

Abdication Summary

1 General

1.1 Customer Information

Company	PICEANCE HL
Representative	
Address	

1.2 Well/Wellbore Information

Well	RGU 43-24-198	Wellbore No.	00
Wellbore Legal	RGU 43-24-198	Common Wellbore	RGU 43-24-198
Project	RG 24-01S-098W	Site	RGU 33-24-198 Pad
Vertical Section	82.60 (°)	North reference	True
Azimuth		Origin EW	
Spud date	6/26/2014	UWI	RGU 43-24-198
Active datum	KB @ 5,617.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	SDI
Date Started	6/26/2014	Ended	
Tool Name	MWD	Engineer	

2.1.1 Tie On Point

MD	(ft)	0.0
Inc.	(°)	0.00
Azi.	(°)	0.00
TVD	(ft)	0.00
N/S	(ft)	
EW	(ft)	0.00

2.1.2 Survey Stations

102, 46

Date	Type	MD	Inc.	Azi.	TVD	N/S	EW	V. sec.	DLS	Build Rate	Turn	Tface
6/26/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/26/2014	NORMAL	106.0	0.97	117.07	106.00	-0.41	0.80	0.74	0.92	0.92	0.00	0.00
	NORMAL	166.0	1.41	97.65	167.98	-0.75	2.02	1.91	0.95	0.71	-31.32	307.51
	NORMAL	260.0	2.99	75.76	259.91	-0.31	5.47	5.38	1.92	1.72	-23.79	320.76
	NORMAL	352.0	3.70	74.62	351.76	1.07	10.66	10.71	0.78	0.77	-1.24	354.08
	NORMAL	428.0	4.28	70.71	427.57	2.66	15.70	15.91	0.84	0.76	-5.14	332.91
	NORMAL	520.0	4.71	78.75	519.29	4.53	22.64	23.04	0.83	0.47	8.74	59.74
	NORMAL	612.0	5.17	82.90	610.95	5.78	30.46	30.95	0.63	0.50	4.51	39.92
	NORMAL	705.0	5.49	82.48	703.55	6.88	39.03	39.59	0.35	0.34	-0.45	352.84
	NORMAL	797.0	5.92	83.29	795.09	8.01	48.11	48.74	0.48	0.47	0.88	11.01
	NORMAL	889.0	6.37	88.00	886.56	8.74	57.92	58.56	0.73	0.49	5.12	50.61
	NORMAL	981.0	7.22	88.71	977.92	9.05	68.80	69.39	0.93	0.92	0.77	6.00
	NORMAL	1,076.0	6.38	80.15	1,072.25	10.08	79.97	80.60	1.38	-0.88	-9.01	226.15
	NORMAL	1,171.0	6.95	78.59	1,166.61	12.12	90.80	91.61	0.63	0.60	-1.64	341.60
	NORMAL	1,265.0	7.23	83.60	1,259.89	13.91	102.26	103.20	0.72	0.30	5.33	68.14
	NORMAL	1,360.0	7.12	87.05	1,354.15	14.88	114.08	115.04	0.47	-0.12	3.63	106.03
	NORMAL	1,455.0	6.99	80.73	1,448.43	16.11	125.66	126.69	0.83	-0.14	-6.65	257.37
	NORMAL	1,550.0	6.84	77.60	1,542.74	18.26	136.89	138.10	0.43	-0.16	-3.29	246.75
	NORMAL	1,646.0	7.13	75.60	1,638.03	20.97	148.25	149.71	0.39	0.30	-2.08	319.02
6/27/2014	NORMAL	1,712.0	6.93	78.08	1,703.53	22.81	156.11	157.75	0.55	-0.30	3.76	124.61
	NORMAL	1,807.0	6.37	80.48	1,797.89	24.86	166.91	168.73	0.66	-0.59	2.53	154.79

