



WMC 24-17 Pad  
WMC 312-20  
Q220998 & RM-220889  
Plan 2

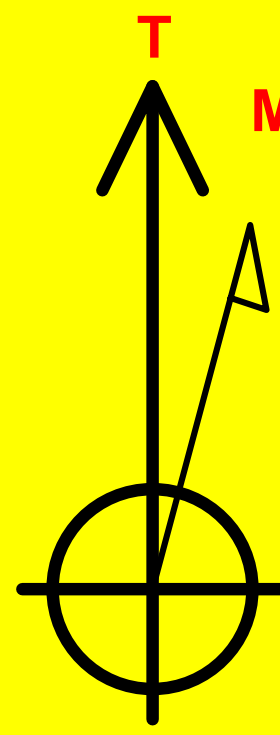
Company Name: Terra Energy Partners, LLP  
WMC 312-20  
Garfield County, CO (Nad 83)  
Rig: KB=30' @ 8898.00usft (H&P #329)  
Created by: Chase Chambers  
Date: 16:26, October 06 2022

PROJECT DETAILS: Garfield County, CO (Nad 83)

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Central Zone  
System Datum: Mean Sea Level







Azimuths to True North  
Magnetic North: 8.88°

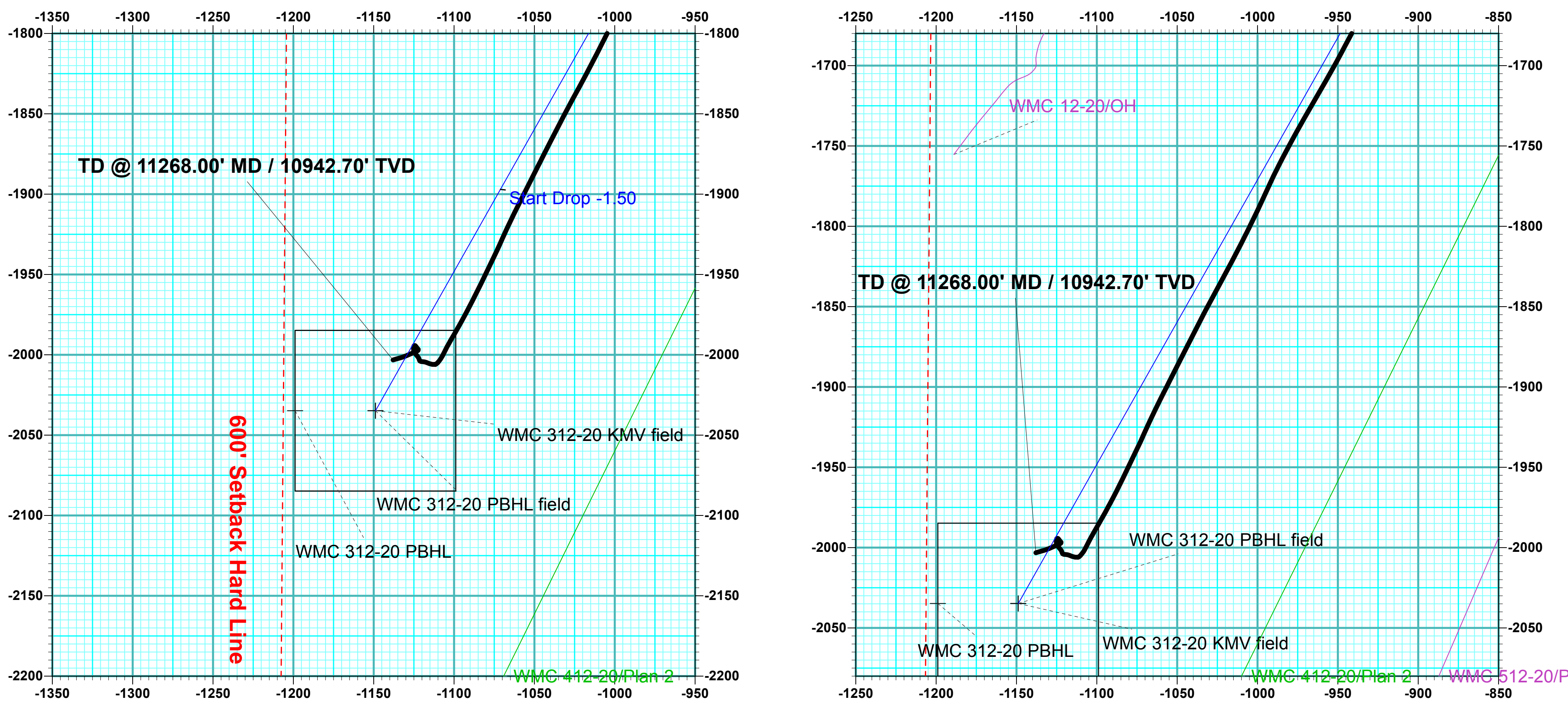
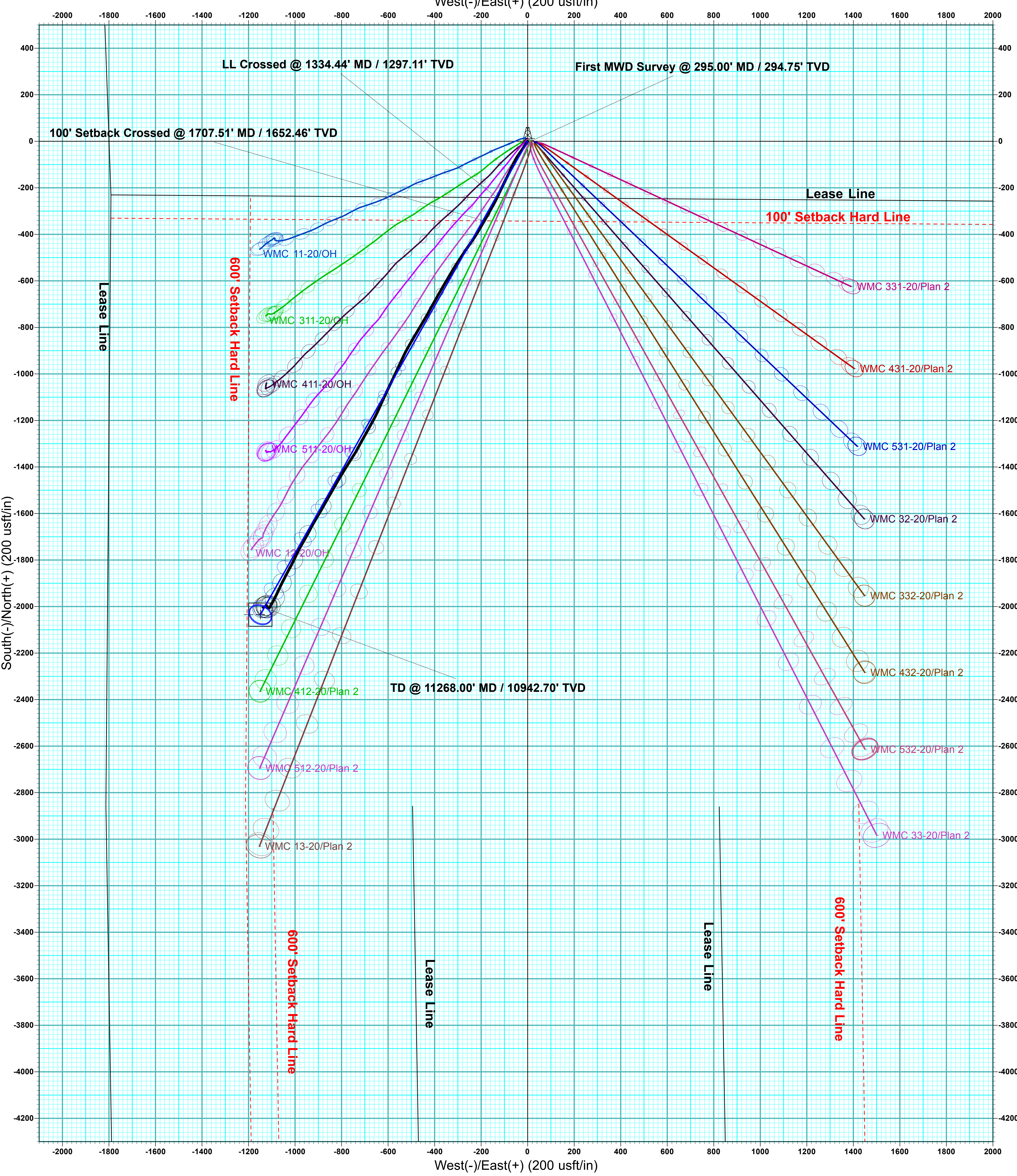
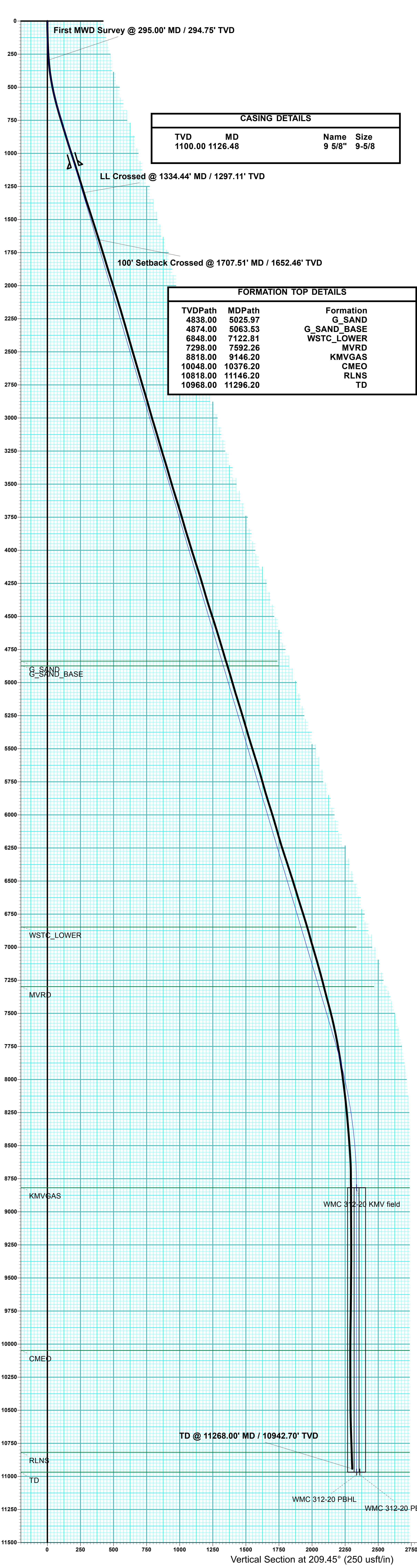
Magnetic Field  
Strength: 51049.8nT  
Dip Angle: 65.38°  
Date: 9/30/2022  
Model: HDGM2022

