



· Directional Drilling · Horizontal Drilling · MWD/LWD · Mud Motors

July 12, 2021

Railroad Commission of Texas
Oil and Gas Division
P.O. Box 12967
Capitol Station
Austin, Texas 78711

Attention: Pamela Johns

Re: Piedra Operating, LLC
University 5-39 LS #5H
Andrews County, Texas
API No. 42-003-48349

Enclosed, please find the original and one copy of the survey performed on the referenced well by Aim Directional Services, LLC (P-5 No. 009134). Other information required by your office is as follows:

<u>Name & Title</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Date Performed</u>	<u>Type of Survey</u>
<u>of Surveyor</u> Breana Wooley Performance and Regulatory Manager	Original hole	190' – 8740'	03/19/21 – 03/26/21	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and the lease line (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Breana Wooley
Performance and Regulatory Manager

Enclosures
cc:



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State of Texas
County of Andrews

I, Breana Wooley, certify that; I am employed by Aim Directional Services, LLC; that I did on the day(s) of March 19, 2021 through March 26, 2021 conduct or supervise the taking of a directional MWD survey from a depth of 190 feet to a depth of 8740 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Aim Directional Services, LLC; that I am authorized and qualified to make this report; that this survey was conducted at the request of Piedra Operating, LLC for University 5-39 LS#5H API No. 42-003-48349 in Andrews County, Texas; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Aim Directional Services, LLC.

Breana Wooley
Performance and Regulatory Manager

Company:	Piedra Operating, LLC	Local Co-ordinate Reference:	Well 5HLS - Office - Slot 5HLS
Project:	Andrews County, Texas	TVD Reference:	3015'GL+31'KB @ 3046.00usft (Lasso 103)
Site:	University 5-39LS 5H	MD Reference:	3015'GL+31'KB @ 3046.00usft (Lasso 103)
Well:	5HLS - Office	North Reference:	Grid
Wellbore:	Drilling	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDMRESTORED

Project	Andrews County, Texas		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Texas North Central Zone		

Site	University 5-39LS 5H		
Site Position:		Northing:	6,859,856.75 usft
From:	Map	Easting:	786,943.25 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 25' 37.466 N
		Longitude:	102° 19' 48.861 W
		Grid Convergence:	-2.09 °

Well	5HLS - Office - Slot 5HLS		
Well Position	+N/-S	0.00 usft	Northing: 6,859,856.75 usft
	+E/-W	0.00 usft	Easting: 786,943.25 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 25' 37.466 N
		Longitude:	102° 19' 48.861 W
		Ground Level:	3,015.00 usft

Wellbore	Drilling				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	3/10/2021	5.91	60.06	47,600.296

Design	Surveys				
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	166.95	

Survey Program	Date	3/26/2021			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
190.00	8,740.00	Aim MWD Svys (Drilling)	B001Mb_MWD+HRGM	OWSG MWD + HRGM	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	
190.00	1.41	144.76	189.98	-1.91	1.35	2.16	0.742	0.742	0.000	
First Aim Svy										
220.00	1.67	143.62	219.97	-2.56	1.82	2.91	0.873	0.867	-3.800	
309.00	1.23	58.27	308.95	-3.10	3.40	3.79	2.238	-0.494	-95.899	
399.00	2.02	17.14	398.92	-1.08	4.69	2.11	1.511	0.878	-45.700	
487.00	1.71	351.74	486.87	1.70	4.96	-0.54	0.993	-0.352	-28.864	
578.00	1.93	328.54	577.83	4.35	3.97	-3.34	0.838	0.242	-25.494	
670.00	1.36	280.02	669.79	5.86	2.08	-5.24	1.574	-0.620	-52.739	
765.00	0.84	303.31	764.77	6.44	0.39	-6.19	0.711	-0.547	24.516	
860.00	1.19	342.60	859.76	7.77	-0.49	-7.67	0.798	0.368	41.358	

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Well:	5HLS - Office	North Reference:	Grid
Wellbore:	Drilling	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDMRESTORED

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
955.00	0.92	329.42	954.74	9.36	-1.17	-9.39	0.380	-0.284	-13.874
1,049.00	0.62	355.34	1,048.74	10.52	-1.60	-10.61	0.481	-0.319	27.574
1,143.00	0.62	358.77	1,142.73	11.54	-1.65	-11.61	0.039	0.000	3.649
1,237.00	0.44	352.09	1,236.73	12.40	-1.71	-12.47	0.202	-0.191	-7.106
1,331.00	0.09	259.46	1,330.73	12.75	-1.83	-12.83	0.482	-0.372	-98.542
1,426.00	0.57	0.09	1,425.72	13.20	-1.90	-13.29	0.624	0.505	105.926
1,520.00	0.84	353.06	1,519.72	14.36	-1.99	-14.43	0.301	0.287	-7.479
1,615.00	0.79	353.41	1,614.71	15.70	-2.14	-15.78	0.053	-0.053	0.368
1,709.00	0.57	5.45	1,708.70	16.81	-2.17	-16.86	0.278	-0.234	12.808
1,779.00	0.31	349.54	1,778.70	17.34	-2.18	-17.38	0.407	-0.371	-22.729
1,898.00	0.35	297.51	1,897.70	17.82	-2.56	-17.94	0.245	0.034	-43.723
1,991.00	0.92	318.69	1,990.69	18.52	-3.30	-18.78	0.653	0.613	22.774
2,085.00	1.23	332.76	2,084.67	19.98	-4.26	-20.43	0.431	0.330	14.968
2,179.00	1.14	330.73	2,178.65	21.69	-5.18	-22.30	0.106	-0.096	-2.160
2,273.00	1.36	336.80	2,272.63	23.53	-6.08	-24.30	0.273	0.234	6.457
2,369.00	2.11	296.72	2,368.59	25.38	-8.10	-26.55	1.440	0.781	-41.750
2,463.00	2.68	284.94	2,462.51	26.72	-11.77	-28.69	0.798	0.606	-12.532
2,557.00	2.11	288.55	2,556.43	27.84	-15.54	-30.63	0.627	-0.606	3.840
2,652.00	1.54	295.75	2,651.38	28.95	-18.35	-32.34	0.646	-0.600	7.579
2,747.00	1.45	296.54	2,746.34	30.04	-20.57	-33.91	0.097	-0.095	0.832
2,842.00	1.54	295.40	2,841.31	31.12	-22.80	-35.47	0.100	0.095	-1.200
2,937.00	1.54	298.39	2,936.28	32.28	-25.08	-37.11	0.085	0.000	3.147
3,032.00	1.41	305.95	3,031.25	33.57	-27.14	-38.83	0.246	-0.137	7.958
3,126.00	1.14	301.20	3,125.22	34.74	-28.88	-40.36	0.308	-0.287	-5.053
3,221.00	1.32	320.63	3,220.20	36.07	-30.38	-42.00	0.475	0.189	20.453
3,316.00	1.01	305.25	3,315.18	37.40	-31.76	-43.61	0.461	-0.326	-16.189
3,411.00	1.05	308.59	3,410.17	38.43	-33.13	-44.91	0.076	0.042	3.516
3,506.00	1.19	304.19	3,505.15	39.52	-34.62	-46.32	0.173	0.147	-4.632
3,600.00	1.71	294.52	3,599.12	40.65	-36.70	-47.89	0.609	0.553	-10.287
3,695.00	2.15	295.31	3,694.06	42.00	-39.61	-49.86	0.464	0.463	0.832
3,788.00	1.98	299.80	3,787.00	43.55	-42.58	-52.04	0.252	-0.183	4.828
3,882.00	1.85	296.63	3,880.95	45.04	-45.34	-54.11	0.178	-0.138	-3.372
3,977.00	1.80	298.48	3,975.90	46.43	-48.02	-56.08	0.081	-0.053	1.947
4,072.00	1.45	296.90	4,070.87	47.69	-50.41	-57.84	0.371	-0.368	-1.663
4,167.00	1.32	304.02	4,165.84	48.85	-52.39	-59.41	0.227	-0.137	7.495
4,262.00	1.36	315.18	4,260.81	50.26	-54.09	-61.17	0.277	0.042	11.747
4,357.00	1.41	305.25	4,355.78	51.73	-55.84	-63.00	0.258	0.053	-10.453
4,451.00	2.33	292.77	4,449.73	53.14	-58.54	-64.99	1.065	0.979	-13.277
4,546.00	2.64	297.07	4,544.64	54.88	-62.27	-67.53	0.381	0.326	4.526
4,641.00	2.24	297.34	4,639.56	56.73	-65.87	-70.14	0.421	-0.421	0.284
4,735.00	2.11	296.63	4,733.49	58.35	-69.05	-72.43	0.141	-0.138	-0.755
4,830.00	1.89	298.74	4,828.43	59.89	-71.99	-74.59	0.244	-0.232	2.221
4,924.00	2.37	295.31	4,922.37	61.46	-75.10	-76.83	0.528	0.511	-3.649

