

GRAVITY AND MAGNETIC SURVEY OVER
THE HUMBOLDT SALT MARSH
DIXIE VALLEY, NEVADA

DOW CHEMICAL COMPANY

EXPLORATION DATA CONSULTANTS, INC.
DENVER, COLORADO
DECEMBER, 1976

LIST OF MAPS

<u>Map</u>	<u>Scale</u>	<u>Contour Interval</u>
Bouguer Gravity	1/62,500	1 mgal
Bouguer Gravity	1/24,000	1 mgal
Total Magnetic Intensity	1/62,500	40 gamma
Total Magnetic Intensity	1/24,000	40 gamma
Bouguer Gravity	-	-
(Profile Locations and Fault Locations Interpreted from Gravity)		

INTERPRETIVE PROFILES

<u>Profile</u>	<u>Scale</u>
AA'	1/24,000
BB'	1/24,000
CC'	1/24,000

INTRODUCTION

Gravity and magnetic data were acquired in Dixie Valley, Nevada during the period October 30 through November 10, 1976. Much of the control was acquired over the muddy, salt marsh surface using a light-weight, wide-tired vehicle.

The principal results of the survey work are a Bouguer gravity map, a magnetic total intensity map, and three interpretive profiles showing the depths to the high-density basement along east-west lines across the valley.

DATA ACQUISITION

INSTRUMENTATION

Gravity Meter

The gravity meter used for this survey is a LaCoste and Romberg Model G Meter, number G-353. The gravity meter is equipped with variable damping and an electronic readout which facilitate reading the gravity meter in noisy environments. LaCoste and Romberg gravity meters are characteristically low drift instruments typically drifting approximately one milligal per month. During the period of this survey, meter G-353 drifted less than one milligal.

Magnetometer

A Geometrics Model G-836 "UniMag" was used for this survey. The UniMag has a digital readout that displays the total magnetic intensity to the nearest ten gammas. The resolution and repeatability of the instrument is ten gammas.

Surveying Instruments

With the exception of 26 stations, elevations for all of the gravity and magnetic stations acquired were surveyed using a Hewlett Packard Model 3810A Total Station surveying instrument. Three basic measurements are made using the 3810: slope distance to target, vertical angle to target, and horizontal angle. The slope distance measurement is accomplished by a phase comparator system where amplitude modulated infrared light is transmitted from the instrument and reflected back to the instrument by a retroprism at the survey target. The distance measurement is based on measurements of phase lag of the returned light at low and high frequencies. The instrument is capable of distance measurements to an accuracy on the order of one part in 100,000.

The vertical angle measurement is derived from the output of a fluid filled transducer. Both the slope distance and vertical angle are converted to digital form within the instrument. Through calculator circuits the instrument will display not only the basic measurements of vertical angle and horizontal distance but also vertical and horizontal distance to the target. The accuracy of elevation measurements made using a total station instrument is limited by the accuracy of the vertical angle measurement which is plus or minus 30 seconds at best.

The instrument is mounted on a 20 second horizontal angle circle similar to that used in many theodolites. The horizontal angle is read through a microscope mounted at the base of the instrument.

Elevation control for stations acquired in the mountains as well as station number 131 was obtained using an American Paulin model M-2 surveying altimeter. The M-2 surveying altimeter is marked in two-foot graduations and has a resolution of one foot. When measurements are carefully made, the altimeter has a repeatability of two feet. Surveying accuracy suffers relative to short-term repeatability because of local and time-dependent changes in barometric pressure not related to changes in elevation. In rugged topography, the expected accuracy of elevations obtainable using altimetry is on the order of 15 to 30 feet.

SURVEY VEHICLES

Two conventional four-wheel drive vehicles plus a light-weight, wide-tired Honda Odyssey were used during the survey. The Honda is a one passenger recreational vehicle designed for sand dunes. The vehicle weighs approximately 400 pounds and is supported by low pressure, high flotation tires approximately 10 inches wide. The Honda provided access to the area near the center of the salt marsh which was inaccessible by conventional four-wheel drive vehicles. The Honda is capable of passing over muddy areas where walking is difficult because of the softness of the mud. In the four instances where the Honda became stuck, knee-deep mud seriously hindered walking and extrication efforts.

FIELD OPERATIONS

Field operations began on October 30, 1976, when a base network of four base gravity stations was established. Three base stations were established on the west side of the valley and one base station on the east side of the valley. The base stations are numbered FB-1, FB-2, FB-3, and FB-4 on the gravity and magnetic maps. The general mode of operation was to first survey in station locations using the Hewlett Packard surveying instrument. On most days the survey crew consisted of a rod man and a surveyor/gravity meter operator. The rod man would position a tripod with retroprism reflector and target at each station location. While instrument readings were being made by the surveyor, the rod man would walk approximately 100 feet away from his vehicle and read the magnetometer. Near the end of a day of surveying the gravity meter operator would read the gravity at the surveyed stations while the rod man would make repeat magnetometer readings, repeat altimetry readings, or prepare for the next day's surveying.

Work on the salt marsh went slowly, mainly because of time lost because of the vehicle becoming stuck in the mud. Also, only one vehicle could be used on the salt marsh surface so that it was necessary for the rod man

to come back and pick up the instrument and surveyor each time the instrument had to be moved to a new location.

The target and retroreflector were mounted on the Honda at a fixed distance above the ground. Typically three to four station locations were surveyed from a single instrument set up.

In the eleven days of survey work, 211 stations were acquired. The weather conditions during the survey period were excellent and the only serious hindrance to survey station production was poor accessibility to many of the stations. As many as 35 stations were acquired in a single day where access is along roads on the west side of the valley. Unfortunately the salt marsh was wetter than normal during the survey period because of a flash flood and heavy rains during September. In an extremely dry year, most of the salt marsh surface is accessible by conventional four-wheel drive vehicles. However, during the survey period the center four to six square miles of the salt marsh was under water and inaccessible with the Honda. Many stations were acquired at the water's edge on the salt marsh. Because of the water and the softness of the underlying mud, additional coverage nearer the center of the salt marsh was virtually impossible to obtain.

Free-air and Bouguer gravity are listed for three correction densities in the listing of basic and reduced data. Bouguer gravity computed with a correction density of 2.67 g/cc has been mapped.

MAGNETIC DATA

Total magnetic intensity, in tens of gammas as displayed on the magnetometer, has been plotted on the map minus a datum of 53,000 gammas. Repeat magnetometer readings were taken at several stations and in most cases readings did not vary by more than 10 gammas. In cases where repeat readings varied by more than 30 gammas, additional repeat readings were taken and a value close to the two closest readings was chosen. Where a third repeat was not obtained the value which appeared to fit the map most reasonably was chosen.

The magnetic data acquired in the mountains was erratic because of near surface magnetic rocks and judged unmapable given the regional spacing of the control.

INTERPRETATION

PROFILE MODELING

Three interpretive profiles have been constructed along east-west profiles AA', BB', and CC' as shown on the Bouguer gravity map with profile locations and fault locations interpreted from gravity.

A gravity modeling calculation was performed using GF-2, EDCON's two-dimensional grid-oriented gravity modeling computer program. Two-dimensional vertical prisms 2000 feet in width and infinitely long in the directions perpendicular to the profile were used as the basic model elements. The top of each element is at ground level and the base of each element represents the base of the valley fill and the top of crystalline basement.

Before a model was computed a regional gravity field was determined as shown at the top of each profile. The difference between the regional and the Bouguer gravity is the negative residual field attributed to the effect of valley fill contrasting with basement rocks.

A density contrast function was then derived and is shown at the lower right of profile AA'. The sedimentary density-depth function was derived from velocity data taken from the 1965 AFCRL report and an empirical velocity-density relation. The derived sedimentary density-depth function is also shown on profile AA'. An assumed basement density of 2.7 g/cc yields the density-depth contrast function which was used in the calculation of all three profiles.

GF-2 was used to compute the bottom of the valley fill. Input data were: a. top of valley fill at ground level b. a density-depth contrast function c. negative residual gravity. GF-2 is an iterative program that alters the depth of each 2000 foot column in the calculation such that the difference between calculated gravity and the observed negative residual gravity is made as small as possible. The basement surface found by GF-2 is shown on the profile.

The maximum depth to basement found was just over 7000 feet. This is believed to be a conservative estimate of the maximum depth to basement because of the low densities assumed for the valley fill below 4000 feet. Higher velocity sedimentary and volcanic fill could exist below the intermediate velocity refractor above the basement as a refraction blind zone. Such a situation is likely and would imply higher valley fill densities below 4000 feet and lower density contrast thus requiring a greater thickness of valley fill to satisfy the observed anomaly. The existence of higher density rocks below 4000 feet could only be proven by deep drilling. However, by assuming valley fill densities higher than the 2.3 g/cc used in the calculation such as 2.4 g/cc increasing with depth to 2.5 g/cc, maximum basement depths in excess

of 10,000 feet would be calculated

GRAVITY MAP

A Bouguer gravity map with "Profile Locations and Fault Locations Interpreted from Gravity" is included with the maps supplied with this report. The fault locations are based on the profile modeling as well as inspection of the gravity map..

The Bouguer gravity map reflects the general shape of the basement surface as can be seen by studying the interpretive profiles. Faulting on the west side of the valley is quite steep compared to the faulting on the east side. The deepest valley fill occurs in sections 7 and 8 of T22N, R36E where Bouguer gravity is most negative. A strong positive nosing from the east side of the area indicates a major basement structural high.

Sharp, local anomalies observed in sections 11 and 23 of T23N, R35E and section 36 of T24N, R35E are probably associated with shallow faulting and possibly mineralization.

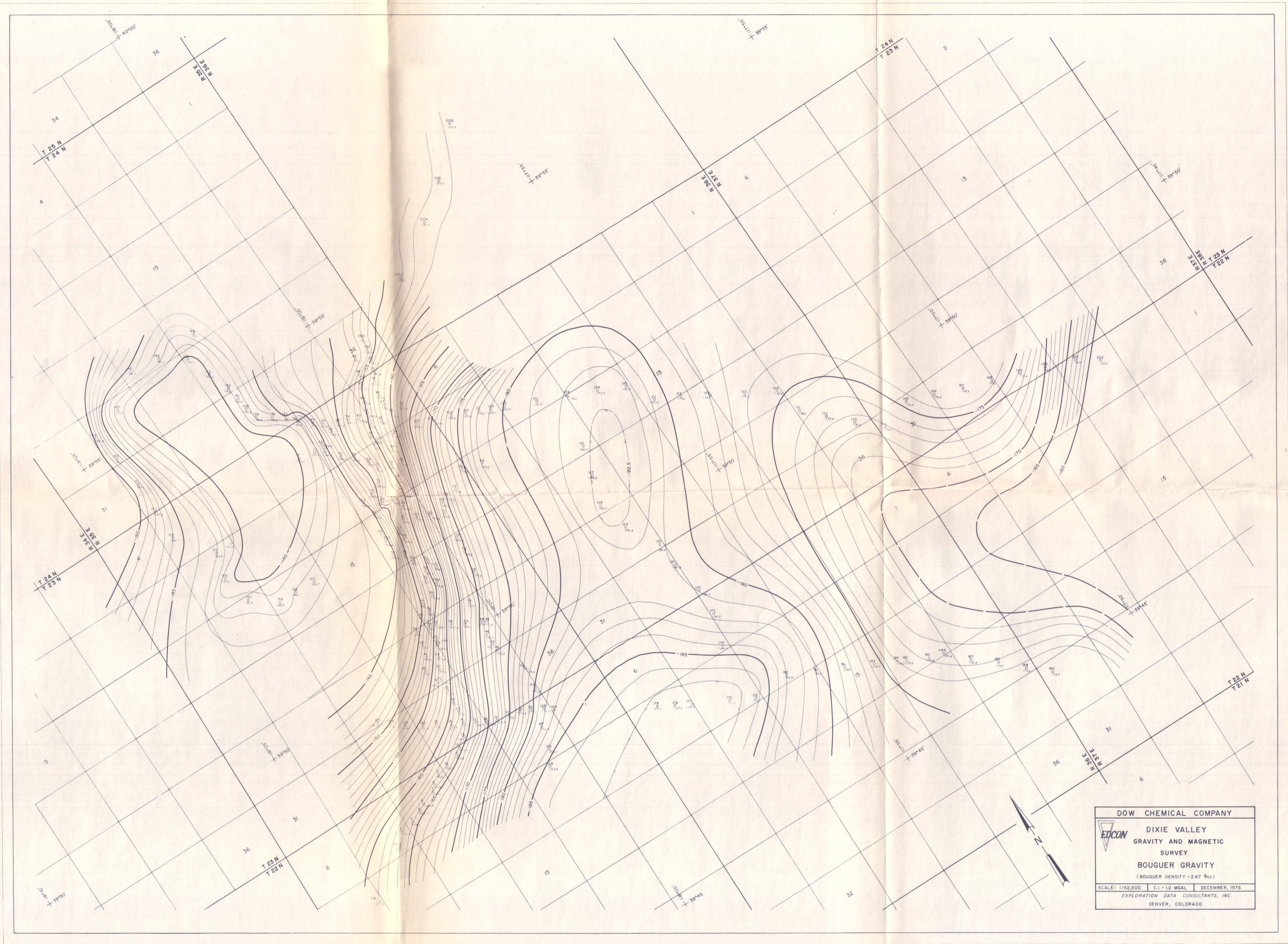
MAGNETIC MAP


Sharp anomalies along the western side of the valley are probably associated with shallow faulting and mineralization. One very sharp, elongate, ESE - trending anomaly correlates with a sharp gravity anomaly in section 11 of T23N, R35E.

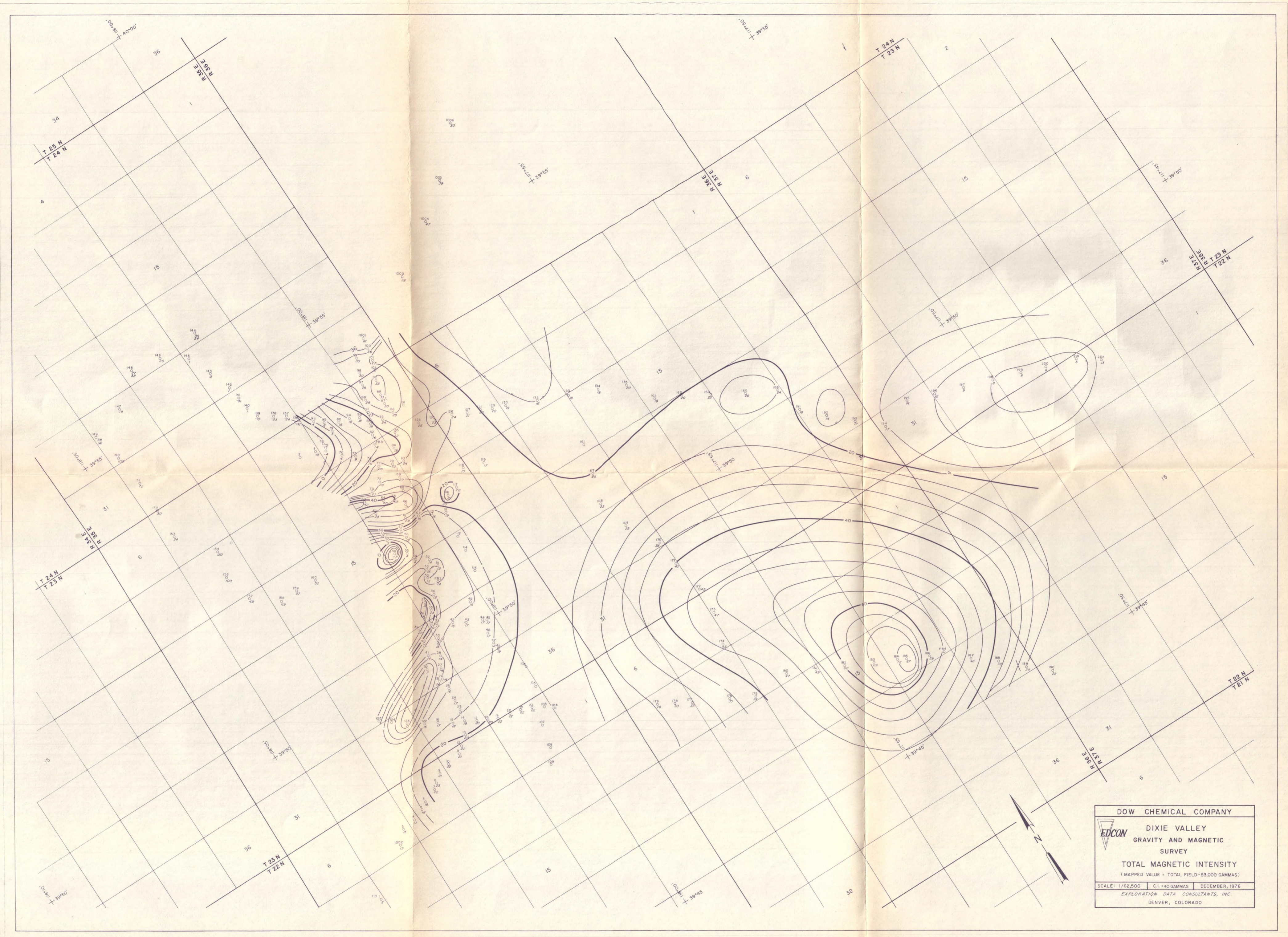
The broad magnetic high centered at section 14 T22N, R36E correlates well with the major basement structural high indicated by gravity on the east side of the valley.


EXPLORATION DATA CONSULTANTS, INC.