WELL DETAILS: WMC 312-20							
Ground Elevation:		8868.00					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	WMC 312-20	
0.00	0.00	1593027.00	2350607.10	39.439061	-107.799561		

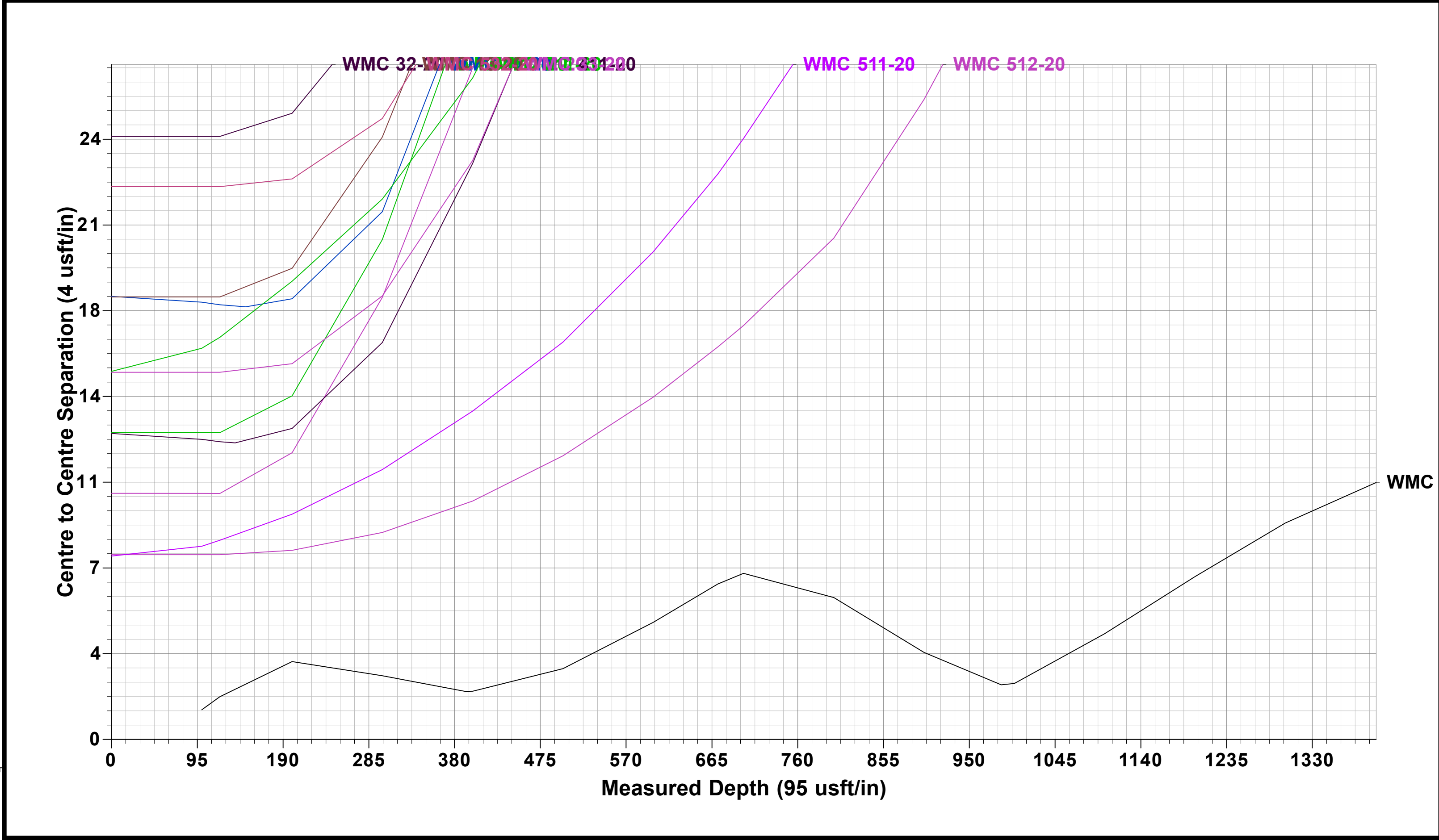
DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
WMC 312-20 KMV field	8818.00	-2034.80	-1148.88	1591021.93	2349407.09	39.433475	-107.803629
WMC 312-20 PBHL	10968.00	-2034.80	-1198.88	1591023.20	2349357.10	39.433475	-107.803806
WMC 312-20 PBHL field	10968.00	-2034.80	-1148.88	1591021.93	2349407.09	39.433475	-107.803629

