

District I

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

District II

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

District III

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

District IV

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

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

Form C-101
August 1, 2011

Permit 319661

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

1. Operator Name and Address Earthstone Operating, LLC 1400 Woodloch Forest The Woodlands, TX 77380		2. OGRID Number 331165
		3. API Number 30-015-49810
4. Property Code 332535	5. Property Name DARK CANYON 15 22 WCA STATE COM	6. Well No. 006H

7. Surface Location

UL - Lot B	Section 15	Township 23S	Range 26E	Lot Idn	Feet From 200	N/S Line N	Feet From 1535	E/W Line E	County Eddy
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8. Proposed Bottom Hole Location

UL - Lot G	Section 22	Township 23S	Range 26E	Lot Idn G	Feet From 2168	N/S Line N	Feet From 2250	E/W Line E	County Eddy
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9. Pool Information

PURPLE SAGE;WOLFCAMP (GAS)	98220
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Additional Well Information

11. Work Type New Well	12. Well Type GAS	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3304
16. Multiple N	17. Proposed Depth 16246	18. Formation Wolfcamp	19. Contractor	20. Spud Date 10/1/2022
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	54.5	500	525	0
Int1	12.25	9.625	40	1950	245	1450
Int1	12.25	9.625	40	1950	340	0
Prod	8.75	5.5	20	16246	1755	6100
Prod	8.76	5.5	20	16246	585	

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	2500	2500	Cameron
Double Ram	5000	5000	Cameron
Pipe	5000	5000	Cameron

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

Signature:

OIL CONSERVATION DIVISION

Printed Name: Electronically filed by Charlotte Stilwell	Approved By: Katherine Pickford	
Title: Senior Production Analyst	Title: Geoscientist	
Email Address: charlotte@earthstoneenergy.com	Approved Date: 8/12/2022	Expiration Date: 8/12/2024
Date: 6/17/2022	Phone: 281-771-3065	Conditions of Approval Attached

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-49810	² Pool Code 98220	³ Pool Name PURPLE SAGE; WOLFCAMP
⁴ Property Code 332535	⁵ Property Name DARK CANYON 15-22 WCA STATE COM	⁶ Well Number 6H
⁷ OGRID No. 331165	⁸ Operator Name EARTHSTONE OPERATING, LLC	⁹ Elevation 3304.0

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	15	23 S	26 E		200	NORTH	1535	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
G	22	23 S	26 E		2168	NORTH	2250	EAST	EDDY

¹² Dedicated Acres 480	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Jennifer Elrod</i> 06/17/2022 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. SEPTEMBER 23, 2019 Date of Survey <i>William F. Jaramillo</i> Signature and Seal of Professional Surveyor Certificate Number: 12797 Survey No. 7513A
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Intent ☒ As Drilled ☐

API #

Operator Name:	Property Name:	Well Number
EARTHSTONE OPERATING, LLC	DARK CANYON 15-22 WCA	6H

Kick Off Point (KOP)

UL B	Section 15	Township 23S	Range 26E	Lot	Feet 200	From N/S NORTH	Feet 1535	From E/W EAST	County EDDY
Latitude 32.3112916					Longitude 104.2772160			NAD 83	

First Take Point (FTP)

UL B	Section 15	Township 23S	Range 26E	Lot	Feet 330	From N/S NORTH	Feet 2250	From E/W EAST	County EDDY
Latitude 32.3108879					Longitude 104.2795297			NAD 83	

Last Take Point (LTP)

UL G	Section 22	Township 23S	Range 26E	Lot	Feet 2168	From N/S NORTH	Feet 2250	From E/W EAST	County EDDY
Latitude 32.2908409					Longitude 104.2795970			NAD 83	

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

☒ YES

Is this well an infill well?

