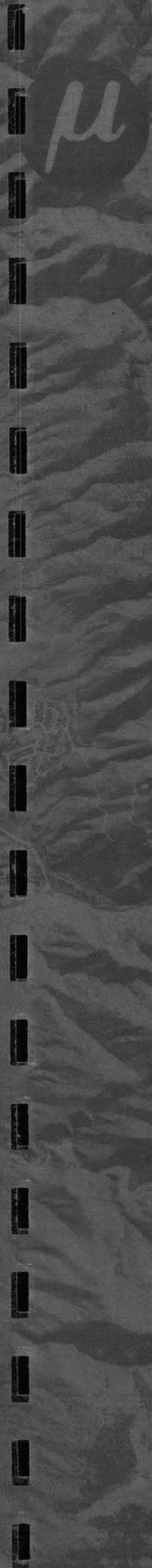


**CONFIDENTIAL**



MICROGEOPHYSICS  
CORPORATION

**SELF-POTENTIAL SURVEY  
SOUTHEAST COAST AREA  
HAWAII COUNTY  
on STATE LANDS**

**AREA I**

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## COMMENTARY

From April 5 to May 22, 1978, Microgeophysics Corporation conducted a self-potential passive-electrical survey (SP) for Atlantic Richfield Company in the area of the east and southwest rifts of Kilauea Volcano.

SP Traverses were planned and conducted by a two-member crew. The traverses were closed loops of several kilometers. All equipment and supplies were carried by hand when vehicle use was not possible. A discussion of the equipment is contained in the Instrumental Appendix.

The data-collection procedure was as follows: The leading crew member was responsible for navigating the traverse and selecting the electrode placement. Beginning at a selected point, the trailing crew member placed his electrode and waited until the leading crew member pulled the 100 meter wire full length along the traverse. The trailing crew member held the wire end securely to indicate to the leading member that he had gone 100 meters along the traverse. The leading man then selected an electrode placement, marked the spot with bright yarn and waited for the trailing crew member to take the voltage reading, record it and signal that the data for that station was acquired. The leading man then picked up his electrode, moved along the traverse until the trailing crew member arrived at the point the leading man had just left. Using this procedure, 80 to 110 stations at 100 meter intervals were occupied per day along roads. In the Puna Forest Preserve many stations required over an hour to move the 100 meters. Therefore, the average production was about 10 to 12 stations per day.

The base map in the pocket shows the location of traverses made on

state land with a starting point and direction of travel shown. Voltages measured at 100 meter station intervals from the starting points are given in the following tabulations.

HAWAII SELF-POTENTIAL SURVEY

Project Area: Central Puna on State Land

Loop: 4

Loop Station	Loop Corrected $\Delta V$	Accumulated Loop Corrected $\Delta V$
1	- 1	- 1
2	- 1	- 2
3	- 14	- 16
4	- 21	- 37
5	- 12	- 49
6	+ 72	+ 23
7	- 3	+ 20
8	+ 4	+ 24
9	- 3	+ 21
10	- 2	+ 19
11	- 2	+ 17
12	- 25	- 8
13	+ 23	+ 15
14	- 3	+ 12
15	- 2	+ 10
16	- 8	+ 2
17	- 3	- 1
18	+ 27	+ 26
19	+ 14	+ 40
20	- 2	+ 38
21	+ 15	+ 53
22	- 3	+ 50
23	+ 52	+ 102
24	- 6	+ 96
25	- 3	+ 93
26	- 2	+ 91
27	- 18	+ 73
28	+ 74	+ 147
29	- 107	+ 40
30	- 1	+ 39
31	+ 38	+ 77
32	+ 67	+ 144
33	- 2	+ 142

Notes:

100 meter station spacing

Loop Start: Station 1 to N\* on Highway 13

Loop End: Station 33

\* General direction only.  
See map for accurate loop route.

HAWAII SELF-POTENTIAL SURVEY

Project Area: Central Puna on State Land

Loop: 4 to Loop 7 tie

<u>Loop Station</u>	<u>Loop Corrected <math>\Delta V</math></u>	<u>Accumulated Loop Corrected <math>\Delta V</math></u>
1	0	0
2	- 18	- 18
3	+ 44	+ 26
4	- 49	- 23
5	- 35	- 58
6	- 22	- 88
7	+ 7	- 73
8	- 23	- 96
9	- 8	- 104
10	- 7	- 111
11	0	- 111

Notes:

100 meter station spacing

Loop Start: Station 1 to N\* on Highway 13

Loop End: Station 11

\* General direction only.  
See map for accurate loop route.

