

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6181 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 478-3460 Fax: (505) 478-3462

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

AS DRILLED PLAT

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-31231	² Pool Code 22619	³ Pool Name ESCRITO GALLUP (ASSOCIATED)
⁴ Property Code 317800	⁵ Property Name ESCRITO D14-2407 COM	⁶ Well Number 01H
⁷ OGRID No. 289408	⁸ Operator Name LOGOS OPERATING, LLC	⁹ Elevation 7034

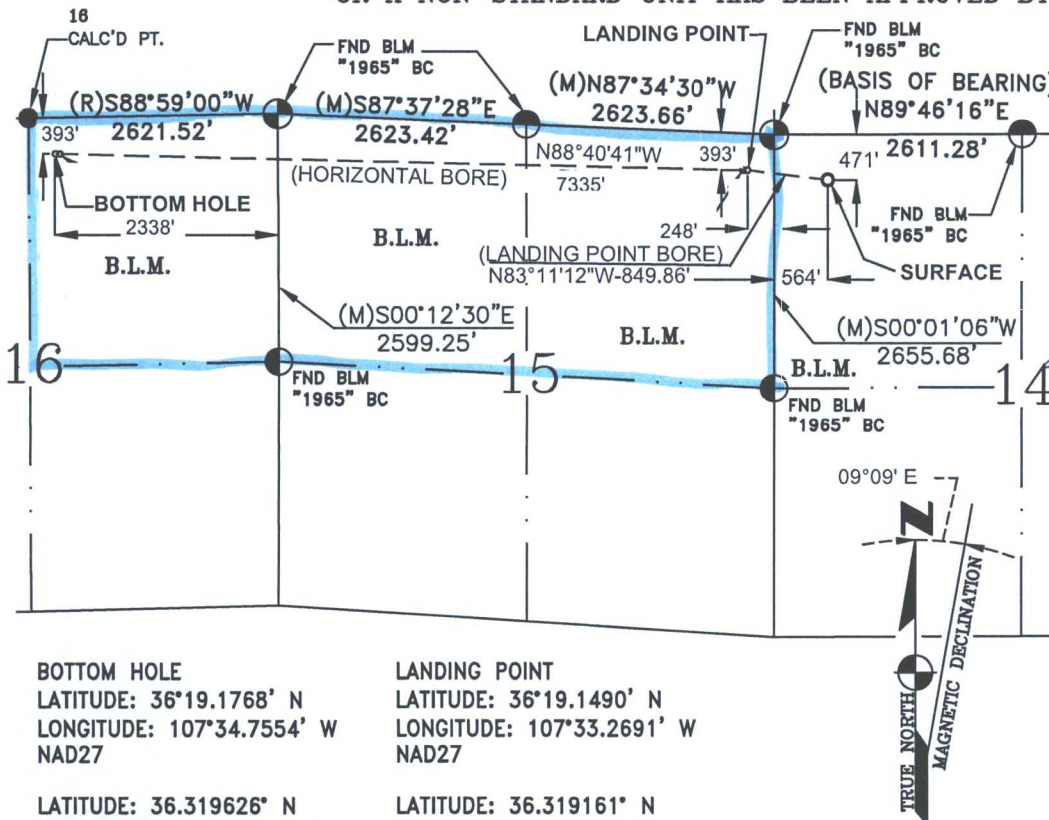
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	14	24-N	7-W		471	NORTH	564	WEST	RIO ARRIBA

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
B	16	24-N	7-W		393	NORTH	2338	EAST	RIO ARRIBA
¹² Dedicated Acres 480 ACRES= N/2 SEC 15 & NE/4 SEC 16			¹³ Joint or Infill		¹⁴ Consolidation Code CA - NMNM136953		¹⁵ Order No.		

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



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 a working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date

Tamra Sessions

Printed Name

tsessions@logosresourcesllc.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.

May 2, 2017

Date of Survey

Signature and Seal of Professional Surveyor:

GLEN W. RUSSELL #15703

Certificate Number

BOTTOM HOLE
LATITUDE: 36°19.1768' N
LONGITUDE: 107°34.7554' W
NAD27

LATITUDE: 36.319626° N
LONGITUDE: 107.579865° W
NAD83

BASIS OF BEARING:

BETWEEN FOUND MONUMENTS AT THE NORTHWEST CORNER AND THE NORTH QUARTER CORNER OF SECTION 14, TOWNSHIP 24 NORTH, RANGE 7 WEST, N.M.P.M. RIO ARRIBA COUNTY, NEW MEXICO.

LINE BEARS: N 89°46'16" E A DISTANCE OF 2611.28 FEET AS MEASURED BY G.P.S. LOCAL GRID NAD83.