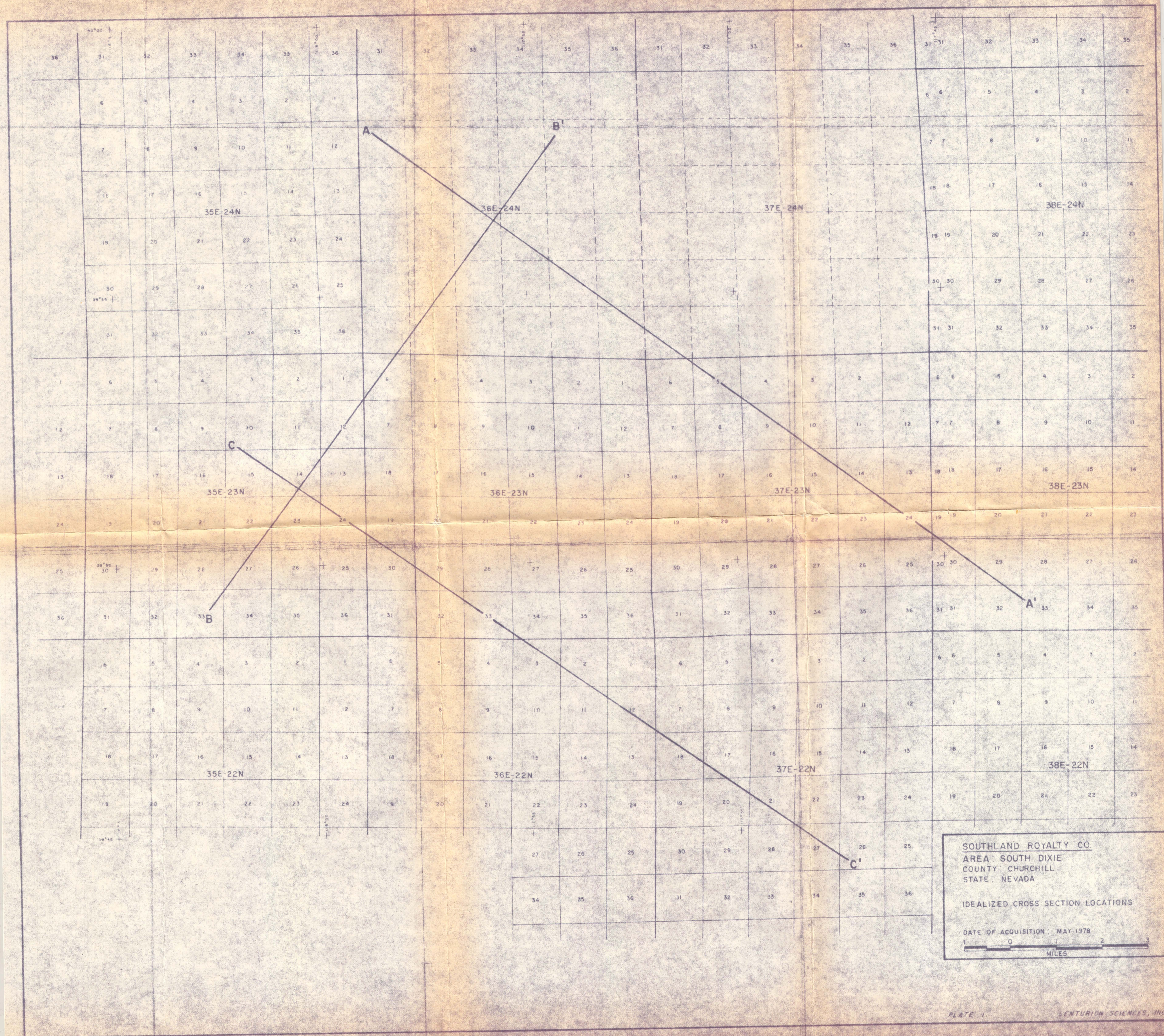
Alan T. HERRING
Alan T. Herring



DOW CHEMICAL COMPANY		
 DIXIE VALLEY GRAVITY AND MAGNETIC SURVEY BOUGUER GRAVITY <small>(BOUGUER DENSITY = 2.67 g/cc)</small>		
SCALE: 1/62,500	C.I. - 10 MGAL	DECEMBER, 1976
<small>EXPLORATION DATA CONSULTANTS, INC.</small>		
<small>DENVER, COLORADO</small>		



DOW CHEMICAL COMPANY			
 DIXIE VALLEY GRAVITY AND MAGNETIC SURVEY TOTAL MAGNETIC INTENSITY <small>(MAPPED VALUE = TOTAL FIELD - 53,000 GAMMAS)</small>			
SCALE: 1/62,500	C.I. = 40 GAMMAS	DECEMBER, 1976	
<small>EXPLORATION DATA CONSULTANTS, INC.</small>			
<small>DENVER, COLORADO</small>			



PROJECT: MIXIE VALLEY LINE A 1000 FT. DERIVATIVE

*****VERTICAL GRADIENT MULTILEVEL AEROMAGNETIC PROFILE*****

COUNTY: BRUNNELL

STATE: NEVADA

DATE OF ACQUISITION: 06 MAY 1978

CROSS SECTION

SCALES: HORIZONTAL - 1 INCH EQUALS 1 MILE
VERTICAL - 1 INCH EQUALS 100 FEET

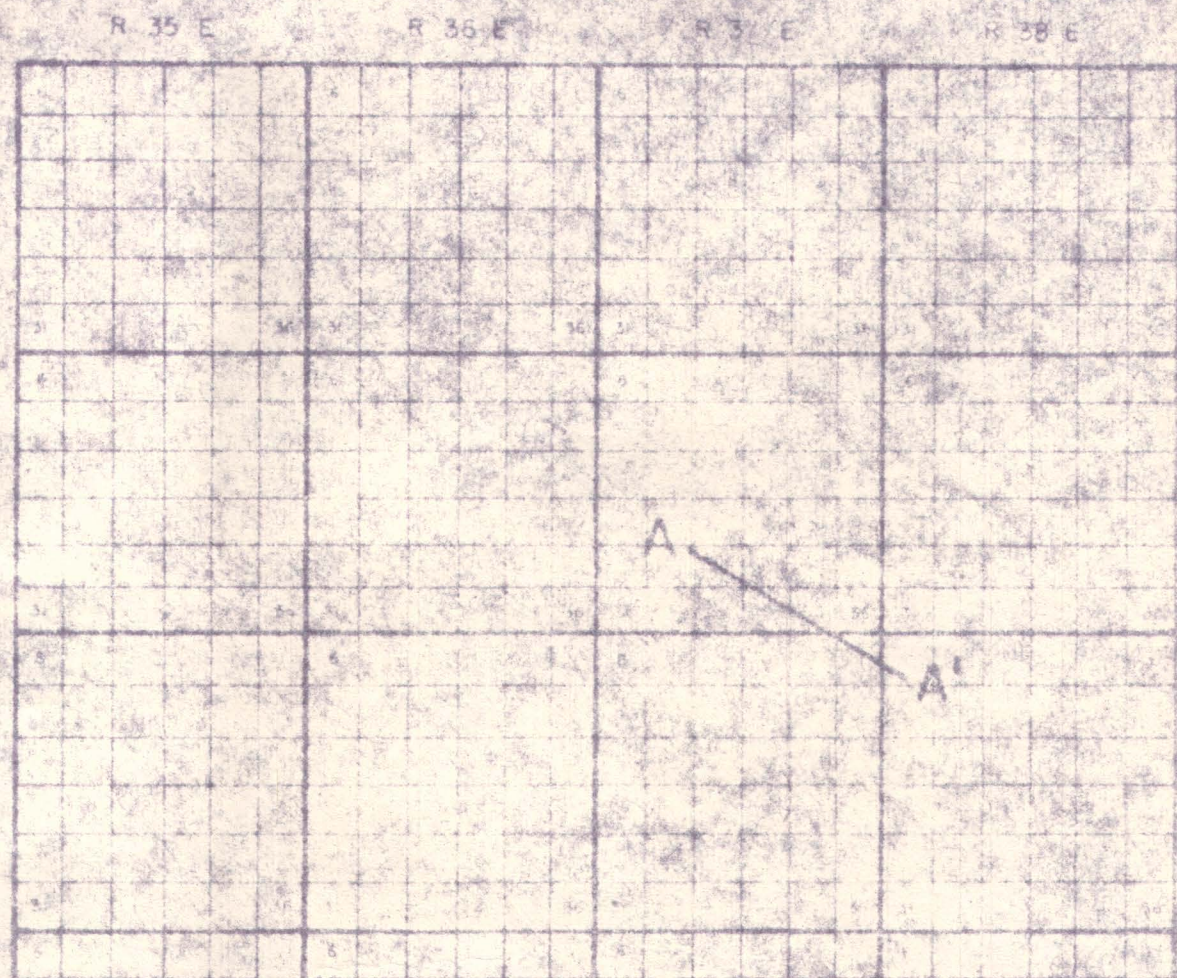
GRADIENT IDENTIFICATION

6500 MSL MINUS 7500 MSL

7500 MSL MINUS 8500 MSL

(6500 MINUS 7500) MINUS (7500 MINUS 8500)

AVERAGE SURFACE ELEVATION BEHEAT PROFILE 4000 FT. MSL



PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMAS X 10 ⁴	CORRECTIONS - STANT	STOE
30L	6500	87	0.500	1.4	1.6
28L	7500	86	0.500	5.2	2.6
26L	8500	88	0.500	7.2	0.8
0??	0	0	0.000	0.0	0.0

VALUES SHOWN ARE GAMMAS X 10⁴

SOUTHLAND ROYALTY CO

PLATE B SENTURION SCIENCES, INC.

NORTHWEST
A

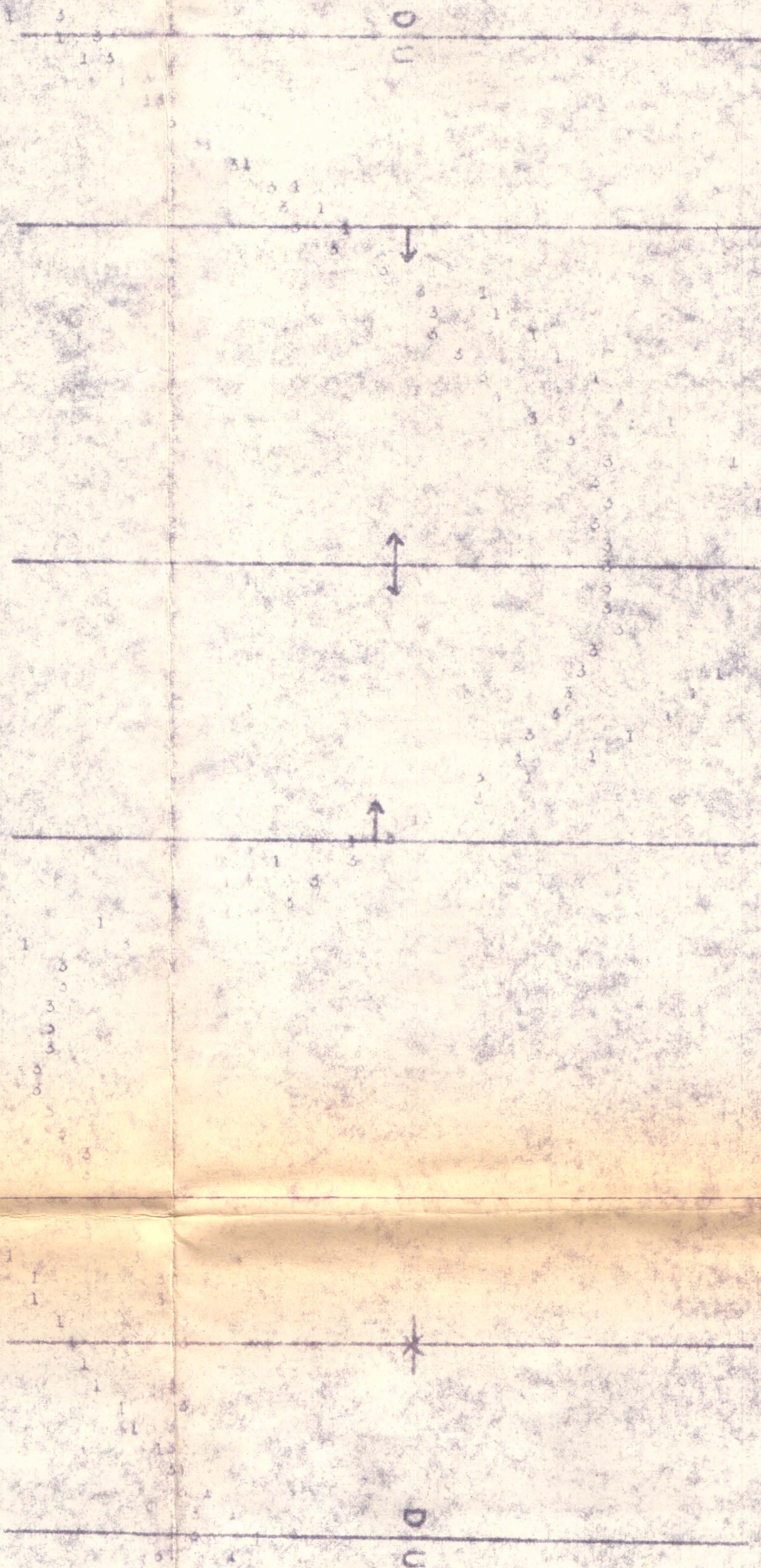
E
BTE - 23N

BTE - 22N

SOUTHEAST
A'

30L	6500	87	0.500	1.4	1.6
28L	7500	86	0.500	5.2	2.6
26L	8500	88	0.500	7.2	0.8
0??	0	0	0.000	0.0	0.0
4184	58	-35	71	01	
4185	53	-35	87	01	
4186	62	-37	101	01	
4187	68	-35	103	01	
4188	70	-31	109	01	
4189	82	-26	107	01	
4190	76	-29	116	01	
4191	105	-16	121	01	
4192	121	-16	127	01	
4196	151	-21	142	01	
4194	146	-11	157	01	
4195	156	-6	162	01	
4196	168	-2	165	01	
4197	163	5	178	01	
4198	139	8	151	012	
4199	216	8	206	012	
4200	227	12	215	01	
4201	237	18	219	01	
4202	255	20	235	01	
4203	273	20	253	01	
4204	271	21	270	01	
4205	300	25	271	01	
4206	311	13	273	01	
4207	325	41	284	01	
4208	359	46	293	01	
4209	350	53	297	01	
4210	368	53	313	01	
4211	391	55	326	01	
4212	395	55	342	01	
4213	400	61	359	01	
4214	405	64	341	01	
4215	408	60	340	01	
4216	413	68	345	01	
4217	411	70	341	01	
4218	412	70	342	01	
4219	411	68	343	01	
4220	419	63	347	01	
4221	399	61	338	01	
4222	387	59	333	01	
4223	378	54	327	01	
4224	368	44	324	01	
4225	351	38	313	01	
4226	336	28	305	01	
4227	313	18	295	01	
4228	295	5	292	01	
4229	266	-7	275	01	
4230	241	-18	259	01	
4231	215	-26	241	01	
4232	192	-35	227	01	
4233	173	-46	209	01	
4234	141	-64	185	01	
4235	111	-91	157	01	
4236	85	-39	129	01	
4237	60	-48	123	01	
4238	78	-35	125	01	
4239	64	-69	125	01	
4240	61	-61	122	01	
4241	57	-62	119	01	
4242	56	-60	113	01	
4243	59	-61	135	01	
4244	70	-60	130	01	
4245	77	-61	137	01	
4246	83	-56	137	01	
4247	82	-55	137	01	
4248	82	-55	137	01	
4249	102	-57	157	01	
4250	108	-51	159	01	
4251	116	-50	169	01	
4252	120	-50	170	01	
4253	130	-50	180	01	
4254	134	-44	178	01	
4255	140	-38	178	01	
4256	144	-30	174	01	
4257	153	-26	178	01	
4258	160	-16	173	01	
4259	168	-9	174	01	
4260	178	5	173	01	
4261	190	11	179	01	
4262	200	14	181	01	
4263	205	20	181	01	
4264	206	35	167	01	
4265	185	40	140	01	
4266	169	48	111	01	
4267	154	53	81	01	
4268	114	55	59	01	
4269	96	64	62	01	
4270	94	63	51	01	
4271	83	69	22	01	

END OF PROFILE



PROJECT: DIXIE VALLEY LINE B 1000 FT DERIVATIVES

*****VERTICAL GRADIENT MULTIPLE AEROMAGNETIC PROFILES*****

COUNTY: CHURCHILL

STATE: NEVADA

DATE OF ACQUISITION: 06 MAY 1978

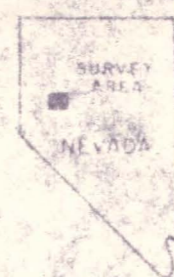
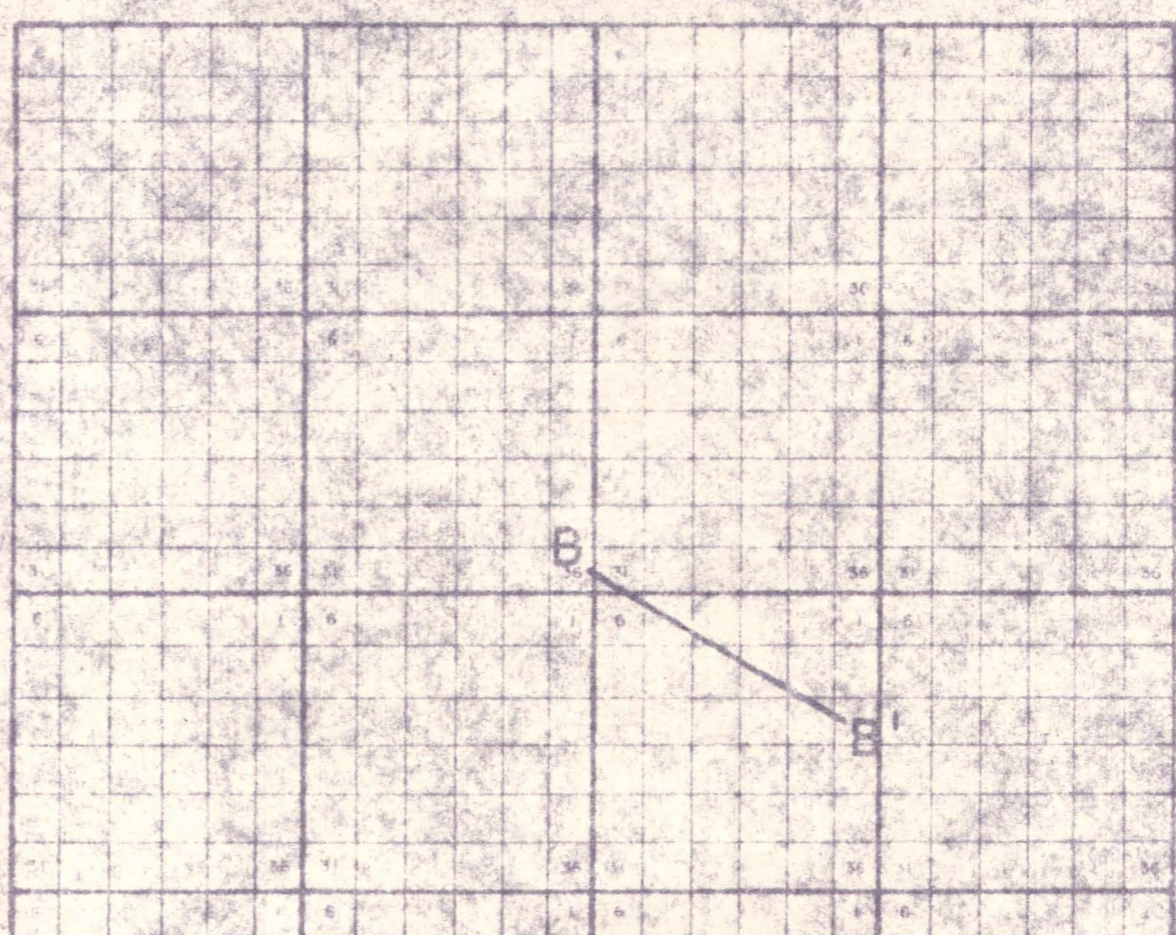
CROSS SECTION
 SCALES: HORIZONTAL 1 INCH EQUALS 1 MILE
 VERTICAL 1 INCH EQUALS 100 FT

