

**NM OIL CONSERVATION
ARTESIA DISTRICT**

OCT 17 2018

RECEIVED



30-015-45349

Caza Operating LLC

Alisa Ogden 15-1H
Alisa Ogden 15-1H
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Alisa Ogden 15-1H

Plan: 181015 Alisa Ogden 15-1H

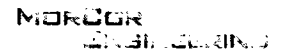
Morcor Standard Plan

17 October, 2018

**MORCOR
ENGINEERING**



Morcor Engineering
Morcor Standard Plan



Company: Caza Operating LLC
Project: Alisa Ogden 15-1H
Site: Alisa Ogden 15-1H
Well: Alisa Ogden 15-1H
Wellbore: Alisa Ogden 15-1H
Design: 181015 Alisa Ogden 15-1H

Local Co-ordinate Reference: Well Alisa Ogden 15-1H
TVD Reference: WELL @ 3149.0usft (Original Well Elev)
MD Reference: WELL @ 3149.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project		Alisa Ogden 15-1H	
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Alisa Ogden 15-1H	
Site Position:		Northing:	473,475.80 usft
From:	Lat/Long	Easting:	591,709.81 usft
Position Uncertainty:	1.0 usft	Slot Radius:	17-1/2 "
		Latitude:	32° 18' 5.591 N
		Longitude:	104° 10' 13.080 W
		Grid Convergence:	0.09 "

Well		Alisa Ogden 15-1H	
Well Position	+N-S 0.0 usft	Northing:	473,475.80 usft
	+E-W 0.0 usft	Easting:	591,709.81 usft
Position Uncertainty	1.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 18' 5.591 N
		Longitude:	104° 10' 13.080 W
		Ground Level:	3,127.0 usft

Wellbore		Alisa Ogden 15-1H	
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	10/17/2018	(°) 6.96
			Dip Angle (°) 59.98
			Field Strength (nT) 47,870

Design		181015 Alisa Ogden 15-1H	
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction (°) 258.22

Survey Tool Program		Date 10/17/2018	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
0.0	14,185.0	181015 Alisa Ogden 15-1H (Alisa Ogden 1	MWD
			Description
			MWD - Standard



Morcor Engineering
Morcor Standard Plan

MORCOR
Petroleum

Company: Caza Operating LLC
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Local Co-ordinate Reference:
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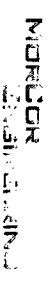
Well/Alisa Ogden 15-1H
WELL @ 3149 Dufft (Original Well Elev)
WELL @ 3149 Dufft (Original Well Elev)
Grid
Minimum Curvature
EDM 5000.1 Single User Db

Planned Survey

MD (ustf)	Inc (°)	Asl (azimuth) (°)	TVD (ustf)	TVDSS (ustf)	N/S (ustf)	E/W (ustf)	Easting (ustf)	Northing (ustf)	V. Sec (ustf)	Diag (°100ustf)
0.0	0.00	0.00	0.0	-3,149.0	0.0	0.0	591,709.81	473,475.80	0.00	0.00
100.0	0.00	165.00	100.0	-3,048.0	0.0	0.0	591,709.81	473,475.80	0.00	0.00
120.0	0.00	165.00	120.0	-3,028.0	0.0	0.0	591,709.81	473,475.80	0.00	0.00
20" Conductor										
200.0	0.00	165.00	200.0	-2,848.0	0.0	0.0	591,709.81	473,475.80	0.00	0.00
300.0	0.00	165.00	300.0	-2,848.0	0.0	0.0	591,709.81	473,475.80	0.00	0.00
399.0	0.00	165.00	399.0	-2,750.0	0.0	0.0	591,709.81	473,475.80	0.00	0.00
13 3/4" Surface Casing										
400.0	0.00	165.00	400.0	-2,749.0	0.0	0.0	591,709.81	473,475.80	0.00	0.00
424.0	0.00	165.00	424.0	-2,725.0	0.0	0.0	591,709.81	473,475.80	0.00	0.00
Saleado										
500.0	0.00	165.00	500.0	-2,849.0	0.0	0.0	591,709.81	473,475.80	0.00	0.00
600.0	0.00	165.00	600.0	-2,548.0	0.0	0.0	591,709.81	473,475.80	0.00	0.00
700.0	0.00	165.00	700.0	-2,449.0	0.0	0.0	591,709.81	473,475.80	0.00	0.00
800.0	0.00	165.00	800.0	-2,349.0	0.0	0.0	591,709.81	473,475.80	0.00	0.00
Start Build 3.67										
800.0	3.57	165.00	899.9	-2,249.1	-3.0	0.8	591,710.62	473,472.78	-0.18	3.57
1,000.0	7.15	165.00	999.5	-2,149.5	-12.0	3.2	591,713.04	473,463.76	-0.70	3.57
Start 7460.0 hoid at 1000.0 MD										
1,100.0	7.15	165.00	1,098.7	-2,050.3	-24.1	6.4	591,716.26	473,451.73	-1.40	0.00
1,200.0	7.15	165.00	1,197.9	-1,951.1	-36.1	9.7	591,719.46	473,439.71	-2.10	0.00
1,200.1	7.15	165.00	1,198.0	-1,951.0	-36.1	9.7	591,719.46	473,439.70	-2.10	0.00
Top of Salt										
1,300.0	7.15	165.00	1,297.1	-1,851.9	-48.1	12.9	591,722.70	473,427.69	-2.80	0.00
1,400.0	7.15	165.00	1,396.4	-1,752.6	-60.1	16.1	591,726.92	473,416.67	-3.50	0.00
1,500.0	7.15	165.00	1,495.6	-1,653.4	-72.2	19.3	591,729.14	473,403.64	-4.20	0.00
1,600.0	7.15	165.00	1,594.8	-1,554.2	-84.2	22.6	591,732.37	473,391.62	-4.89	0.00
1,700.0	7.15	165.00	1,694.0	-1,455.0	-96.2	25.8	591,735.59	473,379.60	-5.59	0.00



