



**Scientific
Drilling**

Survey Certification

7327 West Barton Road
Casper, WY 82604
(307)-472-6621 Fax (307) 472-5439

Operator	<u>KP Kauffman Co, Inc.</u>
Well Name & No.	<u>David Howard B-5</u>
County & State	<u>Weld County, CO</u>
SDI Job No.	<u>411113K81091</u>
Rig	<u>Ground Level</u>
Survey Date	<u>11-Nov-2013</u>

I, Steven F. Gottschalk, having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 0 feet to a measured depth of 4888.07 feet is true and correct as determined from all available records.

Signature

7-Jan-2014

Date

Steven F. Gottschalk

Rockies Region Well Planner
Scientific Drilling - Rocky Mountain District

KP Kauffman Co, Inc.

Weld County, CO

David Howard

David Howard B-5

OH

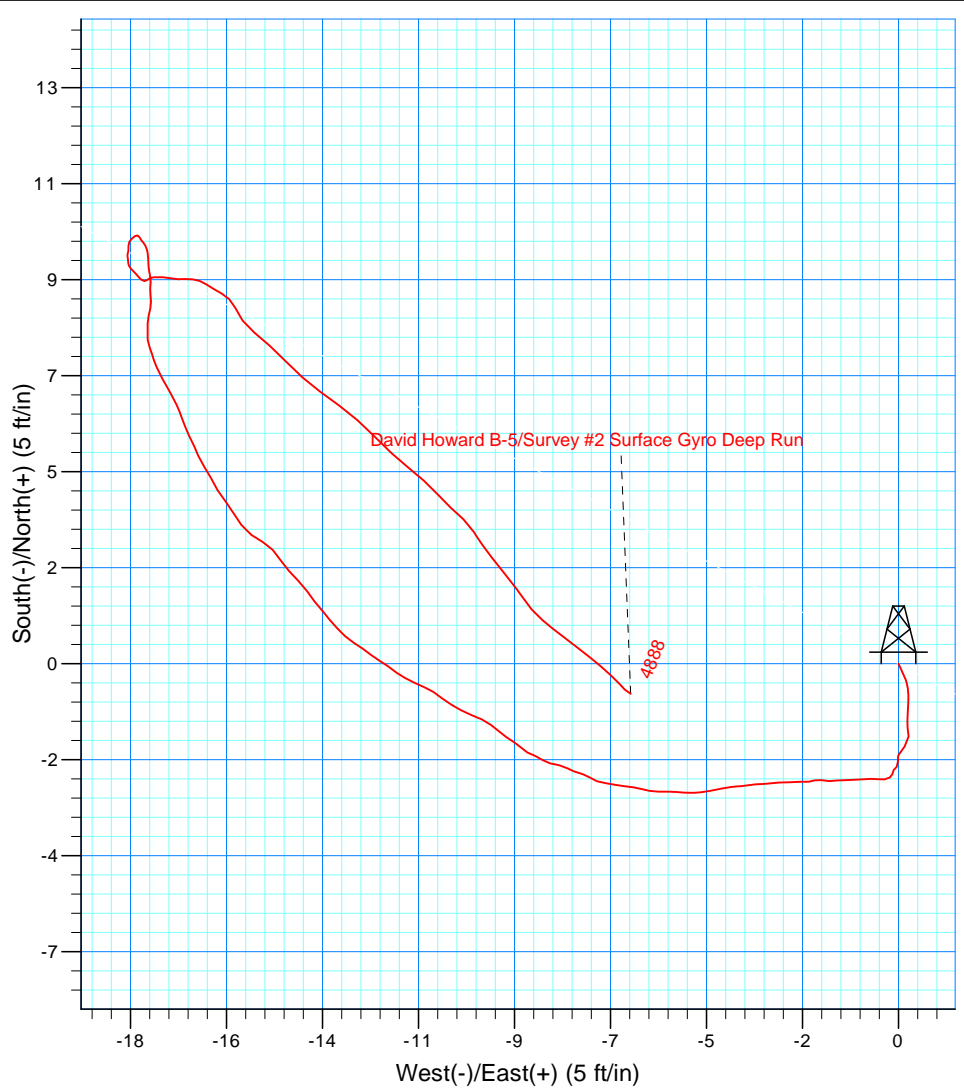
