

EXTRACTION OIL & GAS

Location: COLORADO Slot: SLOT#08 RANCHO WATER VALLEY 12(587FNL & 267FEL,SEC.04)
Field: WELD COUNTY (NAD83/TRUE NORTH) Well: RANCHO WATER VALLEY 12
Facility: SEC.04-T05N-R67W Wellbore: RANCHO WATER VALLEY 12 PWB

Plot reference wellpath is RANCHO WATER VALLEY 12 (REV-B.0) PWP

True vertical depths are referenced to RIG (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to RIG (RKB)	North Reference: True north
RIG (RKB) to Mean Sea Level: 4799 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#08 RANCHO WATER VALLEY 12(587FNL & 267FEL,SEC.04)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painisetr on 7/31/2014

Location Information

Facility Name				Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.04-T05N-R67W				3170424.561	1402077.673	40°26'07.764"N	104°53'15.936"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
SLOT#08 RANCHO WATER VALLEY 12(587FNL & 267FEL,SEC.04)	-369.41	-75.72	3170351.397	1401707.760	40°26'04.114"N	104°53'16.915"W	
RIG (RKB) to Mud line (At Slot: SLOT#08 RANCHO WATER VALLEY 12(587FNL & 267FEL,SEC.04))						4799ft	
Mean Sea Level to Mud line (At Slot: SLOT#08 RANCHO WATER VALLEY 12(587FNL & 267FEL,SEC.04))						0ft	
RIG (RKB) to Mean Sea Level						4799ft	

Targets

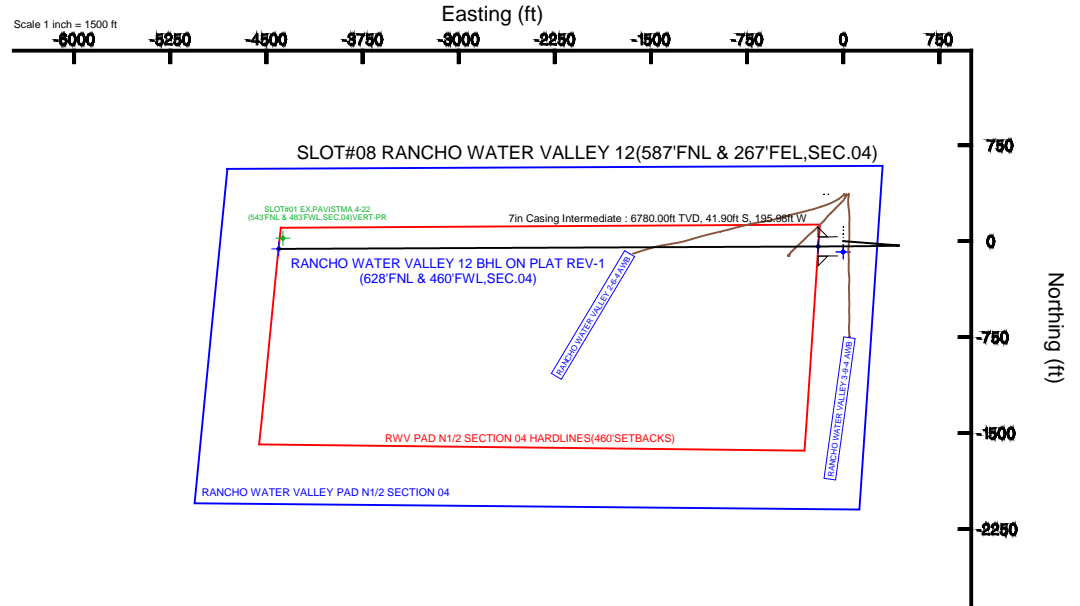
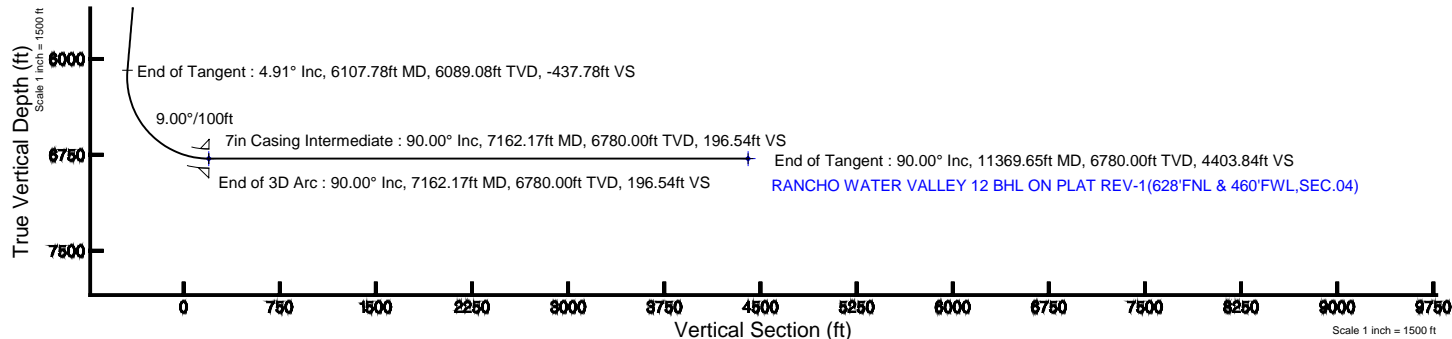
Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
RANCHO WATER VALLEY PAD N1/2 SECTION 04		0.00	-84.16	-0.56	3170351.42	1401623.60	40°26'03.282"N	104°53'16.922"W
RANCHO WATER VALLEY 12 BHL ON PLAT REV-1(628FNL & 460FWL,SEC.04)	11369.65	6780.00	-60.81	-4403.42	3169948.67	1401616.56	40°26'03.500"N	104°54'13.860"W
RANCHO WATER VALLEY 12 LANDING	7162.17	6780.00	-41.90	-195.98	3170155.72	1401664.51	40°26'03.700"N	104°53'19.460"W
RWV PAD N1/2 SECTION 04 HARDLINES(460'SETBACKS)		6780.00	-84.16	-0.56	3170351.42	1401623.60	40°26'03.282"N	104°53'16.922"W

Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
24.00	13000.00	NaviTrak	NaviTrak (Standard)		RANCHO WATER VALLEY 12 PWB

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	24.00	0.000	94.457	24.00	0.00	0.00	0.00	0.00
End of Tangent	850.00	0.000	94.457	850.00	0.00	0.00	0.00	0.00
End of Build	1095.56	4.911	94.457	1095.26	-0.82	10.49	2.00	-10.47
End of Tangent	6107.78	4.911	94.457	6089.08	-34.16	438.29	0.00	-437.78
End of 3D Arc	7162.17	90.000	269.742	6780.00	-41.90	-195.98	9.00	196.54
End of Tangent	11369.65	90.000	269.742	6780.00	-60.81	-4403.42	0.00	4403.84



BGGM (1945.0 to 2016.0) Dip: 66.95° Field: 52759.7 nT
Magnetic North is 8.61 degrees East of True North (at 7/2/2014)

To correct azimuth from Magnetic to True add 8.61 degrees



Planned Wellpath Report

RANCHO WATER VALLEY 12 (REV-B.0) PWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	EXTRACTION OIL & GAS	Slot	SLOT#08 RANCHO WATER VALLEY 12(587'FNL & 267'FEL,SEC.04)
Area	COLORADO	Well	RANCHO WATER VALLEY 12
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	RANCHO WATER VALLEY 12 PWB
Facility	SEC.04-T05N-R67W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.0.0
North Reference	True	User	Painsetr
Scale	0.999962	Report Generated	7/31/2014 at 9:49:19 AM
Convergence at slot	n/a	Database/Source file	WA_Denver/RANCHO_WATER_VALLEY_12_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-369.41	-75.72	3170351.40	1401707.76	40°26'04.114"N	104°53'16.915"W
Facility Reference Pt			3170424.56	1402077.67	40°26'07.764"N	104°53'15.936"W
Field Reference Pt			3185481.27	1419166.81	40°28'55.560"N	104°49'59.556"W