☐

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

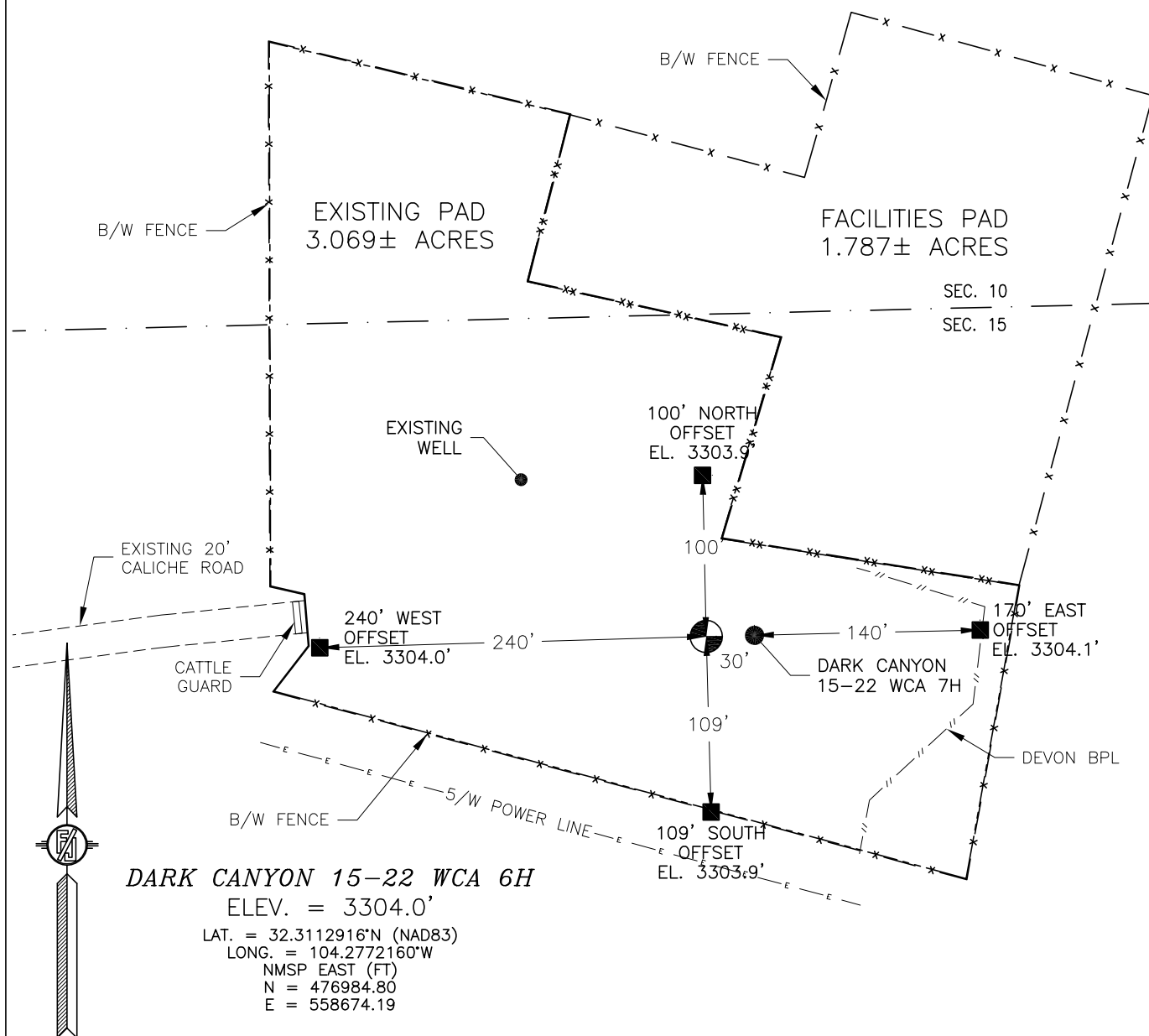
API #

Operator Name:	Property Name:	Well Number

KZ 06/29/2018

SECTION 15, TOWNSHIP 23 SOUTH, RANGE 26 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE



DARK CANYON 15-22 WCA 6H
ELEV. = 3304.0'

LAT. = 32.3112916°N (NAD83)
LONG. = 104.2772160°W
NMSP EAST (FT)
N = 476984.80
E = 558674.19

010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM US HIGHWAY 62-180 AND CR. 408 (DARK CANYON) GO NORTH ON US HIGHWAY 62-180 1.5 MILES, TURN LEFT AND GO WEST ON AIRPORT QUARRY ROAD 0.6 OF A MILE, TURN RIGHT ON CALICHE ROAD AND GO NORTH 0.35 OF A MILE, TURN RIGHT AND GO EAST 763' TO THE SOUTHWEST PAD CORNER FOR THIS LOCATION.

I, FILIMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

9/23/19

DATE

MADSON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

EARTHSTONE OPERATING, LLC

DARK CANYON 15-22 WCA 6H
LOCATED 200 FT. FROM THE NORTH LINE
AND 1535 FT. FROM THE EAST LINE OF
SECTION 15, TOWNSHIP 23 SOUTH,
RANGE 26 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

SEPTEMBER 23, 2019

SURVEY NO. 7513A

CARLSBAD, NEW MEXICO

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Santa Fe, NM 87505

Form APD Conditions

Permit 319661

PERMIT CONDITIONS OF APPROVAL

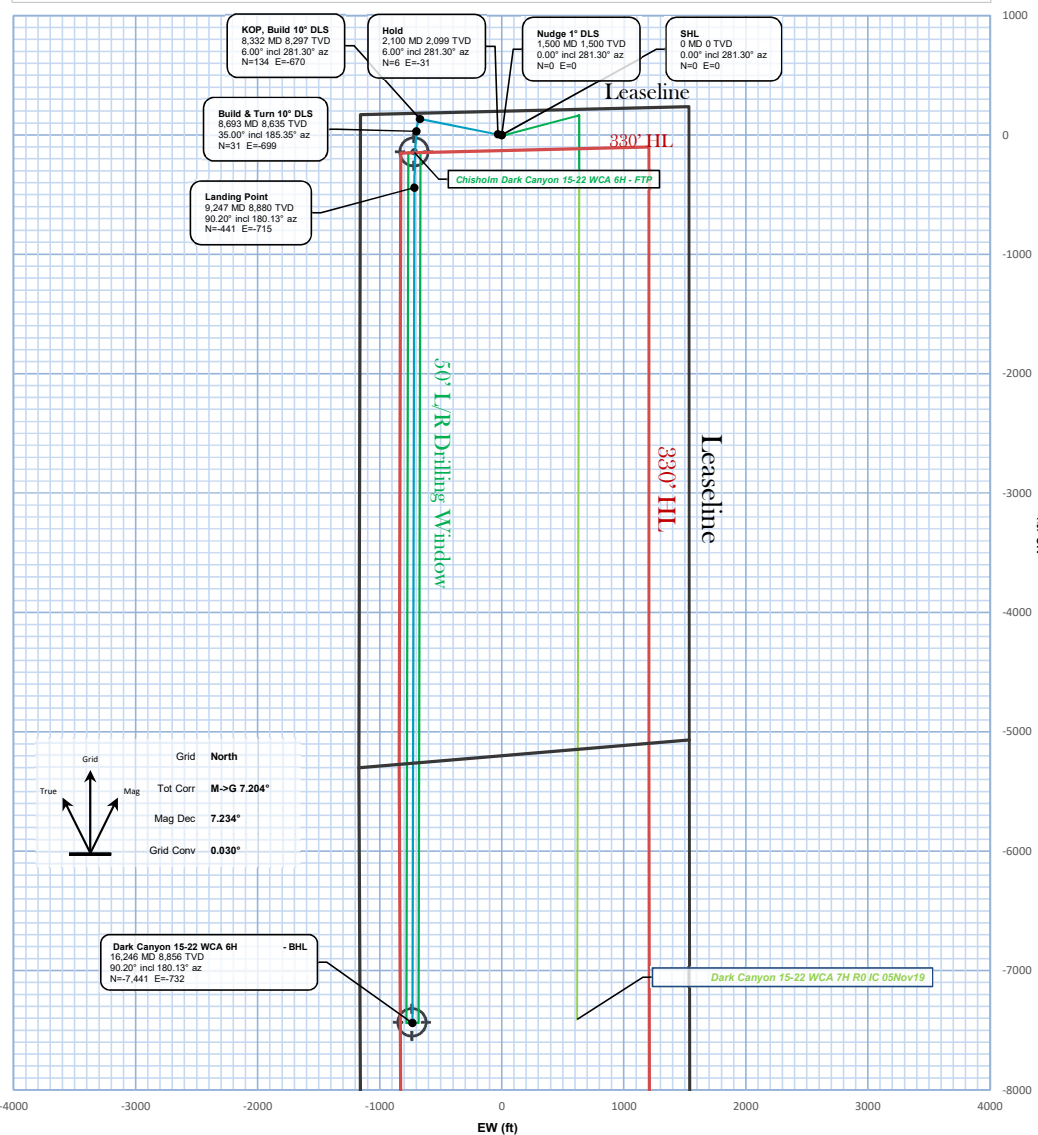
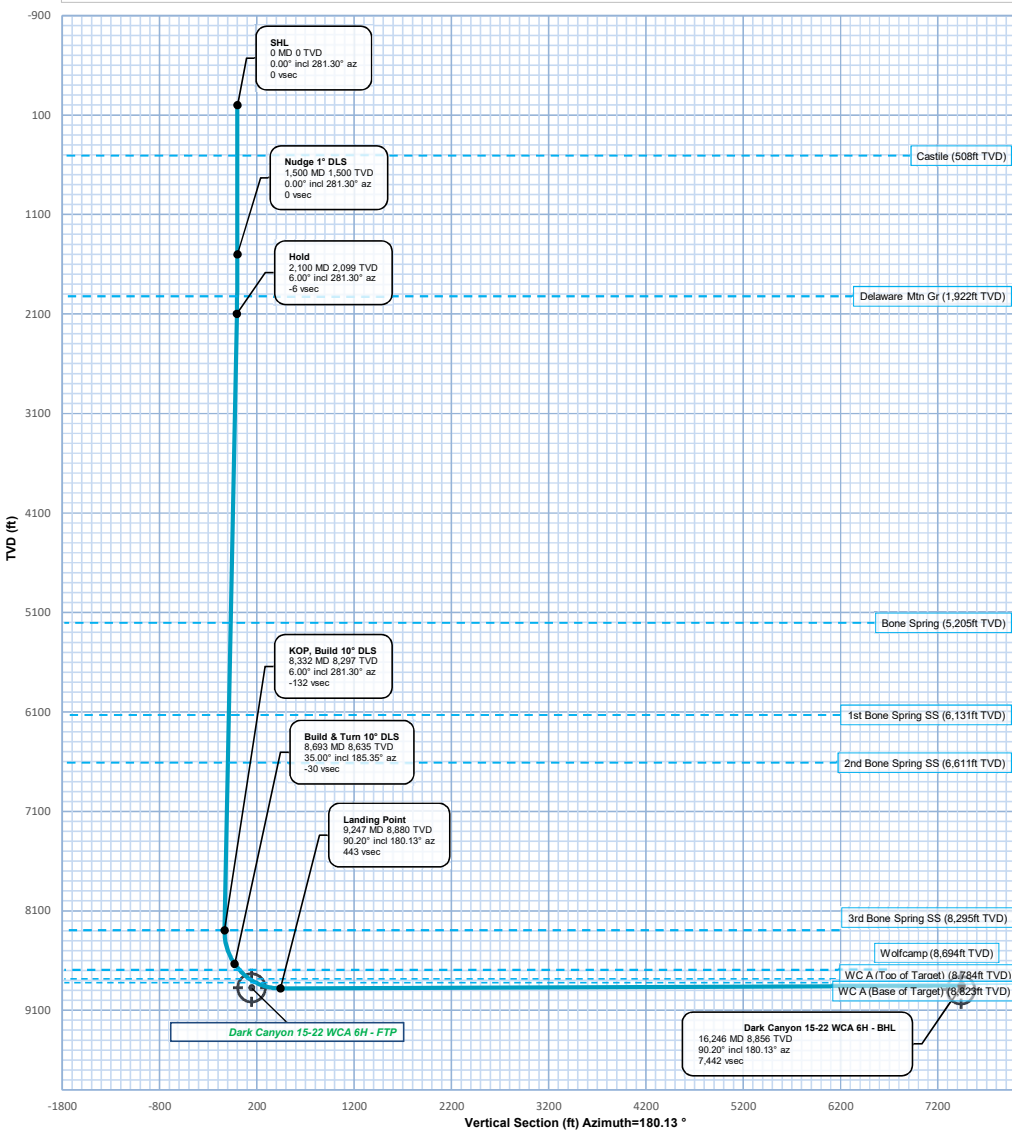
Operator Name and Address: Earthstone Operating, LLC [331165] 1400 Woodloch Forest The Woodlands, TX 77380	API Number: 30-015-49810
	Well: DARK CANYON 15 22 WCA STATE COM #006H

