00	2.99	233.04	1562.53	-14.81	14.76	-17.67	1.26	471635.85	548076.20	N 32 17 47.75	W 104 18 41.49
	1657.00	4.09	234.07	1656.35	-11.38	11.32	-22.34	1.17	471632.41	548071.53	N 32 17 47.72	W 104 18 41.54
	1753.00	4.95	235.38	1752.05	-7.04	6.96	-28.52	0.90	471628.04	548065.35	N 32 17 47.68	W 104 18 41.61
	1848.00	5.31	237.43	1846.67	-2.36	2.26	-35.60	0.43	471623.35	548058.27	N 32 17 47.63	W 104 18 41.70
	2016.00	5.88	235.22	2013.86	6.70	-6.83	-49.22	0.36	471614.26	548044.66	N 32 17 47.54	W 104 18 41.85
	2110.00	5.43	253.64	2107.41	10.67	-10.83	-57.44	1.98	471610.26	548036.43	N 32 17 47.50	W 104 18 41.95
	2205.00	6.27	279.14	2201.93	11.09	-11.27	-66.88	2.85	471609.82	548027.00	N 32 17 47.50	W 104 18 42.06
	2300.00	6.31	284.11	2296.36	8.96	-9.18	-77.06	0.57	471611.91	548016.81	N 32 17 47.52	W 104 18 42.18
	2395.00	5.96	284.44	2390.82	6.43	-6.68	-86.90	0.37	471614.42	548006.97	N 32 17 47.54	W 104 18 42.29
	2490.00	5.98	284.38	2485.30	3.95	-4.22	-96.47	0.02	471616.87	547997.41	N 32 17 47.57	W 104 18 42.41
	2584.00	5.71	284.09	2578.82	1.57	-1.86	-105.75	0.29	471619.23	547988.13	N 32 17 47.59	W 104 18 42.51
	2679.00	5.56	284.74	2673.36	-0.78	0.46	-114.79	0.17	471621.55	547979.09	N 32 17 47.61	W 104 18 42.62
	2773.00	5.69	285.58	2766.90	-3.21	2.87	-123.68	0.16	471623.96	547970.20	N 32 17 47.64	W 104 18 42.72
	2868.00	5.11	286.87	2861.48	-5.73	5.36	-132.26	0.62	471626.45	547961.62	N 32 17 47.66	W 104 18 42.82
	2962.00	4.98	272.08	2955.12	-7.12	6.73	-140.35	1.39	471627.81	547953.54	N 32 17 47.68	W 104 18 42.92
	3056.00	4.68	265.97	3048.79	-7.02	6.60	-148.25	0.63	471627.69	547945.63	N 32 17 47.67	W 104 18 43.01
	3150.00	4.56	265.79	3142.48	-6.50	6.06	-155.80	0.13	471627.15	547938.08	N 32 17 47.67	W 104 18 43.10
	3246.00	4.44	267.96	3238.19	-6.10	5.65	-163.32	0.22	471626.74	547930.56	N 32 17 47.67	W 104 18 43.18
	3341.00	4.36	267.99	3332.91	-5.87	5.39	-170.61	0.08	471626.48	547923.28	N 32 17 47.66	W 104 18 43.27
	3436.00	4.13	269.09	3427.65	-5.71	5.21	-177.63	0.26	471626.30	547916.25	N 32 17 47.66	W 104 18 43.35
	3532.00	5.98	272.84	3523.27	-5.92	5.40	-186.09	1.96	471626.49	547907.80	N 32 17 47.66	W 104 18 43.45
	3627.00	6.24	275.23	3617.73	-6.67	6.12	-196.17	0.38	471627.21	547897.72	N 32 17 47.67	W 104 18 43.57
	3721.00	6.27	275.22	3711.17	-7.63	7.05	-206.37	0.03	471628.14	547887.52	N 32 17 47.68	W 104 18 43.69
