



Operator: TapRock Resources LLC
Well Name: Miso State #168H
County: Eddy
State: New Mexico
Rig Name: H&P 245
API Number: 30-015-45750

Intrepid Directional Drilling Specialists certifies that the surveys performed on the above referenced well are true and correct MWD surveys, data provided as follows:

Surveyor: Intrepid Directional Drilling Specialists
Survey Depths: 100' MD – 13,221.4' MD
Projection to Bit: 13,245' MD
Dates Performed: 06/16/2019 – 06/26/2019
Type of Survey: MWD

Sincerely,

A handwritten signature in black ink, appearing to read "James Burleson".

James Burleson
Vice President of MWD Operations
Intrepid Directional Drilling Specialists





RECEIVED

MAR 11 2020

EMNRD-OCDARTESIA

Tap Rock Resources, LLC

Eddy County, NM (NAD 83 NME)
(Miso State) Sec-2_T-26-S_R-25-E
Miso State #168H

OWB

Design: AWB

Standard Survey Report

27 June, 2019

The logo for Intrepid, featuring a stylized graphic of three vertical bars of increasing height to the left of the word "INTREPID" in a bold, sans-serif font.



Intrepid
Survey Report



Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Miso State #168H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3623.5usft (H&P 245)
Site:	(Miso State) Sec-2_T-26-S_R-25-E	MD Reference:	KB @ 3623.5usft (H&P 245)
Well:	Miso State #168H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Project	Eddy County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	(Miso State) Sec-2_T-26-S_R-25-E		
Site Position:	Map	Northing:	387,500.00 usft
From:		Easting:	533,218.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 3' 55.133 N
		Longitude:	104° 21' 34.362 W
		Grid Convergence:	-0.01 °

Well	Miso State #168H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 3' 55.133 N
		Longitude:	104° 21' 34.362 W
		Ground Level:	3,598.0 usft

Wellbore	OWB		
----------	-----	--	--

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	06/16/19	7.09	59.77	47,553.67213699

Design	AWB		
--------	-----	--	--

Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	0.06

Survey Program	Date	06/27/19		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	7,738.0	VES Gyro Svys (OWB)	GYRO-NS	OWSG Gyrocompass Gyro
7,800.0	13,245.0	Intrepid MWD (7738-8037) (OWB)	MWD	OWSG MWD - Standard

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
39.0	0.16	194.59	39.0	-0.1	0.0	-0.1	0.40	0.40	0.00
Rustler Anhydrite									
100.0	0.40	194.59	100.0	-0.3	-0.1	-0.3	0.40	0.40	0.00
200.0	0.62	182.15	200.0	-1.2	-0.2	-1.2	0.25	0.22	-12.44
300.0	0.90	209.68	300.0	-2.4	-0.6	-2.4	0.45	0.28	27.53
400.0	1.26	201.26	400.0	-4.1	-1.4	-4.1	0.39	0.36	-8.42
479.0	0.76	229.21	479.0	-5.3	-2.1	-5.3	0.87	-0.64	35.36
Top Salt									