## HAWAII SELF-POTENTIAL SURVEY

Project Area: Central Puna on State Land

Loop: 7

Loop Station	Loop Corrected $\Delta V$	Accumulated Loop Corrected $\Delta V$	Loop Station	Loop Corrected $\Delta V$	Accumulated Loop Corrected $\Delta V$
1	+ 24	+ 24	44	- 47	- 648
2	- 74	- 50	45	- 10	- 658
3	- 36	- 86	46	- 24	- 682
4	- 6	- 92	47	+ 11	- 671
5	- 16	- 108	48	- 16	- 687
6	+ 47	- 61	49	+ 13	- 674
7	+ 16	- 45	50	+ 8	- 666
8	- 31	- 76	51	+ 11	- 655
9	- 86	- 162	52	+ 10	- 645
10	+ 3	- 159	53	+ 29	- 616
11	+ 32	- 217	54	+ 36	- 580
12	+ 50	- 77	55	- 3	- 583
13	- 21	- 98	56	- 19	- 602
14	+ 27	- 71	57	+ 13	- 589
15	- 61	- 132	58	+ 42	- 547
16	+ 5	- 127	59	- 33	- 580
17	- 73	- 200	60	+ 3	- 577
18	+ 78	- 122	61	+ 19	- 558
19	+ 73	- 49	62	- 38	- 596
20	- 133	- 182	63	- 4	- 600
21	- 42	- 224	64	- 25	- 625
22	+ 40	- 184	65	- 2	- 627
23	0	- 184	66	+ 2	- 625
24	+ 3	- 181	67	- 19	- 644
25	- 3	- 184	68	- 24	- 668
26	- 24	- 208	69	- 33	- 701
27	+ 5	- 203	70	+ 27	- 674
28	+ 24	- 179	71	- 1	- 675
29	+ 12	- 167	72	+ 3	- 672
30	+ 21	- 146	73	+ 29	- 643
31	+ 27	- 119	74	- 14	- 657
32	+ 4	- 115	75	- 2	- 659
33	+ 3	- 112	76	+ 20	- 639
34	+ 51	- 61	77	+ 16	- 623
35	+ 83	+ 22	78	+ 6	- 617
36	- 3	+ 19	79	+ 4	- 612
37	- 93	- 74	80	+ 15	- 597
38	- 122	- 196	81	+ 3	- 594
39	- 134	- 330	82	- 4	- 598
40	- 71	- 401	83	+ 2	- 596
41	- 85	- 486	84	+ 1	- 595
42	- 63	- 549	85	+ 1	- 594
43	- 52	- 601	86	- 27	- 621

HAWAII SELF-POTENTIAL SURVEY

Project Area: Central Puna on State Land

Loop: 7

Loop Station	Loop Corrected $\Delta V$	Accumulated Loop Corrected $\Delta V$	Loop Station	Loop Corrected $\Delta V$	Accumulated Loop Corrected $\Delta V$
87	+ 27	- 594	122	- 3	- 24
88	- 7	- 601	123	+ 54	+ 30
89	- 17	- 618	124	- 12	+ 18
90	+ 3	- 615	125	- 50	- 32
91	+ 3	- 612	126	- 5	- 37
92	+ 3	- 609	127	- 29	- 66
93	+ 2	- 607	128	+ 7	- 59
94	+ 2	- 605	129	- 13	- 72
95	+ 16	- 589	130	+ 3	- 69
96	+ 7	- 582	131	+ 3	- 66
97	+ 6	- 576	132	+ 13	- 53
98	- 5	- 581	133	+ 23	- 30
99	+ 12	- 569	134	+ 21	- 9
100	- 2	- 571	135	- 4	- 13
101	+ 3	- 568	136	- 24	- 37
102	+ 39	- 529	137	- 27	- 64
103	+ 54	- 475	138	- 16	- 80
104	+ 13	- 462	139	- 24	- 104
105	+ 47	- 415	140	+ 2	- 102
106	+ 3	- 412	141	- 30	- 132
107	+ 13	- 399	142	+ 30	- 102
108	+ 72	- 327	143	+ 44	- 58
109	+ 65	- 262	144	- 22	- 80
110	+ 84	- 178	145	+ 23	- 57
111	+ 32	- 146	146	- 17	- 74
112	+ 15	- 131	147	+ 12	- 62
113	+ 116	- 15	148	- 11	- 73
114	- 161	- 176	149	+ 25	- 48
115	- 1	- 177	150	+ 5	- 43
116	- 103	- 280	151	+ 30	- 13
117	+ 116	- 164	152	+ 4	- 9
118	+ 48	- 116	153	+ 3	- 6
119	+ 25	- 91	154	+ 3	- 3
120	+ 32	- 59	155	+ 3	0
121	+ 38	- 21			