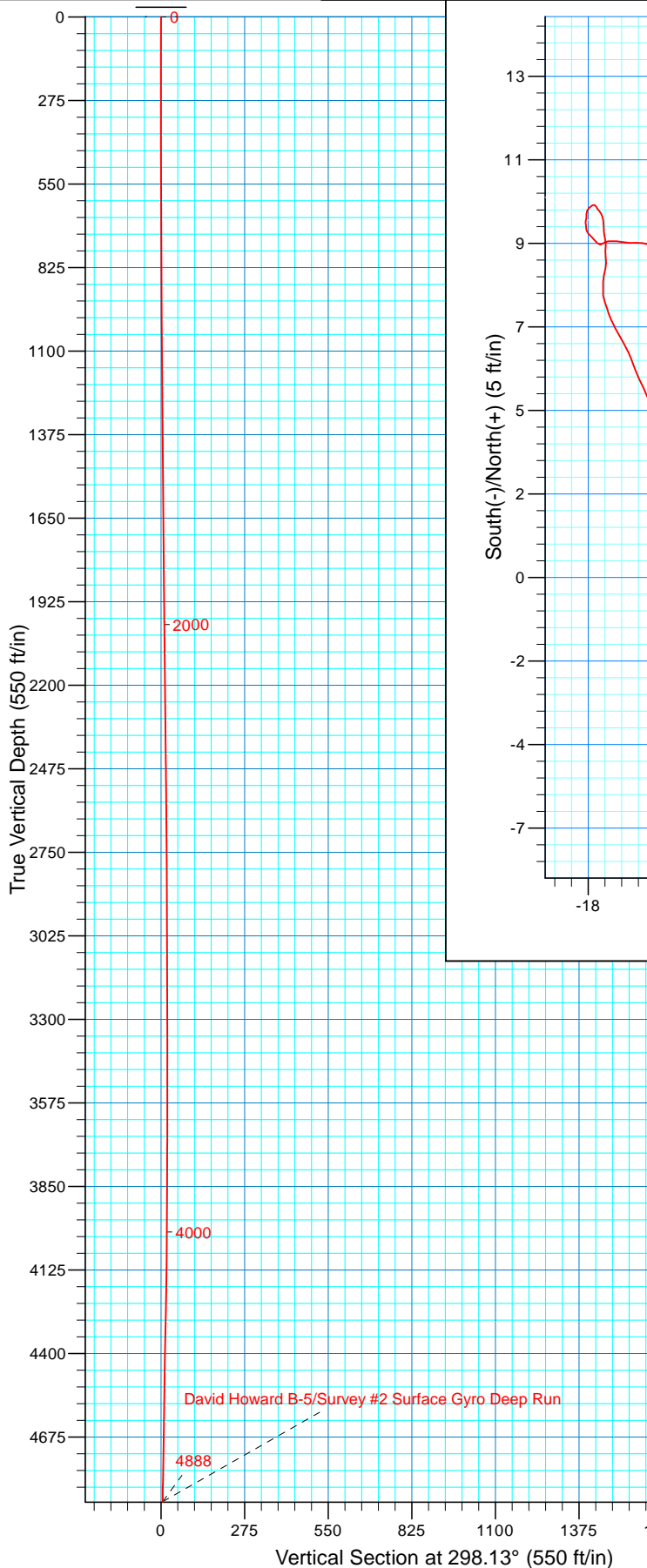
Design: OH

Standard Survey Report

07 January, 2014



Project: Weld County, CO
Site: David Howard
Well: David Howard B-5
Wellbore: OH
Design: OH



WELL DETAILS: David Howard B-5

Ground Level:	5021.00
Northing	1249478.34
Easting	3169987.52
Latitude	40° 0' 59.788 N
Longitude	104° 53' 35.095 W

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well David Howard B-5, True North
Vertical (TVD) Reference: GL 5021' @ 5021.00ft (Halliburton 1668)
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: GL 5021' @ 5021.00ft (Halliburton 1668)
Calculation Method: Minimum Curvature
Local North: True
Location:

PROJECT DETAILS: Weld County, CO

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

Design: OH (David Howard B-5/OH)

