

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-422**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
74.2	7660	14810	0.32	22.6	2340	4520	0.32
75.5	7330	13890	0.31	23.0	2230	4230	0.31
77.4	7370	12580	0.24	23.6	2250	3830	0.24
78.7	7660	14810	0.32	24.0	2340	4520	0.32
80.4	8330	16260	0.32	24.5	2540	4960	0.32
82.0	8330	16260	0.32	25.0	2540	4960	0.32
83.7	7710	13890	0.28	25.5	2350	4230	0.28
85.3	7370	13330	0.28	26.0	2250	4060	0.28
86.9	7450	13070	0.26	26.5	2270	3980	0.26
88.9	8080	15150	0.30	27.1	2460	4620	0.30
90.2	7840	14180	0.28	27.5	2390	4320	0.28
91.9	6700	14490	0.36	28.0	2040	4420	0.36
93.5	6170	12350	0.33	28.5	1880	3760	0.33
95.1	6260	12820	0.34	29.0	1910	3910	0.34
96.8	7530	13070	0.25	29.5	2300	3980	0.25
98.4	8770	16670	0.31	30.0	2670	5080	0.31
100.1	8080	16670	0.35	30.5	2460	5080	0.35
101.7	8080	14180	0.26	31.0	2460	4320	0.26
103.4	8130	14180	0.26	31.5	2480	4320	0.26
105.0	7170	13330	0.30	32.0	2180	4060	0.30
106.6	6730	15500	0.38	32.5	2050	4730	0.38
108.3	6770	13890	0.34	33.0	2060	4230	0.34
109.9	6730	12580	0.30	33.5	2050	3830	0.30
111.6	6500	12580	0.32	34.0	1980	3830	0.32
113.2	6840	12580	0.29	34.5	2080	3830	0.29
114.8	7620	13070	0.24	35.0	2320	3980	0.24
116.5	7450	13330	0.27	35.5	2270	4060	0.27
118.1	7370	13890	0.30	36.0	2250	4230	0.30
119.8	7580	13070	0.25	36.5	2310	3980	0.25
121.4	8230	15150	0.29	37.0	2510	4620	0.29
123.0	9320	17090	0.29	37.5	2840	5210	0.29
124.7	9320	16260	0.26	38.0	2840	4960	0.26
126.3	9070	16260	0.27	38.5	2760	4960	0.27
128.0	8330	15500	0.30	39.0	2540	4730	0.30
129.6	7940	13610	0.24	39.5	2420	4150	0.24
131.2	7450	13330	0.27	40.0	2270	4060	0.27
132.9	7290	13330	0.29	40.5	2220	4060	0.29
134.5	6980	13610	0.32	41.0	2130	4150	0.32
136.2	6800	13330	0.32	41.5	2070	4060	0.32

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	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
137.8	7410	14490	0.32	42.0	2260	4420	0.32
139.4	8180	15150	0.29	42.5	2490	4620	0.29
141.1	8330	15150	0.28	43.0	2540	4620	0.28
142.7	8440	14810	0.26	43.5	2570	4520	0.26
144.4	7750	14180	0.29	44.0	2360	4320	0.29
146.0	7410	14490	0.32	44.5	2260	4420	0.32
147.6	7090	12120	0.24	45.0	2160	3690	0.24
149.3	6600	12120	0.29	45.5	2010	3690	0.29
150.9	6840	11490	0.23	46.0	2080	3500	0.23
152.6	7130	13070	0.29	46.5	2170	3980	0.29
154.2	7620	13890	0.28	47.0	2320	4230	0.28
155.8	7580	12580	0.22	47.5	2310	3830	0.22
157.5	7450	13070	0.26	48.0	2270	3980	0.26
159.1	7370	12580	0.24	48.5	2250	3830	0.24
160.8	7170	13330	0.30	49.0	2180	4060	0.30
162.4	6800	12350	0.28	49.5	2070	3760	0.28
164.0	6540	12820	0.32	50.0	1990	3910	0.32
165.7	7020	13330	0.31	50.5	2140	4060	0.31
167.3	6170	11300	0.29	51.0	1880	3440	0.29
169.0	6230	11110	0.27	51.5	1900	3390	0.27
170.6	6380	11700	0.29	52.0	1940	3560	0.29
172.2	6320	13890	0.37	52.5	1930	4230	0.37
173.9	6800	11900	0.26	53.0	2070	3630	0.26
175.5	7450	12350	0.21	53.5	2270	3760	0.21
177.2	7290	15500	0.36	54.0	2220	4730	0.36
178.8	7750	12820	0.21	54.5	2360	3910	0.21
180.5	8130	16260	0.33	55.0	2480	4960	0.33
182.1	7490	12350	0.21	55.5	2280	3760	0.21
183.7	7940	13610	0.24	56.0	2420	4150	0.24
185.4	9460	18520	0.32	56.5	2880	5640	0.32
187.0	10180	20200	0.33	57.0	3100	6160	0.33
188.7	9660	18520	0.31	57.5	2940	5640	0.31
190.3	9320	18520	0.33	58.0	2840	5640	0.33
191.9	9520	18520	0.32	58.5	2900	5640	0.32
193.6	9730	18520	0.31	59.0	2970	5640	0.31
195.2	9880	19050	0.32	59.5	3010	5810	0.32
196.9	10340	20200	0.32	60.0	3150	6160	0.32
198.5	9590	18020	0.30	60.5	2920	5490	0.30
200.1	9130	15500	0.23	61.0	2780	4730	0.23

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	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
201.8	8330	16260	0.32	61.5	2540	4960	0.32
203.4	8180	15500	0.31	62.0	2490	4730	0.31
205.1	8330	14810	0.27	62.5	2540	4520	0.27
206.7	8390	15500	0.29	63.0	2560	4730	0.29
208.3	8890	16670	0.30	63.5	2710	5080	0.30
210.0	9200	15870	0.25	64.0	2800	4840	0.25
211.6	8390	14810	0.26	64.5	2560	4520	0.26
213.3	7940	14810	0.30	65.0	2420	4520	0.30
214.9	7890	14810	0.30	65.5	2400	4520	0.30
216.5	8180	14810	0.28	66.0	2490	4520	0.28
218.2	7290	13610	0.30	66.5	2220	4150	0.30
219.8	9660	16670	0.25	67.0	2940	5080	0.25
221.5	9520	17090	0.27	67.5	2900	5210	0.27
223.1	9460	16260	0.24	68.0	2880	4960	0.24
224.7	9260	15870	0.24	68.5	2820	4840	0.24
226.4	9070	16670	0.29	69.0	2760	5080	0.29
228.0	9200	16260	0.26	69.5	2800	4960	0.26
229.7	9260	17090	0.29	70.0	2820	5210	0.29
231.3	9260	15870	0.24	70.5	2820	4840	0.24
232.9	8890	14490	0.20	71.0	2710	4420	0.20
234.6	9010	15870	0.26	71.5	2750	4840	0.26
236.2	9070	15150	0.22	72.0	2760	4620	0.22
237.9	8950	15150	0.23	72.5	2730	4620	0.23
239.5	8710	15870	0.28	73.0	2660	4840	0.28
241.1	8390	15150	0.28	73.5	2560	4620	0.28
242.8	8330	14810	0.27	74.0	2540	4520	0.27
244.4	8550	14810	0.25	74.5	2610	4520	0.25
246.1	9260	14810	0.18	75.0	2820	4520	0.18
247.7	9460	17090	0.28	75.5	2880	5210	0.28
249.3	9320	16670	0.27	76.0	2840	5080	0.27
251.0	8770	15150	0.25	76.5	2670	4620	0.25
252.6	7620	14490	0.31	77.0	2320	4420	0.31
254.3	7450	13330	0.27	77.5	2270	4060	0.27
255.9	7580	13330	0.26	78.0	2310	4060	0.26
257.6	6840	12120	0.27	78.5	2080	3690	0.27
259.2	6910	13070	0.31	79.0	2110	3980	0.31
260.8	8130	14810	0.28	79.5	2480	4520	0.28
262.5	9800	19050	0.32	80.0	2990	5810	0.32
264.1	9320	17540	0.30	80.5	2840	5350	0.30

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Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
265.8	8830	14180	0.18	81.0	2690	4320	0.18
267.4	9070	15150	0.22	81.5	2760	4620	0.22
269.0	9730	16670	0.24	82.0	2970	5080	0.24
270.7	10030	18520	0.29	82.5	3060	5640	0.29
272.3	10420	17540	0.23	83.0	3180	5350	0.23
274.0	9950	17090	0.24	83.5	3030	5210	0.24
275.6	9590	18520	0.32	84.0	2920	5640	0.32
277.2	9390	18020	0.31	84.5	2860	5490	0.31
278.9	9260	17540	0.31	85.0	2820	5350	0.31
280.5	9390	16260	0.25	85.5	2860	4960	0.25
282.2	9590	17090	0.27	86.0	2920	5210	0.27
283.8	8890	17090	0.31	86.5	2710	5210	0.31
285.4	9070	18520	0.34	87.0	2760	5640	0.34
287.1	8710	17090	0.32	87.5	2660	5210	0.32
288.7	8770	18020	0.34	88.0	2670	5490	0.34
290.4	10180	20200	0.33	88.5	3100	6160	0.33
292.0	8490	18020	0.36	89.0	2590	5490	0.36
293.6	7580	13890	0.29	89.5	2310	4230	0.29
295.3	8950	15870	0.27	90.0	2730	4840	0.27
296.9	6440	14810	0.38	90.5	1960	4520	0.38
298.6	9730	18020	0.29	91.0	2970	5490	0.29
300.2	10030	17540	0.26	91.5	3060	5350	0.26
301.8	10100	21510	0.36	92.0	3080	6550	0.36
303.5	9460	18020	0.31	92.5	2880	5490	0.31
305.1	8550	18520	0.36	93.0	2610	5640	0.36
306.8	9200	17540	0.31	93.5	2800	5350	0.31

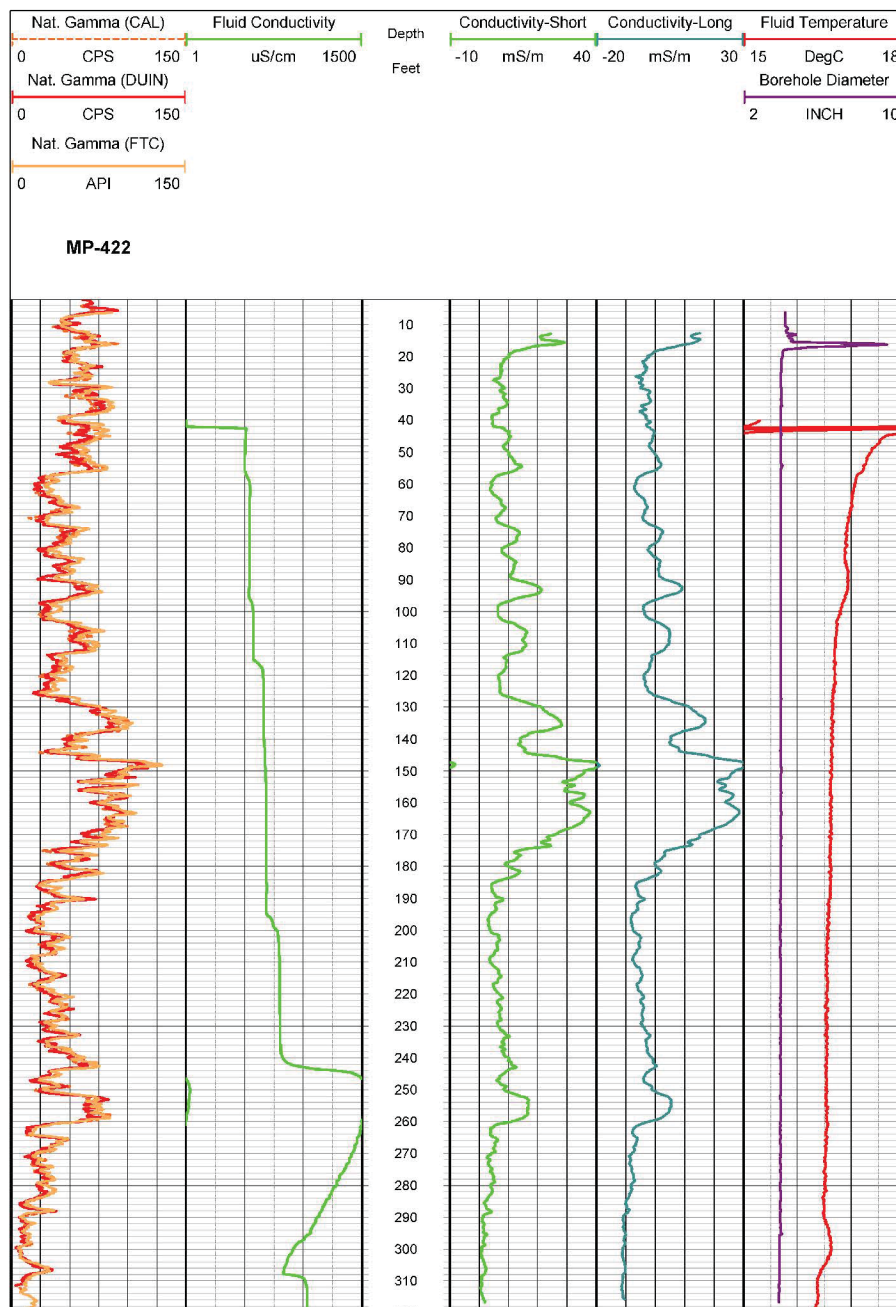


Figure 96. Boring MP-422, Induction, Fluid Temperature/Conductivity, Natural Gamma and Caliper logs

Table 51. Boring MP-422, Acoustic Televiewer Feature depth, dip azimuth, dip and description

Depth (feet)	Dip azimuth	Dip	Structure description
11.3	N133	43	Primary-structure Planar Bedding
12.3	N320	65	Fracture Discontinuous Hairline-fracture
12.6	N148	31	Primary-structure Planar Bedding
12.9	N304	68	Fracture Discontinuous Hairline-fracture
13.7	N155	28	Primary-structure Planar Bedding
14.6	N323	64	Fracture Discontinuous Hairline-fracture
15.6	N144	27	Fracture Planar Open-fracture
15.8	N317	59	Fracture Discontinuous Hairline-fracture
17.0	N126	27	Fracture Planar Open-fracture
17.7	N155	33	Primary-structure Planar Bedding
18.2	N126	38	Fracture Planar Hairline-fracture
18.5	N313	70	Fracture Discontinuous Hairline-fracture
19.1	N141	34	Fracture Planar Hairline-fracture
19.4	N125	35	Primary-structure Planar Bedding
19.6	N289	71	Fracture Discontinuous Hairline-fracture
19.8	N119	32	Primary-structure Planar Bedding
20.2	N123	35	Fracture Planar Hairline-fracture
20.5	N300	65	Fracture Planar Hairline-fracture
21.5	N146	32	Primary-structure Planar Bedding
22.3	N160	36	Primary-structure Planar Bedding
22.8	N161	34	Primary-structure Planar Bedding
24.0	N161	32	Primary-structure Planar Bedding
24.9	N152	35	Primary-structure Planar Bedding
25.0	N333	65	Fracture Discontinuous Hairline-fracture
25.6	N162	35	Primary-structure Planar Bedding
26.5	N152	35	Primary-structure Planar Bedding
27.3	N317	76	Fracture Irregular Hairline-fracture
27.7	N155	34	Primary-structure Planar Bedding
28.1	N318	56	Fracture Planar Hairline-fracture
28.5	N150	35	Primary-structure Planar Bedding
28.7	N152	30	Primary-structure Planar Bedding
29.8	N161	32	Primary-structure Planar Bedding
31.8	N160	36	Primary-structure Planar Bedding
33.4	N329	60	Fracture Discontinuous Hairline-fracture
33.6	N158	35	Primary-structure Planar Bedding
34.7	N153	34	Primary-structure Planar Bedding
35.7	N159	31	Fracture Planar Open-fracture

