



KP KAUFFMAN

# SURVEY REPORT

LANSON FARMS #4

3/29/2019



The **Ultimate Partner** In Wellbore Placement

CUSTOMER  
PROJECT  
FIELD

KP Kauffman  
Lanson Farms #4  
Spindle

SDI JOB NO.  
SDI DISTRICT  
SDI KIT/UNIT

Casper

### SITE INFORMATION

Site Name **Lanson Farms #4**  
Lat/Long **40.100478° N, 104.972922° W**  
Northing  
Easting

Section **NWNW 35**  
Township **2N**  
Range **68W**

### MAP INFORMATION

North Reference **True North**  
Grid Correction  
System **US State Plane 1983**  
Datum **North American Datum 1983 (GRS 1980)**  
Map Zone **Colorado North: 0501**



### WELL INFORMATION

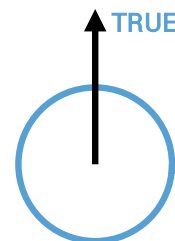
Lat/Long **40.100478° N, 104.972922° W**  
Northing  
Easting  
UWI **05-123-07931 UWBI 05-123-07931**

### DEPTH AND ELEVATION REFERENCE

Ground Level **4951 ft above Mean Sea Level**  
Reference Datum **GL**  
Reference Height **0 ft above G.L.**  
Reference Elevation **4951 ft**

### VERTICAL SECTION REFERENCE

+N/-S **0 ft**  
+E/-W **0 ft**  
Proposal Direction **193.46°**  
Calculation Method **Minimum Curvature**



### LOCAL GRAVITY REFERENCE INFORMATION

Local Gravity **999.043 mG [computed]**

### WELL NOTES

Keeper gyro wireline survey in 4.5" casing.

### OPERATORS

P Holbrook

SDI Operator Name (Printed)

SIGNATURE

DATE

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
25.00	0.18	158.82	25.00	0.03	-0.04	0.01	0.72	0.04	158.82
50.00	0.36	158.82	50.00	0.13	-0.15	0.06	0.72	0.16	158.82
75.00	0.54	158.82	75.00	0.29	-0.33	0.13	0.72	0.35	158.82
100.00	0.73	156.70	100.00	0.51	-0.58	0.23	0.79	0.63	158.28
125.00	0.93	149.46	124.99	0.79	-0.91	0.40	0.90	0.99	156.22
150.00	0.85	150.99	149.99	1.07	-1.25	0.59	0.35	1.38	154.52
175.00	0.91	151.34	174.99	1.36	-1.58	0.78	0.23	1.76	153.79
200.00	0.94	150.16	199.99	1.65	-1.93	0.98	0.14	2.16	153.23
225.00	0.95	150.65	224.98	1.95	-2.29	1.18	0.06	2.58	152.78
250.00	0.97	151.63	249.98	2.26	-2.66	1.38	0.09	2.99	152.55
275.00	0.99	151.67	274.97	2.58	-3.03	1.58	0.10	3.42	152.44
300.00	1.05	150.38	299.97	2.91	-3.42	1.80	0.25	3.87	152.27
325.00	1.12	152.21	324.97	3.26	-3.84	2.03	0.32	4.34	152.17
350.00	1.16	154.09	349.96	3.64	-4.28	2.25	0.23	4.84	152.27
375.00	1.17	152.16	374.96	4.03	-4.73	2.48	0.16	5.34	152.35
400.00	1.18	154.11	399.95	4.42	-5.19	2.71	0.17	5.86	152.42
425.00	1.14	158.51	424.95	4.82	-5.65	2.91	0.39	6.36	152.73
450.00	1.07	165.44	449.94	5.23	-6.11	3.06	0.61	6.84	153.36
475.00	1.07	161.71	474.94	5.63	-6.56	3.20	0.28	7.29	154.01
500.00	1.21	143.07	499.93	6.00	-6.99	3.43	1.57	7.78	153.87
525.00	1.34	123.47	524.93	6.27	-7.36	3.83	1.82	8.30	152.51
550.00	1.48	114.09	549.92	6.43	-7.65	4.37	1.06	8.81	150.28
575.00	1.60	110.24	574.91	6.53	-7.90	4.99	0.64	9.35	147.74
600.00	1.74	109.51	599.90	6.61	-8.15	5.67	0.58	9.93	145.16
625.00	1.82	106.97	624.89	6.67	-8.39	6.41	0.45	10.56	142.63
650.00	1.85	107.82	649.87	6.73	-8.63	7.18	0.18	11.23	140.27
675.00	1.79	107.50	674.86	6.79	-8.88	7.93	0.26	11.91	138.20
700.00	1.71	105.52	699.85	6.83	-9.09	8.67	0.40	12.56	136.38
725.00	1.70	104.13	724.84	6.84	-9.28	9.38	0.17	13.20	134.69
750.00	1.67	103.00	749.83	6.85	-9.46	10.10	0.17	13.84	133.12
775.00	1.72	103.32	774.82	6.84	-9.62	10.82	0.18	14.48	131.66

