

# **EXTRACTION OIL & GAS**

**Adams County**

**Sec 25-T1S-R66W**

**ALMA 1S-66-2524-9NH**

**ORIGINAL WELLBORE**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**29 August, 2017**



Project: Adams County  
Site: Sec 25-T1S-R66W  
Well: ALMA 1S-66-2524-9NH  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL 1

PROJECT DETAILS: Adams County

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone

System Datum: Mean Sea Level



Azimuths to True North  
Magnetic North: 8.13°

Magnetic Field  
Strength: 52129.5nT  
Dip Angle: 66.48°  
Date: 8/17/2017  
Model: IGRF2015

WELL DETAILS: ALMA 1S-66-2524-9NH

+N/-S	+E/-W	Northing	Easting	5177.00	Latitude	Longitude	Slot
0.00	0.00	1218272.44	3218222.77		39° 55' 47.676 N	104° 43' 18.660 W	

#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	
3	1721.93	10.44	198.06	1719.05	-45.08	-14.70	2.00	198.06	-44.48	
4	6364.67	10.44	198.06	6284.95	-844.83	-275.45	0.00	0.00	-833.60	
5	6886.61	0.00	0.00	6804.00	-889.91	-290.15	2.00	180.00	-878.08	
6	6986.61	0.00	0.00	6904.00	-889.91	-290.15	0.00	0.00	-878.08	
7	7886.68	90.00	0.13	7477.00	-316.91	-288.86	10.00	0.13	-305.55	ALMA 9NH LP
8	15259.56	90.00	0.13	7477.00	7055.96	-271.95	0.00	0.00	7061.20	ALMA 9NH PBHL

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1500.00	1500.55	Fox Hills aquifer base
7283.00	7400.73	Sharon Springs
7315.00	7444.94	Top Niobrara
7325.00	7459.48	Nio A Chalk
7346.00	7491.42	Nio A Marl
7467.00	7779.46	Nio B Chalk

#### ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	BUILD 2°/100'
1721.93	10.44	198.06	1719.05	-45.08	-14.70	44.48	47.41	HOLD 10.44° INC
6364.67	10.44	198.06	6284.95	-844.83	-275.45	-833.60	888.60	DROP 2°/100'
6886.61	0.00	0.00	6804.00	-889.91	-290.15	-878.08	936.02	HOLD VERTICAL
6986.61	0.00	0.00	6904.00	-889.91	-290.15	-878.08	936.02	KOP, BUILD 10°/100'
7886.68	90.00	0.13	7477.00	-316.91	-288.86	-305.55	1509.02	LP @ 90° INC, 0.13° AZM HOLD
15259.56	90.00	0.13	7477.00	7055.96	-271.95	7061.20	8881.90	TD at 15259.56' MD

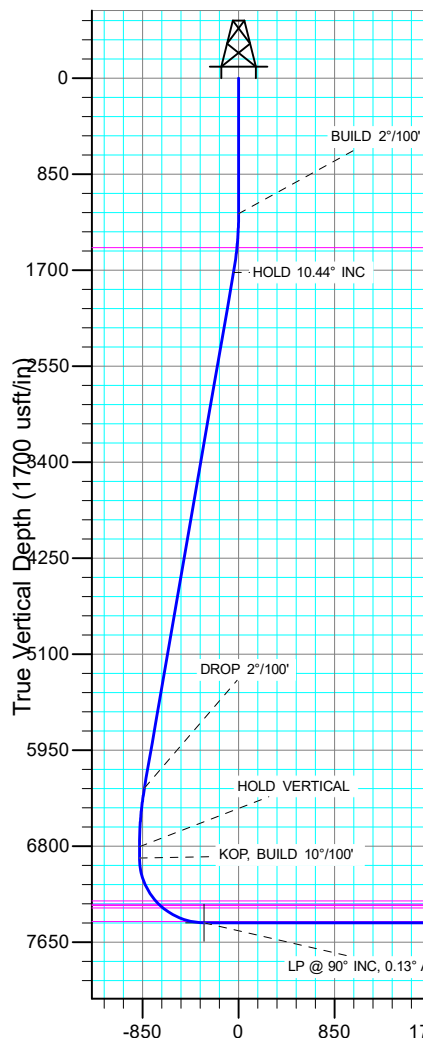
#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
ALMA 9NH LP	7477.00	-316.91	-288.86	1217953.01	3217936.70	39° 55' 44.544 N	104° 43' 22.368 W
ALMA 9NH PBHL	7477.00	7055.96	-271.95	1225325.74	3217888.91	39° 56' 57.408 N	104° 43' 22.152 W