Depth (feet)	Dip azimuth	Dip	Structure description
37.0	N160	36	Primary-structure Planar Bedding
38.1	N337	59	Fracture Discontinuous Hairline-fracture
38.2	N150	34	Primary-structure Planar Bedding
40.0	N157	32	Primary-structure Planar Bedding
40.4	N338	54	Fracture Discontinuous Hairline-fracture
41.0	N162	33	Primary-structure Planar Bedding
42.5	N159	38	Primary-structure Planar Bedding
42.5	N343	61	Fracture Discontinuous Hairline-fracture
43.2	N329	65	Fracture Discontinuous Hairline-fracture
43.6	N159	33	Primary-structure Planar Bedding
44.0	N332	54	Fracture Discontinuous Hairline-fracture
44.0	N151	36	Primary-structure Planar Bedding
44.5	N153	34	Primary-structure Planar Bedding
45.8	N158	34	Primary-structure Planar Bedding
46.5	N337	64	Fracture Discontinuous Hairline-fracture
46.6	N156	35	Primary-structure Planar Bedding
47.3	N030	43	Fracture Discontinuous Hairline-fracture
47.3	N156	31	Primary-structure Planar Bedding
48.0	N156	37	Primary-structure Planar Bedding
48.3	N144	33	Primary-structure Planar Bedding
49.3	N158	33	Primary-structure Planar Bedding
50.3	N153	30	Primary-structure Planar Bedding
50.7	N326	63	Fracture Discontinuous Hairline-fracture
51.0	N166	34	Primary-structure Planar Bedding
53.3	N162	35	Primary-structure Planar Bedding
53.8	N327	57	Fracture Discontinuous Hairline-fracture
54.2	N154	31	Primary-structure Planar Bedding
54.5	N154	35	Fracture Planar Open-fracture
55.8	N160	25	Primary-structure Planar Bedding
56.2	N160	34	Primary-structure Planar Bedding
58.4	N155	27	Primary-structure Planar Bedding
58.7	N155	36	Primary-structure Planar Bedding
59.6	N153	31	Primary-structure Planar Bedding
59.8	N349	43	Fracture Planar Hairline-fracture
60.3	N326	45	Fracture Planar Hairline-fracture
61.3	N156	31	Primary-structure Planar Bedding
62.3	N156	30	Primary-structure Planar Bedding
63.1	N159	34	Primary-structure Planar Bedding
63.9	N163	35	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
65.4	N161	35	Primary-structure Planar Bedding
65.8	N153	37	Primary-structure Planar Bedding
66.7	N156	30	Primary-structure Planar Bedding
67.7	N158	33	Primary-structure Planar Bedding
68.8	N162	32	Primary-structure Planar Bedding
70.2	N164	32	Primary-structure Planar Bedding
73.6	N160	35	Primary-structure Planar Bedding
73.6	N345	58	Fracture Discontinuous Hairline-fracture
75.1	N162	36	Primary-structure Planar Bedding
76.1	N157	34	Primary-structure Planar Bedding
76.6	N157	31	Primary-structure Planar Bedding
77.6	N157	38	Primary-structure Planar Bedding
79.3	N152	32	Primary-structure Planar Bedding
80.8	N155	33	Primary-structure Planar Bedding
81.2	N162	32	Primary-structure Planar Bedding
82.2	N338	55	Fracture Discontinuous Hairline-fracture
82.4	N161	32	Primary-structure Planar Bedding
84.2	N162	36	Primary-structure Planar Bedding
85.0	N332	48	Fracture Discontinuous Hairline-fracture
85.5	N156	34	Primary-structure Planar Bedding
85.7	N339	48	Fracture Discontinuous Hairline-fracture
86.0	N329	52	Fracture Discontinuous Hairline-fracture
86.7	N167	34	Primary-structure Planar Bedding
87.3	N159	34	Primary-structure Planar Bedding
88.1	N159	30	Primary-structure Planar Bedding
88.4	N161	35	Primary-structure Planar Bedding
89.0	N157	38	Primary-structure Planar Bedding
91.1	N152	30	Primary-structure Planar Bedding
91.6	N166	38	Primary-structure Planar Bedding
92.6	N163	27	Primary-structure Planar Bedding
93.5	N156	31	Primary-structure Planar Bedding
94.3	N158	34	Primary-structure Planar Bedding
95.9	N159	32	Primary-structure Planar Bedding
97.1	N154	32	Primary-structure Planar Bedding
100.7	N321	47	Fracture Planar Hairline-fracture
103.6	N162	32	Primary-structure Planar Bedding
104.4	N157	25	Primary-structure Planar Bedding
106.4	N171	32	Primary-structure Planar Bedding
106.7	N162	35	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
107.8	N169	27	Primary-structure Planar Bedding
108.4	N162	37	Primary-structure Planar Bedding
110.0	N166	29	Primary-structure Planar Bedding
111.3	N157	32	Primary-structure Planar Bedding
112.1	N157	30	Primary-structure Planar Bedding
113.0	N164	30	Primary-structure Planar Bedding
116.8	N156	31	Primary-structure Planar Bedding
120.9	N331	59	Fracture Irregular Hairline-fracture
121.5	N325	58	Fracture Planar Hairline-fracture
124.3	N159	31	Primary-structure Planar Bedding
127.3	N154	28	Primary-structure Planar Bedding
128.7	N159	29	Primary-structure Planar Bedding
130.6	N157	28	Primary-structure Planar Bedding
132.9	N160	33	Primary-structure Planar Bedding
134.0	N158	29	Primary-structure Planar Bedding
137.3	N161	36	Primary-structure Planar Bedding
137.9	N155	35	Primary-structure Planar Bedding
138.5	N155	31	Primary-structure Planar Bedding
139.5	N157	31	Primary-structure Planar Bedding
140.8	N157	28	Primary-structure Planar Bedding
142.0	N167	28	Primary-structure Planar Bedding
144.4	N151	31	Primary-structure Planar Bedding
145.3	N153	32	Primary-structure Planar Bedding
145.5	N160	35	Primary-structure Planar Bedding
146.7	N153	32	Primary-structure Planar Bedding
147.4	N151	30	Primary-structure Planar Bedding
149.1	N149	27	Primary-structure Planar Bedding
151.8	N167	29	Primary-structure Planar Bedding
153.7	N145	33	Primary-structure Planar Bedding
155.1	N153	32	Primary-structure Planar Bedding
156.6	N328	55	Fracture Discontinuous Hairline-fracture
157.5	N149	30	Primary-structure Planar Bedding
159.5	N319	61	Fracture Discontinuous Hairline-fracture
159.8	N143	30	Primary-structure Planar Bedding
160.1	N160	29	Primary-structure Planar Bedding
161.5	N150	33	Primary-structure Planar Bedding
163.0	N152	29	Primary-structure Planar Bedding
166.6	N156	31	Primary-structure Planar Bedding
169.1	N153	30	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
170.4	N143	34	Primary-structure Planar Bedding
171.7	N333	64	Fracture Discontinuous Hairline-fracture
172.0	N154	33	Primary-structure Planar Bedding
173.1	N164	36	Primary-structure Planar Bedding
173.7	N151	36	Fracture Planar Open-fracture
176.1	N155	30	Primary-structure Planar Bedding
177.6	N155	34	Primary-structure Planar Bedding
180.4	N158	34	Primary-structure Planar Bedding
182.0	N158	32	Primary-structure Planar Bedding
183.2	N170	33	Primary-structure Planar Bedding
184.0	N164	35	Primary-structure Planar Bedding
186.0	N335	62	Fracture Discontinuous Hairline-fracture
186.6	N173	34	Primary-structure Planar Bedding
186.7	N347	51	Fracture Discontinuous Hairline-fracture
187.3	N166	42	Primary-structure Planar Bedding
187.8	N162	34	Primary-structure Planar Bedding
191.0	N319	49	Fracture Discontinuous Hairline-fracture
191.4	N336	56	Fracture Discontinuous Hairline-fracture
191.6	N148	29	Primary-structure Planar Bedding
192.6	N163	37	Primary-structure Planar Bedding
192.8	N334	53	Fracture Discontinuous Hairline-fracture
194.2	N334	51	Fracture Discontinuous Hairline-fracture
194.3	N162	33	Primary-structure Planar Bedding
195.3	N153	33	Primary-structure Planar Bedding
196.1	N157	41	Primary-structure Planar Bedding
197.7	N164	36	Primary-structure Planar Bedding
199.0	N162	34	Primary-structure Planar Bedding
200.2	N162	36	Primary-structure Planar Bedding
200.4	N332	57	Fracture Discontinuous Hairline-fracture
201.8	N148	34	Primary-structure Planar Bedding
203.8	N162	30	Primary-structure Planar Bedding
204.7	N159	38	Primary-structure Planar Bedding
205.4	N157	37	Primary-structure Planar Bedding
206.3	N157	36	Primary-structure Planar Bedding
211.8	N152	35	Primary-structure Planar Bedding
216.3	N162	34	Primary-structure Planar Bedding
218.4	N156	32	Primary-structure Planar Bedding
221.4	N155	35	Primary-structure Planar Bedding
226.7	N170	27	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
227.3	N154	32	Primary-structure Planar Bedding
228.5	N338	64	Fracture Discontinuous Hairline-fracture
229.2	N331	60	Fracture Discontinuous Hairline-fracture
230.2	N164	38	Primary-structure Planar Bedding
231.3	N141	31	Primary-structure Planar Bedding
232.1	N157	34	Primary-structure Planar Bedding
234.6	N153	30	Primary-structure Planar Bedding
234.8	N327	55	Fracture Discontinuous Hairline-fracture
235.8	N167	28	Primary-structure Planar Bedding
236.3	N335	51	Fracture Discontinuous Hairline-fracture
238.0	N160	30	Primary-structure Planar Bedding
241.1	N145	33	Primary-structure Planar Bedding
242.4	N154	31	Primary-structure Planar Bedding
242.6	N151	30	Primary-structure Planar Bedding
244.1	N143	25	Primary-structure Planar Bedding
244.7	N149	30	Primary-structure Planar Bedding
245.2	N154	32	Primary-structure Planar Bedding
246.0	N337	39	Fracture Discontinuous Hairline-fracture
246.7	N346	56	Fracture Discontinuous Hairline-fracture
246.9	N334	63	Fracture Discontinuous Hairline-fracture
247.0	N153	32	Primary-structure Planar Bedding
247.9	N149	32	Primary-structure Planar Bedding
248.5	N151	32	Primary-structure Planar Bedding
250.1	N157	25	Primary-structure Planar Bedding
251.8	N152	32	Primary-structure Planar Bedding
252.7	N151	31	Primary-structure Planar Bedding
257.0	N152	27	Primary-structure Planar Bedding
260.3	N150	29	Primary-structure Planar Bedding
261.6	N153	33	Primary-structure Planar Bedding
263.0	N335	68	Fracture Discontinuous Hairline-fracture
263.2	N133	31	Primary-structure Planar Bedding
270.3	N175	42	Primary-structure Irregular Bedding
272.2	N145	36	Primary-structure Planar Bedding
273.7	N333	57	Fracture Discontinuous Hairline-fracture
277.2	N145	73	Fracture Discontinuous Hairline-fracture
284.5	N143	38	Primary-structure Planar Bedding
285.6	N332	61	Fracture Discontinuous Hairline-fracture
285.8	N170	31	Primary-structure Planar Bedding
286.4	N160	31	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
287.1	N167	29	Primary-structure Planar Bedding
288.6	N140	32	Primary-structure Planar Bedding
288.8	N356	56	Fracture Discontinuous Hairline-fracture
289.8	N160	30	Primary-structure Planar Bedding
290.4	N180	77	Fracture Irregular Hairline-fracture
291.1	N162	30	Primary-structure Planar Bedding
291.8	N161	29	Primary-structure Planar Bedding
292.4	N158	43	Primary-structure Planar Bedding
292.8	N153	35	Primary-structure Planar Bedding
293.4	N157	28	Primary-structure Planar Bedding
293.5	N293	67	Fracture Discontinuous Hairline-fracture
293.9	N150	22	Primary-structure Planar Bedding
294.3	N260	41	Fracture Discontinuous Hairline-fracture
294.6	N202	34	Primary-structure Planar Bedding
295.3	N167	32	Fracture Planar Open-fracture
295.7	N145	43	Primary-structure Planar Bedding
296.5	N166	30	Primary-structure Planar Bedding
296.8	N355	60	Fracture Discontinuous Hairline-fracture
298.9	N156	41	Primary-structure Planar Bedding
300.0	N161	55	Primary-structure Planar Bedding
300.4	N162	35	Primary-structure Planar Bedding
304.8	N153	41	Primary-structure Planar Bedding
307.9	N141	43	Primary-structure Planar Bedding
309.6	N150	40	Primary-structure Planar Bedding
309.9	N005	58	Fracture Discontinuous Hairline-fracture
310.9	N166	36	Primary-structure Planar Bedding
311.9	N154	33	Primary-structure Planar Bedding
313.4	N173	54	Fracture Planar Hairline-fracture
313.7	N148	62	Fracture Planar Hairline-fracture
314.0	N154	35	Primary-structure Planar Bedding



Figure 97. Boring MP-422, Rose Diagram

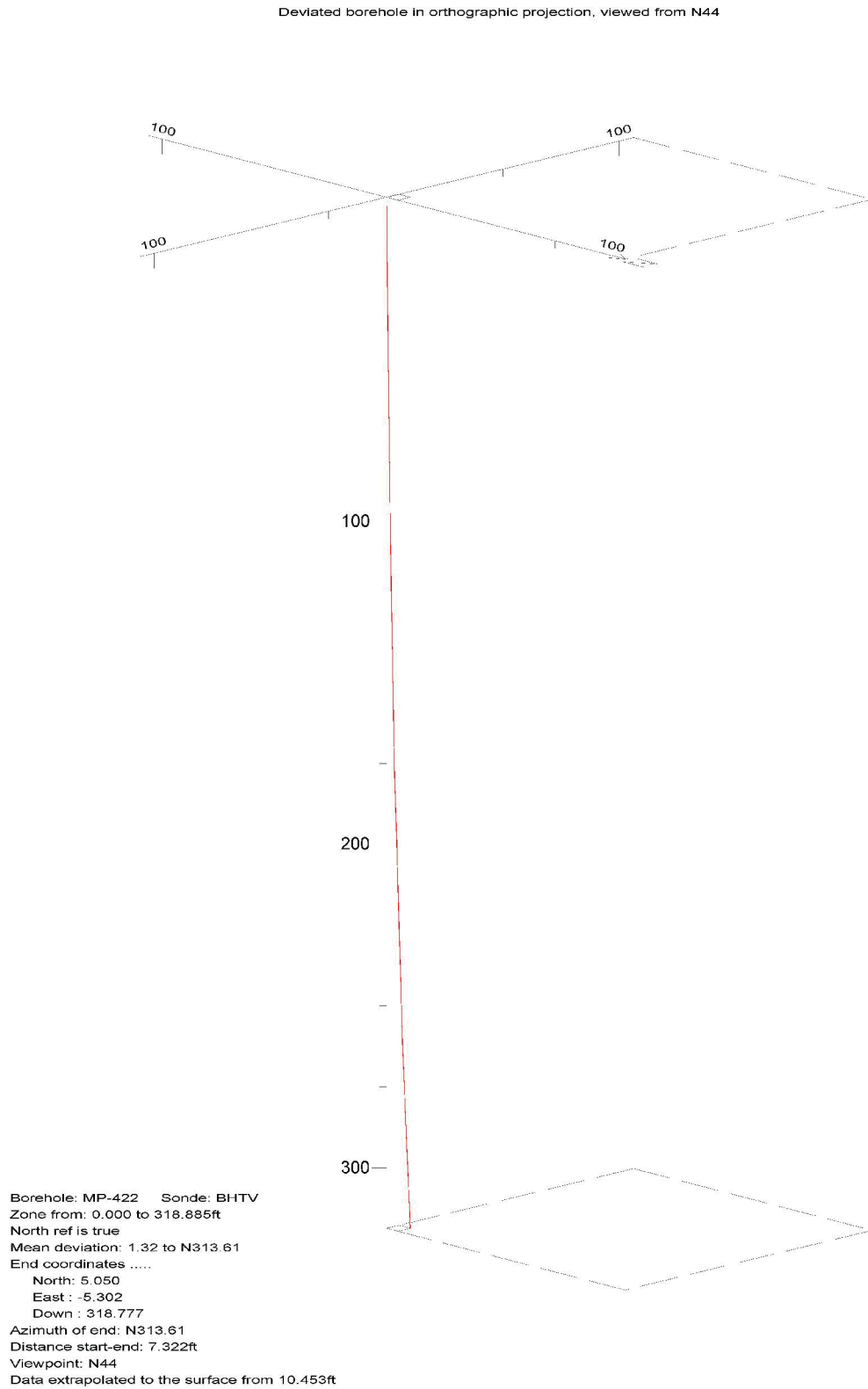


Figure 98. Boring MP-422, Up Deviation Projection

CLINCH RIVER SMR PROJECT BOREHOLE MP-423 Receiver to Receiver V_s and V_p Analysis

