

Results of Directional Survey

API number:	30-025-41835		
OGRID:		Operator:	COG OPERATING LLC
		Property:	KINGFISHER STATE COM # 1H

surface	ULSTR:	P	23	T 18S	R 34E
				290 FSL	740 FEL

BH Loc	ULSTR:	A	23	T 18S	R 34E
14575	MD	9922.5	TVD	332 FNL	447 FEL
4948 FSL					

Top Perf/OH	ULSTR:	P	23	T 18S	R 34E
10343	MD	10202.7	TVD	744 FSL	765 FEL

Bot Perf/OH	ULSTR:	A	23	T 18S	R 34E
14505	MD	9926.9	TVD	402 FNL	453 FEL
4878 FSL					

	MD	N/S	E/W	VD
	10312	424.79	-27.42	10192.92
TOP PERFS/OH	10343	454.07	-24.78	10202.73
	10343	454.07	-24.78	10202.73
	14428	4511.89	281.04	9931.47
BOT PERFS/OH	14505	4588.49	287.34	9926.90
	14529	4612.37	289.30	9925.48

NEXT TO LAST	14529	4612.37	289.30	9925.48
LAST READING	14575	4658.12	293.06	9922.51
TD	14575	4658.12	293.06	9922.51

Surface Location	290	FS	740	FE
Projected BHL	4948	FS	447	FE
Location of				
Top Perfs/OH	744	FS	765	FE
Bottom Perfs/OH	4878	FS	453	FE

SUMMARY of Subsurface Locations

Surface Location	P-23-18S-34E	290	FS	740	FE	Vert. Depth
Top Perfs/OH	P-23-18S-34E	744	FS	765	FE	10202.73
Bottom Perfs/OH	A-23-18S-34E	4878	FS	453	FE	9926.90
Projected TD	A-23-18S-34E	4948	FS	447	FE	9922.51

OCT 20 2014



August 6, 2014

HOBBS OCD

OCT 16 2014

Concho Resources, Inc.
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

RECEIVED

Attn: Kanicia Castillo

RE: **Kingfisher State Com No. 001H**

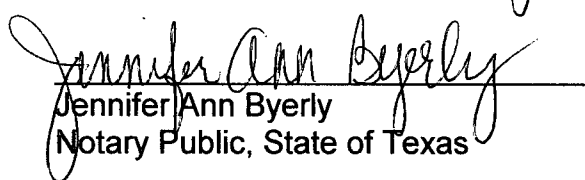
Please find enclosed a copy of the survey from 0.00' to 8900.00' ran on the above referenced well.

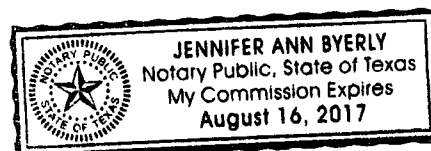
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 16 day of August, A.D., 2014, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas



Operator: COG Operating
Well/Lease: Kingfisher State Com 001H
County: Lea

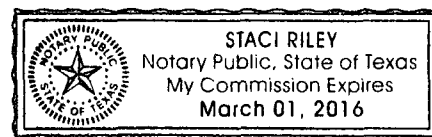
HOBBS OCD

STATE OF NEW MEXICO
DEVIATION REPORT

OCT 16 2014

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<u>Footage</u>	<u>Degree</u>
355	0.60
742	0.40
1122	0.40
1615	0.40
1886	0.10
2171	0.40
2583	0.70
2837	1.20
3090	1.00
3343	1.20
4267	1.30
4489	1.50
4581	1.20
4677	1.30
4834	1.30
4993	2.00
5151	2.10
5786	2.00
5911	1.30
6101	1.10
6196	0.90
6292	0.80
6387	0.40
6481	0.50
6579	0.20
6674	0.40
6832	0.50
6990	1.10
7148	1.40
7243	1.20
7599	1.80
7695	2.00
7789	1.90
8009	1.20
8136	1.60
8295	1.70
8421	0.80
8674	1.10
8890	1.90
9047	1.30
9301	0.90
9553	1.70



Signed By: Roger Dyer
Roger Dyer, Operations Manager
Pioneer Drilling Company

Appeared before me on Sept. 4, 2014.

