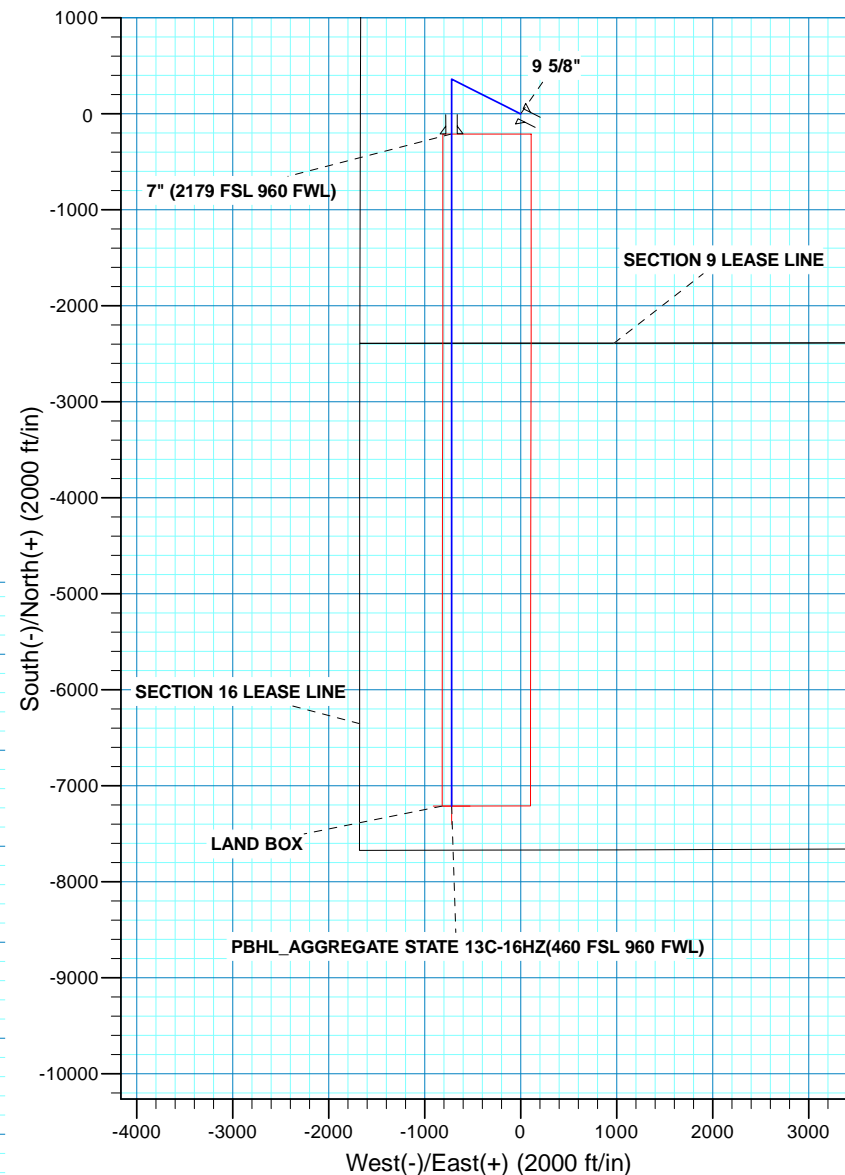
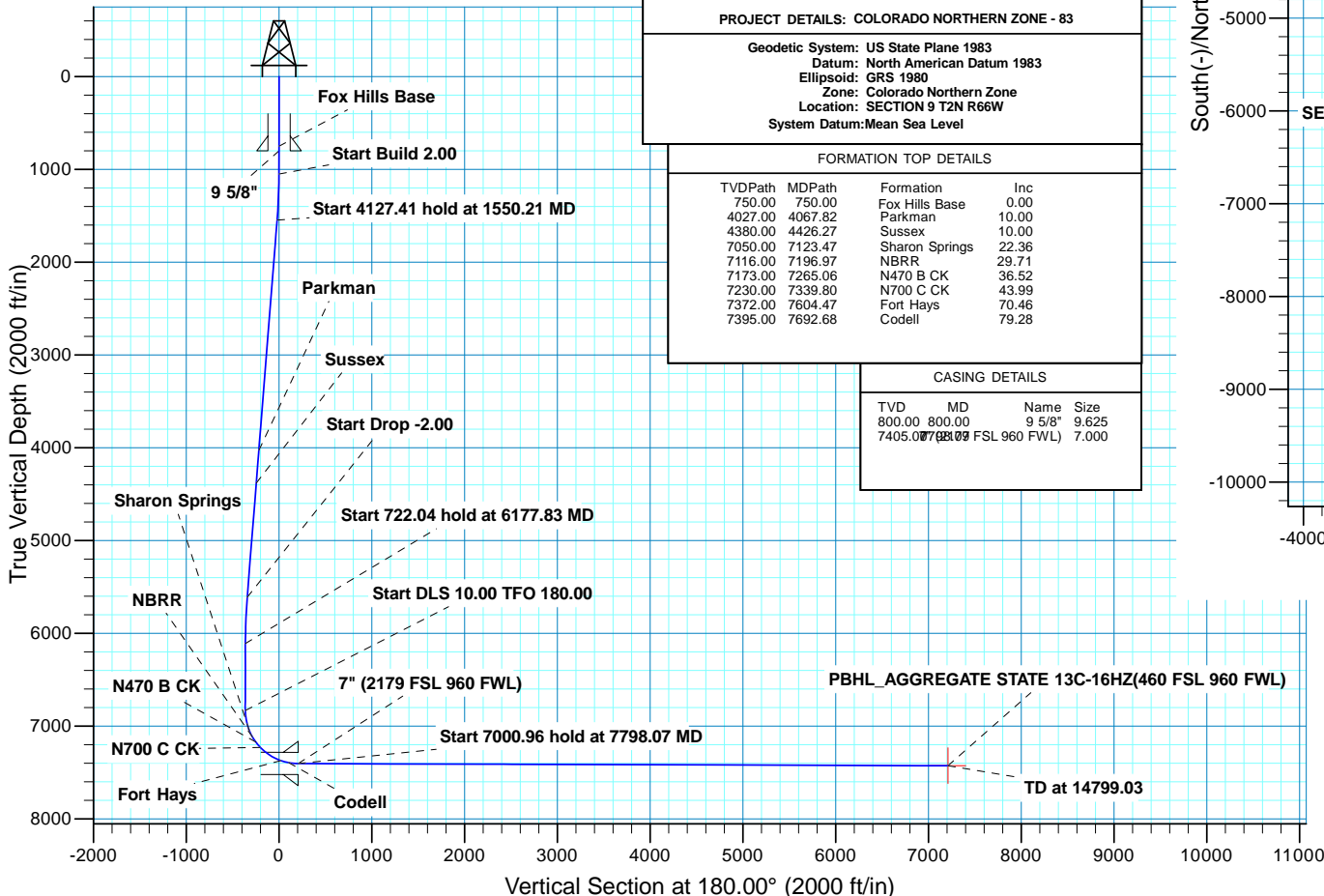


WELL DETAILS: AGGREGATE STATE 13C-16HZ										
GL 4905 & KB 17 @ 4922.00ft (ASSUMED)										
		+N/-S 0.00	+E/-W 0.00	Northing 1298992.65	Easting 3199659.61	Latitude 40.1519220	Longitude -104.7857220			
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1050.00	0.00	0.00	1050.00	0.00	0.00	0.00	0.00	0.00		Start Build 2.00
1550.21	10.00	296.69	1547.68	19.56	-38.92	2.00	296.69	-19.56		Start 4127.41 hold at 1550.21 MD
5677.62	10.00	296.69	5612.32	341.60	-679.55	0.00	0.00	-341.60		Start Drop -2.00
6177.83	0.00	0.00	6110.00	361.16	-718.47	2.00	180.00	-361.16		Start 722.04 hold at 6177.83 MD
6899.87	0.00	0.00	6832.04	361.16	-718.47	0.00	0.00	-361.16		Start DLS 10.00 TFO 180.00
7798.07	89.82	180.00	7405.00	-210.00	-718.46	10.00	180.00	210.00		Start 7000.96 hold at 7798.07 MD
14799.03	89.82	180.00	7427.00	-7210.92	-718.32	0.00	0.00	7210.92	PBHL_AGGREGATE STATE	13C-16HZ
DESIGN TARGET DETAILS										
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape		
PBHL	7427.00	-7210.92	-718.32	1291776.19	3198999.40	40.1321270	-104.7882910	Point		





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

AGGREGATE STATE 22-9HZ PAD

AGGREGATE STATE 13C-16HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

06 September, 2013

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well AGGREGATE STATE 13C-16HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4905 & KB 17 @ 4922.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4905 & KB 17 @ 4922.00ft (ASSUMED)
Site:	AGGREGATE STATE 22-9HZ PAD	North Reference:	True
Well:	AGGREGATE STATE 13C-16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Project	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	AGGREGATE STATE 22-9HZ PAD, SECTION 9 T2N R66W			
Site Position:		Northing:	1,298,992.41 usft	Latitude: 40.1519220
From:	Lat/Long	Easting:	3,199,629.70 usft	Longitude: -104.7858290
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: 0.46 °

Well	AGGREGATE STATE 13C-16HZ, 2389' FSL 1669' FWL			
Well Position	+N/-S	-0.01 ft	Northing:	1,298,992.65 usft