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (")	Azi. (")	TVD (ft)	N/S (ft)	EW (ft)	V. sec. (ft)	DLS ("/100usft)	Build Rate ("/100usft)	Turn ("/100usft)	Tface (")
6/27/2014	NORMAL	1,902.0	6.46	83.70	1,892.30	26.32	177.42	179.34	0.39	0.09	3.39	77.56
	NORMAL	1,996.0	7.63	77.58	1,985.59	28.24	188.77	190.84	1.48	1.24	-6.51	324.26
	NORMAL	2,091.0	7.97	78.54	2,079.71	30.91	201.39	203.69	0.38	0.36	1.01	21.44
6/28/2014	NORMAL	2,186.0	8.05	82.39	2,173.78	33.10	214.44	216.91	0.57	0.08	4.05	83.43
	NORMAL	2,276.0	8.12	79.73	2,262.89	35.07	226.94	229.56	0.42	0.08	-2.96	279.28
	NORMAL	2,371.0	7.98	84.08	2,356.95	36.94	240.10	242.86	0.66	-0.15	4.58	105.09
	NORMAL	2,466.0	6.33	85.50	2,451.21	38.03	251.88	254.68	1.75	-1.74	1.49	174.59
	NORMAL	2,560.0	6.53	90.06	2,544.62	38.44	262.39	265.16	0.58	0.21	4.85	70.89
	NORMAL	2,655.0	6.96	88.37	2,638.96	38.59	273.55	276.24	0.50	0.45	-1.78	334.38
	NORMAL	2,750.0	6.90	88.96	2,733.27	38.86	285.01	287.64	0.10	-0.06	0.62	130.42
	NORMAL	2,844.0	6.44	79.75	2,826.63	39.90	295.84	298.51	1.24	-0.49	-9.80	242.20
	NORMAL	2,939.0	6.40	81.18	2,921.04	41.66	306.31	309.13	0.17	-0.04	1.51	104.75
	NORMAL	3,033.0	6.32	78.67	3,014.46	43.48	316.56	319.53	0.31	-0.09	-2.67	252.70
	NORMAL	3,128.0	6.87	76.59	3,108.83	45.83	327.22	330.39	0.63	0.58	-2.19	335.49
	NORMAL	3,223.0	7.75	80.96	3,203.06	48.15	339.07	342.45	1.10	0.93	4.60	34.47
	NORMAL	3,318.0	8.22	81.81	3,297.14	50.12	352.12	355.64	0.51	0.49	0.89	14.52
	NORMAL	3,412.0	9.69	84.43	3,389.99	51.85	366.64	370.27	1.62	1.56	2.79	16.80
6/29/2014	NORMAL	3,507.0	10.04	83.65	3,483.59	53.54	382.83	386.54	0.39	0.37	-0.82	338.72
	NORMAL	3,602.0	11.54	85.22	3,576.90	55.25	400.53	404.31	1.61	1.58	1.65	11.86
	NORMAL	3,696.0	11.77	84.07	3,688.97	57.02	419.44	422.29	0.35	0.24	-1.22	314.15
	NORMAL	3,791.0	11.53	85.52	3,762.01	58.77	438.54	442.46	0.40	-0.25	1.53	130.05
	NORMAL	3,854.0	11.49	86.10	3,823.74	59.68	451.08	455.01	0.19	-0.06	0.92	109.35
8/1/2014	NORMAL	3,944.0	10.70	85.09	3,912.06	61.01	468.35	472.30	0.90	-0.88	-1.12	193.33
	NORMAL	4,007.0	9.71	85.12	3,974.06	61.96	479.47	483.45	1.57	-1.57	0.05	179.71
	NORMAL	4,102.0	9.86	84.97	4,067.68	63.36	495.55	499.58	0.16	0.16	-0.16	350.28
	NORMAL	4,196.0	11.33	72.34	4,160.09	66.86	512.37	516.72	2.91	1.56	-13.44	296.02
	NORMAL	4,291.0	11.14	65.51	4,253.27	73.50	529.62	534.67	1.41	-0.20	-7.19	258.53