Notes:

100 meter station spacing

Loop Start: Station 1 to NE\* begin 375 meters SE lilewa crater

First turn: at station 23 to S trend SSW\*

Second turn: at station 62 to NW trend W to SW\*

Third turn: at station 89 to NW\*

Fourth turn: at station 120 to NE\*

Fifth turn: at station 144 to SE\*

Sixth turn: at station 149 to ENE\*

Loop End: Station 155

\* General direction only.  
See map for accurate loop route.



HAWAII SELF-POTENTIAL SURVEY

Project Area: Central Puna on State Land

Loop: 7 to Loop 8 tie

Loop Station	Loop Corrected $\Delta V$	Accumulated Loop Corrected $\Delta V$	Loop Station	Loop Corrected $\Delta V$	Accumulated Loop Corrected $\Delta V$
1	- 18	- 410	31	- 22	- 439
2	- 21	- 431	32	+ 45	- 394
3	- 16	- 447	33	- 9	- 403
4	+ 14	- 433	34	+ 9	- 394
5	- 18	- 451	35	+ 14	- 380
6	+ 16	- 435	36	+ 9	- 371
7	- 50	- 485	37	+ 15	- 356
8	- 11	- 496	38	+ 20	- 336
9	- 32	- 528	39	- 14	- 350
10	+ 12	- 516	40	- 21	- 371
11	+ 11	- 505	41	- 42	- 413
12	0	- 505	42	+ 4	- 409
13	+ 30	- 475	43	- 4	- 413
14	+ 18	- 457	44	- 30	- 443
15	+ 13	- 444	45	- 31	- 474
16	+ 25	- 419	46	- 10	- 484
17	- 39	- 458	47	- 44	- 528
18	0	- 458	48	- 54	- 582
19	- 11	- 469	49	+ 1	- 581
20	- 12	- 481	50	- 34	- 615
21	+ 25	- 456	51	- 16	- 631
22	+ 10	- 446	52	- 19	- 650
23	+ 6	- 440	53	- 2	- 652
24	- 23	- 463	54	- 29	- 681
25	+ 49	- 414	55	- 40	- 721
26	- 21	- 435	56	+ 7	- 714
27	- 5	- 440	57	- 6	- 720
28	+ 10	- 430	58	- 13	- 733
29	+ 11	- 419	59	+ 3	- 730
30	+ 2	- 417			

Notes:

100 meter station spacing

Loop Start: Station 1 to SW trend NW\*

Loop End: Station 59

\* General direction only.  
See map for accurate loop route.

HAWAII SELF-POTENTIAL SURVEY

Project Area: Central Puna on State Land

Loop: 8

<u>Loop Station</u>	<u>Loop Corrected ΔV</u>	<u>Accumulated Loop Corrected ΔV</u>	<u>Loop Station</u>	<u>Loop Corrected ΔV</u>	<u>Accumulated Loop Corrected ΔV</u>
1	- 11	- 11	39	+ 50	+ 53
2	- 26	- 37	40	+ 7	+ 60
3	- 4	- 41	41	+ 26	+ 86
4	- 3	- 44	42	+ 26	+ 112
5	- 5	- 49	43	+ 54	+ 166
6	- 10	- 59	44	+ 30	+ 196
7	- 6	- 65	45	+ 97	+ 293
8	- 19	- 84	46	+ 94	+ 387
9	- 1	- 85	47	+ 139	+ 526
10	+ 2	- 83	48	+ 52	+ 578
11	- 5	- 88	49	+ 25	+ 603
12	+ 53	- 35	50	- 18	+ 585
13	+ 22	- 13	51	- 4	+ 581
14	0	- 13	52	+ 19	+ 600
15	- 25	- 38	53	+ 38	+ 638
16	- 4	- 42	54	- 11	+ 627
17	+ 3	- 39	55	- 14	+ 613
18	- 2	- 41	56	+ 52	+ 665
19	0	- 41	57	- 367	+ 298
20	- 62	- 103	58	+ 291	+ 589
21	- 11	- 114	59	- 36	+ 553
22	- 28	- 142	60	- 50	+ 503
23	- 2	- 144	61	- 10	+ 493
24	- 23	- 167	62	- 70	+ 423
25	+ 20	- 147	63	- 9	+ 414
26	+ 11	- 136	64	+ 4	+ 418
27	- 16	- 152	65	- 25	+ 393
28	+ 34	- 118	66	- 22	+ 371
29	+ 3	- 115	67	- 31	+ 340
30	- 3	- 118	68	- 32	+ 308
31	+ 40	- 78	69	- 56	+ 252
32	+ 15	- 63	70	- 5	+ 247
33	+ 22	- 41	71	+ 12	+ 259
34	+ 1	- 40	72	+ 31	+ 290
35	+ 25	- 15	73	+ 19	+ 309
36	- 44	- 59	74	+ 9	+ 318
37	+ 54	- 5	75	+ 14	+ 332
38	+ 8	+ 3	76	- 1	+ 331