LANDING POINT
LATITUDE: 36°19.1490' N
LONGITUDE: 107°33.2691' W
NAD27

LATITUDE: 36.319161° N
LONGITUDE: 107.555091° W
NAD83

SURFACE
LATITUDE: 36°19.1323' N
LONGITUDE: 107°33.0973' W
NAD27

LATITUDE: 36.318884° N
LONGITUDE: 107.552228° W
NAD83

8



Project: Rio Arriba County, NM

Site: S14-T24N-R7W

Well: ESCRITO D14-2407 COM #1H

Wellbore: OH

Design: PLAN #3

PROJECT DETAILS: Rio Arriba County, NM

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Central Zone

SITE DETAILS: S14-T24N-R7W

Well Centre Northing: 1937924.11
Easting: 1256787.17

Positional Uncertainty: 0.00
Convergence: -0.77
Local North: True

SHL: 471' FNL & 564' FWL
SEC 14 T24N R7W
BHL: 378' FNL & 2340' FEL
SEC 16 T24N R7W

LANDING PT / 7" CSG:
380' FNL & 280' FEL
SEC 15 T24N R7W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	0.00	KOP #1 - 2600' MD
3	2718.63	2.37	308.64	2718.59	1.53	-1.92	2.00	308.64	1.97	EOB; INC=2.3°
4	5153.57	2.37	308.64	5151.45	64.47	-80.66	0.00	0.00	82.76	START BUILD/TURN
5	6328.41	90.00	271.34	5890.00	100.86	-843.54	7.50	-37.32	846.43	LP - 5890' TVD; 90°