	+E/-W	29.91 ft	Easting:	3,199,659.61 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft
			Ground Level:	4,905.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	9/5/2013	8.59	66.76	52,693

Design	PLAN #1 PRELIMINARY			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	180.00

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,550.21	10.00	296.69	1,547.68	19.56	-38.92	2.00	2.00	0.00	296.69	
5,677.62	10.00	296.69	5,612.32	341.60	-679.55	0.00	0.00	0.00	0.00	
6,177.83	0.00	0.00	6,110.00	361.16	-718.47	2.00	-2.00	0.00	180.00	
6,899.87	0.00	0.00	6,832.04	361.16	-718.47	0.00	0.00	0.00	0.00	
7,798.07	89.82	180.00	7,405.00	-210.00	-718.46	10.00	10.00	20.04	180.00	
14,799.03	89.82	180.00	7,427.00	-7,210.92	-718.32	0.00	0.00	0.00	0.00	PBHL_AGGREGATE

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well AGGREGATE STATE 13C-16HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4905 & KB 17 @ 4922.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4905 & KB 17 @ 4922.00ft (ASSUMED)
Site:	AGGREGATE STATE 22-9HZ PAD	North Reference:	True
Well:	AGGREGATE STATE 13C-16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
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
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Base									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
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
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,100.00	1.00	296.69	1,100.00	0.20	-0.39	-0.20	2.00	2.00	0.00
1,200.00	3.00	296.69	1,199.93	1.76	-3.51	-1.76	2.00	2.00	0.00
1,300.00	5.00	296.69	1,299.68	4.90	-9.74	-4.90	2.00	2.00	0.00
1,400.00	7.00	296.69	1,399.13	9.59	-19.08	-9.59	2.00	2.00	0.00
1,500.00	9.00	296.69	1,498.15	15.84	-31.51	-15.84	2.00	2.00	0.00
1,550.21	10.00	296.69	1,547.68	19.56	-38.92	-19.56	2.00	2.00	0.00
Start 4127.41 hold at 1550.21 MD									
1,600.00	10.00	296.69	1,596.71	23.45	-46.65	-23.45	0.00	0.00	0.00
1,700.00	10.00	296.69	1,695.18	31.25	-62.17	-31.25	0.00	0.00	0.00
1,800.00	10.00	296.69	1,793.66	39.05	-77.69	-39.05	0.00	0.00	0.00
1,900.00	10.00	296.69	1,892.14	46.86	-93.21	-46.86	0.00	0.00	0.00
2,000.00	10.00	296.69	1,990.62	54.66	-108.73	-54.66	0.00	0.00	0.00