Intrepid
Survey Report



Company:	Tap Rock Resources, LLC	Local Co-ordinate	Reference:	Well Miso State #168H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:		KB @ 3623.5usft (H&P 245)
Site:	(Miso State) Sec-2_T-26-S_R-25-E	MD Reference:		KB @ 3623.5usft (H&P 245)
Well:	Miso State #168H	North Reference:		Grid
Wellbore:	OWB	Survey Calculation Method:		Minimum Curvature
Design:	AWB	Database:		EDM 5000.15 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
500.0	0.68	242.52	500.0	-5.4	-2.3	-5.4	0.87	-0.36	63.52	
600.0	0.40	243.51	600.0	-5.9	-3.2	-5.9	0.28	-0.28	0.99	
700.0	0.81	289.92	699.9	-5.8	-4.1	-5.8	0.61	0.41	46.41	
800.0	0.91	357.36	799.9	-4.8	-4.8	-4.8	0.96	0.10	67.44	
900.0	0.92	262.86	899.9	-4.1	-5.7	-4.1	1.34	0.01	-94.50	
1,000.0	0.94	262.67	999.9	-4.3	-7.3	-4.3	0.02	0.02	-0.19	
1,100.0	0.94	250.18	1,099.9	-4.6	-8.9	-4.7	0.20	0.00	-12.49	
1,200.0	0.93	309.28	1,199.9	-4.4	-10.3	-4.4	0.92	-0.01	59.10	
1,300.0	0.84	248.15	1,299.9	-4.2	-11.6	-4.2	0.90	-0.09	-61.13	
1,400.0	1.24	187.32	1,399.9	-5.5	-12.4	-5.5	1.11	0.40	-60.83	
1,444.1	1.16	167.46	1,444.0	-6.4	-12.4	-6.4	0.95	-0.18	-44.99	
Base Salt										
1,500.0	1.27	142.64	1,499.8	-7.5	-11.9	-7.5	0.95	0.20	-44.43	
1,600.0	1.36	136.24	1,599.8	-9.2	-10.4	-9.2	0.17	0.09	-6.40	
1,674.2	1.15	112.27	1,674.0	-10.1	-9.1	-10.1	0.76	-0.29	-32.31	
Delaware Mountain Gp										
1,684.2	1.14	108.51	1,684.0	-10.2	-8.9	-10.2	0.76	-0.10	-37.57	
Lamar										
1,700.0	1.13	102.48	1,699.8	-10.3	-8.6	-10.3	0.76	-0.04	-38.18	
1,724.2	1.06	87.69	1,724.0	-10.3	-8.1	-10.3	1.20	-0.28	-61.08	
Bell Canyon										
1,764.2	1.12	62.42	1,764.0	-10.1	-7.4	-10.1	1.20	0.14	-63.17	
Ramsey Sand										
1,800.0	1.32	44.54	1,799.8	-9.7	-6.8	-9.7	1.20	0.57	-49.97	
1,900.0	1.00	48.28	1,899.8	-8.3	-5.3	-8.3	0.33	-0.32	3.74	
2,000.0	1.06	63.02	1,999.7	-7.3	-3.9	-7.3	0.27	0.06	14.74	
2,100.0	3.71	134.52	2,099.7	-9.1	-0.7	-9.1	3.52	2.65	71.50	
2,200.0	6.08	144.67	2,199.3	-15.7	4.6	-15.7	2.51	2.37	10.15	
2,300.0	6.91	145.48	2,298.6	-25.0	11.1	-25.0	0.84	0.83	0.81	
2,400.0	6.16	146.18	2,398.0	-34.4	17.5	-34.4	0.75	-0.75	0.70	
2,500.0	6.03	145.66	2,497.4	-43.2	23.4	-43.2	0.14	-0.13	-0.52	
2,600.0	5.28	142.33	2,596.9	-51.2	29.2	-51.1	0.82	-0.75	-3.33	
2,700.0	4.89	142.22	2,696.5	-58.2	34.6	-58.1	0.39	-0.39	-0.11	
2,800.0	4.89	144.23	2,796.2	-65.0	39.7	-65.0	0.17	0.00	2.01	
2,802.8	4.92	144.18	2,799.0	-65.2	39.9	-65.2	1.04	1.03	-1.92	
Cherry Canyon										
2,900.0	5.92	142.63	2,895.7	-72.6	45.4	-72.5	1.04	1.03	-1.59	
3,000.0	6.05	142.39	2,995.2	-80.8	51.7	-80.8	0.13	0.13	-0.24	
3,100.0	5.55	140.86	3,094.7	-88.8	58.0	-88.7	0.52	-0.50	-1.53	
3,200.0	5.20	140.02	3,194.2	-96.0	63.9	-95.9	0.36	-0.35	-0.84	
3,300.0	4.97	140.98	3,293.8	-102.8	69.6	-102.8	0.25	-0.23	0.96	
3,400.0	4.97	141.35	3,393.5	-109.6	75.0	-109.5	0.03	0.00	0.37	
3,500.0	4.99	140.21	3,493.1	-116.3	80.5	-116.2	0.10	0.02	-1.14	
3,600.0	6.70	133.53	3,592.6	-123.7	87.5	-123.6	1.84	1.71	-6.68	