6	6428.41	90.00	271.34	5890.00	103.20	-943.51	0.00	0.00	946.43	START BUILD
7	6450.32	90.44	271.34	5889.92	103.71	-965.42	2.00	-0.31	968.34	EOB; INC=90.44°
8	13629.89	90.44	271.34	5835.00	271.31	-8142.83	0.00	0.00	8147.35	TD at 13,629' MD

CASING DETAILS

TVD	MD	Name	Size
320.00	320.00	9 5/8"	0
5890.00	6328.41	7"	0
5835.00	13629.89	4 1/2"	0

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5846.46	6069.20	TOP GLLP TARGET

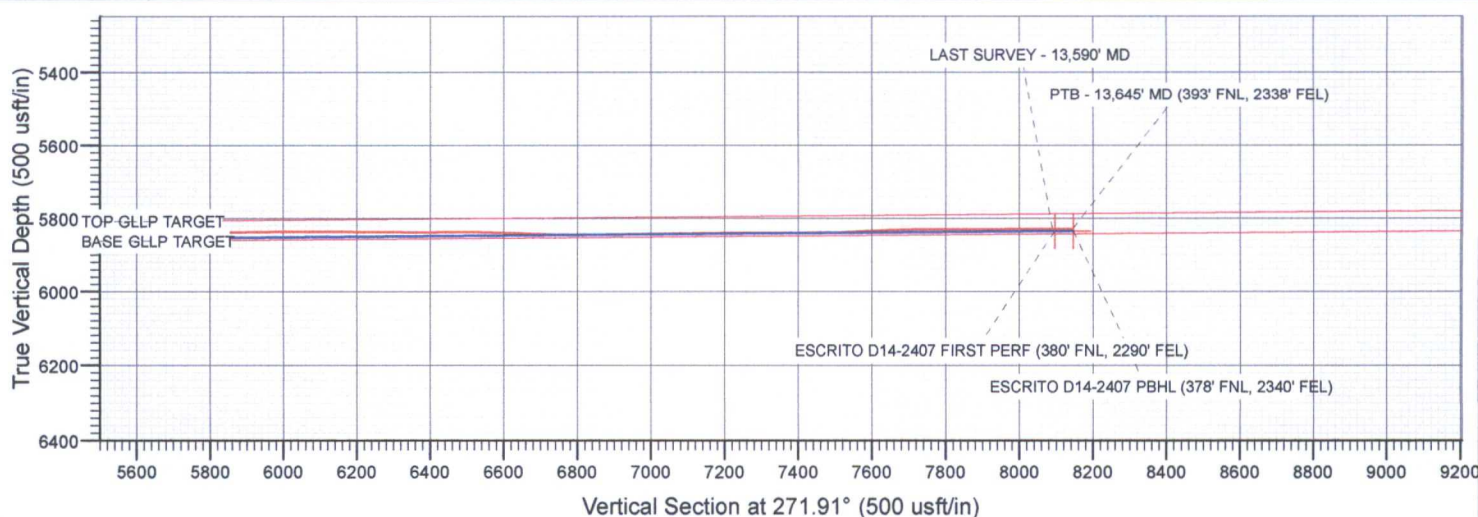
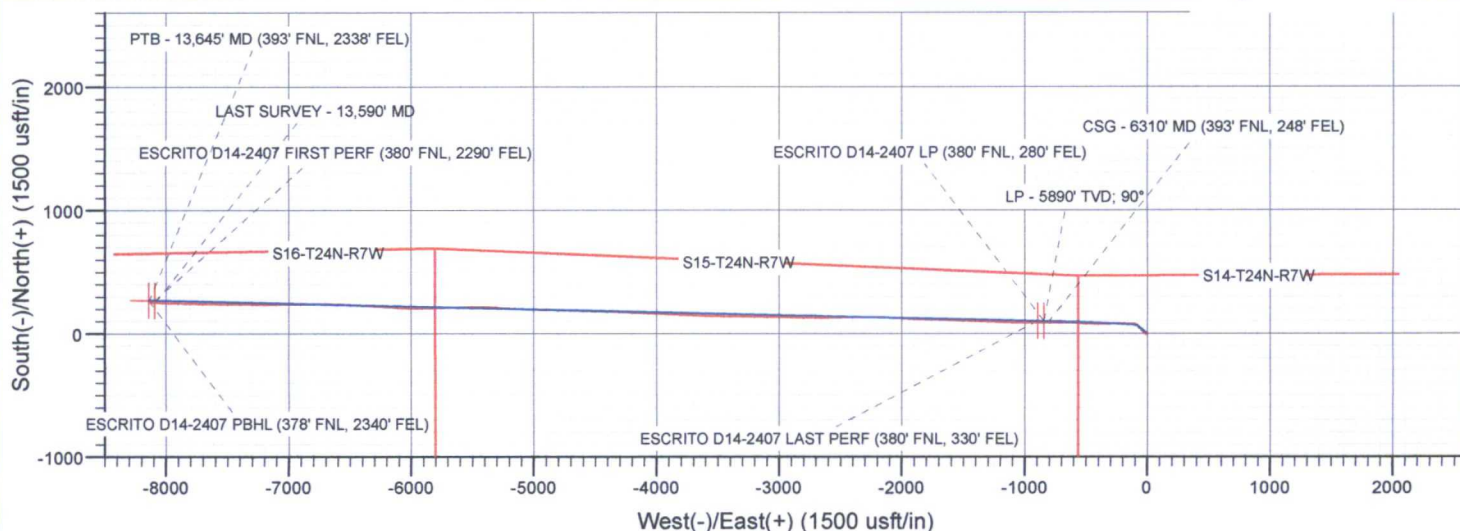
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
ESCRITO D14-2407 PBHL (378' FNL, 2340' FEL)	5835.00	271.31	-8142.83	1938305.02	1248648.73	36.319626	-107.579865
ESCRITO D14-2407 FIRST PERF (380' FNL, 2290' FEL)	5835.38	270.20	-8092.74	1938303.24	1248698.80	36.319623	-107.579695
ESCRITO D14-2407 LAST PERF (380' FNL, 330' FEL)	5890.00	102.32	-893.63	1938038.45	1255895.00	36.319165	-107.555261
ESCRITO D14-2407 LP (380' FNL, 280' FEL)	5890.00	100.86	-843.54	1938036.32	1255945.06	36.319161	-107.555091



