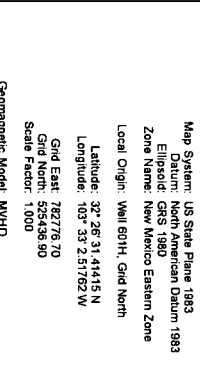
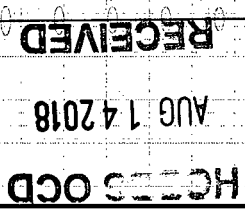
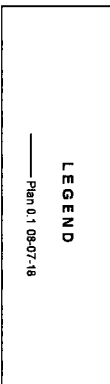


Azimuths to Grid North
 True North: 0.42°
 Magnetic North: 6.29°
 Magnetic Field
 Strength: 48172.95 nT
 Dip Angle: 60.26°
 Date: 9/7/2018
 Model: MVHD



To convert a True Direction to a Grid Direction, Subtract 0.42°





Advance Energy Partners

Lea County, NM (NAD83)

Merchant State Unit

601H

OH

Plan: Plan 0.1 08-07-18

Standard Planning Report

07 August, 2018



Database:	USA Compass	Local Co-ordinate Reference:	Well 601H
Company:	Advance Energy Partners	TVD Reference:	RKB @ 3717.00usft (H&P 620)
Project:	Lea County, NM (NAD83)	MD Reference:	RKB @ 3717.00usft (H&P 620)
Site:	Merchant State Unit	North Reference:	Grid
Well:	601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1 08-07-18		

Project	Lea County, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Merchant State Unit			
Site Position:		Northing:	525,540.70 usft	Latitude:	32° 26' 32.10104 N
From:	Map	Easting:	787,423.60 usft	Longitude:	103° 32' 8.28591 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.43 °

Well	601H					
Well Position	+N/-S	-103.80 usft	Northing:	525,436.90 usft	Latitude:	32° 26' 31.41415 N
	+E/-W	-4,646.90 usft	Easting:	782,776.70 usft	Longitude:	103° 33' 2.51762 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,692.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	9/7/2018	6.71	60.26	48,172.88415600

Design	Plan 0.1 08-07-18			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.56

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,699.94	3.00	359.28	5,699.81	7.85	-0.10	1.00	1.00	0.00	359.28	
6,927.01	3.00	359.28	6,925.19	72.05	-0.90	0.00	0.00	0.00	0.00	
7,226.96	0.00	0.00	7,225.00	79.90	-1.00	1.00	-1.00	0.00	180.00	
11,348.00	0.00	0.00	11,346.04	79.90	-1.00	0.00	0.00	0.00	0.00	
12,248.00	90.00	179.56	11,919.00	-493.04	3.42	10.00	10.00	19.95	179.56	
22,027.35	90.00	179.56	11,919.00	-10,272.10	78.90	0.00	0.00	0.00	0.00	BHL - Merchant Sta

Database:	USA Compass	Local Co-ordinate Reference:	Well 601H
Company:	Advance Energy Partners	TVD Reference:	RKB @ 3717.00usft (H&P 620)
Project:	Lea County, NM (NAD83)	MD Reference:	RKB @ 3717.00usft (H&P 620)
Site:	Merchant State Unit	North Reference:	Grid
Well:	601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1 08-07-18		