Staci Riley
Notary Public



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OCT 16 2014
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State of New Mexico
County of Lea

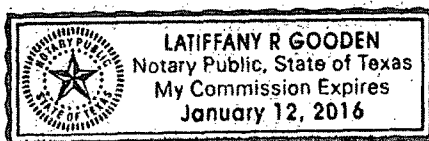
I, Michael K. Baber, certify that: I am employed by Terra Directional Services LLC; that I did on the day(s) of 07/22/2014 through 08/12/2014 conduct or supervise the taking of a MWD survey from a depth of 8900 feet to a depth 14575 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Terra Directional Services LLC; that I am authorized and qualified to make this report; that this survey was conducted at the request of Concho Oil & Gas for the Kingfisher State Com #1H Well API 30-025-41835 in Lea County, New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Terra Directional Services LLC.

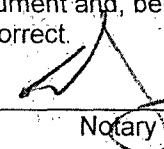


Michael K. Baber
MWD Operations Manager

State of Texas
County of Montgomery

Before me, a notary public, on this day personally appeared Michael K. Baber, known to me to be the person whose name is subscribed to the foregoing document and, being by me first duly sworn, declared that the statements therein contained are true and correct.





Notary Public's Signature

HOBBS OCD

OCT 16 2014

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Customer Name: COG Operating LLC
 Well Name: KingFisher State Com
 API Number: 30-025-41835
 County / Parish: 25 SW Hobbs NM / Le:

M.W.D. Operator: Mike Sakas
 Directional Driller: Chris Thille
 Total Magnetic Correction: 6.79
 Job #: NM-457

Vertical Section: 3.88

Tie In Survey(s) Provided By:

	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS
Tie - In										
0	8900.00	1.70	311.66	8898.04	107.64	107.64	-41.68	115.43	338.83	0.58
1	9047.00	1.30	317.00	9044.99	107.05	110.31	-44.45	118.93	338.05	0.29
2	9301.00	0.90	111.60	9298.97	108.41	111.68	-44.56	120.24	338.25	0.85
3	9554.00	1.70	352.90	9551.93	111.49	114.67	-43.17	122.53	339.37	0.90
4	9744.00	4.00	348.30	9741.69	120.64	123.96	-44.87	131.83	340.10	1.22
5	9775.00	8.10	358.50	9772.51	123.86	127.21	-45.14	134.98	340.46	13.62
6	9807.00	13.00	1.30	9803.96	129.70	133.06	-45.12	140.50	341.27	15.39
7	9839.00	17.10	3.60	9834.85	138.01	141.36	-44.74	148.27	342.44	12.95
8	9870.00	19.90	4.90	9864.25	147.84	151.17	-44.00	157.44	343.77	9.13
9	9902.00	22.20	5.00	9894.11	159.33	162.62	-43.01	168.21	345.18	7.19
10	9933.00	24.00	4.60	9922.62	171.49	174.74	-42.00	179.71	346.49	5.83
11	9965.00	25.60	3.90	9951.67	184.91	188.12	-41.00	192.54	347.70	5.08
12	9996.00	27.70	3.30	9979.38	198.82	202.00	-40.13	205.95	348.76	6.83
13	10028.00	30.70	2.70	10007.31	214.43	217.58	-39.32	221.11	349.76	9.42
14	10060.00	34.40	1.90	10034.28	231.63	234.79	-38.64	237.94	350.66	11.64
15	10091.00	37.20	1.90	10059.42	249.75	252.91	-38.03	255.75	351.45	9.03
16	10122.00	40.30	2.40	10083.59	269.15	272.29	-37.30	274.84	352.20	10.05
17	10154.00	44.30	3.20	10107.25	290.67	293.80	-36.25	296.03	352.97	12.61
18	10186.00	49.60	3.50	10129.09	314.05	317.14	-34.88	319.05	353.72	16.58
19	10217.00	54.50	3.50	10148.15	338.49	341.53	-33.39	343.16	354.42	15.81
20	10249.00	59.20	3.80	10165.64	365.27	368.26	-31.68	369.62	355.08	14.71
21	10281.00	64.40	4.30	10180.76	393.46	396.38	-29.69	397.49	355.72	16.31
22	10312.00	69.40	4.80	10192.92	421.96	424.79	-27.42	425.68	356.31	16.20
23	10343.00	73.70	5.50	10202.73	451.36	454.07	-24.78	454.75	356.88	14.04
24	10374.00	77.50	7.00	10210.43	481.35	483.92	-21.51	484.39	357.46	13.12
25	10405.00	80.90	8.00	10216.24	511.74	514.10	-17.53	514.40	358.05	11.42
26	10437.00	82.70	8.10	10220.81	543.32	545.46	-13.10	545.62	358.62	5.63
27	10469.00	84.60	8.10	10224.35	575.04	576.95	-8.62	577.01	359.14	5.94
28	10500.00	86.50	7.40	10226.75	605.87	607.57	-4.45	607.58	359.58	6.53
29	10532.00	87.70	6.80	10228.37	637.78	639.28	-0.50	639.28	359.96	4.19
30	10564.00	87.90	6.60	10229.60	669.72	671.04	3.23	671.05	0.28	0.88
31	10596.00	89.30	6.20	10230.38	701.68	702.83	6.80	702.86	0.55	4.55
32	10627.00	91.00	5.70	10230.30	732.66	733.66	10.01	733.73	0.78	5.72
33	10722.00	92.30	4.90	10227.56	827.59	828.21	18.78	828.43	1.30	1.61
34	10816.00	93.80	5.20	10222.56	921.43	921.71	27.04	922.11	1.68	1.63
35	10911.00	94.50	5.00	10215.69	1016.16	1016.09	35.47	1016.71	2.00	0.77
36	11005.00	95.80	5.00	10207.25	1109.76	1109.35	43.63	1110.21	2.25	1.38
37	11100.00	94.40	4.60	10198.80	1204.37	1203.64	51.54	1204.74	2.45	1.53
38	11195.00	92.50	4.50	10193.09	1299.19	1298.16	59.07	1299.51	2.61	2.00
39	11290.00	92.70	4.40	10188.78	1394.08	1392.78	66.43	1394.36	2.73	0.24
40	11385.00	93.50	4.20	10183.64	1488.94	1487.37	73.54	1489.19	2.83	0.87
41	11480.00	94.70	3.90	10176.85	1583.70	1581.89	80.23	1583.93	2.90	1.30
42	11575.00	95.90	3.30	10168.07	1678.29	1676.30	86.17	1678.51	2.94	1.41
43	11670.00	94.20	3.00	10159.71	1772.91	1770.78	91.37	1773.14	2.95	1.82
44	11765.00	94.10	2.70	10152.84	1867.64	1865.42	96.08	1867.89	2.95	0.33