Intrepid
Survey Report



Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Miso State #168H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3623.5usft (H&P 245)
Site:	(Miso State) Sec-2_T-26-S_R-25-E	MD Reference:	KB @ 3623.5usft (H&P 245)
Well:	Miso State #168H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
3,700.0	6.27	142.74	3,691.9	-132.0	95.1	-131.9	1.12	-0.43	9.21	
3,702.1	6.26	142.70	3,694.0	-132.2	95.2	-132.1	0.66	-0.61	-2.09	
Brushy Canyon										
3,800.0	5.66	140.43	3,791.4	-140.2	101.5	-140.1	0.66	-0.61	-2.31	
3,900.0	5.17	140.02	3,890.9	-147.4	107.5	-147.3	0.49	-0.49	-0.41	
4,000.0	4.61	137.58	3,990.6	-153.8	113.1	-153.7	0.60	-0.56	-2.44	
4,100.0	5.92	143.60	4,090.2	-161.0	118.9	-160.8	1.42	1.31	6.02	
4,200.0	6.01	147.50	4,189.6	-169.5	124.8	-169.4	0.42	0.09	3.90	
4,300.0	5.88	149.38	4,289.1	-178.4	130.2	-178.2	0.23	-0.13	1.88	
4,400.0	5.79	149.41	4,388.6	-187.1	135.4	-187.0	0.09	-0.09	0.03	
4,500.0	5.83	151.19	4,488.0	-195.9	140.4	-195.7	0.18	0.04	1.78	
4,600.0	5.77	149.89	4,587.5	-204.7	145.4	-204.5	0.14	-0.06	-1.30	
4,700.0	4.79	141.00	4,687.1	-212.3	150.5	-212.1	1.27	-0.98	-8.89	
4,800.0	4.72	140.73	4,786.8	-218.7	155.8	-218.6	0.07	-0.07	-0.27	
4,900.0	4.85	139.96	4,886.4	-225.1	161.1	-225.0	0.14	0.13	-0.77	
5,000.0	3.56	131.49	4,986.1	-230.4	166.1	-230.3	1.43	-1.29	-8.47	
5,100.0	2.20	124.46	5,086.0	-233.6	170.0	-233.4	1.40	-1.36	-7.03	
5,200.0	0.71	113.98	5,186.0	-234.9	172.2	-234.7	1.51	-1.49	-10.48	
5,223.0	0.73	107.80	5,209.0	-235.0	172.4	-234.8	0.35	0.11	-26.84	
Bone Spring Lime										
5,273.0	0.81	96.05	5,259.0	-235.2	173.1	-235.0	0.35	0.16	-23.51	
Upper Avalon										
5,300.0	0.87	90.72	5,286.0	-235.2	173.5	-235.0	0.35	0.20	-19.75	
5,400.0	0.66	103.89	5,386.0	-235.3	174.8	-235.1	0.27	-0.21	13.17	
5,500.0	0.36	36.86	5,486.0	-235.2	175.6	-235.0	0.62	-0.30	-67.03	
5,600.0	0.91	252.73	5,586.0	-235.2	175.0	-235.0	1.22	0.55	-144.13	
5,633.0	0.96	237.94	5,619.0	-235.4	174.5	-235.2	0.74	0.14	-44.77	
Middle Avalon										
5,700.0	1.21	215.04	5,685.9	-236.3	173.6	-236.1	0.74	0.38	-34.20	
5,800.0	1.64	205.37	5,785.9	-238.5	172.4	-238.3	0.49	0.43	-9.67	
5,900.0	2.02	237.50	5,885.9	-240.7	170.3	-240.5	1.08	0.38	32.13	
5,978.2	1.53	252.48	5,964.0	-241.7	168.2	-241.6	0.86	-0.63	19.16	
Lower Avalon										
6,000.0	1.42	258.37	5,985.8	-241.9	167.6	-241.7	0.86	-0.50	26.99	
6,100.0	0.80	227.39	6,085.8	-242.6	165.9	-242.4	0.84	-0.62	-30.98	
6,113.2	0.80	228.01	6,099.0	-242.7	165.8	-242.6	0.07	-0.02	4.67	
1st Bone Spring Sand										
6,200.0	0.78	232.17	6,185.8	-243.5	164.8	-243.3	0.07	-0.02	4.80	
6,300.0	0.72	263.53	6,285.8	-244.0	163.7	-243.8	0.41	-0.06	31.36	
6,323.2	0.72	278.60	6,309.0	-244.0	163.4	-243.8	0.81	0.00	64.91	
2nd Bone Spring Carb										
6,400.0	1.01	316.41	6,385.8	-243.4	162.4	-243.3	0.81	0.38	49.24	
6,500.0	0.69	293.03	6,485.8	-242.5	161.3	-242.4	0.47	-0.32	-23.38	
6,600.0	0.80	262.49	6,585.8	-242.4	160.0	-242.2	0.41	0.11	-30.54	
6,700.0	1.01	240.07	6,685.7	-242.9	158.6	-242.8	0.41	0.21	-22.42	