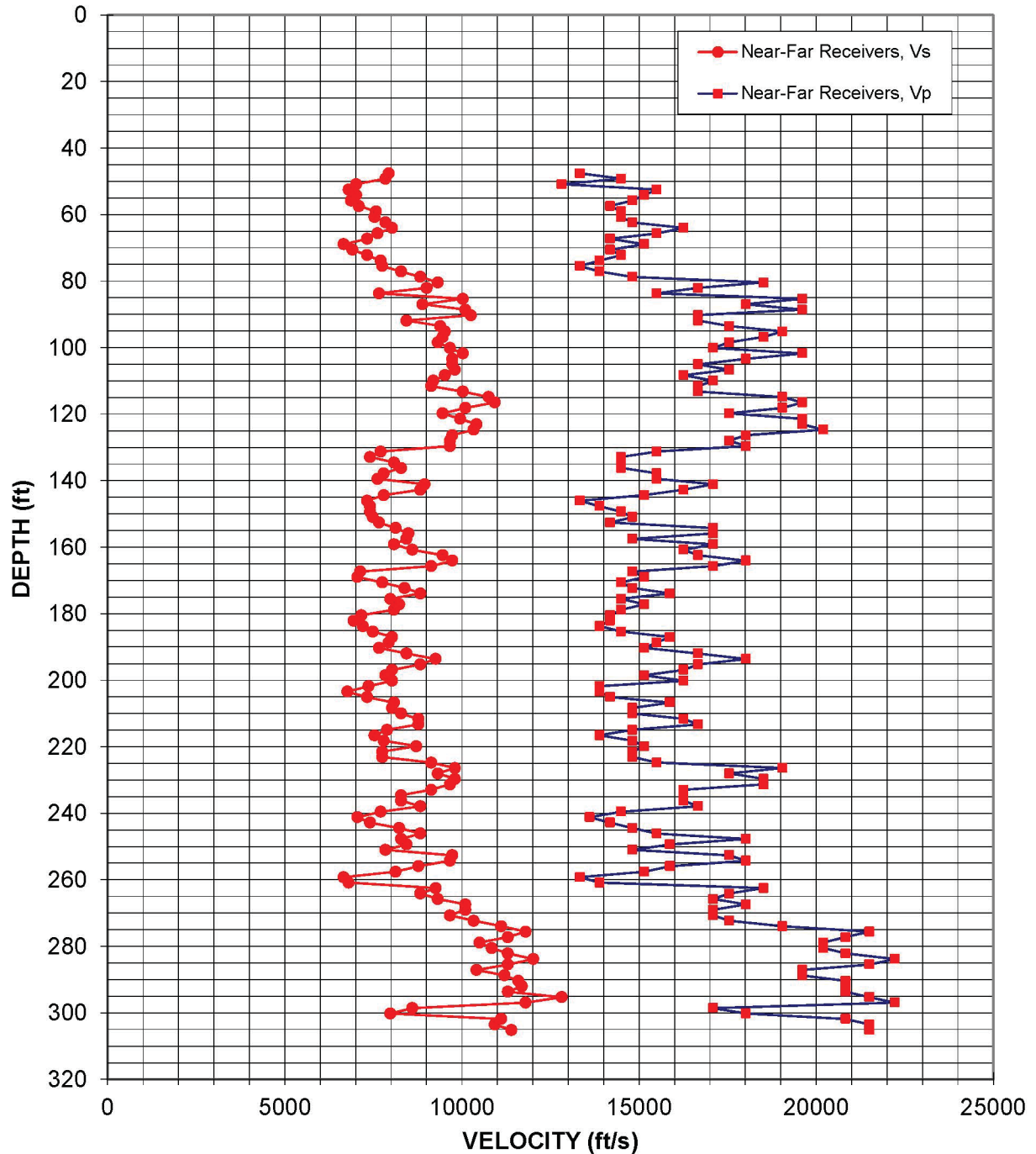


Figure 99: Boring MP-423, Suspension R1-R2 P- and S_H -wave velocities

Table 52. Boring MP-423, Suspension R1-R2 depths and P- and S_H-wave velocities

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-423**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
47.6	7940	13330	0.23	14.5	2420	4060	0.23
49.2	7840	14490	0.29	15.0	2390	4420	0.29
50.9	7020	12820	0.29	15.5	2140	3910	0.29
52.5	6800	15500	0.38	16.0	2070	4730	0.38
54.1	7020	15150	0.36	16.5	2140	4620	0.36
55.8	6870	14810	0.36	17.0	2090	4520	0.36
57.4	7090	14180	0.33	17.5	2160	4320	0.33
59.1	7580	14490	0.31	18.0	2310	4420	0.31
60.7	7530	14490	0.31	18.5	2300	4420	0.31
62.3	7840	14810	0.31	19.0	2390	4520	0.31
64.0	8030	16260	0.34	19.5	2450	4960	0.34
65.6	7620	15500	0.34	20.0	2320	4730	0.34
67.3	7330	14180	0.32	20.5	2230	4320	0.32
68.9	6670	15150	0.38	21.0	2030	4620	0.38
70.5	6910	14180	0.34	21.5	2110	4320	0.34
72.2	7330	14490	0.33	22.0	2230	4420	0.33
73.8	7710	13890	0.28	22.5	2350	4230	0.28
75.5	7750	13330	0.24	23.0	2360	4060	0.24
77.1	8280	13890	0.22	23.5	2520	4230	0.22
78.7	8830	14810	0.22	24.0	2690	4520	0.22
80.4	9320	18520	0.33	24.5	2840	5640	0.33
82.0	9010	16670	0.29	25.0	2750	5080	0.29
83.7	7660	15500	0.34	25.5	2340	4730	0.34
85.3	10030	19610	0.32	26.0	3060	5980	0.32
86.9	8890	18020	0.34	26.5	2710	5490	0.34
88.6	10100	19610	0.32	27.0	3080	5980	0.32
90.2	10260	16670	0.20	27.5	3130	5080	0.20
91.9	8440	16670	0.33	28.0	2570	5080	0.33
93.5	9390	17540	0.30	28.5	2860	5350	0.30
95.1	9520	19050	0.33	29.0	2900	5810	0.33
96.8	9460	18520	0.32	29.5	2880	5640	0.32
98.4	9320	17540	0.30	30.0	2840	5350	0.30
100.1	9660	17090	0.27	30.5	2940	5210	0.27
101.7	10030	19610	0.32	31.0	3060	5980	0.32
103.4	9730	18020	0.29	31.5	2970	5490	0.29
105.0	9730	16670	0.24	32.0	2970	5080	0.24
106.6	9800	17540	0.27	32.5	2990	5350	0.27

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-423**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
108.3	9520	16260	0.24	33.0	2900	4960	0.24
109.9	9200	17090	0.30	33.5	2800	5210	0.30
111.6	9130	16670	0.29	34.0	2780	5080	0.29
113.2	10030	16670	0.22	34.5	3060	5080	0.22
114.8	10750	19050	0.27	35.0	3280	5810	0.27
116.5	10930	19610	0.27	35.5	3330	5980	0.27
118.1	10100	19050	0.30	36.0	3080	5810	0.30
119.8	9460	17540	0.30	36.5	2880	5350	0.30
121.4	9950	19610	0.33	37.0	3030	5980	0.33
123.0	10420	19610	0.30	37.5	3180	5980	0.30
124.7	10340	20200	0.32	38.0	3150	6160	0.32
126.3	9730	18020	0.29	38.5	2970	5490	0.29
128.0	9660	17540	0.28	39.0	2940	5350	0.28
129.6	9660	18020	0.30	39.5	2940	5490	0.30
131.2	7710	15500	0.34	40.0	2350	4730	0.34
132.9	7410	14490	0.32	40.5	2260	4420	0.32
134.5	8080	14490	0.27	41.0	2460	4420	0.27
136.2	8280	14490	0.26	41.5	2520	4420	0.26
137.8	7800	15500	0.33	42.0	2380	4730	0.33
139.4	7620	15500	0.34	42.5	2320	4730	0.34
141.1	8950	17090	0.31	43.0	2730	5210	0.31
142.7	8830	16260	0.29	43.5	2690	4960	0.29
144.4	7800	15150	0.32	44.0	2380	4620	0.32
146.0	7330	13330	0.28	44.5	2230	4060	0.28
147.6	7410	13890	0.30	45.0	2260	4230	0.30
149.3	7410	14490	0.32	45.5	2260	4420	0.32
150.9	7490	14810	0.33	46.0	2280	4520	0.33
152.6	7660	14180	0.29	46.5	2340	4320	0.29
154.2	8130	17090	0.35	47.0	2480	5210	0.35
155.8	8490	17090	0.34	47.5	2590	5210	0.34
157.5	8440	14810	0.26	48.0	2570	4520	0.26
159.1	8080	17090	0.36	48.5	2460	5210	0.36
160.8	8600	16260	0.31	49.0	2620	4960	0.31
162.4	9460	16670	0.26	49.5	2880	5080	0.26
164.0	9730	18020	0.29	50.0	2970	5490	0.29
165.7	9130	17090	0.30	50.5	2780	5210	0.30
167.3	7130	14810	0.35	51.0	2170	4520	0.35
169.0	7050	15150	0.36	51.5	2150	4620	0.36
170.6	7750	14490	0.30	52.0	2360	4420	0.30

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-423**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
172.2	8390	14810	0.26	52.5	2560	4520	0.26
173.9	8830	15870	0.28	53.0	2690	4840	0.28
175.5	7980	14490	0.28	53.5	2430	4420	0.28
177.2	8230	15150	0.29	54.0	2510	4620	0.29
178.8	8080	14490	0.27	54.5	2460	4420	0.27
180.5	7170	14180	0.33	55.0	2180	4320	0.33
182.1	6940	14180	0.34	55.5	2120	4320	0.34
183.7	7210	13890	0.32	56.0	2200	4230	0.32
185.4	7490	14490	0.32	56.5	2280	4420	0.32
187.0	8030	15870	0.33	57.0	2450	4840	0.33
188.7	7940	15500	0.32	57.5	2420	4730	0.32
190.3	7660	15150	0.33	58.0	2340	4620	0.33
191.9	8440	16670	0.33	58.5	2570	5080	0.33
193.6	9260	18020	0.32	59.0	2820	5490	0.32
195.2	8830	16670	0.30	59.5	2690	5080	0.30
196.9	8030	16260	0.34	60.0	2450	4960	0.34
198.5	7840	15150	0.32	60.5	2390	4620	0.32
200.1	8030	16260	0.34	61.0	2450	4960	0.34
201.8	7370	13890	0.30	61.5	2250	4230	0.30
203.4	6770	13890	0.34	62.0	2060	4230	0.34
205.1	7330	14180	0.32	62.5	2230	4320	0.32
206.7	8080	15870	0.33	63.0	2460	4840	0.33
208.3	8030	14810	0.29	63.5	2450	4520	0.29
210.0	8280	14810	0.27	64.0	2520	4520	0.27
211.6	8770	16260	0.29	64.5	2670	4960	0.29
213.3	8770	16670	0.31	65.0	2670	5080	0.31
214.9	7890	14810	0.30	65.5	2400	4520	0.30
216.5	7530	13890	0.29	66.0	2300	4230	0.29
218.2	7800	14810	0.31	66.5	2380	4520	0.31
219.8	8710	15150	0.25	67.0	2660	4620	0.25
221.5	7750	14810	0.31	67.5	2360	4520	0.31
223.1	7750	14810	0.31	68.0	2360	4520	0.31
224.7	9130	15500	0.23	68.5	2780	4730	0.23
226.4	9800	19050	0.32	69.0	2990	5810	0.32
228.0	9320	17540	0.30	69.5	2840	5350	0.30
229.7	9800	18520	0.31	70.0	2990	5640	0.31
231.3	9660	18520	0.31	70.5	2940	5640	0.31
232.9	9130	16260	0.27	71.0	2780	4960	0.27
234.6	8280	16260	0.32	71.5	2520	4960	0.32

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-423**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
236.2	8280	16260	0.32	72.0	2520	4960	0.32
237.9	8830	16670	0.30	72.5	2690	5080	0.30
239.5	7710	14490	0.30	73.0	2350	4420	0.30
241.1	7050	13610	0.32	73.5	2150	4150	0.32
242.8	7410	14180	0.31	74.0	2260	4320	0.31
244.4	8230	14810	0.28	74.5	2510	4520	0.28
246.1	8830	15500	0.26	75.0	2690	4730	0.26
247.7	8280	18020	0.37	75.5	2520	5490	0.37
249.3	8440	15870	0.30	76.0	2570	4840	0.30
251.0	7840	14810	0.31	76.5	2390	4520	0.31
252.6	9730	17540	0.28	77.0	2970	5350	0.28
254.3	9660	18020	0.30	77.5	2940	5490	0.30
255.9	8770	15870	0.28	78.0	2670	4840	0.28
257.6	8130	15150	0.30	78.5	2480	4620	0.30
259.2	6670	13330	0.33	79.0	2030	4060	0.33
260.8	6800	13890	0.34	79.5	2070	4230	0.34
262.5	9260	18520	0.33	80.0	2820	5640	0.33
264.1	8830	17540	0.33	80.5	2690	5350	0.33
265.8	9320	17090	0.29	81.0	2840	5210	0.29
267.4	10100	18020	0.27	81.5	3080	5490	0.27
269.0	10100	17090	0.23	82.0	3080	5210	0.23
270.7	9660	17090	0.27	82.5	2940	5210	0.27
272.3	10340	17540	0.23	83.0	3150	5350	0.23
274.0	11110	19050	0.24	83.5	3390	5810	0.24
275.6	11800	21510	0.28	84.0	3600	6550	0.28
277.2	11300	20830	0.29	84.5	3440	6350	0.29
278.9	10500	20200	0.32	85.0	3200	6160	0.32
280.5	10840	20200	0.30	85.5	3300	6160	0.30
282.2	11300	20830	0.29	86.0	3440	6350	0.29
283.8	12010	22220	0.29	86.5	3660	6770	0.29
285.4	11300	21510	0.31	87.0	3440	6550	0.31
287.1	10420	19610	0.30	87.5	3180	5980	0.30
288.7	11200	19610	0.26	88.0	3420	5980	0.26
290.4	11590	20830	0.28	88.5	3530	6350	0.28
292.0	11700	20830	0.27	89.0	3560	6350	0.27
293.6	11300	20830	0.29	89.5	3440	6350	0.29
295.3	12820	21510	0.22	90.0	3910	6550	0.22
296.9	11800	22220	0.30	90.5	3600	6770	0.30
298.6	8600	17090	0.33	91.0	2620	5210	0.33