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft	CLOSURE DIST ft	CLOSURE DIR deg
800.00	1.67	106.19	799.81	6.86	-9.81	11.53	0.38	15.14	130.39
825.00	1.64	109.81	824.80	6.92	-10.04	12.22	0.44	15.81	129.39
850.00	1.51	112.00	849.79	7.00	-10.28	12.86	0.56	16.47	128.63
875.00	1.39	113.44	874.78	7.11	-10.52	13.45	0.52	17.08	128.05
900.00	1.38	111.06	899.77	7.20	-10.75	14.01	0.23	17.66	127.51
925.00	1.36	112.34	924.76	7.28	-10.98	14.56	0.15	18.24	127.00
950.00	1.40	119.42	949.76	7.41	-11.24	15.11	0.71	18.83	126.65
975.00	1.38	121.48	974.75	7.59	-11.55	15.63	0.23	19.43	126.45
1000.00	1.27	122.78	999.74	7.78	-11.85	16.12	0.44	20.01	126.33
1025.00	1.19	122.26	1024.74	7.95	-12.14	16.57	0.32	20.54	126.23
1050.00	1.10	121.04	1049.73	8.11	-12.40	17.00	0.37	21.04	126.12
1075.00	1.13	119.68	1074.73	8.25	-12.65	17.42	0.15	21.53	125.99
1100.00	1.13	117.83	1099.72	8.38	-12.89	17.85	0.15	22.01	125.83
1125.00	1.05	121.95	1124.72	8.51	-13.12	18.26	0.43	22.49	125.70
1150.00	1.08	124.30	1149.71	8.67	-13.38	18.65	0.21	22.95	125.65
1175.00	1.01	124.49	1174.71	8.83	-13.64	19.03	0.29	23.41	125.63
1200.00	1.03	128.04	1199.70	9.01	-13.90	19.39	0.27	23.85	125.64
1225.00	1.03	131.83	1224.70	9.21	-14.19	19.73	0.27	24.30	125.72
1250.00	0.90	133.22	1249.70	9.41	-14.47	20.04	0.51	24.72	125.83
1275.00	0.84	135.59	1274.69	9.61	-14.74	20.31	0.28	25.10	125.96
1300.00	0.74	138.74	1299.69	9.80	-14.99	20.55	0.43	25.44	126.11
1325.00	0.62	141.18	1324.69	9.97	-15.22	20.74	0.50	25.73	126.27
1350.00	0.54	146.12	1349.69	10.14	-15.42	20.89	0.38	25.97	126.44
1375.00	0.54	150.55	1374.69	10.30	-15.62	21.02	0.17	26.19	126.63
1400.00	0.50	153.52	1399.69	10.47	-15.82	21.12	0.19	26.39	126.84
1425.00	0.50	155.49	1424.69	10.64	-16.02	21.22	0.07	26.58	127.05
1450.00	0.47	162.38	1449.68	10.81	-16.22	21.29	0.26	26.76	127.29
1475.00	0.45	169.01	1474.68	10.99	-16.41	21.34	0.23	26.92	127.56
1500.00	0.39	176.92	1499.68	11.16	-16.59	21.36	0.33	27.05	127.83
1525.00	0.40	180.81	1524.68	11.33	-16.76	21.37	0.12	27.16	128.12
1550.00	0.40	196.52	1549.68	11.50	-16.94	21.34	0.44	27.25	128.44
1575.00	0.40	192.36	1574.68	11.68	-17.11	21.30	0.12	27.32	128.77