Planned 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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 1.00°/100' Build at 359.28° TF									
5,500.00	1.00	359.28	5,500.00	0.87	-0.01	-0.87	1.00	1.00	0.00
5,600.00	2.00	359.28	5,599.96	3.49	-0.04	-3.49	1.00	1.00	0.00
5,699.94	3.00	359.28	5,699.81	7.85	-0.10	-7.85	1.00	1.00	0.00
Hold 3.00° Inc at 359.28° Azm									
5,700.00	3.00	359.28	5,699.86	7.85	-0.10	-7.85	0.00	0.00	0.00
5,800.00	3.00	359.28	5,799.73	13.08	-0.16	-13.08	0.00	0.00	0.00
5,900.00	3.00	359.28	5,899.59	18.32	-0.23	-18.32	0.00	0.00	0.00
6,000.00	3.00	359.28	5,999.45	23.55	-0.29	-23.55	0.00	0.00	0.00
6,100.00	3.00	359.28	6,099.32	28.78	-0.36	-28.78	0.00	0.00	0.00
6,200.00	3.00	359.28	6,199.18	34.01	-0.43	-34.01	0.00	0.00	0.00
6,300.00	3.00	359.28	6,299.04	39.24	-0.49	-39.25	0.00	0.00	0.00
6,400.00	3.00	359.28	6,398.90	44.48	-0.56	-44.48	0.00	0.00	0.00
6,500.00	3.00	359.28	6,498.77	49.71	-0.62	-49.71	0.00	0.00	0.00
6,600.00	3.00	359.28	6,598.63	54.94	-0.69	-54.95	0.00	0.00	0.00
6,700.00	3.00	359.28	6,698.49	60.17	-0.75	-60.18	0.00	0.00	0.00
6,800.00	3.00	359.28	6,798.36	65.41	-0.82	-65.41	0.00	0.00	0.00
6,900.00	3.00	359.28	6,898.22	70.64	-0.88	-70.64	0.00	0.00	0.00
6,927.01	3.00	359.28	6,925.19	72.05	-0.90	-72.06	0.00	0.00	0.00
Begin 1.00°/100' Drop									
7,000.00	2.27	359.28	6,998.10	75.41	-0.94	-75.41	1.00	-1.00	0.00
7,100.00	1.27	359.28	7,098.06	78.49	-0.98	-78.50	1.00	-1.00	0.00
7,200.00	0.27	359.28	7,198.05	79.84	-1.00	-79.84	1.00	-1.00	0.00
7,226.96	0.00	0.00	7,225.00	79.90	-1.00	-79.91	1.00	-1.00	0.00
Begin Vertical Hold									
11,348.00	0.00	0.00	11,346.04	79.90	-1.00	-79.91	0.00	0.00	0.00
KOP2, Begin 10.00°/100' Build at 179.56° TF									
11,400.00	5.20	179.56	11,397.97	77.54	-0.98	-77.55	10.00	10.00	0.00
11,500.00	15.20	179.56	11,496.27	59.86	-0.85	-59.86	10.00	10.00	0.00
11,600.00	25.20	179.56	11,590.00	25.37	-0.58	-25.37	10.00	10.00	0.00
11,700.00	35.20	179.56	11,676.32	-24.87	-0.19	24.87	10.00	10.00	0.00
11,800.00	45.20	179.56	11,752.60	-89.33	0.31	89.33	10.00	10.00	0.00
11,900.00	55.20	179.56	11,816.53	-166.06	0.90	166.06	10.00	10.00	0.00
12,000.00	65.20	179.56	11,866.16	-252.72	1.57	252.73	10.00	10.00	0.00
12,100.00	75.20	179.56	11,899.99	-346.69	2.29	346.70	10.00	10.00	0.00
12,200.00	85.20	179.56	11,916.99	-445.10	3.05	445.11	10.00	10.00	0.00
12,248.00	90.00	179.56	11,919.00	-493.04	3.42	493.05	10.00	10.00	0.00
LP, Hold 90.00° Inc at 179.56° Azm									
12,300.00	90.00	179.56	11,919.00	-545.04	3.82	545.06	0.00	0.00	0.00
12,400.00	90.00	179.56	11,919.00	-645.04	4.60	645.06	0.00	0.00	0.00
12,500.00	90.00	179.56	11,919.00	-745.04	5.37	745.06	0.00	0.00	0.00
12,600.00	90.00	179.56	11,919.00	-845.04	6.14	845.06	0.00	0.00	0.00
12,700.00	90.00	179.56	11,919.00	-945.03	6.91	945.06	0.00	0.00	0.00
12,800.00	90.00	179.56	11,919.00	-1,045.03	7.68	1,045.06	0.00	0.00	0.00
12,900.00	90.00	179.56	11,919.00	-1,145.03	8.45	1,145.06	0.00	0.00	0.00
13,000.00	90.00	179.56	11,919.00	-1,245.02	9.23	1,245.06	0.00	0.00	0.00
13,100.00	90.00	179.56	11,919.00	-1,345.02	10.00	1,345.06	0.00	0.00	0.00
13,200.00	90.00	179.56	11,919.00	-1,445.02	10.77	1,445.06	0.00	0.00	0.00
13,300.00	90.00	179.56	11,919.00	-1,545.01	11.54	1,545.06	0.00	0.00	0.00
13,400.00	90.00	179.56	11,919.00	-1,645.01	12.31	1,645.06	0.00	0.00	0.00
13,500.00	90.00	179.56	11,919.00	-1,745.01	13.09	1,745.06	0.00	0.00	0.00