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HAWAII SELF-POTENTIAL SURVEY

Project Area: Central Puna on State Land

Loop: 8

<u>Loop Station</u>	<u>Loop Corrected <math>\Delta V</math></u>	<u>Accumulated Loop Corrected <math>\Delta V</math></u>	<u>Loop Station</u>	<u>Loop Corrected <math>\Delta V</math></u>	<u>Accumulated Loop Corrected <math>\Delta V</math></u>
77	- 55	+ 276	115	- 33	+ 77
78	- 41	+ 235	116	+ 25	+ 102
79	- 30	+ 205	117	+ 3	+ 105
80	- 21	+ 184	118	- 1	+ 104
81	- 26	+ 158	119	- 22	+ 82
82	+ 7	+ 165	120	- 51	+ 31
83	- 5	+ 160	121	- 26	+ 5
84	- 20	+ 140	122	+ 5	+ 10
85	- 26	+ 114	123	+ 18	+ 28
86	- 28	+ 86	124	+ 25	+ 53
87	+ 10	+ 96	125	- 12	+ 41
88	+ 14	+ 110	126	- 12	+ 29
89	+ 34	+ 144	127	+ 3	+ 32
90	- 10	+ 134	128	- 2	+ 30
91	+ 30	+ 164	129	- 3	+ 27
92	+ 8	+ 172	130	+ 27	+ 54
93	- 4	+ 168	131	+ 28	+ 82
94	+ 31	+ 199	132	+ 3	+ 85
95	+ 34	+ 233	133	+ 30	+ 115
96	+ 13	+ 246	134	+ 12	+ 127
97	- 18	+ 228	135	+ 9	+ 136
98	- 11	+ 217	136	+ 14	+ 150
99	+ 22	+ 239	137	+ 11	+ 161
100	- 34	+ 205	138	+ 5	+ 166
101	+ 15	+ 220	139	+ 1	+ 167
102	+ 7	+ 227	140	- 15	+ 152
103	- 24	+ 203	141	+ 53	+ 205
104	+ 27	+ 230	142	- 11	+ 194
105	- 5	+ 225	143	+ 28	+ 222
106	+ 11	+ 236	144	+ 5	+ 227
107	- 19	+ 217	145	+ 14	+ 241
108	+ 27	+ 244	146	- 6	+ 235
109	- 39	+ 205	147	+ 30	+ 265
110	- 49	+ 156	148	- 82	+ 183
111	- 17	+ 139	149	+ 10	+ 193
112	+ 9	+ 148	150	- 17	+ 176
113	- 21	+ 127	151	- 18	+ 158
114	- 17	+ 110	152	- 26	+ 132

HAWAII SELF-POTENTIAL SURVEY

Project Area: Central Puna on State Land

Loop: 8

<u>Loop Station</u>	<u>Loop Corrected ΔV</u>	<u>Accumulated Loop Corrected ΔV</u>	<u>Loop Station</u>	<u>Loop Corrected ΔV</u>	<u>Accumulated Loop Corrected ΔV</u>
153	0	+ 132	182	+ 16	+ 468
154	- 5	+ 127	183	+ 67	+ 535
155	- 20	+ 107	184	- 82	+ 453
156	+ 7	+ 114	185	- 10	+ 443
157	- 3	+ 111	186	+ 36	+ 479
158	+ 7	+ 118	187	+ 106	+ 585
159	- 12	+ 106	188	+ 5	+ 590
160	+ 5	+ 111	189	+ 55	+ 645
161	- 12	+ 99	190	+ 65	+ 710
162	- 13	+ 86	191	+ 128	+ 838
163	- 29	+ 57	192	- 143	695
164	- 18	+ 39	193	- 58	+ 637
165	+ 19	+ 58	194	- 11	+ 626
166	+ 10	+ 68	195	- 8	+ 618
167	+ 35	+ 103	196	- 7	+ 611
168	+ 62	+ 165	197	- 50	+ 561
169	- 17	+ 148	198	- 113	+ 448
170	+ 58	+ 206	199	- 33	+ 415
171	- 6	+ 200	200	- 15	+ 400
172	- 8	+ 192	201	- 8	+ 392
173	+ 52	+ 244	202	- 84	+ 308
174	+ 65	+ 309	203	+ 30	+ 338
175	+ 50	+ 359	204	- 125	+ 213
176	+ 37	+ 396	205	- 85	+ 128
177	- 29	+ 367	206	- 49	+ 79
178	- 36	+ 331	207	- 34	+ 45
179	+ 15	+ 346	208	- 30	+ 15
180	+ 148	+ 494	209	+ 6	+ 21
181	- 42	+ 452	210	- 21	0

