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76-152

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Audio-magnetotelluric Data Log, Station
Location Map, and Telluric Profile Data
for the Elko Hot Springs Known Geothermal
Resource Area (KGRA), Nevada

Elko Co.

BY

Donald B. Hoover, Gary Broughm^a and
John Clark[^]
U.S. Geological Survey

Open-file Report 76-152
1976

This report is preliminary and has not been
edited or reviewed for conformity with U.S.
Geological Survey standards and nomenclature.

**UNIVERSITY OF UTAH
RESEARCH INSTITUTE
EARTH SCIENCE LAB.**

Elko, Nevada
1976

U.S. GEOLOGICAL SURVEY A.M.T. DATA LOG

pa = observed apparent resistivity in ohm-metres
 N = number of observations
 Er = standard error in ohm-metres - = no data

"NOTE" - Telluric line orientation indicated with station numbers.

Sta. No.		FREQUENCY											
		7.5	10	14	27	76	285	685	1.2K	3.3K	6.7K	10.2K	18.6K
1NS	pa	8.1	11.1	8.1	7.7	6.7	-	-	-	-	-	113	15.4
	N	9	14	13	9	12						1	1
	Er	0.9	1.0	0.7	0.2	0.2							
1EW	pa	4.1	3.8	1.7	3.2	3.7	-	-	-	-	85	641	1272.
	N	11	13	12	11	12					4	1	1
	Er	0.4	0.3	0.1	0.2	0.3					6.8		
2NS	pa	8.3	9.4	9.2	9.9	10.7	-	-	-	-	363	408	438
	N	14	13	10	12	10					1	1	1
	Er	1.2	1.5	0.8	0.6	0.1							
2EW	pa	5.9	5.1	3.5	6.2	11.6	-	-	-	-	64	948	706
	N	20	7	10	11	10					6	1	1
	Er	0.4	0.6	0.2	0.4	1.3					1.5		
3NS	pa	41.1	61.	66	92.6	122.6	-	-	-	-	-	309.	42.1
	N	12	9	12	10	10						1	1
	Er	6.9	8.8	9.7	11.8	7.0							
3EW	pa	277	193	179	133.	50.5	-	-	-	-	-	1755	345.
	N	16	18	14	16	10						1	1
	Er	12.	19	12	6.	2.4							
4NS	pa	13.9	46.5	30.4	74	79.5	-	-	-	-	-	212	591
	N	7	5	10	10	10						1	1
	Er	2.7	12	5.1	9.6	0.8						-	-
4EW	pa	54.4	38.5	30.5	33.7	53.6	-	-	-	-	-	55	37
	N	10	10	10	10	10						1	1
	Er	5.6	4.9	1.2	3.5	4.6						-	-

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Sta. No.		FREQUENCY											
		7.5	10	14	27	76	285	685	1.2K	3.3K	6.7K	10.2K	18.6K
5NS	pa	42.1	28.3	58.9	41.1	29.2	14.3	-	-	-	169	668	159
	N	10	9	5	11	10	6				4	1	1
	Er	3.4	4.8	3.5	4.4	1.6	1.8				18		
5EW	pa	40.2	28.0	14.6	1.23	93.0	62.9	-	-	-	270	561	488
	N	11	11	13	9	12	5				8	1	1
	Er	22.	23	5.4	8.9	1.6	2.5				1.5		
6NS	pa	4.4	3.1	4.2	3.5	6.0	6.5	-	-	-	81	582	356
	N	4	1	10	13	9	4				4	1	1
	Er	0.6		0.6	0.2	0.5	0.2				11		
6EW	pa	7.1	5.9	4.3	4.1	4.1	7.8	-	-	-	51	627	753
	N	15	15	11	11	14	10				12	1	1
	Er	0.5	0.4	0.2	0.2	0.1	0.5				1.8		
7NS	pa	9	5.6	9.0	11.1	10.9	11.7	-	-	-	173	492	1166
	N	1	2	7	10	10	10				6	1	1
	Er		.8	.7	1.0	0.8	0.5				11.		
7EW	pa	7.9	4.7	5.6	8.9	8.0	14.2	-	-	-	31.9	477	126.
	N	11	6	11	12	11	10				9	1	1
	Er	0.6	0.7	0.4	1.1	0.3	0.5				1.5		
8NS	pa	7.2	9.0	11.5	11.1	13.5	11.4	-	-	-	735	612	1536
	N	9	3	10	8	10	2				3	1	1
	Er	1.0	3.3	1.1	0.8	0.5	0.3	-	-	-	57.		
8EW	pa	5.8	4.9	5.5	7.5	12.2	15.3				116.6	1121	1847
	N	9	8	11	13	11	2				5	1	1
	Er	0.6	0.7	0.4	0.4	0.8	0.3				13.2		