Created By: Steve Gottschalk
17:17, January 07 2014

Scientific Drilling International

Survey Report

Company:	KP Kauffman Co, Inc.	Local Co-ordinate Reference:	Well David Howard B-5
Project:	Weld County, CO	TVD Reference:	GL 5021' @ 5021.00ft (Halliburton 1668)
Site:	David Howard	MD Reference:	GL 5021' @ 5021.00ft (Halliburton 1668)
Well:	David Howard B-5	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Project	Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		David Howard					
Site Position:		Northing:	1,249,478.35	usft	Latitude:	40° 0' 59.788 N	
From:	Lat/Long	Easting:	3,169,987.52	usft	Longitude:	104° 53' 35.095 W	
Position Uncertainty:	0.00	ft	Slot Radius:	13.200	in	Grid Convergence:	0.39 °

Well	David Howard B-5, 1355' FSL, 1355, FEL, SEC 28 T1N R67W					
Well Position	+N/-S	0.00 ft	Northing:	1,249,478.34 usft	Latitude:	40° 0' 59.788 N
	+E/-W	0.00 ft	Easting:	3,169,987.52 usft	Longitude:	104° 53' 35.095 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,021.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	11/4/2013	8.62	66.63	52,588

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	298.13	

Survey Program	Date	1/7/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
101.70	4,888.07	Survey #2 Surface Gyro Deep Run (OH)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
101.70	0.45	156.19	101.70	-0.37	0.16	-0.31	0.44	0.44	0.00
First SDI Gyro Survey									
124.90	0.44	171.71	124.90	-0.54	0.21	-0.44	0.52	-0.04	66.90
149.31	0.45	178.55	149.31	-0.73	0.23	-0.54	0.22	0.04	28.02
174.65	0.45	180.77	174.65	-0.92	0.23	-0.64	0.07	0.00	8.76
199.87	0.52	186.76	199.87	-1.14	0.21	-0.72	0.34	0.28	23.75
223.95	0.46	176.00	223.94	-1.34	0.21	-0.82	0.46	-0.25	-44.68
249.30	0.43	179.19	249.29	-1.54	0.22	-0.92	0.15	-0.12	12.58
274.44	0.33	166.85	274.43	-1.70	0.23	-1.01	0.51	-0.40	-49.09
299.13	0.93	213.69	299.12	-1.94	0.14	-1.04	3.01	2.43	189.71