Morcor Engineering
Morcor Standard Plan



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Wellbore: Alisa Ogen 15-1H
Design: 181015 Alisa Ogen 15-1H

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well Alisa Ogen 15-1H
WELL @ 3148 Duff (Original Well Elev)
WELL @ 3148 Duff (Original Well Elev)
Grid
Minimum Curvature
EDM 5000.1 Single User Db

Planned Survey

MD (unit)	Inc (°)	Asl (elevation) (°)	TVD (unit)	TVDSS (unit)	N/S (unit)	E/W (unit)	Easting (unit)	Northing (unit)	V. Sec (unit)	Drag (7700unit)
1,800.0	7.15	165.00	1,793.3	-1,355.7	-108.2	28.0	591,738.81	473,387.58	-8.29	0.00
1,900.0	7.15	165.00	1,892.5	-1,256.5	-120.2	32.2	591,742.03	473,355.55	-8.89	0.00
1,907.6	7.15	165.00	1,900.0	-1,249.0	-121.2	32.5	591,742.27	473,354.64	-7.04	0.00
Base of Salt										
2,000.0	7.15	165.00	1,991.7	-1,157.3	-132.3	35.4	591,745.25	473,343.53	-7.69	0.00
2,090.0	7.15	165.00	2,081.0	-1,068.0	-143.1	38.3	591,748.15	473,332.71	-8.32	0.00
Database										
2,100.0	7.15	165.00	2,090.9	-1,058.1	-144.3	38.7	591,748.47	473,331.51	-8.39	0.00
2,200.0	7.15	165.00	2,190.1	-958.9	-158.3	41.9	591,751.69	473,319.49	-8.09	0.00
2,300.0	7.15	165.00	2,289.4	-859.6	-169.3	45.1	591,754.82	473,307.46	-8.79	0.00
2,400.0	7.15	165.00	2,388.6	-760.4	-180.4	48.3	591,758.14	473,295.44	-10.49	0.00
2,500.0	7.15	165.00	2,487.8	-661.2	-192.4	51.5	591,761.39	473,283.42	-11.19	0.00
2,600.0	7.15	165.00	2,587.0	-562.0	-204.4	54.8	591,764.58	473,271.39	-11.88	0.00
2,700.0	7.15	165.00	2,686.3	-462.7	-216.4	58.0	591,767.80	473,259.37	-12.58	0.00
2,800.0	7.15	165.00	2,785.5	-363.5	-228.4	61.2	591,771.02	473,247.35	-13.28	0.00
2,946.9	7.15	165.00	2,832.0	-317.0	-234.1	62.7	591,772.53	473,241.71	-13.61	0.00
Cherry Canyon										
2,900.0	7.15	165.00	2,894.7	-264.3	-240.5	64.4	591,774.24	473,235.33	-13.98	0.00
3,000.0	7.15	165.00	2,983.9	-165.1	-252.5	67.7	591,777.47	473,223.30	-14.68	0.00
3,100.0	7.15	165.00	3,083.2	-65.8	-264.5	70.9	591,780.69	473,211.28	-15.38	0.00
3,200.0	7.15	165.00	3,182.4	33.4	-276.5	74.1	591,783.91	473,199.26	-16.08	0.00
3,300.0	7.15	165.00	3,281.6	132.6	-288.6	77.3	591,787.13	473,187.24	-16.78	0.00
3,400.0	7.15	165.00	3,380.8	231.8	-300.6	80.5	591,790.35	473,175.21	-17.48	0.00
3,500.0	7.15	165.00	3,480.0	331.0	-312.6	83.8	591,793.57	473,163.19	-18.18	0.00
3,600.0	7.15	165.00	3,579.3	430.3	-324.6	87.0	591,796.79	473,151.17	-18.87	0.00
3,700.0	7.15	165.00	3,678.5	529.5	-336.6	90.2	591,800.02	473,139.15	-19.57	0.00
3,800.0	7.15	165.00	3,777.7	628.7	-348.7	93.4	591,803.24	473,127.12	-20.27	0.00