Azimuths to True North
Magnetic North: 8.85°

Magnetic Field
Strength: 49685.2nT
Dip Angle: 62.98°
Date: 7/24/2017
Model: HDGM



WELL DETAILS: ESCRITO D14-2407 COM #1H

+N/-S 0.00 +E/-W 0.00 Northing 1937924.11 Easting 1256787.17 Ground Level: 7029.00 Latitude 36.318884 Longitude -107.552228



Cathedral Energy Services

Survey Report

Company:	LOGOS Operating LLC	Local Co-ordinate Reference:	Well ESCRITO D14-2407 COM #1H
Project:	Rio Arriba County, NM	TVD Reference:	KB=14' @ 7043.00usft (AZTEC 920)
Site:	S14-T24N-R7W	MD Reference:	KB=14' @ 7043.00usft (AZTEC 920)
Well:	ESCRITO D14-2407 COM #1H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Project	Rio Arriba County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site		S14-T24N-R7W			
Site Position:		Northing:	1,937,924.11 usft	Latitude:	36.318884
From:	Lat/Long	Easting:	1,256,787.17 usft	Longitude:	-107.552228
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence:	-0.77 °

Well	ESCRITO D14-2407 COM #1H					
Well Position	+N/-S	0.00 usft	Northing:	1,937,924.11 usft	Latitude:	36.318884
	+E/-W	0.00 usft	Easting:	1,256,787.17 usft	Longitude:	-107.552228
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	7,029.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	7/24/2017	8.85	62.98	49,685.20000000

Design	FINAL			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	310.42

Survey Program	Date	8/7/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
374.00	13,645.00	Survey #1 (OH)	MWD+HDGM	OWSG MWD + HDGM	

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
374.00	0.48	120.47	374.00	-0.79	1.35	-1.54	0.13	0.13	
435.00	0.44	179.62	434.99	-1.16	1.57	-1.95	0.75	-0.07	
495.00	0.57	129.52	494.99	-1.58	1.80	-2.40	0.74	0.22	
557.00	0.53	198.08	556.99	-2.05	1.95	-2.81	1.00	-0.06	
618.00	0.92	160.46	617.98	-2.78	2.03	-3.35	0.98	0.64	
680.00	1.14	187.00	679.98	-3.86	2.12	-4.12	0.84	0.35	
741.00	1.36	179.45	740.96	-5.18	2.05	-4.92	0.45	0.36	
802.00	0.75	160.02	801.95	-6.28	2.20	-5.75	1.15	-1.00	
863.00	0.84	357.60	862.95	-6.21	2.31	-5.79	2.58	0.15	
925.00	1.89	345.21	924.93	-4.77	2.03	-4.64	1.75	1.69	
985.00	1.98	343.71	984.90	-2.82	1.49	-2.96	0.17	0.15	
1,047.00	2.11	347.58	1,046.86	-0.68	0.95	-1.16	0.31	0.21	