Intrepid
Survey Report



Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Miso State #168H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3623.5usft (H&P 245)
Site:	(Miso State) Sec-2_T-26-S_R-25-E	MD Reference:	KB @ 3623.5usft (H&P 245)
Well:	Miso State #168H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
6,708.3	1.04	240.08	6,694.0	-243.0	158.5	-242.8	0.37	0.37	0.09	
2nd Bone Spring Sand										
6,800.0	1.38	240.14	6,785.7	-244.0	156.8	-243.8	0.37	0.37	0.07	
6,900.0	1.75	232.05	6,885.7	-245.5	154.5	-245.4	0.43	0.37	-8.09	
7,000.0	1.65	180.23	6,985.6	-247.9	153.3	-247.7	1.49	-0.10	-51.82	
7,100.0	2.23	152.72	7,085.6	-251.1	154.2	-250.9	1.08	0.58	-27.51	
7,138.4	1.90	134.54	7,124.0	-252.2	155.0	-252.0	1.90	-0.87	-47.29	
3rd Bone Spring Carb										
7,200.0	1.90	98.64	7,185.5	-253.0	156.7	-252.9	1.90	0.01	-58.32	
7,300.0	1.98	69.00	7,285.5	-252.7	160.0	-252.5	1.00	0.08	-29.64	
7,400.0	1.22	91.13	7,385.4	-252.1	162.7	-251.9	0.97	-0.76	22.13	
7,500.0	0.25	98.50	7,485.4	-252.1	163.9	-252.0	0.97	-0.97	7.37	
7,600.0	0.59	310.46	7,585.4	-251.8	163.8	-251.7	0.81	0.34	-148.04	
7,700.0	1.16	268.36	7,685.4	-251.5	162.4	-251.3	0.82	0.57	-42.10	
7,738.0	1.10	276.77	7,723.4	-251.5	161.6	-251.3	0.46	-0.16	22.13	
7,800.0	1.10	285.19	7,785.4	-251.3	160.4	-251.1	0.26	0.00	13.58	
7,847.0	3.65	349.70	7,832.4	-249.7	159.7	-249.5	7.08	5.43	137.26	
7,895.0	7.25	356.99	7,880.1	-245.1	159.3	-245.0	7.62	7.50	15.19	
7,942.0	11.38	5.69	7,926.5	-237.6	159.6	-237.4	9.26	8.79	18.51	
7,980.5	14.69	10.53	7,964.0	-229.0	160.9	-228.8	9.05	8.60	12.57	
3rd Bone Spring Sand										
7,990.0	15.52	11.41	7,973.2	-226.5	161.4	-226.4	9.05	8.72	9.27	
8,037.0	20.31	10.26	8,017.9	-212.3	164.1	-212.2	10.22	10.19	-2.45	
8,099.0	25.32	7.80	8,075.0	-188.6	167.8	-188.4	8.22	8.08	-3.97	
8,146.0	31.65	4.99	8,116.3	-166.3	170.2	-166.2	13.76	13.47	-5.98	
8,193.0	40.75	2.00	8,154.2	-138.7	171.8	-138.5	19.72	19.36	-6.36	
8,240.0	44.88	3.32	8,188.7	-106.8	173.3	-106.6	8.99	8.79	2.81	
8,288.0	47.34	4.29	8,222.0	-72.3	175.6	-72.1	5.33	5.13	2.02	
8,298.5	48.09	4.04	8,229.0	-64.5	176.2	-64.3	7.41	7.20	-2.35	
3rd BS W Sand										
8,335.0	50.73	3.23	8,252.8	-36.8	177.9	-36.7	7.41	7.22	-2.23	
8,383.0	54.15	1.91	8,282.0	1.2	179.6	1.3	7.45	7.13	-2.75	
8,396.8	54.89	1.60	8,290.0	12.4	180.0	12.6	5.65	5.33	-2.28	
FTP @ 8396.8'MD, 330'FSL & 338.1'FEL										
8,430.0	56.66	0.86	8,308.7	39.8	180.6	40.0	5.65	5.34	-2.21	
8,449.0	57.77	0.61	8,319.0	55.8	180.8	56.0	5.96	5.85	-1.32	
Wolfcamp A X Sand										
8,478.0	59.47	0.24	8,334.1	80.6	181.0	80.7	5.96	5.86	-1.28	
8,525.0	63.87	359.72	8,356.4	121.9	180.9	122.1	9.41	9.36	-1.11	
8,573.0	66.95	0.07	8,376.4	165.6	180.9	165.8	6.45	6.42	0.73	
8,620.0	75.56	1.21	8,391.4	210.0	181.4	210.2	18.46	18.32	2.43	
8,668.0	84.35	0.16	8,399.8	257.2	181.9	257.4	18.44	18.31	-2.19	
8,763.0	89.63	0.77	8,404.8	352.1	182.7	352.3	5.59	5.56	0.64	
8,858.0	89.58	0.95	8,405.5	447.1	184.1	447.2	0.20	-0.05	0.19	