Morcor Engineering
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Well/Alisa Ogden 15-1H
WELL @ 3149 Duff (Original Well Elev)
WELL @ 3149 Duff (Original Well Elev)
Grid
Minimum Curvature
EDM 5000.1 Single User Db

Planned Survey

MD (unit)	Inc (°)	Adj (estimated) (°)	TVD (unit)	TVDSS (unit)	N/S (unit)	E/W (unit)	Easting (unit)	Northing (unit)	V. Sec (unit)	Diag (YTD/unit)
3,900.0	7.15	165.00	3,876.9	727.9	-360.7	96.6	591,806.46	473,115.10	-20.87	0.00
4,000.0	7.15	165.00	3,976.2	827.2	-372.7	99.9	591,809.68	473,103.08	-21.87	0.00
4,030.1	7.15	165.00	4,006.0	857.0	-376.3	100.6	591,810.65	473,099.46	-21.88	0.00
Brushy Canyon										
4,100.0	7.15	165.00	4,075.4	926.4	-384.7	103.1	591,812.80	473,091.06	-22.37	0.00
4,200.0	7.15	165.00	4,174.6	1,025.6	-396.8	106.3	591,816.12	473,079.03	-23.07	0.00
4,300.0	7.15	165.00	4,273.8	1,124.8	-408.8	109.5	591,819.34	473,067.01	-23.77	0.00
4,400.0	7.15	165.00	4,373.0	1,224.0	-420.8	112.8	591,822.57	473,054.99	-24.47	0.00
4,500.0	7.15	165.00	4,472.3	1,323.3	-432.8	116.0	591,825.79	473,042.96	-25.17	0.00
4,600.0	7.15	165.00	4,571.5	1,422.5	-444.9	119.2	591,829.01	473,030.94	-25.88	0.00
4,700.0	7.15	165.00	4,670.7	1,521.7	-456.9	122.4	591,832.23	473,018.92	-26.58	0.00
4,800.0	7.15	165.00	4,769.9	1,620.9	-468.9	125.6	591,835.45	473,006.90	-27.28	0.00
4,900.0	7.15	165.00	4,869.2	1,720.2	-480.9	128.9	591,838.67	472,994.87	-27.98	0.00
5,000.0	7.15	165.00	4,968.4	1,819.4	-492.9	132.1	591,841.89	472,982.85	-28.68	0.00
5,100.0	7.15	165.00	5,067.6	1,918.6	-505.0	135.3	591,845.12	472,970.83	-29.38	0.00
5,200.0	7.15	165.00	5,166.8	2,017.8	-517.0	138.5	591,848.34	472,958.81	-30.08	0.00
5,300.0	7.15	165.00	5,266.0	2,117.0	-529.0	141.7	591,851.56	472,946.78	-30.78	0.00
5,400.0	7.15	165.00	5,365.3	2,216.3	-541.0	145.0	591,854.78	472,934.76	-31.48	0.00
5,500.0	7.15	165.00	5,464.5	2,315.5	-553.1	148.2	591,858.00	472,922.74	-32.18	0.00
5,600.0	7.15	165.00	5,563.7	2,414.7	-565.1	151.4	591,861.22	472,910.72	-32.88	0.00
5,606.3	7.15	165.00	5,570.0	2,421.0	-565.8	151.6	591,861.43	472,909.95	-32.90	0.00
Bone Spring										
5,666.7	7.15	165.00	5,620.0	2,471.0	-571.9	153.2	591,863.05	472,903.90	-33.25	0.00
9 667 Intermediate Casing										
5,700.0	7.15	165.00	5,662.9	2,513.9	-577.1	154.6	591,864.45	472,898.69	-33.55	0.00
5,800.0	7.15	165.00	5,762.2	2,613.2	-589.1	157.9	591,867.67	472,886.67	-34.25	0.00
5,900.0	7.15	165.00	5,861.4	2,712.4	-601.1	161.1	591,870.89	472,874.65	-34.95	0.00