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Sta. No.		FREQUENCY											
		7.5	10	14	27	76	285	685	1.2K	3.3K	6.7K	10.2K	18.6K
9NS	pa	6.2	14.3	10.5	18.3	24.5	18.8	-	-	-	-	1454	1220
	N	3	6	9	10	4	3						
	Er	0.6	3.9	1.2	1.0	3.3	0.5						
9EW	pa	8.3	13.4	10.6	15.7	19.5	-	-	-	-	-	1570	1907
	N	4	5	8	10	6							
	Er	1.5	3.2	0.9	0.9	1.0							
10NS	pa	14.3	10.3	14.8	20.5	19.4	15.0	-	-	-	626	1378	-
	N	5	7	9	12	9	6				6	1	
	Er	2.0	0.9	1.3	1.8	1.4	1.4				212		
10EW	pa	14.2	7.7	11.6	14.6	17.0	11.0	-	-	-	94	1924	923
	N	7	8	11	11	11	3				4	1	
	Er	2.2	0.9	0.7	0.6	1.1	1.9				12		
11NS	pa	8.3	21.1	18.8	17.1	13.5	-	-	-	-	298	7850	2480
	N	3	3	12	10	13					3	1	1
	Er	2.4	2.4	1.3	0.9	0.9					66		
11EW	pa	12.5	14.2	15.1	16.2	17.4	15.5	-	-	-	78.8	743	2970
	N	3	6	9	8	11	4				6	1	1
	Er	2.0	2.1	1.7	1.7	1.5	1.4				4.9		
12NS	pa	2.7	7.5	2.4	4.9	5.7	-	-	-	-	-	312	102
	N	3	4	9	9	6						1	1
	Er	0.8	2.0	0.4	0.6	1.3							
12EW	pa	6.0	6.3	4.3	5.7	6.5	-	-	-	-	56.6	1648	471
	N	9	9	12	11	10					5	1	1
	Er	0.7	0.7	0.3	0.5	0.2					6.8		

