

Deviation Summary

PICEANCE VLY

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	NER 513-32	Wellbore No.	00
Wellbore Legal Name	NER 513-32	Common Wellbore Name	NER 513-32
Project	RU 05-07S-093W	Site	RU 23-5 Pad
Vertical Section Azimuth		North reference	True
Origin N/S		Origin E/W	
Spud date	5/26/2014	UWI	NER 513-32
Active datum	KB @7,627.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	5/26/2014	Ended	
Tool Name	MWD	Engineer	

2.1.1 Tie On Point

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

2.1.2 Survey Stations

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
5/26/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/26/2014	NORMAL	84.0	0.35	343.83	84.00	0.25	-0.07	0.25	0.42	0.42	0.00	343.83
	NORMAL	177.0	2.38	307.35	176.97	1.69	-1.69	1.69	2.27	2.18	-39.23	317.86
	NORMAL	267.0	5.89	289.25	266.72	4.35	-7.53	4.35	4.11	3.90	-20.11	330.41
5/27/2014	NORMAL	359.0	8.53	299.09	357.99	9.22	-17.95	9.22	3.16	2.87	10.70	30.01
	NORMAL	451.0	12.76	300.67	448.39	17.73	-32.66	17.73	4.61	4.60	1.72	4.73
	NORMAL	543.0	16.98	301.55	537.29	29.94	-52.86	29.94	4.59	4.59	0.96	3.49
	NORMAL	635.0	20.59	310.52	624.39	47.49	-76.62	47.49	5.01	3.92	9.75	42.98
	NORMAL	709.0	20.54	314.71	693.68	65.08	-95.73	65.08	1.99	-0.07	5.66	93.91
	NORMAL	800.0	20.72	314.69	778.84	87.63	-118.52	87.63	0.20	0.20	-0.02	357.75
	NORMAL	892.0	21.68	311.34	864.62	110.30	-142.85	110.30	1.68	1.04	-3.64	306.82
	NORMAL	982.0	22.70	311.01	947.95	132.68	-168.44	132.68	1.14	1.13	-0.37	352.88
	NORMAL	1,073.0	21.98	310.63	1,032.12	155.29	-194.62	155.29	0.81	-0.79	-0.42	191.17
	NORMAL	1,123.0	22.77	310.91	1,078.36	167.72	-209.03	167.72	1.59	1.58	0.56	7.81
5/28/2014	NORMAL	1,264.0	22.67	310.95	1,208.42	203.40	-250.17	203.40	0.07	-0.07	0.03	171.24
	NORMAL	1,358.0	21.86	310.04	1,295.41	226.53	-277.25	226.53	0.94	-0.86	-0.97	202.64
	NORMAL	1,454.0	21.83	310.68	1,384.51	249.66	-304.47	249.66	0.25	-0.03	0.67	97.48
	NORMAL	1,549.0	21.68	310.08	1,472.75	272.47	-331.29	272.47	0.28	-0.16	-0.63	235.72
	NORMAL	1,644.0	21.61	309.65	1,561.05	294.94	-358.19	294.94	0.18	-0.07	-0.45	245.99
	NORMAL	1,738.0	21.46	308.70	1,648.49	316.73	-384.94	316.73	0.40	-0.16	-1.01	246.28
	NORMAL	1,834.0	21.77	309.12	1,737.74	338.94	-412.45	338.94	0.36	0.32	0.44	26.72