SHL:  
387' FSL, 2038' FEL  
Sec 25-T1S-R66W

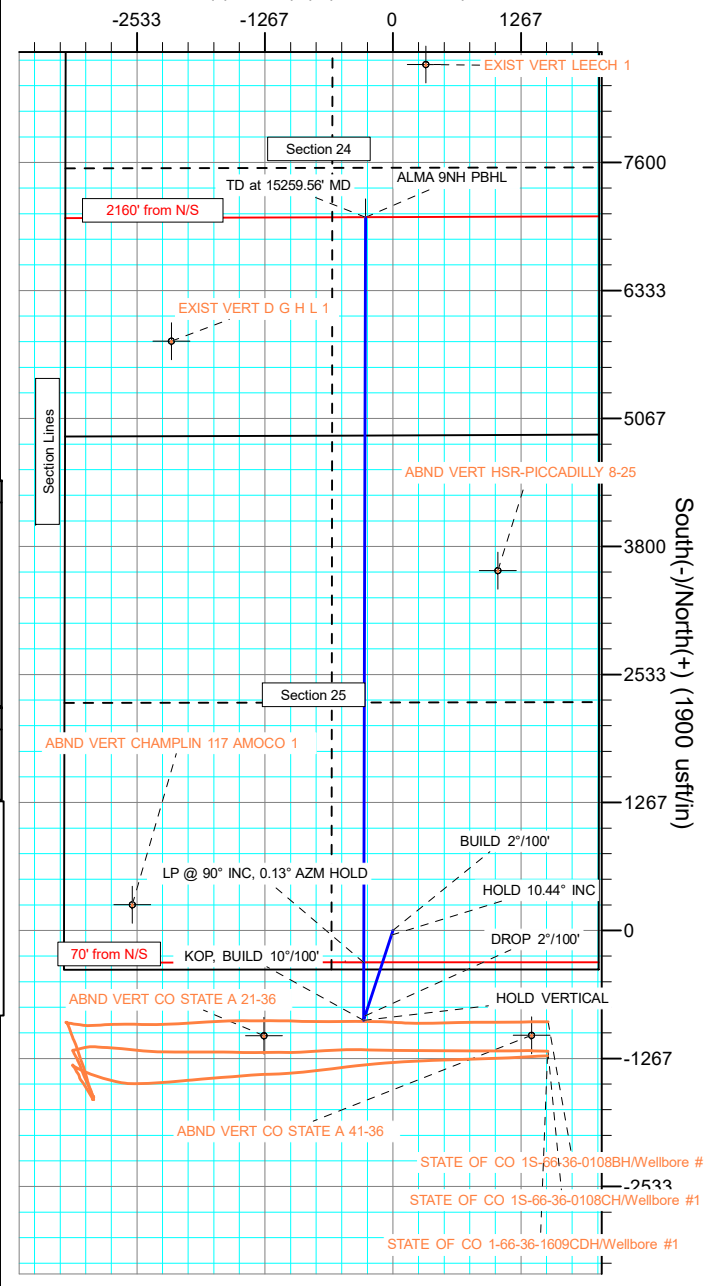
LP:  
70' FSL, 2312' FEL  
Sec 25-T1S-R66W

BHL:  
2160' FSL, 2312' FEL  
Sec 24-T1S-R66W



Vertical Section at 357.79° (1700 usft/in)

West(-)/East(+) (1900 usft/in)