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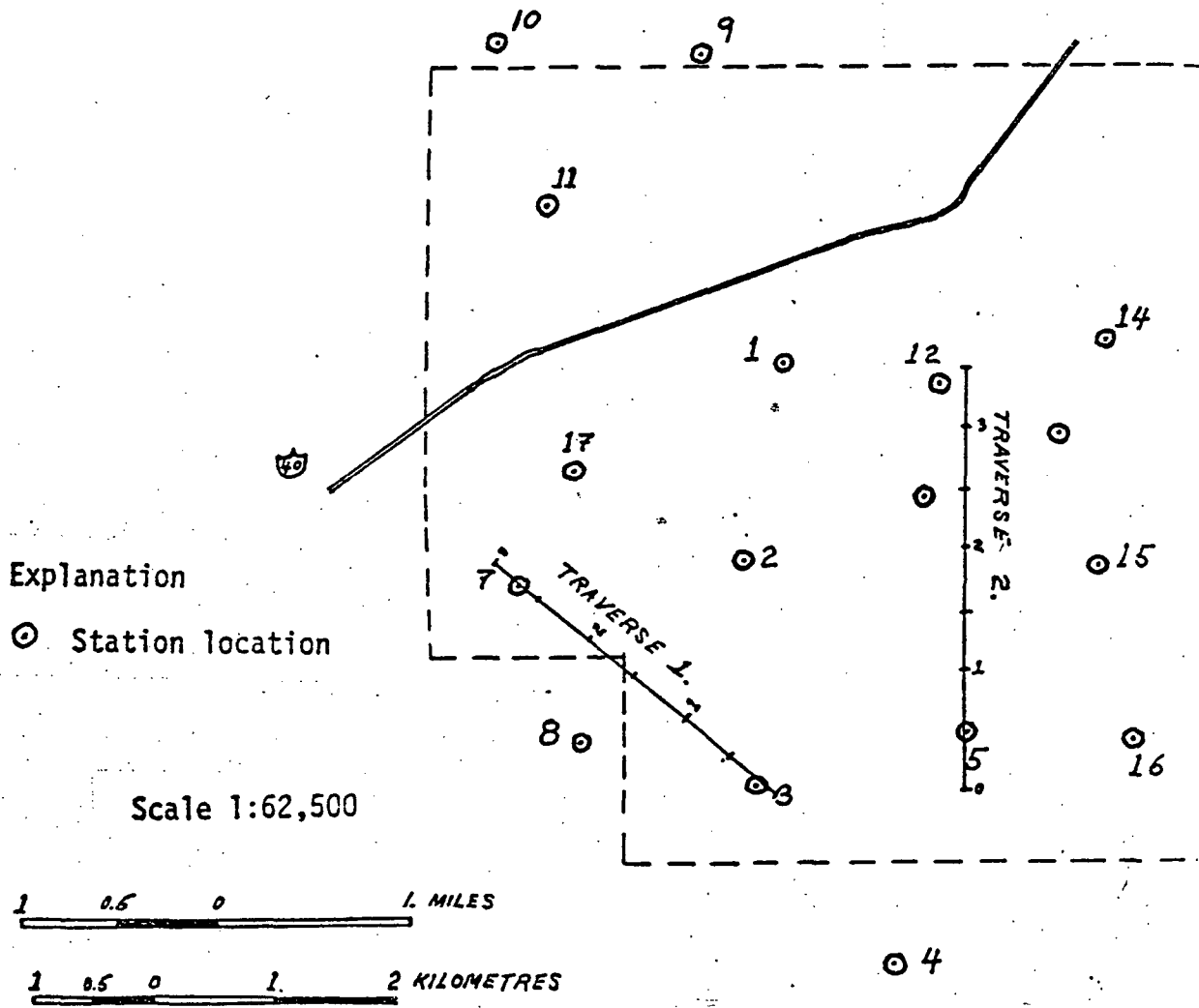
Sta. No.		FREQUENCY											
		7.5	10	14	27	76	285	685	1.2K	3.3K	6.7K	10.2K	18.6K
13NS	pa	4.7	4.0	3.4	3.9	3.1	4.6	-	-	-	229	996	-
	N	4	1	4	9	10	3				2	1	
	Er	0.7		0.3	0.5	0.2	0.3				26		
13EW	pa	10.5	5.4	5.0	3.9	4.9	-	-	-	-	54	1396	-
	N	10	5	10	10	9					8	1	
	Er	0.9	0.9	0.3	0.2	0.7					4.0		
14NS	pa	4.2	5.3	3.6	4.2	2.7	3.5	-	-	-	-	216	148
	N	5	7	5	4	9	2					1	1
	Er	0.6	0.9	0.4	0.4	0.1	0.3						
14EW	pa	13.1	9.7	7.0	7.6	8.9	9.8	-	-	-	72.2	77.1	3069
	N	6	7	11	7	10	1				4	1	1
	Er	1.6	1.0	0.4	0.3	0.3					1.8		
15NS	pa	8.1	13.6	6.7	6.1	4.4	4.8	-	-	-	147	889	90
	N	9	6	9	10	8	5				1	1	1
	Er	0.7	1.9	0.4	0.3	0.1	0.8						
15EW	pa	11.9	8.2	6.0	7.2	8.8	14	-	-	-	90	1287	833
	N	6	4	10	10	10	2				5	1	1
	Er	1.3	1.2	0.4	0.3	0.3	0.5				4.0		
16NS	pa	3.7	3.8	4.8	5.6	11.4	11.8				75.9	232	309
	N	8	6	9	12	13	6				4	1	1
	Er	0.3	0.4	0.2	0.5	0.4	0.8				7.		
16EW	pa	11.7	9.3	6.3	6.7	13.0	17.1				113.5	762	1039
	N	8	7	12	9	11	7				8	1	1
	Er	0.4	1.4	0.4	0.4	0.3	0.8				7.6		