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Local Co-ordinate Reference:
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MD Reference: WELL @ 3148.0m (Original Well Elev)
North Reference: WELL @ 3148.0m (Original Well Elev)
Survey Calculation Method: Gnd Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey	MD (unit)	Inc (°)	Asz (estimated) (°)	TVD (unit)	TVDSS (unit)	N/S (unit)	E/W (unit)	Easting (unit)	Northing (unit)	V. Sec (unit)	Drag (7100unit)
	6,000.0	7.15	165.00	5,860.8	2,811.6	-613.2	164.3	591,874.11	472,882.63	-35.65	0.00
	6,100.0	7.15	165.00	6,058.8	2,910.8	-625.2	167.5	591,877.33	472,850.60	-36.35	0.00
	6,200.0	7.15	165.00	6,158.0	3,010.0	-637.2	170.7	591,880.55	472,838.58	-37.05	0.00
	6,300.0	7.15	165.00	6,258.3	3,108.3	-649.2	174.0	591,883.77	472,826.56	-37.75	0.00
	6,400.0	7.15	165.00	6,357.5	3,208.5	-661.3	177.2	591,887.00	472,814.53	-38.45	0.00
	6,500.0	7.15	165.00	6,456.7	3,307.7	-673.3	180.4	591,890.22	472,802.51	-39.15	0.00
	6,600.0	7.15	165.00	6,555.9	3,406.9	-685.3	183.6	591,893.44	472,790.49	-39.85	0.00
	6,676.7	7.15	165.00	6,632.0	3,463.0	-694.5	186.1	591,895.91	472,781.27	-40.38	0.00
1st Bone Spring Sand	6,700.0	7.15	165.00	6,655.2	3,506.2	-697.3	186.8	591,896.66	472,778.47	-40.54	0.00
	6,800.0	7.15	165.00	6,754.4	3,605.4	-709.4	190.1	591,899.88	472,766.44	-41.24	0.00
	6,900.0	7.15	165.00	6,853.8	3,704.6	-721.4	193.3	591,903.10	472,754.42	-41.94	0.00
	7,000.0	7.15	165.00	6,952.8	3,803.8	-733.4	196.5	591,906.32	472,742.40	-42.64	0.00
	7,100.0	7.15	165.00	7,052.0	3,903.0	-745.4	199.7	591,909.55	472,730.38	-43.34	0.00
	7,200.0	7.15	165.00	7,151.3	4,002.3	-757.4	203.0	591,912.77	472,718.35	-44.04	0.00
	7,256.2	7.15	165.00	7,207.0	4,058.0	-764.2	204.8	591,914.58	472,711.60	-44.43	0.00
2nd Bone Spring Sand	7,300.0	7.15	165.00	7,260.5	4,101.5	-769.5	206.2	591,915.98	472,706.33	-44.74	0.00
	7,400.0	7.15	165.00	7,346.7	4,200.7	-781.5	209.4	591,918.21	472,694.31	-45.44	0.00
	7,428.5	7.15	165.00	7,378.0	4,229.0	-784.9	210.3	591,920.13	472,680.88	-45.64	0.00
2nd Bone Spring Lime	7,500.0	7.15	165.00	7,448.9	4,289.9	-793.5	212.6	591,922.43	472,682.29	-46.14	0.00
	7,500.0	7.15	165.00	7,548.2	4,389.2	-805.5	215.8	591,925.65	472,670.26	-46.84	0.00
	7,600.0	7.15	165.00	7,647.4	4,488.4	-817.6	219.1	591,928.87	472,658.24	-47.53	0.00
	7,700.0	7.15	165.00	7,746.6	4,587.6	-829.6	222.3	591,932.10	472,646.22	-48.23	0.00
	7,800.0	7.15	165.00	7,845.8	4,686.8	-841.6	225.5	591,935.32	472,634.20	-48.93	0.00
	8,000.0	7.15	165.00	7,945.0	4,786.0	-853.6	228.7	591,938.54	472,622.17	-49.63	0.00
	8,100.0	7.15	165.00	8,044.3	4,885.3	-865.6	231.9	591,941.76	472,610.15	-50.33	0.00