Notes:

100 meter station spacing

Loop Start: Station 1 to SW\*

First turn: at station 19 to NW\*

Second turn: at station 50 to NNE\*

Third turn: at station 121 to S trend SE\*

Loop End: Station 210

\* General direction only.  
See map for accurate loop route.

HAWAII SELF-POTENTIAL SURVEY

Project Area: North Kilauea on State Land

Loop: 10

<u>Loop Station</u>	<u>Loop Corrected <math>\Delta V</math></u>	<u>Accumulated Loop Corrected <math>\Delta V</math></u>	<u>Loop Station</u>	<u>Loop Corrected <math>\Delta V</math></u>	<u>Accumulated Loop Corrected <math>\Delta V</math></u>
1	- 38	- 38	41	+ 38	- 713
2	- 20	- 58	42	+ 35	- 678
3	+ 20	- 38	43	+ 47	- 631
4	+ 13	- 25	44	+ 61	- 570
5	- 64	- 89	45	+ 74	- 496
6	+ 4	- 85	46	+ 44	- 452
7	- 4	- 89	47	+ 69	- 383
8	- 13	- 102	48	+ 41	- 342
9	+ 9	- 93	49	+ 17	- 325
10	- 65	- 158	50	+ 5	- 320
11	- 203	- 361	51	- 15	- 335
12	+ 110	- 251	52	- 10	- 345
13	- 7	- 258	53	+ 10	- 335
14	- 23	- 281	54	+ 28	- 307
15	- 32	- 313	55	+ 11	- 296
16	- 13	- 326	56	- 23	- 319
17	- 77	- 403	57	- 4	- 323
18	- 87	- 490	58	+ 1	- 322
19	- 65	- 555	59	+ 21	- 301
20	- 97	- 652	60	+ 7	- 318
21	+ 12	- 640	61	+ 28	- 290
22	- 25	- 665	62	- 9	- 299
23	- 44	- 709	63	+ 11	- 288
24	+ 27	- 682	64	+ 100	- 188
25	- 23	- 705	65	- 55	- 243
26	- 47	- 752	66	- 34	- 277
27	- 34	- 786	67	- 11	- 288
28	- 41	- 827	68	+ 48	- 240
29	+ 19	- 808	69	- 6	- 246
30	- 34	- 842	70	+ 30	- 216
31	- 30	- 872	71	- 61	- 277
32	+ 6	- 866	72	+ 14	- 263
33	+ 14	- 852	73	- 5	- 268
34	- 28	- 880	74	- 7	- 275
35	- 13	- 893	75	+ 9	- 266
36	0	- 893	76	- 33	- 299
37	+ 40	- 853	77	+ 45	- 254
38	+ 69	- 784	78	+ 12	- 242
39	+ 11	- 773	79	- 57	- 299
40	+ 22	- 751	80	- 2	- 301