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-423**

American Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p	
(ft)	(ft/s)	(ft/s)	
300.2	7980	18020	0.38
301.8	11110	20830	0.30
303.5	10930	21510	0.33
305.1	11400	21510	0.30

Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p	
(m)	(m/s)	(m/s)	
91.5	2430	5490	0.38
92.0	3390	6350	0.30
92.5	3330	6550	0.33
93.0	3470	6550	0.30

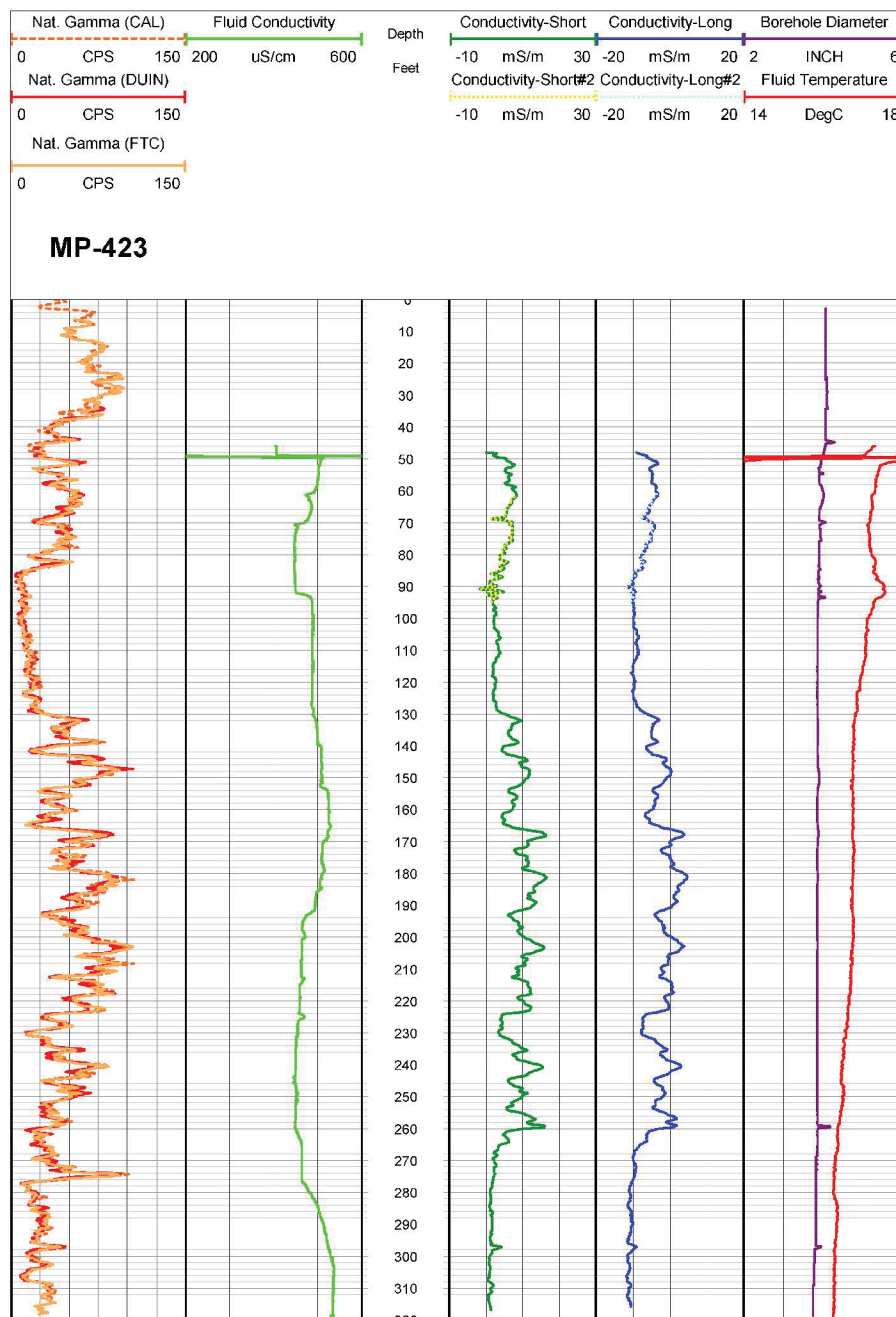


Figure 100. Boring MP-423, Induction, Fluid Temperature/Conductivity, Natural Gamma and Caliper logs

Table 53. Boring MP-423, Acoustic Televiewer Feature depth, dip azimuth, dip and description

Depth (feet)	Dip azimuth	Dip	Structure description
46.2	N147	36	Primary-structure Planar Bedding
46.8	N135	39	Primary-structure Planar Bedding
47.4	N139	39	Primary-structure Planar Bedding
48.0	N138	39	Primary-structure Planar Bedding
48.9	N142	35	Primary-structure Planar Bedding
49.3	N147	34	Primary-structure Planar Bedding
49.7	N314	52	Fracture Planar Hairline-fracture
51.2	N149	38	Primary-structure Planar Bedding
52.2	N143	45	Primary-structure Planar Bedding
52.7	N316	40	Fracture Discontinuous Hairline-fracture
53.3	N144	35	Primary-structure Planar Bedding
54.2	N155	35	Primary-structure Planar Bedding
54.7	N331	53	Fracture Discontinuous Hairline-fracture
55.1	N152	36	Primary-structure Planar Bedding
55.7	N158	36	Primary-structure Planar Bedding
56.0	N152	33	Primary-structure Planar Bedding
56.7	N153	36	Primary-structure Planar Bedding
56.9	N329	45	Fracture Discontinuous Hairline-fracture
57.4	N313	49	Fracture Discontinuous Hairline-fracture
57.5	N167	32	Primary-structure Planar Bedding
58.2	N147	36	Primary-structure Planar Bedding
58.6	N149	37	Primary-structure Planar Bedding
59.5	N148	34	Primary-structure Planar Bedding
61.1	N154	38	Primary-structure Planar Bedding
62.1	N157	35	Primary-structure Planar Bedding
63.9	N156	44	Primary-structure Planar Bedding
64.9	N157	31	Primary-structure Planar Bedding
66.0	N150	38	Primary-structure Planar Bedding
66.3	N160	41	Primary-structure Planar Bedding
67.1	N172	41	Primary-structure Planar Bedding
67.8	N166	37	Primary-structure Planar Bedding
68.1	N154	36	Primary-structure Planar Bedding
68.7	N143	39	Primary-structure Planar Bedding
69.1	N159	40	Primary-structure Planar Bedding
69.6	N331	59	Fracture Discontinuous Hairline-fracture
70.0	N152	41	Primary-structure Planar Bedding
70.2	N330	37	Fracture Planar Hairline-fracture

Depth (feet)	Dip azimuth	Dip	Structure description
70.8	N151	38	Primary-structure Planar Bedding
71.1	N151	38	Primary-structure Planar Bedding
71.8	N155	38	Primary-structure Planar Bedding
72.5	N156	36	Primary-structure Planar Bedding
73.5	N154	35	Primary-structure Planar Bedding
74.4	N157	34	Primary-structure Planar Bedding
74.8	N155	36	Primary-structure Planar Bedding
75.4	N329	48	Fracture Planar Hairline-fracture
75.6	N153	34	Primary-structure Planar Bedding
77.2	N158	36	Primary-structure Planar Bedding
78.8	N161	35	Primary-structure Planar Bedding
79.3	N311	71	Fracture Discontinuous Hairline-fracture
79.7	N151	33	Primary-structure Planar Bedding
82.3	N155	30	Primary-structure Planar Bedding
83.0	N154	35	Primary-structure Planar Bedding
83.8	N157	35	Primary-structure Planar Bedding
84.4	N136	33	Fracture Planar Open-fracture
85.0	N149	35	Primary-structure Planar Bedding
86.3	N153	39	Primary-structure Planar Bedding
87.1	N318	20	Fracture Planar Open-fracture
89.6	N332	28	Fracture Discontinuous Hairline-fracture
89.7	N148	42	Primary-structure Planar Bedding
89.9	N346	33	Fracture Planar Open-fracture
90.5	N154	43	Primary-structure Planar Bedding
91.2	N155	49	Primary-structure Planar Bedding
91.7	N346	6	Fracture Planar Open-fracture
92.2	N325	78	Fracture Irregular Hairline-fracture
92.4	N160	37	Primary-structure Planar Bedding
93.3	N165	42	Primary-structure Planar Bedding
93.7	N328	62	Fracture Discontinuous Hairline-fracture
94.5	N152	34	Primary-structure Planar Bedding
95.1	N148	40	Primary-structure Planar Bedding
95.7	N156	38	Primary-structure Planar Bedding
96.9	N159	37	Primary-structure Planar Bedding
98.3	N146	74	Fracture Discontinuous Hairline-fracture
98.4	N151	39	Primary-structure Planar Bedding
98.7	N125	72	Fracture Discontinuous Hairline-fracture
100.6	N351	71	Fracture Discontinuous Hairline-fracture
101.5	N139	36	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
102.0	N144	39	Primary-structure Planar Bedding
102.2	N141	37	Primary-structure Planar Bedding
102.9	N161	32	Primary-structure Planar Bedding
103.1	N333	65	Fracture Discontinuous Hairline-fracture
104.6	N325	50	Fracture Discontinuous Hairline-fracture
105.9	N148	32	Primary-structure Planar Bedding
106.3	N147	30	Primary-structure Planar Bedding
107.1	N151	31	Primary-structure Planar Bedding
107.8	N163	35	Primary-structure Planar Bedding
110.0	N153	33	Primary-structure Planar Bedding
111.7	N151	36	Primary-structure Planar Bedding
112.3	N163	36	Primary-structure Planar Bedding
113.1	N141	30	Primary-structure Planar Bedding
114.1	N146	35	Primary-structure Planar Bedding
114.9	N155	30	Primary-structure Planar Bedding
115.5	N334	54	Fracture Planar Hairline-fracture
116.0	N148	32	Primary-structure Planar Bedding
117.4	N162	27	Primary-structure Planar Bedding
117.8	N332	49	Fracture Planar Hairline-fracture
118.8	N148	38	Primary-structure Planar Bedding
119.3	N321	45	Fracture Planar Hairline-fracture
119.6	N328	38	Fracture Planar Hairline-fracture
119.7	N146	33	Primary-structure Planar Bedding
121.1	N153	37	Primary-structure Planar Bedding
122.8	N147	59	Fracture Discontinuous Hairline-fracture
123.4	N304	53	Fracture Irregular Hairline-fracture
123.9	N155	30	Primary-structure Planar Bedding
124.1	N166	35	Primary-structure Planar Bedding
124.4	N328	51	Fracture Planar Hairline-fracture
126.4	N153	35	Primary-structure Planar Bedding
131.5	N174	36	Primary-structure Planar Bedding
132.0	N153	38	Primary-structure Planar Bedding
132.9	N157	33	Primary-structure Planar Bedding
134.1	N154	37	Primary-structure Planar Bedding
136.2	N153	33	Primary-structure Planar Bedding
137.7	N157	37	Primary-structure Planar Bedding
139.1	N159	34	Primary-structure Planar Bedding
140.1	N160	37	Primary-structure Planar Bedding
141.0	N163	39	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
141.8	N144	31	Primary-structure Planar Bedding
142.6	N153	38	Primary-structure Planar Bedding
143.3	N159	36	Primary-structure Planar Bedding
143.4	N320	35	Fracture Discontinuous Hairline-fracture
144.4	N158	33	Primary-structure Planar Bedding
145.7	N156	38	Primary-structure Planar Bedding
153.7	N152	33	Primary-structure Planar Bedding
154.3	N153	37	Primary-structure Planar Bedding
155.7	N157	36	Primary-structure Planar Bedding
157.8	N159	36	Primary-structure Planar Bedding
158.9	N165	31	Primary-structure Planar Bedding
160.0	N156	34	Primary-structure Planar Bedding
161.0	N152	32	Primary-structure Planar Bedding
163.1	N157	33	Primary-structure Planar Bedding
165.8	N164	35	Primary-structure Planar Bedding
168.1	N179	41	Primary-structure Planar Bedding
169.4	N157	40	Primary-structure Planar Bedding
170.5	N158	33	Primary-structure Planar Bedding
172.0	N161	34	Primary-structure Planar Bedding
172.9	N160	36	Primary-structure Planar Bedding
173.8	N161	36	Primary-structure Planar Bedding
175.7	N157	35	Primary-structure Planar Bedding
177.0	N159	34	Primary-structure Planar Bedding
178.3	N159	34	Primary-structure Planar Bedding
181.0	N178	28	Primary-structure Planar Bedding
183.3	N160	36	Primary-structure Planar Bedding
184.1	N160	36	Primary-structure Planar Bedding
187.7	N157	30	Primary-structure Planar Bedding
189.3	N161	31	Primary-structure Planar Bedding
191.6	N162	35	Primary-structure Planar Bedding
192.7	N160	32	Primary-structure Planar Bedding
192.7	N336	52	Fracture Discontinuous Hairline-fracture
195.3	N160	36	Primary-structure Planar Bedding
197.5	N157	31	Primary-structure Planar Bedding
197.9	N158	33	Primary-structure Planar Bedding
198.3	N155	31	Primary-structure Planar Bedding
199.2	N160	31	Primary-structure Planar Bedding
199.5	N155	30	Primary-structure Planar Bedding
203.6	N178	32	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
205.2	N158	31	Primary-structure Planar Bedding
205.6	N153	31	Primary-structure Planar Bedding
206.3	N321	62	Fracture Planar Hairline-fracture
206.8	N163	28	Primary-structure Planar Bedding
207.4	N161	28	Primary-structure Planar Bedding
210.7	N157	32	Primary-structure Planar Bedding
211.2	N161	31	Primary-structure Planar Bedding
215.1	N155	31	Primary-structure Planar Bedding
216.1	N160	34	Primary-structure Planar Bedding
217.0	N159	28	Primary-structure Planar Bedding
218.3	N155	30	Primary-structure Planar Bedding
221.6	N170	41	Primary-structure Planar Bedding
222.3	N152	51	Primary-structure Planar Bedding
222.5	N151	51	Primary-structure Planar Bedding
223.0	N161	31	Primary-structure Planar Bedding
224.8	N166	30	Primary-structure Planar Bedding
226.5	N159	30	Primary-structure Planar Bedding
227.1	N328	60	Fracture Discontinuous Hairline-fracture
227.4	N157	28	Primary-structure Planar Bedding
229.4	N161	30	Primary-structure Planar Bedding
229.5	N320	49	Fracture Discontinuous Hairline-fracture
230.1	N170	36	Primary-structure Planar Bedding
231.0	N167	32	Primary-structure Planar Bedding
231.9	N164	31	Primary-structure Planar Bedding
234.4	N164	34	Primary-structure Planar Bedding
235.3	N147	35	Primary-structure Planar Bedding
237.0	N164	36	Primary-structure Planar Bedding
237.0	N349	63	Fracture Irregular Hairline-fracture
238.0	N318	51	Fracture Planar Hairline-fracture
239.5	N161	30	Primary-structure Planar Bedding
241.6	N331	64	Fracture Planar Hairline-fracture
242.9	N148	36	Primary-structure Planar Bedding
243.8	N155	31	Primary-structure Planar Bedding
244.0	N156	29	Primary-structure Planar Bedding
244.4	N165	30	Primary-structure Planar Bedding
245.3	N133	46	Primary-structure Planar Bedding
246.0	N155	31	Primary-structure Planar Bedding
248.2	N172	30	Primary-structure Planar Bedding
249.0	N170	25	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
249.5	N171	27	Primary-structure Planar Bedding
250.7	N145	44	Primary-structure Planar Bedding
251.9	N164	27	Primary-structure Planar Bedding
252.6	N171	24	Primary-structure Planar Bedding
253.5	N163	26	Primary-structure Planar Bedding
254.7	N169	41	Primary-structure Planar Bedding
255.1	N170	28	Primary-structure Planar Bedding
255.6	N154	31	Primary-structure Planar Bedding
257.3	N168	30	Primary-structure Planar Bedding
258.1	N161	36	Primary-structure Planar Bedding
258.9	N164	34	Primary-structure Planar Bedding
260.7	N172	25	Primary-structure Planar Bedding
261.5	N170	29	Primary-structure Planar Bedding
262.2	N167	32	Primary-structure Planar Bedding
262.5	N306	61	Fracture Discontinuous Hairline-fracture
262.8	N316	58	Fracture Discontinuous Hairline-fracture
264.4	N176	29	Primary-structure Planar Bedding
264.9	N163	29	Primary-structure Planar Bedding
267.8	N171	32	Primary-structure Planar Bedding
268.5	N316	54	Fracture Planar Hairline-fracture
269.2	N140	30	Primary-structure Planar Bedding
269.8	N293	65	Fracture Planar Hairline-fracture
270.5	N292	61	Fracture Planar Hairline-fracture
271.8	N147	29	Primary-structure Planar Bedding
273.0	N148	25	Primary-structure Planar Bedding
276.4	N167	29	Primary-structure Planar Bedding
277.2	N307	24	Fracture Planar Hairline-fracture
278.1	N021	13	Fracture Planar Hairline-fracture
279.4	N213	22	Fracture Planar Hairline-fracture
280.5	N153	34	Fracture Irregular Hairline-fracture
280.9	N066	73	Fracture Discontinuous Hairline-fracture
281.3	N222	76	Fracture Discontinuous Hairline-fracture
281.4	N045	65	Fracture Discontinuous Hairline-fracture
281.6	N165	32	Primary-structure Planar Bedding
282.1	N085	86	Fracture Planar Hairline-fracture
282.3	N144	34	Fracture Irregular Hairline-fracture
283.4	N150	36	Primary-structure Planar Bedding
283.9	N158	46	Primary-structure Planar Bedding
285.1	N147	35	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
285.4	N148	36	Fracture Irregular Hairline-fracture
286.2	N161	48	Primary-structure Irregular Bedding
286.5	N034	49	Fracture Planar Hairline-fracture
287.0	N020	68	Fracture Planar Hairline-fracture
287.2	N180	38	Primary-structure Planar Bedding
290.1	N168	38	Primary-structure Planar Bedding
290.5	N061	83	Fracture Planar Hairline-fracture
291.4	N155	36	Primary-structure Planar Bedding
291.8	N155	35	Primary-structure Planar Bedding
292.9	N163	38	Primary-structure Planar Bedding
295.4	N260	71	Fracture Planar Hairline-fracture
295.5	N292	65	Fracture Planar Hairline-fracture
295.9	N290	68	Fracture Planar Hairline-fracture
297.1	N147	29	Fracture Planar Open-fracture
297.3	N215	51	Primary-structure Planar Bedding
298.6	N053	62	Fracture Planar Hairline-fracture
298.7	N170	51	Primary-structure Irregular Bedding
299.3	N237	69	Fracture Planar Hairline-fracture
300.3	N243	68	Fracture Planar Hairline-fracture
300.7	N149	39	Primary-structure Planar Bedding
301.5	N318	67	Fracture Discontinuous Hairline-fracture
302.0	N163	45	Primary-structure Irregular Bedding
305.4	N157	41	Primary-structure Planar Bedding
307.6	N166	51	Primary-structure Planar Bedding
308.7	N164	33	Primary-structure Planar Bedding
309.2	N305	23	Fracture Planar Hairline-fracture
309.2	N106	89	Fracture Discontinuous Hairline-fracture
310.9	N162	41	Primary-structure Anastomosing Bedding
313.3	N197	56	Primary-structure Anastomosing Bedding
315.0	N159	42	Primary-structure Planar Bedding
317.5	N322	43	Fracture Planar Hairline-fracture
318.0	N161	35	Primary-structure Planar Bedding
318.7	N338	57	Fracture Planar Hairline-fracture