	3816.00	5.99	276.96	3805.63	-8.73	8.12	-216.46	0.35	471629.21	547877.43	N 32 17 47.69	W 104 18 43.80
	3910.00	5.76	279.84	3899.13	-10.15	9.52	-225.97	0.40	471630.61	547867.92	N 32 17 47.70	W 104 18 43.91
	4006.00	5.41	282.65	3994.68	-11.99	11.34	-235.13	0.46	471632.43	547858.76	N 32 17 47.72	W 104 18 44.02
	4101.00	5.19	283.85	4089.27	-14.03	13.35	-243.68	0.26	471634.44	547850.22	N 32 17 47.74	W 104 18 44.12
	4195.00	7.13	277.82	4182.72	-15.87	15.16	-253.58	2.17	471636.25	547840.31	N 32 17 47.76	W 104 18 44.24
	4290.00	7.46	277.15	4276.96	-17.47	16.73	-265.54	0.36	471637.82	547828.35	N 32 17 47.77	W 104 18 44.38
	4385.00	6.81	275.67	4371.22	-18.83	18.05	-277.27	0.71	471639.14	547816.63	N 32 17 47.79	W 104 18 44.51
	4480.00	6.52	274.62	4465.58	-19.85	19.04	-288.25	0.33	471640.13	547805.65	N 32 17 47.80	W 104 18 44.6

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7320.00	6.28	265.83	7291.70	0.93	-2.50	-564.45	1.26	471618.59	547529.48	N 32 17 47.59	W 104 18 47.86
	7414.00	5.36	266.75	7385.21	1.54	-3.14	-547.95	0.99	471617.95	547519.97	N 32 17 47.58	W 104 18 47.97
	7509.00	5.12	272.27	7479.81	1.60	-3.23	-582.62	0.59	471617.86	547511.00	N 32 17 47.58	W 104 18 48.07
	7604.00	5.87	271.17	7574.38	1.31	-2.96	-591.71	0.80	471618.13	547502.21	N 32 17 47.58	W 104 18 48.17
	7698.00	6.08	280.37	7667.87	0.29	-1.97	-601.42	1.04	471618.12	547492.51	N 32 17 47.59	W 104 18 48.29
	7793.00	9.07	273.93	7762.03	-1.17	-0.55	-613.84	3.27	471620.54	547480.09	N 32 17 47.60	W 104 18 48.43
	7888.00	8.64	268.66	7855.90	-1.55	-0.20	-628.44	0.97	471620.89	547465.49	N 32 17 47.61	W 104 18 48.60
	7981.00	7.33	263.76	7948.00	-0.78	-1.01	-641.32	1.59	471620.08	547452.60	N 32 17 47.60	W 104 18 48.75
	8037.00	6.40	261.24	8003.59	0.06	-1.87	-647.96	1.75	471619.22	547445.97	N 32 17 47.59	W 104 18 48.83
	8069.00	5.63	237.62	8035.42	1.17	-2.98	-651.05	8.03	471618.11	547442.88	N 32 17 47.58	W 104 18 48.87
	8100.00	7.23	214.88	8066.23	3.57	-5.40	-653.45	9.60	471615.69	547440.48	N 32 17 47.56	W 104 18 48.89
	8132.00	9.73	207.61	8097.88	7.62	-9.45	-655.85	8.49	471611.64	547438.08	N 32 17 47.52	W 104 18 48.92
	8163.00	11.91	213.33	8128.33	12.60	-14.44	-658.83	7.83	471606.65	547435.10	N 32 17 47.47	W 104 18 48.96