HAWAII SELF-POTENTIAL SURVEY

Project Area: North Kilauea on State Land

Loop: 10

<u>Loop Station</u>	<u>Loop Corrected <math>\Delta V</math></u>	<u>Accumulated Loop Corrected <math>\Delta V</math></u>	<u>Loop Station</u>	<u>Loop Corrected <math>\Delta V</math></u>	<u>Accumulated Loop Corrected <math>\Delta V</math></u>
81	+ 38	- 263	111	+ 18	- 66
82	+ 10	- 253	112	+ 1	- 65
83	+ 17	- 236	113	+ 2	- 63
84	+ 66	- 170	114	+ 6	- 57
85	- 57	- 227	115	+ 11	- 46
86	- 76	- 303	116	- 11	- 57
87	- 16	- 319	117	+ 3	- 54
88	- 19	- 338	118	+ 18	- 36
89	+ 55	- 285	119	- 20	- 56
90	+ 29	- 256	120	- 11	- 67
91	- 61	- 317	121	+ 13	- 54
92	+ 32	- 285	122	+ 35	- 19
93	- 4	- 289	123	- 5	- 24
94	+ 5	- 285	124	+ 18	- 6
95	+ 3	- 281	125	+ 4	- 2
96	+ 18	- 263	126	- 14	- 16
97	+ 29	- 234	127	- 1	- 17
98	- 1	- 235	128	+ 2	- 15
99	- 2	- 237	129	- 14	- 29
100	+ 22	- 215	130	+ 9	- 20
101	+ 11	- 204	131	+ 13	- 7
102	+ 15	- 189	132	+ 3	- 4
103	+ 36	- 153	133	+ 9	+ 5
104	- 32	- 185	134	+ 17	+ 22
105	+ 89	- 96	135	- 9	+ 13
106	- 12	- 108	136	- 15	- 2
107	- 41	- 149	137	- 9	- 11
108	+ 3	- 146	138	+ 11	0
109	+ 11	- 135	139	- 16	- 16
110	+ 51	- 84	140	- 14	- 30

HAWAII SELF-POTENTIAL SURVEY

Project Area: North Kilauea on State Land

Loop: 10

<u>Loop Station</u>	<u>Loop Corrected <math>\Delta V</math></u>	<u>Accumulated Loop Corrected <math>\Delta V</math></u>	<u>Loop Station</u>	<u>Loop Corrected <math>\Delta V</math></u>	<u>Accumulated Loop Corrected <math>\Delta V</math></u>
141	- 14	- 44			
142	- 22	- 66			
143	+ 17	- 49			
144	- 30	- 79			
145	- 12	- 91			
146	- 2	- 93			
147	- 28	- 121			
148	+ 6	- 115			
149	+ 1	- 114			
150	+ 5	- 109			
151	- 4	- 113			
152	+ 69	- 44			
153	- 1	- 45			
154	- 51	- 96			
155	+ 54	- 42			
156	- 21	- 63			
157	+ 18	- 45			
158	+ 32	- 13			
159	- 18	- 31			
160	+ 17	- 14			
161	- 6	- 20			
162	- 4	- 24			
163	+ 11	- 13			
164	- 5	- 18			
165	+ 4	- 14			
166	+ 25	+ 11			
167	- 14	- 3			
168	+ 3	0			

Notes:

- 100 meter station spacing
- Loop Start: Station 1 to SW\*
- First Turn: at station 33 to NE trend ENE\*
- Second Turn: at station 91 to W\*
- Third Turn: at station 152.5 to NNW\*
- Fourth Turn: at station 155.5 to WSW\*
- Fifth Turn: at station 166 to SW\*
- Loop End: Station 168

\* General direction only.  
See map for accurate loop route.

HAWAII SELF-POTENTIAL SURVEY

Project Area: SW Fault Trend on State Land

Loop: 13

<u>Loop Station</u>	<u>Loop Corrected ΔV</u>	<u>Accumulated Loop Corrected ΔV</u>	<u>Loop Station</u>	<u>Loop Corrected ΔV</u>	<u>Accumulated Loop Corrected ΔV</u>
1	+ 73	+ 73	24	+ 30	+ 102
2	+ 3	+ 76	25	+ 17	+ 119
3	- 23	+ 53	26	+ 34	+ 153
4	+ 33	+ 86	27	- 16	+ 137
5	- 36	+ 50	28	+ 48	+ 185
6	- 36	+ 14	29	+ 47	+ 232
7	+ 42	+ 56	30	- 22	+ 210
8	- 23	+ 33	31	+ 18	+ 228
9	+ 6	+ 39	32	- 21	+ 207
10	+ 16	+ 55	33	+ 18	+ 225
11	- 11	+ 44	34	- 118	+ 107
12	+ 54	+ 98	35	+ 90	+ 197
13	- 8	+ 90	36	+ 87	+ 284
14	+ 27	+ 117	37	+ 28	+ 312
15	+ 8	+ 125	38	- 23	+ 289
16	- 12	+ 113	39	+ 5	+ 294
17	+ 24	+ 137	40	+ 50	+ 344
18	- 20	+ 117	41	- 2	+ 342
19	+ 16	+ 133	42	- 1	+ 341
20	- 12	+ 121	43	- 37	+ 304
21	- 27	+ 94	44	- 33	+ 271
22	- 27	+ 67	45	- 5	+ 266
23	+ 5	+ 72			

Notes:

100 meter station spacing

Loop Start: Station 1 to W trend SW\* at national park boundary

First turn: at station 43 to SE\*

Loop End: Station 45 at national park boundary

\* General direction only.  
See map for accurate loop route.