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well ALMA 1S-66-2524-9NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5202.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5202.00usft
<b>Site:</b>	Sec 25-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	ALMA 1S-66-2524-9NH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

<b>Project</b>	Adams County		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		Sec 25-T1S-R66W			
Site Position:		Northing:	1,217,904.28 usft	Latitude:	39° 55' 43.860 N
From:	Lat/Long	Easting:	3,220,262.11 usft	Longitude:	104° 42' 52.524 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.51 °

Well	ALMA 1S-66-2524-9NH					
Well Position	+N/-S	386.20 usft	Northing:	1,218,272.44 usft	Latitude:	39° 55' 47.676 N
	+E/-W	-2,036.01 usft	Easting:	3,218,222.77 usft	Longitude:	104° 43' 18.660 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,177.00 usft

<b>Wellbore</b>	ORIGINAL WELLBORE				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	8/17/2017	8.13	66.48	52,129.52192282

<b>Design</b>	PROPOSAL 1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	357.79

<b>Plan Survey Tool Program</b>	<b>Date</b>	8/29/2017		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	15,259.56	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG
			OWSG MWD - Standard	

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,721.93	10.44	198.06	1,719.05	-45.08	-14.70	2.00	2.00	0.00	198.06	
6,364.67	10.44	198.06	6,284.95	-844.83	-275.45	0.00	0.00	0.00	0.00	
6,886.61	0.00	0.00	6,804.00	-889.91	-290.15	2.00	-2.00	0.00	180.00	
6,986.61	0.00	0.00	6,904.00	-889.91	-290.15	0.00	0.00	0.00	0.00	
7,886.68	90.00	0.13	7,477.00	-316.91	-288.86	10.00	10.00	0.01	0.13	ALMA 9NH LP
15,259.56	90.00	0.13	7,477.00	7,055.96	-271.95	0.00	0.00	0.00	0.00	ALMA 9NH PBHL