	8195.00	14.50	210.12	8159.48	18.82	-20.67	-662.65	8.41	471600.42	547431.28	N 32 17 47.41	W 104 18 49.00
	8227.00	16.64	208.10	8190.30	26.31	-28.18	-666.82	6.90	471592.92	547427.11	N 32 17 47.33	W 104 18 49.05
	8258.00	19.40	205.40	8219.78	34.87	-36.74	-671.12	9.30	471584.35	547422.81	N 32 17 47.25	W 104 18 49.10
	8290.00	22.51	202.17	8249.66	45.33	-47.22	-675.71	10.36	471573.87	547418.22	N 32 17 47.14	W 104 18 49.15
	8322.00	25.82	200.56	8278.85	57.52	-59.42	-680.47	10.55	471561.67	547413.46	N 32 17 47.02	W 104 18 49.21
	8353.00	30.25	198.60	8306.21	71.24	-73.15	-685.34	14.59	471547.95	547408.60	N 32 17 46.89	W 104 18 49.27
	8385.00	33.43	198.67	8333.39	87.22	-89.14	-690.73	9.94	471531.95	547403.20	N 32 17 46.73	W 104 18 49.33
	8416.00	36.03	197.94	8358.17	103.97	-105.91	-696.27	8.49	471515.19	547397.66	N 32 17 46.56	W 104 18 49.39
	8447.00	39.52	196.95	8383.37	122.07	-124.03	-701.96	11.43	471497.08	547391.97	N 32 17 46.38	W 104 18 49.46
	8479.00	42.70	196.63	8407.47	142.19	-144.17	-708.04	9.96	471476.94	547385.90	N 32 17 46.18	W 104 18 49.53
	8511.00	45.05	196.58	8430.54	163.42	-165.42	-714.37	7.34	471455.69	547379.56	N 32 17 45.97	W 104 18 49.60
	8543.00	47.33	196.62	8452.69	185.53	-187.55	-720.97	7.13	471433.56	547373.72	N 32 17 45.75	W 104 18 49.68
	8575.00	49.55	195.48	8473.92	208.53	-210.56	-727.59	7.43	471410.55	547366.35	N 32 17 45.53	W 104 18 49.76
HL Crossing	8577.07	49.69	195.48	8475.26	210.04	-212.08	-728.01	6.94	471409.03	547365.93	N 32 17 45.51	W 104 18 49.76
	8606.00	51.70	195.43	8493.58	231.60	-233.65	-733.97	6.94	471387.46	547359.97	N 32 17 45.30	W 104 18 49.83
	8654.00	56.40	194.19	8521.76	269.13	-271.21	-743.89	10.01	471349.90	547350.05	N 32 17 44.93	W 104 18 49.95
	8702.00	60.70	192.47	8546.80	308.94	-311.05	-753.31	9.47	471310.07	547340.63	N 32 17 44.53	W 104 18 50.06
	8749.00	63.43	191.39	8568.81	349.54	-351.67	-761.89	6.15	471269.45	547332.05	N 32 17 44.13	W 104 18 50.16
	8797.00	66.32	189.84	8589.19	392.23	-394.38	-769.89	6.69	471226.75	547324.05	N 32 17 43.71	W 104 18 50.25
	8844.00	69.65	188.26	8606.81	435.23	-437.41	-776.73	7.74	471183.73	547317.21	N 32 17 43.28	W 104 18 50.33
	8891.00	72.66	187.78	8621.99	479.26	-481.45	-782.94	6.48	471139.69	547311.01	N 32 17 42.85	W 104 18 50.40
	8938.00	74.35	188.66	8635.33	523.84	-526.05	-789.38	4.02	471095.09	547304.56	N 32 17 42.41	W 104 18 50.48