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Site:	David Howard	MD Reference:	GL 5021' @ 5021.00ft (Halliburton 1668)
Well:	David Howard B-5	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
324.03	0.25	219.97	324.02	-2.15	-0.01	-1.01	2.74	-2.73	25.22
349.05	0.51	167.01	349.04	-2.30	-0.02	-1.07	1.64	1.04	-211.67
374.04	0.25	255.78	374.03	-2.42	-0.05	-1.10	2.25	-1.04	355.22
398.59	0.27	196.27	398.58	-2.49	-0.11	-1.07	1.05	0.08	-242.40
424.81	0.19	202.05	424.80	-2.59	-0.15	-1.09	0.32	-0.31	22.04
449.86	0.28	227.86	449.85	-2.67	-0.21	-1.07	0.55	0.36	103.03
474.11	0.38	271.38	474.10	-2.71	-0.33	-0.98	1.08	0.41	179.46
499.01	0.34	271.30	499.00	-2.70	-0.49	-0.84	0.16	-0.16	-0.32
523.99	0.39	271.63	523.98	-2.70	-0.65	-0.70	0.20	0.20	1.32
548.99	0.29	262.67	548.98	-2.70	-0.80	-0.57	0.45	-0.40	-35.84
574.09	0.35	269.23	574.08	-2.71	-0.94	-0.45	0.28	0.24	26.14
599.02	0.42	267.09	599.01	-2.72	-1.10	-0.31	0.29	0.28	-8.58
623.46	0.35	266.16	623.45	-2.73	-1.27	-0.17	0.29	-0.29	-3.81
649.66	0.41	270.26	649.65	-2.73	-1.44	-0.02	0.25	0.23	15.65
674.55	0.43	259.45	674.53	-2.75	-1.62	0.13	0.33	0.08	-43.43
699.24	0.49	292.64	699.22	-2.73	-1.81	0.31	1.09	0.24	134.43
724.92	0.32	231.93	724.90	-2.73	-1.97	0.45	1.69	-0.66	-236.41
749.13	0.40	273.23	749.11	-2.77	-2.11	0.55	1.09	0.33	170.59
774.74	0.47	265.72	774.72	-2.77	-2.30	0.72	0.35	0.27	-29.32
799.19	0.65	270.72	799.17	-2.77	-2.54	0.93	0.76	0.74	20.45
824.98	0.54	264.47	824.96	-2.78	-2.81	1.16	0.49	-0.43	-24.23
849.02	0.39	263.47	849.00	-2.80	-3.00	1.32	0.62	-0.62	-4.16
874.64	0.40	267.48	874.62	-2.82	-3.18	1.47	0.11	0.04	15.65
899.08	0.41	267.80	899.06	-2.83	-3.35	1.62	0.04	0.04	1.31
924.52	0.40	259.25	924.50	-2.85	-3.53	1.77	0.24	-0.04	-33.61
949.02	0.43	263.68	949.00	-2.87	-3.70	1.91	0.18	0.12	18.08
974.59	0.41	268.49	974.57	-2.88	-3.89	2.07	0.16	-0.08	18.81
998.97	0.50	254.36	998.94	-2.92	-4.08	2.22	0.59	0.37	-57.96
1,024.50	0.39	270.35	1,024.47	-2.95	-4.27	2.38	0.65	-0.43	62.63
1,049.97	0.59	251.59	1,049.94	-2.99	-4.48	2.55	1.00	0.79	-73.66
1,074.49	0.40	271.42	1,074.46	-3.02	-4.69	2.71	1.03	-0.77	80.87
1,099.16	0.40	270.17	1,099.13	-3.02	-4.86	2.86	0.04	0.00	-5.07
1,123.91	0.38	271.86	1,123.88	-3.02	-5.03	3.01	0.09	-0.08	6.83
1,148.95	0.41	276.45	1,148.92	-3.01	-5.20	3.17	0.17	0.12	18.33
1,173.87	0.45	269.76	1,173.84	-3.00	-5.39	3.34	0.26	0.16	-26.85
1,199.75	0.58	269.63	1,199.72	-3.00	-5.62	3.54	0.50	0.50	-0.50
1,224.39	0.44	283.16	1,224.36	-2.98	-5.84	3.74	0.75	-0.57	54.91
1,248.91	0.41	281.75	1,248.88	-2.94	-6.02	3.92	0.13	-0.12	-5.75
1,274.79	0.47	280.41	1,274.76	-2.90	-6.21	4.11	0.24	0.23	-5.18
1,299.81	0.50	275.66	1,299.78	-2.87	-6.42	4.31	0.20	0.12	-18.98
1,324.46	0.46	281.55	1,324.42	-2.84	-6.62	4.50	0.26	-0.16	23.89
1,349.15	0.56	277.84	1,349.11	-2.80	-6.84	4.71	0.43	0.41	-15.03
1,374.95	0.46	287.45	1,374.91	-2.76	-7.06	4.93	0.51	-0.39	37.25