Figure 101. Boring MP-423, Rose Diagram

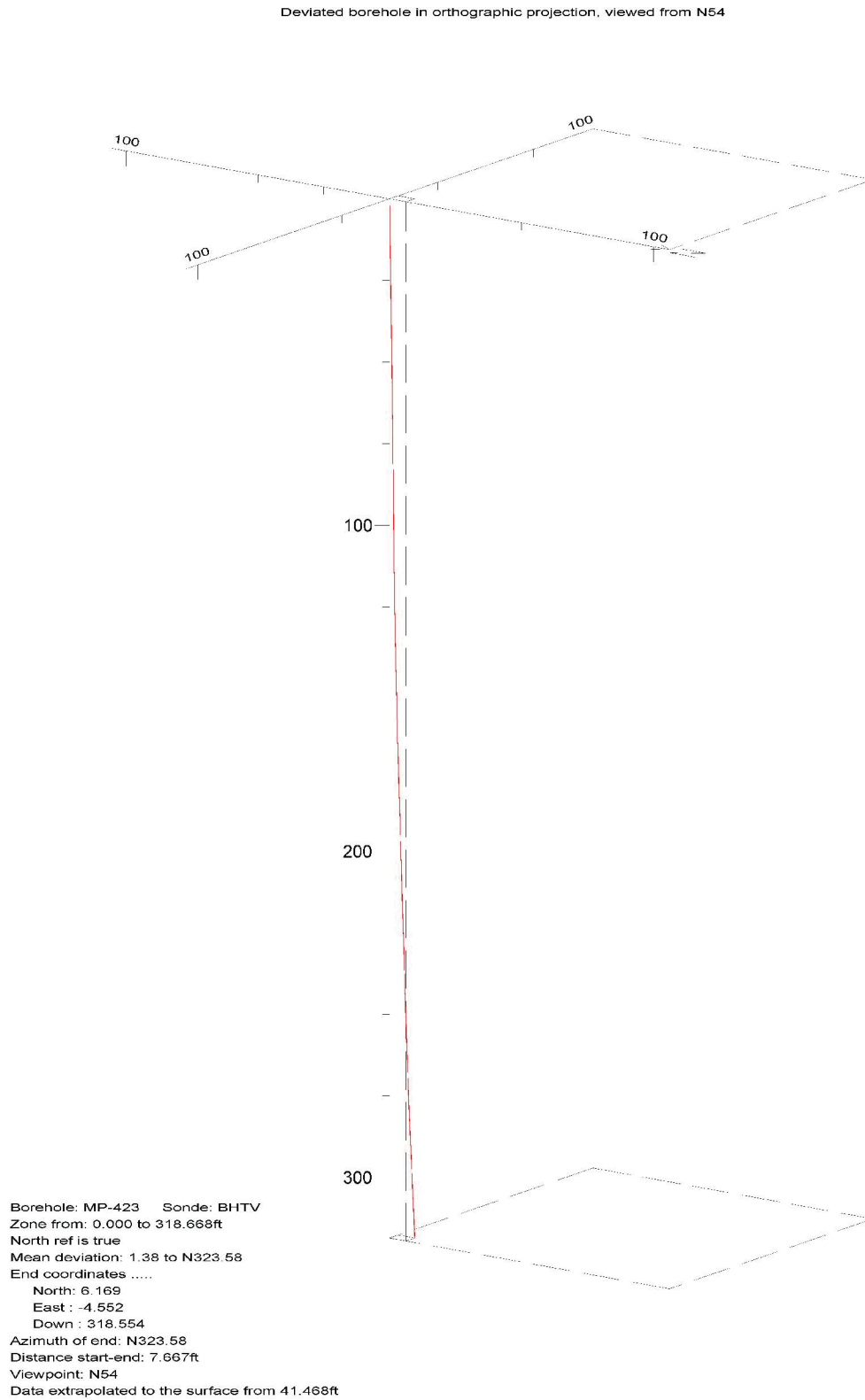


Figure 102. Boring MP-423, Up Deviation Projection

CLINCH RIVER SMR PROJECT BOREHOLE MP-425 Receiver to Receiver V_s and V_p Analysis

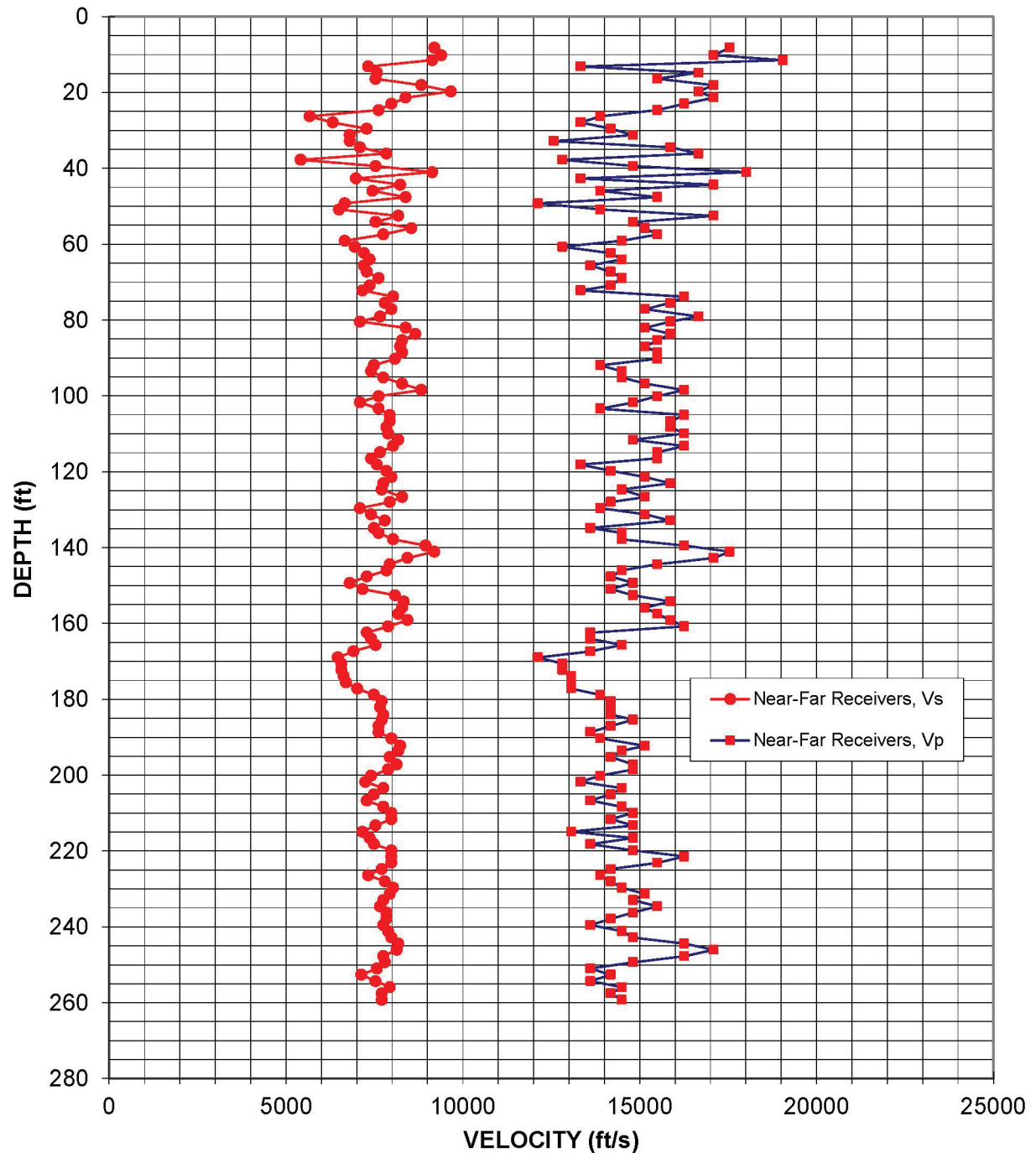


Figure 103: Boring MP-425, Suspension R1-R2 P- and S_H -wave velocities

Table 54. Boring MP-425, Suspension R1-R2 depths and P- and S_H-wave velocities

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-425**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
8.2	9200	17540	0.31	2.5	2800	5350	0.31
10.2	9390	17090	0.28	3.1	2860	5210	0.28
11.5	9130	19050	0.35	3.5	2780	5810	0.35
13.1	7330	13330	0.28	4.0	2230	4060	0.28
14.8	7580	16670	0.37	4.5	2310	5080	0.37
16.4	7530	15500	0.35	5.0	2300	4730	0.35
18.0	8830	17090	0.32	5.5	2690	5210	0.32
19.7	9660	16670	0.25	6.0	2940	5080	0.25
21.3	8390	17090	0.34	6.5	2560	5210	0.34
23.0	7980	16260	0.34	7.0	2430	4960	0.34
24.6	7620	15500	0.34	7.5	2320	4730	0.34
26.3	5670	13890	0.40	8.0	1730	4230	0.40
27.9	6320	13330	0.36	8.5	1930	4060	0.36
29.5	7290	14180	0.32	9.0	2220	4320	0.32
31.2	6800	14810	0.37	9.5	2070	4520	0.37
32.8	6800	12580	0.29	10.0	2070	3830	0.29
34.5	7090	15870	0.38	10.5	2160	4840	0.38
36.1	7840	16670	0.36	11.0	2390	5080	0.36
37.7	5420	12820	0.39	11.5	1650	3910	0.39
39.4	7530	14810	0.33	12.0	2300	4520	0.33
41.0	9130	18020	0.33	12.5	2780	5490	0.33
42.7	6980	13330	0.31	13.0	2130	4060	0.31
44.3	8230	17090	0.35	13.5	2510	5210	0.35
45.9	7450	13890	0.30	14.0	2270	4230	0.30
47.6	8390	15500	0.29	14.5	2560	4730	0.29
49.2	6670	12120	0.28	15.0	2030	3690	0.28
50.9	6500	13890	0.36	15.5	1980	4230	0.36
52.5	8180	17090	0.35	16.0	2490	5210	0.35
54.1	7530	14810	0.33	16.5	2300	4520	0.33
55.8	8550	15150	0.27	17.0	2610	4620	0.27
57.4	7750	15500	0.33	17.5	2360	4730	0.33
59.1	6670	14490	0.37	18.0	2030	4420	0.37
60.7	6940	12820	0.29	18.5	2120	3910	0.29
62.3	7210	14180	0.33	19.0	2200	4320	0.33
64.0	7370	14490	0.33	19.5	2250	4420	0.33
65.6	7210	13610	0.30	20.0	2200	4150	0.30
67.3	7290	14180	0.32	20.5	2220	4320	0.32
68.9	7620	14490	0.31	21.0	2320	4420	0.31