	8986.00	78.16	189.58	8646.74	569.85	-572.07	-796.77	8.15	471049.07	547297.17	N 32 17 41.95	W 104 18 50.57
	9033.00	82.42	189.00	8654.66	615.53	-617.78	-804.25	9.15	471003.37	547289.70	N 32 17 41.50	W 104 18 50.65
	9081.00	85.52	188.28	8659.70	662.70	-664.97	-811.42	6.63	470956.18	547282.53	N 32 17 41.03	W 104 18 50.74
	9175.00	91.29	187.99	8662.32	755.64	-757.95	-824.71	6.15	470863.21	547269.24	N 32 17 40.11	W 104 18 50.89
	9238.00	89.83	188.26	8661.70	817.98	-820.31	-833.61	2.36	470800.86	547260.34	N 32 17 39.49	W 104 18 50.99
	9336.00	88.17	188.79	8663.41	914.84	-917.21	-848.14	1.78	470703.97	547245.81	N 32 17 38.53	W 104 18 51.16
	9431.00	88.51	185.68	8666.17	1008.99	-1011.40	-860.09	3.29	470609.78	547233.86	N 32 17 37.60	W 104 18 51.30
	9526.00	89.20	183.38	8668.06	1103.65	-1106.08	-867.59	2.53	470515.11	547226.36	N 32 17 36.67	W 104 18 51.39
	9621.00	89.11	182.37	8669.47	1198.51	-1200.95	-872.36	1.07	470420.25	547221.59	N 32 17 35.73	W 104 18 51.45
	9716.00	89.77	181.86	8670.39	1293.43	-1295.88	-875.86	0.88	470325.33	547218.09	N 32 17 34.79	W 104 18 51.49
	9810.00	89.28	179.90	8671.17	1387.40	-1389.86	-877.31	2.15	470231.36	547216.64	N 32 17 33.86	W 104 18 51.50
	9906.00	89.54	179.32	8672.16	1483.40	-1485.85	-876.65	0.66	470135.38	547217.30	N 32 17 32.91	W 104 18 51.50
	10000.00	89.68	179.59	8672.80	1577.39	-1579.84	-875.76	0.32	470041.39	547218.19	N 32 17 31.98	W 104 18 51.49
	10096.00	89.77	179.94	8673.26	1673.39	-1675.84	-875.37	0.38	469945.40	547218.58	N 32 17 31.03	W 104 18 51.48
	10191.00	89.71	178.95	8673.69	1768.39	-1770.83	-874.45	1.04	469850.42	547219.50	N 32 17 30.09	W 104 18 51.47
	10285.00	89.74	178.65	8674.14	1862.37	-1864.81	-872.48	0.32	469756.45	547221.47	N 32 17 29.16	W 104 18 51.45
	10379.00	89.68	178.55	8674.62	1956.35	-1958.78	-870.18	0.12	469662.49	547223.77	N 32 17 28.23	W 104 18 51.42
	10474.00	90.11	177.70	8674.79	2051.30	-2053.73	-867.07	1.00	469567.55	547226.88	N 32 17 27.29	W 104 18 51.39
	10569.00	90.60	177.51	8674.21	2146.23	-2148.65	-863.10	0.55	469472.64	547230.85	N 32 17 26.35	W 104 18 51.34
	10664.00	90.69	177.48	8673.14	2241.14	-2243.55	-858.95	0.10	469377.75	547235.00	N 32 17 25.41	W 104 18 51.29
	10758.00	90.72	177.75	8671.98	2335.06	-2337.46	-855.04	0.29	469283.85	547238.91	N 32 17 24.48	W 104 18 51.25