Intrepid
Survey Report



Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Miso State #168H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3623.5usft (H&P 245)
Site:	(Miso State) Sec-2_T-26-S_R-25-E	MD Reference:	KB @ 3623.5usft (H&P 245)
Well:	Miso State #168H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,953.0	87.21	0.33	8,408.1	542.0	185.2	542.2	2.58	-2.49	-0.65	
8,972.9	87.69	359.72	8,409.0	561.8	185.2	562.0	3.88	2.40	-3.06	
Wolfcamp A Y Sand										
9,048.0	89.49	357.43	8,410.9	636.9	183.3	637.1	3.88	2.40	-3.05	
9,142.0	92.79	358.66	8,409.0	730.8	180.1	731.0	3.75	3.51	1.31	
9,237.0	93.63	359.89	8,403.7	825.7	178.9	825.9	1.57	0.88	1.29	
9,332.0	91.96	0.95	8,399.0	920.6	179.6	920.8	2.08	-1.76	1.12	
9,427.0	89.45	1.21	8,397.9	1,015.5	181.4	1,015.7	2.66	-2.64	0.27	
9,522.0	86.46	1.04	8,401.3	1,110.4	183.3	1,110.6	3.15	-3.15	-0.18	
9,616.0	87.47	0.86	8,406.2	1,204.3	184.8	1,204.5	1.09	1.07	-0.19	
9,711.0	87.03	0.51	8,410.8	1,299.2	186.0	1,299.4	0.59	-0.46	-0.37	
9,805.0	88.57	0.60	8,414.4	1,393.1	186.9	1,393.3	1.64	1.64	0.10	
9,900.0	89.01	0.42	8,416.4	1,488.1	187.7	1,488.3	0.50	0.46	-0.19	
9,995.0	89.41	0.77	8,417.7	1,583.1	188.7	1,583.3	0.56	0.42	0.37	
10,090.0	87.60	0.68	8,420.2	1,678.0	189.9	1,678.2	1.91	-1.91	-0.09	
10,185.0	89.45	2.27	8,422.6	1,772.9	192.3	1,773.1	2.57	1.95	1.67	
10,279.0	92.44	3.06	8,421.1	1,866.8	196.7	1,867.0	3.29	3.18	0.84	
10,374.0	89.71	1.91	8,419.3	1,961.7	200.8	1,961.9	3.12	-2.87	-1.21	
10,469.0	87.43	1.39	8,421.7	2,056.6	203.6	2,056.8	2.46	-2.40	-0.55	
10,564.0	88.31	1.39	8,425.2	2,151.5	205.9	2,151.8	0.93	0.93	0.00	