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (")	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS ("/100usft)	Build Rate ("/100usft)	Turn ("/100usft)	Tface (")
5/28/2014	NORMAL	1,929.0	21.59	308.57	1,826.02	360.96	-439.79	360.96	0.29	-0.19	-0.58	228.21
	NORMAL	2,025.0	22.96	309.80	1,914.85	383.95	-467.98	383.95	1.51	1.43	1.28	19.36
	NORMAL	2,120.0	22.50	309.79	2,002.47	407.45	-496.19	407.45	0.48	-0.48	-0.01	180.48
	NORMAL	2,215.0	21.68	309.61	2,090.50	430.27	-523.67	430.27	0.87	-0.86	-0.19	184.64
5/29/2014	NORMAL	2,310.0	23.40	310.13	2,178.24	453.62	-551.62	453.62	1.82	1.81	0.55	6.85
	NORMAL	2,405.0	23.52	311.38	2,265.39	478.31	-580.26	478.31	0.54	0.13	1.32	77.02
	NORMAL	2,501.0	22.70	310.70	2,353.68	503.05	-608.68	503.05	0.90	-0.85	-0.71	197.72
	NORMAL	2,596.0	22.63	310.56	2,441.35	526.89	-636.46	526.89	0.09	-0.07	-0.15	217.56
	NORMAL	2,692.0	22.60	310.97	2,529.96	550.99	-664.42	550.99	0.17	-0.03	0.43	100.96
	NORMAL	2,787.0	22.54	307.87	2,617.69	574.14	-692.58	574.14	1.25	-0.06	-3.26	265.68
	NORMAL	2,883.0	22.58	308.09	2,706.34	596.80	-721.61	596.80	0.10	0.04	0.23	64.74
	NORMAL	2,978.0	22.62	308.85	2,794.05	619.52	-750.19	619.52	0.31	0.04	0.80	82.55
	NORMAL	3,074.0	22.52	308.68	2,882.70	642.59	-778.92	642.59	0.12	-0.10	-0.18	213.05
	NORMAL	3,170.0	22.23	308.22	2,971.47	665.31	-807.54	665.31	0.35	-0.30	-0.48	210.91
	NORMAL	3,265.0	21.83	308.56	3,059.53	687.44	-835.47	687.44	0.44	-0.42	0.36	162.47
	NORMAL	3,360.0	21.55	308.65	3,147.81	709.35	-862.91	709.35	0.30	-0.29	0.09	173.27
	NORMAL	3,455.0	22.45	311.45	3,235.89	732.25	-890.13	732.25	1.45	0.95	2.95	50.67
	NORMAL	3,551.0	22.28	312.32	3,324.67	756.64	-917.33	756.64	0.39	-0.18	0.91	117.58
	NORMAL	3,645.0	22.07	312.32	3,411.72	780.52	-943.56	780.52	0.22	-0.22	0.00	180.00
	NORMAL	3,739.0	21.80	312.26	3,498.91	804.15	-969.54	804.15	0.29	-0.29	-0.06	184.72
	NORMAL	3,834.0	21.25	312.31	3,587.29	827.60	-995.32	827.60	0.58	-0.58	0.05	178.11
	NORMAL	3,929.0	21.79	311.15	3,675.66	850.80	-1,021.33	850.80	0.72	0.57	-1.22	321.22
	NORMAL	4,023.0	20.96	310.76	3,763.20	873.25	-1,047.20	873.25	0.90	-0.88	-0.41	189.54
	NORMAL	4,118.0	22.48	311.19	3,851.45	896.31	-1,073.74	896.31	1.61	1.60	0.45	6.18
	NORMAL	4,214.0	21.82	311.14	3,940.37	920.13	-1,100.99	920.13	0.69	-0.69	-0.05	181.61
	NORMAL	4,308.0	23.63	309.97	4,027.06	943.73	-1,128.59	943.73	1.98	1.93	-1.24	345.44
	NORMAL	4,403.0	23.04	309.15	4,114.29	967.70	-1,157.60	967.70	0.71	-0.62	-0.86	208.46
	NORMAL	4,498.0	22.74	309.27	4,201.81	991.06	-1,186.23	991.06	0.32	-0.32	0.13	171.21