	10853.00	90.77	177.39	8670.74	2429.98	-2432.37	-851.01	0.38	469188.95	547242.94	N 32 17 23.54	W 104 18 51.20
	10947.00	90.46	177.67	8669.74	2523.90	-2526.27	-846.96	0.44	469095.05	547246.99	N 32 17 22.61	W 104 18 51.15
	11042.00	90.17	179.24	8669.21	2618.87	-2621.24	-844.40	1.68	469000.10	547249.55	N 32 17 21.67	W 104 18 51.12
	11136.00	90.80	180.92	8668.42	2712.86	-2715.23	-844.53	1.91	468906.11	547249.42	N 32 17 20.74	W 104 18 51.13
	11231.00	90.63	180.89	8667.23	2807.84	-2810.21	-846.03	0.18	468811.14	547247.92	N 32 17 19.80	W 104 18 51.14
	11324.00	90.52	179.85	8666.30	2900.83	-2903.20	-846.63	1.12	468718.16	547247.32	N 32 17 18.88	W 104 18 51.15
	11419.00	90.40	179.68	8665.54	2995.82	-2998.20	-846.24	0.22	468623.17	547247.71	N 32 17 17.94	W 104 18 51.15
	11513.00	90.69	181.18	8664.64	3089.81	-3092.19	-846.95	1.63	468529.19	547247.00	N 32 17 17.01	W 104 18 51.15
	11608.00	90.66	179.96	8663.52	3184.79	-3187.17	-847.89	1.28	468434.21	547246.06	N 32 17 16.07	W 104 18 51.17
	11703.00	90.03	179.68	8662.95	3279.79	-3282.17	-847.59	0.73	468339.22	547246.35	N 32 17 15.13	W 104 18 51.16
	11798.00	90.03	180.74	8662.90	3374.79	-3377.17	-847.94	1.12	468244.23	547246.01	N 32 17 14.19	W 104 18 51.17
	11893.00	89.66	181.32	8663.16	3469.77	-3472.15	-849.65	0.72	468149.26	547244.30	N 32 17 13.25	W 104 18 51.19
	11988.00	89.46	180.40	8663.89	3564.75	-3567.14	-851.08	0.99	468054.28	547242.87	N 32 17 12.31	W 104 18 51.20
	12084.00	89.83	179.90	8664.48	3660.74	-3663.14	-851.33	0.65	467958.29	547242.62	N 32 17 11.36	W 104 18 51.21
	12177.00	89.66	179.35	8664.90	3753.74	-3756.13	-850.72	0.62	467865.31	547243.23	N 32 17 10.44	W 104 18 51.20
	12272.00	89.71	179.97	8665.42	3848.74	-3851.13	-850.16	0.65	467770.32	547243.79	N 32 17 9.50	W 104 18 51.19
	12367.00	89.71	179.61	8665.90	3943.74	-3946.13	-849.81	0.38	467675.33	547244.14	N 32 17 8.56	W 104 18 51.19
	12462.00	89.80	180.03	8666.31	4038.74	-4041.13	-849.51	0.45	467580.34	547244.44	N 32 17 7.62	W 104 18 51.19
	12557.00	89.71	180.67	8666.74	4133.74	-4136.12	-849.21	0.45	467485.35	547244.74	N 32 17 6.68	W 104 18 51.18
	12650.00	89.43	180.93	8667.17	4228.74	-4231.12	-848.95	1.45	467390.36	547244.30	N 32 17 5.76	W 104 18 51.19
	12745.00											

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 ° ' '')