## HAWAII SELF-POTENTIAL SURVEY

Project Area: SW Fault Trend on State Land

Loop: 15

Loop Station	Loop Corrected $\Delta V$	Accumulated Loop Corrected $\Delta V$
1	- 23	- 23
2	- 21	- 44
3	+ 1	- 43
4	- 6	- 49
5	- 15	- 64
6	+ 16	- 48
7	- 6	- 54
8	- 2	- 56
9	- 22	- 78
10	+ 3	- 75
11	+ 18	- 57
12	- 31	- 88
13	- 1	- 89
14	- 35	- 124
15	- 32	- 156
16	+ 11	- 145
17	+ 37	- 108
18	+ 42	- 66
19	- 18	- 84
20	+ 10	- 74
21	+ 8	- 66
22	+ 29	- 37
23	+ 33	- 4
24	- 5	- 9
25	+ 4	- 5
26	+ 77	+ 72
27	+ 77	+ 149
28	+ 80	+ 229

**Notes:**

100 meter station spacing

Loop Start: Station 1 to NNE\*

First Loop Section Ends: at station 18 at national park boundary

Second Loop Section Starts: at station 19 to NW\* at national park boundary

Loop End: Station 28

\* General direction only.  
See map for accurate loop route.

HAWAII SELF-POTENTIAL SURVEY

Project Area: SW Fault Trend on State Land

Loop: 16

<u>Loop Station</u>	<u>Loop Corrected <math>\Delta V</math></u>	<u>Accumulated Loop Corrected <math>\Delta V</math></u>	<u>Loop Station</u>	<u>Loop Corrected <math>\Delta V</math></u>	<u>Accumulated Loop Corrected <math>\Delta V</math></u>
1	+ 32	+ 32	41	+ 3	- 397
2	+ 4	+ 36	42	- 7	- 404
3	- 105	- 69	43	- 46	- 450
4	+ 98	+ 29	44	- 27	- 477
5	+ 2	+ 31	45	- 78	- 555
6	- 4	+ 27	46	- 10	- 565
7	- 27	0	47	+ 12	- 553
8	- 4	- 4	48	+ 26	- 527
9	- 10	- 14	49	- 67	- 594
10	- 2	- 16	50	- 20	- 614
11	- 1	- 17	51	+ 8	- 606
12	- 16	- 33	52	- 35	- 641
13	- 1	- 34	53	- 12	- 653
14	- 38	- 72	54	- 9	- 662
15	- 17	- 89	55	- 4	- 666
16	- 13	- 102	56	+ 23	- 643
17	- 14	- 116	57	- 8	- 651
18	- 20	- 136	58	- 46	- 697
19	+ 4	- 132	59	- 19	- 716
20	- 19	- 151	60	- 9	- 725
21	+ 23	- 128	61	+ 41	- 684
22	- 24	+ 52	62	- 58	- 742
23	- 12	- 164	63	+ 24	- 718
24	- 13	- 177	64	- 38	- 756
25	- 21	- 198	65	+ 28	- 728
26	- 7	- 205	66	+ 38	- 690
27	- 16	- 221	67	+ 53	- 637
28	- 26	- 247	68	+ 17	- 620
29	- 2	- 249	69	+ 38	- 582
30	+ 5	- 244	70	- 2	- 584
31	- 35	- 279	71	- 1	- 585
32	+ 6	- 273	72	+ 53	- 532
33	- 20	- 293	73	+ 2	- 530
34	- 31	- 324	74	+ 49	- 481
35	- 15	- 339	75	- 7	- 488
36	- 15	- 354	76	- 29	- 517
37	+ 20	- 334	77	- 20	- 537
38	- 20	- 354	78	+ 21	- 516
39	- 32	- 386	79	+ 1	- 515
40	- 14	- 400	80	+ 41	- 474