	NORMAL	4,594.0	21.80	308.53	4,290.65	1,013.91	-1,214.54	1,013.91	1.02	-0.98	-0.77	196.27
	NORMAL	4,689.0	23.39	309.06	4,378.36	1,036.78	-1,242.98	1,036.78	1.69	1.67	0.56	7.54
	NORMAL	4,784.0	23.13	309.43	4,465.64	1,060.51	-1,272.04	1,060.51	0.31	-0.27	0.39	150.83
	NORMAL	4,880.0	22.32	308.60	4,554.19	1,083.85	-1,300.83	1,083.85	0.93	-0.86	-0.86	200.73
	NORMAL	4,975.0	23.07	308.42	4,641.84	1,106.66	-1,329.50	1,106.66	0.81	0.81	-0.19	354.77
	NORMAL	5,070.0	22.34	307.90	4,729.48	1,129.32	-1,358.33	1,129.32	0.80	-0.77	-0.55	195.13
	NORMAL	5,166.0	21.71	308.47	4,818.47	1,151.58	-1,386.63	1,151.58	0.69	-0.66	0.59	161.52
	NORMAL	5,262.0	21.74	308.36	4,907.65	1,173.65	-1,414.48	1,173.65	0.05	0.03	-0.11	306.33
5/30/2014	NORMAL	5,357.0	21.11	308.48	4,996.09	1,195.22	-1,441.66	1,195.22	0.66	-0.66	0.13	176.08
	NORMAL	5,453.0	22.82	307.88	5,085.11	1,217.41	-1,469.89	1,217.41	1.80	1.78	-0.63	352.24
	NORMAL	5,548.0	22.52	308.09	5,172.77	1,239.94	-1,498.75	1,239.94	0.33	-0.32	0.22	165.00
	NORMAL	5,643.0	22.06	307.82	5,260.68	1,262.10	-1,527.16	1,262.10	0.50	-0.48	-0.28	192.43
	NORMAL	5,738.0	21.90	310.23	5,348.77	1,284.49	-1,554.78	1,284.49	0.96	-0.17	2.54	101.17
	NORMAL	5,834.0	21.38	310.06	5,438.01	1,307.32	-1,581.84	1,307.32	0.54	-0.54	-0.16	186.00
	NORMAL	5,930.0	21.19	309.67	5,527.46	1,329.66	-1,608.58	1,329.66	0.25	-0.20	-0.43	217.88
	NORMAL	6,025.0	20.75	309.23	5,616.17	1,351.26	-1,634.84	1,351.26	0.49	-0.46	-0.46	199.49
5/31/2014	NORMAL	6,120.0	21.52	310.16	5,704.77	1,373.14	-1,661.19	1,373.14	0.88	0.81	0.98	23.97
	NORMAL	6,216.0	21.80	310.53	5,794.00	1,396.08	-1,688.19	1,396.08	0.32	0.29	0.39	26.17
	NORMAL	6,312.0	20.66	312.66	5,883.48	1,419.14	-1,714.20	1,419.14	1.43	-1.19	2.22	146.91
	NORMAL	6,408.0	19.51	313.94	5,973.64	1,441.75	-1,738.20	1,441.75	1.28	-1.20	1.33	159.68
	NORMAL	6,503.0	16.82	312.34	6,063.90	1,462.01	-1,759.78	1,462.01	2.88	-2.83	-1.68	189.75
	NORMAL	6,599.0	14.93	310.01	6,156.23	1,479.32	-1,779.52	1,479.32	2.08	-1.97	-2.43	197.52
	NORMAL	6,695.0	14.47	310.79	6,249.09	1,495.11	-1,798.08	1,495.11	0.52	-0.48	0.81	157.10
	NORMAL	6,790.0	13.27	308.55	6,341.32	1,509.66	-1,815.59	1,509.66	1.38	-1.26	-2.36	203.02
	NORMAL	6,885.0	12.46	310.76	6,433.94	1,523.14	-1,831.88	1,523.14	1.00	-0.85	2.33	149.80
	NORMAL	6,980.0	11.36	312.31	6,526.89	1,536.13	-1,846.56	1,536.13	1.21	-1.16	1.63	164.54
	NORMAL	7,076.0	9.40	315.89	6,621.31	1,548.13	-1,859.01	1,548.13	2.15	-2.04	3.73	163.54
	NORMAL	7,172.0	9.27	314.55	6,716.04	1,559.18	-1,869.98	1,559.18	0.26	-0.14	-1.40	238.46