	15868.00	90.43	179.57	8674.24	7444.40	-7446.76	-836.97	0.47	464175.02	547256.98	N 32 16 33.92	W 104 18 51.05
	15963.00	90.54	179.81	8673.44	7539.39	-7541.76	-836.45	0.28	464080.03	547257.50	N 32 16 32.98	W 104 18 51.04
	16057.00	90.75	179.76	8672.38	7633.39	-7635.75	-836.10	0.23	463986.05	547257.85	N 32 16 32.05	W 104 18 51.04
	16153.00	90.29	180.92	8671.51	7729.38	-7731.74	-836.67	1.30	463899.06	547257.28	N 32 16 31.10	W 104 18 51.04
	16248.00	89.80	179.49	8671.43	7824.37	-7826.74	-837.01	1.59	463795.08	547256.94	N 32 16 30.16	W 104 18 51.05
	16344.00	90.09	179.31	8671.52	7920.37	-7922.74	-836.00	0.36	463699.09	547257.94	N 32 16 29.21	W 104 18 51.04
	16439.00	90.26	180.06	8671.23	8015.37	-8017.73	-835.48	0.81	463604.10	547258.47	N 32 16 28.27	W 104 18 51.03
	16534.00	89.74	179.27	8671.23	8110.37	-8112.73	-834.93	1.00	463509.11	547259.02	N 32 16 27.33	W 104 18 51.03
	16629.00	89.77	179.80	8671.64	8205.36	-8207.73	-834.15	0.56	463414.13	547259.79	N 32 16 26.39	W 104 18 51.02
	16724.00	89.48	179.59	8672.26	8300.36	-8302.72	-833.65	0.38	463319.14	547260.30	N 32 16 25.45	W 104 18 51.01
	16818.00	89.28	179.77	8673.28	8394.36	-8396.71	-833.12	0.29	463225.15	547260.82	N 32 16 24.52	W 104 18 51.00
	16912.00	88.97	182.82	8674.71	8488.30	-8490.67	-835.25	3.26	463131.21	547258.70	N 32 16 23.59	W 104 18 51.03
	17007.00	89.34	185.16	8676.12	8583.04	-8585.42	-841.86	2.49	463036.47	547252.09	N 32 16 22.66	W 104 18 51.11
	17101.00	89.20	191.66	8677.31	8675.93	-8678.35	-855.60	6.92	462943.54	547238.35	N 32 16 21.74	W 104 18 51.27
	17133.00	89.08	189.09	8677.80	8707.38	-8709.82	-861.36	8.04	462912.08	547232.59	N 32 16 21.43	W 104 18 51.33
	17165.00	89.26	189.15	8678.26	8738.96	-8741.42	-866.43	0.59	462880.49	547227.52	N 32 16 21.11	W 104 18 51.39
	17196.00	89.31	188.39	8678.65	8769.58	-8772.05	-871.16	2.46	462849.85	547222.79	N 32 16 20.81	W 104 18 51.45
	17227.00	89.40	187.50	8678.99	8800.27	-8802.75	-875.44	2.89	462819.16	547218.51	N 32 16 20.51	W 104 18 51.50
	17259.00	89.31	186.28	8679.35	8832.03	-8834.52	-879.28	3.82	462787.39	547214.67	N 32 16 20.19	W 104 18 51.54
	17291.00	89.37	185.38	8679.72	8863.85	-8866.35	-882.53	2.82	462755.56	547211.42	N 32 16 19.88	W 104 18 51.58
	17321.00	89.28	184.57	8680.08	8893.73	-8896.23	-885.13	2.72	462725.68	547208.82	N 32 16 19.58	W 104 18 51.61