Cathedral Energy Services

Survey Report

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Project:	Rio Arriba County, NM	TVD Reference:	KB=14' @ 7043.00usft (AZTEC 920)
Site:	S14-T24N-R7W	MD Reference:	KB=14' @ 7043.00usft (AZTEC 920)
Well:	ESCRITO D14-2407 COM #1H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
1,108.00	2.24	349.25	1,107.81	1.59	0.48	0.67	0.24	0.21	
1,169.00	1.41	338.88	1,168.78	3.46	-0.01	2.26	1.46	-1.36	
1,230.00	1.01	336.95	1,229.77	4.66	-0.49	3.40	0.66	-0.66	
1,291.00	0.79	340.90	1,290.76	5.55	-0.84	4.24	0.37	-0.36	
1,353.00	1.06	336.16	1,352.75	6.48	-1.21	5.12	0.45	0.44	
1,414.00	1.36	355.67	1,413.74	7.72	-1.50	6.14	0.83	0.49	
1,475.00	1.36	3.84	1,474.72	9.16	-1.50	7.08	0.32	0.00	
1,536.00	0.84	16.76	1,535.71	10.31	-1.32	7.69	0.94	-0.85	
1,597.00	0.13	279.20	1,596.71	10.75	-1.26	7.93	1.42	-1.16	
1,659.00	0.31	182.08	1,658.71	10.59	-1.34	7.89	0.57	0.29	
1,721.00	0.75	146.93	1,720.70	10.09	-1.12	7.40	0.85	0.71	
1,782.00	0.88	180.32	1,781.70	9.28	-0.91	6.71	0.79	0.21	
1,843.00	0.66	191.49	1,842.69	8.47	-0.98	6.24	0.43	-0.36	
1,905.00	0.84	186.74	1,904.69	7.67	-1.11	5.81	0.31	0.29	
1,966.00	0.79	187.36	1,965.68	6.81	-1.21	5.34	0.08	-0.08	
2,027.00	0.70	173.73	2,026.68	6.02	-1.22	4.84	0.32	-0.15	
2,088.00	0.97	159.50	2,087.67	5.17	-1.00	4.11	0.55	0.44	
2,148.00	1.14	189.73	2,147.66	4.10	-0.93	3.37	0.96	0.28	
2,209.00	0.97	177.86	2,208.65	2.99	-1.01	2.71	0.45	-0.28	
2,270.00	1.54	176.19	2,269.64	1.66	-0.94	1.79	0.94	0.93	
2,331.00	1.63	181.91	2,330.61	-0.03	-0.91	0.67	0.30	0.15	
2,391.00	1.23	175.93	2,390.59	-1.52	-0.89	-0.31	0.71	-0.67	
2,452.00	1.54	173.82	2,451.58	-2.99	-0.76	-1.36	0.51	0.51	
2,513.00	1.80	179.36	2,512.55	-4.77	-0.66	-2.59	0.50	0.43	
2,574.00	1.58	190.70	2,573.52	-6.55	-0.80	-3.63	0.65	-0.36	
2,634.00	1.58	211.26	2,633.50	-8.07	-1.39	-4.18	0.94	0.00	
2,695.00	1.45	230.51	2,694.48	-9.28	-2.42	-4.18	0.86	-0.21	
2,755.00	1.45	267.95	2,754.46	-9.79	-3.76	-3.48	1.55	0.00	
2,816.00	2.11	292.34	2,815.43	-9.39	-5.57	-1.85	1.62	1.08	
2,878.00	2.73	298.36	2,877.38	-8.25	-7.93	0.68	1.08	1.00	
2,939.00	3.34	310.93	2,938.29	-6.40	-10.55	3.88	1.47	1.00	
3,000.00	3.12	304.34	2,999.20	-4.30	-13.26	7.31	0.71	-0.36	
3,061.00	3.96	306.71	3,060.08	-2.10	-16.32	11.06	1.40	1.38	
3,121.00	4.48	314.45	3,119.92	0.78	-19.66	15.47	1.28	0.87	
3,180.00	4.00	315.06	3,178.75	3.85	-22.75	19.82	0.82	-0.81	
3,241.00	4.04	313.04	3,239.60	6.82	-25.83	24.08	0.24	0.07	
3,302.00	4.31	307.06	3,300.44	9.67	-29.23	28.52	0.84	0.44	
3,363.00	4.26	314.27	3,361.27	12.63	-32.68	33.07	0.89	-0.08	
3,424.00	4.40	320.33	3,422.10	16.01	-35.80	37.63	0.78	0.23	
3,484.00	4.79	320.07	3,481.91	19.70	-38.87	42.37	0.65	0.65	
3,545.00	4.66	321.13	3,542.70	23.59	-42.06	47.31	0.26	-0.21	
3,606.00	3.16	321.65	3,603.55	26.83	-44.66	51.40	2.46	-2.46	
3,666.00	2.33	324.03	3,663.49	29.12	-46.40	54.21	1.40	-1.38	
3,727.00	2.42	329.83	3,724.43	31.24	-47.78	56.63	0.42	0.15	
3,790.00	2.33	319.37	3,787.38	33.36	-49.28	59.15	0.70	-0.14	
3,853.00	2.24	321.48	3,850.33	35.29	-50.88	61.62	0.20	-0.14	
3,916.00	2.29	312.34	3,913.28	37.10	-52.58	64.09	0.58	0.08	
3,979.00	2.81	306.71	3,976.22	38.87	-54.75	66.88	0.92	0.83	
4,042.00	2.51	291.68	4,039.15	40.31	-57.27	69.73	1.20	-0.48	
4,106.00	1.71	285.18	4,103.11	41.07	-59.49	71.92	1.30	-1.25	
4,169.00	1.71	305.22	4,166.08	41.86	-61.17	73.71	0.94	0.00	
4,232.00	1.80	317.35	4,229.05	43.13	-62.60	75.63	0.61	0.14	
4,295.00	1.80	304.51	4,292.02	44.42	-64.09	77.59	0.64	0.00	