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well ALMA 1S-66-2524-9NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5202.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5202.00usft
<b>Site:</b>	Sec 25-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	ALMA 1S-66-2524-9NH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned 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	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>BUILD 2°/100'</b>									
1,300.00	2.00	198.06	1,299.98	-1.66	-0.54	-1.64	2.00	2.00	0.00
1,400.00	4.00	198.06	1,399.84	-6.63	-2.16	-6.55	2.00	2.00	0.00
1,500.00	6.00	198.06	1,499.45	-14.92	-4.86	-14.72	2.00	2.00	0.00
1,500.55	6.01	198.06	1,500.00	-14.98	-4.88	-14.78	2.00	2.00	0.00
<b>Fox Hills aquifer base</b>									
1,600.00	8.00	198.06	1,598.70	-26.51	-8.64	-26.15	2.00	2.00	0.00
1,700.00	10.00	198.06	1,697.47	-41.38	-13.49	-40.83	2.00	2.00	0.00
1,721.93	10.44	198.06	1,719.05	-45.08	-14.70	-44.48	2.00	2.00	0.00
<b>HOLD 10.44° INC</b>									
1,800.00	10.44	198.06	1,795.83	-58.53	-19.08	-57.75	0.00	0.00	0.00
1,900.00	10.44	198.06	1,894.17	-75.75	-24.70	-74.74	0.00	0.00	0.00
2,000.00	10.44	198.06	1,992.52	-92.98	-30.31	-91.74	0.00	0.00	0.00
2,100.00	10.44	198.06	2,090.86	-110.20	-35.93	-108.74	0.00	0.00	0.00
2,200.00	10.44	198.06	2,189.21	-127.43	-41.55	-125.74	0.00	0.00	0.00
2,300.00	10.44	198.06	2,287.55	-144.66	-47.16	-142.73	0.00	0.00	0.00
2,400.00	10.44	198.06	2,385.89	-161.88	-52.78	-159.73	0.00	0.00	0.00
2,500.00	10.44	198.06	2,484.24	-179.11	-58.40	-176.73	0.00	0.00	0.00
2,600.00	10.44	198.06	2,582.58	-196.33	-64.01	-193.72	0.00	0.00	0.00
2,700.00	10.44	198.06	2,680.93	-213.56	-69.63	-210.72	0.00	0.00	0.00
2,800.00	10.44	198.06	2,779.27	-230.79	-75.25	-227.72	0.00	0.00	0.00
2,900.00	10.44	198.06	2,877.62	-248.01	-80.86	-244.71	0.00	0.00	0.00
3,000.00	10.44	198.06	2,975.96	-265.24	-86.48	-261.71	0.00	0.00	0.00
3,100.00	10.44	198.06	3,074.31	-282.46	-92.10	-278.71	0.00	0.00	0.00
3,200.00	10.44	198.06	3,172.65	-299.69	-97.71	-295.70	0.00	0.00	0.00
3,300.00	10.44	198.06	3,271.00	-316.91	-103.33	-312.70	0.00	0.00	0.00
3,400.00	10.44	198.06	3,369.34	-334.14	-108.94	-329.70	0.00	0.00	0.00
3,500.00	10.44	198.06	3,467.69	-351.37	-114.56	-346.69	0.00	0.00	0.00
3,600.00	10.44	198.06	3,566.03	-368.59	-120.18	-363.69	0.00	0.00	0.00
3,700.00	10.44	198.06	3,664.38	-385.82	-125.79	-380.69	0.00	0.00	0.00
3,800.00	10.44	198.06	3,762.72	-403.04	-131.41	-397.68	0.00	0.00	0.00
3,900.00	10.44	198.06	3,861.07	-420.27	-137.03	-414.68	0.00	0.00	0.00
4,000.00	10.44	198.06	3,959.41	-437.50	-142.64	-431.68	0.00	0.00	0.00
4,100.00	10.44	198.06	4,057.76	-454.72	-148.26	-448.67	0.00	0.00	0.00
4,200.00	10.44	198.06	4,156.10	-471.95	-153.88	-465.67	0.00	0.00	0.00
4,300.00	10.44	198.06	4,254.45	-489.17	-159.49	-482.67	0.00	0.00	0.00
4,400.00	10.44	198.06	4,352.79	-506.40	-165.11	-499.66	0.00	0.00	0.00
4,500.00	10.44	198.06	4,451.14	-523.63	-170.72	-516.66	0.00	0.00	0.00
4,600.00	10.44	198.06	4,549.48	-540.85	-176.34	-533.66	0.00	0.00	0.00
4,700.00	10.44	198.06	4,647.83	-558.08	-181.96	-550.66	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well ALMA 1S-66-2524-9NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5202.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5202.00usft