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Company:	Advance Energy Partners	TVD Reference:	RKB @ 3717.00usft (H&P 620)
Project:	Lea County, NM (NAD83)	MD Reference:	RKB @ 3717.00usft (H&P 620)
Site:	Merchant State Unit	North Reference:	Grid
Well:	601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1 08-07-18		

Planned 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)	
13,600.00	90.00	179.56	11,919.00	-1,845.01	13.86	1,845.06	0.00	0.00	0.00	
13,700.00	90.00	179.56	11,919.00	-1,945.00	14.63	1,945.06	0.00	0.00	0.00	
13,800.00	90.00	179.56	11,919.00	-2,045.00	15.40	2,045.06	0.00	0.00	0.00	
13,900.00	90.00	179.56	11,919.00	-2,145.00	16.17	2,145.06	0.00	0.00	0.00	
14,000.00	90.00	179.56	11,919.00	-2,244.99	16.94	2,245.06	0.00	0.00	0.00	
14,100.00	90.00	179.56	11,919.00	-2,344.99	17.72	2,345.06	0.00	0.00	0.00	
14,200.00	90.00	179.56	11,919.00	-2,444.99	18.49	2,445.06	0.00	0.00	0.00	
14,300.00	90.00	179.56	11,919.00	-2,544.98	19.26	2,545.06	0.00	0.00	0.00	
14,400.00	90.00	179.56	11,919.00	-2,644.98	20.03	2,645.06	0.00	0.00	0.00	
14,500.00	90.00	179.56	11,919.00	-2,744.98	20.80	2,745.06	0.00	0.00	0.00	
14,600.00	90.00	179.56	11,919.00	-2,844.98	21.58	2,845.06	0.00	0.00	0.00	
14,700.00	90.00	179.56	11,919.00	-2,944.97	22.35	2,945.06	0.00	0.00	0.00	
14,800.00	90.00	179.56	11,919.00	-3,044.97	23.12	3,045.06	0.00	0.00	0.00	
14,900.00	90.00	179.56	11,919.00	-3,144.97	23.89	3,145.06	0.00	0.00	0.00	
15,000.00	90.00	179.56	11,919.00	-3,244.96	24.66	3,245.06	0.00	0.00	0.00	
15,100.00	90.00	179.56	11,919.00	-3,344.96	25.43	3,345.06	0.00	0.00	0.00	
15,200.00	90.00	179.56	11,919.00	-3,444.96	26.21	3,445.06	0.00	0.00	0.00	
15,300.00	90.00	179.56	11,919.00	-3,544.95	26.98	3,545.06	0.00	0.00	0.00	
15,400.00	90.00	179.56	11,919.00	-3,644.95	27.75	3,645.06	0.00	0.00	0.00	
15,500.00	90.00	179.56	11,919.00	-3,744.95	28.52	3,745.06	0.00	0.00	0.00	
15,600.00	90.00	179.56	11,919.00	-3,844.95	29.29	3,845.06	0.00	0.00	0.00	
15,700.00	90.00	179.56	11,919.00	-3,944.94	30.07	3,945.06	0.00	0.00	0.00	
15,800.00	90.00	179.56	11,919.00	-4,044.94	30.84	4,045.06	0.00	0.00	0.00	
15,900.00	90.00	179.56	11,919.00	-4,144.94	31.61	4,145.06	0.00	0.00	0.00	