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-425**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
70.9	7370	14180	0.32	21.6	2250	4320	0.32
72.2	7170	13330	0.30	22.0	2180	4060	0.30
73.8	8030	16260	0.34	22.5	2450	4960	0.34
75.5	7800	15870	0.34	23.0	2380	4840	0.34
77.1	7980	15150	0.31	23.5	2430	4620	0.31
79.1	7660	16670	0.37	24.1	2340	5080	0.37
80.4	7090	15870	0.38	24.5	2160	4840	0.38
82.0	8390	15150	0.28	25.0	2560	4620	0.28
83.7	8660	15870	0.29	25.5	2640	4840	0.29
85.3	8280	15500	0.30	26.0	2520	4730	0.30
86.9	8230	15150	0.29	26.5	2510	4620	0.29
88.6	8280	15500	0.30	27.0	2520	4730	0.30
90.2	8080	15500	0.31	27.5	2460	4730	0.31
91.9	7490	13890	0.29	28.0	2280	4230	0.29
93.5	7410	14490	0.32	28.5	2260	4420	0.32
95.1	7750	14490	0.30	29.0	2360	4420	0.30
96.8	8280	15150	0.29	29.5	2520	4620	0.29
98.4	8830	16260	0.29	30.0	2690	4960	0.29
100.1	7620	15500	0.34	30.5	2320	4730	0.34
101.7	7090	14810	0.35	31.0	2160	4520	0.35
103.4	7620	13890	0.28	31.5	2320	4230	0.28
105.0	7940	16260	0.34	32.0	2420	4960	0.34
106.6	7940	15870	0.33	32.5	2420	4840	0.33
108.3	7840	15870	0.34	33.0	2390	4840	0.34
109.9	7890	16260	0.35	33.5	2400	4960	0.35
111.6	8180	14810	0.28	34.0	2490	4520	0.28
113.2	8030	16260	0.34	34.5	2450	4960	0.34
114.8	7660	15500	0.34	35.0	2340	4730	0.34
116.5	7410	15500	0.35	35.5	2260	4730	0.35
118.1	7580	13330	0.26	36.0	2310	4060	0.26
119.8	7840	14180	0.28	36.5	2390	4320	0.28
121.4	7980	15150	0.31	37.0	2430	4620	0.31
123.0	7750	15870	0.34	37.5	2360	4840	0.34
124.7	7710	14490	0.30	38.0	2350	4420	0.30
126.6	8280	15150	0.29	38.6	2520	4620	0.29
128.0	7940	14180	0.27	39.0	2420	4320	0.27
129.6	7090	13890	0.32	39.5	2160	4230	0.32
131.2	7410	15150	0.34	40.0	2260	4620	0.34
132.9	7800	15870	0.34	40.5	2380	4840	0.34
134.8	7490	13610	0.28	41.1	2280	4150	0.28

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-425**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
136.2	7620	14490	0.31	41.5	2320	4420	0.31
137.8	8030	14490	0.28	42.0	2450	4420	0.28
139.4	8950	16260	0.28	42.5	2730	4960	0.28
141.1	9200	17540	0.31	43.0	2800	5350	0.31
142.7	8440	17090	0.34	43.5	2570	5210	0.34
144.4	7940	15500	0.32	44.0	2420	4730	0.32
146.0	7840	14490	0.29	44.5	2390	4420	0.29
147.6	7290	14180	0.32	45.0	2220	4320	0.32
149.3	6800	14810	0.37	45.5	2070	4520	0.37
150.9	7170	14180	0.33	46.0	2180	4320	0.33
152.6	8080	14810	0.29	46.5	2460	4520	0.29
154.2	8330	15870	0.31	47.0	2540	4840	0.31
155.8	8280	15150	0.29	47.5	2520	4620	0.29
157.5	8180	15500	0.31	48.0	2490	4730	0.31
159.1	8440	15870	0.30	48.5	2570	4840	0.30
160.8	7890	16260	0.35	49.0	2400	4960	0.35
162.4	7290	13610	0.30	49.5	2220	4150	0.30
164.0	7410	13610	0.29	50.0	2260	4150	0.29
165.7	7530	14490	0.31	50.5	2300	4420	0.31
167.3	6910	13610	0.33	51.0	2110	4150	0.33
169.0	6470	12120	0.30	51.5	1970	3690	0.30
170.6	6570	12820	0.32	52.0	2000	3910	0.32
172.2	6570	12820	0.32	52.5	2000	3910	0.32
173.9	6630	13070	0.33	53.0	2020	3980	0.33
175.5	6700	13070	0.32	53.5	2040	3980	0.32
177.2	7020	13070	0.30	54.0	2140	3980	0.30
178.8	7490	13890	0.29	54.5	2280	4230	0.29
180.5	7710	14180	0.29	55.0	2350	4320	0.29
182.1	7660	14180	0.29	55.5	2340	4320	0.29
184.1	7750	14180	0.29	56.1	2360	4320	0.29
185.4	7710	14810	0.31	56.5	2350	4520	0.31
187.0	7620	14180	0.30	57.0	2320	4320	0.30
188.7	7620	13610	0.27	57.5	2320	4150	0.27
190.3	7980	13890	0.25	58.0	2430	4230	0.25
192.3	8230	15150	0.29	58.6	2510	4620	0.29
193.6	8180	14490	0.27	59.0	2490	4420	0.27
195.2	7940	14180	0.27	59.5	2420	4320	0.27
197.2	8130	14810	0.28	60.1	2480	4520	0.28
198.5	7890	14810	0.30	60.5	2400	4520	0.30
200.1	7410	13890	0.30	61.0	2260	4230	0.30

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-425**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
201.8	7250	13330	0.29	61.5	2210	4060	0.29
203.4	7750	14490	0.30	62.0	2360	4420	0.30
205.1	7490	14180	0.31	62.5	2280	4320	0.31
206.7	7290	13610	0.30	63.0	2220	4150	0.30
208.3	7750	14490	0.30	63.5	2360	4420	0.30
210.0	7980	14810	0.30	64.0	2430	4520	0.30
211.6	7980	14180	0.27	64.5	2430	4320	0.27
213.3	7530	14810	0.33	65.0	2300	4520	0.33
214.9	7170	13070	0.28	65.5	2180	3980	0.28
216.5	7370	14810	0.34	66.0	2250	4520	0.34
218.2	7490	13610	0.28	66.5	2280	4150	0.28
219.8	7980	14810	0.30	67.0	2430	4520	0.30
221.5	7980	16260	0.34	67.5	2430	4960	0.34
223.1	7980	15500	0.32	68.0	2430	4730	0.32
224.7	7710	14180	0.29	68.5	2350	4320	0.29
226.4	7330	13890	0.31	69.0	2230	4230	0.31
228.0	7800	14180	0.28	69.5	2380	4320	0.28
229.7	8030	14490	0.28	70.0	2450	4420	0.28
231.3	7940	15150	0.31	70.5	2420	4620	0.31
232.9	7750	14810	0.31	71.0	2360	4520	0.31
234.6	7660	15500	0.34	71.5	2340	4730	0.34
236.2	7840	14810	0.31	72.0	2390	4520	0.31
237.9	7840	14180	0.28	72.5	2390	4320	0.28
239.5	7750	13610	0.26	73.0	2360	4150	0.26
241.1	7890	14490	0.29	73.5	2400	4420	0.29
242.8	7980	14810	0.30	74.0	2430	4520	0.30
244.4	8180	16260	0.33	74.5	2490	4960	0.33
246.1	8130	17090	0.35	75.0	2480	5210	0.35
247.7	7750	16260	0.35	75.5	2360	4960	0.35
249.3	7800	14810	0.31	76.0	2380	4520	0.31
251.0	7580	13610	0.28	76.5	2310	4150	0.28
252.6	7130	14180	0.33	77.0	2170	4320	0.33
254.3	7530	13610	0.28	77.5	2300	4150	0.28
255.9	7940	14490	0.29	78.0	2420	4420	0.29
257.6	7710	14180	0.29	78.5	2350	4320	0.29
259.2	7710	14490	0.30	79.0	2350	4420	0.30

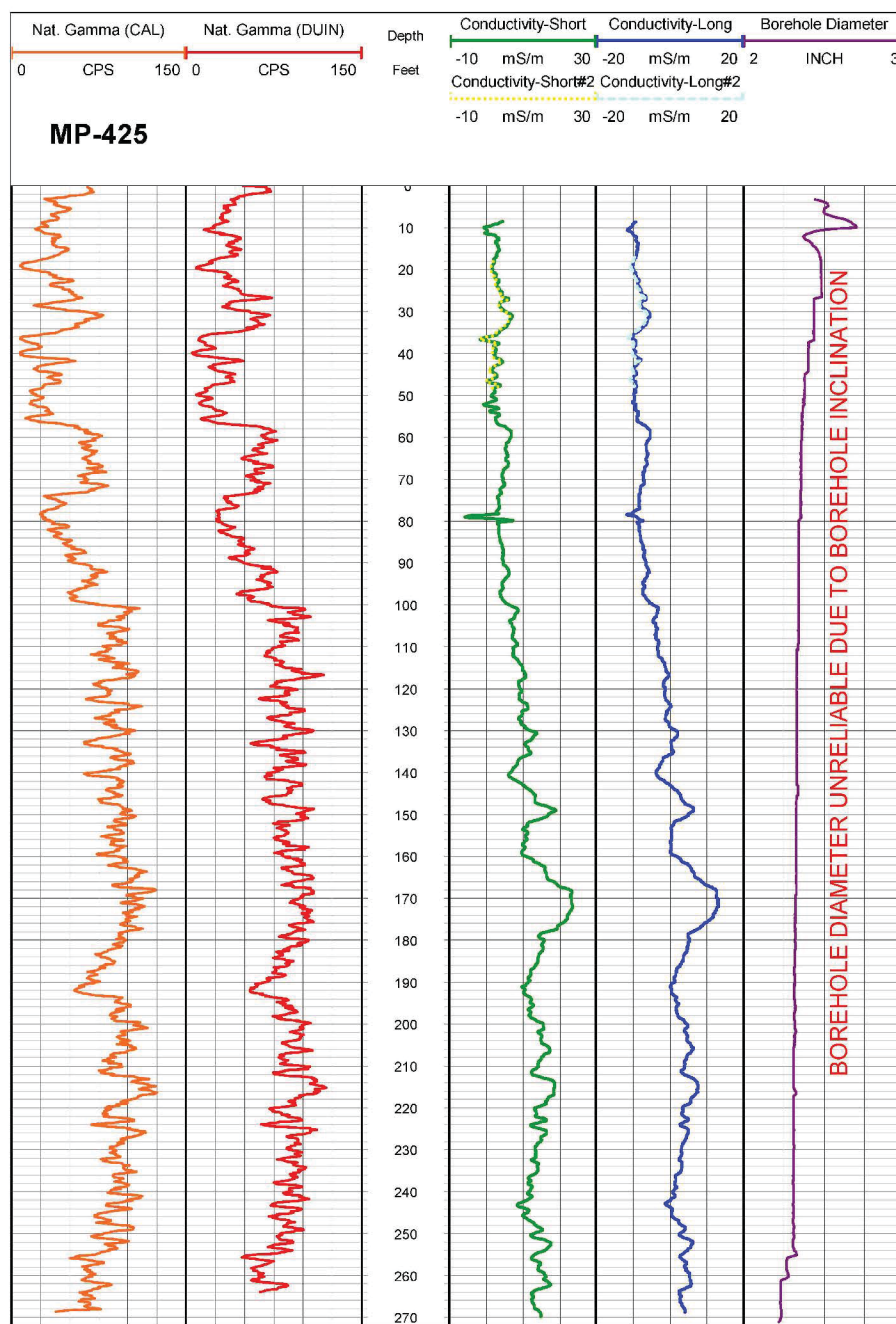


Figure 104. Boring MP-425, Induction, Natural Gamma and Caliper logs

Table 55. Boring MP-425, Acoustic Televiewer Feature depth, dip azimuth, dip and description