	NORMAL	4,386.0	12.08	70.53	4,346.33	80.62	547.34	553.16	1.45	0.99	5.28	49.54
	NORMAL	4,481.0	11.30	83.82	4,439.38	84.93	565.97	572.20	2.94	-0.82	13.99	112.59
	NORMAL	4,575.0	11.83	85.30	4,531.47	86.71	584.73	591.03	0.65	0.56	1.57	29.97
	NORMAL	4,671.0	12.39	89.36	4,625.33	87.64	604.84	611.08	1.06	0.58	4.23	58.67
	NORMAL	4,765.0	10.86	88.36	4,717.40	88.00	623.77	629.91	1.64	-1.63	-1.06	187.01
	NORMAL	4,860.0	10.56	78.15	4,810.76	90.05	641.24	647.50	2.02	-0.32	-10.75	256.02
	NORMAL	4,955.0	9.87	82.44	4,904.25	92.91	657.83	664.32	1.08	-0.73	4.52	134.30
	NORMAL	5,050.0	9.79	80.70	4,997.68	95.28	673.87	680.53	0.32	0.35	-1.83	254.07
8/2/2014	NORMAL	5,144.0	10.08	87.89	5,090.45	96.88	689.98	696.71	1.35	0.31	7.65	80.40
	NORMAL	5,239.0	9.75	86.38	5,184.03	97.69	706.32	713.02	0.44	-0.35	-1.59	217.49
	NORMAL	5,334.0	10.20	79.82	5,277.60	99.68	722.62	729.44	1.29	0.47	-6.91	288.35
	NORMAL	5,428.0	11.00	86.17	5,370.00	101.75	739.77	746.71	1.50	0.85	6.76	58.74
	NORMAL	5,523.0	10.29	82.05	5,463.36	103.53	757.21	764.24	1.10	-0.75	-4.34	224.88
	NORMAL	5,618.0	10.52	84.67	5,556.80	105.51	774.25	781.39	0.55	0.24	2.76	65.37
	NORMAL	5,713.0	11.47	77.59	5,650.06	108.35	792.11	799.47	1.74	1.00	-7.45	301.62
	NORMAL	5,808.0	10.95	76.27	5,743.25	112.52	810.10	817.85	0.61	-0.55	-1.39	205.62
	NORMAL	5,902.0	10.11	75.61	5,835.67	116.69	826.77	834.91	0.90	-0.89	-0.70	187.85
	NORMAL	5,997.0	11.04	76.72	5,929.05	120.85	843.70	852.23	1.00	0.98	1.17	12.90
	NORMAL	6,092.0	10.69	82.14	6,022.35	124.15	861.28	870.09	1.14	-0.37	5.71	111.56
	NORMAL	6,187.0	11.21	77.32	6,115.62	127.38	879.02	888.10	1.11	0.55	-5.07	297.21
	NORMAL	6,281.0	10.12	78.07	6,208.00	131.09	896.01	905.43	1.17	-1.16	0.80	173.11
	NORMAL	6,376.0	9.75	82.81	6,301.68	133.82	912.16	921.80	0.94	-0.39	2.44	116.67
	NORMAL	6,471.0	10.55	85.13	6,395.09	135.57	928.80	938.53	0.95	0.84	2.49	28.21
	NORMAL	6,565.0	7.83	84.72	6,487.87	136.89	943.76	953.53	2.89	-2.89	-0.44	181.18
	NORMAL	6,660.0	7.24	76.51	6,582.06	138.88	956.02	965.95	1.29	-0.62	-8.64	237.25
	NORMAL	6,755.0	6.89	82.84	6,676.34	140.99	967.50	977.60	0.90	-0.37	6.66	117.33
8/3/2014	NORMAL	6,850.0	6.26	80.46	6,770.71	142.56	978.26	988.47	0.72	-0.66	-2.51	202.21
	NORMAL	6,944.0	6.22	82.57	6,864.15	144.06	988.36	998.69	0.25	-0.04	2.24	100.94
	NORMAL	7,039.0	5.22	87.53	6,958.68	144.92	997.78	1,008.14	1.17	-1.05	5.22	156.15