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft	CLOSURE DIST ft	CLOSURE DIR deg
1600.00	0.43	198.26	1599.68	11.86	-17.28	21.25	0.21	27.39	129.12
1625.00	0.45	209.89	1624.68	12.05	-17.46	21.17	0.37	27.44	129.50
1650.00	0.46	208.59	1649.68	12.24	-17.63	21.07	0.06	27.48	129.92
1675.00	0.48	209.50	1674.68	12.44	-17.81	20.97	0.06	27.52	130.33
1700.00	0.54	214.26	1699.68	12.65	-18.00	20.86	0.32	27.55	130.79
1725.00	0.54	218.22	1724.68	12.87	-18.19	20.72	0.15	27.57	131.28
1750.00	0.55	221.21	1749.68	13.08	-18.37	20.56	0.13	27.58	131.78
1775.00	0.55	222.05	1774.67	13.29	-18.55	20.40	0.04	27.58	132.28
1800.00	0.55	226.48	1799.67	13.50	-18.72	20.24	0.17	27.57	132.77
1825.00	0.58	222.99	1824.67	13.71	-18.90	20.07	0.19	27.56	133.28
1850.00	0.60	221.80	1849.67	13.93	-19.09	19.89	0.10	27.57	133.82
1875.00	0.65	225.85	1874.67	14.17	-19.28	19.70	0.26	27.57	134.38
1900.00	0.65	222.72	1899.67	14.41	-19.49	19.50	0.14	27.57	134.97
1925.00	0.68	220.39	1924.67	14.67	-19.70	19.31	0.15	27.59	135.58
1950.00	0.71	221.09	1949.66	14.94	-19.93	19.11	0.11	27.62	136.20
1975.00	0.75	222.66	1974.66	15.22	-20.17	18.90	0.19	27.64	136.86
2000.00	0.76	224.22	1999.66	15.50	-20.41	18.68	0.09	27.66	137.54
2025.00	0.73	222.36	2024.66	15.78	-20.64	18.45	0.15	27.69	138.21
2050.00	0.63	216.97	2049.66	16.05	-20.87	18.26	0.46	27.73	138.81
2075.00	0.60	218.23	2074.65	16.29	-21.09	18.10	0.13	27.79	139.36
2100.00	0.51	217.91	2099.65	16.52	-21.28	17.95	0.36	27.84	139.85
2125.00	0.51	225.32	2124.65	16.71	-21.44	17.80	0.26	27.87	140.31
2150.00	0.53	226.73	2149.65	16.90	-21.60	17.64	0.09	27.89	140.77
2175.00	0.53	232.19	2174.65	17.09	-21.75	17.46	0.20	27.89	141.24
2200.00	0.55	233.60	2199.65	17.27	-21.89	17.28	0.10	27.89	141.72
2225.00	0.58	234.23	2224.65	17.46	-22.04	17.08	0.13	27.88	142.23
2250.00	0.65	240.49	2249.65	17.65	-22.18	16.85	0.39	27.86	142.78
2275.00	0.72	245.07	2274.64	17.85	-22.32	16.58	0.34	27.81	143.39
2300.00	0.76	252.42	2299.64	18.03	-22.43	16.28	0.41	27.72	144.03
2325.00	0.78	260.35	2324.64	18.18	-22.51	15.96	0.43	27.60	144.67
2350.00	0.88	264.79	2349.64	18.31	-22.56	15.60	0.48	27.43	145.33
2375.00	0.89	267.80	2374.63	18.42	-22.58	15.22	0.19	27.23	146.03