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	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud
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

BOREHOLE				WELL				FIELD		STRUCTURE	
Dark Canyon 15-22 WCA 6H				Dark Canyon 15-22 WCA 6H				NM Eddy County (NAD 83)		Dark Canyon 15-22 WCA 6H	

Critical Point	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (deg/100ft)
SHL	0.00	0.00	281.30	0.00	0.00	0.00	0.00	
13.375 in Casing	1,085.80	0.00	281.30	1,085.80	0.00	0.00	0.00	0.00
Nudge 1" DLS	1,500.00	0.00	281.30	1,500.00	0.00	0.00	0.00	0.00
Hold	2,100.00	6.00	281.30	2,098.90	-6.08	6.15	-30.78	1.00
9.625 in Casing	8,187.80	6.00	281.30	8,153.35	-129.35	130.84	-654.79	0.00
KOP, Build 10" DLS	8,332.32	6.00	281.30	8,297.08	-132.28	133.80	-669.60	0.00
Build & Turn 10" DLS	8,692.87	35.00	185.35	8,635.27	-29.55	31.13	-698.70	10.00
Landing Point	9,246.52	90.20	180.13	8,880.45	442.74	-441.12	-715.49	10.00
Chisholm Dark Canyon 15-22 WCA 6H - BHL	16,246.21	90.20	180.13	8,856.02	7,442.38	-7,440.74	-731.94	0.00

GRAVITY & MAGNETICS PARAMETERS				SURFACE LOCATION				NAD83 New Mexico State Plane, Eastern Zone, US Feet			
Model	HDGM 2019 GARM	Dip	59.950°	Date	15-Oct-19	Lat	32°18'40.65"N	Northing	476,984.80 ftUS	Grid Conv	0.030°
MagDec	7.234°	FS	47,826.145nT	Gravity FS	998.463mgn (8.80665 Based)	Lon	104°16'37.98"W	Easting	658,674.19 ftUS	Scale Fact	0.99990944
MISCELLANEOUS											
Slot				TVD Reference							
Plan Dark Canyon 15-22 WCA 6H R0 IC 04Nov19				Seabed / Ground Elevation							
				3304.000 ft above MSL							





Dark Canyon 15-22 WCA 6H R0 IC 04Nov19 Anti-Collision Summary Report

Analysis Date-24hr Time:	November 05, 2019 - 05:21 PM (UTC 0)	Analysis Method:	3D Least Distance
Client:	NM Eddy County (NAD 83)	Reference Trajectory:	Dark Canyon 15-22 WCA 6H R0 IC 04Nov19 (Non-Def Plan) Every
Field:	Dark Canyon 15-22 WCA 6H	Depth Interval:	10.00 Measured Depth (ft)
Structure:		Rule Set:	NAL Procedure: D&M AntiCollision Standard S002
Slot:	Dark Canyon 15-22 WCA 6H	Min Pts:	Absolute minima indicated.
Well:	Dark Canyon 15-22 WCA 6H	Engine Version:	2019.3.0.2
Borehole:	0.00ft ~ 16246.21ft	Database \ Project:	Dark Canyon 15-22 WCA 6H
Scan MD Range:			

Trajectory Error Model: ISCWSA0 3 - D 95 % Confidence 2.7955 sigma, the latest version of tool error models is to be used.