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Wellbore:	Drilling	Survey Calculation Method:	Minimum Curvature
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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,019.00	2.95	296.98	5,017.26	63.41	-79.06	-79.63	0.616	0.611	1.758
5,113.00	3.82	297.16	5,111.10	65.94	-84.00	-83.20	0.926	0.926	0.191
5,207.00	4.70	295.75	5,204.84	69.04	-90.25	-87.64	0.943	0.936	-1.500
5,302.00	4.57	299.62	5,299.53	72.60	-97.05	-92.64	0.356	-0.137	4.074
5,396.00	4.53	303.14	5,393.23	76.48	-103.41	-97.86	0.300	-0.043	3.745
5,489.00	4.57	303.31	5,485.94	80.53	-109.58	-103.19	0.045	0.043	0.183
5,583.00	4.92	301.73	5,579.62	84.70	-116.14	-108.74	0.397	0.372	-1.681
5,679.00	4.79	301.12	5,675.27	88.94	-123.07	-114.43	0.146	-0.135	-0.635
5,774.00	4.70	305.33	5,769.95	93.24	-129.65	-120.11	0.379	-0.095	4.432
5,869.00	4.09	305.42	5,864.67	97.45	-135.58	-125.55	0.642	-0.642	0.095
5,964.00	3.21	303.22	5,959.47	100.87	-140.57	-130.01	0.938	-0.926	-2.316
6,059.00	2.95	303.05	6,054.34	103.66	-144.84	-133.69	0.274	-0.274	-0.179
6,154.00	2.59	307.27	6,149.23	106.30	-148.60	-137.11	0.435	-0.379	4.442
6,249.00	2.51	302.52	6,244.13	108.72	-152.06	-140.24	0.238	-0.084	-5.000
6,343.00	2.29	300.68	6,338.05	110.78	-155.41	-143.01	0.248	-0.234	-1.957
6,438.00	2.02	304.02	6,432.98	112.69	-158.43	-145.55	0.313	-0.284	3.516
6,533.00	1.71	307.88	6,527.93	114.49	-160.94	-147.88	0.352	-0.326	4.063
6,628.00	1.36	304.37	6,622.90	116.00	-162.99	-149.81	0.381	-0.368	-3.695
6,723.00	1.23	311.57	6,717.87	117.31	-164.68	-151.47	0.219	-0.137	7.579
6,818.00	1.05	313.33	6,812.85	118.59	-166.08	-153.02	0.193	-0.189	1.853
6,912.00	1.01	310.17	6,906.84	119.71	-167.34	-154.40	0.074	-0.043	-3.362
7,006.00	0.70	295.49	7,000.83	120.49	-168.49	-155.43	0.401	-0.330	-15.617
7,102.00	0.62	301.03	7,096.82	121.01	-169.46	-156.15	0.107	-0.083	5.771
7,197.00	0.70	305.51	7,191.82	121.62	-170.38	-156.95	0.100	0.084	4.716
7,292.00	0.66	289.78	7,286.81	122.14	-171.36	-157.68	0.200	-0.042	-16.558
7,387.00	0.48	282.57	7,381.80	122.41	-172.27	-158.15	0.204	-0.189	-7.589
7,481.00	0.18	288.02	7,475.80	122.54	-172.79	-158.39	0.321	-0.319	5.798
7,576.00	0.22	257.08	7,570.80	122.55	-173.11	-158.47	0.119	0.042	-32.568
7,671.00	0.00	248.56	7,665.80	122.51	-173.29	-158.47	0.232	-0.232	0.000
7,766.00	0.22	158.47	7,760.80	122.34	-173.22	-158.29	0.232	0.232	0.000
7,860.00	0.26	58.54	7,854.80	122.28	-172.97	-158.18	0.392	0.043	-106.308
7,956.00	0.04	108.46	7,950.80	122.38	-172.76	-158.23	0.246	-0.229	52.000
8,050.00	0.22	73.39	8,044.80	122.42	-172.55	-158.22	0.201	0.191	-37.308
8,146.00	0.44	129.20	8,140.80	122.24	-172.09	-157.94	0.380	0.229	58.135
8,240.00	0.53	114.61	8,234.80	121.83	-171.41	-157.39	0.162	0.096	-15.521
8,335.00	0.40	115.67	8,329.79	121.51	-170.72	-156.92	0.137	-0.137	1.116
8,430.00	0.35	97.65	8,424.79	121.32	-170.13	-156.61	0.134	-0.053	-18.968
8,525.00	0.13	114.44	8,519.79	121.24	-169.74	-156.44	0.241	-0.232	17.674
8,620.00	0.00	195.12	8,614.79	121.20	-169.65	-156.37	0.137	-0.137	0.000
8,660.00	0.18	194.42	8,654.79	121.14	-169.66	-156.32	0.450	0.450	0.000
Last Aim Svy									
8,740.00	0.18	194.42	8,734.79	120.89	-169.72	-156.09	0.000	0.000	0.000
Projection to BHL									

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Wellbore:	Drilling	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDMRESTORED

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
190.00	189.98	-1.91	1.35	First Aim Svy
8,660.00	8,654.79	121.14	-169.66	Last Aim Svy
8,740.00	8,734.79	120.89	-169.72	Projection to BHL

Checked By: _____ Approved By: _____ Date: _____