GRADIENT IDENTIFICATION

6500 MSL MINUS 7500 MSL
 7500 MSL MINUS 8500 MSL
 (6500 MINUS 7500) MINUS (7500 MINUS 8500)

AVERAGE SURFACE ELEVATION BENEATH PROFILE 4000 FT. MSL

R 35 E R 36 E R 37 E R 38 E

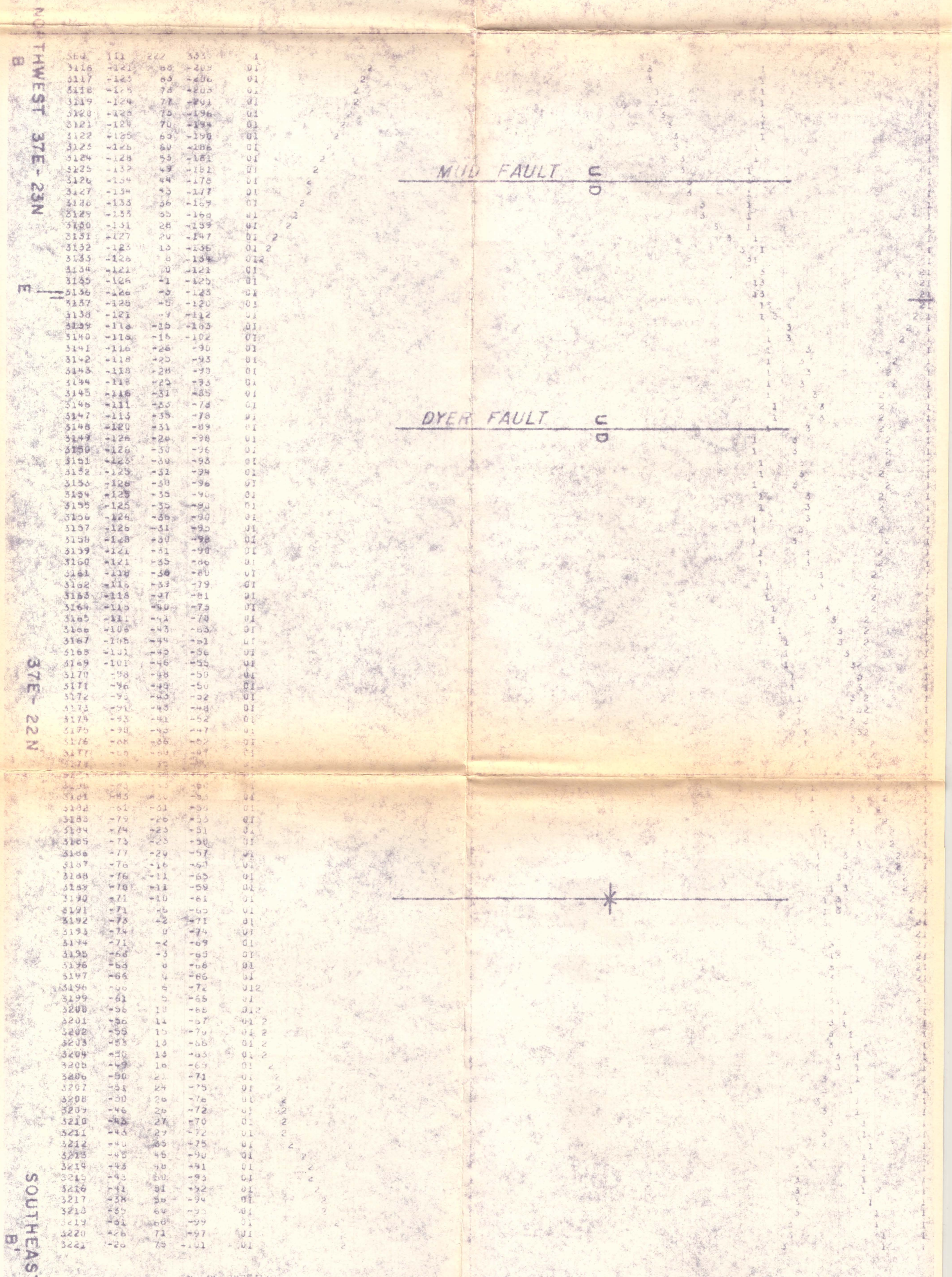


PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMAS / PLOT POS.	CORRECTIONS START	STOP
176	6500	106	0.500	4.5	4.1
210	7500	106	0.500	5.2	4.9
176	8500	106	0.500	5.3	5.5
077	0	0	0.000	0.0	0.0

VALUES SHOWN ARE GAMMAS X 10

SOUTHLAND ROYALTY CO.

PLATE 3 SENTURION SCIENCES, INC.



END OF PROFILE

SENTURION SCIENCES AEROMAGNETIC SERVICES

PROJECT: DIXIE VALLEY LINE C 1000 FT DERIVATIVES

*****VERTICAL GRADIENT MULTILEVEL AEROMAGNETIC PROFILES*****

COUNTY: CHURCHILL

STATE: NEVADA

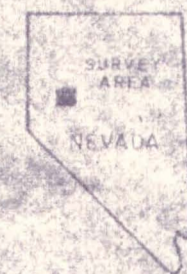
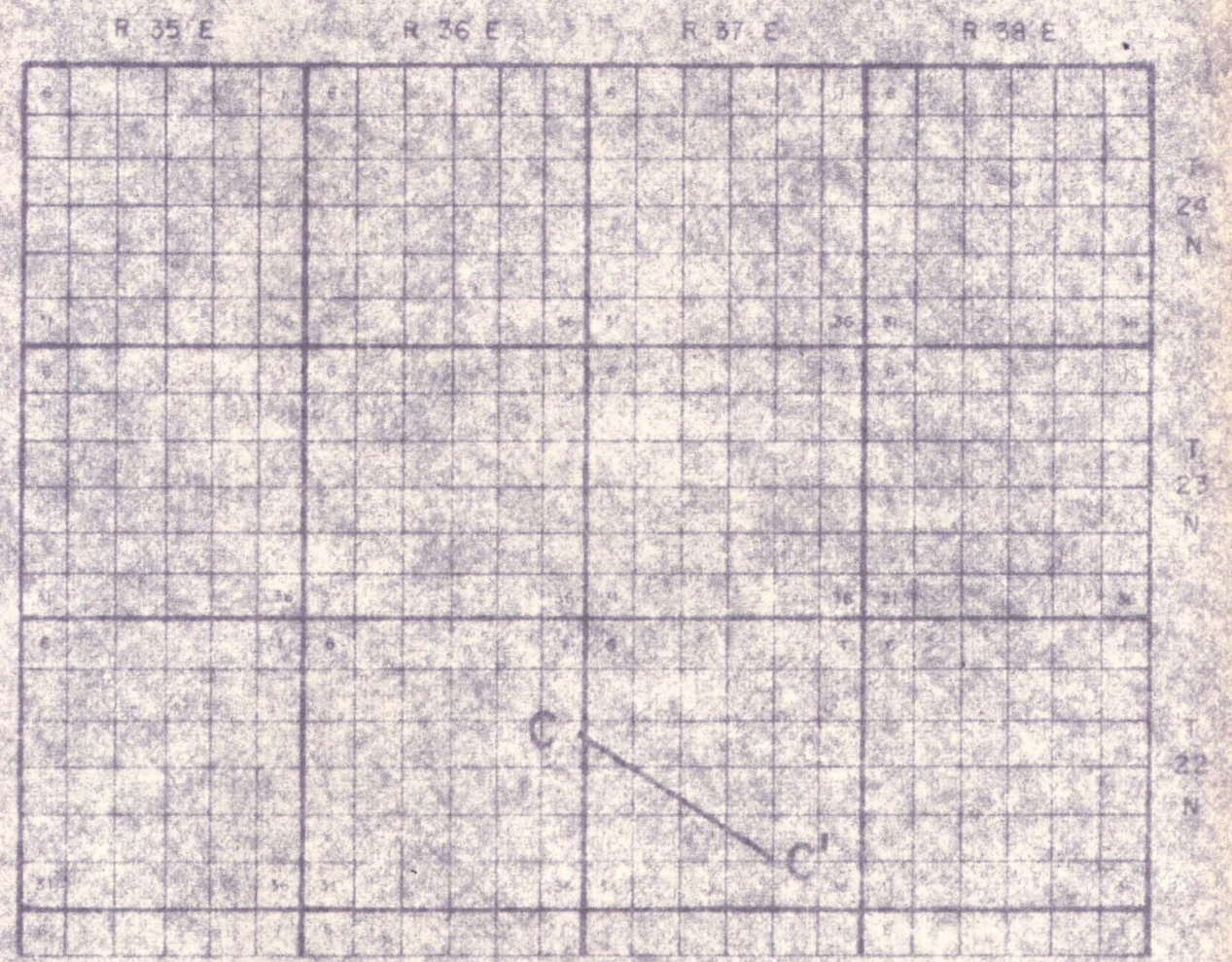
DATE OF ACQUISITION: 07 MAY 1978

CROSS SECTION
 SCALE: HORIZONTAL = 3 INCH EQUALS 1 MILE
 VERTICAL = 1 INCH EQUALS 100 FEET

GRADIENT IDENTIFICATION

6500 MSL MINUS 7500 MSL
 7500 MSL MINUS 8500 MSL
 (6500 MINUS 7500) MINUS (7500 MINUS 8500)

AVERAGE SURFACE ELEVATION BENEATH PROFILE 4800 FT. MSL



PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMAS / FEET POS.	CORRECTIONS START	STOP
47L	6500	96	0.500	8.6	9.4
53L	7500	94	0.500	18.1	17.1
55L	8500	87	0.500	8.5	8.8
072	0	0	0.000	0.0	0.0

VALUES SHOWN ARE GAMMAS X 10

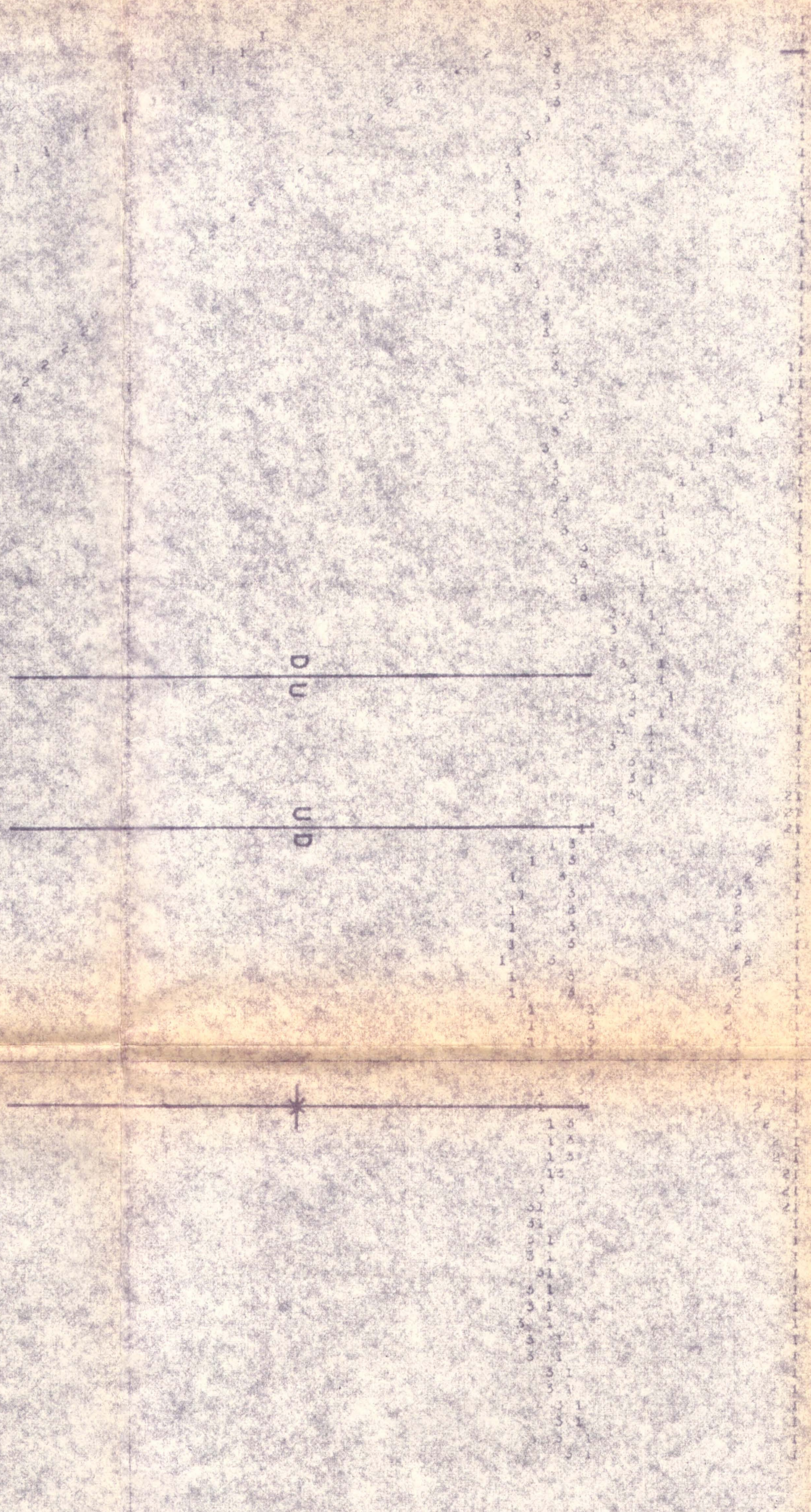
SOUTHLAND ROYALTY CO.
 PLATE 4 SENTURION SCIENCES, INC.

NORTHWEST

37E - 22N

SOUTHEAST

STATION	ELEVATION	NO. OF POINTS	SCALE GAMMAS / FEET POS.	CORRECTIONS START	STOP
7354	235	373	-138	01	
7355	221	348	-127	01	
7356	208	321	-125	01	
7357	193	293	-122	01	
7358	179	260	-121	01	
7359	161	228	-117	01	
7360	141	193	-117	01	
7361	123	163	-115	01	
7362	106	135	-114	01	
7363	96	104	-115	01	
7364	86	72	-112	01	
7365	75	41	-113	01	
7366	56	20	-103	01	
7367	43	13	-105	01	
7368	40	16	-113	01	
7369	38	16	-122	01	
7370	31	15	-127	01	
7371	24	15	-125	01	
7372	18	14	-124	01	
7373	6	11	-125	01	
7374	0	12	-123	01	
7375	0	11	-115	01	
7376	-10	10	-116	01	
7377	-20	9	-116	01	
7378	-31	9	-122	01	
7379	-45	11	-126	01	
7380	-51	7	-122	01	
7381	-60	6	-121	01	
7382	-61	3	-119	01	
7383	-66	4	-122	01	
7384	-67	5	-127	01	
7385	-66	4	-107	01	
7386	-70	3	-110	01	
7387	-78	3	-111	01	
7388	-78	2	-107	01	
7389	-71	2	-94	01	
7390	-68	2	-91	01	
7391	-71	2	-91	01	
7392	-70	1	-88	01	
7393	-66	1	-91	01	
7394	-65	1	-81	01	
7395	-66	1	-82	01	
7396	-72	1	-94	01	
7397	-73	1	-92	01	
7398	-71	1	-82	01	
7399	-75	6	-81	01	
7400	-88	1	-81	01	
7401	-92	0	-92	01	
7402	-108	-3	-105	01	
7403	-123	-11	-112	01	
7404	-133	-18	-115	01	
7405	-141	-21	-120	01	
7406	-140	-26	-114	01	
7407	-141	-30	-111	01	
7408	-143	-30	-115	01	
7409	-142	-29	-113	01	
7410	-146	-23	-121	01	
7411	-141	-28	-113	01	
7412	-141	-24	-113	01	
7413	-135	-31	-104	01	
7414	-132	-34	-101	01	
7415	-131	-38	-105	01	
7416	-130	-40	-106	01	
7417	-130	-40	-106	01	
7418	-125	-43	-104	01	
7419	-126	-42	-105	01	
7420	-126	-42	-105	01	
7421	-121	-41	-101	01	
7422	-123	-38	-103	01	
7423	-123	-35	-100	01	
7424	-126	0	-128	01	
7425	-125	3	-121	01	
7426	-126	6	-132	01	
7427	-125	6	-131	01	
7428	-125	6	-131	01	
7429	-121	6	-127	01	
7430	-123	6	-131	01	
7431	-121	11	-132	01	
7432	-121	15	-136	01	
7433	-117	16	-133	01	
7434	-118	16	-134	01	
7435	-111	14	-125	01	
7436	-111	13	-124	01	
7437	-108	11	-119	01	
7438	-108	12	-120	01	
7439	-105	14	-116	01	
7440	-104	19	-114	01	