DESIGN ANNOTATIONS							
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00
671.58	16.55	209.45	663.94	-68.88	-38.89	79.10	79.10
8043.04	16.55	209.45	7730.12	-1897.04	-1071.10	2178.54	2178.54
9146.20	0.00	0.00	8818.00	-2034.80	-1148.88	2336.73	2336.73
11296.20	0.00	0.00	10968.00	-2034.80	-1148.88	2336.73	2336.73
							Annotation
							Start Build 3.00
							Start 7371.47 hold at 671.58 MD
							Start Drop -1.50
							Start 2150.00 hold at 9146.20 MD
							TD at 11296.20

SLOTS				
Slot Name	+N/-S	+E/-W	Northing	Easting
WMC 11-20	14.74	-10.48	1593042.00	2350597.00
WMC 12-20	9.39	3.56	1593036.30	2350610.90
WMC 13-20	4.05	17.60	1593030.60	2350624.80
WMC 311-20	5.35	-14.04	1593032.70	2350593.20
WMC 312-20	0.00	0.00	1593027.00	2350607.10
WMC 32-20	1.42	24.57	1593027.80	2350631.70
WMC 331-20	-6.55	45.68	1593019.30	2350652.60
WMC 33-20	-5.25	14.04	1593021.40	2350621.00
WMC 332-20	-13.22	35.05	1593012.90	2350641.80
WMC 411-20	12.02	-3.41	1593039.10	2350604.00
WMC 412-20	6.77	10.53	1593033.50	2350617.80
WMC 431-20	-3.92	38.61	1593022.10	2350645.60
WMC 432-20	-10.59	28.08	1593015.70	2350634.90
WMC 511-20	2.72	-6.97	1593029.90	2350600.20
WMC 512-20	-2.62	7.07	1593024.20	2350614.10
WMC 531-20	-1.20	31.64	1593025.00	2350638.70
WMC 532-20	-7.97	21.11	1593018.50	2350628.00



ANNOTATIONS							
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure
295.00	4.09	215.34	294.75	-8.59	-6.09	10.47	10.52
1334.44	16.83	205.38	1297.11	-242.37	-131.55	275.72	276.40
1707.51	17.54	210.19	1652.46	-341.98	-186.11	389.28	390.00
11268.00	2.55	253.83	10942.70	-2003.19	-1137.90	2303.82	2339.05
							Annotation
							First MWD Survey @ 295.00' MD / 294.75' TVD
							LL Crossed @ 1334.44' MD / 1297.11' TVD
							100' Setback Crossed @ 1707.51' MD / 1652.46' TVD
							TD @ 11268.00' MD / 10942.70' TVD