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Grid
Minimum Curvature
EDM 5000.1 Single User Db

Planned Survey

MD (feet)	Inc (")	Asl (elevation) (")	TVD (feet)	TVDSS (feet)	N/S (feet)	E/W (feet)	Easting (feet)	Northing (feet)	V. Sec (feet)	Drag (ft/100feet)
8,200.0	7.15	165.00	8,143.5	4,894.5	-877.7	235.2	591,844.88	472,588.13	-51.03	0.00
8,300.0	7.15	165.00	8,242.7	5,093.7	-889.7	236.4	591,848.20	472,588.11	-51.73	0.00
8,400.0	7.15	165.00	8,341.9	5,192.9	-901.7	241.8	591,851.42	472,574.08	-52.43	0.00
8,460.0	7.15	165.00	8,401.5	5,252.5	-908.9	243.5	591,853.36	472,568.87	-52.85	0.00
Start Drop -3.67										
8,500.0	5.72	165.00	8,441.2	5,292.2	-913.3	244.7	591,854.52	472,562.54	-53.10	3.57
8,600.0	2.14	165.00	8,541.0	5,392.0	-919.9	246.5	591,856.29	472,555.82	-53.48	3.57
8,660.0	0.00	0.00	8,601.0	5,452.0	-921.0	246.8	591,856.58	472,554.83	-53.55	3.57
Start 100.0 hold at 8880.0 MD										
8,700.0	0.00	268.90	8,641.0	5,492.0	-921.0	246.8	591,856.58	472,554.83	-53.55	0.00
8,730.0	0.00	268.90	8,671.0	5,522.0	-921.0	246.8	591,856.58	472,554.83	-53.55	0.00
3rd Bone Spring Sand										
8,760.0	0.00	268.90	8,701.0	5,552.0	-921.0	246.8	591,856.58	472,554.83	-53.55	0.00
Start Build 11.35										
8,800.0	4.54	268.90	8,740.9	5,591.9	-921.0	245.2	591,855.00	472,554.80	-51.99	11.35
8,900.0	15.89	268.90	8,839.2	5,690.2	-921.3	227.5	591,837.29	472,554.46	-34.59	11.35
9,000.0	27.25	268.90	8,932.0	5,783.0	-922.0	190.8	591,800.60	472,553.76	1.48	11.35
9,100.0	38.60	268.90	9,015.8	5,868.8	-923.1	138.5	591,846.35	472,552.71	54.80	11.35
9,114.5	40.24	268.90	9,027.0	5,878.0	-923.3	127.3	591,837.15	472,552.54	63.84	11.35
Workcamp										
9,200.0	49.95	268.90	9,087.3	5,938.3	-924.4	68.9	591,776.68	472,551.38	123.29	11.35
9,300.0	61.30	268.90	9,143.7	5,994.7	-926.0	-15.5	591,694.27	472,548.79	204.26	11.35
9,400.0	72.66	268.90	9,192.7	6,033.7	-927.8	-107.4	591,602.41	472,546.03	294.56	11.35
9,500.0	84.01	268.90	9,202.9	6,033.8	-928.6	-205.2	591,504.65	472,546.15	380.84	11.35
9,560.0	90.82	268.90	9,205.6	6,056.6	-930.9	-265.1	591,444.76	472,545.00	448.50	11.35
Start Turn 0.00										
9,600.0	90.82	268.90	9,205.0	6,056.0	-931.6	-305.0	591,404.77	472,544.24	488.81	0.00
9,700.0	90.82	268.90	9,203.6	6,054.6	-933.5	-405.0	591,304.80	472,542.32	587.06	0.00



Morcor Engineering
Morcor Standard Plan

MORCOR
ENGINEERING

Company: Caza Operating LLC
Project: Alisa Ogden 15-1H
Site: Alisa Ogden 15-1H
Well: Alisa Ogden 15-1H
Wellbore: Alisa Ogden 15-1H
Design: 181015 Alisa Ogden 15-1H