END OF PROFILE

PROJECT: DATE VALLEY LINE & 1000 FT DERIVATIVES

*****VERTICAL GRADIENT MULTILEVEL GEOMAGNETIC PROFILES*****

COUNTY: CHURCHILL

STATE: NEVADA

DATE OF ACQUISITION: 07 MAY 1978

CROSS SECTION
 SCALES: HORIZONTAL - 1" = 500 FT
 VERTICAL - 1" = 100 FT

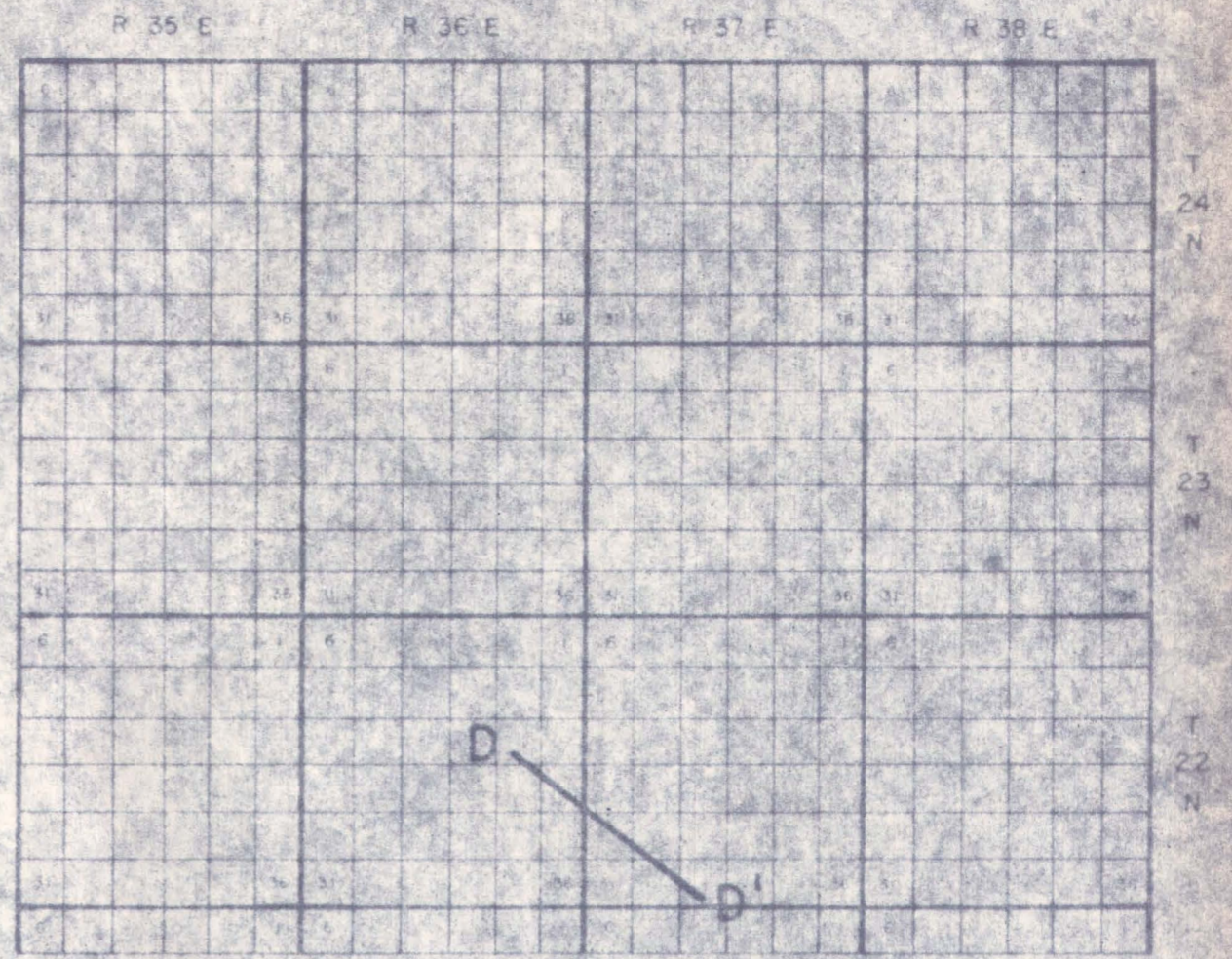
GRADIENT IDENTIFICATION

6500 MSL MINUS 7500 MSL
 7500 MSL MINUS 8500 MSL
 (6500 MINUS 7500) MINUS (7500 MINUS 8500)

AVERAGE SURFACE ELEVATION BENEATH PROFILE 4500 FT. MSL

SYMBOL

|||||
 22222
 55555



PROFILE	ELEVATION	NO. OF POINTS	SCALE	GAMMA	CORRECTIONS
			FEET		START STOP
461	6200	95	0.500	2.8	0.4
481	7500	97	0.500	6.0	0.5
501	8500	96	0.500	18.0	12.7
677	0	0	0.000	0.0	0.0

VALUES SHOWN ARE GAMMAS X 10

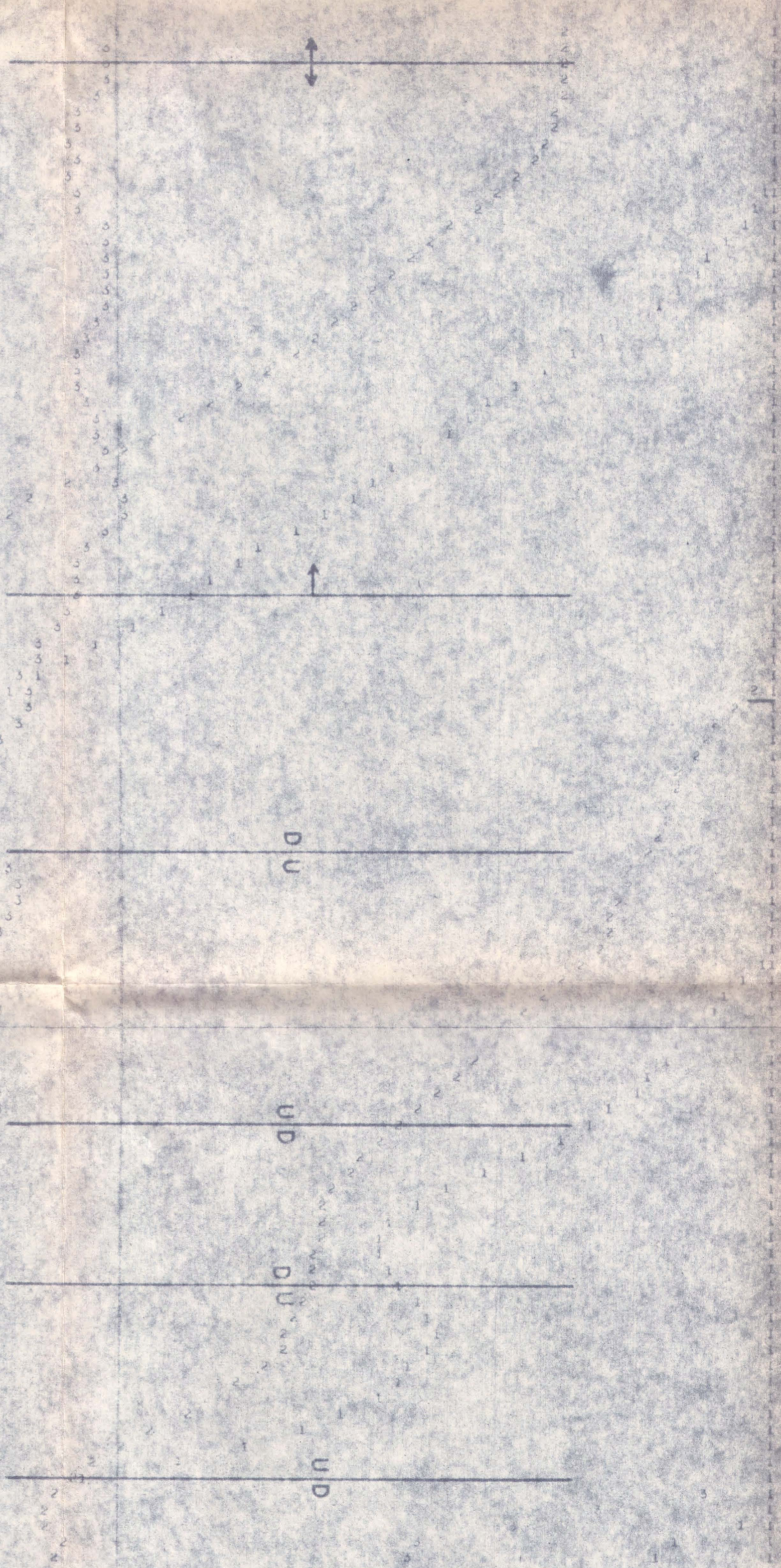
SOUTHLAND ROYALTY CO.
 PLATE 5 SENTURION SCIENCES, INC.

NORTHWEST
 D
 E
 36E-22N

37E-22N
 D
 D'
 SOUTHEAST

6417	538	338	182	01	1	
6420	550	348	180	01	1	
6421	557	348	187	01	1	
6422	553	358	187	01	1	
6423	548	358	187	01	1	
6424	540	355	185	01	1	
6425	535	364	181	01	1	
6426	520	390	168	04	1	
6427	523	381	172	01	1	
6428	511	375	175	01	1	
6429	505	362	183	01	1	
6430	497	352	195	01	1	
6431	493	357	196	01	1	
6432	485	326	197	01	1	
6433	475	317	198	01	1	
6434	468	308	190	01	1	
6435	458	298	188	01	1	
6436	446	288	188	01	1	
6437	431	280	181	01	1	
6438	418	265	193	01	1	
6439	401	256	185	01	1	
6440	388	241	183	01	1	
6441	372	228	188	01	1	
6442	360	219	186	01	1	
6443	348	197	184	01	1	
6444	336	181	185	01	1	
6445	322	165	186	01	1	
6446	309	153	194	01	1	
6447	298	138	182	01	1	
6448	288	120	188	01	1	
6449	275	106	187	01	1	
6450	256	100	188	01	1	
6451	233	91	187	01	1	
6452	228	83	183	01	1	
6453	213	71	184	01	1	
6454	207	58	183	01	1	
6455	186	44	180	01	1	
6456	171	30	183	01	1	
6457	155	18	183	01	1	
6458	140	6	182	01	1	
6459	124	0	114	01	1	
6460	110	-6	116	01	1	
6461	98	-20	118	01	1	
6462	83	-30	118	01	1	
6463	68	-43	101	01	1	
6464	52	-40	91	01	1	
6465	48	-48	84	01	1	
6466	33	-50	85	01	1	
6467	28	-53	81	01	1	
6468	25	-55	80	01	1	
6469	25	-56	81	01	1	
6470	10	-64	94	01	1	
6471	36	-73	103	01	1	
6472	36	-75	111	01	1	
6473	35	-80	113	01	1	
6474	25	-81	108	01	1	
6475	18	-83	101	01	1	
6476	8	-90	96	01	1	
6477	5	-96	91	01	1	
6478	-11	-103	97	01	1	
6479	-21	-118	95	01	1	
6480	-28	-122	101	01	1	
6481	-37	-142	97	01	1	
6482	-54	-161	97	01	1	
6483	-61	-161	100	01	1	
6484	-70	-173	103	01	1	
6485	-83	-185	102	01	1	
6486	-95	-193	100	01	1	
6487	-110	-204	98	01	1	
6488	-129	-211	82	01	1	
6489	-146	-220	74	01	1	
6490	-167	-223	61	01	1	
6491	-185	-231	46	01	1	
6492	-196	-239	39	01	1	
6493	-201	-238	34	01	1	
6494	-202	-236	34	01	1	
6495	-198	-239	40	01	1	
6496	-191	-240	49	01	1	
6497	-183	-241	58	01	1	
6498	-178	-248	70	01	1	
6499	-173	-251	75	01	1	
6500	-168	-253	75	01	1	
6501	-167	-253	76	01	1	
6502	-195	-276	63	01	1	
6503	-205	-282	87	01	1	
6504	-221	-302	89	01	1	
6505	-243	-320	80	01	1	
6506	-273	-337	64	01	1	
6507	-310	-353	43	01	1	
6508	-358	-365	7	01	1	
6509	-410	-375	-35	01	1	
6510	-463	-379	-86	01	1	
6511	-511	-378	-133	01	1	
6512	-550	-368	-182	01	1	
6513	-580	-371	-189	01	1	

END OF PROFILE



PROJECT: DIXIE VALLEY LINE 1000 FT DERIVATIVES

 *****VERTICAL GRADIENT MULTILEVEL AEROMAGNETIC PROFILE*****

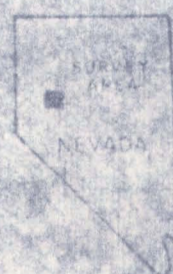
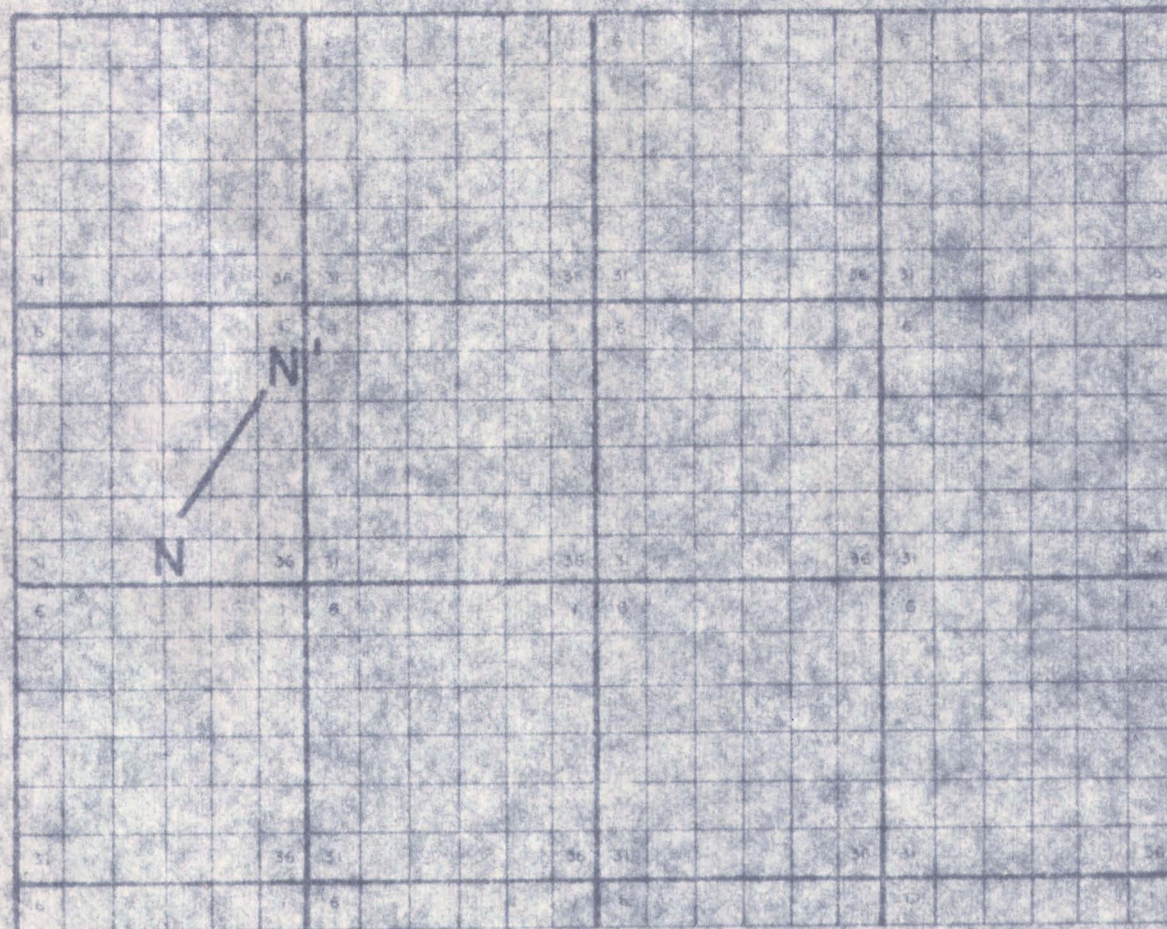
COUNTY: CHURCHILL
 STATE: NEVADA
 DATE OF ACQUISITION: 02 MAY 1978

CROSS SECTION
 SCALES: HORIZONTAL 1" = 3 MILES
 VERTICAL 1" = 100 FEET

GRADIENT IDENTIFICATION
 5000 MSL MINUS 6500 MSL 11131
 6500 MSL MINUS 7500 MSL 22222
 (5000 MINUS 6500) MINUS (6500 MINUS 7500) 33333

AVERAGE SURFACE ELEVATION BENEATH PROFILE 3500 FT. MSL

R 35 E R 36 E R 37 E R 38 E



PROFILE	ELEVATION	NO. OF POINTS	SCALE OF GAMMAS / FEET POS.	CONNECTIONS START	STOP
4R	5000	63	0.500	1.0	1.0
10R	6500	64	0.500	1.0	1.2
13R	7500	63	0.500	1.2	1.2
077	0	0	0.500	0.0	0.0

VALUES SHOWN ARE GAMMAS X 10

SOUTHLAND ROYALTY CO.