Offset Trajectories Summary

Offset Selection Criteria

Bounding box scan: minimum Ct-Ct separation <= 500ft

Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans

- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		

Results highlighted in red: Sep-Factor <= 1.5

Result highlighted in boxed, red and bold: all local minima indicated.

Chisholm Dark Canyon 15-22 WCA 7H R0 IC 05Nov19 (DefinitivePlan)													
												Warning Alert	
30.01	24.30	28.55	5.71	#####		MAS = 7.41 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
30.01	24.30	28.55	5.71	#####		MAS = 7.41 (m)	31.00	31.00				WRP	
30.01	24.30	19.69	5.71	3.19		MAS = 7.41 (m)	1490.00	1490.00				MinPts	
30.01	24.30	19.99	5.71	3.22		MAS = 7.41 (m)	1500.00	1500.00				MinPts	
30.03	24.30	19.99	5.73	3.21		MAS = 7.41 (m)	1510.00	1510.00				MINPT-O-EQU	
30.16	24.30	20.03	5.86	3.20		MAS = 7.41 (m)	1530.00	1530.00				MinPt-O-SF	
48.43	24.30	37.91	24.13	4.99		MAS = 7.41 (m)	1830.00	1829.82	CtCt<=15m>15.00			Exit Alert	
1305.21	64.64	1261.78	1240.57	30.75		OSF1.50	8332.32	8297.08				MinPt-O-SF	
1350.00	406.38	1078.75	943.62	4.99		OSF1.50	13190.00	8866.69	OSF<5.00			Enter Alert	
1350.00	443.64	1053.91	906.35	4.57		OSF1.50	13590.00	8865.29				MinPt-CtCt	
1350.34	690.67	889.57	659.68	2.93		OSF1.50	16240.00	8856.04				MINPT-O-EQU	
1350.48	690.87	889.57	659.61	2.93		OSF1.50	16246.21	8856.02				MinPts	

Schlumberger													
Dark Canyon 15-22 WCA 6H R0 IC 04Nov19 Proposal Geodetic Report													
Def Plan													
Report Date: November 05, 2019 - 09:20 PM (UTC-8)													
Client: NM Early County (NAD 83)													
Structure / Site: Dark Canyon 15-22 WCA 6H													
Well: Dark Canyon 15-22 WCA 6H													
Borehole: Dark Canyon 15-22 WCA 6H													
UWI / API#: Unlicensed / Unlicensed													
Survey Name: Chalkwell Dark Canyon 15-22 WCA 6H R0 IC 04Nov19													
Survey Date: November 04, 2019													
Test / AND / EOU Ratio: 97.451 / 0.000 / 200.000													
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet													
Location Lat / Long: 32°06'46.9687N, -104°02'37.9747W													
Location Grid NE TYS: N 476984.800 RUS, E 359876.380 RUS													
CRS Grid Convergence Angle: 0.00700													
Grid Scale Factor: 0.9999994													
Version / Patch: 2019.1.1.2													
Survey / DLS Computation: Vertical Section Summary: Minimum Curvature / Lubinski													
Vertical Section Summary: 200.230 (1000) North													
Vertical Section Origin: 0.000 N, 0.000 E													
TVS Reference Elevation: 2326.000 N above MSL													
Survey / DLS Computation: Survey / DLS Computation: Minimum Curvature / Lubinski													
Survey / DLS Computation: 200.230 (1000) North													
Survey / DLS Computation: 0.000 N, 0.000 E													
Survey / DLS Computation: 2326.000 N above MSL													
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Dark Canyon 15-22 WCA 6H R0 IC 04Nov19 Proposal Geodetic

Report

Def Plan

Report Date: November 05, 2019 - 05:20 PM (UTC 0)
Client:
Field: NM Eddy County (NAD 83)
Structure / Slot: Dark Canyon 15-22 WCA 6H
Well: Dark Canyon 15-22 WCA 6H
Borehole: Dark Canyon 15-22 WCA 6H
UWI / APL: Unknown / Unknown
Survey Name: Dark Canyon 15-22 WCA 6H R0 IC 04Nov19 November 04, 2019
Survey Date: 97.421° / 6266.229 R / 6.189 / 0.931
Text / AHD / DOU / ERD Ratio: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Coordinate Reference System: 32°18'40.64976"N , 104°18'37.97743"W
Location Lat / Long: N 476584.600 RUS , E 558674.190 RUS
Location Grid NE VIC: 0.03'
CRS Grid Convergence Angle: 0.99990944
Grid Scale Factor: 2019.3.0.2
Version / Patch:

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Asimuth: 180.130 (GRID North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RNB
TVD Reference Elevation: 3335.000 ft above MSL
Seabed / Ground Elevation: 3304.000 ft above MSL
Magnetic Declination: 7.234°
Total Gravity Field Strength: 986.463mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47626.145 nT
Magnetic Dip Angle: 58.95°
Declination Date: October 15, 2019
Magnetic Declination Model: HDGM 2019
North Reference: Grid North
Grid Convergence Used: 0.03°
Total Cor Mag North-Grid: 7.2041°
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Acim (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	AHD (ft)	NS (ft)	EW (ft)	DeltaMD (ft)	DeltaTVD (ft)	DLS (°/1000)	BR (°/1000)	TR (°/1000)	GTF (°)	MTF (°)	TF (°)	Northing (RUS)	Easting (RUS)	Latitude E°-''	Longitude E°-''	Latitude (°)	Longitude (°)	Closure (ft)	Closure Azimuth (°)	Directional Difficulty Index	Tortuosity (°)	ERD Ratio
SHL	0.00	0.00	281.30	0.00	-3.335.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	HS	281.30	281.3M	476.984.80	558.674.19 18'40.649761"N	637.977430"W	32.31	-104.28			0.00	0.00	0.00	
Castile	508.00	0.00	281.30	508.00	-2.827.00	0.00	0.00	0.00	0.00	508.00	508.00	0.00	0.00	0.00	HS	281.30	281.3M	476.984.80	558.674.19 18'40.649761"N	637.977430"W	32.31	-104.28	0.00	0.00	0.00	0.00	0.00	
13.375 in Casino	1.085.80	0.00	281.30	1.085.80	-2.249.20	0.00	0.00	0.00	0.00	577.80	577.80	0.00	0.00	0.00	HS	281.30	281.3M	476.984.80	558.674.19 18'40.649761"N	637.977430"W	32.31	-104.28	0.00	0.00	0.00	0.00	0.00	
Nudge 1" DLS	1.500.00	0.00	281.30	1.500.00	-1.835.00	0.00	0.00	0.00	0.00	414.20	414.20	0.00	0.00	0.00	HS	281.30	281.3M	476.984.80	558.674.19 18'40.649761"N	637.977430"W	32.31	-104.28	0.00	0.00	0.00	0.00	0.00	
Delaware Mtn Gr	1.922.38	4.22	281.30	1.922.00	-1.413.00	-3.01	15.56	3.05	-15.26	422.38	422.00	1.00	1.00	0.00	HS	281.30	281.3M	476.987.85	558.658.93 18'40.680013"N	638.155221"W	32.31	-104.28	15.56	281.30	1.82	4.22	0.01	
Held	2.100.00	6.00	281.30	2.098.90	-1.236.10	-6.08	31.39	6.15	-30.78	177.62	176.90	1.00	1.00	0.00	HS	281.30	281.3M	476.990.95	558.641.41 18'40.710777"N	638.336021"W	32.31	-104.28	31.39	281.30	2.28	6.00	0.01	
Bone Spring	5.223.21	6.00	281.30	5.205.00	1.870.00	-69.32	357.85	70.12	-350.91	3.123.21	3.106.10	0.00	0.00	0.00	HS	281.30	281.3M	477.054.91	558.323.31 18'41.345394"N	642.065794"W	32.31	-104.28	357.85	281.30	3.33	6.00	0.07	
1st Bone Spring SS	6.154.31	6.00	281.30	6.131.00	2.796.00	-88.18	455.18	89.19	-446.35	931.10	926.00	0.00	0.00	0.00	HS	281.30	281.3M	477.073.98	558.227.88 18'41.534582"N	643.177729"W	32.31	-104.28	455.18	281.30	3.44	6.00	0.07	
2nd Bone Spring SS	6.636.95	6.00	281.30	6.611.00	3.276.00	-97.95	505.63	99.08	-495.83	482.64	480.00	0.00	0.00	0.00	HS	281.30	281.3M	477.083.87	558.178.41 18'41.632649"N	643.754111"W	32.31	-104.28	505.63	281.30	3.48	6.00	0.08	
9.625 in Casino	8.187.80	6.00	281.30	8.153.35	4.818.35	-129.35	667.74	130.84	-654.79	1.550.86	1.542.35	0.00	0.00	0.00	HS	281.30	281.3M	477.115.63	558.019.46 18'41.947754"N	646.606165"W	32.31	-104.28	667.74	281.30	3.60	6.00	0.08	
3rd Bone Spring SS	8.330.23	6.00	281.30	8.295.00	4.960.00	-132.24	682.62	133.76	-669.39	142.43	141.65	0.00	0.00	0.00	HS	281.30	281.3M	477.118.54	558.004.86 18'41.976692"N	646.776253"W	32.31	-104.28	682.62	281.30	3.61	6.00	0.08	
KOP: Build 10" DLS	8.332.32	6.00	281.30	8.297.08	4.962.08	-132.28	682.84	133.80	-669.60	2.09	2.08	0.00	0.00	104.24L	185.35	185.35M	477.118.59	558.004.65 18'41.977117"N	646.778750"W	32.31	-104.28	682.84	281.30	3.61	6.00	0.08		
Build & Turn 10" DLS	8.692.87	35.00	185.35	8.635.27	5.300.27	-29.55	793.91	31.13	-698.70	360.55	338.19	10.00	8.04	-26.61	6.35L	184.12	6.35L	477.015.93	557.975.56 18'40.961357"N	646.118319"W	32.31	-104.28	699.39	272.55	4.53	42.05	0.09	
Wolfcarr	8.768.22	42.50	184.12	8.694.00	5.359.00	17.43	841.04	-15.84	-702.55	75.35	58.73	10.00	9.95	-1.63	5.39L	182.57	5.39L	476.968.96	557.971.71 18'40.496616"N	646.163473"W	32.31	-104.28	702.73	268.71	4.62	49.59	0.10	
WC A (Top of Target)	8.906.86	56.31	182.57	8.784.00	5.449.00	122.28	946.05	-120.67	-708.53	138.64	90.00	10.00	9.95	-1.12	4.37L	181.91	4.37L	476.864.14	557.965.72 18'39.493857"N	646.223849"W	32.31	-104.28	718.74	260.33	4.78	63.45	0.11	
WC A (Base of Target)	8.985.46	64.15	181.91	8.823.00	5.488.00	190.42	1.014.23	-188.80	-711.19	78.61	39.00	10.00	9.97	-0.84	4.04L	180.13	4.04L	476.796.01	557.963.07 18'38.785180"N	646.265159"W	32.31	-104.28	735.82	255.13	4.87	71.31	0.11	
Landing Point	9.246.52	90.20	180.13	8.880.45	5.545.45	442.74	1.266.59	-441.12	-715.49	261.06	57.45	10.00	9.98	-0.68	HS	180.13	HS	476.543.72	557.958.77 18'36.288539"N	646.316725"W	32.31	-104.28	840.54	238.35	5.11	97.42	0.14	
Dark Canyon 15-22 W	16.246.21	90.20	180.13	8.856.02	5.521.02	7.442.38	8.266.23	-7.440.74	-731.94	6.999.68	-24.43	0.00	0.00	0.00	HS			469.544.75	557.942.32 17.27.027185"N	646.548279"W	32.29	-104.28	7,476.65	185.62	6.17	97.42	0.93	

Survey Type: Def Plan

Survey Error Model: ISCWSAO 3 - D 95 % 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	1,500.000	1/100.000	17.500			NAL_MWD_1_0_DEG	Dark Canyon 15-22 WCA 6H /
	1	1,500.000	8,332.320	1/100.000	12.250			NAL_MWD_1_0_DEG	Dark Canyon 15-22 WCA 6H /
	1	8,332.320	9,246.520	1/100.000	8.750			NAL_MWD_1_0_DEG	Dark Canyon 15-22 WCA 6H /
	1	9,246.520	16,246.210	1/100.000	8.500			NAL_MWD_1_0_DEG	Dark Canyon 15-22 WCA 6H /