Local Co-ordinate Reference:
TVD Reference: WELL @ 3149 Dufft (Original Well Elev)
MD Reference: WELL @ 3149 Dufft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey	MD (unit)	Inc (°)	Asl (azimuth) (°)	TVD (unit)	TVDSS (unit)	N/S (unit)	E/W (unit)	Easting (unit)	Northing (unit)	V. Sac (unit)	Dleg (°/100unit)
	8,800.0	90.82	266.90	9,202.2	6,053.2	-935.4	-505.0	591,204.83	472,540.40	685.32	0.00
	8,900.0	90.82	266.90	9,200.7	6,051.7	-937.3	-805.0	591,104.85	472,538.46	783.58	0.00
	10,000.0	90.82	266.90	9,199.3	6,050.3	-939.2	-704.9	591,004.88	472,536.56	881.84	0.00
	10,100.0	90.82	266.90	9,197.9	6,048.9	-941.2	-804.9	590,904.91	472,534.64	980.10	0.00
	10,200.0	90.82	266.90	9,196.4	6,047.4	-943.1	-904.8	590,804.94	472,532.72	1,078.35	0.00
	10,300.0	90.82	266.90	9,195.0	6,046.0	-945.0	-1,004.8	590,704.97	472,530.80	1,176.61	0.00
	10,400.0	90.82	266.90	9,193.6	6,044.6	-946.9	-1,104.8	590,605.00	472,528.88	1,274.87	0.00
	10,500.0	90.82	266.90	9,192.1	6,043.1	-948.8	-1,204.8	590,505.03	472,526.96	1,373.13	0.00
	10,600.0	90.82	266.90	9,190.7	6,041.7	-950.8	-1,304.8	590,405.06	472,525.04	1,471.38	0.00
	10,700.0	90.82	266.90	9,189.3	6,040.3	-952.7	-1,404.7	590,305.08	472,523.12	1,569.64	0.00
	10,800.0	90.82	266.90	9,187.9	6,038.8	-954.6	-1,504.7	590,205.11	472,521.20	1,667.90	0.00
	10,900.0	90.82	266.90	9,186.4	6,037.4	-956.5	-1,604.7	590,105.14	472,519.28	1,766.16	0.00
	11,000.0	90.82	266.90	9,185.0	6,036.0	-958.4	-1,704.6	590,005.17	472,517.36	1,864.41	0.00
	11,100.0	90.82	266.90	9,183.6	6,034.6	-960.4	-1,804.6	589,905.20	472,515.44	1,962.67	0.00
	11,200.0	90.82	266.90	9,182.1	6,033.1	-962.3	-1,904.6	589,805.23	472,513.52	2,060.93	0.00
	11,300.0	90.82	266.90	9,180.7	6,031.7	-964.2	-2,004.6	589,705.26	472,511.60	2,159.19	0.00
	11,400.0	90.82	266.90	9,179.3	6,030.3	-966.1	-2,104.5	589,605.28	472,509.68	2,257.44	0.00
	11,500.0	90.82	266.90	9,177.8	6,028.8	-968.0	-2,204.5	589,505.31	472,507.76	2,355.70	0.00
	11,600.0	90.82	266.90	9,176.4	6,027.4	-970.0	-2,304.5	589,405.34	472,505.84	2,453.96	0.00
	11,700.0	90.82	266.90	9,175.0	6,026.0	-971.9	-2,404.4	589,305.37	472,503.92	2,552.22	0.00
	11,800.0	90.82	266.90	9,173.5	6,024.5	-973.8	-2,504.4	589,205.40	472,502.01	2,650.47	0.00
	11,900.0	90.82	266.90	9,172.1	6,023.1	-975.7	-2,604.4	589,105.43	472,500.09	2,748.73	0.00
	12,000.0	90.82	266.90	9,170.7	6,021.7	-977.6	-2,704.4	589,005.46	472,498.17	2,846.99	0.00
	12,100.0	90.82	266.90	9,169.2	6,020.2	-979.5	-2,804.3	588,905.48	472,496.25	2,945.25	0.00
	12,200.0	90.82	266.90	9,167.8	6,018.8	-981.5	-2,904.3	588,805.51	472,494.33	3,043.50	0.00
	12,300.0	90.82	266.90	9,166.4	6,017.4	-983.4	-3,004.3	588,705.54	472,492.41	3,141.76	0.00
	12,400.0	90.82	266.90	9,165.0	6,016.0	-985.3	-3,104.2	588,605.57	472,490.49	3,240.02	0.00