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Survey Report

Company:	KP Kauffman Co, Inc.	Local Co-ordinate Reference:	Well David Howard B-5
Project:	Weld County, CO	TVD Reference:	GL 5021' @ 5021.00ft (Halliburton 1668)
Site:	David Howard	MD Reference:	GL 5021' @ 5021.00ft (Halliburton 1668)
Well:	David Howard B-5	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
1,399.58	0.43	309.85	1,399.54	-2.67	-7.23	5.12	0.71	-0.12	90.95	
1,424.19	0.50	281.76	1,424.15	-2.59	-7.41	5.31	0.96	0.28	-114.14	
1,449.98	0.42	293.47	1,449.94	-2.52	-7.60	5.51	0.48	-0.31	45.41	
1,474.52	0.44	296.41	1,474.48	-2.45	-7.77	5.70	0.12	0.08	11.98	
1,498.67	0.49	285.00	1,498.63	-2.38	-7.95	5.89	0.43	0.21	-47.25	
1,524.46	0.49	277.20	1,524.42	-2.34	-8.17	6.10	0.26	0.00	-30.24	
1,549.14	0.44	314.31	1,549.10	-2.26	-8.34	6.29	1.21	-0.20	150.36	
1,574.81	0.51	285.28	1,574.77	-2.16	-8.52	6.50	0.96	0.27	-113.09	
1,599.16	0.43	303.78	1,599.12	-2.08	-8.70	6.69	0.70	-0.33	75.98	
1,624.78	0.46	311.82	1,624.73	-1.96	-8.86	6.89	0.27	0.12	31.38	
1,649.69	0.46	302.47	1,649.64	-1.84	-9.02	7.09	0.30	0.00	-37.54	
1,674.23	0.50	305.16	1,674.18	-1.72	-9.19	7.29	0.19	0.16	10.96	
1,699.57	0.51	310.69	1,699.52	-1.58	-9.36	7.51	0.20	0.04	21.82	
1,724.93	0.59	305.42	1,724.88	-1.44	-9.56	7.75	0.37	0.32	-20.78	
1,749.12	0.60	296.65	1,749.07	-1.31	-9.77	8.00	0.38	0.04	-36.25	
1,774.31	0.61	290.43	1,774.26	-1.20	-10.01	8.27	0.26	0.04	-24.69	
1,799.75	0.59	299.12	1,799.70	-1.09	-10.26	8.53	0.37	-0.08	34.16	
1,823.43	0.62	300.36	1,823.38	-0.97	-10.47	8.78	0.14	0.13	5.24	
1,848.68	0.60	309.11	1,848.62	-0.81	-10.69	9.05	0.38	-0.08	34.65	
1,873.94	0.53	303.67	1,873.88	-0.66	-10.89	9.29	0.35	-0.28	-21.54	
1,899.19	0.60	291.77	1,899.13	-0.55	-11.11	9.54	0.54	0.28	-47.13	
1,924.45	0.57	295.89	1,924.39	-0.45	-11.35	9.80	0.20	-0.12	16.31	
1,949.68	0.56	299.38	1,949.62	-0.33	-11.57	10.05	0.14	-0.04	13.83	
1,974.85	0.52	305.61	1,974.79	-0.20	-11.77	10.28	0.28	-0.16	24.75	
1,999.71	0.56	307.25	1,999.65	-0.07	-11.96	10.51	0.17	0.16	6.60	
2,024.93	0.57	298.93	2,024.87	0.07	-12.17	10.76	0.33	0.04	-32.99	
2,048.62	0.59	309.03	2,048.55	0.20	-12.36	11.00	0.44	0.08	42.63	
2,073.83	0.53	306.73	2,073.76	0.35	-12.56	11.24	0.25	-0.24	-9.12	
2,099.03	0.60	300.63	2,098.96	0.49	-12.76	11.49	0.37	0.28	-24.21	
2,124.05	0.57	313.66	2,123.98	0.64	-12.97	11.74	0.54	-0.12	52.08	
2,149.24	0.62	315.37	2,149.17	0.83	-13.15	11.99	0.21	0.20	6.79	
2,173.87	0.65	321.22	2,173.80	1.03	-13.33	12.25	0.29	0.12	23.75	
2,199.00	0.62	320.75	2,198.93	1.25	-13.51	12.50	0.12	-0.12	-1.87	
2,224.07	0.67	319.19	2,223.99	1.46	-13.69	12.76	0.21	0.20	-6.22	
2,249.13	0.69	329.24	2,249.05	1.70	-13.86	13.03	0.48	0.08	40.10	
2,274.19	0.73	309.95	2,274.11	1.94	-14.06	13.32	0.96	0.16	-76.98	
2,300.52	0.72	324.44	2,300.44	2.18	-14.29	13.63	0.70	-0.04	55.03	
2,324.79	0.75	318.61	2,324.71	2.42	-14.48	13.91	0.33	0.12	-24.02	
2,349.80	0.70	327.83	2,349.71	2.67	-14.67	14.20	0.51	-0.20	36.87	
2,374.25	0.73	290.06	2,374.16	2.85	-14.90	14.48	1.90	0.12	-154.48	
2,399.21	0.75	312.07	2,399.12	3.02	-15.17	14.80	1.13	0.08	88.18	
2,424.22	0.77	318.26	2,424.13	3.25	-15.40	15.12	0.34	0.08	24.75	
2,449.46	0.76	334.02	2,449.37	3.53	-15.59	15.41	0.83	-0.04	62.44	