<b>Site:</b>	Sec 25-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	ALMA 1S-66-2524-9NH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned 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)
4,800.00	10.44	198.06	4,746.17	-575.30	-187.57	-567.65	0.00	0.00	0.00
4,900.00	10.44	198.06	4,844.52	-592.53	-193.19	-584.65	0.00	0.00	0.00
5,000.00	10.44	198.06	4,942.86	-609.75	-198.81	-601.65	0.00	0.00	0.00
5,100.00	10.44	198.06	5,041.21	-626.98	-204.42	-618.64	0.00	0.00	0.00
5,200.00	10.44	198.06	5,139.55	-644.21	-210.04	-635.64	0.00	0.00	0.00
5,300.00	10.44	198.06	5,237.90	-661.43	-215.66	-652.64	0.00	0.00	0.00
5,400.00	10.44	198.06	5,336.24	-678.66	-221.27	-669.63	0.00	0.00	0.00
5,500.00	10.44	198.06	5,434.59	-695.88	-226.89	-686.63	0.00	0.00	0.00
5,600.00	10.44	198.06	5,532.93	-713.11	-232.51	-703.63	0.00	0.00	0.00
5,700.00	10.44	198.06	5,631.28	-730.34	-238.12	-720.62	0.00	0.00	0.00
5,800.00	10.44	198.06	5,729.62	-747.56	-243.74	-737.62	0.00	0.00	0.00
5,900.00	10.44	198.06	5,827.97	-764.79	-249.35	-754.62	0.00	0.00	0.00
6,000.00	10.44	198.06	5,926.31	-782.01	-254.97	-771.61	0.00	0.00	0.00
6,100.00	10.44	198.06	6,024.66	-799.24	-260.59	-788.61	0.00	0.00	0.00
6,200.00	10.44	198.06	6,123.00	-816.47	-266.20	-805.61	0.00	0.00	0.00
6,300.00	10.44	198.06	6,221.35	-833.69	-271.82	-822.60	0.00	0.00	0.00
6,364.67	10.44	198.06	6,284.95	-844.83	-275.45	-833.60	0.00	0.00	0.00
DROP 2°/100'									
6,400.00	9.73	198.06	6,319.73	-850.71	-277.37	-839.40	2.00	-2.00	0.00
6,500.00	7.73	198.06	6,418.57	-865.15	-282.08	-853.64	2.00	-2.00	0.00
6,600.00	5.73	198.06	6,517.87	-876.29	-285.71	-864.64	2.00	-2.00	0.00
6,700.00	3.73	198.06	6,617.53	-884.13	-288.27	-872.38	2.00	-2.00	0.00
6,800.00	1.73	198.06	6,717.41	-888.67	-289.74	-876.85	2.00	-2.00	0.00
6,886.61	0.00	0.00	6,804.00	-889.91	-290.15	-878.08	2.00	-2.00	0.00
HOLD VERTICAL									
6,900.00	0.00	0.00	6,817.39	-889.91	-290.15	-878.08	0.00	0.00	0.00
6,986.61	0.00	0.00	6,904.00	-889.91	-290.15	-878.08	0.00	0.00	0.00
KOP, BUILD 10°/100'									
7,000.00	1.34	0.13	6,917.39	-889.75	-290.15	-877.92	10.00	10.00	0.00
7,050.00	6.34	0.13	6,967.26	-886.41	-290.14	-874.57	10.00	10.00	0.00
7,100.00	11.34	0.13	7,016.66	-878.73	-290.12	-866.90	10.00	10.00	0.00
7,150.00	16.34	0.13	7,065.19	-866.77	-290.10	-854.96	10.00	10.00	0.00
7,200.00	21.34	0.13	7,112.50	-850.63	-290.06	-838.83	10.00	10.00	0.00
7,250.00	26.34	0.13	7,158.22	-830.43	-290.02	-818.65	10.00	10.00	0.00
7,300.00	31.34	0.13	7,202.00	-806.32	-289.96	-794.56	10.00	10.00	0.00
7,350.00	36.34	0.13	7,243.52	-778.49	-289.90	-766.75	10.00	10.00	0.00
7,400.00	41.34	0.13	7,282.45	-747.14	-289.83	-735.43	10.00	10.00	0.00
7,400.73	41.41	0.13	7,283.00	-746.66	-289.83	-734.95	10.00	10.00	0.00
Sharon Springs									
7,444.94	45.83	0.13	7,315.00	-716.17	-289.76	-704.48	10.00	10.00	0.00
Top Niobrara									
7,450.00	46.34	0.13	7,318.51	-712.53	-289.75	-700.84	10.00	10.00	0.00
7,459.48	47.28	0.13	7,325.00	-705.61	-289.73	-693.93	10.00	10.00	0.00
Nio A Chalk									
7,491.42	50.48	0.13	7,346.00	-681.55	-289.68	-669.89	10.00	10.00	0.00
Nio A Marl									
7,500.00	51.34	0.13	7,351.41	-674.90	-289.67	-663.24	10.00	10.00	0.00
7,550.00	56.34	0.13	7,380.91	-634.54	-289.57	-622.92	10.00	10.00	0.00
7,600.00	61.33	0.13	7,406.77	-591.77	-289.48	-580.18	10.00	10.00	0.00
7,650.00	66.33	0.13	7,428.81	-546.91	-289.38	-535.36	10.00	10.00	0.00