ρ_a = observed apparent resistivity in ohm-metres
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Sta. No.		FREQUENCY											
		7.5	10	14	27	76	285	685	1.2K	3.3K	6.7K	10.2K	18.6K
17NS	ρ_a	6.3	6.4	8.7	10.7	9.8	19.0				-	1100	692
	N	5	4	5	6	10	8					1	1
	Er	0.5	1.1	1.1	0.5	0.6	0.6						
17EW	ρ_a	12.6	11.1	8.1	9.4	11.2	40.				-	3220	5880
	N	9	4	9	10	8	8					1	1
	Er	0.7	1.5	0.3	0.7	0.7	1.7						
	ρ_a												
	N												
	Er												
	ρ_a												
	N												
	Er												
	ρ_a												
	N												
	Er												
	ρ_a												
	N												
	Er												
	ρ_a												
	N												
	Er												

40°52'30"



Explanation
 ⓪ Station location

Scale 1:62,500

1 0.5 0 1 MILES

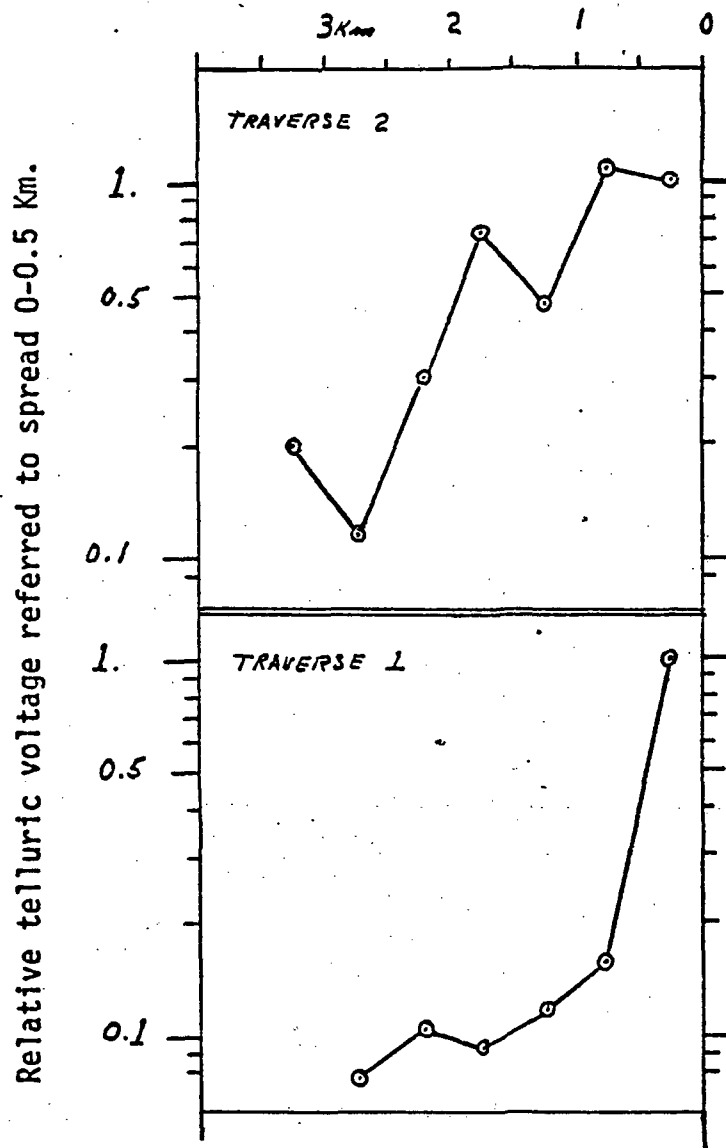
1 0.5 0 1 2 KILOMETRES

115°52'30"

115°45'

40°45'

FIGURE 1.
 Audio-magnetotelluric and telluric traverse location map for the Elko Hot Springs KGRA (Known Geothermal Resource Area), Nevada.



Scale 1:62,500
 Station spacing 0.5 km

Figure 2. Telluric profile data for the Elko Hot Springs Known Geothermal Resource Area (KGRA), Nevada.