2,100.00	10.00	296.69	2,089.10	62.46	-124.25	-62.46	0.00	0.00	0.00
2,200.00	10.00	296.69	2,187.58	70.26	-139.78	-70.26	0.00	0.00	0.00
2,300.00	10.00	296.69	2,286.06	78.06	-155.30	-78.06	0.00	0.00	0.00
2,400.00	10.00	296.69	2,384.54	85.87	-170.82	-85.87	0.00	0.00	0.00
2,500.00	10.00	296.69	2,483.02	93.67	-186.34	-93.67	0.00	0.00	0.00
2,600.00	10.00	296.69	2,581.50	101.47	-201.86	-101.47	0.00	0.00	0.00
2,700.00	10.00	296.69	2,679.98	109.27	-217.38	-109.27	0.00	0.00	0.00
2,800.00	10.00	296.69	2,778.46	117.08	-232.90	-117.08	0.00	0.00	0.00
2,900.00	10.00	296.69	2,876.94	124.88	-248.43	-124.88	0.00	0.00	0.00
3,000.00	10.00	296.69	2,975.42	132.68	-263.95	-132.68	0.00	0.00	0.00
3,100.00	10.00	296.69	3,073.90	140.48	-279.47	-140.48	0.00	0.00	0.00
3,200.00	10.00	296.69	3,172.38	148.29	-294.99	-148.29	0.00	0.00	0.00
3,300.00	10.00	296.69	3,270.86	156.09	-310.51	-156.09	0.00	0.00	0.00
3,400.00	10.00	296.69	3,369.34	163.89	-326.03	-163.89	0.00	0.00	0.00
3,500.00	10.00	296.69	3,467.82	171.69	-341.55	-171.69	0.00	0.00	0.00
3,600.00	10.00	296.69	3,566.30	179.49	-357.07	-179.49	0.00	0.00	0.00
3,700.00	10.00	296.69	3,664.77	187.30	-372.60	-187.30	0.00	0.00	0.00
3,800.00	10.00	296.69	3,763.25	195.10	-388.12	-195.10	0.00	0.00	0.00
3,900.00	10.00	296.69	3,861.73	202.90	-403.64	-202.90	0.00	0.00	0.00
4,000.00	10.00	296.69	3,960.21	210.70	-419.16	-210.70	0.00	0.00	0.00
4,067.82	10.00	296.69	4,027.00	215.99	-429.69	-215.99	0.00	0.00	0.00
Parkman									
4,100.00	10.00	296.69	4,058.69	218.51	-434.68	-218.51	0.00	0.00	0.00
4,200.00	10.00	296.69	4,157.17	226.31	-450.20	-226.31	0.00	0.00	0.00
4,300.00	10.00	296.69	4,255.65	234.11	-465.72	-234.11	0.00	0.00	0.00
4,400.00	10.00	296.69	4,354.13	241.91	-481.25	-241.91	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well AGGREGATE STATE 13C-16HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4905 & KB 17 @ 4922.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4905 & KB 17 @ 4922.00ft (ASSUMED)
Site:	AGGREGATE STATE 22-9HZ PAD	North Reference:	True
Well:	AGGREGATE STATE 13C-16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,426.27	10.00	296.69	4,380.00	243.96	-485.32	-243.96	0.00	0.00	0.00