45	11859.00	94.70	2.40	10145.63	1961.34	1959.04	100.25	1961.61	2.93	0.71
46	11953.00	94.30	3.00	10138.25	2055.03	2052.65	104.67	2055.32	2.92	0.77
47	12048.00	94.60	3.10	10130.88	2149.73	2147.23	109.71	2150.03	2.92	0.33
48	12143.00	95.60	2.70	10122.43	2244.34	2241.73	114.50	2244.65	2.92	1.13
49	12238.00	94.80	3.20	10113.82	2338.94	2336.21	119.37	2339.26	2.92	0.99
50	12333.00	91.80	4.70	10108.36	2433.76	2430.82	125.90	2434.08	2.96	3.53
51	12427.00	92.70	4.60	10104.67	2527.68	2524.43	133.51	2527.96	3.03	0.96
52	12523.00	93.30	4.20	10099.64	2623.55	2620.02	140.87	2623.80	3.08	0.75
53	12617.00	94.80	4.60	10093.00	2717.31	2713.51	148.06	2717.54	3.12	1.65
54	12712.00	96.60	4.40	10083.57	2811.83	2807.74	155.48	2812.04	3.17	1.91
55	12807.00	95.00	5.00	10073.97	2906.33	2901.93	163.22	2906.52	3.22	1.80
56	12902.00	93.80	5.60	10066.68	3001.02	2996.25	171.97	3001.18	3.28	1.41
57	12997.00	93.60	5.50	10060.55	3095.78	3090.60	181.14	3095.91	3.35	0.24
58	13093.00	96.30	4.30	10052.27	3191.39	3185.89	189.31	3191.50	3.40	3.08
59	13188.00	96.40	2.70	10041.76	3285.80	3280.12	195.08	3285.92	3.40	1.68
60	13284.00	92.80	3.40	10034.06	3381.47	3375.66	200.17	3381.59	3.39	3.82
61	13379.00	94.40	2.90	10028.09	3476.27	3470.33	205.38	3476.40	3.39	1.76
62	13475.00	94.30	3.50	10020.81	3571.99	3565.90	210.72	3572.12	3.38	0.63
63	13571.00	95.30	3.50	10012.78	3667.65	3661.39	216.56	3667.78	3.38	1.04
64	13666.00	97.40	2.90	10002.27	3762.05	3755.65	221.83	3762.19	3.38	2.30
65	13761.00	95.70	3.60	9991.44	3856.42	3849.87	227.18	3856.57	3.38	1.93
66	13856.00	94.90	4.10	9982.66	3951.01	3944.25	233.54	3951.16	3.39	0.99
67	13951.00	96.30	4.00	9973.39	4045.56	4038.56	240.21	4045.70	3.40	1.48
68	14047.00	95.90	4.90	9963.19	4141.01	4133.73	247.62	4141.14	3.43	1.02
69	14142.00	95.00	5.50	9954.17	4235.55	4227.91	256.19	4235.66	3.47	1.14
70	14238.00	95.70	4.90	9945.22	4331.11	4323.10	264.85	4331.20	3.51	0.96
71	14333.00	93.90	5.00	9937.27	4425.75	4417.41	273.02	4425.83	3.54	1.90
72	14428.00	93.10	4.70	9931.47	4520.56	4511.89	281.04	4520.63	3.56	0.90
73	14529.00	93.70	4.70	9925.48	4621.37	4612.37	289.30	4621.43	3.59	0.59
74	14575.00	93.70	4.70	9922.51	4667.27	4658.12	293.06	4667.33	3.60	0.00



Company: COG OPERATING, LLC (CONCHO)
Lease/Well: KINGFISHER STATE COM/NO. 001H



Rig Name: PIONEER #20
State/County: NEW MEXICO/LEA
Latitude: 32.73, Longitude: -103.52
GRID North is 0.44 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB: 17 FEET

HOBBS OCD

OCT 16 2014

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DRILLOG HA GYRO SURVEY CALCULATIONS
Filename: gyro survey.ut
Minimum Curvature Method
Report Date/Time: 8/6/2014 / 13:12
VES Survey International
West Texas
(432) 563-5444
Surveyor: Jordan Shelleby
Kingfisher State Com No. 001H / API 30-025-41835