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DIST ft	CLOSURE DIR deg
2400.00	0.89	267.28	2399.63	18.53	-22.60	14.83	0.03	27.03	146.73
2425.00	0.96	261.38	2424.63	18.66	-22.64	14.43	0.48	26.85	147.50
2450.00	0.87	260.92	2449.63	18.81	-22.70	14.03	0.36	26.69	148.28
2475.00	0.86	258.38	2474.62	18.97	-22.77	13.66	0.16	26.55	149.05
2500.00	0.88	257.88	2499.62	19.13	-22.85	13.29	0.07	26.43	149.82
2525.00	0.80	253.93	2524.62	19.30	-22.94	12.93	0.38	26.33	150.59
2550.00	0.72	255.44	2549.61	19.46	-23.02	12.61	0.34	26.25	151.29
2575.00	0.77	259.41	2574.61	19.60	-23.09	12.29	0.29	26.16	151.97
2600.00	0.71	259.89	2599.61	19.73	-23.15	11.98	0.25	26.07	152.65
2625.00	0.65	261.21	2624.61	19.84	-23.20	11.69	0.25	25.98	153.27
2650.00	0.66	263.16	2649.61	19.95	-23.24	11.40	0.10	25.89	153.86
2675.00	0.62	259.65	2674.61	20.05	-23.28	11.13	0.22	25.80	154.45
2700.00	0.60	261.01	2699.60	20.16	-23.33	10.87	0.11	25.73	155.02
2725.00	0.60	261.46	2724.60	20.25	-23.37	10.61	0.03	25.66	155.58
2750.00	0.56	256.53	2749.60	20.36	-23.41	10.36	0.27	25.60	156.13
2775.00	0.52	253.15	2774.60	20.47	-23.48	10.13	0.18	25.57	156.65
2800.00	0.56	253.73	2799.60	20.59	-23.54	9.91	0.14	25.54	157.17
2825.00	0.56	254.39	2824.60	20.71	-23.61	9.67	0.04	25.51	157.72
2850.00	0.58	248.56	2849.60	20.84	-23.69	9.44	0.24	25.50	158.28
2875.00	0.50	251.74	2874.60	20.97	-23.77	9.22	0.34	25.49	158.80
2900.00	0.51	250.71	2899.59	21.09	-23.84	9.01	0.05	25.48	159.29
2925.00	0.43	249.56	2924.59	21.20	-23.91	8.82	0.32	25.48	159.75
2950.00	0.44	247.68	2949.59	21.31	-23.98	8.64	0.08	25.49	160.18
2975.00	0.39	242.39	2974.59	21.42	-24.05	8.48	0.25	25.50	160.58
3000.00	0.33	224.16	2999.59	21.54	-24.15	8.35	0.52	25.55	160.92
3025.00	0.46	234.55	3024.59	21.68	-24.25	8.22	0.56	25.61	161.28
3050.00	0.46	239.44	3049.59	21.82	-24.36	8.05	0.16	25.66	161.71
3075.00	0.40	229.80	3074.59	21.96	-24.47	7.90	0.39	25.71	162.11
3100.00	0.37	224.66	3099.59	22.10	-24.59	7.77	0.17	25.79	162.45
3125.00	0.40	218.76	3124.59	22.25	-24.71	7.66	0.19	25.87	162.77
3150.00	0.49	219.64	3149.59	22.42	-24.86	7.54	0.37	25.98	163.13
3175.00	0.41	230.36	3174.59	22.59	-25.00	7.40	0.48	26.07	163.50



MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
3200.00	0.35	230.37	3199.59	22.72	-25.11	7.28	0.23	26.14	163.83
3225.00	0.33	218.56	3224.59	22.85	-25.21	7.17	0.29	26.21	164.11
3250.00	0.21	224.30	3249.59	22.95	-25.30	7.10	0.48	26.27	164.33
3275.00	0.11	247.58	3274.59	23.00	-25.34	7.04	0.48	26.30	164.46
3300.00	0.08	55.44	3299.59	23.01	-25.34	7.04	0.72	26.30	164.48
3325.00	0.21	52.98	3324.59	22.96	-25.30	7.09	0.55	26.28	164.35
3350.00	0.33	72.80	3349.59	22.89	-25.25	7.19	0.60	26.26	164.10
3375.00	0.36	77.83	3374.59	22.81	-25.21	7.34	0.18	26.26	163.77
3400.00	0.30	64.15	3399.58	22.74	-25.17	7.47	0.40	26.26	163.46
3425.00	0.26	34.91	3424.58	22.64	-25.09	7.57	0.59	26.21	163.22
3450.00	0.22	2.11	3449.58	22.55	-25.00	7.60	0.56	26.13	163.09
3475.00	0.21	341.69	3474.58	22.46	-24.91	7.59	0.30	26.04	163.06
3500.00	0.24	333.97	3499.58	22.38	-24.82	7.55	0.16	25.94	163.08
3525.00	0.42	320.30	3524.58	22.29	-24.70	7.47	0.76	25.81	163.18
3550.00	0.46	320.82	3549.58	22.17	-24.55	7.35	0.19	25.63	163.34
3575.00	0.52	321.53	3574.58	22.04	-24.39	7.21	0.24	25.43	163.52
3600.00	0.54	319.04	3599.58	21.90	-24.21	7.06	0.13	25.22	163.73
3625.00	0.59	320.98	3624.58	21.75	-24.02	6.91	0.19	24.99	163.96
3650.00	0.61	317.48	3649.58	21.60	-23.82	6.73	0.18	24.75	164.21
3675.00	0.70	316.38	3674.58	21.44	-23.61	6.54	0.36	24.50	164.52
3700.00	0.83	319.74	3699.57	21.25	-23.36	6.32	0.53	24.20	164.87
3725.00	0.80	318.44	3724.57	21.05	-23.10	6.08	0.13	23.88	165.24
3750.00	0.82	323.33	3749.57	20.83	-22.82	5.86	0.28	23.56	165.59
3775.00	0.89	329.81	3774.57	20.58	-22.51	5.66	0.47	23.21	165.89
3800.00	0.91	323.86	3799.56	20.31	-22.19	5.45	0.38	22.84	166.21
3825.00	0.85	323.38	3824.56	20.06	-21.88	5.22	0.25	22.49	166.58
3850.00	0.85	327.41	3849.56	19.82	-21.57	5.01	0.24	22.15	166.93
3875.00	0.88	329.30	3874.55	19.55	-21.25	4.81	0.18	21.79	167.25
3900.00	0.87	330.96	3899.55	19.27	-20.92	4.62	0.11	21.43	167.55
3925.00	0.78	340.93	3924.55	18.99	-20.60	4.47	0.68	21.08	167.75
3950.00	0.71	352.27	3949.55	18.70	-20.28	4.40	0.64	20.75	167.77
3975.00	0.63	0.00	3974.55	18.42	-19.99	4.38	0.48	20.46	167.65