Sussex									
4,500.00	10.00	296.69	4,452.61	249.71	-496.77	-249.71	0.00	0.00	0.00
4,600.00	10.00	296.69	4,551.09	257.52	-512.29	-257.52	0.00	0.00	0.00
4,700.00	10.00	296.69	4,649.57	265.32	-527.81	-265.32	0.00	0.00	0.00
4,800.00	10.00	296.69	4,748.05	273.12	-543.33	-273.12	0.00	0.00	0.00
4,900.00	10.00	296.69	4,846.53	280.92	-558.85	-280.92	0.00	0.00	0.00
5,000.00	10.00	296.69	4,945.01	288.73	-574.37	-288.73	0.00	0.00	0.00
5,100.00	10.00	296.69	5,043.49	296.53	-589.90	-296.53	0.00	0.00	0.00
5,200.00	10.00	296.69	5,141.97	304.33	-605.42	-304.33	0.00	0.00	0.00
5,300.00	10.00	296.69	5,240.45	312.13	-620.94	-312.13	0.00	0.00	0.00
5,400.00	10.00	296.69	5,338.93	319.94	-636.46	-319.94	0.00	0.00	0.00
5,500.00	10.00	296.69	5,437.41	327.74	-651.98	-327.74	0.00	0.00	0.00
5,600.00	10.00	296.69	5,535.88	335.54	-667.50	-335.54	0.00	0.00	0.00
5,677.62	10.00	296.69	5,612.32	341.60	-679.55	-341.60	0.00	0.00	0.00
Start Drop -2.00									
5,700.00	9.56	296.69	5,634.38	343.30	-682.95	-343.30	2.00	-2.00	0.00
5,800.00	7.56	296.69	5,733.26	349.99	-696.24	-349.99	2.00	-2.00	0.00
5,900.00	5.56	296.69	5,832.60	355.11	-706.44	-355.11	2.00	-2.00	0.00
6,000.00	3.56	296.69	5,932.28	358.68	-713.54	-358.68	2.00	-2.00	0.00
6,100.00	1.56	296.69	6,032.18	360.69	-717.53	-360.69	2.00	-2.00	0.00
6,177.83	0.00	0.00	6,110.00	361.16	-718.47	-361.16	2.00	-2.00	0.00
Start 722.04 hold at 6177.83 MD									
6,200.00	0.00	0.00	6,132.17	361.16	-718.47	-361.16	0.00	0.00	0.00
6,300.00	0.00	0.00	6,232.17	361.16	-718.47	-361.16	0.00	0.00	0.00
6,400.00	0.00	0.00	6,332.17	361.16	-718.47	-361.16	0.00	0.00	0.00
6,500.00	0.00	0.00	6,432.17	361.16	-718.47	-361.16	0.00	0.00	0.00
6,600.00	0.00	0.00	6,532.17	361.16	-718.47	-361.16	0.00	0.00	0.00
6,700.00	0.00	0.00	6,632.17	361.16	-718.47	-361.16	0.00	0.00	0.00
6,800.00	0.00	0.00	6,732.17	361.16	-718.47	-361.16	0.00	0.00	0.00
6,899.87	0.00	0.00	6,832.04	361.16	-718.47	-361.16	0.00	0.00	0.00
Start DLS 10.00 TFO 180.00									
6,900.00	0.00	180.00	6,832.17	361.16	-718.47	-361.16	0.00	0.00	0.00
7,000.00	10.01	180.00	6,931.66	352.43	-718.47	-352.43	10.01	10.01	0.00