7,700.00	71.33	0.13	7,446.86	-500.30	-289.27	-488.79	10.00	10.00	0.00
7,750.00	76.33	0.13	7,460.78	-452.29	-289.16	-440.82	10.00	10.00	0.00
7,779.46	79.28	0.13	7,467.00	-423.49	-289.10	-412.05	10.00	10.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well ALMA 1S-66-2524-9NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5202.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5202.00usft
<b>Site:</b>	Sec 25-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	ALMA 1S-66-2524-9NH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned 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)
<b>Nio B Chalk</b>									
7,800.00	81.33	0.13	7,470.46	-403.25	-289.05	-391.82	10.00	10.00	0.00
7,850.00	86.33	0.13	7,475.83	-353.56	-288.94	-342.17	10.00	10.00	0.00
7,886.68	90.00	0.13	7,477.00	-316.91	-288.86	-305.55	10.00	10.00	0.00
<b>LP @ 90° INC, 0.13° AZM HOLD</b>									
7,900.00	90.00	0.13	7,477.00	-303.58	-288.83	-292.23	0.00	0.00	0.00
8,000.00	90.00	0.13	7,477.00	-203.58	-288.60	-192.32	0.00	0.00	0.00
8,100.00	90.00	0.13	7,477.00	-103.58	-288.38	-92.40	0.00	0.00	0.00
8,200.00	90.00	0.13	7,477.00	-3.58	-288.15	7.52	0.00	0.00	0.00
8,300.00	90.00	0.13	7,477.00	96.42	-287.93	107.43	0.00	0.00	0.00
8,400.00	90.00	0.13	7,477.00	196.42	-287.70	207.35	0.00	0.00	0.00
8,500.00	90.00	0.13	7,476.99	296.41	-287.48	307.27	0.00	0.00	0.00
8,600.00	90.00	0.13	7,476.99	396.41	-287.25	407.18	0.00	0.00	0.00
8,700.00	90.00	0.13	7,476.99	496.41	-287.03	507.10	0.00	0.00	0.00
8,800.00	90.00	0.13	7,476.99	596.41	-286.80	607.02	0.00	0.00	0.00
8,900.00	90.00	0.13	7,476.99	696.41	-286.57	706.93	0.00	0.00	0.00
9,000.00	90.00	0.13	7,476.99	796.41	-286.35	806.85	0.00	0.00	0.00
9,100.00	90.00	0.13	7,476.99	896.41	-286.12	906.77	0.00	0.00	0.00
9,200.00	90.00	0.13	7,476.99	996.41	-285.90	1,006.68	0.00	0.00	0.00
9,300.00	90.00	0.13	7,476.99	1,096.41	-285.67	1,106.60	0.00	0.00	0.00
9,400.00	90.00	0.13	7,476.99	1,196.41	-285.45	1,206.52	0.00	0.00	0.00
9,500.00	90.00	0.13	7,476.99	1,296.41	-285.22	1,306.44	0.00	0.00	0.00
9,600.00	90.00	0.13	7,476.98	1,396.41	-285.00	1,406.35	0.00	0.00	0.00
9,700.00	90.00	0.13	7,476.98	1,496.41	-284.77	1,506.27	0.00	0.00	0.00
9,800.00	90.00	0.13	7,476.98	1,596.41	-284.55	1,606.19	0.00	0.00	0.00
9,900.00	90.00	0.13	7,476.98	1,696.41	-284.32	1,706.10	0.00	0.00	0.00
10,000.00	90.00	0.13	7,476.98	1,796.41	-284.10	1,806.02	0.00	0.00	0.00
10,100.00	90.00	0.13	7,476.98	1,896.41	-283.87	1,905.94	0.00	0.00	0.00
10,200.00	90.00	0.13	7,476.98	1,996.41	-283.64	2,005.85	0.00	0.00	0.00
10,300.00	90.00	0.13	7,476.98	2,096.41	-283.42	2,105.77	0.00	0.00	0.00
10,400.00	90.00	0.13	7,476.98	2,196.41	-283.19	2,205.69	0.00	0.00	0.00
10,500.00	90.00	0.13	7,476.98	2,296.41	-282.97	2,305.60	0.00	0.00	0.00
10,600.00	90.00	0.13	7,476.98	2,396.41	-282.74	2,405.52	0.00	0.00	0.00
10,700.00	90.00	0.13	7,476.97	2,496.41	-282.52	2,505.44	0.00	0.00	0.00
10,800.00	90.00	0.13	7,476.97	2,596.41	-282.29	2,605.35	0.00	0.00	0.00
10,900.00	90.00	0.13	7,476.97	2,696.41	-282.07	2,705.27	0.00	0.00	0.00
11,000.00	90.00	0.13	7,476.97	2,796.41	-281.84	2,805.19	0.00	0.00	0.00
11,100.00	90.00	0.13	7,476.97	2,896.41	-281.62	2,905.11	0.00	0.00	0.00
11,200.00	90.00	0.13	7,476.97	2,996.41	-281.39	3,005.02	0.00	0.00	0.00
11,300.00	90.00	0.13	7,476.97	3,096.41	-281.16	3,104.94	0.00	0.00	0.00