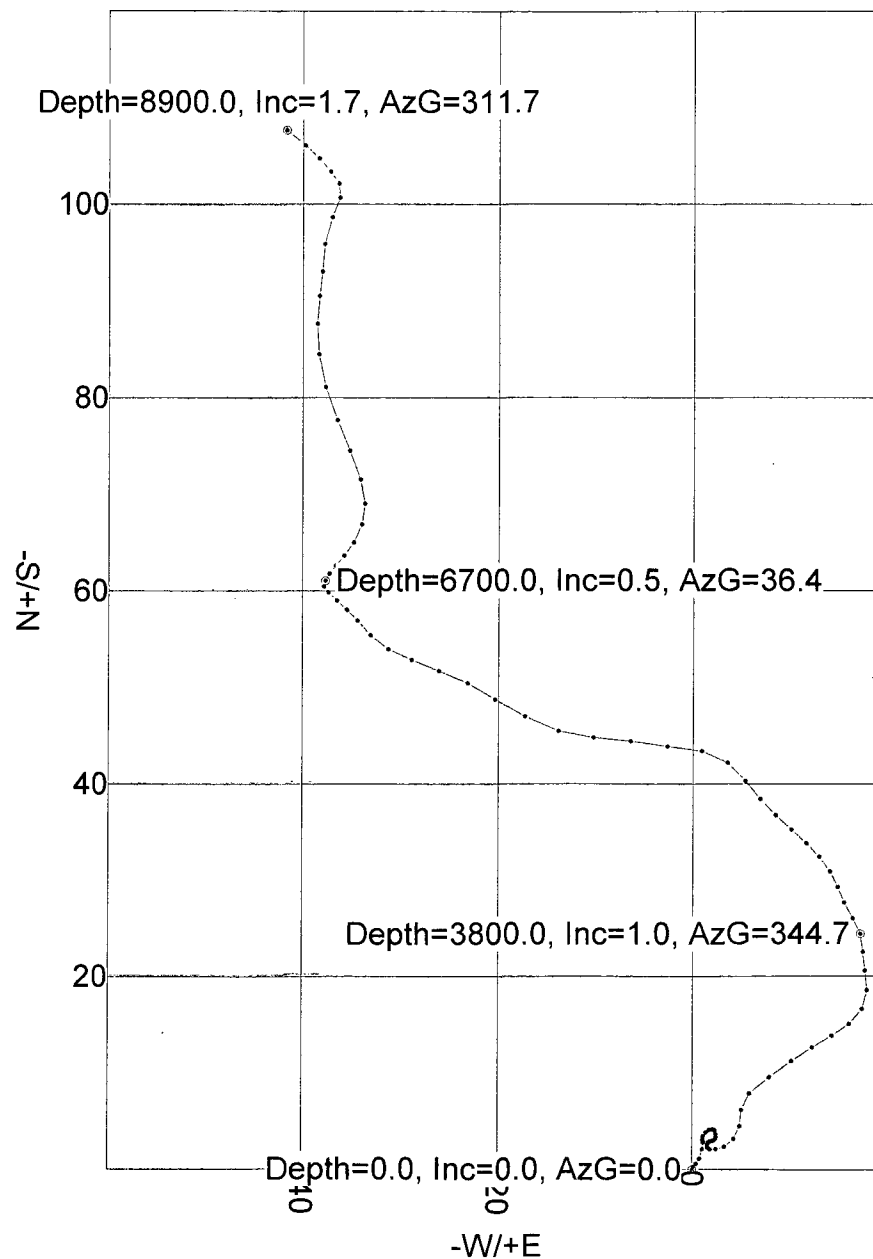
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.33	17.19	100.00	0.28	0.09	0.28	0.29	17.19	0.33
200.00	0.28	73.36	200.00	0.62	0.40	0.62	0.74	32.92	0.29
300.00	0.53	13.83	300.00	1.14	0.74	1.14	1.36	33.14	0.46
400.00	0.64	16.45	399.99	2.12	1.01	2.12	2.34	25.49	0.11
500.00	0.21	341.72	499.99	2.82	1.11	2.82	3.03	21.43	0.48
600.00	0.13	354.22	599.99	3.11	1.04	3.11	3.28	18.45	0.09
700.00	0.27	19.12	699.99	3.45	1.11	3.45	3.63	17.75	0.16
800.00	0.29	49.42	799.99	3.85	1.38	3.85	4.09	19.72	0.15
900.00	0.20	60.19	899.98	4.10	1.73	4.10	4.45	22.84	0.10
1000.00	0.22	95.27	999.98	4.17	2.07	4.17	4.66	26.45	0.13
1100.00	0.13	156.03	1099.98	4.05	2.32	4.05	4.66	29.77	0.20
1200.00	0.33	174.96	1199.98	3.66	2.39	3.66	4.37	33.13	0.21
1300.00	0.07	180.92	1299.98	3.31	2.41	3.31	4.10	36.07	0.26
1400.00	0.06	203.17	1399.98	3.20	2.39	3.20	3.99	36.74	0.03
1500.00	0.09	228.64	1499.98	3.10	2.31	3.10	3.87	36.70	0.04
1600.00	0.09	220.00	1599.98	2.99	2.20	2.99	3.72	36.39	0.02
1700.00	0.16	278.58	1699.98	2.95	2.02	2.95	3.57	34.35	0.14
1800.00	0.11	237.41	1799.98	2.92	1.80	2.92	3.43	31.66	0.11