7,100.00	20.01	180.00	7,028.12	326.56	-718.47	-326.56	10.00	10.00	0.00
7,123.47	22.36	180.00	7,050.00	318.08	-718.47	-318.08	10.00	10.00	0.00
Sharon Springs									
7,196.97	29.71	180.00	7,116.00	285.84	-718.47	-285.84	10.00	10.00	0.00
NBRR									
7,200.00	30.01	180.00	7,118.63	284.34	-718.47	-284.34	10.00	10.00	0.00
7,265.06	36.52	180.00	7,173.00	248.67	-718.47	-248.67	10.00	10.00	0.00
N470 B CK									
7,300.00	40.01	180.00	7,200.43	227.03	-718.47	-227.03	10.00	10.00	0.00
7,339.80	43.99	180.00	7,230.00	200.40	-718.47	-200.40	10.00	10.00	0.00
N700 C CK									
7,400.00	50.01	180.00	7,271.03	156.40	-718.47	-156.40	10.00	10.00	0.00
7,500.00	60.01	180.00	7,328.30	74.57	-718.46	-74.57	10.00	10.00	0.00
7,600.00	70.01	180.00	7,370.49	-15.95	-718.46	15.95	10.00	10.00	0.00
7,604.47	70.46	180.00	7,372.00	-20.16	-718.46	20.16	10.00	10.00	0.00
Fort Hays									
7,692.68	79.28	180.00	7,395.00	-105.23	-718.46	105.23	10.00	10.00	0.00
Codell									

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well AGGREGATE STATE 13C-16HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4905 & KB 17 @ 4922.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4905 & KB 17 @ 4922.00ft (ASSUMED)
Site:	AGGREGATE STATE 22-9HZ PAD	North Reference:	True
Well:	AGGREGATE STATE 13C-16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,700.00	80.01	180.00	7,396.32	-112.43	-718.46	112.43	10.00	10.00	0.00
7,798.07	89.82	180.00	7,405.00	-209.99	-718.46	209.99	10.00	10.00	0.00
Start 7000.96 hold at 7798.07 MD - 7" (2179 FSL 960 FWL)									
7,800.00	89.82	180.00	7,405.00	-211.92	-718.46	211.92	0.02	0.02	0.00
7,900.00	89.82	180.00	7,405.32	-311.92	-718.46	311.92	0.00	0.00	0.00
8,000.00	89.82	180.00	7,405.63	-411.92	-718.45	411.92	0.00	0.00	0.00
8,100.00	89.82	180.00	7,405.95	-511.92	-718.45	511.92	0.00	0.00	0.00
8,200.00	89.82	180.00	7,406.26	-611.92	-718.45	611.92	0.00	0.00	0.00
8,300.00	89.82	180.00	7,406.57	-711.92	-718.45	711.92	0.00	0.00	0.00
8,400.00	89.82	180.00	7,406.89	-811.92	-718.45	811.92	0.00	0.00	0.00
8,500.00	89.82	180.00	7,407.20	-911.92	-718.45	911.92	0.00	0.00	0.00
8,600.00	89.82	180.00	7,407.52	-1,011.92	-718.44	1,011.92	0.00	0.00	0.00