## HAWAII SELF-POTENTIAL SURVEY

Project Area: SW Fault Trend on State Land

Loop: 16

<u>Loop Station</u>	<u>Loop Corrected <math>\Delta V</math></u>	<u>Accumulated Loop Corrected <math>\Delta V</math></u>	<u>Loop Station</u>	<u>Loop Corrected <math>\Delta V</math></u>	<u>Accumulated Loop Corrected <math>\Delta V</math></u>
81	- 7	- 481	112	- 2	+ 24
82	+ 29	- 452	113	+ 20	+ 44
83	+ 15	- 437	114	+ 13	+ 57
84	+ 5	- 432	115	+ 10	+ 67
85	- 7	- 439	116	+ 13	+ 80
86	- 6	- 445	117	+ 6	+ 86
87	+ 41	- 404	118	+ 22	+ 108
88	+ 14	- 390	119	+ 15	+ 123
89	+ 20	- 370	120	- 16	+ 107
90	+ 18	- 352	121	- 108	- 1
91	+ 15	- 337	122	- 61	- 62
92	+ 46	- 291	123	+ 5	- 57
93	+ 19	- 272	124	+ 19	- 38
94	+ 8	- 264	125	- 53	- 91
95	+ 32	- 232	126	+ 4	- 87
96	+ 45	- 187	127	- 2	- 89
97	+ 13	- 174	128	- 19	- 108
98	- 11	- 185	129	+ 39	- 69
99	+ 17	- 168	130	- 20	- 89
100	+ 9	- 159	131	- 51	- 140
101	+ 8	- 151	132	+ 27	- 113
102	+ 20	- 131	133	+ 26	- 87
103	+ 20	- 111	134	+ 38	- 49
104	+ 13	- 98	135	+ 29	- 20
105	+ 8	- 90	136	+ 33	+ 13
106	+ 22	- 68	137	+ 17	+ 30
107	+ 10	- 58	138	- 3	+ 27
108	+ 35	- 23	139	- 15	+ 12
109	+ 19	- 4	140	- 29	- 17
110	+ 22	+ 18	141	+ 19	+ 2
111	+ 8	+ 26			

**Notes:**

100 meter station spacing

Loop Start: Station 1 to NW\*

First turn: at station 49 to SW\*

Second turn: at station 63.5 to S trend SE\*

Third turn: at station 125 to NNE\*

Loop End: Station 141

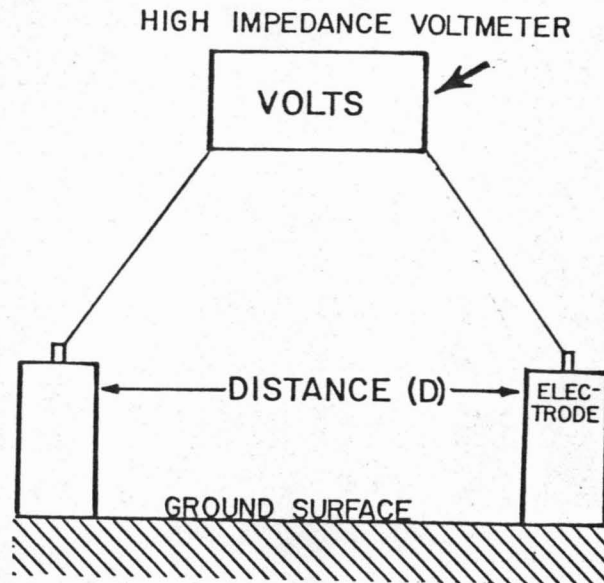
\* General direction only.

See map for accurate loop route.

APPENDIX  
INSTRUMENTATION

Introduction

The self-potential instrumentation used by MicroGeophysics Corporation involves simply three elements: measuring electrodes, high impedance voltmeter, and wire to connect them. An illustration of the system is shown in Figure 1. Each of the component parts is explained in detail below:



Electrodes:

The electrodes are porous porcelain cylinders containing a metallic conductor immersed in an electrolyte. The metallic conductor is usually copper, and the electrolyte is usually copper sulfate.. However, other metal, metal-salt pairs are: Cadmium-cadmium chloride, and silver-silver chloride. Differences in chemical makeup of either the electrodes or electrolyte will show up as a measureable voltage between electrodes when they are placed side by side on moist earth. By cutting the electrodes

from the same stock and thoroughly mixing the electrolyte, the potential difference between pots is kept below the smallest voltage detectable with the meter. Cutting the two electrodes from the same stock insures the best possible similarity in chemical composition for the two electrodes. To insure the best possible chemical composition of the electrolyte, the copper sulfate crystals are added to water until at equilibrium undissolved crystals remain.

#### Voltage Meter:

The meters are digital panel meters with an input resistance of  $10^{10}$  ohms. The meter has a voltage resolution of one millivolt with maximum level of one volt. These levels are adjustable. Power for the meters comes from four Alkaline "D" cells. The meter is encased in plexiglass with a packet of silica gel to keep moisture from reducing the input impedance.

#### Wire:

The wire is 18 AWG copper with TEFLON insulation. The TEFLON has two functions. First, the TEFLON has extremely high electrical resistance to reduce leakage to ground along the wire. Second, it is water resistant.