Cathedral Energy Services

Survey Report

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Well:	ESCRITO D14-2407 COM #1H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
4,358.00	1.80	308.47	4,354.99	45.60	-65.68	79.57	0.20	0.00	
4,421.00	1.93	300.82	4,417.95	46.76	-67.37	81.60	0.45	0.21	
4,484.00	2.29	323.94	4,480.91	48.32	-69.02	83.87	1.45	0.57	
4,547.00	2.46	334.48	4,543.86	50.55	-70.34	86.33	0.74	0.27	
4,611.00	2.29	333.43	4,607.80	52.94	-71.50	88.76	0.27	-0.27	
4,674.00	2.64	340.99	4,670.75	55.44	-72.54	91.17	0.76	0.56	
4,737.00	2.73	329.91	4,733.68	58.11	-73.77	93.83	0.83	0.14	
4,800.00	2.94	335.98	4,796.60	60.88	-75.18	96.70	0.58	0.33	
4,863.00	2.11	338.79	4,859.54	63.44	-76.25	99.18	1.33	-1.32	
4,927.00	1.67	331.23	4,923.50	65.35	-77.13	101.09	0.79	-0.69	
4,959.00	1.54	323.50	4,955.49	66.11	-77.61	101.95	0.79	-0.41	
4,984.00	1.93	332.82	4,980.48	66.75	-78.00	102.66	1.92	1.56	
5,047.00	1.63	336.33	5,043.45	68.52	-78.84	104.45	0.51	-0.48	
5,110.00	1.71	343.27	5,106.42	70.24	-79.47	106.05	0.34	0.13	
5,173.00	3.03	308.91	5,169.37	72.18	-81.04	108.50	2.99	2.10	
5,237.00	8.88	284.12	5,233.01	74.45	-87.15	114.62	9.78	9.14	
5,300.00	13.84	278.67	5,294.75	76.78	-99.33	125.40	8.05	7.87	
5,363.00	17.80	271.91	5,355.36	78.23	-116.41	139.35	6.92	6.29	
5,427.00	21.71	270.15	5,415.58	78.59	-138.03	156.04	6.18	6.11	
5,491.00	25.09	272.00	5,474.31	79.10	-163.44	175.71	5.40	5.28	
5,554.00	27.07	272.87	5,530.89	80.28	-191.10	197.54	3.20	3.14	
5,617.00	31.99	272.00	5,585.69	81.58	-222.12	221.99	7.84	7.81	
5,680.00	39.02	270.41	5,636.95	82.31	-258.67	250.29	11.25	11.16	
5,744.00	45.66	266.19	5,684.24	80.93	-301.71	282.16	11.28	10.37	
5,807.00	50.36	266.99	5,726.37	78.15	-348.44	315.94	7.52	7.46	
5,871.00	55.68	269.89	5,764.86	76.81	-399.52	353.95	9.06	8.31	
5,933.00	61.74	272.00	5,797.05	77.71	-452.47	394.84	10.20	9.77	
5,996.00	65.35	274.98	5,825.12	81.17	-508.75	439.92	7.12	5.73	
6,059.00	68.34	274.28	5,849.89	85.84	-566.48	486.90	4.85	4.75	
6,122.00	74.66	272.00	5,869.87	89.09	-626.10	534.39	10.60	10.03	
6,185.00	80.82	268.83	5,883.25	89.51	-687.62	581.51	10.94	9.78	
6,249.00	88.90	267.78	5,888.98	87.63	-751.28	628.74	12.73	12.62	
6,310.00	90.45	270.04	5,889.32	86.47	-812.26	674.41	4.49	2.55	CSG - 6310' MD (393' FNL, 248' FEL)
6,313.00	90.53	270.15	5,889.29	86.47	-815.26	676.70	4.49	2.55	
6,442.00	90.84	269.62	5,887.75	86.21	-944.25	774.73	0.48	0.24	
6,505.00	90.62	269.89	5,886.95	85.94	-1,007.25	822.51	0.55	-0.35	
6,569.00	90.35	272.08	5,886.41	87.04	-1,071.23	871.93	3.45	-0.42	
6,633.00	90.04	271.82	5,886.19	89.22	-1,135.20	922.04	0.63	-0.48	
6,697.00	90.22	271.56	5,886.04	91.11	-1,199.17	971.96	0.49	0.28	
6,761.00	91.36	272.87	5,885.16	93.58	-1,263.11	1,022.24	2.71	1.78	
6,824.00	90.75	273.66	5,884.00	97.17	-1,326.00	1,072.44	1.58	-0.97	
6,888.00	90.26	273.05	5,883.44	100.91	-1,389.88	1,123.50	1.22	-0.77	
6,952.00	90.00	272.43	5,883.29	103.97	-1,453.81	1,174.15	1.05	-0.41	
7,015.00	90.84	273.49	5,882.83	107.23	-1,516.72	1,224.15	2.15	1.33	
7,079.00	90.22	272.96	5,882.24	110.83	-1,580.62	1,275.13	1.27	-0.97	
7,142.00	90.62	272.00	5,881.78	113.55	-1,643.56	1,324.81	1.65	0.63	
7,205.00	90.13	271.20	5,881.36	115.31	-1,706.53	1,373.89	1.49	-0.78	
7,270.00	90.26	270.85	5,881.14	116.47	-1,771.52	1,424.12	0.57	0.20	
7,333.00	90.48	270.33	5,880.74	117.12	-1,834.52	1,472.49	0.90	0.35	
7,397.00	91.41	270.94	5,879.68	117.83	-1,898.50	1,521.67	1.74	1.45	
7,459.00	91.80	272.17	5,877.94	119.51	-1,960.45	1,569.92	2.08	0.63	
7,523.00	91.27	273.93	5,876.23	122.92	-2,024.34	1,620.76	2.87	-0.83	
7,586.00	88.55	274.37	5,876.33	127.48	-2,087.17	1,671.54	4.37	-4.32	