WELLPATH DATUM			
Calculation method	Minimum curvature	RIG (RKB) to Facility Vertical Datum	4799.00ft
Horizontal Reference Pt	Slot	RIG (RKB) to Mean Sea Level	4799.00ft
Vertical Reference Pt	RIG (RKB)	RIG (RKB) to Mud Line at Slot (SLOT#08 RANCHO WATER VALLEY 12(587'FNL & 267'FEL,SEC.04))	4799.00ft
MD Reference Pt	RIG (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	269.21°



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Area	COLORADO	Well	RANCHO WATER VALLEY 12
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	RANCHO WATER VALLEY 12 PWB
Facility	SEC.04-T05N-R67W		

WELLPATH DATA (120 stations) † = interpolated/extrapolated station								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00†	0.000	94.457	0.00	0.00	0.00	0.00	0.00	
24.00	0.000	94.457	24.00	0.00	0.00	0.00	0.00	Tie On
124.00†	0.000	94.457	124.00	0.00	0.00	0.00	0.00	
224.00†	0.000	94.457	224.00	0.00	0.00	0.00	0.00	
324.00†	0.000	94.457	324.00	0.00	0.00	0.00	0.00	
424.00†	0.000	94.457	424.00	0.00	0.00	0.00	0.00	
524.00†	0.000	94.457	524.00	0.00	0.00	0.00	0.00	
624.00†	0.000	94.457	624.00	0.00	0.00	0.00	0.00	
724.00†	0.000	94.457	724.00	0.00	0.00	0.00	0.00	
824.00†	0.000	94.457	824.00	0.00	0.00	0.00	0.00	
850.00	0.000	94.457	850.00	0.00	0.00	0.00	0.00	End of Tangent
924.00†	1.480	94.457	923.99	-0.95	-0.07	0.95	2.00	
1024.00†	3.480	94.457	1023.89	-5.26	-0.41	5.27	2.00	
1095.56	4.911	94.457	1095.26	-10.47	-0.82	10.49	2.00	End of Build
1124.00†	4.911	94.457	1123.59	-12.90	-1.01	12.91	0.00	
1224.00†	4.911	94.457	1223.23	-21.42	-1.67	21.45	0.00	
1324.00†	4.911	94.457	1322.86	-29.95	-2.34	29.98	0.00	
1424.00†	4.911	94.457	1422.49	-38.47	-3.00	38.52	0.00	
1524.00†	4.911	94.457	1522.13	-47.00	-3.67	47.05	0.00	
1624.00†	4.911	94.457	1621.76	-55.52	-4.33	55.59	0.00	
1724.00†	4.911	94.457	1721.39	-64.05	-5.00	64.12	0.00	
1824.00†	4.911	94.457	1821.03	-72.57	-5.66	72.66	0.00	
1924.00†	4.911	94.457	1920.66	-81.10	-6.33	81.20	0.00	
2024.00†	4.911	94.457	2020.29	-89.63	-6.99	89.73	0.00	
2124.00†	4.911	94.457	2119.92	-98.15	-7.66	98.27	0.00	
2224.00†	4.911	94.457	2219.56	-106.68	-8.32	106.80	0.00	
2324.00†	4.911	94.457	2319.19	-115.20	-8.99	115.34	0.00	
2424.00†	4.911	94.457	2418.82	-123.73	-9.66	123.87	0.00	
2524.00†	4.911	94.457	2518.46	-132.25	-10.32	132.41	0.00	
2624.00†	4.911	94.457	2618.09	-140.78	-10.99	140.94	0.00	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	EXTRACTION OIL & GAS	Slot	SLOT#08 RANCHO WATER VALLEY 12(587'FNL & 267'FEL,SEC.04)
Area	COLORADO	Well	RANCHO WATER VALLEY 12
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	RANCHO WATER VALLEY 12 PWB
Facility	SEC.04-T05N-R67W		