10,659.0	88.26	1.04	8,428.0	2,246.5	207.9	2,246.7	0.37	-0.05	-0.37	
10,753.0	87.65	0.42	8,431.4	2,340.4	209.1	2,340.6	0.92	-0.65	-0.66	
10,849.0	90.24	1.12	8,433.2	2,436.4	210.4	2,436.6	2.79	2.70	0.73	
10,943.0	89.80	0.68	8,433.1	2,530.4	211.8	2,530.6	0.66	-0.47	-0.47	
11,038.0	89.98	0.42	8,433.3	2,625.4	212.8	2,625.6	0.33	0.19	-0.27	
11,133.0	89.54	359.63	8,433.7	2,720.4	212.8	2,720.6	0.95	-0.46	-0.83	
11,227.0	89.98	358.40	8,434.1	2,814.3	211.2	2,814.6	1.39	0.47	-1.31	
11,322.0	91.65	357.70	8,432.8	2,909.3	208.0	2,909.5	1.91	1.76	-0.74	
11,417.0	87.56	356.64	8,433.4	3,004.1	203.3	3,004.3	4.45	-4.31	-1.12	
11,512.0	88.57	356.64	8,436.6	3,098.9	197.7	3,099.1	1.06	1.06	0.00	
11,606.0	85.45	356.64	8,441.5	3,192.6	192.2	3,192.8	3.32	-3.32	0.00	
11,701.0	85.71	357.17	8,448.8	3,287.2	187.1	3,287.4	0.62	0.27	0.56	
11,772.2	85.98	357.69	8,454.0	3,358.1	183.9	3,358.3	0.83	0.38	0.74	
Wolfcamp A Lower										
11,796.0	86.07	357.87	8,455.7	3,381.9	183.0	3,382.0	0.83	0.38	0.74	
11,890.0	89.19	359.54	8,459.5	3,475.7	180.9	3,475.9	3.76	3.32	1.78	
11,985.0	89.01	359.28	8,461.0	3,570.7	179.9	3,570.9	0.33	-0.19	-0.27	
12,080.0	90.51	359.45	8,461.4	3,665.7	178.8	3,665.9	1.59	1.58	0.18	
12,175.0	90.86	359.98	8,460.3	3,760.7	178.4	3,760.9	0.67	0.37	0.56	
12,269.0	90.90	0.16	8,458.9	3,854.7	178.5	3,854.9	0.20	0.04	0.19	
12,364.0	90.02	0.51	8,458.1	3,949.7	179.0	3,949.9	1.00	-0.93	0.37	
12,459.0	90.11	0.24	8,458.0	4,044.7	179.7	4,044.9	0.30	0.09	-0.28	
12,554.0	92.44	0.51	8,455.9	4,139.6	180.3	4,139.8	2.47	2.45	0.28	
12,649.0	92.79	359.98	8,451.5	4,234.5	180.7	4,234.7	0.67	0.37	-0.56	