Cathedral Energy Services

Survey Report

Company: LOGOS Operating LLC
Project: Rio Arriba County, NM
Site: S14-T24N-R7W
Well: ESCRITO D14-2407 COM #1H
Wellbore: OH
Design: FINAL

Local Co-ordinate Reference: Well ESCRITO D14-2407 COM #1H
TVD Reference: KB=14' @ 7043.00usft (AZTEC 920)
MD Reference: KB=14' @ 7043.00usft (AZTEC 920)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
7,649.00	89.03	272.43	5,877.66	131.21	-2,150.04	1,721.83	3.17	0.76	
7,712.00	89.21	271.56	5,878.63	133.40	-2,212.99	1,771.17	1.41	0.29	
7,775.00	89.96	270.33	5,879.08	134.44	-2,275.98	1,819.80	2.29	1.19	
7,839.00	89.91	268.74	5,879.16	133.92	-2,339.98	1,868.18	2.49	-0.08	
7,902.00	92.86	269.01	5,877.63	132.69	-2,402.94	1,915.31	4.70	4.68	
7,963.00	92.99	269.27	5,874.52	131.77	-2,463.85	1,961.08	0.48	0.21	
8,027.00	92.81	268.66	5,871.28	130.62	-2,527.76	2,008.99	0.99	-0.28	
8,088.00	92.68	269.45	5,868.36	129.61	-2,588.68	2,054.71	1.31	-0.21	
8,149.00	92.64	270.06	5,865.53	129.35	-2,649.61	2,100.93	1.00	-0.07	
8,210.00	91.54	270.24	5,863.30	129.51	-2,710.57	2,147.44	1.83	-1.80	
8,272.00	90.35	270.33	5,862.28	129.82	-2,772.56	2,194.83	1.92	-1.92	
8,333.00	90.75	271.73	5,861.70	130.92	-2,833.55	2,241.96	2.39	0.66	
8,395.00	90.04	271.64	5,861.27	132.74	-2,895.52	2,290.32	1.15	-1.15	
8,455.00	90.66	271.56	5,860.90	134.42	-2,955.49	2,337.07	1.04	1.03	
8,516.00	90.22	270.76	5,860.43	135.65	-3,016.48	2,384.29	1.50	-0.72	
8,578.00	90.79	270.15	5,859.89	136.14	-3,078.47	2,431.81	1.35	0.92	
8,640.00	90.18	270.85	5,859.36	136.68	-3,140.47	2,479.35	1.50	-0.98	
8,701.00	91.14	270.76	5,858.66	137.54	-3,201.46	2,526.34	1.58	1.57	
8,762.00	91.49	270.76	5,857.26	138.35	-3,262.44	2,573.28	0.57	0.57	
8,822.00	90.75	271.47	5,856.09	139.52	-3,322.41	2,619.70	1.71	-1.23	
8,884.00	90.48	271.03	5,855.42	140.87	-3,384.39	2,667.76	0.83	-0.44	
8,945.00	90.31	270.33	5,855.00	141.59	-3,445.39	2,714.66	1.18	-0.28	
9,006.00	90.97	270.76	5,854.32	142.17	-3,506.38	2,761.47	1.29	1.08	
9,068.00	90.04	271.64	5,853.77	143.47	-3,568.36	2,809.49	2.07	-1.50	
9,129.00	90.92	272.61	5,853.26	145.73	-3,629.32	2,857.36	2.15	1.44	
9,190.00	89.78	271.03	5,852.89	147.67	-3,690.28	2,905.03	3.19	-1.87	
9,251.00	91.49	272.87	5,852.21	149.75	-3,751.24	2,952.78	4.12	2.80	
9,312.00	90.79	272.35	5,851.00	152.52	-3,812.16	3,000.96	1.43	-1.15	
9,373.00	90.75	271.73	5,850.18	154.70	-3,873.12	3,048.77	1.02	-0.07	
9,434.00	90.53	272.26	5,849.50	156.82	-3,934.08	3,096.55	0.94	-0.36	
9,496.00	90.62	272.96	5,848.88	159.64	-3,996.01	3,145.53	1.14	0.15	
9,557.00	90.44	273.66	5,848.31	163.16	-4,056.90	3,194.17	1.18	-0.30	
9,619.00	90.09	273.75	5,848.03	167.17	-4,118.77	3,243.87	0.58	-0.56	
9,680.00	90.48	274.10	5,847.72	171.35	-4,179.63	3,292.90	0.86	0.64	
9,741.00	90.40	273.14	5,847.25	175.20	-4,240.51	3,341.74	1.58	-0.13	
9,803.00	90.79	273.14	5,846.61	178.59	-4,302.41	3,391.07	0.63	0.63	
9,865.00	90.18	272.79	5,846.09	181.80	-4,364.32	3,440.28	1.13	-0.98	
9,925.00	89.03	271.47	5,846.50	184.03	-4,424.28	3,487.37	2.92	-1.92	
9,987.00	91.01	271.82	5,846.48	185.81	-4,486.25	3,535.70	3.24	3.19	
10,048.00	89.69	271.12	5,846.11	187.37	-4,547.23	3,583.13	2.45	-2.16	
10,108.00	89.43	270.94	5,846.57	188.45	-4,607.22	3,629.50	0.53	-0.43	
10,169.00	90.57	270.68	5,846.57	189.31	-4,668.21	3,676.49	1.92	1.87	
10,230.00	91.32	271.73	5,845.56	190.60	-4,729.19	3,723.74	2.12	1.23	
10,290.00	89.12	270.06	5,845.33	191.53	-4,789.17	3,770.01	4.60	-3.67	
10,351.00	89.78	270.15	5,845.91	191.65	-4,850.17	3,816.52	1.09	1.08	
10,412.00	91.80	270.94	5,845.07	192.23	-4,911.16	3,863.33	3.56	3.31	
10,473.00	91.27	272.00	5,843.44	193.79	-4,972.11	3,910.74	1.94	-0.87	
10,534.00	90.48	272.35	5,842.51	196.11	-5,033.06	3,958.64	1.42	-1.30	
10,594.00	89.03	272.79	5,842.76	198.80	-5,093.00	4,006.02	2.53	-2.42	
10,655.00	89.47	273.31	5,843.56	202.04	-5,153.91	4,054.49	1.12	0.72	
10,715.00	91.93	274.28	5,842.83	206.01	-5,213.77	4,102.63	4.41	4.10	
10,776.00	89.91	274.02	5,841.85	210.42	-5,274.59	4,151.80	3.34	-3.31	
10,837.00	88.86	272.96	5,842.51	214.14	-5,335.48	4,200.55	2.45	-1.72	