	17353.00	89.66	183.58	8680.37	8925.64	-8928.15	-887.40	3.31	462693.77	547206.55	N 32 16 19.27	W 104 18 51.64
	17385.00	89.25	182.79	8680.68	8957.58	-8960.10	-889.18	2.78	462661.82	547204.77	N 32 16 18.95	W 104 18 51.66
	17416.00	89.31	182.33	8681.07	8988.54	-8991.07	-890.57	1.50	462630.86	547203.39	N 32 16 18.64	W 104 18 51.68
	17448.00	89.57	180.83	8681.38	9020.53	-9023.05	-891.45	4.76	462598.88	547202.50	N 32 16 18.33	W 104 18 51.69
	17479.00	89.54	180.06	8681.62	9051.52	-9054.05	-891.69	2.49	462567.88	547202.26	N 32 16 18.02	W 104 18 51.69
	17511.00	89.40	179.17	8681.92	9083.52	-9086.05	-891.48	2.82	462535.89	547202.48	N 32 16 17.70	W 104 18 51.69
	17574.00	89.51	177.02	8682.52	9146.49	-9149.01	-889.38	3.42	462472.93	547204.57	N 32 16 17.08	W 104 18 51.66
	17669.00	89.08	174.58	8683.68	9241.24	-9243.74	-882.42	2.61	462378.21	547211.53	N 32 16 16.14	W 104 18 51.58
	17764.00	89.28	174.19	8685.04	9335.80	-9338.27	-873.13	0.46	462283.69	547220.82	N 32 16 15.21	W 104 18 51.47
	17859.00	89.74	174.32	8685.86	9430.34	-9432.79	-863.62	0.50	462189.18	547230.33	N 32 16 14.27	W 104 18 51.36
	17954.00	89.94	174.22	8686.12	9524.89	-9527.31	-854.14	0.24	462094.66	547239.81	N 32 16 13.34	W 104 18 51.25
	18048.00	90.00	174.58	8686.17	9618.47	-9620.87	-844.96	0.39	462001.12	547248.98	N 32 16 12.41	W 104 18 51.15
	18143.00	90.29	175.08	8685.93	9713.11	-9715.48	-836.40	0.61	461906.51	547257.54	N 32 16 11.48	W 104 18 51.05
	18238.00	90.17	175.88	8685.55	9807.83	-9810.18	-828.92	0.85	461811.82	547265.03	N 32 16 10.54	W 104 18 50.96
	18332.00	89.91	176.40	8685.48	9901.63	-9903.97	-822.59	0.62	461718.04	547271.36	N 32 16 9.61	W 104 18 50.89
	18428.00	89.94	177.69	8685.61	9997.52	-9999.84	-817.64	1.34	461622.18	547276.31	N 32 16 8.66	W 104 18 50.83
Final Survey	18489.00	90.03	180.17	8685.63	10058.50	-10060.82	-816.50	4.07	461561.20	547277.45	N 32 16 8.06	W 104 18 50.81
HL Crossing	18571.89	90.03	180.17	8685.58	10141.39	-10143.71	-816.75	0.00	461478.32	547277.20	N 32 16 7.24	W 104 18 50.82
Projection To Bit	18580.00	90.03	180.17	8685.58	10149.50	-10151.82	-816.77	0.00	461470.21	547277.18	N 32 16 7.16	W 104 18 50.82

Survey Type: Def Survey

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	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	31.000	1/98.425	17.500	13.375	NAL_MWD_1.0_DEG-Depth Only	Asteroid 20-29 Fed Com WC A 1H / Chisholm Asteroid 20-29 Fed Com WC A 1H MWD Surveys 0ft