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Design:	OH	Database:	Casper District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,474.69	0.76	317.65	2,474.59	3.80	-15.77	15.70	0.86	0.00	-64.88
2,499.92	0.75	331.55	2,499.82	4.07	-15.97	16.00	0.73	-0.04	55.09
2,523.51	0.69	331.86	2,523.41	4.33	-16.11	16.25	0.25	-0.25	1.31
2,549.89	0.76	327.02	2,549.79	4.62	-16.28	16.53	0.35	0.27	-18.35
2,574.69	0.60	337.13	2,574.59	4.88	-16.42	16.78	0.80	-0.65	40.77
2,599.53	0.50	335.16	2,599.43	5.10	-16.51	16.97	0.41	-0.40	-7.93
2,624.35	0.69	333.96	2,624.24	5.33	-16.62	17.17	0.77	0.77	-4.83
2,649.17	0.49	340.73	2,649.06	5.56	-16.72	17.37	0.85	-0.81	27.28
2,673.97	0.61	338.78	2,673.86	5.79	-16.81	17.55	0.49	0.48	-7.86
2,699.97	0.47	337.56	2,699.86	6.01	-16.90	17.74	0.54	-0.54	-4.69
2,724.77	0.65	330.39	2,724.66	6.23	-17.01	17.94	0.78	0.73	-28.91
2,749.17	0.49	331.94	2,749.06	6.44	-17.12	18.14	0.66	-0.66	6.35
2,773.81	0.48	331.61	2,773.70	6.63	-17.22	18.31	0.04	-0.04	-1.34
2,799.92	0.51	332.02	2,799.81	6.83	-17.33	18.50	0.12	0.11	1.57
2,824.61	0.54	336.69	2,824.50	7.03	-17.43	18.68	0.21	0.12	18.91
2,849.37	0.42	350.07	2,849.25	7.23	-17.49	18.83	0.66	-0.48	54.04
2,874.08	0.49	334.61	2,873.96	7.41	-17.55	18.97	0.57	0.28	-62.57
2,898.90	0.40	356.72	2,898.78	7.59	-17.60	19.10	0.77	-0.36	89.08
2,924.92	0.44	2.05	2,924.80	7.78	-17.60	19.19	0.21	0.15	20.48
2,949.68	0.42	358.47	2,949.56	7.97	-17.60	19.28	0.14	-0.08	-14.46
2,973.98	0.44	15.55	2,973.86	8.15	-17.58	19.34	0.53	0.08	70.29
2,999.93	0.38	10.01	2,999.81	8.33	-17.54	19.39	0.28	-0.23	-21.35
3,024.69	0.34	358.77	3,024.57	8.48	-17.52	19.45	0.33	-0.16	-45.40
3,049.45	0.38	353.70	3,049.33	8.64	-17.53	19.54	0.21	0.16	-20.48
3,074.21	0.35	2.40	3,074.09	8.80	-17.54	19.61	0.25	-0.12	35.14
3,099.76	0.30	8.19	3,099.64	8.94	-17.53	19.67	0.23	-0.20	22.66
3,124.91	0.32	341.26	3,124.79	9.07	-17.54	19.75	0.58	0.08	-107.08
3,149.67	0.37	354.16	3,149.55	9.22	-17.57	19.84	0.37	0.20	52.10
3,174.43	0.35	355.92	3,174.31	9.37	-17.58	19.93	0.09	-0.08	7.11
3,198.66	0.29	0.34	3,198.54	9.51	-17.59	19.99	0.27	-0.25	18.24
3,224.67	0.25	347.64	3,224.55	9.63	-17.60	20.06	0.28	-0.15	-48.83
3,249.50	0.28	345.25	3,249.38	9.74	-17.63	20.14	0.13	0.12	-9.63
3,274.05	0.25	317.27	3,273.93	9.84	-17.68	20.23	0.54	-0.12	-113.97
3,298.88	0.22	326.58	3,298.76	9.92	-17.74	20.32	0.20	-0.12	37.49
3,324.89	0.19	324.23	3,324.77	9.99	-17.79	20.40	0.12	-0.12	-9.03
3,349.64	0.09	298.67	3,349.52	10.04	-17.84	20.46	0.47	-0.40	-103.27
3,374.42	0.20	246.03	3,374.30	10.03	-17.89	20.51	0.65	0.44	-212.43
3,399.32	0.24	218.48	3,399.20	9.97	-17.96	20.54	0.45	0.16	-110.64
3,423.62	0.23	216.86	3,423.49	9.89	-18.03	20.56	0.05	-0.04	-6.67
3,449.53	0.27	172.80	3,449.40	9.79	-18.05	20.53	0.74	0.15	-170.05
3,474.13	0.23	188.43	3,474.00	9.68	-18.05	20.48	0.32	-0.16	63.54
3,499.55	0.11	207.71	3,499.42	9.61	-18.07	20.46	0.52	-0.47	75.85
3,523.91	0.17	168.77	3,523.78	9.55	-18.07	20.44	0.45	0.25	-159.85
3,549.31	0.18	175.89	3,549.18	9.48	-18.06	20.40	0.09	0.04	28.03