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft	CLOSURE DIST ft	CLOSURE DIR deg
4000.00	0.56	351.16	3999.54	18.17	-19.73	4.36	0.47	20.21	167.55
4025.00	0.56	348.61	4024.54	17.95	-19.49	4.31	0.10	19.96	167.52
4050.00	0.48	0.55	4049.54	17.74	-19.27	4.29	0.53	19.74	167.44
4075.00	0.46	350.44	4074.54	17.54	-19.06	4.28	0.34	19.53	167.36
4100.00	0.45	338.71	4099.54	17.37	-18.87	4.22	0.38	19.34	167.38
4125.00	0.28	357.75	4124.54	17.23	-18.72	4.18	0.83	19.18	167.40
4150.00	0.28	354.64	4149.54	17.11	-18.59	4.18	0.06	19.06	167.34
4175.00	0.30	351.65	4174.54	16.99	-18.47	4.16	0.10	18.93	167.30
4200.00	0.30	0.91	4199.54	16.86	-18.33	4.15	0.19	18.80	167.24
4225.00	0.33	28.75	4224.54	16.73	-18.21	4.19	0.62	18.68	167.04
4250.00	0.36	15.04	4249.54	16.58	-18.07	4.24	0.35	18.56	166.78
4275.00	0.37	21.66	4274.54	16.42	-17.91	4.29	0.18	18.42	166.52
4300.00	0.34	31.40	4299.54	16.27	-17.78	4.36	0.28	18.30	166.21
4325.00	0.34	24.53	4324.54	16.13	-17.65	4.43	0.16	18.19	165.90
4350.00	0.35	31.73	4349.54	15.99	-17.51	4.50	0.19	18.08	165.58
4375.00	0.25	36.92	4374.54	15.86	-17.41	4.58	0.42	18.00	165.27
4400.00	0.20	36.55	4399.54	15.77	-17.33	4.63	0.22	17.94	165.02
4425.00	0.12	5.00	4424.54	15.71	-17.27	4.66	0.47	17.89	164.89
4450.00	0.04	250.28	4449.54	15.69	-17.24	4.66	0.56	17.86	164.89
4475.00	0.10	267.01	4474.54	15.70	-17.25	4.63	0.23	17.86	164.99
4500.00	0.25	268.00	4499.54	15.72	-17.25	4.55	0.62	17.84	165.22
4525.00	0.33	246.63	4524.54	15.78	-17.28	4.43	0.52	17.84	165.62
4550.00	0.43	254.24	4549.53	15.87	-17.34	4.27	0.47	17.86	166.15
4575.00	0.51	264.39	4574.53	15.95	-17.37	4.07	0.46	17.84	166.82
4600.00	0.59	259.33	4599.53	16.04	-17.41	3.83	0.37	17.82	167.59
4625.00	0.70	260.04	4624.53	16.15	-17.46	3.55	0.45	17.82	168.50
4650.00	0.71	259.86	4649.53	16.27	-17.51	3.25	0.02	17.81	169.49
4675.00	0.77	270.83	4674.53	16.37	-17.54	2.93	0.61	17.78	170.51
4700.00	0.94	272.67	4699.52	16.45	-17.52	2.56	0.70	17.71	171.69
4725.00	1.11	273.33	4724.52	16.53	-17.50	2.11	0.67	17.63	173.11
4750.00	1.09	272.56	4749.52	16.62	-17.48	1.63	0.08	17.55	174.66
4775.00	1.15	271.77	4774.51	16.71	-17.46	1.15	0.26	17.50	176.25



MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DIST ft	CLOSURE DIR deg
4800.00	1.20	272.95	4799.51	16.81	-17.44	0.63	0.20	17.45	177.92
4825.00	1.40	276.45	4824.50	16.90	-17.39	0.07	0.89	17.39	179.78
4850.00	1.54	275.71	4849.49	16.98	-17.32	-0.57	0.56	17.33	181.89
4875.00	1.63	281.07	4874.48	17.04	-17.22	-1.26	0.70	17.27	184.17
4900.00	1.72	284.15	4899.47	17.05	-17.06	-1.97	0.50	17.17	186.59
4925.00	1.86	288.50	4924.46	17.01	-16.84	-2.72	0.76	17.06	189.17
4950.00	1.68	293.18	4949.45	16.91	-16.57	-3.44	0.91	16.92	191.73
4967.92	1.62	289.52	4967.36	16.84	-16.38	-3.92	0.67	16.84	193.46