	1	31.000	31.000	Act Stns	17.500	13.375	NAL_MWD_1.0_DEG-Depth Only	Asteroid 20-29 Fed Com WC A 1H / Chisholm Asteroid 20-29 Fed Com WC A 1H MWD Surveys 0ft
	1	31.000	465.000	Act Stns	17.500	13.375	NAL_MWD_1.0_DEG	Asteroid 20-29 Fed Com WC A 1H / Chisholm Asteroid 20-29 Fed Com WC A 1H MWD Surveys 0ft
	1	465.000	1935.000	Act Stns	12.250	9.625	NAL_MWD_1.0_DEG	Asteroid 20-29 Fed Com WC A 1H / Chisholm Asteroid 20-29 Fed Com WC A 1H MWD Surveys 0ft
	1	1935.000	9290.000	Act Stns	8.750	0.000	NAL_MWD_1.0_DEG	Asteroid 20-29 Fed Com WC A 1H / Chisholm Asteroid 20-29 Fed Com WC A 1H MWD Surveys 0ft
	1	9290.000	18580.000	Act Stns	8.500	0.000	NAL_MWD_1.0_DEG	Asteroid 20-29 Fed Com WC A 1H / Chisholm Asteroid 20-29 Fed Com WC A 1H MWD Surveys 0ft

Borehole:	Well:	Field:	Structure:
Asteroid 20-29 Fed Com WC A 1H	Asteroid 20-29 Fed Com WC A 1H	NM Eddy County (NAD 83)	Chisholm Asteroid 20-29 WC A 1H

Gravity & Magnetic Parameters	Surface Location	Miscellaneous
Model: HDGM 2019 Dip: 69.912° Date: 12-Dec-2019 MagDec: 7.236° FS: 47792.056nT Gravity FS: 998.46mg (9.80665 Based)	NAD83 New Mexico State Plane, Eastern Zone, US Feet Lat: N 32 17 47.61 Northing: 471621.69NUS Grid Conv: 0.0157° Lon: W 104 18 41.28 Easting: 548093.87NUS Scale Fact: 0.99990914	Slot: New Slot TVD Ref: RKB(3417.9ft above MSL) Plan: Chisholm Asteroid 20-29 Fed Com WC A 1H MWD Surveys Off to 18580ft MD

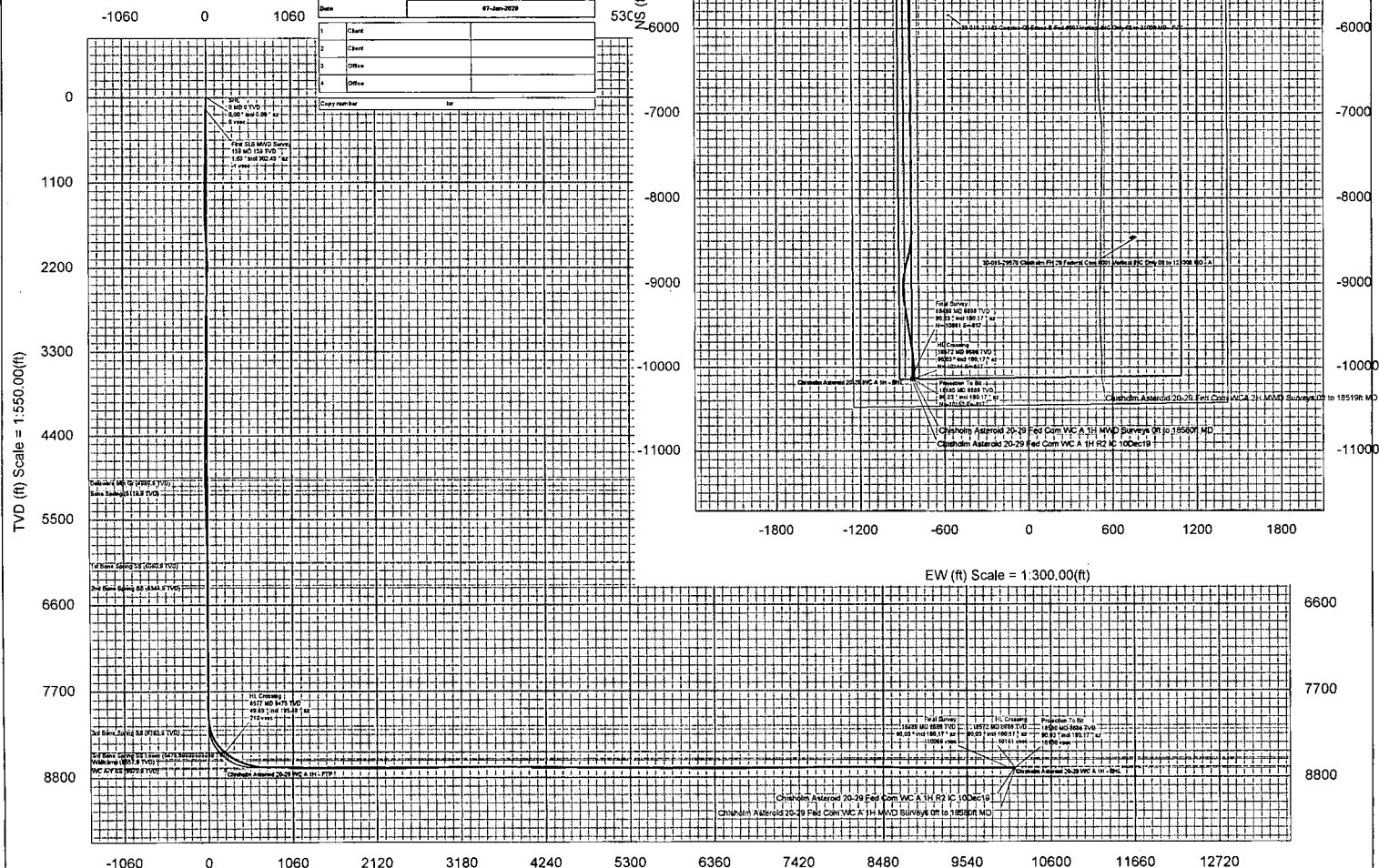
Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	OLS
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
First SLB MWD Survey	159.00	1.63	302.45	158.98	-1.22	1.21	-1.91	1.03
HL Crossing	8577.07	49.69	195.48	8475.26	210.04	-212.08	-728.01	6.94
Final Survey	18489.00	90.03	180.17	8685.63	10058.50	-10060.82	-816.50	4.07
HL Crossing	18571.89	90.03	180.17	8685.58	10141.39	-10143.71	-816.75	0.00
Projection To Bit	18580.00	90.03	180.17	8685.58	10149.50	-10151.82	-816.77	0.00



CONTROLLED

Plan ref	Chisholm Asteroid 20-29 Fed Com WC A 1H MWD Surveys Off to 18580ft MD
Drawing ref	
Copy number	of 3
Date	07-Jan-2020
1. Check	
2. Check	
3. Office	
4. Office	
Copy number	1st



Vertical Section (ft) Azim = 179.84° Scale = 1:530.00(ft) Origin = 0N/-S, 0E/-W