PLATE 7 SENTURION SCIENCES, INC

SOUTHWEST

D

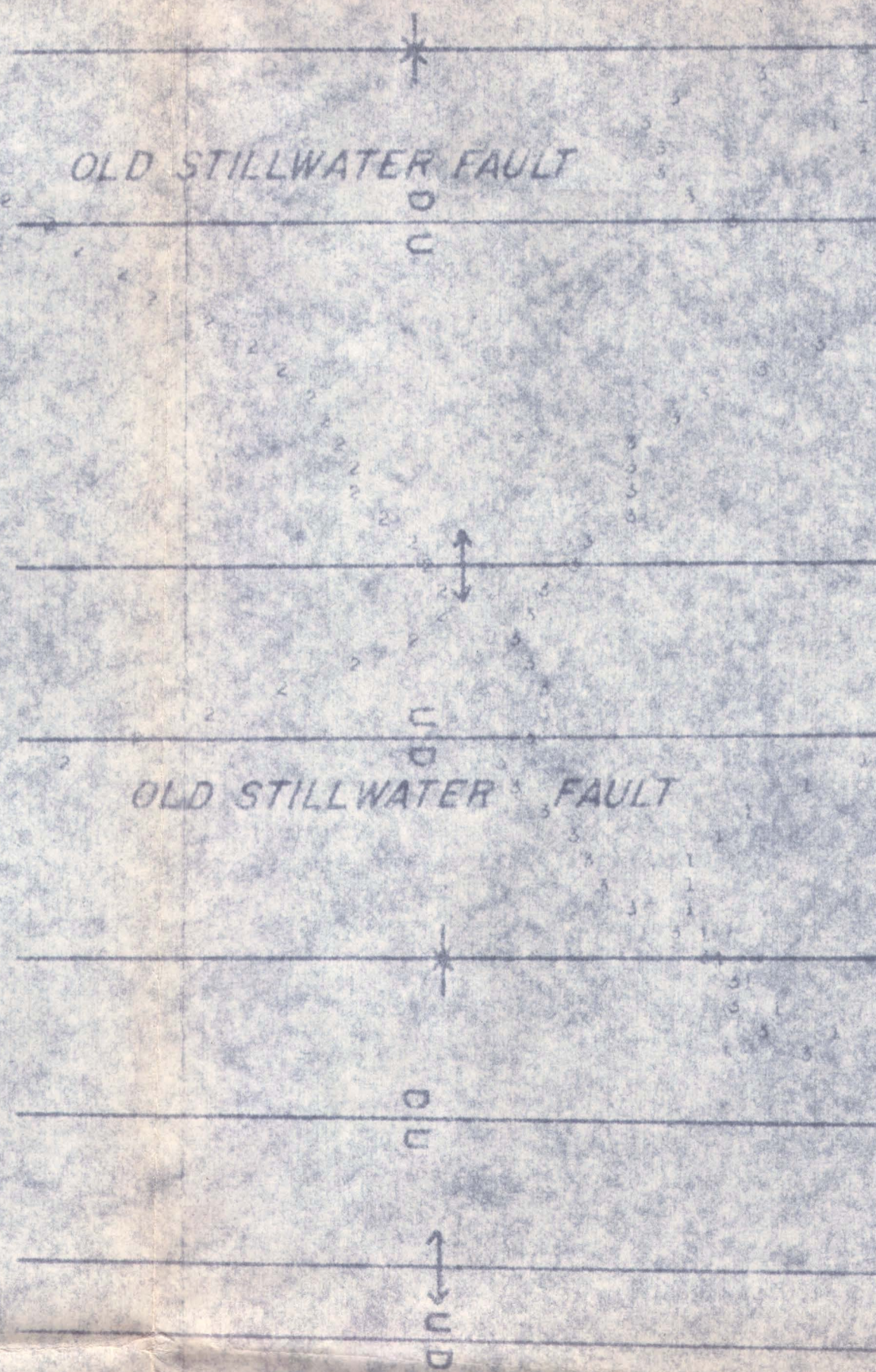
C

SEE FIGURE 7 35E-23N

NORTH EAST

B

1477	12	57	-43	01	1	1
1478	8	58	-50	01	1	1
1479	-20	58	-72	01	1	1
1480	-35	53	-106	01	1	1
1481	-35	58	-143	01	1	1
1482	-110	51	-1071	01	1	1
1483	-116	66	-104	01	1	1
1484	-108	70	-178	01	1	1
1485	-91	69	-177	01	1	1
1486	-63	103	-160	01	1	1
1487	-32	170	-150	01	1	1
1488	7	130	-125	011	1	1
1489	40	145	-105	01	1	1
1490	63	153	-92	01	1	1
1491	68	173	-105	01	1	1
1492	65	186	-123	01	1	1
1493	54	196	-144	01	1	1
1494	45	209	-163	01	1	1
1495	38	213	-175	01	1	1
1496	30	218	-188	01	1	1
1497	31	221	-190	01	1	1
1498	36	225	-189	01	1	1
1499	41	231	-190	01	1	1
1500	40	241	-201	01	1	1
1501	38	247	-209	01	1	1
1502	36	255	-217	01	1	1
1503	30	251	-221	01	1	1
1504	17	245	-228	01	1	1
1505	1	225	-224	01	1	1
1506	-18	200	-218	01	1	1
1507	-45	178	-220	01	1	1
1508	-77	146	-225	01	1	1
1510	-110	123	-233	01	1	1
1511	-130	100	-230	01	1	1
1512	-146	76	-219	01	1	1
1513	-156	53	-209	01	1	1
1514	-166	38	-204	01	1	1
1515	-168	28	-196	01	1	1
1516	-168	20	-186	01	1	1
1517	-163	10	-173	012	1	1
1518	-156	5	-151	01	1	1
1519	-148	5	-154	01	1	1
1520	-136	15	-131	01	2	1
1521	-113	25	-141	01	2	1
1522	-95	31	-128	01	2	1
1523	-65	35	-100	01	2	1
1524	-35	43	-78	01	2	1
1525	-5	45	-50	01	2	1
1526	13	51	-36	01	1	2
1527	24	51	-27	01	1	2
1528	24	60	-36	01	1	2
1529	25	63	-40	01	1	2
1530	13	68	-53	01	1	2
1531	7	67	-60	011	1	2
1532	-0	70	-78	01	1	2
1533	-27	63	-95	01	1	2
1534	-35	60	-95	01	1	2
1535	-42	55	-97	01	1	2
1536	-45	55	-100	01	1	2
1537	-45	55	-97	01	1	2
1538	-43	50	-93	01	1	2
1539	-41	48	-97	01	1	2



END OF PROFILE

LINE E-E' PLATE 9

SEARCHED BY: [] INDEXED BY: []
 CHECKED BY: [] FIELD NO. []
 DATE: []

THE ABOVE SHOWN ELEVATIONS ARE MEAN SEA LEVEL
 ALL HEIGHTS ARE IN FEET, UNLESS OTHERWISE SPECIFIED

SCALE: 1" = 100'

DATA POINTS: []
 POINTS: []
 CORRECTIONS: []

DATE: []

PROJECT: []

BY: []

FOR: []

NO. []

DATE: []

BY: []

FOR: []

NO. []

DATE: []

BY: []

FOR: []

NO. []

DATE: []

BY: []

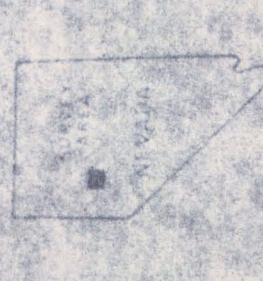
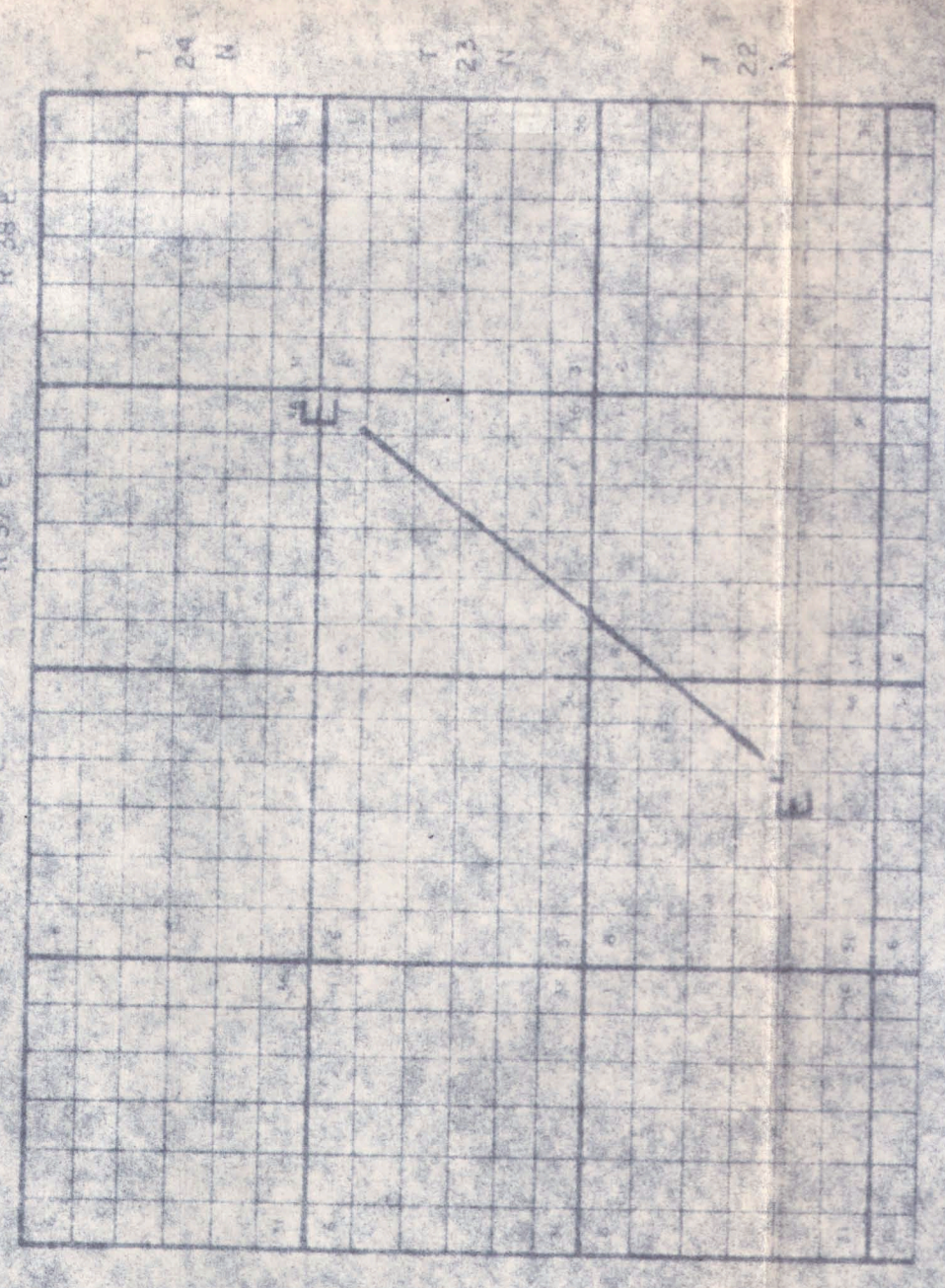
FOR: []

NO. []

DATE: []

BY: []

FOR: []



SOUTHLAND ROYALTY CO.
 PLATE 9
 SOUTHWEST

Station	Elevation	Station	Elevation
7700	1174.0	7700	1174.0
7701	1174.5	7701	1174.5
7702	1175.0	7702	1175.0
7703	1175.5	7703	1175.5
7704	1176.0	7704	1176.0
7705	1176.5	7705	1176.5
7706	1177.0	7706	1177.0
7707	1177.5	7707	1177.5
7708	1178.0	7708	1178.0
7709	1178.5	7709	1178.5
7710	1179.0	7710	1179.0
7711	1179.5	7711	1179.5
7712	1180.0	7712	1180.0
7713	1180.5	7713	1180.5
7714	1181.0	7714	1181.0
7715	1181.5	7715	1181.5
7716	1182.0	7716	1182.0
7717	1182.5	7717	1182.5
7718	1183.0	7718	1183.0
7719	1183.5	7719	1183.5
7720	1184.0	7720	1184.0
7721	1184.5	7721	1184.5
7722	1185.0	7722	1185.0
7723	1185.5	7723	1185.5
7724	1186.0	7724	1186.0
7725	1186.5	7725	1186.5
7726	1187.0	7726	1187.0
7727	1187.5	7727	1187.5
7728	1188.0	7728	1188.0
7729	1188.5	7729	1188.5
7730	1189.0	7730	1189.0
7731	1189.5	7731	1189.5
7732	1190.0	7732	1190.0
7733	1190.5	7733	1190.5
7734	1191.0	7734	1191.0
7735	1191.5	7735	1191.5
7736	1192.0	7736	1192.0
7737	1192.5	7737	1192.5
7738	1193.0	7738	1193.0
7739	1193.5	7739	1193.5
7740	1194.0	7740	1194.0
7741	1194.5	7741	1194.5
7742	1195.0	7742	1195.0
7743	1195.5	7743	1195.5
7744	1196.0	7744	1196.0
7745	1196.5	7745	1196.5
7746	1197.0	7746	1197.0
7747	1197.5	7747	1197.5
7748	1198.0	7748	1198.0
7749	1198.5	7749	1198.5
7750	1199.0	7750	1199.0
7751	1199.5	7751	1199.5
7752	1200.0	7752	1200.0
7753	1200.5	7753	1200.5
7754	1201.0	7754	1201.0
7755	1201.5	7755	1201.5
7756	1202.0	7756	1202.0
7757	1202.5	7757	1202.5
7758	1203.0	7758	1203.0
7759	1203.5	7759	1203.5
7760	1204.0	7760	1204.0
7761	1204.5	7761	1204.5
7762	1205.0	7762	1205.0
7763	1205.5	7763	1205.5
7764	1206.0	7764	1206.0
7765	1206.5	7765	1206.5
7766	1207.0	7766	1207.0
7767	1207.5	7767	1207.5
7768	1208.0	7768	1208.0
7769	1208.5	7769	1208.5
7770	1209.0	7770	1209.0
7771	1209.5	7771	1209.5
7772	1210.0	7772	1210.0
7773	1210.5	7773	1210.5
7774	1211.0	7774	1211.0
7775	1211.5	7775	1211.5
7776	1212.0	7776	1212.0
7777	1212.5	7777	1212.5
7778	1213.0	7778	1213.0
7779	1213.5	7779	1213.5
7780	1214.0	7780	1214.0
7781	1214.5	7781	1214.5
7782	1215.0	7782	1215.0
7783	1215.5	7783	1215.5
7784	1216.0	7784	1216.0
7785	1216.5	7785	1216.5
7786	1217.0	7786	1217.0
7787	1217.5	7787	1217.5
7788	1218.0	7788	1218.0
7789	1218.5	7789	1218.5
7790	1219.0	7790	1219.0
7791	1219.5	7791	1219.5
7792	1220.0	7792	1220.0
7793	1220.5	7793	1220.5
7794	1221.0	7794	1221.0
7795	1221.5	7795	1221.5
7796	1222.0	7796	1222.0
7797	1222.5	7797	1222.5
7798	1223.0	7798	1223.0
7799	1223.5	7799	1223.5
7800	1224.0	7800	1224.0

NORTHWEST
 36E-22N
 37E-22N
 37E-23N
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PROJECT: DIXIE VALLEY LIME 1000 FT. FLD.

*****TOTAL FIELD MULTILEVEL AEROMAGNETIC PROFILE*****

COUNTY: CHURCHILL

STATE: NEVADA

DATE OF ACQUISITION: 06 MAY 1978

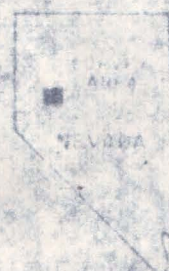
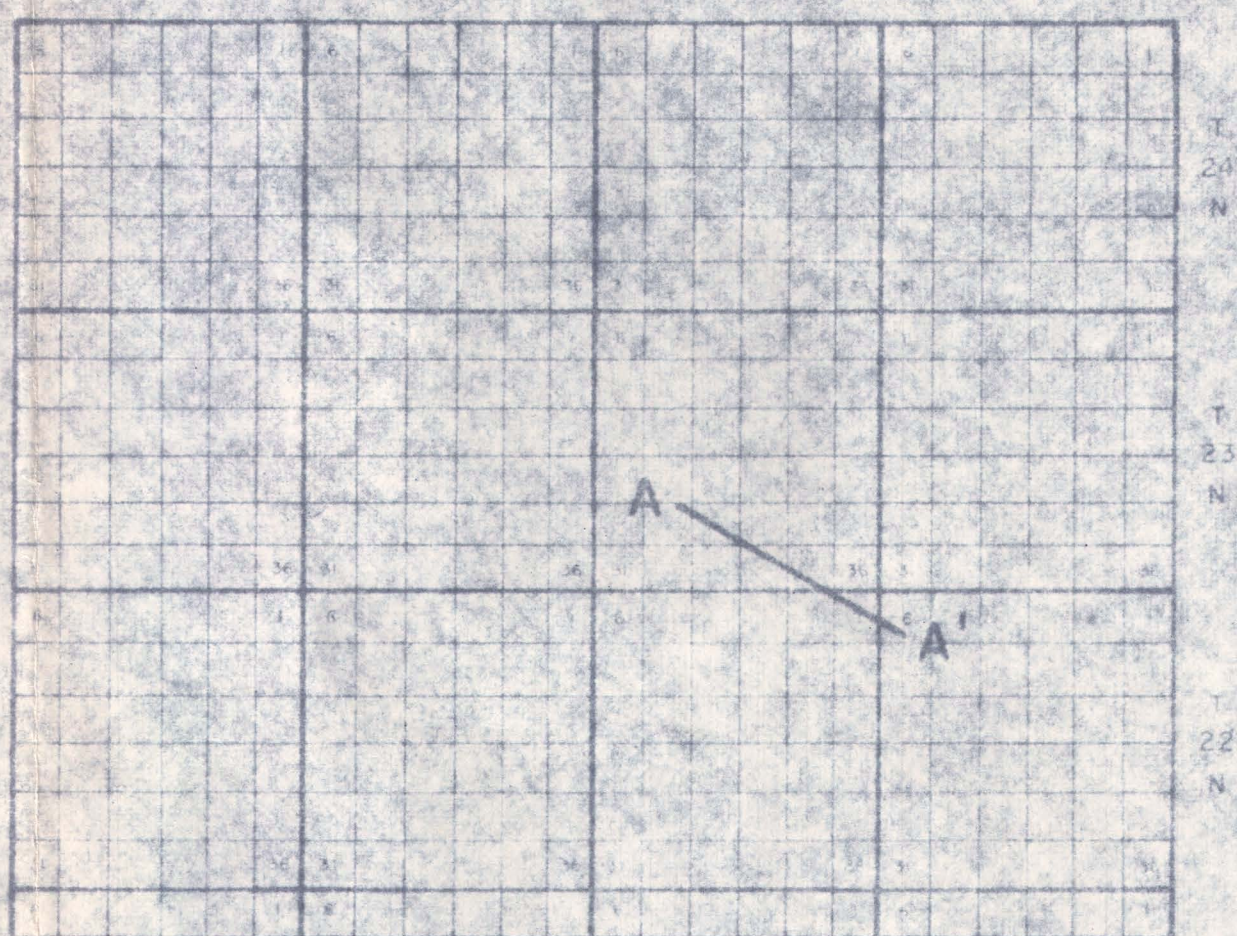
GROSS SECTION
 SCALES: HORIZONTAL - 1 INCH EQUALS 1 MILES
 VERTICAL - 1 INCH EQUALS 100 FEET