16,000.00	90.00	179.56	11,919.00	-4,244.93	32.38	4,245.06	0.00	0.00	0.00	
16,100.00	90.00	179.56	11,919.00	-4,344.93	33.15	4,345.06	0.00	0.00	0.00	
16,200.00	90.00	179.56	11,919.00	-4,444.93	33.92	4,445.06	0.00	0.00	0.00	
16,300.00	90.00	179.56	11,919.00	-4,544.93	34.70	4,545.06	0.00	0.00	0.00	
16,400.00	90.00	179.56	11,919.00	-4,644.92	35.47	4,645.06	0.00	0.00	0.00	
16,500.00	90.00	179.56	11,919.00	-4,744.92	36.24	4,745.06	0.00	0.00	0.00	
16,600.00	90.00	179.56	11,919.00	-4,844.92	37.01	4,845.06	0.00	0.00	0.00	
16,700.00	90.00	179.56	11,919.00	-4,944.91	37.78	4,945.06	0.00	0.00	0.00	
16,800.00	90.00	179.56	11,919.00	-5,044.91	38.55	5,045.06	0.00	0.00	0.00	
16,900.00	90.00	179.56	11,919.00	-5,144.91	39.33	5,145.06	0.00	0.00	0.00	
17,000.00	90.00	179.56	11,919.00	-5,244.90	40.10	5,245.06	0.00	0.00	0.00	
17,100.00	90.00	179.56	11,919.00	-5,344.90	40.87	5,345.06	0.00	0.00	0.00	
17,200.00	90.00	179.56	11,919.00	-5,444.90	41.64	5,445.06	0.00	0.00	0.00	
17,300.00	90.00	179.56	11,919.00	-5,544.90	42.41	5,545.06	0.00	0.00	0.00	
17,400.00	90.00	179.56	11,919.00	-5,644.89	43.19	5,645.06	0.00	0.00	0.00	
17,500.00	90.00	179.56	11,919.00	-5,744.89	43.96	5,745.06	0.00	0.00	0.00	
17,600.00	90.00	179.56	11,919.00	-5,844.89	44.73	5,845.06	0.00	0.00	0.00	
17,700.00	90.00	179.56	11,919.00	-5,944.88	45.50	5,945.06	0.00	0.00	0.00	
17,800.00	90.00	179.56	11,919.00	-6,044.88	46.27	6,045.06	0.00	0.00	0.00	
17,900.00	90.00	179.56	11,919.00	-6,144.88	47.04	6,145.06	0.00	0.00	0.00	
18,000.00	90.00	179.56	11,919.00	-6,244.87	47.82	6,245.06	0.00	0.00	0.00	
18,100.00	90.00	179.56	11,919.00	-6,344.87	48.59	6,345.06	0.00	0.00	0.00	
18,200.00	90.00	179.56	11,919.00	-6,444.87	49.36	6,445.06	0.00	0.00	0.00	
18,300.00	90.00	179.56	11,919.00	-6,544.87	50.13	6,545.06	0.00	0.00	0.00	
18,400.00	90.00	179.56	11,919.00	-6,644.86	50.90	6,645.06	0.00	0.00	0.00	
18,500.00	90.00	179.56	11,919.00	-6,744.86	51.68	6,745.06	0.00	0.00	0.00	
18,600.00	90.00	179.56	11,919.00	-6,844.86	52.45	6,845.06	0.00	0.00	0.00	
18,700.00	90.00	179.56	11,919.00	-6,944.85	53.22	6,945.06	0.00	0.00	0.00	
18,800.00	90.00	179.56	11,919.00	-7,044.85	53.99	7,045.06	0.00	0.00	0.00	
18,900.00	90.00	179.56	11,919.00	-7,144.85	54.76	7,145.06	0.00	0.00	0.00	