Schlumberger

Dark Canyon 15-22 WCA 6H RO IC 04Nov19 Proposal Geodetic

Report

Def Plan

Report Date: November 05, 2019 - 05:20 PM (UTC -8)
Client: NM Eddy County (NAD 83)
Field: Dark Canyon 15-22 WCA 6H
Structure / Slot: Dark Canyon 15-22 WCA 6H
Well: Dark Canyon 15-22 WCA 6H
Borehole: Dark Canyon 15-22 WCA 6H
UWI / AHP: Unknown / Unknown
Survey Name: Dark Canyon 15-22 WCA 6H RO IC 04Nov19
Survey Date: November 04, 2019
Tie / AND / DO / ERD Ratio: 97.431 / 1.026, 1220 R / 1.186 / 0.891
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: 32°18'40.64879"N 104°16'37.9743"W
Location Grid N/E: UTM 18Q UTM 18Q
CRS Grid Convergence Angle: 0.03°
Grid Scale Factor: 0.9999940
Version / Patch: 2019.3.0.2

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Assumptions: 180-120 (GRID North)
Vertical Section Origin: 0.000 R, 0.000 R
TVD Reference Datum: RNN
TVD Reference Elevation: 3335.000 R above MSL
Sealed / Depth Elevation: 3334.000 R above MSL
Magnetic Declination: 7.234°
Total Gravity Field Strength: 966.463mgm (9.80665 m/s²)
Gravity Model: GARM
Total Magnetic Field Strength: 47626.145 nT
Magnetic Dip Angle: 59.89°
Declination Date: October 15, 2019
Magnetic Declination Model: Grid North
North Reference: Grid North
Grid Convergence Used: 0.03°
Total Core Mag North-Grid: 7.2041°
Local Coord Referenced To: Well Head