WELLPATH DATA (120 stations) † = interpolated/extrapolated station								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
2724.00†	4.911	94.457	2717.72	-149.30	-11.65	149.48	0.00	
2824.00†	4.911	94.457	2817.35	-157.83	-12.32	158.01	0.00	
2924.00†	4.911	94.457	2916.99	-166.35	-12.98	166.55	0.00	
3024.00†	4.911	94.457	3016.62	-174.88	-13.65	175.08	0.00	
3124.00†	4.911	94.457	3116.25	-183.40	-14.31	183.62	0.00	
3224.00†	4.911	94.457	3215.89	-191.93	-14.98	192.15	0.00	
3324.00†	4.911	94.457	3315.52	-200.45	-15.64	200.69	0.00	
3424.00†	4.911	94.457	3415.15	-208.98	-16.31	209.22	0.00	
3524.00†	4.911	94.457	3514.78	-217.50	-16.97	217.76	0.00	
3624.00†	4.911	94.457	3614.42	-226.03	-17.64	226.29	0.00	
3724.00†	4.911	94.457	3714.05	-234.55	-18.30	234.83	0.00	
3824.00†	4.911	94.457	3813.68	-243.08	-18.97	243.36	0.00	
3924.00†	4.911	94.457	3913.32	-251.60	-19.64	251.90	0.00	
4024.00†	4.911	94.457	4012.95	-260.13	-20.30	260.43	0.00	
4124.00†	4.911	94.457	4112.58	-268.65	-20.97	268.97	0.00	
4224.00†	4.911	94.457	4212.21	-277.18	-21.63	277.51	0.00	
4324.00†	4.911	94.457	4311.85	-285.71	-22.30	286.04	0.00	
4424.00†	4.911	94.457	4411.48	-294.23	-22.96	294.58	0.00	
4524.00†	4.911	94.457	4511.11	-302.76	-23.63	303.11	0.00	
4624.00†	4.911	94.457	4610.75	-311.28	-24.29	311.65	0.00	
4724.00†	4.911	94.457	4710.38	-319.81	-24.96	320.18	0.00	
4824.00†	4.911	94.457	4810.01	-328.33	-25.62	328.72	0.00	
4924.00†	4.911	94.457	4909.64	-336.86	-26.29	337.25	0.00	
5024.00†	4.911	94.457	5009.28	-345.38	-26.95	345.79	0.00	
5124.00†	4.911	94.457	5108.91	-353.91	-27.62	354.32	0.00	
5224.00†	4.911	94.457	5208.54	-362.43	-28.28	362.86	0.00	
5324.00†	4.911	94.457	5308.18	-370.96	-28.95	371.39	0.00	
5424.00†	4.911	94.457	5407.81	-379.48	-29.61	379.93	0.00	
5524.00†	4.911	94.457	5507.44	-388.01	-30.28	388.46	0.00	
5624.00†	4.911	94.457	5607.07	-396.53	-30.95	397.00	0.00	



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REFERENCE WELLPATH IDENTIFICATION			
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Area	COLORADO	Well	RANCHO WATER VALLEY 12
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	RANCHO WATER VALLEY 12 PWB
Facility	SEC.04-T05N-R67W		