8,700.00	89.82	180.00	7,407.83	-1,111.92	-718.44	1,111.92	0.00	0.00	0.00
8,800.00	89.82	180.00	7,408.15	-1,211.92	-718.44	1,211.92	0.00	0.00	0.00
8,900.00	89.82	180.00	7,408.46	-1,311.92	-718.44	1,311.92	0.00	0.00	0.00
9,000.00	89.82	180.00	7,408.77	-1,411.92	-718.44	1,411.92	0.00	0.00	0.00
9,100.00	89.82	180.00	7,409.09	-1,511.92	-718.43	1,511.92	0.00	0.00	0.00
9,200.00	89.82	180.00	7,409.40	-1,611.92	-718.43	1,611.92	0.00	0.00	0.00
9,300.00	89.82	180.00	7,409.72	-1,711.92	-718.43	1,711.92	0.00	0.00	0.00
9,400.00	89.82	180.00	7,410.03	-1,811.92	-718.43	1,811.92	0.00	0.00	0.00
9,500.00	89.82	180.00	7,410.35	-1,911.92	-718.43	1,911.92	0.00	0.00	0.00
9,600.00	89.82	180.00	7,410.66	-2,011.91	-718.42	2,011.91	0.00	0.00	0.00
9,700.00	89.82	180.00	7,410.97	-2,111.91	-718.42	2,111.91	0.00	0.00	0.00
9,800.00	89.82	180.00	7,411.29	-2,211.91	-718.42	2,211.91	0.00	0.00	0.00
9,900.00	89.82	180.00	7,411.60	-2,311.91	-718.42	2,311.91	0.00	0.00	0.00
10,000.00	89.82	180.00	7,411.92	-2,411.91	-718.42	2,411.91	0.00	0.00	0.00
10,100.00	89.82	180.00	7,412.23	-2,511.91	-718.41	2,511.91	0.00	0.00	0.00
10,200.00	89.82	180.00	7,412.55	-2,611.91	-718.41	2,611.91	0.00	0.00	0.00
10,300.00	89.82	180.00	7,412.86	-2,711.91	-718.41	2,711.91	0.00	0.00	0.00
10,400.00	89.82	180.00	7,413.17	-2,811.91	-718.41	2,811.91	0.00	0.00	0.00
10,500.00	89.82	180.00	7,413.49	-2,911.91	-718.41	2,911.91	0.00	0.00	0.00
10,600.00	89.82	180.00	7,413.80	-3,011.91	-718.40	3,011.91	0.00	0.00	0.00
10,700.00	89.82	180.00	7,414.12	-3,111.91	-718.40	3,111.91	0.00	0.00	0.00
10,800.00	89.82	180.00	7,414.43	-3,211.91	-718.40	3,211.91	0.00	0.00	0.00
10,900.00	89.82	180.00	7,414.75	-3,311.91	-718.40	3,311.91	0.00	0.00	0.00
11,000.00	89.82	180.00	7,415.06	-3,411.91	-718.40	3,411.91	0.00	0.00	0.00
11,100.00	89.82	180.00	7,415.37	-3,511.91	-718.39	3,511.91	0.00	0.00	0.00
11,200.00	89.82	180.00	7,415.69	-3,611.91	-718.39	3,611.91	0.00	0.00	0.00
11,300.00	89.82	180.00	7,416.00	-3,711.91	-718.39	3,711.91	0.00	0.00	0.00
11,400.00	89.82	180.00	7,416.32	-3,811.91	-718.39	3,811.91	0.00	0.00	0.00
11,500.00	89.82	180.00	7,416.63	-3,911.91	-718.39	3,911.91	0.00	0.00	0.00