Comments

MD

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Azim

TVD

TVSS

VSEC

AHD

NS

EW

DeltaMD

DeltaTVD

DLS

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MTF

TF

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Closure

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Directional

Tortuosity

ERD Ratio

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Comments	MD	Incl	Asim	TVD	TVSS	VSEC	AHD	NS	EW	DeltaMD	DeltaTVD	OLS	BR	TR	GTF	MTF	TF	Northing	Easting	Latitude	Longitude	Latitude	Longitude	Closure	Closure	Directional	Tortosity	ERD
	(")	(")		(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(100ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(°)	(°)	(°)	(ft)	(ft)	Difficulty	(%)	(ft)
Wellcamp	8.700.00	35.71	185.22	8,641.09	5,306.09	-25.44	798.04	27.02	-699.08	7.13	5.82	100.00	9.94	-1.89	6.24	184.12	6.24	477.011.82	557.975.18	1840.520689°N	646.122777°W	32.31	-104.28	699.60	272.21	4.54	42.77	0.09
	8.768.22	42.78	184.12	8,694.00	5,359.00	-17.43	841.04	-15.94	-702.55	68.22	52.91	100.00	9.95	-1.60	5.38	183.71	5.38	476.968.96	557.971.71	1840.496316°N	646.163477°W	32.31	-104.28	702.73	286.71	4.52	48.59	0.10
	8.800.00	45.66	183.71	8,716.83	5,381.83	-39.49	863.14	-37.89	-704.05	31.78	22.83	100.00	9.96	-1.31	5.09	182.64	5.09	476.946.91	557.970.20	1840.478394°N	646.181161°W	32.31	-104.28	705.07	266.92	4.66	52.77	0.10
	8.900.00	55.63	182.64	8,780.16	5,445.16	-116.61	940.37	-115.00	-708.28	100.00	63.33	100.00	9.97	-1.07	4.41	182.64	4.41	476.868.81	557.968.98	1838.515459°N	646.230808°W	32.31	-104.28	717.95	260.78	4.78	62.77	0.11
	8.966.86	56.31	182.67	8,794.00	5,449.00	-122.28	946.05	-120.67	-708.53	6.86	3.84	100.00	9.97	-0.92	4.37	181.91	4.37	476.864.14	557.965.72	1838.493265°N	646.233847°W	32.31	-104.28	718.74	260.33	4.78	63.45	0.11
	8.985.46	64.65	181.91	8,823.00	5,488.00	-104.22	1,014.23	-108.80	-711.19	78.61	39.00	100.00	9.97	-0.84	4.04	181.80	4.04	476.798.01	557.963.07	1838.785107°N	646.265159°W	32.31	-104.28	735.82	255.13	4.87	71.31	0.11
	9.000.00	65.10	180.80	8,829.17	5,494.17	-203.57	1,027.39	-201.96	-711.61	14.54	6.17	100.00	9.98	-0.77	3.99	181.08	3.99	476.782.86	557.962.64	1838.655005°N	646.270198°W	32.31	-104.28	739.72	254.16	4.88	72.77	0.12
	9.100.00	75.58	180.12	8,862.36	5,527.36	-287.74	1,120.06	-286.19	-713.96	121.13	59.62	100.00	9.98	-0.72	3.76	180.43	3.76	476.688.10	557.960.29	1837.723336°N	646.286141°W	32.31	-104.28	772.94	247.47	4.98	82.77	0.13
	9.200.00	85.56	180.43	8,878.73	5,543.73	-396.26	1,220.11	-394.64	-715.26	100.00	16.37	100.00	9.98	-0.65	3.65	180.13	3.65	476.590.20	557.959.00	1836.748443°N	646.313786°W	32.31	-104.28	816.90	241.11	5.07	92.77	0.14
	9.240.00	92.10	180.13	8,880.45	5,545.45	-442.74	1,266.59	-441.12	-715.49	46.52	1.72	100.00	9.98	-0.64	HS	180.13	HS	476.543.72	557.958.77	1836.288539°N	646.316725°W	32.31	-104.28	840.54	238.35	5.11	97.42	0.14
Landino Point	9.300.00	92.10	180.13	8,880.27	5,545.27	-442.74	1,266.59	-441.12	-715.49	46.52	1.72	100.00	9.98	-0.64	HS	180.13	HS	476.543.72	557.958.77	1836.288539°N	646.316725°W	32.31	-104.28	840.54	238.35	5.11	97.42	0.14
	9.400.00	92.10	180.13	8,879.92	5,544.92	-596.21	1,420.06	-594.59	-715.85	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	476.390.26	557.958.41	1834.769995°N	646.321825°W	32.31	-104.28	930.58	230.29	5.17	97.42	0.16
	9.500.00	92.10	180.13	8,879.57	5,544.57	-696.21	1,520.06	-694.59	-716.08	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	476.290.27	557.958.17	1833.770414°N	646.325149°W	32.31	-104.28	997.61	225.87	5.20	97.42	0.17
	9.600.00	92.10	180.13	8,879.22	5,544.22	-796.21	1,620.06	-794.59	-716.32	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	476.190.28	557.957.94	1832.790923°N	646.328347°W	32.31	-104.28	1,069.81	222.03	5.23	97.42	0.18
	9.700.00	92.10	180.13	8,878.87	5,543.87	-896.21	1,720.06	-894.59	-716.55	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	476.090.29	557.957.70	1831.801432°N	646.331795°W	32.31	-104.28	1,146.18	218.69	5.26	97.42	0.19
	9.800.00	92.10	180.13	8,878.52	5,543.52	-996.21	1,820.06	-994.59	-716.79	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	475.990.30	557.957.47	1830.811947°N	646.335119°W	32.31	-104.28	1,225.96	215.78	5.29	97.42	0.20
	9.900.00	92.10	180.13	8,878.17	5,543.17	-1,096.21	1,920.06	-1,094.59	-717.02	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	475.890.31	557.957.23	1829.822449°N	646.338441°W	32.31	-104.28	1,312.33	213.23	5.32	97.42	0.22
	10.000.00	92.10	180.13	8,877.82	5,542.82	-1,196.21	2,020.06	-1,194.59	-717.26	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	475.790.32	557.957.00	1828.832959°N	646.341764°W	32.31	-104.28	1,393.38	210.98	5.35	97.42	0.23
	10.100.00	92.10	180.13	8,877.48	5,542.48	-1,296.21	2,120.06	-1,294.59	-717.49	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	475.690.33	557.956.76	1827.843469°N	646.345087°W	32.31	-104.28	1,480.12	209.00	5.37	97.42	0.24
	10.200.00	92.10	180.13	8,877.13	5,542.13	-1,396.21	2,220.06	-1,394.59	-717.73	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	475.590.34	557.956.53	1826.853975°N	646.348410°W	32.31	-104.28	1,569.44	207.23	5.40	97.42	0.25
	10.300.00	92.10	180.13	8,876.78	5,541.78	-1,496.21	2,320.06	-1,494.59	-717.96	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	475.490.35	557.956.29	1825.864483°N	646.351733°W	32.31	-104.28	1,658.09	205.66	5.42	97.42	0.26
	10.400.00	92.10	180.13	8,876.43	5,541.43	-1,596.21	2,420.06	-1,594.59	-718.20	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	475.390.36	557.956.06	1824.874959°N	646.355056°W	32.31	-104.28	1,746.86	204.25	5.44	97.42	0.27
	10.500.00	92.10	180.13	8,876.08	5,541.08	-1,696.21	2,520.06	-1,694.59	-718.43	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	475.290.37	557.955.82	1823.886475°N	646.358377°W	32.31	-104.28	1,840.58	202.87	5.46	97.42	0.28
	10.600.00	92.10	180.13	8,875.73	5,540.73	-1,796.21	2,620.06	-1,794.59	-718.67	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	475.190.39	557.955.59	1822.896909°N	646.361702°W	32.31	-104.28	1,933.13	201.82	5.48	97.42	0.30
	10.700.00	92.10	180.13	8,875.38	5,540.38	-1,896.21	2,720.06	-1,894.59	-718.90	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	475.090.40	557.955.35	1821.906517°N	646.365024°W	32.31	-104.28	2,026.39	200.78	5.50	97.42	0.31
	10.800.00	92.10	180.13	8,875.03	5,540.03	-1,996.21	2,820.06	-1,994.59	-719.14	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	474.990.41	557.955.12	1820.917025°N	646.368346°W	32.31	-104.28	2,120.25	199.83	5.52	97.42	0.32
	10.900.00	92.10	180.13	8,874.68	5,539.68	-2,096.20	2,920.05	-2,094.58	-719.37	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	474.890.42	557.954.88	1819.927534°N	646.371670°W	32.31	-104.28	2,214.67	198.95	5.54	97.42	0.33
	11.000.00	92.10	180.13	8,874.33	5,539.33	-2,196.20	3,020.05	-2,194.58	-719.60	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	474.790.43	557.954.65	1818.938042°N	646.374992°W	32.31	-104.28	2,309.95	198.06	5.56	97.42	0.34
	11.100.00	92.10	180.13	8,873.98	5,538.98	-2,296.20	3,120.05	-2,294.58	-719.84	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	474.690.44	557.954.41	1817.948595°N	646.378315°W	32.31	-104.28	2,404.84	197.18	5.58	97.42	0.35
	11.200.00	92.10	180.13	8,873.64	5,538.64	-2,396.20	3,220.05	-2,394.58	-720.08	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	474.590.45	557.954.18	1816.959098°N	646.381638°W	32.30	-104.28	2,500.50	196.74	5.60	97.42	0.36
	11.300.00	92.10	180.13	8,873.29	5,538.29	-2,496.20	3,320.05	-2,494.58	-720.31	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	474.490.46	557.953.94	1815.968596°N	646.384961°W	32.30	-104.28	2,596.48	195.81	5.61	97.42	0.37
	11.400.00	92.10	180.13	8,872.94	5,537.94	-2,596.20	3,420.05	-2,594.57	-720.55	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	474.390.47	557.953.71	1814.980074°N	646.388284°W	32.30	-104.28	2,692.77	195.52	5.63	97.42	0.39
	11.500.00	92.10	180.13	8,872.59	5,537.59	-2,696.20	3,520.05	-2,694.57	-720.78	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	474.290.48	557.953.47	1813.990582°N	646.391606°W	32.30	-104.28	2,789.31	194.98	5.65	97.42	0.40
	11.600.00	92.10	180.13	8,872.24	5,537.24	-2,796.20	3,620.05	-2,794.57	-721.01	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	474.190.49	557.953.24	1812.999090°N	646.394928°W	32.30	-104.28	2,881.19	194.28	5.67	97.42	0.42
	11.700.00	92.10	180.13	8,871.89	5,536.89	-2,896.20	3,720.05	-2,894.57	-721.25	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	474.090.50	557.953.00	1812.011598°N	646.398252°W	32.30	-104.28	2,978.08	193.99	5.68	97.42	0.43
	11.800.00	92.10	180.13	8,871.54	5,536.54	-2,996.20	3,820.05	-2,994.57	-721.49	100.00	-0.35	0.00	0.00	0.00	HS	180.13	HS	473.990.51	557.952.77	1811.022106°N	646.401574°W	32.30	-104.28	3,080.26	193.55	5.69	97.42	0.43