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
6/1/2014	NORMAL	7,267.0	7.79	312.31	6,809.99	1,568.88	-1,880.19	1,568.88	1.60	-1.56	-2.36	191.55
	NORMAL	7,362.0	6.69	307.46	6,904.23	1,576.58	-1,889.35	1,576.58	1.32	-1.16	-5.11	206.67
	NORMAL	7,457.0	5.46	307.86	6,998.70	1,582.72	-1,897.31	1,582.72	1.30	-1.29	0.42	178.23
	NORMAL	7,553.0	4.12	304.03	7,094.36	1,587.46	-1,903.77	1,587.46	1.43	-1.40	-3.99	191.52
	NORMAL	7,648.0	2.85	301.58	7,189.18	1,590.60	-1,908.61	1,590.60	1.35	-1.34	-2.58	185.47
	NORMAL	7,744.0	1.87	303.77	7,285.10	1,592.72	-1,911.95	1,592.72	1.02	-1.02	2.28	175.84
	NORMAL	7,839.0	1.16	356.81	7,380.07	1,594.55	-1,913.29	1,594.55	1.57	-0.75	55.83	141.67
6/2/2014	NORMAL	7,933.0	1.18	7.23	7,474.05	1,596.46	-1,913.22	1,596.46	0.23	0.02	11.09	89.85
	NORMAL	8,029.0	1.06	12.30	7,570.03	1,598.30	-1,912.91	1,598.30	0.16	-0.13	5.28	142.96
	NORMAL	8,124.0	0.84	21.49	7,665.02	1,599.81	-1,912.47	1,599.81	0.28	-0.23	9.67	149.83
	NORMAL	8,220.0	0.53	9.44	7,761.01	1,600.90	-1,912.14	1,600.90	0.35	-0.32	-12.55	198.98
	NORMAL	8,315.0	0.15	342.19	7,856.01	1,601.46	-1,912.10	1,601.46	0.42	-0.40	-28.68	189.82
	NORMAL	8,410.0	0.42	253.78	7,951.01	1,601.48	-1,912.47	1,601.48	0.47	0.28	-93.06	251.76
	NORMAL	8,507.0	0.68	224.00	8,048.01	1,600.96	-1,913.22	1,600.96	0.39	0.27	-30.70	296.75
6/3/2014	NORMAL	8,602.0	0.53	240.59	8,143.00	1,600.34	-1,913.99	1,600.34	0.24	-0.16	17.46	138.67
	NORMAL	8,695.0	1.06	74.46	8,236.00	1,600.36	-1,913.54	1,600.36	1.70	0.57	-178.63	189.26
6/4/2014	NORMAL	8,788.0	1.35	81.41	8,328.98	1,600.76	-1,911.62	1,600.76	0.35	0.31	7.47	30.25
	NORMAL	8,883.0	1.23	71.94	8,423.95	1,601.24	-1,909.55	1,601.24	0.26	-0.13	-9.97	235.95
	NORMAL	8,978.0	0.86	86.70	8,518.94	1,601.60	-1,907.87	1,601.60	0.48	-0.39	15.54	151.19
	NORMAL	9,073.0	0.89	134.81	8,613.93	1,601.12	-1,906.63	1,601.12	0.75	0.03	50.64	111.85
	NORMAL	9,167.0	1.05	150.93	8,707.91	1,599.85	-1,905.69	1,599.85	0.33	0.17	17.15	67.84
	NORMAL	9,262.0	0.77	154.55	8,802.90	1,598.51	-1,905.00	1,598.51	0.30	-0.29	3.81	170.20
	NORMAL	9,358.0	0.99	174.67	8,898.89	1,597.10	-1,904.64	1,597.10	0.39	0.23	20.96	64.89
6/5/2014	NORMAL	9,453.0	1.45	180.13	8,993.87	1,595.08	-1,904.57	1,595.08	0.50	0.48	5.75	16.92
	NORMAL	9,548.0	1.62	181.89	9,088.83	1,592.54	-1,904.62	1,592.54	0.19	0.18	1.85	16.38
	NORMAL	9,643.0	1.85	199.28	9,183.79	1,589.75	-1,905.17	1,589.75	0.60	0.24	18.31	75.26
	NORMAL	9,738.0	2.49	202.40	9,278.72	1,586.40	-1,906.46	1,586.40	0.68	0.67	3.28	12.02
	NORMAL	9,832.0	2.64	210.97	9,372.63	1,582.65	-1,908.35	1,582.65	0.44	0.16	9.12	72.96
	NORMAL	9,927.0	2.60	204.50	9,467.53	1,578.81	-1,910.37	1,578.81	0.31	-0.04	-6.81	259.07
	NORMAL	10,022.0	2.57	213.50	9,562.43	1,575.08	-1,912.44	1,575.08	0.43	-0.03	9.47	98.71
	NORMAL	10,117.0	2.81	216.40	9,657.33	1,571.43	-1,915.00	1,571.43	0.29	0.25	3.05	31.01
	NORMAL	10,212.0	3.85	215.42	9,752.17	1,566.95	-1,918.23	1,566.95	1.10	1.09	-1.03	356.38
	NORMAL	10,308.0	3.97	215.88	9,847.94	1,561.64	-1,922.04	1,561.64	0.13	0.13	0.48	14.88
	NORMAL	10,403.0	4.20	217.93	9,942.70	1,556.23	-1,926.11	1,556.23	0.29	0.24	2.16	33.44
	NORMAL	10,469.0	4.14	218.89	10,008.53	1,552.47	-1,929.09	1,552.47	0.14	-0.09	1.45	131.16
	NORMAL	10,524.0	4.14	218.89	10,063.38	1,549.38	-1,931.58	1,549.38	0.00	0.00	0.00	0.00