PROFILE IDENTIFICATION

LEVELS FLOWN	SYMBOL	LINE
6500 MSL	XXXXX	30
7500 MSL	UUUUU	28
8500 MSL	*****	26
0 MSL	+++++	0

AVERAGE SURFACE ELEVATION BENEATH PROFILE 4000 FT. MSL

R 35 E R 36 E R 37 E R 38 E



PROFILE	ELEVATION	NO. OF POINTS	SCALE OF GAMMAS / PLUT POS.	CORRECTIONS START	STOP
30E	6500	07	1,000	1.4	1.6
28E	7500	08	1,000	3.2	6.6
26E	8500	08	1,000	7.2	6.6
077	0	0	0.000	0.0	0.0

RAW VALUES SHOWN = (TOTAL FIELD - BIAS) X 10
 EXAMPLE: FOR TOTAL FIELD VALUE OF 95379.2 GAMMAS
 AND BIAS OF 5500.0 GAMMAS
 RAW VALUE = (95379.2 - 5500.0) X 10 = 4792

SOUTHLAND ROYALTY CO.
 PLATE 10 CENTURION SCIENCES, INC

NORTHWEST

SOUTHEAST

NO.	ELEVATIONS	0500	7500	8500	0
4184	12006	11968	12004	01	
4185	12008	11975	12011	01	X
4186	12006	11965	12023	01	X
4187	12055	11999	12033	01	X
4188	12071	12013	12045	01	X
4189	12116	12051	12053	01	X
4190	12145	12088	12060	01	X
4191	12173	12089	12085	01	X
4192	12208	12086	12109	01	X
4193	12241	12108	12120	01	X
4194	12276	12134	12141	01	X
4195	12311	12158	12161	01	X
4196	12350	12191	12178	01	X
4197	12390	12206	12201	01	X
4198	12435	12253	12225	01	X
4199	12476	12260	12221	01	X
4200	12516	12260	12278	01	X
4201	12556	12310	12309	01	X
4202	12540	12345	12323	01	X
4203	12545	12371	12351	01	X
4204	12570	12390	12376	01	X
4205	12701	12431	12401	01	X
4206	12773	12461	12423	01	X
4207	12815	12490	12478	01	X
4208	12856	12518	12470	01	X
4209	12893	12543	12490	01	X
4210	12930	12561	12508	01	X
4211	12965	12580	12528	01	X
4212	12995	12600	12546	01	X
4213	13041	12621	12560	01	X
4214	13045	12630	12573	01	X
4215	13065	12636	12588	01	X
4216	13085	12670	12601	01	X
4217	13095	12681	12612	01	X
4218	13101	12688	12618	01	X
4219	13105	12690	12623	01	X
4220	13103	12690	12630	01	X
4221	13095	12693	12631	01	X
4222	13078	12680	12631	01	X
4223	13058	12680	12628	01	X
4224	13036	12668	12623	01	X
4225	13005	12653	12615	01	X
4226	12971	12635	12606	01	X
4227	12928	12610	12596	01	X
4228	12885	12590	12586	01	X
4229	12835	12568	12576	01	X
4230	12786	12546	12565	01	X
4231	12738	12525	12558	01	X
4232	12691	12498	12553	01	X
4233	12645	12471	12518	01	X
4234	12600	12458	12503	01	X
4235	12558	12446	12488	01	X
4236	12523	12433	12473	01	X
4237	12493	12416	12461	01	X
4238	12466	12393	12446	01	X
4239	12441	12370	12436	01	X
4240	12423	12361	12423	01	X
4241	12405	12348	12411	01	X
4242	12395	12336	12396	01	X
4243	12371	12323	12396	01	X
4244	12345	12303	12378	01	X
4245	12328	12283	12363	01	X
4246	12311	12275	12341	01	X
4247	12298	12260	12321	01	X
4248	12283	12250	12306	01	X
4249	12260	12245	12296	01	X
4250	12256	12236	12286	01	X
4251	12256	12226	12273	01	X
4252	12255	12218	12263	01	X
4253	12253	12213	12251	01	X
4254	12253	12208	12238	01	X
4255	12256	12203	12226	01	X
4256	12263	12203	12218	01	X
4257	12270	12201	12208	01	X
4258	12280	12203	12200	01	X
4259	12293	12203	12191	01	X
4260	12303	12203	12183	01	X
4261	12410	12201	12178	01	X
4262	12405	12205	12171	01	X
4263	12393	12208	12163	01	X
4264	12368	12208	12160	01	X
4265	12341	12206	12153	01	X
4266	12318	12203	12148	01	X
4267	12300	12208	12136	01	X
4268	12276	12196	12135	01	X
4269	12266	12196	12131	01	X

END OF PROFILE

PROJECT: SIXIE VALLEY LINE W 1000 FT TOI FLUET

*****AEROMAGNETIC MULTILEVEL AEROMAGNETIC PROFILES*****

COUNTY: CHURCHILL

STATE: NEVADA

DATE OF ACQUISITION: 06 MAY 1978

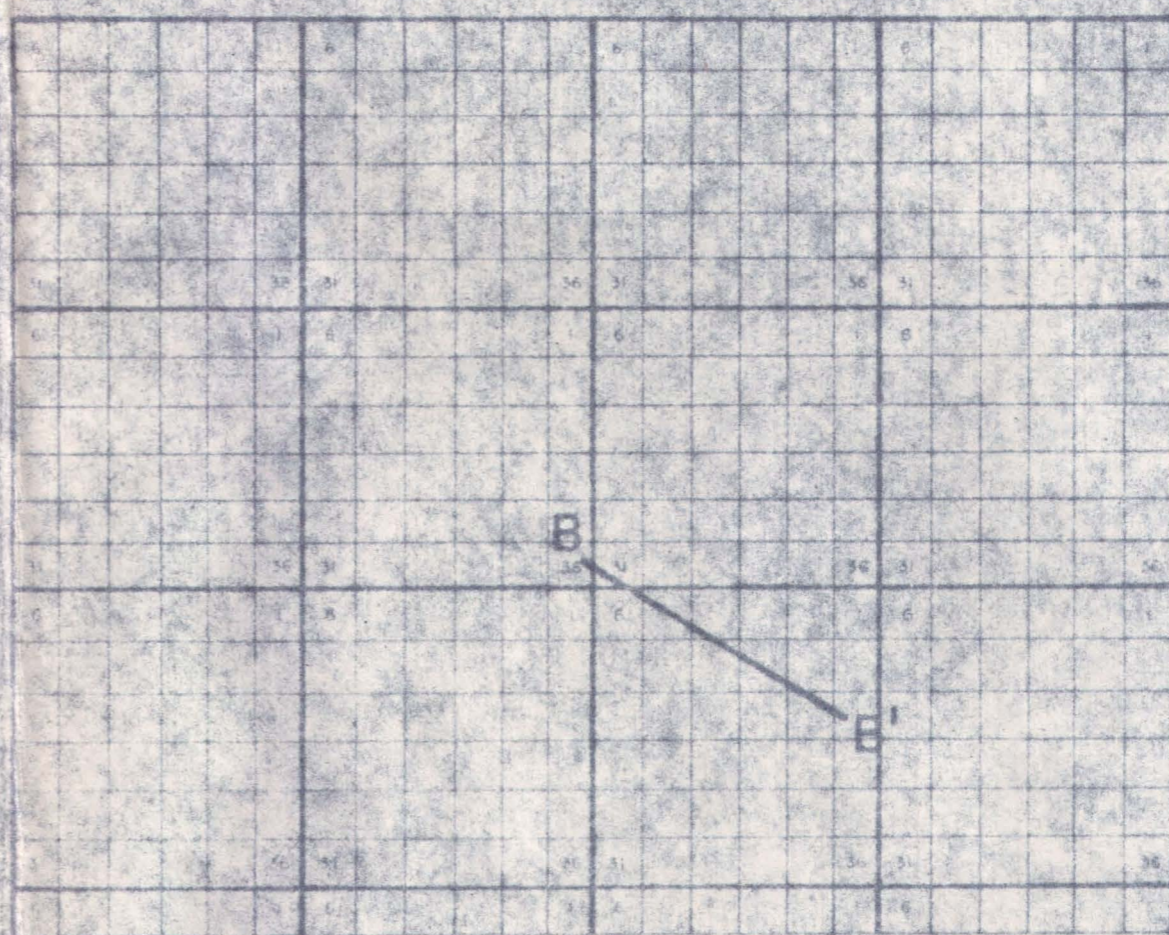
CROSS SECTION
 SCALES: HORIZONTAL - 1/4 INCH EQUALS 1 MILE
 VERTICAL - 1/4 INCH EQUALS 100 FEET

PROFILE IDENTIFICATION

LEVELS FLOWN	SYMBOL	LINE
6500 MSL	XXXXX	17
7500 MSL	00000	21
8000 MSL	XXXXX	19
0 MSL	+++++	0

AVERAGE SURFACE ELEVATION-BY-PLATE PROFILE 4000 FT. MSL

R 35 E R 36 E R 37 E R 38 E



PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMAS / FOOT POS.	CORRECTIONS START	STOP
17E	6500	106	1.000	4.5	4.1
21E	7500	106	1.000	3.2	2.9
19E	8000	106	1.000	3.3	3.5
077	0	0	0.000	0.0	0.0

MAG. VALUES SHOWN = (TOTAL FIELD - BIAS) X 10
 EXAMPLE: FOR TOTAL FIELD VALUE OF 55379.2 GAMMAS
 AND BIAS OF 55000.0 GAMMAS
 MAG. VALUE = (55379.2 - 55000.0) X 10 = 3792

BIAS THIS PROJECT IS: 55000.0 GAMMAS

SOUTHLAND ROYALTY CO.
 PLATE II SENTURION SCIENCES, INC

NORTHWEST

ELEVATIONS				
6500	7500	8000	0	
3116	12026	12146	12056	01 X
3117	12013	12136	12053	01X
3118	12000	12125	12046	01
3119	11985	12111	12033	01
3120	11971	12099	12021	01
3121	11958	12078	12009	01
3122	11953	12068	11993	01
3123	11915	12041	11961	01
3124	11891	12020	11966	01
3125	11868	12004	11951	01
3126	11843	11978	11954	01
3127	11821	11955	11913	01
3128	11798	11931	11896	01
3129	11775	11906	11875	01
3130	11750	11881	11853	01
3131	11726	11853	11833	01
3132	11703	11826	11813	01
3133	11676	11803	11793	01
3134	11651	11778	11773	01
3135	11625	11751	11753	01
3136	11601	11728	11731	01
3137	11575	11703	11708	01
3138	11555	11678	11686	01
3139	11531	11651	11663	01
3140	11506	11626	11644	01
3141	11481	11599	11623	01
3142	11458	11576	11601	01
3143	11431	11550	11579	01
3144	11408	11526	11551	01
3145	11381	11498	11530	01
3146	11356	11474	11505	01
3147	11333	11448	11481	01
3148	11306	11426	11458	01
3149	11281	11406	11436	01
3150	11258	11383	11413	01
3151	11236	11360	11390	01
3152	11211	11336	11364	01
3153	11186	11313	11343	01
3154	11163	11288	11326	01
3155	11141	11266	11307	01
3156	11118	11243	11281	01
3157	11096	11223	11256	01
3158	11076	11206	11236	01
3159	11053	11183	11216	01
3160	11043	11163	11200	01
3161	11025	11143	11181	01
3162	11008	11123	11163	01
3163	10988	11106	11143	01
3164	10973	11086	11126	01
3165	10960	11071	11113	01
3166	10946	11055	11098	01
3167	10933	11038	11083	01
3168	10920	11021	11066	01
3169	10905	11006	11053	01
3170	10893	10991	11040	01
3171	10883	10980	11028	01
3172	10875	10970	11013	01
3173	10866	10958	11001	01
3174	10856	10953	10993	01
3175	10841	10941	10983	01

SOUTHEAST

3176	10826	10914	10971	01
3177	10821	10908	10963	01
3178	10821	10905	10958	01
3179	10816	10901	10951	01
3180	10813	10895	10946	01
3181	10813	10893	10920	01
3182	10813	10886	10911	01
3183	10811	10883	10906	01
3184	10808	10886	10906	01
3185	10808	10883	10901	01
3186	10810	10886	10896	01
3187	10811	10881	10891	01
3188	10810	10881	10881	01
3189	10810	10881	10881	01
3190	10810	10881	10881	01
3191	10810	10881	10881	01
3192	10810	10881	10881	01
3193	10811	10886	10886	01
3194	10811	10883	10886	01
3195	10815	10883	10886	01
3196	10818	10886	10886	01
3197	10823	10890	10890	01
3198	10828	10893	10886	01
3199	10835	10896	10894	01
3200	10843	10901	10891	01
3201	10848	10905	10893	01
3202	10853	10906	10893	01
3203	10858	10911	10896	01
3204	10863	10913	10901	01
3205	10871	10921	10905	01
3206	10880	10930	10906	01
3207	10886	10938	10913	01
3208	10895	10945	10918	01
3209	10906	10950	10923	01
3210	10913	10956	10929	01
3211	10923	10966	10944	01
3212	10936	10976	10941	01
3213	10946	10981	10946	01
3214	10956	11000	10951	01
3215	10963	11008	10958	01
3216	10976	11018	10966	01
3217	10991	11029	10975	01
3218	11008	11043	10983	01
3219	11025	11058	10988	01
3220	11041	11076	10996	01
3221	11048	11076	11000	01

END OF PROFILE

PROJECT: DIXIE VALLEY LINE C - 1000 FT TO 1 FLD

*****TOTAL FIELD MULTILEVEL GEOMAGNETIC PROFILES*****

COUNTY: CHURCHILL

STATE: NEVADA

DATE OF ACQUISITION: 07 MAY 1978

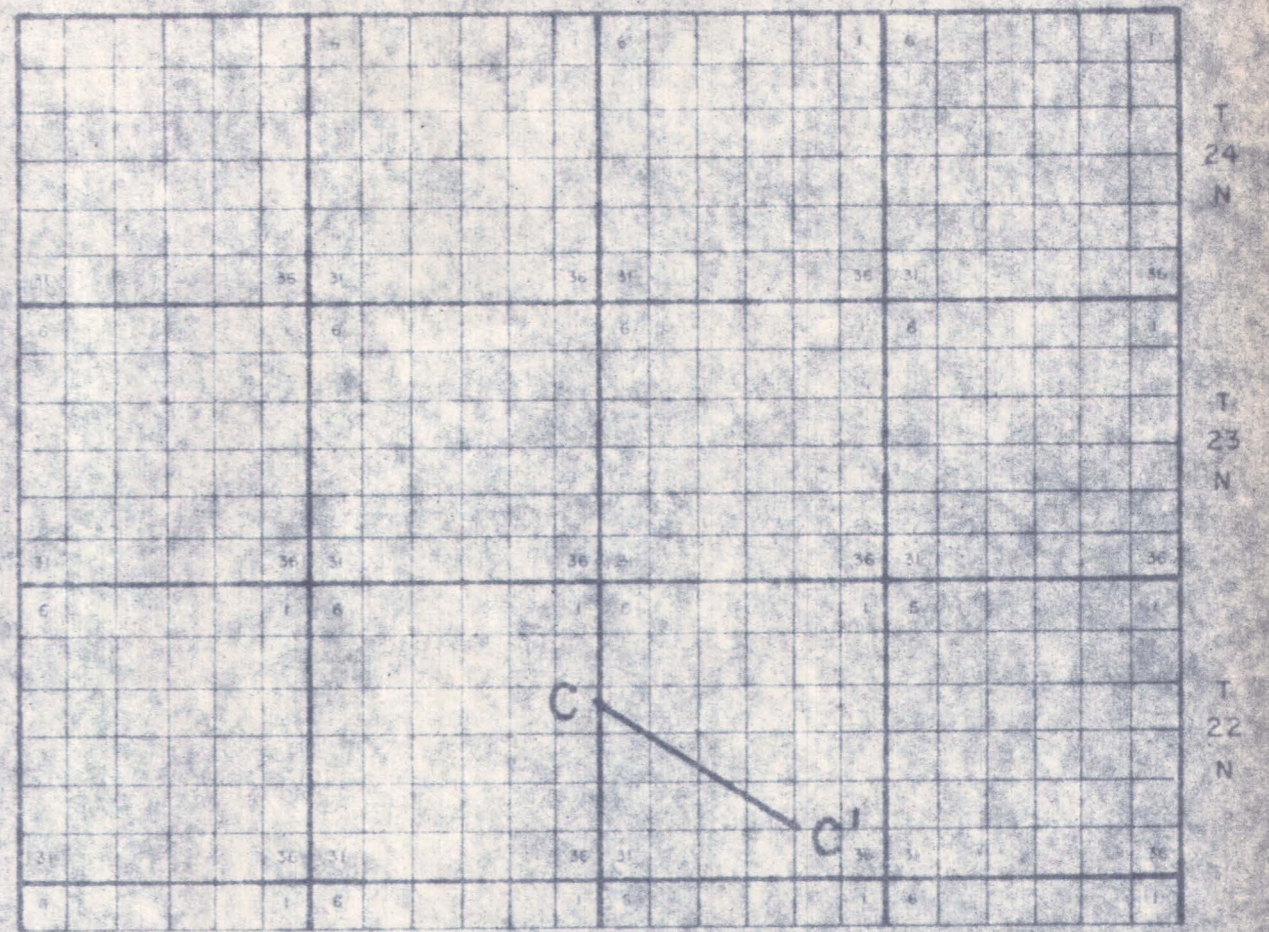
CROSS SECTION
 SCALES: HORIZONTAL - INCH EQUALS MILES
 VERTICAL - INCH EQUALS FEET