WELLPATH DATA (120 stations) † = interpolated/extrapolated station								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
5724.00†	4.911	94.457	5706.71	-405.06	-31.61	405.53	0.00	
5824.00†	4.911	94.457	5806.34	-413.58	-32.28	414.07	0.00	
5924.00†	4.911	94.457	5905.97	-422.11	-32.94	422.60	0.00	
6024.00†	4.911	94.457	6005.61	-430.63	-33.61	431.14	0.00	
6107.78	4.911	94.457	6089.08	-437.78	-34.16	438.29	0.00	End of Tangent
6124.00†	3.459	96.453	6105.25	-438.95	-34.27	439.47	9.00	
6224.00†	5.580	265.597	6205.13	-437.09	-34.99	437.61	9.00	
6324.00†	14.571	268.185	6303.49	-419.63	-35.76	420.16	9.00	
6424.00†	23.568	268.815	6397.90	-386.99	-36.57	387.53	9.00	
6524.00†	32.567	269.109	6486.05	-339.99	-37.41	340.54	9.00	
6624.00†	41.567	269.286	6565.76	-279.77	-38.24	280.33	9.00	
6724.00†	50.566	269.410	6635.07	-207.83	-39.05	208.39	9.00	
6824.00†	59.566	269.505	6692.28	-125.94	-39.83	126.50	9.00	
6924.00†	68.566	269.584	6735.97	-36.10	-40.54	36.67	9.00	
7024.00†	77.565	269.653	6765.07	59.46	-41.17	-58.90	9.00	
7124.00†	86.565	269.718	6778.86	158.40	-41.72	-157.84	9.00	
7162.17	90.000	269.742	6780.00 ¹	196.54	-41.90	-195.98	9.00	End of 3D Arc
7224.00†	90.000	269.742	6780.00	258.37	-42.17	-257.81	0.00	
7324.00†	90.000	269.742	6780.00	358.37	-42.62	-357.81	0.00	
7424.00†	90.000	269.742	6780.00	458.36	-43.07	-457.81	0.00	
7524.00†	90.000	269.742	6780.00	558.36	-43.52	-557.81	0.00	
7624.00†	90.000	269.742	6780.00	658.35	-43.97	-657.81	0.00	
7724.00†	90.000	269.742	6780.00	758.35	-44.42	-757.81	0.00	
7824.00†	90.000	269.742	6780.00	858.35	-44.87	-857.81	0.00	
7924.00†	90.000	269.742	6780.00	958.34	-45.32	-957.81	0.00	
8024.00†	90.000	269.742	6780.00	1058.34	-45.77	-1057.81	0.00	
8124.00†	90.000	269.742	6780.00	1158.33	-46.22	-1157.80	0.00	
8224.00†	90.000	269.742	6780.00	1258.33	-46.67	-1257.80	0.00	
8324.00†	90.000	269.742	6780.00	1358.32	-47.12	-1357.80	0.00	
8424.00†	90.000	269.742	6780.00	1458.32	-47.57	-1457.80	0.00	



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REFERENCE WELLPATH IDENTIFICATION			
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Area	COLORADO	Well	RANCHO WATER VALLEY 12
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	RANCHO WATER VALLEY 12 PWB
Facility	SEC.04-T05N-R67W		