Intrepid
Survey Report



Company:	Tap Rock Resources, LLC	Local Co-ordinate	Reference:
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	Well Miso State #168H
Site:	(Miso State) Sec-2_T-26-S_R-25-E	MD Reference:	KB @ 3623.5usft (H&P 245)
Well:	Miso State #168H	North Reference:	KB @ 3623.5usft (H&P 245)
Wellbore:	OWB	Survey Calculation Method:	Grid
Design:	AWB	Database:	Minimum Curvature
			EDM 5000.15 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
12,744.0	92.88	358.57	8,446.8	4,329.4	179.5	4,329.6	1.49	0.09	-1.48	
12,839.0	88.22	357.17	8,445.9	4,424.3	175.9	4,424.5	5.12	-4.91	-1.47	
12,933.0	89.89	357.87	8,447.5	4,518.2	171.9	4,518.4	1.93	1.78	0.74	
13,028.0	88.70	357.34	8,448.6	4,613.1	167.9	4,613.3	1.37	-1.25	-0.56	
13,173.0	92.18	358.49	8,447.5	4,758.0	162.6	4,758.2	2.53	2.40	0.79	
LAST SVY										
13,221.4	92.18	358.49	8,445.7	4,806.3	161.4	4,806.5	0.00	0.00	0.00	
LTP @ 13221.4'MD, 200'FNL & 362.1'FEL										
13,245.0	92.18	358.49	8,444.8	4,829.9	160.7	4,830.1	0.00	0.00	0.00	
Projection to TD @ 13245'MD, 176.4'FNL & 362.7'FEL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
FTP (Miso State #168	0.00	360.00	8,430.0	12.0	187.0	387,512.00	533,405.00	32° 3' 55.252 N	104° 21' 32.188 W	
- actual wellpath misses target center by 117.6usft at 8469.4usft MD (8329.7 TVD, 73.2 N, 180.9 E)										
- Point										
PBHL (Miso State #168	1.00	0.06	8,481.0	4,806.0	192.0	392,306.00	533,410.00	32° 4' 42.695 N	104° 21' 32.143 W	
- actual wellpath misses target center by 46.7usft at 13218.9usft MD (8445.8 TVD, 4803.9 N, 161.4 E)										
- Rectangle (sides W100.0 H1,843.8 D30.0)										
LTP (Miso State #168	0.00	360.00	8,481.0	4,676.0	192.0	392,176.00	533,410.00	32° 4' 41.408 N	104° 21' 32.143 W	
- actual wellpath misses target center by 41.5usft at 13089.7usft MD (8449.2 TVD, 4674.8 N, 165.3 E)										
- Point										



Intrepid
Survey Report



Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Miso State #168H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3623.5usft (H&P 245)
Site:	(Miso State) Sec-2_T-26-S_R-25-E	MD Reference:	KB @ 3623.5usft (H&P 245)
Well:	Miso State #168H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
39.0	39.0	Rustler Anhydrite			
479.0	479.0	Top Salt			
1,444.1	1,444.0	Base Salt			
1,674.2	1,674.0	Delaware Mountain Gp			
1,684.2	1,684.0	Lamar			
1,724.2	1,724.0	Bell Canyon			
1,764.2	1,764.0	Ramsey Sand			
2,802.8	2,799.0	Cherry Canyon			
3,702.1	3,694.0	Brushy Canyon			
5,223.0	5,209.0	Bone Spring Lime			
5,273.0	5,259.0	Upper Avalon			
5,633.0	5,619.0	Middle Avalon			
5,978.2	5,964.0	Lower Avalon			
6,113.2	6,099.0	1st Bone Spring Sand			
6,323.2	6,309.0	2nd Bone Spring Carb			
6,708.3	6,694.0	2nd Bone Spring Sand			
7,138.4	7,124.0	3rd Bone Spring Carb			
7,980.5	7,964.0	3rd Bone Spring Sand			
8,298.5	8,229.0	3rd BS W Sand			
8,449.0	8,319.0	Wolfcamp A X Sand			
8,972.9	8,409.0	Wolfcamp A Y Sand			
11,772.2	8,454.0	Wolfcamp A Lower			

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			Comment
		+N/-S (usft)	+E/-W (usft)		
8,396.8	8,290.0	12.4	180.0		FTP @ 8396.8'MD, 330'FSL & 338.1'FEL
13,173.0	8,447.5	4,758.0	162.6		LAST SVY
13,221.4	8,445.7	4,806.3	161.4		LTP @ 13221.4'MD, 200'FNL & 362.1'FEL
13,245.0	8,444.8	4,829.9	160.7		Projection to TD @ 13245'MD, 176.4'FNL & 362.7'FEL

Checked By: _____ Approved By: _____ Date: _____