## **Terra Energy Partners, LLP**

**Garfield County, CO (Nad 83)**

**WMC 24-17 Pad**

**WMC 312-20 - Slot WMC 312-20**

**OH**

**Design: OH**

## **KLX Survey Certification Report**

**06 October, 2022**



**KLX Directional Drilling, INC.**

11390 FM 830  
Willis, TX 77318  
Phone: (936) 856-4332  
Fax: (936) 856-8678

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**Survey Certification Sheet**

Company	Job Number	Date
TEP Rocky Mountain LLC	RM-220889	10/6/2022

Lease	Well Name	County & State
SESW 17 7S93W 6	Federal #WMC 312-20	Garfield, CO

API No.	Survey Depth Range	Survey Type
05-045-24486	295 feet to 11268 feet MD	MWD

Sidetrack Information	Directional Supervisor/Surveyor
<a href="#">Click here to enter text.</a>	Robert Cuevas

**Certification Statement**

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by KLX Directional Drilling. This report represents a true and correct directional survey of this well based on the original data obtained at the well site. Wellbore coordinates are calculated using minimum curvature.

Kristopher Ray  
Regulatory Compliance Manager  
KLX Directional Drilling, Inc.

<b>Company:</b>	Terra Energy Partners, LLP	<b>Local Co-ordinate Reference:</b>	Well WMC 312-20 - Slot WMC 312-20
<b>Project:</b>	Garfield County, CO (Nad 83)	<b>TVD Reference:</b>	KB=30' @ 8898.00usft (H&P #329)
<b>Site:</b>	WMC 24-17 Pad	<b>MD Reference:</b>	KB=30' @ 8898.00usft (H&P #329)
<b>Well:</b>	WMC 312-20	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b>	Garfield County, CO (Nad 83)		
<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 Central Zone		

Site		WMC 24-17 Pad			
Site Position:		Northing:	1,593,032.70 usft	Latitude:	39.439076
From:	Map	Easting:	2,350,593.20 usft	Longitude:	-107.799611
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence:	-1.45 °

Well		WMC 312-20 - Slot WMC 312-20				
Well Position	+N/-S	0.00 usft	Northing:	1,593,027.00 usft	Latitude:	39.439061
	+E/-W	0.00 usft	Easting:	2,350,607.10 usft	Longitude:	-107.799561
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	8,868.00 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM2022	9/30/2022	8.88	65.38	51,049.80000000

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<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	209.60	

<b>Survey Program</b>	<b>Date</b>	10/6/2022			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
295.00	11,268.00	KLX MWD Surveys (OH)	OWSG (REV5) MWD HDGM	OWSG MWD - Standard	

<b>Survey</b>								
<b>MD (usft)</b>	<b>Inc (°)</b>	<b>Azi (azimuth) (°)</b>	<b>TVD (usft)</b>	<b>N/S (usft)</b>	<b>E/W (usft)</b>	<b>Closure Distance (usft)</b>	<b>Closure Azimuth (°)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
295.00	4.09	215.34	294.75	-8.59	-6.09	10.52	215.34	
<b>First MWD Survey @ 295.00' MD / 294.75' TVD</b>								
388.00	7.51	211.73	387.26	-16.46	-11.20	19.91	214.24	
481.00	10.77	213.84	479.07	-28.85	-19.24	34.68	213.70	
574.00	13.45	214.72	569.99	-44.96	-30.24	54.19	213.93	
667.00	15.69	214.02	659.99	-64.28	-43.44	77.58	214.05	
760.00	17.09	206.28	749.22	-86.96	-56.53	103.72	213.03	
853.00	16.74	204.79	838.20	-111.37	-68.19	130.59	211.48	
947.00	17.62	205.32	928.00	-136.52	-79.96	158.21	210.36	
1,040.00	18.19	207.34	1,016.50	-162.14	-92.64	186.74	209.74	
1,083.00	17.97	206.72	1,057.38	-174.02	-98.71	200.07	209.56	