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.09	225.37	1899.98	2.81	1.66	2.81	3.27	30.61	0.02
2000.00	0.18	198.16	1999.98	2.61	1.56	2.61	3.03	30.86	0.11
2100.00	0.20	164.34	2099.98	2.29	1.55	2.29	2.76	34.22	0.11
2200.00	0.20	97.16	2199.98	2.09	1.78	2.09	2.75	40.33	0.22
2300.00	0.53	89.25	2299.98	2.08	2.42	2.08	3.19	49.32	0.33
2400.00	0.56	56.48	2399.97	2.35	3.29	2.35	4.04	54.41	0.31
2500.00	0.89	45.40	2499.97	3.17	4.25	3.17	5.30	53.29	0.36
2600.00	0.87	6.39	2599.95	4.46	4.88	4.46	6.61	47.57	0.59
2700.00	1.08	4.03	2699.94	6.15	5.03	6.15	7.95	39.29	0.22
2800.00	1.23	44.68	2799.92	7.85	5.85	7.85	9.79	36.70	0.81
2900.00	1.77	53.50	2899.89	9.53	7.84	9.53	12.34	39.46	0.58
3000.00	1.45	54.01	2999.85	11.19	10.11	11.19	15.08	42.09	0.31
3100.00	1.45	57.70	3099.82	12.62	12.21	12.62	17.55	44.06	0.09
3200.00	1.24	60.14	3199.79	13.83	14.21	13.83	19.83	45.78	0.22
3300.00	1.21	51.09	3299.77	15.03	15.97	15.03	21.93	46.74	0.19
3400.00	1.17	30.23	3399.74	16.58	17.31	16.58	23.97	46.23	0.43
3500.00	1.20	357.90	3499.72	18.51	17.79	18.51	25.67	43.85	0.66
3600.00	1.15	350.17	3599.70	20.55	17.58	20.55	27.04	40.53	0.17
3700.00	1.12	358.92	3699.68	22.52	17.39	22.52	28.45	37.67	0.18
3800.00	1.05	344.75	3799.67	24.38	17.13	24.38	29.79	35.09	0.28
3900.00	1.08	322.76	3899.65	26.01	16.32	26.01	30.70	32.10	0.41
4000.00	1.05	340.29	3999.63	27.62	15.44	27.62	31.64	29.20	0.33
4100.00	0.98	336.35	4099.62	29.27	14.79	29.27	32.79	26.80	0.10
4200.00	1.08	330.78	4199.60	30.88	13.98	30.88	33.90	24.36	0.14
4300.00	1.08	318.81	4299.58	32.42	12.90	32.42	34.89	21.70	0.23
4400.00	1.14	315.13	4399.56	33.83	11.58	33.83	35.75	18.89	0.09
4500.00	1.25	311.24	4499.54	35.25	10.05	35.25	36.66	15.92	0.14
4600.00	1.26	314.87	4599.52	36.75	8.45	36.75	37.71	12.96	0.08
4700.00	1.34	319.04	4699.49	38.41	6.91	38.41	39.02	10.20	0.13
4800.00	1.46	323.68	4799.46	40.32	5.38	40.32	40.68	7.61	0.16
4900.00	1.58	308.20	4899.43	42.20	3.54	42.20	42.35	4.80	0.43
5000.00	1.89	282.58	4999.38	43.41	0.85	43.41	43.42	1.13	0.82
5100.00	2.14	273.34	5099.32	43.88	-2.62	43.88	43.96	356.59	0.41
5200.00	2.24	282.85	5199.25	44.42	-6.39	44.42	44.88	351.82	0.38
5300.00	2.19	268.06	5299.17	44.79	-10.20	44.79	45.94	347.17	0.57
5400.00	2.15	293.81	5399.11	45.48	-13.82	45.48	47.54	343.10	0.97
5500.00	2.17	292.69	5499.03	46.97	-17.28	46.97	50.05	339.80	0.04
5600.00	1.97	308.24	5598.97	48.76	-20.37	48.76	52.85	337.32	0.59
5700.00	1.86	292.47	5698.92	50.44	-23.22	50.44	55.53	335.29	0.54