PROFILE IDENTIFICATION

LEVELS FLOWN	SYMBOL	LINE
6500 MSL	AXXX	57
7500 MSL	UUUU	58
8500 MSL	*****	59
U MSL	***+*	U

AVERAGE SURFACE ELEVATION BENEATH PROFILE 420 FT. MSL

R 35 E R 36 E R 37 E R 38 E



PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMAS / PLUT POS.	CORRECTIONS START	STOP
57E	8500	86	1.000	0.8	9.4
58E	7500	88	1.000	18.1	17.1
59E	6500	87	1.000	0.5	0.0
U77	U	U	0.000	0.0	0.0

MAP. VALUES SHOWN = (TOTAL FIELD - BIAS) X 10
 EXAMPLE: FOR TOTAL FIELD VALUE OF 55579.2 GAMMAS
 AND BIAS OF 55000.0 GAMMAS
 MAP. VALUE = (55579.2 - 55000.0) X 10 = 579.2

SOUTHLAND ROYALTY CO.
 PLATE 12 SENTURION SCIENCES, INC

MAP. VALUES SHOWN = (TOTAL FIELD - BIAS) X 10

NORTHWEST
C

SOUTHEAST
C'

SEW	XXX	000	*****	***+*	U
7354	13778	13545	13170	01	
7355	13671	13451	13104	01	
7356	13576	13366	13040	01	
7357	13488	13293	12971	01	
7358	13376	13200	12900	01	
7359	13283	13121	12836	01	
7360	13181	13040	12780	01	
7361	13086	12963	12694	01	
7362	12981	12878	12621	01	
7363	12868	12793	12554	01	
7364	12801	12711	12482	01	
7365	12703	12628	12412	01	
7366	12608	12556	12344	01	
7367	12508	12470	12272	01	
7368	12425	12388	12205	01	
7369	12350	12306	12140	01	
7370	12255	12223	12070	01	
7371	12171	12150	11994	01	
7372	12093	12073	11933	01	
7373	11998	12000	11868	01	
7374	11928	11926	11803	01	
7375	11853	11883	11736	01	
7376	11776	11783	11678	01	
7377	11688	11713	11614	01	
7378	11613	11645	11554	01	
7379	11536	11578	11495	01	
7380	11448	11511	11438	01	
7381	11388	11449	11381	01	
7382	11318	11381	11327	01	
7383	11263	11320	11268	01	
7384	11200	11270	11221	01	
7385	11145	11206	11168	01	
7386	11089	11156	11119	01	
7387	11016	11100	11060	01	
7388	10966	11043	11021	01	
7389	10923	10996	10971	01	
7390	10886	10951	10950	01	
7391	10838	10908	10884	01	
7392	10788	10865	10849	01	
7393	10753	10821	10800	01	
7394	10720	10776	10765	01	
7395	10670	10743	10727	01	
7396	10628	10703	10679	01	
7397	10598	10668	10649	01	
7398	10553	10626	10614	01	
7399	10518	10581	10588	01	
7400	10468	10548	10543	01	
7401	10416	10510	10512	01	
7402	10361	10471	10473	01	
7403	10311	10433	10442	01	
7404	10255	10398	10421	01	
7405	10226	10361	10383	01	
7406	10181	10328	10357	01	
7407	10150	10295	10327	01	
7408	10131	10268	10305	01	
7409	10091	10245	10287	01	
7410	10076	10221	10249	01	
7411	10056	10201	10224	01	
7412	10040	10183	10212	01	
7413	10025	10161	10193	01	
7414	10010	10144	10174	01	
7415	9995	10122	10154	01	
7416	9975	10120	10147	01	
7417	9975	10105	10132	01	
7418	9971	10100	10125	01	
7419	9961	10095	10110	01	
7420	9963	10086	10098	01	
7421	9951	10080	10090	01	
7422	9950	10073	10082	01	
7423	9943	10071	10081	01	
7424	9946	10071	10066	01	
7425	9948	10073	10066	01	
7426	9938	10066	10062	01	
7427	9941	10066	10055	01	
7428	9941	10063	10057	01	
7429	9933	10060	10054	01	
7430	9940	10060	10050	01	
7431	9935	10060	10050	01	
7432	9943	10063	10048	01	
7433	9943	10066	10045	01	
7434	9951	10063	10049	01	
7435	9951	10070	10045	01	
7436	9961	10066	10053	01	
7437	9958	10073	10064	01	
7438	9970	10073	10063	01	
7439	9975	10083	10066	01	
7440	9981	10096	10068	01	

END OF PROFILE

PROJECT: DIAT VALLEY-LINE D 1000 - 11 101 103

***** DIGITAL FIELD MULTILEVEL AERODENDROLOGIC PROFILES *****

COUNTY: CHURCHILL

STATE: NEVADA

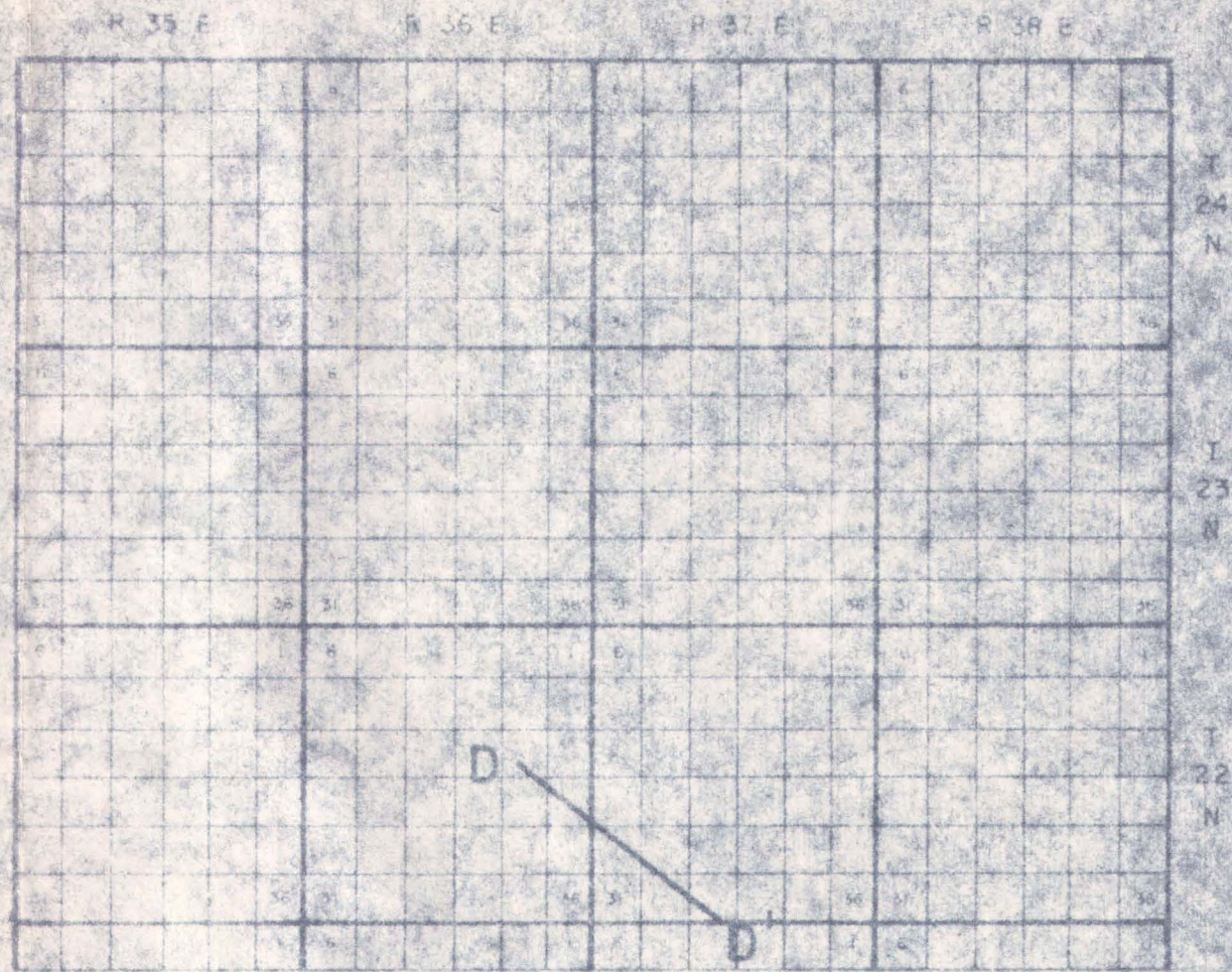
DATE OF ACQUISITION: 07 MAY 1970

CROSS-SECTION
 SCALES: HORIZONTAL - INCH TO FEET
 VERTICAL - INCH TO FEET

PROFILE IDENTIFICATION

LEVELS FLOW	SYMBOL	LINE
6500 MSL	XXXX	46
7500 MSL	00000	48
8500 MSL	*****	50
0 MSL	++++	0

AVERAGE SURFACE ELEVATION BENEATH PROFILE 4500 FT. MSL



PROFILE	ELEVATION	NO. OF POINTS	SCALE OF GPMMS / FLOU PWS.	CORRECTIONS START	STOP
45E	6500	70	4,000	24.8	2.4
48E	7500	97	4,000	6.0	2.5
50E	8500	96	4,000	18.0	17.2
077	0	0	0,000	0.0	0.0

MAX. VALUES SHOWN = TOTAL FIELD + BIAS X 10
 EXAMPLE: FOR TOTAL FIELD VALUE OF 55079.2 GPMMS
 AND BIAS OF 35000.0 GPMMS
 MAX. VALUE = (55079.2 - 35000.0) X 10 = 20079.2
 BIAS THIS PROFILE IS: 35000.0 GPMMS

SOUTHLAND ROYALTY CO.
 PLATE 13 SENTURION SCIENCES, INC

NORTHWEST
 D

ELEVATION	6500	7500	8500	0
6919	14440	13881	13483	01
6920	14445	13885	13485	01
6921	14408	13856	13488	01
6922	14458	13865	13488	01
6923	14450	13861	13488	01
6924	14416	13876	13481	01
6925	14403	13864	13473	01
6926	14403	13856	13465	01
6927	14360	13836	13455	01
6928	14328	13816	13441	01
6929	14296	13788	13426	01
6930	14266	13758	13416	01
6931	14216	13723	13386	01
6932	14173	13686	13361	01
6933	14126	13651	13355	01
6934	14078	13610	13341	01
6935	14023	13566	13268	01
6936	13964	13521	13233	01
6937	13908	13476	13196	01
6938	13846	13428	13158	01
6939	13776	13375	13118	01
6940	13706	13328	13078	01
6941	13636	13280	13033	01
6942	13566	13236	12991	01
6943	13495	13186	12948	01
6944	13421	13139	12903	01
6945	13346	13093	12856	01
6946	13271	12961	12806	01
6947	13195	12898	12760	01
6948	13120	12851	12711	01
6949	13041	12768	12661	01
6950	12960	12706	12616	01
6951	12885	12645	12563	01
6952	12808	12581	12498	01
6953	12731	12515	12445	01
6954	12654	12450	12391	01
6955	12574	12383	12333	01
6956	12498	12315	12278	01
6957	12406	12251	12221	01
6958	12323	12183	12165	01
6959	12245	12116	12168	01
6960	12161	12051	12056	01
6961	12080	11981	12001	01
6962	12001	11914	11948	01
6963	11926	11853	11821	01
6964	11853	11804	11844	01
6965	11788	11741	11790	01
6966	11723	11686	11758	01
6967	11663	11633	11663	01
6968	11608	11563	11638	01
6969	11556	11531	11569	01
6970	11506	11476	11541	01
6971	11456	11421	11496	01
6972	11416	11375	11443	01
6973	11366	11343	11403	01
6974	11298	11273	11363	01
6975	11258	11231	11305	01
6976	11176	11176	11250	01
6977	11111	11116	11213	01
6978	11046	11068	11165	01
6979	10985	11025	11131	01
6980	10925	10983	11095	01
6981	10865	10940	11065	01
6982	10805	10898	11036	01
6983	10745	10853	11006	01
6984	10685	10808	10975	01
6985	10625	10763	10945	01
6986	10565	10718	10915	01
6987	10505	10673	10885	01
6988	10445	10628	10855	01
6989	10385	10583	10825	01
6990	10325	10538	10795	01
6991	10265	10493	10765	01
6992	10205	10448	10735	01
6993	10145	10403	10705	01
6994	10085	10358	10675	01
6995	10025	10313	10645	01
6996	9965	10268	10615	01
6997	9905	10223	10585	01
6998	9845	10178	10555	01
6999	9785	10133	10525	01
7000	9725	10088	10495	01
7001	9665	10043	10465	01
7002	9605	9998	10435	01
7003	9545	9953	10405	01
7004	9485	9908	10375	01
7005	9425	9863	10345	01
7006	9365	9818	10315	01
7007	9305	9773	10285	01
7008	9245	9728	10255	01
7009	9185	9683	10225	01
7010	9125	9638	10195	01
7011	9065	9593	10165	01
7012	9005	9548	10135	01
7013	8945	9503	10105	01
7014	8885	9458	10075	01
7015	8825	9413	10045	01

SOUTHEAST
 D

END OF PROFILE

PROJECT: GATE VALLEY LINE, T. 1000 FT. 101.100

*****MULTI-LEVEL GEOMAGNETIC PROFILES*****

COUNTY: CHURCHILL

STATE: NEVADA

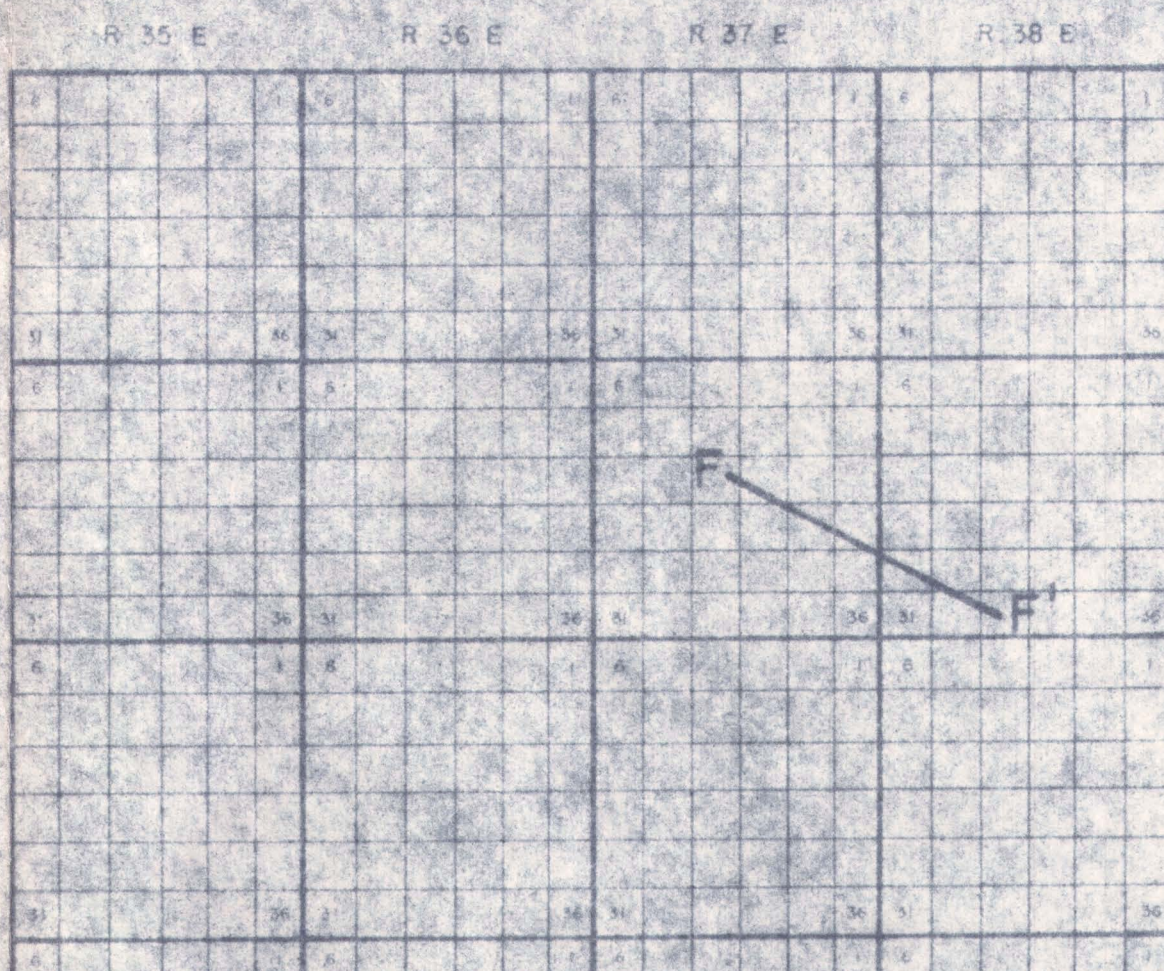
DATE OF ACQUISITION: 07 MAY 1978

GROSS SECTION
 SCALES: HORIZONTAL = 5 INCH EQUALS 1 MILE
 VERTICAL = 1 INCH EQUALS 10 FEET

PROFILE IDENTIFICATION

LEVELS FROM	SYMBOL	LINE
0.000 MSL	XXXXX	1059
0.000 MSL	UUUUU	25
0.000 MSL	UUUUU	27
0.000 MSL	UUUUU	0

AVERAGE SURFACE ELEVATION BENEATH PROFILE 4200 FT. MSL



PROFILE	ELEVATION	NO. OF POINTS	SCALE PLUG POS.	CORRECTIONS START	STOP
1059	0.000	153	1.000	14.1	15.4
25	0.000	158	1.000	9.8	7.4
27	0.000	158	1.000	8.9	9.4
0	0.000	0	0.000	0.0	0.0

Mag. Values Shown = (TOTAL FIELD - BIAS) X 10
 EXAMPLE: FOR TOTAL FIELD VALUE OF 55379.2 GAMMAS
 AND BIAS OF 55000.0 GAMMAS
 MAG. VALUE = (55379.2 - 55000.0) X 10 = 379.2

SOUTHLAND ROYALTY CO.
 PLATE 14 SENTURION SCIENCES, INC.