<b>Company:</b>	Terra Energy Partners, LLP	<b>Local Co-ordinate Reference:</b>	Well WMC 312-20 - Slot WMC 312-20
<b>Project:</b>	Garfield County, CO (Nad 83)	<b>TVD Reference:</b>	KB=30' @ 8898.00usft (H&P #329)
<b>Site:</b>	WMC 24-17 Pad	<b>MD Reference:</b>	KB=30' @ 8898.00usft (H&P #329)
<b>Well:</b>	WMC 312-20	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	
1,248.00	17.53	205.05	1,214.52	-219.27	-120.67	250.28	208.83	
1,339.00	16.79	205.40	1,301.47	-243.56	-132.11	277.08	208.48	
1,429.00	18.02	208.74	1,387.35	-267.51	-144.38	303.99	208.36	
1,519.00	18.02	209.53	1,472.94	-291.83	-157.94	331.83	208.42	
1,610.00	17.75	208.74	1,559.54	-316.24	-171.55	359.77	208.48	
1,700.00	17.58	210.15	1,645.30	-340.02	-184.97	387.08	208.55	
1,791.00	17.09	210.59	1,732.16	-363.41	-198.68	414.18	208.67	
1,881.00	16.61	210.24	1,818.30	-385.91	-211.88	440.25	208.77	
1,972.00	17.84	213.58	1,905.22	-408.76	-226.15	467.15	208.95	
2,062.00	17.53	214.46	1,990.96	-431.42	-241.44	494.39	209.23	
2,153.00	17.27	214.37	2,077.80	-453.87	-256.82	521.50	209.50	
2,243.00	16.74	213.31	2,163.86	-475.73	-271.48	547.74	209.71	
2,334.00	16.39	214.54	2,251.09	-497.26	-285.96	573.62	209.90	
2,424.00	16.04	212.52	2,337.51	-518.20	-299.84	598.70	210.05	
2,515.00	15.69	212.05	2,425.04	-539.23	-313.13	623.56	210.14	
2,605.00	16.66	210.76	2,511.48	-560.64	-326.19	648.62	210.19	
2,695.00	16.13	210.33	2,597.82	-582.51	-339.10	674.02	210.20	
2,786.00	15.95	210.94	2,685.28	-604.15	-351.91	699.17	210.22	
2,876.00	16.96	209.71	2,771.59	-626.16	-364.77	724.66	210.22	
2,967.00	16.30	210.24	2,858.78	-648.72	-377.78	750.70	210.21	
3,057.00	15.34	208.22	2,945.37	-670.12	-389.77	775.23	210.18	
3,147.00	17.05	210.41	3,031.80	-691.99	-402.08	800.32	210.16	
3,238.00	16.79	208.39	3,118.86	-715.06	-415.08	826.80	210.13	
3,328.00	16.00	208.30	3,205.20	-737.41	-427.14	852.19	210.08	
3,419.00	17.31	211.03	3,292.38	-760.06	-440.07	878.27	210.07	
3,509.00	16.61	210.94	3,378.47	-782.57	-453.59	904.52	210.10	
3,600.00	15.82	210.41	3,465.85	-804.42	-466.55	929.93	210.11	
3,690.00	17.31	210.33	3,552.11	-826.56	-479.52	955.58	210.12	
3,781.00	17.23	210.68	3,639.01	-849.83	-493.24	982.60	210.13	
3,871.00	16.66	209.80	3,725.10	-872.49	-506.45	1,008.83	210.13	
3,962.00	15.95	208.92	3,812.44	-894.76	-518.98	1,034.37	210.11	
4,052.00	17.45	206.02	3,898.64	-917.71	-530.88	1,060.20	210.05	
4,143.00	16.66	204.44	3,985.64	-941.85	-542.26	1,086.79	209.93	
4,233.00	18.15	205.14	4,071.52	-966.28	-553.56	1,113.61	209.81	
4,324.00	17.53	205.14	4,158.14	-991.52	-565.40	1,141.40	209.69	
4,414.00	16.79	205.05	4,244.13	-1,015.57	-576.66	1,167.87	209.59	
4,505.00	15.91	206.11	4,331.45	-1,038.67	-587.72	1,193.42	209.50	
4,595.00	17.75	205.40	4,417.59	-1,062.15	-599.03	1,219.42	209.42	
4,686.00	18.02	205.32	4,504.20	-1,087.40	-611.00	1,247.30	209.33	
4,776.00	17.45	204.17	4,589.92	-1,112.30	-622.48	1,274.63	209.23	
4,867.00	17.01	204.44	4,676.84	-1,136.86	-633.57	1,301.49	209.13	
4,958.00	16.26	204.35	4,764.03	-1,160.59	-644.33	1,327.45	209.04	
5,049.00	17.49	207.34	4,851.11	-1,184.34	-655.87	1,353.82	208.98	
5,139.00	16.70	209.09	4,937.13	-1,207.65	-668.37	1,380.27	208.96	