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: EARTHSTONE OPERATING, LLC **OGRID:** 331165 **Date:** 06/17/2022

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
DARK CANYON 15 22 WCA STATE	COM 6H	B-15-23S-26E		1000	2500	2500
DARK CANYON 15 22 WCA STATE	COM 7H	B-15-23S-26E		1000	2500	2500

IV. Central Delivery Point Name: DARK CANYON 15 22 EAST STATE BATTERY [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
DARK CANYON 15 22 WCA STATE	COM 6H	12/01/2022	12/27/2022	04/01/2023	04/20/2023	04/22/2023
DARK CANYON 15 22 WCA STATE	COM 7H	01/01/2023	01/27/2022	04/01/2023	04/20/2023	04/22/2023

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☐ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

If Operator checks this box, Operator will select one of the following:

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☒ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

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I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	<i>Jennifer Elrod</i>
Printed Name:	JENNIFER ELROD
Title:	SR. REGULATORY TECH
E-mail Address:	JELROD@EARTHSTONEENERGY.COM
Date:	06/17/2022
Phone:	(940)452-6214
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)	
Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	

EARTHSTONE OPEARATING, LLC
Natural Gas Management Plan
Items VI-VIII

VI. Separation Equipment: Attach a complete description of how Operator will size separation equipment to optimize gas capture.

- Separation equipment will be sized to provide adequate separation for anticipated rates.
- Adequate separation relates to retention time for Liquid – Liquid separation and velocity for Gas-Liquid separation.
- Collection systems are appropriately sized to handle facility production rates on all (3) phases.
- Ancillary equipment and metering are selected to be serviced without flow interruptions or the need to release gas from the well.

VII. Operational Practices: Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F 19.15.27.8 NMAC.

Drilling Operations

- All flare stacks will be properly sized. The flare stacks will be located at a minimum 100' from the nearest surface hole location on the pad.
- All-natural gas produced during drilling operations will be flared, unless there is an equipment malfunction and/or to avoid risk of an immediate and substantial adverse impact on safety and the environment, at which point the gas will be vented.

Completions/Recompletions Operations

- New wells will not be flowed back until they are connected to a properly sized gathering system.
- The facility will be built/sized for maximum anticipated flowrates and pressures to minimize waste.
- For flowback operations, multiple stages of separation will be used as well as excess VRU and blowers to make sure waste is minimized off the storage tanks and facility.
- During initial flowback, the well stream will be routed to separation equipment.
- At an existing facility, when necessary, post separation natural gas will be flared until it meets pipeline specifications, at which point it will be turned into a collection system.
- At a new facility, post separation natural gas will be vented until storage tanks can safely function, at which point it will be flared until it meets pipeline spec.

Production Operations

- Weekly AVOs will be performed on all facilities.
- All flares will be equipped with auto-ignition systems and continuous pilot operations.
- After a well is stabilized from liquid unloading, the well will be turned back into the collection system.
- All tanks will have sight glasses installed, but no electronic gauging equipment.
- Leaking thief hatches found during AVOs will be cleaned and properly re-sealed.
- There will be no gas re-injection for underground storage, temporary storage, or for enhanced oil recovery; however, gas injection will be used for gas lift applications in which the gas would be circulated through a closed loop system.
- If H2S is encountered, gas will be treated to pipeline spec to avoid shut-in's and/or flaring.

Performance Standards

- Production equipment will be designed to handle maximum anticipated rates and pressure.

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- All flared gas will be combusted in a flare stack that is properly sized and designed to ensure proper combustion.
- Weekly AVOs will be performed on all wells and facilities that produce more than 50MCFPD.

Measurement & Estimation

- All volume that is flared or vented that is not measured will be estimated.
- All measurement equipment for flared volumes will conform to API 14.10.
- No meter bypasses will be installed.
- When metering is not practical due to low pressure/low rate, the vented or flared volume will be estimated.

VIII. Best Management Practices: Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

- During downhole well maintenance, CEH will use best management practices to vent as minimally as possible.
- After downhole well maintenance, natural gas will be flared until it reaches pipeline specification.

Earthstone Operating, LLC

1400 Woodloch Forest Drive, Suite 300
The Woodlands, TX 77380
Phone: (281) 298-4246
Fax: (832) 823-0478

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 SO,

Common	Chemical	Specific	Threshold	Hazardous	Lethal
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Name	Formula	Gravity	Limit	Limit	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

Contacting Authorities

Earthstone 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. Earthstone 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 ConditionFlagsandSigns

- 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

Earthstone Operating, LLC

The Woodlands Office (Headquarters): 281-298-4246

Midland Office: 432-686-1100

Vice President of Drilling-Nick Goree

Office: 281-771-3201

Cell: 405-488-7164

Sr. Drilling Engineer/Superintendent- Ben Taylor

Cell: 432-978-3029

Production Superintendent-Paul Martinez

Cell: 325-206-1722

Public Safety:		911 or
Lea County Sheriff's Department	Number:	(575)396-3611
Lea County Emergency Management-Lorenzo Velasquez	Number:	(575)391-2983
Lea County Fire Marshal		
Lorenzo Velasquez, Director	Number:	(575)391-2983
Jeff Broom, Deputy Fire Marshal	Number:	(575)391-2988
Fire Department:		
Knowles Fire Department	Number:	(505)392-2810
City of Hobbs Fire Department	Number:	(505)397-9308
Jal Volunteer Fire Department	Number:	(505)395-2221
Lovington Fire Department	Number:	(575)396-2359
Maljamar Fire Department	Number:	(505)676-4100
Tatum Volunteer Fire Department	Number:	(505)398-3473
Eunice Fire Department	Number:	(575)394-3258
Hospital: Lea Regional Medical Center	Number:	(575)492-5000
AirMed: Medevac	Number:	(888)303-9112
Dept. of Public Safety	Number:	(505)827-9000
New Mexico OCD-Dist. 1-Hobbs-	Office	Number: (575)393-6161
	Emergency	Number: (575)370-3186
Lea County Road Department	Number:	(575)391-2940
NMDOT	Number:	(505)827-5100
Bureau of Land Management		
Pecos District Office	Number:	(575)627-0272
Carlsbad Field Office	Number:	(575)234-5972