11,600.00	89.82	180.00	7,416.95	-4,011.91	-718.38	4,011.91	0.00	0.00	0.00
11,700.00	89.82	180.00	7,417.26	-4,111.90	-718.38	4,111.90	0.00	0.00	0.00
11,800.00	89.82	180.00	7,417.57	-4,211.90	-718.38	4,211.90	0.00	0.00	0.00
11,900.00	89.82	180.00	7,417.89	-4,311.90	-718.38	4,311.90	0.00	0.00	0.00
12,000.00	89.82	180.00	7,418.20	-4,411.90	-718.38	4,411.90	0.00	0.00	0.00
12,100.00	89.82	180.00	7,418.52	-4,511.90	-718.37	4,511.90	0.00	0.00	0.00
12,200.00	89.82	180.00	7,418.83	-4,611.90	-718.37	4,611.90	0.00	0.00	0.00
12,300.00	89.82	180.00	7,419.15	-4,711.90	-718.37	4,711.90	0.00	0.00	0.00
12,400.00	89.82	180.00	7,419.46	-4,811.90	-718.37	4,811.90	0.00	0.00	0.00
12,500.00	89.82	180.00	7,419.77	-4,911.90	-718.37	4,911.90	0.00	0.00	0.00
12,600.00	89.82	180.00	7,420.09	-5,011.90	-718.36	5,011.90	0.00	0.00	0.00
12,700.00	89.82	180.00	7,420.40	-5,111.90	-718.36	5,111.90	0.00	0.00	0.00
12,800.00	89.82	180.00	7,420.72	-5,211.90	-718.36	5,211.90	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well AGGREGATE STATE 13C-16HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4905 & KB 17 @ 4922.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4905 & KB 17 @ 4922.00ft (ASSUMED)
Site:	AGGREGATE STATE 22-9HZ PAD	North Reference:	True
Well:	AGGREGATE STATE 13C-16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,900.00	89.82	180.00	7,421.03	-5,311.90	-718.36	5,311.90	0.00	0.00	0.00
13,000.00	89.82	180.00	7,421.35	-5,411.90	-718.36	5,411.90	0.00	0.00	0.00
13,100.00	89.82	180.00	7,421.66	-5,511.90	-718.35	5,511.90	0.00	0.00	0.00
13,200.00	89.82	180.00	7,421.97	-5,611.90	-718.35	5,611.90	0.00	0.00	0.00
13,300.00	89.82	180.00	7,422.29	-5,711.90	-718.35	5,711.90	0.00	0.00	0.00
13,400.00	89.82	180.00	7,422.60	-5,811.90	-718.35	5,811.90	0.00	0.00	0.00
13,500.00	89.82	180.00	7,422.92	-5,911.90	-718.35	5,911.90	0.00	0.00	0.00
13,600.00	89.82	180.00	7,423.23	-6,011.90	-718.35	6,011.90	0.00	0.00	0.00
13,700.00	89.82	180.00	7,423.55	-6,111.89	-718.34	6,111.89	0.00	0.00	0.00
13,800.00	89.82	180.00	7,423.86	-6,211.89	-718.34	6,211.89	0.00	0.00	0.00
13,900.00	89.82	180.00	7,424.17	-6,311.89	-718.34	6,311.89	0.00	0.00	0.00