Depth (feet)	Dip azimuth	Dip	Structure description
6.4	N234	27	Planar Bottom of surface casing
7.5	N318	59	Fracture Discontinuous Hairline-fracture
8.8	N152	34	Primary-structure Planar Bedding
9.8	N146	38	Primary-structure Irregular Bedding
11.8	N178	48	Primary-structure Irregular Bedding
12.8	N305	49	Fracture Irregular Hairline-fracture
14.1	N321	52	Fracture Discontinuous Hairline-fracture
14.2	N150	27	Primary-structure Irregular Bedding
15.0	N137	33	Primary-structure Planar Bedding
15.6	N323	55	Fracture Discontinuous Hairline-fracture
15.8	N159	32	Primary-structure Planar Bedding
16.3	N149	28	Primary-structure Planar Bedding
16.7	N332	50	Fracture Discontinuous Hairline-fracture
17.3	N147	34	Primary-structure Planar Bedding
18.2	N133	28	Primary-structure Planar Bedding
18.7	N148	31	Primary-structure Planar Bedding
19.5	N159	31	Primary-structure Planar Bedding
19.9	N315	59	Fracture Planar Hairline-fracture
20.6	N142	30	Primary-structure Planar Bedding
21.2	N152	29	Primary-structure Planar Bedding
21.6	N146	27	Primary-structure Planar Bedding
22.9	N147	30	Primary-structure Planar Bedding
24.2	N154	32	Primary-structure Planar Bedding
25.5	N152	22	Primary-structure Planar Bedding
27.1	N147	36	Fracture Planar Open-fracture
27.9	N159	26	Primary-structure Planar Bedding
28.9	N325	68	Fracture Irregular Hairline-fracture
29.6	N152	33	Primary-structure Planar Bedding
30.8	N176	30	Primary-structure Planar Bedding
32.6	N149	36	Primary-structure Planar Bedding
34.3	N149	34	Primary-structure Planar Bedding
34.8	N144	31	Primary-structure Planar Bedding
35.8	N149	33	Primary-structure Planar Bedding
36.5	N150	28	Primary-structure Planar Bedding
37.3	N305	61	Fracture Discontinuous Hairline-fracture
37.5	N151	34	Primary-structure Planar Bedding
38.7	N148	28	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
39.1	N142	31	Primary-structure Planar Bedding
40.0	N147	36	Primary-structure Planar Bedding
41.5	N156	26	Primary-structure Planar Bedding
42.3	N144	32	Primary-structure Planar Bedding
43.3	N145	36	Primary-structure Irregular Bedding
44.2	N162	42	Primary-structure Irregular Bedding
44.6	N141	32	Primary-structure Planar Bedding
45.3	N169	32	Primary-structure Irregular Bedding
46.2	N163	35	Primary-structure Planar Bedding
47.0	N118	25	Primary-structure Planar Bedding
47.4	N165	45	Primary-structure Planar Bedding
47.4	N312	46	Fracture Discontinuous Hairline-fracture
47.8	N160	30	Primary-structure Planar Bedding
48.3	N159	30	Primary-structure Planar Bedding
48.9	N139	29	Primary-structure Planar Bedding
49.9	N154	28	Primary-structure Planar Bedding
51.0	N154	25	Primary-structure Planar Bedding
51.6	N134	22	Primary-structure Planar Bedding
52.1	N151	33	Primary-structure Irregular Bedding
53.0	N175	45	Fracture Irregular Hairline-fracture
53.2	N325	42	Fracture Discontinuous Hairline-fracture
54.3	N157	38	Primary-structure Planar Bedding
54.7	N311	41	Fracture Discontinuous Hairline-fracture
55.2	N149	26	Fracture Irregular Hairline-fracture
56.0	N149	33	Primary-structure Irregular Bedding
56.8	N151	38	Primary-structure Irregular Bedding
57.8	N137	27	Fracture Irregular Hairline-fracture
58.8	N150	31	Primary-structure Irregular Bedding
62.5	N155	34	Primary-structure Irregular Bedding
64.8	N157	40	Primary-structure Irregular Bedding
66.9	N144	28	Primary-structure Irregular Bedding
67.7	N327	40	Fracture Discontinuous Hairline-fracture
69.4	N159	36	Primary-structure Irregular Bedding
69.4	N327	55	Fracture Discontinuous Hairline-fracture
73.2	N165	42	Primary-structure Irregular Bedding
73.9	N153	33	Primary-structure Irregular Bedding
74.3	N153	30	Fracture Irregular Hairline-fracture
75.4	N167	29	Primary-structure Planar Bedding
76.7	N156	34	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
77.1	N152	33	Primary-structure Planar Bedding
77.5	N147	32	Primary-structure Planar Bedding
78.1	N319	47	Fracture Discontinuous Hairline-fracture
78.4	N144	26	Primary-structure Planar Bedding
78.5	N155	36	Primary-structure Planar Bedding
79.9	N321	46	Fracture Irregular Open-fracture
81.6	N145	32	Primary-structure Planar Bedding
84.2	N148	33	Primary-structure Planar Bedding
85.8	N138	34	Primary-structure Planar Bedding
87.5	N158	34	Primary-structure Planar Bedding
88.4	N165	36	Primary-structure Planar Bedding
90.2	N147	37	Primary-structure Planar Bedding
91.6	N155	33	Primary-structure Planar Bedding
94.3	N153	37	Primary-structure Planar Bedding
94.5	N325	48	Fracture Discontinuous Hairline-fracture
94.9	N149	35	Primary-structure Planar Bedding
95.2	N148	35	Primary-structure Planar Bedding
95.6	N330	60	Fracture Discontinuous Hairline-fracture
96.3	N154	33	Primary-structure Planar Bedding
96.6	N319	44	Fracture Discontinuous Hairline-fracture
97.0	N152	34	Primary-structure Planar Bedding
98.5	N324	46	Fracture Planar Hairline-fracture
99.2	N151	34	Primary-structure Planar Bedding
99.8	N155	36	Primary-structure Planar Bedding
99.9	N325	52	Fracture Discontinuous Hairline-fracture
100.3	N149	34	Primary-structure Planar Bedding
100.4	N326	49	Fracture Discontinuous Hairline-fracture
103.4	N325	46	Fracture Discontinuous Hairline-fracture
103.8	N322	49	Fracture Discontinuous Hairline-fracture
103.9	N147	35	Primary-structure Planar Bedding
104.2	N148	31	Primary-structure Planar Bedding
105.0	N324	63	Fracture Discontinuous Hairline-fracture
105.2	N147	33	Primary-structure Planar Bedding
106.4	N151	34	Primary-structure Planar Bedding
107.6	N329	55	Fracture Planar Hairline-fracture
107.7	N148	33	Primary-structure Planar Bedding
109.3	N149	33	Primary-structure Planar Bedding
109.9	N327	58	Fracture Discontinuous Hairline-fracture
110.0	N144	32	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
110.5	N324	58	Fracture Discontinuous Hairline-fracture
110.7	N151	33	Primary-structure Planar Bedding
111.5	N154	34	Primary-structure Planar Bedding
111.9	N328	60	Fracture Discontinuous Hairline-fracture
114.3	N148	32	Primary-structure Planar Bedding
114.9	N145	34	Primary-structure Planar Bedding
118.3	N332	65	Fracture Discontinuous Hairline-fracture
118.5	N153	36	Primary-structure Planar Bedding
119.1	N148	34	Primary-structure Planar Bedding
120.5	N146	35	Primary-structure Planar Bedding
122.0	N325	60	Fracture Planar Hairline-fracture
122.8	N324	52	Fracture Discontinuous Hairline-fracture
122.8	N149	35	Primary-structure Planar Bedding
125.1	N149	35	Primary-structure Planar Bedding
125.7	N323	54	Fracture Discontinuous Hairline-fracture
125.9	N148	26	Primary-structure Planar Bedding
126.6	N326	53	Fracture Discontinuous Hairline-fracture
127.5	N150	31	Primary-structure Planar Bedding
128.3	N152	35	Primary-structure Planar Bedding
128.9	N147	34	Primary-structure Planar Bedding
129.5	N328	59	Fracture Irregular Hairline-fracture
129.8	N146	27	Primary-structure Planar Bedding
131.0	N146	34	Primary-structure Planar Bedding
133.7	N320	67	Fracture Discontinuous Hairline-fracture
133.9	N145	36	Primary-structure Planar Bedding
134.5	N335	53	Fracture Discontinuous Hairline-fracture
134.9	N140	33	Primary-structure Planar Bedding
136.9	N323	60	Fracture Irregular Hairline-fracture
137.6	N149	43	Primary-structure Planar Bedding
137.7	N319	55	Fracture Irregular Hairline-fracture
138.9	N153	34	Primary-structure Planar Bedding
139.7	N150	34	Primary-structure Planar Bedding
140.9	N148	36	Primary-structure Planar Bedding
141.8	N152	36	Primary-structure Planar Bedding
142.3	N340	45	Fracture Discontinuous Hairline-fracture
142.4	N154	36	Primary-structure Planar Bedding
142.7	N147	36	Primary-structure Planar Bedding
145.8	N160	40	Primary-structure Planar Bedding
146.2	N146	34	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
146.2	N328	55	Fracture Discontinuous Hairline-fracture
147.0	N323	67	Fracture Discontinuous Hairline-fracture
148.3	N150	35	Primary-structure Planar Bedding
149.9	N325	56	Fracture Discontinuous Hairline-fracture
150.0	N145	33	Primary-structure Planar Bedding
151.9	N328	46	Fracture Discontinuous Hairline-fracture
152.0	N158	40	Primary-structure Planar Bedding
152.4	N148	35	Primary-structure Planar Bedding
152.7	N157	39	Primary-structure Planar Bedding
153.0	N324	59	Fracture Discontinuous Hairline-fracture
153.5	N157	34	Primary-structure Planar Bedding
155.1	N148	36	Primary-structure Planar Bedding
156.8	N312	68	Fracture Discontinuous Hairline-fracture
157.5	N155	35	Primary-structure Planar Bedding
157.7	N156	32	Primary-structure Planar Bedding
159.0	N331	44	Fracture Discontinuous Hairline-fracture
159.3	N145	30	Primary-structure Planar Bedding
160.0	N152	35	Primary-structure Planar Bedding
160.9	N150	34	Primary-structure Planar Bedding
160.9	N324	37	Fracture Discontinuous Hairline-fracture
161.4	N145	33	Primary-structure Planar Bedding
163.0	N149	38	Primary-structure Planar Bedding
163.4	N151	34	Primary-structure Planar Bedding
165.5	N146	31	Primary-structure Planar Bedding
166.9	N129	29	Primary-structure Planar Bedding
168.7	N146	37	Primary-structure Planar Bedding
170.5	N148	35	Primary-structure Planar Bedding
172.6	N153	32	Primary-structure Planar Bedding
174.5	N147	37	Primary-structure Planar Bedding
175.4	N147	37	Primary-structure Planar Bedding
176.5	N143	37	Primary-structure Planar Bedding
176.7	N140	37	Primary-structure Planar Bedding
177.4	N141	33	Primary-structure Planar Bedding
177.9	N149	38	Primary-structure Planar Bedding
178.4	N338	46	Fracture Discontinuous Hairline-fracture
178.6	N142	34	Primary-structure Planar Bedding
179.2	N146	36	Primary-structure Planar Bedding
179.5	N328	48	Fracture Discontinuous Hairline-fracture
180.1	N146	34	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
181.1	N146	34	Primary-structure Planar Bedding
182.9	N145	34	Primary-structure Planar Bedding
183.9	N144	36	Primary-structure Planar Bedding
184.6	N145	35	Primary-structure Planar Bedding
185.5	N148	35	Primary-structure Planar Bedding
186.9	N145	40	Primary-structure Planar Bedding
187.8	N318	50	Fracture Irregular Hairline-fracture
188.1	N150	34	Primary-structure Planar Bedding
189.6	N146	39	Primary-structure Planar Bedding
190.2	N323	66	Fracture Discontinuous Hairline-fracture
190.3	N163	27	Primary-structure Planar Bedding
190.9	N159	43	Primary-structure Planar Bedding
191.6	N323	50	Fracture Discontinuous Hairline-fracture
191.9	N148	39	Primary-structure Planar Bedding
192.5	N146	37	Primary-structure Planar Bedding
193.5	N146	34	Primary-structure Planar Bedding
195.8	N147	35	Primary-structure Planar Bedding
196.8	N328	55	Fracture Planar Hairline-fracture
197.2	N151	36	Primary-structure Planar Bedding
197.9	N149	35	Primary-structure Planar Bedding
198.8	N148	36	Primary-structure Planar Bedding
199.8	N159	38	Primary-structure Planar Bedding
201.3	N143	37	Primary-structure Planar Bedding
201.6	N324	53	Fracture Discontinuous Hairline-fracture
202.0	N138	36	Primary-structure Planar Bedding
202.4	N146	38	Primary-structure Planar Bedding
203.0	N321	71	Fracture Discontinuous Hairline-fracture
203.7	N145	34	Primary-structure Planar Bedding
207.0	N314	68	Fracture Discontinuous Hairline-fracture
207.4	N145	35	Primary-structure Planar Bedding
209.7	N137	35	Primary-structure Planar Bedding
211.0	N304	48	Fracture Discontinuous Hairline-fracture
211.2	N146	38	Primary-structure Planar Bedding
211.9	N147	36	Primary-structure Planar Bedding
212.4	N145	37	Primary-structure Planar Bedding
213.1	N158	52	Primary-structure Planar Bedding
213.9	N151	38	Primary-structure Planar Bedding
219.5	N146	36	Primary-structure Planar Bedding
221.7	N142	36	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
223.0	N156	38	Primary-structure Planar Bedding
223.7	N146	38	Primary-structure Planar Bedding
223.9	N143	37	Primary-structure Planar Bedding
224.9	N324	29	Fracture Discontinuous Hairline-fracture
228.0	N144	40	Primary-structure Planar Bedding
228.8	N144	39	Primary-structure Planar Bedding
231.6	N146	39	Primary-structure Planar Bedding
232.1	N335	45	Fracture Discontinuous Hairline-fracture
232.9	N323	38	Fracture Discontinuous Hairline-fracture
233.9	N139	35	Primary-structure Planar Bedding
235.3	N142	36	Primary-structure Planar Bedding
236.1	N144	37	Primary-structure Planar Bedding
236.4	N148	37	Primary-structure Planar Bedding
237.3	N325	56	Fracture Discontinuous Hairline-fracture
237.8	N144	38	Primary-structure Planar Bedding
237.9	N317	53	Fracture Discontinuous Hairline-fracture
238.5	N145	35	Primary-structure Planar Bedding
239.3	N143	37	Primary-structure Planar Bedding
240.3	N145	35	Primary-structure Planar Bedding
240.4	N325	45	Fracture Discontinuous Hairline-fracture
241.6	N143	35	Primary-structure Planar Bedding
242.1	N147	37	Primary-structure Planar Bedding
242.6	N151	38	Primary-structure Planar Bedding
243.4	N144	38	Primary-structure Planar Bedding
243.5	N326	53	Fracture Discontinuous Hairline-fracture
243.7	N321	39	Fracture Planar Hairline-fracture
244.1	N146	41	Primary-structure Planar Bedding
245.0	N144	37	Primary-structure Planar Bedding
246.0	N326	57	Fracture Irregular Hairline-fracture
246.1	N143	36	Primary-structure Planar Bedding
250.0	N147	34	Primary-structure Planar Bedding
250.4	N320	53	Fracture Planar Hairline-fracture
251.0	N144	40	Primary-structure Planar Bedding
252.0	N151	38	Primary-structure Planar Bedding
254.3	N148	36	Primary-structure Planar Bedding
255.2	N326	45	Fracture Planar Hairline-fracture
256.1	N123	30	Primary-structure Planar Bedding
257.6	N137	35	Primary-structure Planar Bedding
257.7	N326	62	Fracture Discontinuous Hairline-fracture

Depth (feet)	Dip azimuth	Dip	Structure description
258.3	N319	45	Fracture Discontinuous Hairline-fracture
258.7	N323	45	Fracture Discontinuous Hairline-fracture
259.0	N322	48	Fracture Discontinuous Hairline-fracture
259.7	N148	39	Primary-structure Planar Bedding
259.8	N329	48	Fracture Discontinuous Hairline-fracture
260.8	N136	37	Primary-structure Planar Bedding
261.3	N323	42	Fracture Discontinuous Hairline-fracture
262.6	N148	37	Primary-structure Planar Bedding
263.6	N148	35	Primary-structure Planar Bedding
264.7	N145	31	Primary-structure Planar Bedding
265.5	N141	37	Primary-structure Planar Bedding
266.5	N142	37	Primary-structure Planar Bedding
266.5	N320	42	Fracture Discontinuous Hairline-fracture
267.3	N143	37	Primary-structure Planar Bedding
267.7	N321	47	Fracture Discontinuous Hairline-fracture
267.9	N144	37	Primary-structure Planar Bedding
269.7	N141	35	Primary-structure Planar Bedding
270.5	N326	52	Fracture Discontinuous Hairline-fracture
270.6	N146	38	Primary-structure Planar Bedding