11,400.00	90.00	0.13	7,476.97	3,196.41	-280.94	3,204.86	0.00	0.00	0.00
11,500.00	90.00	0.13	7,476.97	3,296.41	-280.71	3,304.77	0.00	0.00	0.00
11,600.00	90.00	0.13	7,476.97	3,396.41	-280.49	3,404.69	0.00	0.00	0.00
11,700.00	90.00	0.13	7,476.96	3,496.41	-280.26	3,504.61	0.00	0.00	0.00
11,800.00	90.00	0.13	7,476.96	3,596.41	-280.04	3,604.52	0.00	0.00	0.00
11,900.00	90.00	0.13	7,476.96	3,696.41	-279.81	3,704.44	0.00	0.00	0.00
12,000.00	90.00	0.13	7,476.96	3,796.41	-279.59	3,804.36	0.00	0.00	0.00
12,100.00	90.00	0.13	7,476.96	3,896.41	-279.36	3,904.27	0.00	0.00	0.00
12,200.00	90.00	0.13	7,476.96	3,996.41	-279.14	4,004.19	0.00	0.00	0.00
12,300.00	90.00	0.13	7,476.96	4,096.41	-278.91	4,104.11	0.00	0.00	0.00
12,400.00	90.00	0.13	7,476.96	4,196.40	-278.69	4,204.02	0.00	0.00	0.00
12,500.00	90.00	0.13	7,476.96	4,296.40	-278.46	4,303.94	0.00	0.00	0.00
12,600.00	90.00	0.13	7,476.96	4,396.40	-278.23	4,403.86	0.00	0.00	0.00
12,700.00	90.00	0.13	7,476.96	4,496.40	-278.01	4,503.78	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well ALMA 1S-66-2524-9NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5202.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5202.00usft
<b>Site:</b>	Sec 25-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	ALMA 1S-66-2524-9NH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned 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)	
12,800.00	90.00	0.13	7,476.95	4,596.40	-277.78	4,603.69	0.00	0.00	0.00	
12,900.00	90.00	0.13	7,476.95	4,696.40	-277.56	4,703.61	0.00	0.00	0.00	
13,000.00	90.00	0.13	7,476.95	4,796.40	-277.33	4,803.53	0.00	0.00	0.00	
13,100.00	90.00	0.13	7,476.95	4,896.40	-277.11	4,903.44	0.00	0.00	0.00	
13,200.00	90.00	0.13	7,476.95	4,996.40	-276.88	5,003.36	0.00	0.00	0.00	
13,300.00	90.00	0.13	7,476.95	5,096.40	-276.66	5,103.28	0.00	0.00	0.00	
13,400.00	90.00	0.13	7,476.95	5,196.40	-276.43	5,203.19	0.00	0.00	0.00	
13,500.00	90.00	0.13	7,476.95	5,296.40	-276.21	5,303.11	0.00	0.00	0.00	
13,600.00	90.00	0.13	7,476.95	5,396.40	-275.98	5,403.03	0.00	0.00	0.00	
13,700.00	90.00	0.13	7,476.95	5,496.40	-275.76	5,502.94	0.00	0.00	0.00	
13,800.00	90.00	0.13	7,476.95	5,596.40	-275.53	5,602.86	0.00	0.00	0.00	
13,900.00	90.00	0.13	7,476.94	5,696.40	-275.30	5,702.78	0.00	0.00	0.00	
14,000.00	90.00	0.13	7,476.94	5,796.40	-275.08	5,802.69	0.00	0.00	0.00	
14,100.00	90.00	0.13	7,476.94	5,896.40	-274.85	5,902.61	0.00	0.00	0.00	
14,200.00	90.00	0.13	7,476.94	5,996.40	-274.63	6,002.53	0.00	0.00	0.00	
14,300.00	90.00	0.13	7,476.94	6,096.40	-274.40	6,102.45	0.00	0.00	0.00	
14,400.00	90.00	0.13	7,476.94	6,196.40	-274.18	6,202.36	0.00	0.00	0.00	
14,500.00	90.00	0.13	7,476.94	6,296.40	-273.95	6,302.28	0.00	0.00	0.00	
14,600.00	90.00	0.13	7,476.94	6,396.40	-273.73	6,402.20	0.00	0.00	0.00	
14,700.00	90.00	0.13	7,476.94	6,496.40	-273.50	6,502.11	0.00	0.00	0.00	
14,800.00	90.00	0.13	7,476.94	6,596.40	-273.28	6,602.03	0.00	0.00	0.00	
14,900.00	90.00	0.13	7,476.94	6,696.40	-273.05	6,701.95	0.00	0.00	0.00	
15,000.00	90.00	0.13	7,476.93	6,796.40	-272.83	6,801.86	0.00	0.00	0.00	
15,100.00	90.00	0.13	7,476.93	6,896.40	-272.60	6,901.78	0.00	0.00	0.00	
15,200.00	90.00	0.13	7,476.93	6,996.40	-272.37	7,001.70	0.00	0.00	0.00	
15,259.56	90.00	0.13	7,477.00	7,055.96	-271.95	7,061.20	0.00	0.00	0.00	
TD at 15259.56' MD										