Scientific Drilling International

Survey Report

Company:	KP Kauffman Co, Inc.	Local Co-ordinate Reference:	Well David Howard B-5
Project:	Weld County, CO	TVD Reference:	GL 5021' @ 5021.00ft (Halliburton 1668)
Site:	David Howard	MD Reference:	GL 5021' @ 5021.00ft (Halliburton 1668)
Well:	David Howard B-5	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,574.99	0.18	175.09	3,574.86	9.40	-18.06	20.35	0.01	0.00	-3.12
3,599.36	0.08	158.04	3,599.23	9.34	-18.05	20.32	0.44	-0.41	-69.96
3,624.12	0.11	137.51	3,623.99	9.31	-18.02	20.28	0.18	0.12	-82.92
3,649.63	0.18	150.42	3,649.50	9.26	-17.99	20.23	0.30	0.27	50.61
3,673.99	0.23	134.51	3,673.86	9.19	-17.93	20.15	0.31	0.21	-65.31
3,699.52	0.15	123.94	3,699.39	9.13	-17.87	20.06	0.34	-0.31	-41.40
3,723.90	0.19	153.16	3,723.77	9.08	-17.82	20.00	0.39	0.16	119.85
3,749.29	0.28	125.66	3,749.16	9.01	-17.75	19.90	0.56	0.35	-108.31
3,774.93	0.12	92.78	3,774.80	8.97	-17.68	19.82	0.74	-0.62	-128.24
3,799.95	0.21	50.33	3,799.82	9.00	-17.62	19.78	0.58	0.36	-169.66
3,823.98	0.20	66.94	3,823.85	9.04	-17.54	19.73	0.25	-0.04	69.12
3,849.50	0.21	88.99	3,849.37	9.06	-17.46	19.66	0.31	0.04	86.40
3,873.85	0.27	89.45	3,873.72	9.06	-17.35	19.58	0.25	0.25	1.89
3,899.36	0.25	90.21	3,899.23	9.06	-17.24	19.47	0.08	-0.08	2.98
3,924.74	0.53	102.41	3,924.61	9.04	-17.07	19.31	1.14	1.10	48.07
3,949.16	0.34	86.48	3,949.03	9.02	-16.88	19.14	0.92	-0.78	-65.23
3,974.65	0.44	92.08	3,974.52	9.02	-16.71	18.99	0.42	0.39	21.97
3,999.00	0.36	91.70	3,998.87	9.01	-16.54	18.84	0.33	-0.33	-1.56
4,024.52	0.40	114.91	4,024.39	8.97	-16.38	18.68	0.62	0.16	90.95
4,048.85	0.41	121.21	4,048.72	8.89	-16.23	18.50	0.19	0.04	25.89
4,074.36	0.47	119.83	4,074.23	8.79	-16.06	18.31	0.24	0.24	-5.41
4,099.88	0.55	120.27	4,099.75	8.68	-15.86	18.08	0.31	0.31	1.72
4,124.22	0.49	134.43	4,124.09	8.55	-15.69	17.86	0.58	-0.25	58.18
4,149.75	0.68	153.43	4,149.61	8.33	-15.54	17.64	1.05	0.74	74.42
4,174.57	0.86	146.97	4,174.43	8.05	-15.38	17.35	0.80	0.73	-26.03
4,198.93	1.02	126.60	4,198.79	7.76	-15.10	16.98	1.51	0.66	-83.62
4,224.46	1.13	133.77	4,224.31	7.45	-14.74	16.51	0.68	0.43	28.08
4,249.99	1.30	134.82	4,249.84	7.08	-14.35	15.99	0.67	0.67	4.11
4,274.70	1.17	133.19	4,274.54	6.71	-13.97	15.48	0.54	-0.53	-6.60
4,299.08	1.27	124.16	4,298.92	6.38	-13.56	14.97	0.89	0.41	-37.04
4,324.56	1.31	127.77	4,324.39	6.05	-13.10	14.40	0.36	0.16	14.17
4,348.98	1.22	130.97	4,348.81	5.70	-12.68	13.87	0.47	-0.37	13.10
4,374.25	1.29	135.66	4,374.07	5.32	-12.28	13.34	0.49	0.28	18.56
4,399.35	1.20	133.17	4,399.16	4.94	-11.89	12.82	0.42	-0.36	-9.92
4,424.46	1.14	128.06	4,424.27	4.61	-11.50	12.32	0.48	-0.24	-20.35
4,449.58	1.10	132.53	4,449.38	4.29	-11.13	11.84	0.38	-0.16	17.79
4,474.69	1.01	136.87	4,474.49	3.97	-10.80	11.39	0.48	-0.36	17.28
4,499.79	0.96	134.20	4,499.59	3.66	-10.50	10.98	0.27	-0.20	-10.64
4,524.90	0.86	130.74	4,524.69	3.39	-10.20	10.60	0.45	-0.40	-13.78
4,550.00	0.95	148.76	4,549.79	3.09	-9.95	10.23	1.18	0.36	71.79
4,573.98	0.78	145.24	4,573.77	2.78	-9.76	9.92	0.74	-0.71	-14.68
4,599.48	0.72	140.61	4,599.26	2.52	-9.56	9.61	0.33	-0.24	-18.16
4,624.59	0.90	143.77	4,624.37	2.24	-9.34	9.29	0.74	0.72	12.58