WELLPATH DATA (120 stations) † = interpolated/extrapolated station								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
8524.00†	90.000	269.742	6780.00	1558.31	-48.02	-1557.80	0.00	
8624.00†	90.000	269.742	6780.00	1658.31	-48.47	-1657.80	0.00	
8724.00†	90.000	269.742	6780.00	1758.31	-48.92	-1757.80	0.00	
8824.00†	90.000	269.742	6780.00	1858.30	-49.37	-1857.80	0.00	
8924.00†	90.000	269.742	6780.00	1958.30	-49.82	-1957.80	0.00	
9024.00†	90.000	269.742	6780.00	2058.29	-50.27	-2057.80	0.00	
9124.00†	90.000	269.742	6780.00	2158.29	-50.72	-2157.79	0.00	
9224.00†	90.000	269.742	6780.00	2258.28	-51.17	-2257.79	0.00	
9324.00†	90.000	269.742	6780.00	2358.28	-51.61	-2357.79	0.00	
9424.00†	90.000	269.742	6780.00	2458.28	-52.06	-2457.79	0.00	
9524.00†	90.000	269.742	6780.00	2558.27	-52.51	-2557.79	0.00	
9624.00†	90.000	269.742	6780.00	2658.27	-52.96	-2657.79	0.00	
9724.00†	90.000	269.742	6780.00	2758.26	-53.41	-2757.79	0.00	
9824.00†	90.000	269.742	6780.00	2858.26	-53.86	-2857.79	0.00	
9924.00†	90.000	269.742	6780.00	2958.25	-54.31	-2957.79	0.00	
10024.00†	90.000	269.742	6780.00	3058.25	-54.76	-3057.78	0.00	
10124.00†	90.000	269.742	6780.00	3158.25	-55.21	-3157.78	0.00	
10224.00†	90.000	269.742	6780.00	3258.24	-55.66	-3257.78	0.00	
10324.00†	90.000	269.742	6780.00	3358.24	-56.11	-3357.78	0.00	
10424.00†	90.000	269.742	6780.00	3458.23	-56.56	-3457.78	0.00	
10524.00†	90.000	269.742	6780.00	3558.23	-57.01	-3557.78	0.00	
10624.00†	90.000	269.742	6780.00	3658.22	-57.46	-3657.78	0.00	
10724.00†	90.000	269.742	6780.00	3758.22	-57.91	-3757.78	0.00	
10824.00†	90.000	269.742	6780.00	3858.21	-58.36	-3857.78	0.00	
10924.00†	90.000	269.742	6780.00	3958.21	-58.81	-3957.78	0.00	
11024.00†	90.000	269.742	6780.00	4058.21	-59.26	-4057.77	0.00	
11124.00†	90.000	269.742	6780.00	4158.20	-59.71	-4157.77	0.00	
11224.00†	90.000	269.742	6780.00	4258.20	-60.16	-4257.77	0.00	
11324.00†	90.000	269.742	6780.00	4358.19	-60.61	-4357.77	0.00	
11369.65	90.000	269.742	6780.00 ²	4403.84	-60.81	-4403.42	0.00	End of Tangent



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	EXTRACTION OIL & GAS	Slot	SLOT#08 RANCHO WATER VALLEY 12(587'FNL & 267'FEL,SEC.04)
Area	COLORADO	Well	RANCHO WATER VALLEY 12
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	RANCHO WATER VALLEY 12 PWB
Facility	SEC.04-T05N-R67W		

HOLE & CASING SECTIONS -

Ref Wellbore: RANCHO WATER VALLEY 12 PWB Ref Wellpath: RANCHO WATER VALLEY 12 (REV-B.0) PWP

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
7in Casing Intermediate	24.00	7162.17	7138.17	24.00	6780.00	0.00	0.00	-41.90	-195.98

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
RANCHO WATER VALLEY PAD N1/2 SECTION 04		0.00	-84.16	-0.56	3170351.42	1401623.60	40°26'03.282"N	104°53'16.922"W	polygon
2) RANCHO WATER VALLEY 12 BHL ON PLAT REV-1(628'FNL & 460'FWL,SEC.04)	11369.65	6780.00	-60.81	-4403.42	3165948.67	1401616.56	40°26'03.509"N	104°54'13.860"W	point
1) RANCHO WATER VALLEY 12 LANDING	7162.17	6780.00	-41.90	-195.98	3170155.72	1401664.51	40°26'03.700"N	104°53'19.450"W	point
RWV PAD N1/2 SECTION 04 HARDLINES(460'SETBACKS)		6780.00	-84.16	-0.56	3170351.42	1401623.60	40°26'03.282"N	104°53'16.922"W	polygon

SURVEY PROGRAM - Ref Wellbore: RANCHO WATER VALLEY 12 PWB Ref Wellpath: RANCHO WATER VALLEY 12 (REV-B.0) PWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.00	13000.00	NaviTrak (Standard)		RANCHO WATER VALLEY 12 PWB