14,000.00	89.82	180.00	7,424.49	-6,411.89	-718.34	6,411.89	0.00	0.00	0.00
14,100.00	89.82	180.00	7,424.80	-6,511.89	-718.34	6,511.89	0.00	0.00	0.00
14,200.00	89.82	180.00	7,425.12	-6,611.89	-718.33	6,611.89	0.00	0.00	0.00
14,300.00	89.82	180.00	7,425.43	-6,711.89	-718.33	6,711.89	0.00	0.00	0.00
14,400.00	89.82	180.00	7,425.75	-6,811.89	-718.33	6,811.89	0.00	0.00	0.00
14,500.00	89.82	180.00	7,426.06	-6,911.89	-718.33	6,911.89	0.00	0.00	0.00
14,600.00	89.82	180.00	7,426.37	-7,011.89	-718.33	7,011.89	0.00	0.00	0.00
14,700.00	89.82	180.00	7,426.69	-7,111.89	-718.32	7,111.89	0.00	0.00	0.00
14,799.03	89.82	180.00	7,427.00	-7,210.92	-718.32	7,210.92	0.00	0.00	0.00
TD at 14799.03 - PBHL_AGGREGATE STATE 13C-16HZ(460 FSL 960 FWL)									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL_AGGREGATE S1	0.00	0.00	7,427.00	-7,210.92	-718.32	1,291,776.19	3,198,999.40	40.1321270	-104.7882910
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
800.00	800.00	9 5/8"	9.625	12.250	
7,798.07	7,405.00	7" (2179 FSL 960 FWL)	7.000	7.500	

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well AGGREGATE STATE 13C-16HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4905 & KB 17 @ 4922.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4905 & KB 17 @ 4922.00ft (ASSUMED)
Site:	AGGREGATE STATE 22-9HZ PAD	North Reference:	True
Well:	AGGREGATE STATE 13C-16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
750.00	750.00	Fox Hills Base			
4,067.82	4,027.00	Parkman			
4,426.27	4,380.00	Sussex			
7,123.47	7,050.00	Sharon Springs			
7,196.97	7,116.00	NBRR			
7,265.06	7,173.00	N470 B CK			
7,339.80	7,230.00	N700 C CK			
7,604.47	7,372.00	Fort Hays			
7,692.68	7,395.00	Codell			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,050.00	1,050.00	0.00	0.00	Start Build 2.00
1,550.21	1,547.68	19.56	-38.92	Start 4127.41 hold at 1550.21 MD
5,677.62	5,612.32	341.60	-679.55	Start Drop -2.00
6,177.83	6,110.00	361.16	-718.47	Start 722.04 hold at 6177.83 MD
6,899.87	6,832.04	361.16	-718.47	Start DLS 10.00 TFO 180.00
7,798.07	7,405.00	-210.00	-718.46	Start 7000.96 hold at 7798.07 MD
14,799.03	7,427.00	-7,210.92	-718.32	TD at 14799.03