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2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	EW (ft)	V. sec. (ft)	DLS (%/100usft)	Build Rate (%/100usft)	Turn (%/100usft)	Tface (°)
8/3/2014	NORMAL	7,134.0	4.67	83.29	7,053.33	145.55	1,005.94	1,016.31	0.69	-0.58	-4.46	211.50
	NORMAL	7,229.0	4.16	85.40	7,148.05	146.28	1,013.22	1,023.62	0.56	-0.54	2.22	163.38
	NORMAL	7,324.0	3.82	87.32	7,242.82	146.71	1,019.81	1,030.22	0.38	-0.36	2.02	159.50
	NORMAL	7,419.0	3.32	93.71	7,337.63	146.68	1,025.72	1,036.07	0.67	-0.53	6.73	144.65
	NORMAL	7,513.0	2.74	88.24	7,431.50	146.57	1,030.68	1,040.98	0.69	-0.62	-5.82	203.78
	NORMAL	7,608.0	2.88	85.88	7,526.39	146.81	1,035.33	1,045.62	0.19	-0.15	-2.48	319.25
	NORMAL	7,703.0	0.65	123.56	7,621.34	146.68	1,038.16	1,048.41	2.52	-2.35	39.66	170.46
	NORMAL	7,797.0	0.75	146.77	7,715.33	145.87	1,038.94	1,049.08	0.32	0.11	24.69	82.43
	NORMAL	7,892.0	0.71	155.73	7,810.32	144.82	1,039.53	1,049.52	0.13	-0.04	9.43	113.75
	NORMAL	7,987.0	0.50	149.92	7,905.32	143.92	1,039.98	1,049.85	0.23	-0.22	-6.12	193.39
	NORMAL	8,082.0	0.50	150.67	8,000.31	143.20	1,040.39	1,050.17	0.01	0.00	0.79	90.37
	NORMAL	8,176.0	0.63	156.69	8,094.31	142.37	1,040.79	1,050.46	0.15	0.14	6.40	27.57
	NORMAL	8,272.0	0.64	162.00	8,190.30	141.38	1,041.17	1,050.70	0.06	0.04	5.53	83.02
8/4/2014	NORMAL	8,366.0	0.68	211.54	8,284.30	140.40	1,041.04	1,050.45	0.59	0.04	52.70	111.01
	NORMAL	8,461.0	0.55	228.27	8,379.29	139.62	1,040.40	1,049.72	0.23	-0.14	17.61	134.07
	NORMAL	8,555.0	1.66	9.01	8,473.28	140.66	1,040.28	1,049.73	2.25	1.18	149.72	150.21
	NORMAL	8,650.0	1.52	9.10	8,568.25	143.26	1,040.69	1,050.48	0.15	-0.15	0.09	179.02
	NORMAL	8,745.0	1.22	9.84	8,663.22	145.50	1,041.07	1,051.13	0.32	-0.32	0.78	176.99
	NORMAL	8,840.0	0.85	9.28	8,758.20	147.20	1,041.35	1,051.64	0.39	-0.39	-0.59	181.29
8/5/2014	NORMAL	8,935.0	0.81	49.33	8,853.19	148.33	1,041.97	1,052.40	0.60	-0.04	42.16	113.81
	NORMAL	9,029.0	0.86	52.19	8,947.18	149.20	1,043.04	1,053.56	0.07	0.05	3.04	41.25
	NORMAL	9,124.0	0.94	66.55	9,042.17	149.94	1,044.31	1,054.93	0.25	0.08	15.12	77.75
	NORMAL	9,219.0	0.90	73.28	9,137.16	150.47	1,045.74	1,056.41	0.12	-0.04	7.08	113.66
	NORMAL	9,314.0	0.71	102.85	9,232.15	150.55	1,047.03	1,057.70	0.47	-0.20	31.13	128.88
	NORMAL	9,408.0	0.80	110.64	9,326.14	150.19	1,048.21	1,058.83	0.15	0.10	8.29	52.69
	NORMAL	9,503.0	0.91	101.43	9,421.13	149.81	1,049.57	1,060.13	0.18	0.12	-9.69	304.01
	NORMAL	9,598.0	0.55	229.40	9,516.13	149.36	1,049.97	1,060.46	1.39	-0.38	134.71	160.85
	NORMAL	9,693.0	0.46	229.47	9,611.13	148.82	1,049.76	1,059.30	0.09	-0.09	0.07	179.64
	NORMAL	9,788.0	0.56	190.14	9,706.12	148.11	1,048.96	1,059.30	0.37	-0.11	-41.40	265.68
	NORMAL	9,882.0	0.85	191.57	9,800.12	146.98	1,048.74	1,058.93	0.31	0.31	1.52	4.19
	NORMAL	9,977.0	1.13	198.60	9,895.10	145.40	1,048.30	1,058.29	0.32	0.29	7.40	26.99