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<b>Project:</b>	Garfield County, CO (Nad 83)	<b>TVD Reference:</b>	KB=30' @ 8898.00usft (H&P #329)
<b>Site:</b>	WMC 24-17 Pad	<b>KD Reference:</b>	KB=30' @ 8898.00usft (H&P #329)
<b>Well:</b>	WMC 312-20	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	
5,230.00	15.82	208.48	5,024.49	-1,229.98	-680.64	1,405.75	208.96	
5,320.00	17.40	209.27	5,110.73	-1,252.51	-693.07	1,431.47	208.96	
5,411.00	17.23	209.45	5,197.61	-1,276.11	-706.35	1,458.56	208.97	
5,501.00	16.57	208.74	5,283.72	-1,298.97	-719.07	1,484.72	208.97	
5,592.00	15.78	207.86	5,371.12	-1,321.29	-731.09	1,510.07	208.96	
5,682.00	17.62	212.79	5,457.32	-1,343.56	-744.19	1,535.90	208.98	
5,772.00	17.67	211.91	5,543.09	-1,366.61	-758.79	1,563.13	209.04	
5,863.00	16.83	211.73	5,630.00	-1,389.54	-773.02	1,590.08	209.09	
5,953.00	16.17	212.35	5,716.29	-1,411.21	-786.57	1,615.61	209.13	
6,044.00	15.60	211.03	5,803.81	-1,432.40	-799.66	1,640.49	209.17	
6,134.00	17.58	210.24	5,890.06	-1,454.51	-812.75	1,666.18	209.20	
6,224.00	17.31	209.80	5,975.92	-1,477.87	-826.25	1,693.16	209.21	
6,315.00	16.39	209.71	6,063.02	-1,500.77	-839.34	1,719.53	209.22	
6,405.00	15.60	210.24	6,149.53	-1,522.25	-851.73	1,744.33	209.23	
6,496.00	17.45	209.36	6,236.77	-1,544.72	-864.58	1,770.21	209.24	
6,587.00	18.50	209.45	6,323.33	-1,569.18	-878.37	1,798.29	209.24	
6,677.00	17.89	210.33	6,408.83	-1,593.55	-892.37	1,826.39	209.25	
6,768.00	17.67	210.50	6,495.48	-1,617.51	-906.44	1,854.18	209.27	
6,858.00	16.52	210.24	6,581.50	-1,640.34	-919.81	1,880.63	209.28	
6,949.00	17.62	207.95	6,668.49	-1,663.68	-932.78	1,907.33	209.28	
7,039.00	17.67	207.78	6,754.26	-1,687.80	-945.54	1,934.61	209.26	
7,130.00	16.48	210.06	6,841.25	-1,711.19	-958.44	1,961.32	209.25	
7,220.00	15.34	209.80	6,927.80	-1,732.57	-970.75	1,985.99	209.26	
7,311.00	16.52	207.86	7,015.30	-1,754.46	-982.78	2,010.96	209.26	
7,401.00	16.13	204.44	7,101.68	-1,777.15	-993.93	2,036.21	209.22	
7,492.00	15.47	206.28	7,189.24	-1,799.54	-1,004.53	2,060.93	209.17	
7,582.00	14.02	207.69	7,276.27	-1,819.96	-1,014.91	2,083.82	209.15	
7,672.00	15.20	208.66	7,363.36	-1,839.96	-1,025.64	2,106.51	209.14	
7,763.00	14.72	207.07	7,451.28	-1,860.73	-1,036.62	2,130.00	209.12	
7,854.00	13.54	206.81	7,539.52	-1,880.53	-1,046.69	2,152.20	209.10	
7,944.00	12.13	206.99	7,627.27	-1,898.36	-1,055.73	2,172.17	209.08	
8,035.00	10.50	205.93	7,716.50	-1,914.34	-1,063.70	2,190.01	209.06	
8,125.00	9.54	203.91	7,805.12	-1,928.53	-1,070.31	2,205.63	209.03	
8,216.00	8.31	206.11	7,895.02	-1,941.33	-1,076.26	2,219.71	209.00	
8,306.00	7.47	205.32	7,984.17	-1,952.46	-1,081.62	2,232.04	208.99	
8,397.00	7.16	206.90	8,074.43	-1,962.86	-1,086.72	2,243.61	208.97	
8,487.00	6.24	207.86	8,163.81	-1,972.19	-1,091.54	2,254.11	208.96	
8,578.00	5.36	209.71	8,254.35	-1,980.25	-1,095.96	2,263.30	208.96	
8,669.00	4.83	209.80	8,344.99	-1,987.27	-1,099.97	2,271.38	208.96	
8,759.00	4.26	208.66	8,434.70	-1,993.49	-1,103.46	2,278.51	208.97	
8,849.00	4.04	206.37	8,524.47	-1,999.27	-1,106.47	2,285.02	208.96	
8,940.00	2.99	218.85	8,615.30	-2,003.99	-1,109.38	2,290.56	208.97	
9,030.00	1.14	260.42	8,705.24	-2,005.96	-1,111.74	2,293.43	209.00	
9,121.00	1.14	280.99	8,796.22	-2,005.94	-1,113.52	2,294.28	209.04	
9,211.00	1.36	288.20	8,886.20	-2,005.44	-1,115.41	2,294.76	209.08	