Cathedral Energy Services

Survey Report

Company:	LOGOS Operating LLC	Local Co-ordinate Reference:	Well ESCRITO D14-2407 COM #1H
Project:	Rio Arriba County, NM	TVD Reference:	KB=14' @ 7043.00usft (AZTEC 920)
Site:	S14-T24N-R7W	MD Reference:	KB=14' @ 7043.00usft (AZTEC 920)
Well:	ESCRITO D14-2407 COM #1H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
10,898.00	90.40	271.73	5,842.90	216.63	-5,396.42	4,248.57	3.23	2.52	
10,960.00	90.66	269.80	5,842.33	217.46	-5,458.41	4,296.29	3.14	0.42	
11,021.00	90.22	269.71	5,841.86	217.20	-5,519.41	4,342.56	0.74	-0.72	
11,080.00	90.62	269.45	5,841.43	216.77	-5,578.40	4,387.19	0.81	0.68	
11,140.00	90.35	268.83	5,840.92	215.87	-5,638.39	4,432.27	1.13	-0.45	
11,201.00	90.48	267.60	5,840.48	213.97	-5,699.36	4,477.45	2.03	0.21	
11,261.00	90.75	267.69	5,839.83	211.50	-5,759.31	4,521.49	0.47	0.45	
11,322.00	91.27	267.34	5,838.76	208.86	-5,820.24	4,566.16	1.03	0.85	
11,383.00	91.54	268.83	5,837.26	206.82	-5,881.19	4,611.24	2.48	0.44	
11,444.00	90.48	269.62	5,836.19	206.00	-5,942.17	4,657.13	2.17	-1.74	
11,505.00	90.09	271.38	5,835.88	206.53	-6,003.16	4,703.90	2.96	-0.64	
11,566.00	90.44	273.14	5,835.60	208.93	-6,064.11	4,751.86	2.94	0.57	
11,626.00	89.39	272.96	5,835.69	212.13	-6,124.03	4,799.54	1.78	-1.75	
11,687.00	89.74	273.75	5,836.15	215.69	-6,184.92	4,848.21	1.42	0.57	
11,750.00	89.74	273.84	5,836.44	219.86	-6,247.78	4,898.77	0.14	0.00	
11,814.00	89.21	274.10	5,837.02	224.30	-6,311.63	4,950.25	0.92	-0.83	
11,877.00	89.91	273.66	5,837.51	228.56	-6,374.48	5,000.86	1.31	1.11	
11,941.00	90.18	272.96	5,837.46	232.25	-6,438.37	5,051.89	1.17	0.42	
12,004.00	90.44	271.56	5,837.12	234.74	-6,501.32	5,101.42	2.26	0.41	
12,068.00	88.15	271.56	5,837.90	236.48	-6,565.29	5,151.25	3.58	-3.58	
12,132.00	87.94	272.00	5,840.09	238.47	-6,629.22	5,201.21	0.76	-0.33	
12,195.00	87.72	271.47	5,842.47	240.37	-6,692.15	5,250.35	0.91	-0.35	
12,258.00	89.08	271.03	5,844.23	241.75	-6,755.10	5,299.16	2.27	2.16	
12,322.00	90.44	270.15	5,844.50	242.41	-6,819.10	5,348.31	2.53	2.12	
12,384.00	89.78	268.39	5,844.38	241.62	-6,881.09	5,394.99	3.03	-1.06	
12,448.00	91.27	269.09	5,843.79	240.21	-6,945.07	5,442.78	2.57	2.33	
12,511.00	91.58	268.57	5,842.23	238.92	-7,008.04	5,489.88	0.96	0.49	
12,574.00	90.75	269.45	5,840.95	237.83	-7,071.01	5,537.12	1.92	-1.32	
12,637.00	90.35	270.06	5,840.34	237.56	-7,134.01	5,584.90	1.16	-0.63	
12,701.00	89.78	270.15	5,840.27	237.68	-7,198.01	5,633.70	0.90	-0.89	
12,765.00	90.66	271.20	5,840.02	238.44	-7,262.00	5,682.90	2.14	1.37	
12,828.00	90.09	271.20	5,839.61	239.76	-7,324.99	5,731.70	0.90	-0.90	
12,891.00	90.79	271.47	5,839.13	241.22	-7,387.97	5,780.60	1.19	1.11	
12,955.00	89.47	269.36	5,838.98	241.69	-7,451.96	5,829.62	3.89	-2.06	
13,018.00	91.93	269.53	5,838.21	241.08	-7,514.95	5,877.17	3.91	3.90	
13,081.00	93.34	270.41	5,835.32	241.04	-7,577.88	5,925.06	2.64	2.24	
13,145.00	92.42	271.03	5,832.10	241.85	-7,641.79	5,974.23	1.73	-1.44	
13,209.00	91.06	271.38	5,830.16	243.19	-7,705.75	6,023.79	2.19	-2.12	
13,272.00	90.13	271.03	5,829.50	244.52	-7,768.73	6,072.59	1.58	-1.48	
13,334.00	89.87	271.82	5,829.50	246.06	-7,830.71	6,120.78	1.34	-0.42	
13,398.00	89.91	270.94	5,829.63	247.60	-7,894.69	6,170.48	1.38	0.06	
13,461.00	90.18	271.03	5,829.58	248.68	-7,957.68	6,219.14	0.45	0.43	
13,524.00	90.53	271.73	5,829.19	250.20	-8,020.66	6,268.07	1.24	0.56	
13,590.00	90.57	272.61	5,828.55	252.70	-8,086.61	6,319.89	1.33	0.06	LAST SURVEY - 13,590' MD
13,645.00	90.57	272.61	5,828.01	255.20	-8,141.55	6,363.34	0.00	0.00	PTB - 13,645' MD (393' FNL, 2338' FEL)

Cathedral Energy Services

Survey Report

Company:	LOGOS Operating LLC	Local Co-ordinate Reference:	Well ESCRITO D14-2407 COM #1H
Project:	Rio Arriba County, NM	TVD Reference:	KB=14' @ 7043.00usft (AZTEC 920)
Site:	S14-T24N-R7W	MD Reference:	KB=14' @ 7043.00usft (AZTEC 920)
Well:	ESCRITO D14-2407 COM #1H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
ESCRITO D14-2407 PB	0.00	0.00	5,835.00	271.31	-8,142.83	1,938,305.02	1,248,648.73	36.319626	-107.579865
- actual wellpath misses target center by 17.60usft at 13645.00usft MD (5828.01 TVD, 255.20 N, -8141.55 E)									
- Point									
ESCRITO D14-2407 LP	0.00	0.00	5,890.00	100.86	-843.54	1,938,036.32	1,255,945.06	36.319161	-107.555091
- actual wellpath misses target center by 14.38usft at 6341.24usft MD (5889.02 TVD, 86.52 N, -843.50 E)									
- Point									
ESCRITO D14-2407 FIR	0.00	0.00	5,835.38	270.20	-8,092.74	1,938,303.24	1,248,698.80	36.319623	-107.579695
- actual wellpath misses target center by 19.76usft at 13590.00usft MD (5828.55 TVD, 252.70 N, -8086.61 E)									
- Point									
ESCRITO D14-2407 LA:	0.00	0.00	5,890.00	102.32	-893.63	1,938,038.45	1,255,895.00	36.319165	-107.555261
- actual wellpath misses target center by 15.94usft at 6391.32usft MD (5888.44 TVD, 86.46 N, -893.58 E)									
- Point									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
6,310.00	5,889.32	86.47	-812.26	CSG - 6310' MD (393' FNL, 248' FEL)
13,590.00	5,828.55	252.70	-8,086.61	LAST SURVEY - 13,590' MD
13,645.00	5,828.01	255.20	-8,141.55	PTB - 13,645' MD (393' FNL, 2338' FEL)

Checked By: _____ Approved By: _____ Date: _____