	NORMAL	10,072.0	1.05	231.29	9,980.09	143.97	1,047.32	1,057.14	0.65	-0.08	34.41	113.47
	NORMAL	10,167.0	1.13	229.28	10,085.07	142.81	1,045.93	1,055.61	0.09	0.08	-2.12	333.45
8/6/2014	NORMAL	10,262.0	0.46	205.30	10,180.06	141.15	1,044.75	1,054.62	0.77	-0.71	-25.24	194.76
	NORMAL	10,356.0	0.48	202.00	10,274.06	141.15	1,045.23	1,054.93	0.04	0.02	-3.51	304.80
	NORMAL	10,451.0	0.64	158.87	10,369.05	140.28	1,044.16	1,054.16	0.46	0.17	-45.40	268.31
	NORMAL	10,546.0	0.73	169.94	10,464.05	139.19	1,045.09	1,054.31	0.17	0.09	11.65	61.40
	NORMAL	10,641.0	0.97	187.56	10,559.04	137.80	1,045.09	1,054.13	0.37	0.25	18.55	56.48
8/7/2014	NORMAL	10,735.0	1.56	259.58	10,653.02	136.78	1,043.73	1,052.65	1.66	0.63	76.62	108.21
	NORMAL	10,830.0	1.69	259.58	10,747.98	136.29	1,041.08	1,049.96	0.14	0.14	0.00	0.00
	NORMAL	10,925.0	2.41	306.25	10,842.93	137.22	1,038.09	1,047.11	1.85	0.76	49.13	91.17
	NORMAL	11,020.0	1.85	302.75	10,937.66	139.23	1,035.19	1,044.50	0.60	-0.59	-3.68	191.31
	NORMAL	11,114.0	1.23	282.33	11,031.83	140.27	1,032.93	1,042.39	0.87	-0.66	-21.72	211.61
	NORMAL	11,209.0	1.28	282.50	11,126.80	140.72	1,030.89	1,040.43	0.05	0.05	0.18	4.34
	NORMAL	11,303.0	1.05	334.57	11,220.79	141.72	1,029.50	1,039.18	1.11	-0.24	55.39	127.46
	NORMAL	11,398.0	0.65	342.18	11,315.78	143.02	1,028.96	1,038.81	0.44	-0.42	8.01	168.02
	NORMAL	11,493.0	0.20	351.63	11,410.77	143.70	1,028.77	1,038.71	0.48	-0.47	9.95	175.85
	NORMAL	11,588.0	0.13	90.38	11,505.77	143.86	1,028.85	1,038.81	0.27	-0.07	103.95	149.69
	NORMAL	11,682.0	0.20	69.32	11,599.77	143.92	1,029.11	1,039.08	0.10	0.07	-22.40	308.24
	NORMAL	11,777.0	0.35	98.94	11,694.77	143.93	1,029.56	1,039.52	0.21	0.16	31.18	58.92
	NORMAL	11,872.0	0.54	104.16	11,789.77	143.78	1,030.28	1,040.21	0.20	0.20	5.49	14.66
8/8/2014	NORMAL	11,966.0	0.62	119.13	11,883.76	143.42	1,031.15	1,041.03	0.18	0.09	15.93	69.79
	NORMAL	12,061.0	0.65	110.81	11,978.76	142.98	1,032.10	1,041.92	0.10	0.03	-8.76	283.83
	NORMAL	12,156.0	0.73	100.41	12,073.75	142.68	1,033.20	1,042.97	0.16	0.08	-10.95	297.30
	NORMAL	12,250.0	1.02	86.22	12,167.74	142.62	1,034.63	1,044.38	0.38	0.31	-15.10	316.00
	NORMAL	12,345.0	0.87	87.54	12,262.73	142.71	1,036.19	1,045.94	0.16	-0.16	1.39	172.40

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2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	EW (ft)	V. sec. (ft)	DLS (%/100usft)	Build Rate (%/100usft)	Turn (%/100usft)	Tface (°)
8/8/2014	NORMAL	12,440.0	1.09	79.29	12,357.72	142.91	1,037.80	1,047.56	0.27	0.23	-8.68	323.16
	NORMAL	12,534.0	1.17	70.19	12,451.70	143.40	1,039.58	1,049.39	0.21	0.09	-9.68	289.43
	NORMAL	12,629.0	1.21	73.46	12,546.68	144.02	1,041.45	1,051.33	0.08	0.04	3.44	61.14
	NORMAL	12,724.0	1.08	81.47	12,641.66	144.43	1,043.30	1,053.21	0.22	-0.14	8.43	133.04
8/9/2014	NORMAL	12,843.0	1.09	83.71	12,760.64	144.72	1,045.54	1,055.47	0.04	0.01	1.88	77.86