<b>Company:</b>	Terra Energy Partners, LLP	<b>Local Co-ordinate Reference:</b>	Well WMC 312-20 - Slot WMC 312-20
<b>Project:</b>	Garfield County, CO (Nad 83)	<b>TVD Reference:</b>	KB=30' @ 8898.00usft (H&P #329)
<b>Site:</b>	WMC 24-17 Pad	<b>MD Reference:</b>	KB=30' @ 8898.00usft (H&P #329)
<b>Well:</b>	WMC 312-20	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	
9,302.00	0.79	296.72	8,977.18	-2,004.82	-1,117.00	2,294.99	209.12	
9,392.00	0.74	283.27	9,067.17	-2,004.41	-1,118.12	2,295.17	209.15	
9,483.00	0.79	270.09	9,158.17	-2,004.27	-1,119.32	2,295.64	209.18	
9,573.00	0.70	278.88	9,248.16	-2,004.18	-1,120.48	2,296.13	209.21	
9,664.00	0.48	315.09	9,339.15	-2,003.83	-1,121.30	2,296.22	209.23	
9,754.00	0.70	354.20	9,429.15	-2,003.01	-1,121.62	2,295.67	209.25	
9,845.00	0.79	328.98	9,520.14	-2,001.92	-1,122.00	2,294.90	209.27	
9,935.00	1.23	317.82	9,610.13	-2,000.68	-1,122.97	2,294.29	209.31	
10,026.00	1.54	323.97	9,701.10	-1,998.96	-1,124.34	2,293.47	209.36	
10,116.00	1.10	354.03	9,791.08	-1,997.13	-1,125.14	2,292.26	209.40	
10,207.00	1.10	1.41	9,882.06	-1,995.38	-1,125.21	2,290.78	209.42	
10,298.00	0.53	66.71	9,973.05	-1,994.34	-1,124.80	2,289.67	209.42	
10,389.00	0.26	98.88	10,064.05	-1,994.21	-1,124.21	2,289.26	209.41	
10,479.00	0.26	172.97	10,154.05	-1,994.44	-1,123.99	2,289.36	209.40	
10,570.00	0.48	130.96	10,245.05	-1,994.90	-1,123.67	2,289.60	209.39	
10,660.00	0.70	144.67	10,335.04	-1,995.59	-1,123.07	2,289.91	209.37	
10,751.00	0.75	138.43	10,426.04	-1,996.49	-1,122.35	2,290.34	209.34	
10,841.00	0.79	233.44	10,516.03	-1,997.30	-1,122.46	2,291.10	209.34	
10,932.00	2.29	246.80	10,607.00	-1,998.39	-1,124.64	2,293.12	209.37	
11,022.00	2.29	245.75	10,696.92	-1,999.84	-1,127.93	2,295.99	209.42	
11,113.00	2.42	251.02	10,787.85	-2,001.21	-1,131.40	2,298.90	209.48	
11,203.00	2.55	253.83	10,877.76	-2,002.39	-1,135.12	2,301.75	209.55	
11,268.00	2.55	253.83	10,942.70	-2,003.19	-1,137.90	2,303.82	209.60	
TD @ 11268.00' MD / 10942.70' TVD								

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
295.00	294.75	-8.59	-6.09	First MWD Survey @ 295.00' MD / 294.75' TVD
11,268.00	10,942.70	-2,003.19	-1,137.90	TD @ 11268.00' MD / 10942.70' TVD