Scientific Drilling International

Survey Report

Company:	KP Kauffman Co, Inc.	Local Co-ordinate Reference:	Well David Howard B-5
Project:	Weld County, CO	TVD Reference:	GL 5021' @ 5021.00ft (Halliburton 1668)
Site:	David Howard	MD Reference:	GL 5021' @ 5021.00ft (Halliburton 1668)
Well:	David Howard B-5	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,649.63	0.94	138.32	4,649.41	1.93	-9.09	8.92	0.38	0.16	-21.77	
4,674.73	0.97	147.91	4,674.50	1.59	-8.84	8.54	0.65	0.12	38.21	
4,699.84	0.85	138.46	4,699.61	1.27	-8.60	8.18	0.76	-0.48	-37.63	
4,724.57	0.83	131.87	4,724.34	1.02	-8.35	7.84	0.40	-0.08	-26.65	
4,749.69	0.93	126.93	4,749.46	0.77	-8.05	7.46	0.50	0.40	-19.67	
4,774.80	0.98	126.61	4,774.56	0.52	-7.71	7.05	0.20	0.20	-1.27	
4,799.92	0.99	128.16	4,799.68	0.26	-7.37	6.62	0.11	0.04	6.17	
4,823.87	1.08	130.79	4,823.62	-0.02	-7.03	6.20	0.42	0.38	10.98	
4,848.96	1.05	132.80	4,848.71	-0.33	-6.69	5.74	0.19	-0.12	8.01	
4,874.66	0.69	140.51	4,874.41	-0.61	-6.42	5.37	1.47	-1.40	30.00	
4,888.07	0.80	111.59	4,887.82	-0.70	-6.28	5.20	2.89	0.82	-215.66	
Last SDI Gyro Survey										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
101.70	101.70	-0.37	0.16	First SDI Gyro Survey	
4,888.07	4,887.82	-0.70	-6.28	Last SDI Gyro Survey	

Checked By: _____ Approved By: _____ Date: _____