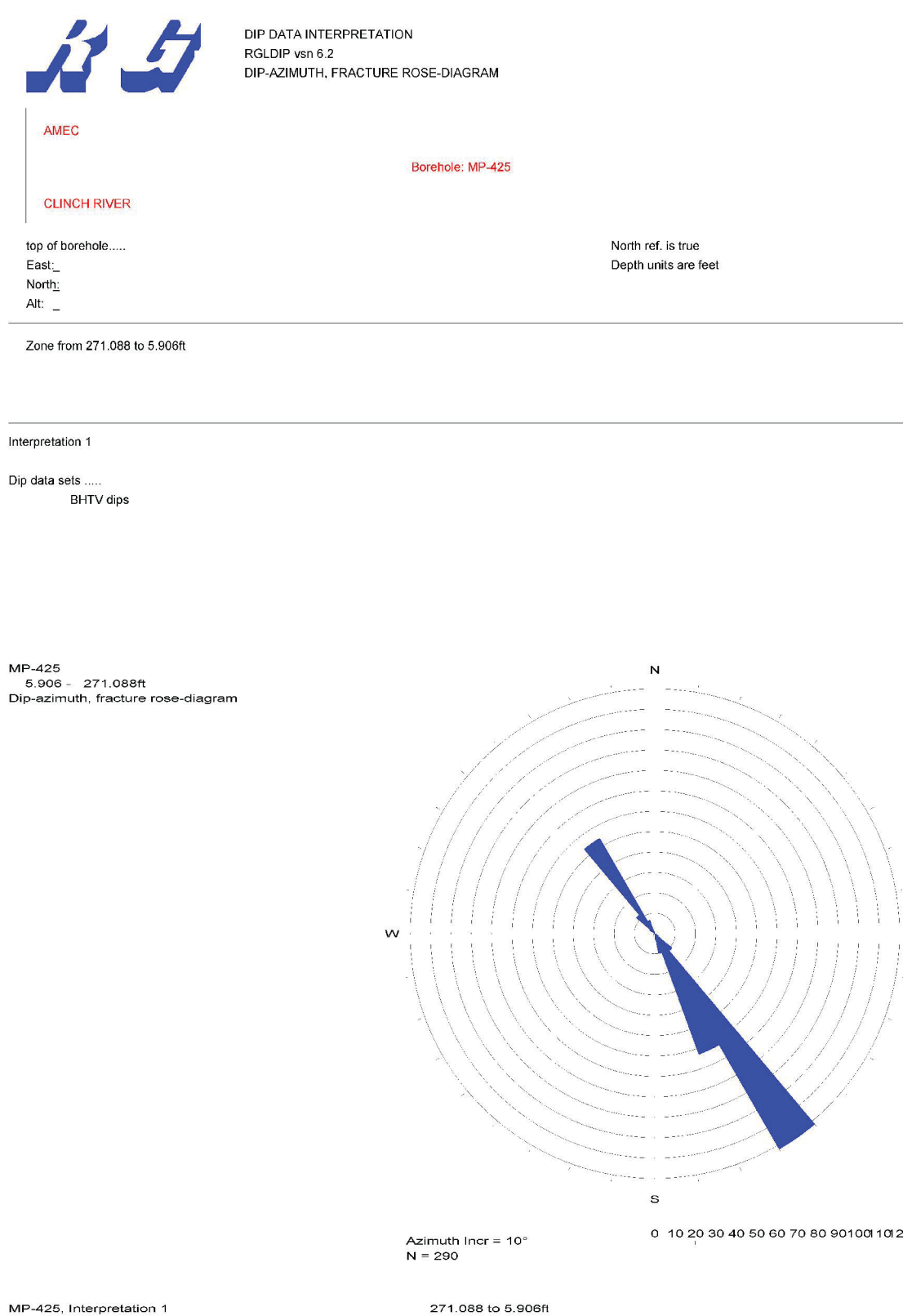
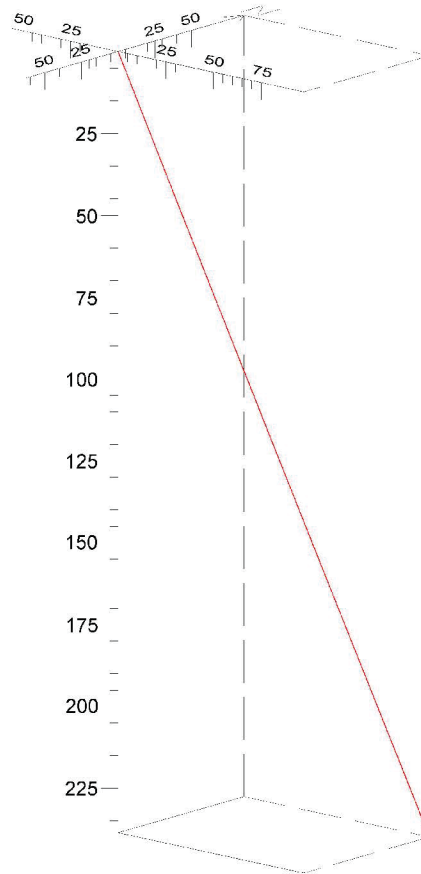


Figure 105. Boring MP-425, Rose Diagram

Deviated borehole in orthographic projection, viewed from N139



Borehole: MP-425 Sonde: BHTV
Zone from: 0.000 to 271.666ft
North ref is true
Mean deviation: 28.53 to N48.62
End coordinates
 North: 85.782
 East : 97.376
 Down : 238.662
Azimuth of end: N48.62
Distance start-end: 129.771ft
Viewpoint: N139
Data extrapolated to the surface from 4.930ft

Figure 106. Boring MP-425, Up Deviation Projection

CLINCH RIVER SMR PROJECT BOREHOLE MP-426 Receiver to Receiver V_s and V_p Analysis

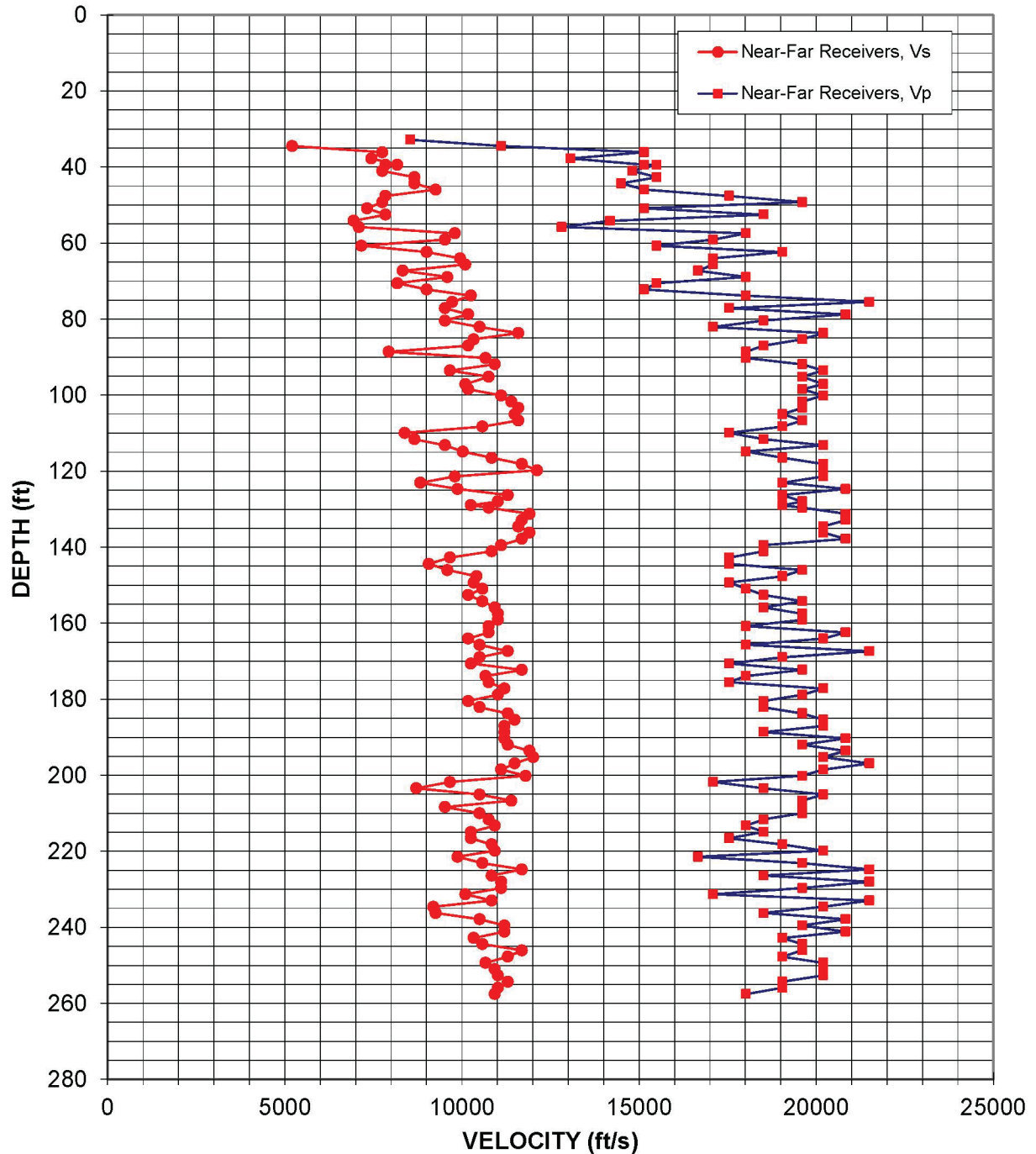


Figure 107: Boring MP-426, Suspension R1-R2 P- and S_H -wave velocities

Table 56. Boring MP-426, Suspension R1-R2 depths and P- and S_H-wave velocities

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-426**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
32.8	-	8550	-	10.0	-	2610	-
34.5	5210	11110	0.36	10.5	1590	3390	0.36
36.1	7750	15150	0.32	11.0	2360	4620	0.32
37.7	7450	13070	0.26	11.5	2270	3980	0.26
39.4	8180	15150	0.29	12.0	2490	4620	0.29
39.4	7840	15500	0.33	12.0	2390	4730	0.33
41.0	7750	14810	0.31	12.5	2360	4520	0.31
42.7	8660	15500	0.27	13.0	2640	4730	0.27
44.3	8660	14490	0.22	13.5	2640	4420	0.22
45.9	9260	15150	0.20	14.0	2820	4620	0.20
47.6	7840	17540	0.38	14.5	2390	5350	0.38
49.2	7750	19610	0.41	15.0	2360	5980	0.41
50.9	7330	15150	0.35	15.5	2230	4620	0.35
52.5	7840	18520	0.39	16.0	2390	5640	0.39
54.1	6940	14180	0.34	16.5	2120	4320	0.34
55.8	7090	12820	0.28	17.0	2160	3910	0.28
57.4	9800	18020	0.29	17.5	2990	5490	0.29
59.1	9520	17090	0.27	18.0	2900	5210	0.27
60.7	7170	15500	0.36	18.5	2180	4730	0.36
62.3	9010	19050	0.36	19.0	2750	5810	0.36
64.0	9950	17090	0.24	19.5	3030	5210	0.24
65.6	10100	17090	0.23	20.0	3080	5210	0.23
67.3	8330	16670	0.33	20.5	2540	5080	0.33
68.9	9590	18020	0.30	21.0	2920	5490	0.30
70.5	8180	15500	0.31	21.5	2490	4730	0.31
72.2	9010	15150	0.23	22.0	2750	4620	0.23
73.8	10260	18020	0.26	22.5	3130	5490	0.26
75.5	9730	21510	0.37	23.0	2970	6550	0.37
77.1	9520	17540	0.29	23.5	2900	5350	0.29
78.7	10180	20830	0.34	24.0	3100	6350	0.34
80.4	9520	18520	0.32	24.5	2900	5640	0.32
82.0	10500	17090	0.20	25.0	3200	5210	0.20
83.7	11590	20200	0.25	25.5	3530	6160	0.25
85.3	10340	19610	0.31	26.0	3150	5980	0.31
86.9	10180	18520	0.28	26.5	3100	5640	0.28
88.6	7940	18020	0.38	27.0	2420	5490	0.38
90.2	10670	18020	0.23	27.5	3250	5490	0.23

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-426**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
91.9	10930	19610	0.27	28.0	3330	5980	0.27
93.5	9660	20200	0.35	28.5	2940	6160	0.35
95.1	10750	19610	0.28	29.0	3280	5980	0.28
97.1	10100	20200	0.33	29.6	3080	6160	0.33
98.4	10180	19610	0.32	30.0	3100	5980	0.32
100.1	11110	20200	0.28	30.5	3390	6160	0.28
101.7	11400	19610	0.24	31.0	3470	5980	0.24
103.4	11590	19610	0.23	31.5	3530	5980	0.23
105.0	11490	19050	0.21	32.0	3500	5810	0.21
106.6	11590	19610	0.23	32.5	3530	5980	0.23
108.3	10580	19050	0.28	33.0	3230	5810	0.28
109.9	8390	17540	0.35	33.5	2560	5350	0.35
111.6	8660	18520	0.36	34.0	2640	5640	0.36
113.2	9520	20200	0.36	34.5	2900	6160	0.36
114.8	10030	18020	0.28	35.0	3060	5490	0.28
116.5	10840	19050	0.26	35.5	3300	5810	0.26
118.1	11700	20200	0.25	36.0	3560	6160	0.25
119.8	12120	20200	0.22	36.5	3690	6160	0.22
121.4	9800	20200	0.35	37.0	2990	6160	0.35
123.0	8830	19050	0.36	37.5	2690	5810	0.36
124.7	9880	20830	0.36	38.0	3010	6350	0.36
126.3	11300	19050	0.23	38.5	3440	5810	0.23
128.0	11020	19610	0.27	39.0	3360	5980	0.27
128.9	10260	19050	0.30	39.3	3130	5810	0.30
129.6	10750	19610	0.28	39.5	3280	5980	0.28
131.2	11900	20830	0.26	40.0	3630	6350	0.26
132.9	11700	20830	0.27	40.5	3560	6350	0.27
134.5	11590	20200	0.25	41.0	3530	6160	0.25
136.2	11900	20200	0.23	41.5	3630	6160	0.23
137.8	11700	20830	0.27	42.0	3560	6350	0.27
139.4	11110	18520	0.22	42.5	3390	5640	0.22
141.1	10840	18520	0.24	43.0	3300	5640	0.24
142.7	9660	17540	0.28	43.5	2940	5350	0.28
144.4	9070	17540	0.32	44.0	2760	5350	0.32
146.0	9590	19610	0.34	44.5	2920	5980	0.34
147.6	10420	19050	0.29	45.0	3180	5810	0.29
149.3	10340	17540	0.23	45.5	3150	5350	0.23
150.9	10580	18020	0.24	46.0	3230	5490	0.24
152.6	10180	18520	0.28	46.5	3100	5640	0.28

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-426**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
154.2	10580	19610	0.29	47.0	3230	5980	0.29
155.8	10930	18520	0.23	47.5	3330	5640	0.23
157.5	11020	19610	0.27	48.0	3360	5980	0.27
159.1	11020	19610	0.27	48.5	3360	5980	0.27
160.8	10750	18020	0.22	49.0	3280	5490	0.22
162.4	10750	20830	0.32	49.5	3280	6350	0.32
164.0	10180	20200	0.33	50.0	3100	6160	0.33
165.7	10500	18020	0.24	50.5	3200	5490	0.24
167.3	11300	21510	0.31	51.0	3440	6550	0.31
169.0	10500	19050	0.28	51.5	3200	5810	0.28
170.6	10260	17540	0.24	52.0	3130	5350	0.24
172.2	11700	19610	0.22	52.5	3560	5980	0.22
173.9	10670	18020	0.23	53.0	3250	5490	0.23
175.5	10750	17540	0.20	53.5	3280	5350	0.20
177.2	11200	20200	0.28	54.0	3420	6160	0.28
178.8	11020	19610	0.27	54.5	3360	5980	0.27
180.5	10180	18520	0.28	55.0	3100	5640	0.28
182.1	10500	18520	0.26	55.5	3200	5640	0.26
183.7	11300	19610	0.25	56.0	3440	5980	0.25
185.4	11490	20200	0.26	56.5	3500	6160	0.26
187.0	11200	20200	0.28	57.0	3420	6160	0.28
188.7	11200	18520	0.21	57.5	3420	5640	0.21
190.3	11200	20830	0.30	58.0	3420	6350	0.30
191.9	11300	19610	0.25	58.5	3440	5980	0.25
193.6	11900	20830	0.26	59.0	3630	6350	0.26
195.2	12010	20200	0.23	59.5	3660	6160	0.23
196.9	11490	21510	0.30	60.0	3500	6550	0.30
198.5	11110	20200	0.28	60.5	3390	6160	0.28
200.1	11800	19610	0.22	61.0	3600	5980	0.22
201.8	9660	17090	0.27	61.5	2940	5210	0.27
203.4	8710	18520	0.36	62.0	2660	5640	0.36
205.1	10500	20200	0.32	62.5	3200	6160	0.32
206.7	11400	19610	0.24	63.0	3470	5980	0.24
208.3	9520	19610	0.35	63.5	2900	5980	0.35
210.0	10500	19610	0.30	64.0	3200	5980	0.30
211.6	10750	18520	0.25	64.5	3280	5640	0.25
213.3	10930	18020	0.21	65.0	3330	5490	0.21
214.9	10260	18520	0.28	65.5	3130	5640	0.28
216.5	10260	17540	0.24	66.0	3130	5350	0.24