Morcor Engineering
Morcor Standard Plan

MORCOR
ENGINEERING

Company: Caza Operating LLC
Project: Alisa Ogden 15-1H
Site: Alisa Ogden 15-1H
Well: Alisa Ogden 15-1H
Wellbore: Alisa Ogden 15-1H
Design: 181015 Alisa Ogden 15-1H

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:
Well Alisa Ogden 15-1H
WELL @ 3148 Dufft (Original Well Elev)
WELL @ 3148 Dufft (Original Well Elev)
Grid
Minimum Curvature
EDM 5000.1 Single User Db

Planned Survey											
MD (unit)	Inc (°)	Adj (technut) (°)	TVD (unit)	TVDSS (unit)	N/S (unit)	E/W (unit)	Easting (unit)	Northing (unit)	V. Sec (unit)	DLg (Tribunit)	
12,500.0	90.82	268.90	9,163.5	6,014.5	-987.2	-3,204.2	588,505.60	472,488.57	3,338.28	0.00	
12,600.0	90.82	268.90	9,162.1	6,013.1	-989.1	-3,304.2	588,405.63	472,486.65	3,438.53	0.00	
12,700.0	90.82	268.90	9,160.7	6,011.7	-991.1	-3,404.2	588,305.66	472,484.73	3,534.79	0.00	
12,800.0	90.82	268.90	9,159.2	6,010.2	-993.0	-3,504.1	588,205.69	472,482.81	3,633.05	0.00	
12,900.0	90.82	268.90	9,157.8	6,008.8	-994.9	-3,604.1	588,105.71	472,480.89	3,731.31	0.00	
13,000.0	90.82	268.90	9,156.4	6,007.4	-996.8	-3,704.1	588,005.74	472,478.97	3,829.56	0.00	
13,100.0	90.82	268.90	9,154.9	6,005.9	-998.7	-3,804.0	587,905.77	472,477.05	3,927.82	0.00	
13,200.0	90.82	268.90	9,153.5	6,004.5	-1,000.7	-3,904.0	587,805.80	472,475.13	4,026.08	0.00	
13,300.0	90.82	268.90	9,152.1	6,003.1	-1,002.6	-4,004.0	587,705.83	472,473.21	4,124.34	0.00	
13,400.0	90.82	268.90	9,150.6	6,001.6	-1,004.5	-4,104.0	587,605.86	472,471.29	4,222.59	0.00	
13,500.0	90.82	268.90	9,149.2	6,000.2	-1,006.4	-4,203.9	587,505.89	472,469.37	4,320.85	0.00	
13,600.0	90.82	268.90	9,147.8	5,998.8	-1,008.3	-4,303.9	587,405.92	472,467.45	4,419.11	0.00	
13,700.0	90.82	268.90	9,146.3	5,997.3	-1,010.3	-4,403.9	587,305.94	472,465.53	4,517.37	0.00	
13,800.0	90.82	268.90	9,144.9	5,995.9	-1,012.2	-4,503.8	587,205.97	472,463.61	4,615.62	0.00	
13,900.0	90.82	268.90	9,143.5	5,994.5	-1,014.1	-4,603.8	587,106.00	472,461.69	4,713.88	0.00	
14,000.0	90.82	268.90	9,142.1	5,993.1	-1,016.0	-4,703.8	587,006.03	472,459.78	4,812.14	0.00	
14,100.0	90.82	268.90	9,140.6	5,991.6	-1,017.9	-4,803.8	586,906.06	472,457.86	4,910.40	0.00	
14,185.0	90.82	268.90	9,139.4	5,990.4	-1,019.6	-4,898.7	586,821.08	472,456.22	4,993.82	0.00	
TD at 14185.0 - 5 1/2" Production Casing											



Morcor Engineering
Morcor Standard Plan

MORCOR
ENGINEERING

Company: Caza Operating LLC
Project: Alisa Ogden 15-1H
Site: Alisa Ogden 15-1H
Well: Alisa Ogden 15-1H
Wellbore: Alisa Ogden 15-1H
Design: 181015 Alisa Ogden 15-1H