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5800.00	1.76	294.17	5798.87	51.69	-26.11	51.69	57.91	333.20	0.11
5900.00	1.70	291.11	5898.82	52.85	-28.90	52.85	60.24	331.33	0.11
6000.00	1.36	298.77	5998.78	53.96	-31.32	53.96	62.39	329.87	0.39
6100.00	1.35	318.19	6098.76	55.41	-33.14	55.41	64.56	329.11	0.46
6200.00	0.95	319.73	6198.74	56.92	-34.47	56.92	66.54	328.80	0.40
6300.00	0.81	312.16	6298.72	58.03	-35.53	58.03	68.04	328.52	0.19
6400.00	0.80	315.40	6398.71	59.00	-36.54	59.00	69.40	328.23	0.05
6500.00	0.59	311.86	6498.71	59.84	-37.42	59.84	70.58	327.98	0.22
6600.00	0.32	342.78	6598.70	60.45	-37.88	60.45	71.34	327.93	0.35
6700.00	0.46	36.43	6698.70	61.04	-37.73	61.04	71.75	328.28	0.37
6800.00	0.54	23.09	6798.70	61.79	-37.31	61.79	72.18	328.88	0.14
6900.00	0.70	49.86	6898.69	62.61	-36.66	62.61	72.55	329.65	0.33
7000.00	0.86	30.61	6998.68	63.65	-35.81	63.65	73.03	330.64	0.31
7100.00	1.06	39.73	7098.67	65.01	-34.83	65.01	73.75	331.82	0.25
7200.00	1.34	11.15	7198.65	66.86	-34.02	66.86	75.02	333.03	0.65
7300.00	1.18	3.27	7298.62	69.04	-33.73	69.04	76.84	333.96	0.23
7400.00	1.79	341.10	7398.59	71.55	-34.18	71.55	79.30	334.47	0.83
7500.00	1.83	339.06	7498.54	74.53	-35.26	74.53	82.45	334.68	0.08
7600.00	2.06	337.38	7598.48	77.68	-36.52	77.68	85.84	334.82	0.24
7700.00	2.11	343.72	7698.42	81.11	-37.73	81.11	89.46	335.05	0.24
7800.00	1.86	354.08	7798.36	84.49	-38.42	84.49	92.82	335.55	0.44
7900.00	1.78	0.76	7898.31	87.66	-38.56	87.66	95.77	336.25	0.22
8000.00	1.53	8.15	7998.26	90.54	-38.35	90.54	98.33	337.04	0.33
8100.00	1.37	3.98	8098.23	93.05	-38.08	93.05	100.54	337.74	0.19
8200.00	1.87	5.90	8198.19	95.88	-37.83	95.88	103.07	338.47	0.50
8300.00	1.46	27.09	8298.15	98.64	-37.08	98.64	105.38	339.40	0.73
8400.00	1.04	14.22	8398.13	100.66	-36.27	100.66	107.00	340.18	0.50
8500.00	0.77	331.11	8498.12	102.14	-36.38	102.14	108.42	340.40	0.71
8600.00	0.97	319.07	8598.10	103.37	-37.26	103.37	109.87	340.18	0.27
8700.00	1.09	320.65	8698.09	104.74	-38.41	104.74	111.56	339.86	0.12
8800.00	1.12	307.13	8798.07	106.06	-39.79	106.06	113.28	339.43	0.26
8900.00	1.70	311.66	8898.04	107.64	-41.68	107.64	115.43	338.83	0.58



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Kingfisher State Com No. 001H / API 30-025-41835



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