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Site:	Merchant State Unit	North Reference:	Grid
Well:	601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1 08-07-18		

Planned 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)
19,000.00	90.00	179.56	11,919.00	-7,244.84	55.53	7,245.06	0.00	0.00	0.00
19,100.00	90.00	179.56	11,919.00	-7,344.84	56.31	7,345.06	0.00	0.00	0.00
19,200.00	90.00	179.56	11,919.00	-7,444.84	57.08	7,445.06	0.00	0.00	0.00
19,300.00	90.00	179.56	11,919.00	-7,544.84	57.85	7,545.06	0.00	0.00	0.00
19,400.00	90.00	179.56	11,919.00	-7,644.83	58.62	7,645.06	0.00	0.00	0.00
19,500.00	90.00	179.56	11,919.00	-7,744.83	59.39	7,745.06	0.00	0.00	0.00
19,600.00	90.00	179.56	11,919.00	-7,844.83	60.17	7,845.06	0.00	0.00	0.00
19,700.00	90.00	179.56	11,919.00	-7,944.82	60.94	7,945.06	0.00	0.00	0.00
19,800.00	90.00	179.56	11,919.00	-8,044.82	61.71	8,045.06	0.00	0.00	0.00
19,900.00	90.00	179.56	11,919.00	-8,144.82	62.48	8,145.06	0.00	0.00	0.00
20,000.00	90.00	179.56	11,919.00	-8,244.81	63.25	8,245.06	0.00	0.00	0.00
20,100.00	90.00	179.56	11,919.00	-8,344.81	64.02	8,345.06	0.00	0.00	0.00
20,200.00	90.00	179.56	11,919.00	-8,444.81	64.80	8,445.06	0.00	0.00	0.00
20,300.00	90.00	179.56	11,919.00	-8,544.81	65.57	8,545.06	0.00	0.00	0.00
20,400.00	90.00	179.56	11,919.00	-8,644.80	66.34	8,645.06	0.00	0.00	0.00
20,500.00	90.00	179.56	11,919.00	-8,744.80	67.11	8,745.06	0.00	0.00	0.00
20,600.00	90.00	179.56	11,919.00	-8,844.80	67.88	8,845.06	0.00	0.00	0.00
20,700.00	90.00	179.56	11,919.00	-8,944.79	68.66	8,945.06	0.00	0.00	0.00
20,800.00	90.00	179.56	11,919.00	-9,044.79	69.43	9,045.06	0.00	0.00	0.00
20,900.00	90.00	179.56	11,919.00	-9,144.79	70.20	9,145.06	0.00	0.00	0.00
21,000.00	90.00	179.56	11,919.00	-9,244.79	70.97	9,245.06	0.00	0.00	0.00
21,100.00	90.00	179.56	11,919.00	-9,344.78	71.74	9,345.06	0.00	0.00	0.00
21,200.00	90.00	179.56	11,919.00	-9,444.78	72.51	9,445.06	0.00	0.00	0.00
21,300.00	90.00	179.56	11,919.00	-9,544.78	73.29	9,545.06	0.00	0.00	0.00
21,400.00	90.00	179.56	11,919.00	-9,644.77	74.06	9,645.06	0.00	0.00	0.00
21,500.00	90.00	179.56	11,919.00	-9,744.77	74.83	9,745.06	0.00	0.00	0.00
21,600.00	90.00	179.56	11,919.00	-9,844.77	75.60	9,845.06	0.00	0.00	0.00
21,700.00	90.00	179.56	11,919.00	-9,944.76	76.37	9,945.06	0.00	0.00	0.00
21,800.00	90.00	179.56	11,919.00	-10,044.76	77.15	10,045.06	0.00	0.00	0.00
21,900.00	90.00	179.56	11,919.00	-10,144.76	77.92	10,145.06	0.00	0.00	0.00
22,000.00	90.00	179.56	11,919.00	-10,244.76	78.69	10,245.06	0.00	0.00	0.00
22,027.35	90.00	179.56	11,919.00	-10,272.10	78.90	10,272.40	0.00	0.00	0.00
TD at 22027.35									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP - Merchant State	0.00	0.00	11,919.00	79.90	-1.00	525,516.80	782,775.70	32° 26' 32.20482 N	103° 33' 2.52246 W
- hit/miss target									
- Shape									
- plan misses target center by 237.34usft at 11800.00usft MD (11752.60 TVD, -89.33 N, 0.31 E)									
- Point									
BHL - Merchant State	0.00	0.00	11,919.00	-10,272.10	78.90	515,164.80	782,855.60	32° 24' 49.76787 N	103° 33' 2.47500 W
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

Database:	USA Compass	Local Co-ordinate Reference:	Well 601H
Company:	Advance Energy Partners	TVD Reference:	RKB @ 3717.00usft (H&P 620)
Project:	Lea County, NM (NAD83)	MD Reference:	RKB @ 3717.00usft (H&P 620)
Site:	Merchant State Unit	North Reference:	Grid
Well:	601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1 08-07-18		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,400.00	5,400.00	0.00	0.00	KOP, Begin 1.00°/100' Build at 359.28° TF
5,699.94	5,699.81	7.85	-0.10	Hold 3.00° Inc at 359.28° Azm
6,927.01	6,925.19	72.05	-0.90	Begin 1.00°/100' Drop
7,226.96	7,225.00	79.90	-1.00	Begin Vertical Hold
11,348.00	11,346.04	79.90	-1.00	KOP2, Begin 10.00°/100' Build at 179.56° TF
12,248.00	11,919.00	-493.04	3.42	LP, Hold 90.00° Inc at 179.56° Azm
22,027.35	11,919.00	-10,272.10	78.90	TD at 22027.35