Local Co-ordinate Reference:
TVD Reference: Well Alisa Ogden 15-1H
MD Reference: WELL @ 3149.0surf (Original Well Elev)
North Reference: WELL @ 3149.0surf (Original Well Elev)
Survey Calculation Method: Grid
Database: Minimum Curvature
EDM 5000.1 Single User Db

Casing Points

Measured Depth (feet)	Vertical Depth (feet)	Name
14,195.0	9,139.4	5 1/2" Production Casing
120.0	120.0	20" Conductor
399.0	399.0	13 3/8" Surface Casing
5,656.7	5,620.0	9 5/8" Intermediate Casing

Casing Diameter (")	Hole Diameter (")
5-1/2	8-3/4
20	28
13-3/8	17-1/2
9-5/8	12-1/4

Formations

Measured Depth (feet)	Vertical Depth (feet)	Name
7,428.5	7,376.0	2nd Bone Spring Lime
8,730.0	8,671.0	3rd Bone Spring Sand
7,256.2	7,207.0	2nd Bone Spring Sand
4,030.1	4,006.0	Brushy Canyon
6,678.7	6,632.0	1st Bone Spring Sand
2,846.9	2,832.0	Cherry Canyon
2,090.0	2,081.0	Delaware
9,114.5	9,027.0	Wellcamp
424.0	424.0	Saliado
5,606.3	5,570.0	Bone Spring
1,907.6	1,900.0	Base of Salt
1,200.1	1,198.0	Top of Salt

Lithology	Dip (")	Dip Direction (")
	0.00	
	0.00	
	0.00	
	0.00	
	0.00	
	0.00	
	0.00	
	0.00	
	0.00	
	0.00	
	0.00	
	0.00	



Morcor Engineering
Morcor Standard Plan

MORCOR
ENGINEERING

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Alisa Ogden 15-1H
Project:	Alisa Ogden 15-1H	TVD Reference:	WELL @ 3149.0usft (Original Well Elev)
Site:	Alisa Ogden 15-1H	MD Reference:	WELL @ 3149.0usft (Original Well Elev)
Well:	Alisa Ogden 15-1H	North Reference:	Grid
Wellbore:	Alisa Ogden 15-1H	Survey Calculation Method:	Minimum Curvature
Design:	181015 Alisa Ogden 15-1H	Database:	EDM 5000.1 Single User Db

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/S (usft)	+E/W (usft)		
800.0	800.0	0.0	0.0	Start Build 3.57	
1,000.0	999.5	-12.0	3.2	Start 7460.0 hold at 1000.0 MD	
8,460.0	8,401.5	-908.9	243.5	Start Drop -3.57	
8,660.0	8,601.0	-921.0	246.8	Start 100.0 hold at 8660.0 MD	
8,760.0	8,701.0	-921.0	246.8	Start Build 11.35	
9,560.0	9,205.6	-930.8	-265.1	Start Turn 0.00	
14,185.0	9,139.4	-1,019.6	-4,888.7	TD at 14185.0	

Checked By: _____	Approved By: _____	Date: _____
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Project: Alisa Ogden 15-1H
 Site: Alisa Ogden 15-1H
 Well: Alisa Ogden 15-1H
 Wellbore: Alisa Ogden 15-1H
 Design: 181015 Alisa Ogden 15-1H



Azimuths to Grid North
 True North: -0.09°
 Magnetic North: 6.88°
 Magnetic Field
 Strength: 47870.0snT
 Dip Angle: 59.98°
 Date: 10/17/2018
 Model: IGRF2010

CASING DETAILS

TVD	MD	Name	Size
120.0	120.0	20" Conductor	20
399.0	399.0	13 3/8" Surface Casing	13-3/8
5620.0	5656.7	9 5/8" Intermediate Casing	9-5/8
9139.4	14185.0	5 1/2" Production Casing	5-1/2

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
424.0	424.0	Salado	0.00	
1198.0	1200.1	Top of Salt	0.00	
1900.0	1907.6	Base of Salt	0.00	
2081.0	2090.0	Delaware	0.00	
2832.0	2846.9	Cherry Canyon	0.00	
4006.0	4030.1	Brushy Canyon	0.00	
5570.0	5606.3	Bone Spring	0.00	
6632.0	6676.7	1st Bone Spring Sand	0.00	
7207.0	7256.2	2nd Bone Spring Sand	0.00	
7378.0	7428.5	2nd Bone Spring Lime	0.00	
8671.0	8730.0	3rd Bone Spring Sand	0.00	
9027.0	9114.5	Wolfcamp	0.00	