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									
ALMA 9NH PBHL	0.00	0.00	7,477.00	7,055.96	-271.95	1,225,325.74	3,217,888.91	39° 56' 57.408 N	104° 43' 22.152 W
- plan hits target center									
- Point									
ALMA 9NH LP	0.00	0.00	7,477.00	-316.91	-288.86	1,217,953.01	3,217,936.70	39° 55' 44.544 N	104° 43' 22.368 W
- plan hits target center									
- Point									

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well ALMA 1S-66-2524-9NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5202.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5202.00usft
<b>Site:</b>	Sec 25-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	ALMA 1S-66-2524-9NH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,500.55	1,500.00	Fox Hills aquifer base				
7,400.73	7,283.00	Sharon Springs				
7,444.94	7,315.00	Top Niobrara				
7,459.48	7,325.00	Nio A Chalk				
7,491.42	7,346.00	Nio A Marl				
7,779.46	7,467.00	Nio B Chalk				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,200.00	1,200.00	0.00	0.00	BUILD 2°/100'	
1,721.93	1,719.05	-45.08	-14.70	HOLD 10.44° INC	
6,364.67	6,284.95	-844.83	-275.45	DROP 2°/100'	
6,886.61	6,804.00	-889.91	-290.15	HOLD VERTICAL	
6,986.61	6,904.00	-889.91	-290.15	KOP, BUILD 10°/100'	
7,886.68	7,477.00	-316.91	-288.86	LP @ 90° INC, 0.13° AZM HOLD	
15,259.56	7,477.00	7,055.96	-271.95	TD at 15259.56' MD	