THIS PROFILE IS: 52000.0 GAMMAS

NORTHWEST

STN	ELEVATIONS			MAG
	4500	5000	8500	
5701	12648	12558	12498	01
5702	12648	12576	12498	01
5703	12648	12576	12498	01
5704	12648	12576	12498	01
5705	12648	12576	12498	01
5706	12648	12576	12498	01
5707	12648	12576	12498	01
5708	12648	12576	12498	01
5709	12648	12576	12498	01
5710	12648	12576	12498	01
5711	12648	12576	12498	01
5712	12648	12576	12498	01
5713	12648	12576	12498	01
5714	12648	12576	12498	01
5715	12648	12576	12498	01
5716	12648	12576	12498	01
5717	12648	12576	12498	01
5718	12648	12576	12498	01
5719	12648	12576	12498	01
5720	12648	12576	12498	01
5721	12648	12576	12498	01
5722	12648	12576	12498	01
5723	12648	12576	12498	01
5724	12648	12576	12498	01
5725	12648	12576	12498	01
5726	12648	12576	12498	01
5727	12648	12576	12498	01
5728	12648	12576	12498	01
5729	12648	12576	12498	01
5730	12648	12576	12498	01
5731	12648	12576	12498	01
5732	12648	12576	12498	01
5733	12648	12576	12498	01
5734	12648	12576	12498	01
5735	12648	12576	12498	01
5736	12648	12576	12498	01
5737	12648	12576	12498	01
5738	12648	12576	12498	01
5739	12648	12576	12498	01
5740	12648	12576	12498	01
5741	12648	12576	12498	01
5742	12648	12576	12498	01
5743	12648	12576	12498	01
5744	12648	12576	12498	01
5745	12648	12576	12498	01
5746	12648	12576	12498	01
5747	12648	12576	12498	01
5748	12648	12576	12498	01
5749	12648	12576	12498	01
5750	12648	12576	12498	01
5751	12648	12576	12498	01
5752	12648	12576	12498	01
5753	12648	12576	12498	01
5754	12648	12576	12498	01
5755	12648	12576	12498	01
5756	12648	12576	12498	01
5757	12648	12576	12498	01
5758	12648	12576	12498	01
5759	12648	12576	12498	01
5760	12648	12576	12498	01
5761	12648	12576	12498	01
5762	12648	12576	12498	01
5763	12648	12576	12498	01
5764	12648	12576	12498	01
5765	12648	12576	12498	01
5766	12648	12576	12498	01
5767	12648	12576	12498	01
5768	12648	12576	12498	01
5769	12648	12576	12498	01
5770	12648	12576	12498	01
5771	12648	12576	12498	01
5772	12648	12576	12498	01
5773	12648	12576	12498	01
5774	12648	12576	12498	01
5775	12648	12576	12498	01
5776	12648	12576	12498	01
5777	12648	12576	12498	01
5778	12648	12576	12498	01
5779	12648	12576	12498	01
5780	12648	12576	12498	01
5781	12648	12576	12498	01
5782	12648	12576	12498	01
5783	12648	12576	12498	01
5784	12648	12576	12498	01
5785	12648	12576	12498	01
5786	12648	12576	12498	01
5787	12648	12576	12498	01
5788	12648	12576	12498	01
5789	12648	12576	12498	01
5790	12648	12576	12498	01
5791	12648	12576	12498	01
5792	12648	12576	12498	01
5793	12648	12576	12498	01
5794	12648	12576	12498	01
5795	12648	12576	12498	01
5796	12648	12576	12498	01
5797	12648	12576	12498	01
5798	12648	12576	12498	01
5799	12648	12576	12498	01
5800	12648	12576	12498	01
5801	12648	12576	12498	01
5802	12648	12576	12498	01
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5822	12648	12576	12498	01
5823	12648	12576	12498	01
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5825	12648	12576	12498	01
5826	12648	12576	12498	01
5827	12648	12576	12498	01
5828	12648	12576	12498	01
5829	12648	12576	12498	01
5830	12648	12576	12498	01
5831	12648	12576	12498	01
5832	12648	12576	12498	01
5833	12648	12576	12498	01
5834	12648	12576	12498	01
5835	12648	12576	12498	01
5836	12648	12576	12498	01
5837	12648	12576	12498	01
5838	12648	12576	12498	01
5839	12648	12576	12498	01
5840	12648	12576	12498	01

SOUTHEAST

END OF PROFILE

PROJECT: DIXIE VALLEY LINE N 1000 FT T31 FLD

*****TOTAL FIELD MULTILEVEL GEOMAGNETIC PROFILE*****

COUNTY: CHURCHILL

STATE: NEVADA

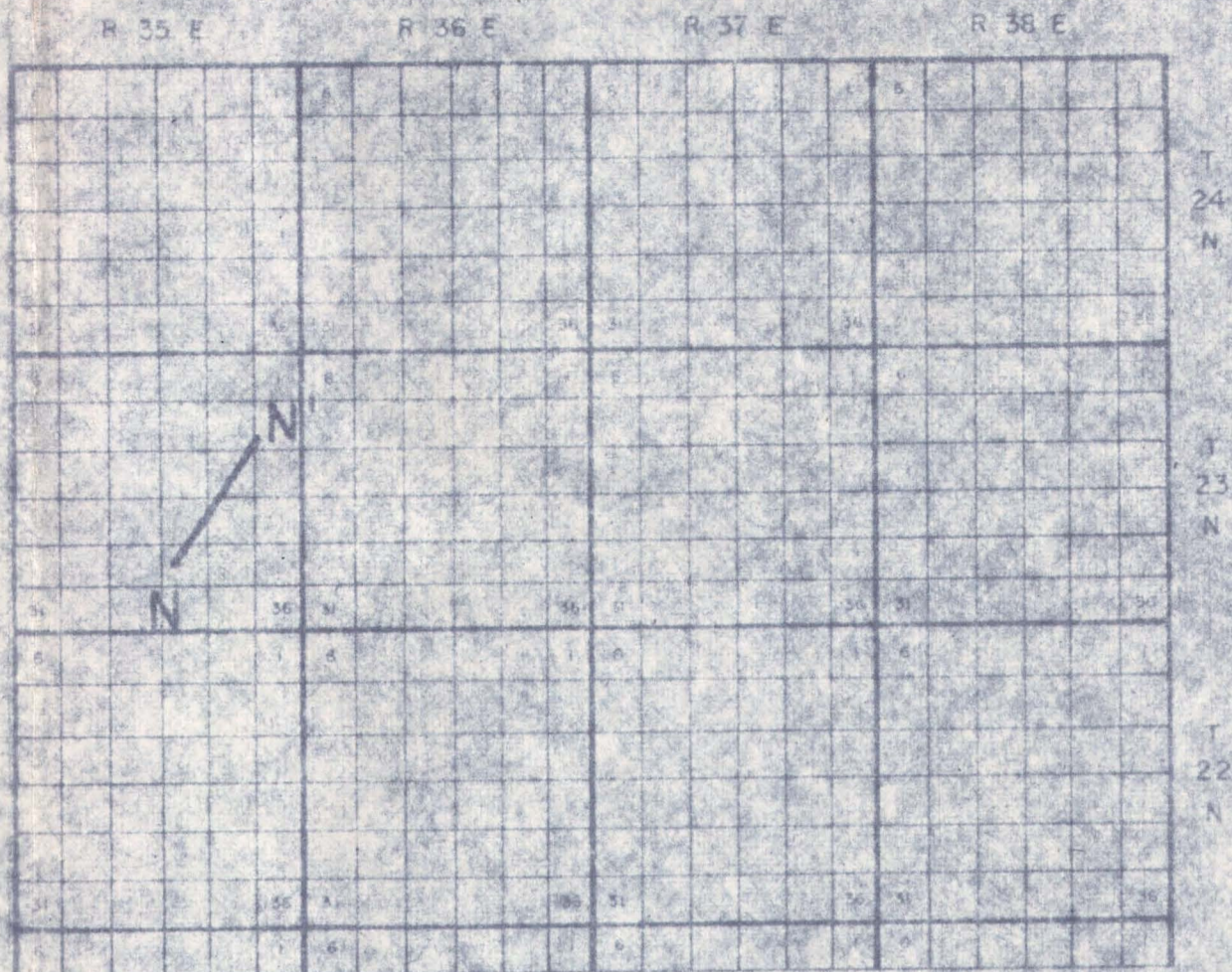
DATE OF ACQUISITION: 02 MAY 1978

CROSS SECTION
 SCALES: HORIZONTAL - INCH EQUALS MILES
 VERTICAL - INCH EQUALS FEET

PROFILE IDENTIFICATION

LEVELS FROM	SYMBOL	LINE
5500 MSL	XXXXX	4
6500 MSL	00000	10
7500 MSL	*****	15
0 MSL	+++++	0

AVERAGE SURFACE ELEVATION BENEATH PROFILE 3500 FT. MSL



PROFILE	ELEVATION	NO. OF POINTS	SCALE OF GAMMAS / PLOT POS.	CORRECTIONS START	STOP
9N	5500	63	1,000	1.0	1.0
10N	6500	64	1,000	1.0	1.2
15N	7500	63	1,000	1.2	1.2
077	0	0	0,000	0.0	0.0

MAG. VALUES SHOWN = (TOTAL FIELD - BIAS) X 10
 EXAMPLE: FOR TOTAL FIELD VALUE OF 55579.2 GAMMAS
 AND BIAS OF 55000.0 GAMMAS
 MAG. VALUE = (55579.2 - 55000.0) X 10 = 579.2

BIAS THIS PROJECT IS: 52000.0 GAMMAS

SOUTHLAND ROYALTY CO.
 PLATE 15 SENTURION SCIENCES, INC.

SOUTHWEST

SLW	ELEVATIONS				
	5500	6500	7500	0	
1477	11806	11793	11733	01	
1478	11813	11813	11761	01	
1479	11813	11833	11761	01	
1480	11805	11838	11802	01	
1481	11778	11343	11823	01	
1482	11804	11941	11850	01	
1483	11821	11940	11873	01	
1484	11863	11971	11901	01	
1485	11918	12010	11923	010	
1486	11986	12051	11948	01	
1487	12058	12091	11971	01	
1488	12136	12128	11998	01	
1489	12206	12166	12023	01	
1490	12266	12201	12046	01	
1491	12306	12238	12065	01	
1492	12333	12270	12088	01	
1493	12393	12298	12100	01	
1494	12371	12326	12110	01	
1495	12390	12351	12138	01	
1496	12408	12378	12158	01	
1497	12426	12395	12173	01	
1498	12448	12411	12185	01	
1499	12466	12425	12193	01	
1500	12478	12498	12196	01	
1501	12481	12446	12196	01	
1502	12478	12441	12188	01	
1503	12460	12430	12178	01	
1504	12443	12411	12166	01	
1505	12383	12381	12156	01	
1506	12325	12343	12143	01	
1507	12256	12301	12126	01	
1508	12181	12258	12110	01	
1510	12106	12216	12093	01	
1511	12043	12173	12073	01	
1512	11965	12131	12058	01	
1513	11938	12095	12041	01	
1514	11879	12065	12026	01	
1515	11870	12036	12010	01	
1516	11850	12018	11998	010	
1517	11838	12001	11991	01	
1518	11838	11995	11990	01	
1519	11843	11991	11986	01	
1520	11861	11998	11983	01	
1521	11886	12005	11981	01	
1522	11920	12013	11983	010	
1523	11956	12021	11989	01	
1524	11996	12031	11988	01	
1525	12031	12036	11991	01	
1526	12058	12048	11993	01	
1527	12076	12051	12000	01	
1528	12086	12061	12001	01	
1529	12090	12068	12003	01	
1530	12065	12071	12003	01	
1531	12075	12060	12001	01	
1532	12058	12068	11996	01	
1533	12039	12061	11993	01	
1534	12021	12056	11996	01	
1535	12004	12051	11996	01	
1536	12001	12046	11991	01	
1537	11996	12043	11990	01	
1538	11993	12031	11983	01	

END OF PROFILE

NORTHEAST

PROJECT: VIXAL VALLEY LINE S 1600 FT. (10' PL)

TOTAL FIELD MULTILEVEL AEROMAGNETIC PROFILES

COUNTY: CHURCHILL

STATE: NEVADA

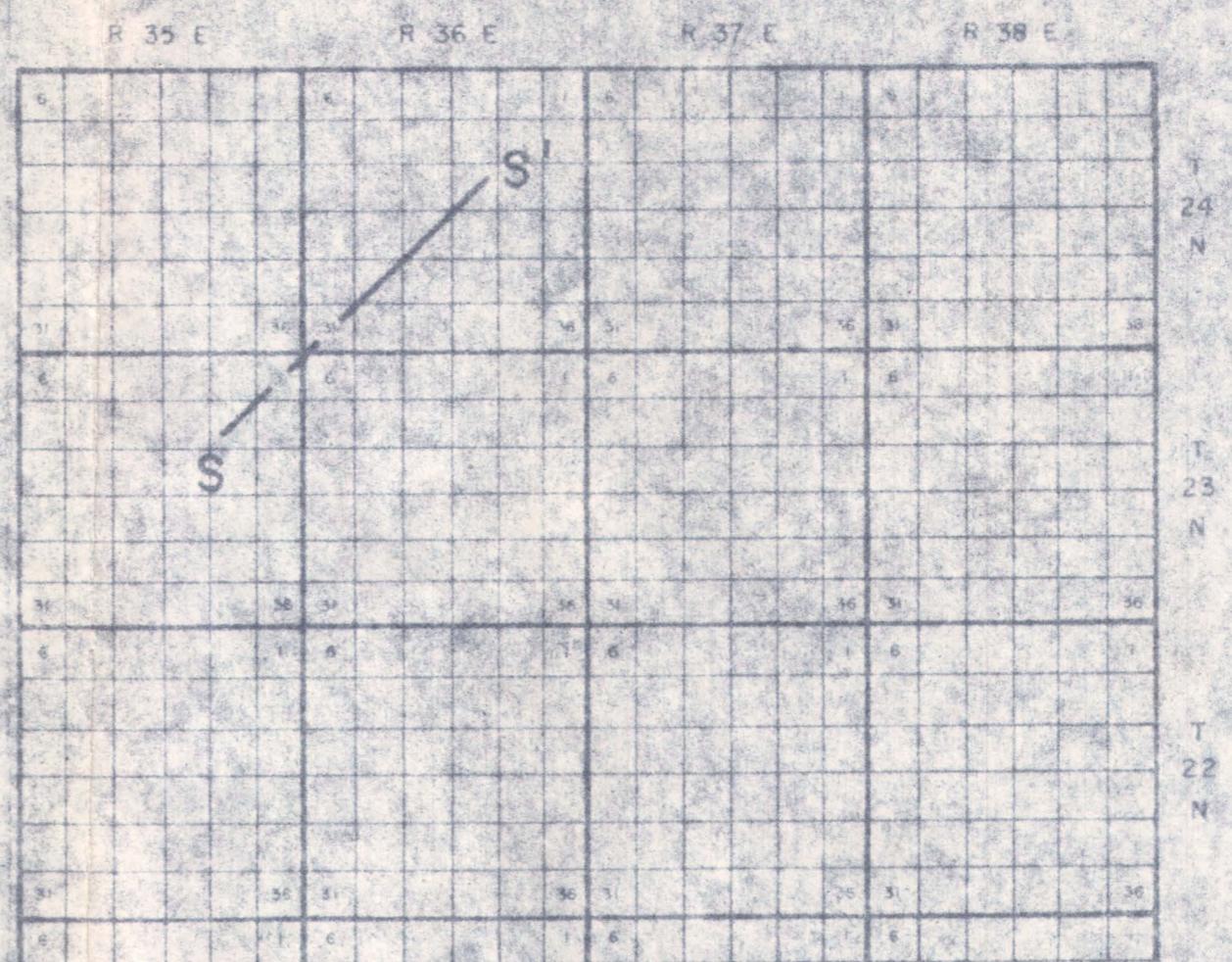
DATE OF ACQUISITION: 16 MAY 1978

CROSS SECTION SCALES: HORIZONTAL - 1" = 1/4 MILES VERTICAL - 1" = 100 FEET

PROFILE IDENTIFICATION

Table with columns: LEVELS FLOWN, SYMBOL, LINE. Rows: 5500 MSL (XXXX), 6500 MSL (UUUU), 7500 MSL (AAAA), U MSL (++++).

AVERAGE SURFACE ELEVATION BENEATH PROFILE: 5500 FT. MSL



Summary table with columns: PROFILE, ELEVATION, NO. OF POINTS, SCALE GAMMAS / FOOT POS., CORRECTIONS START, CORRECTIONS STOP. Rows for profiles 33, 34, 35, 36.

AGG. VALUES SHOWN = (TOTAL FIELD - BIAS) X 10. EXAMPLE: FOR TOTAL FIELD VALUE OF 563794.2 GAMMAS AND BIAS OF 55000.0 GAMMAS. AGG. VALUE = (563794.2 - 55000.0) X 10 = 3792. BIAS THIS PROFILE IS: 52000.0 GAMMAS

SOUTHLAND ROYALTY CO. PLATE 16 SENTURION SCIENCES, INC.

SOUTHWEST S

Main data table with columns: ELEVATIONS, SEU, and profile points. It contains a long list of elevation values and corresponding profile points.

NORTHEAST S

END OF PROFILE

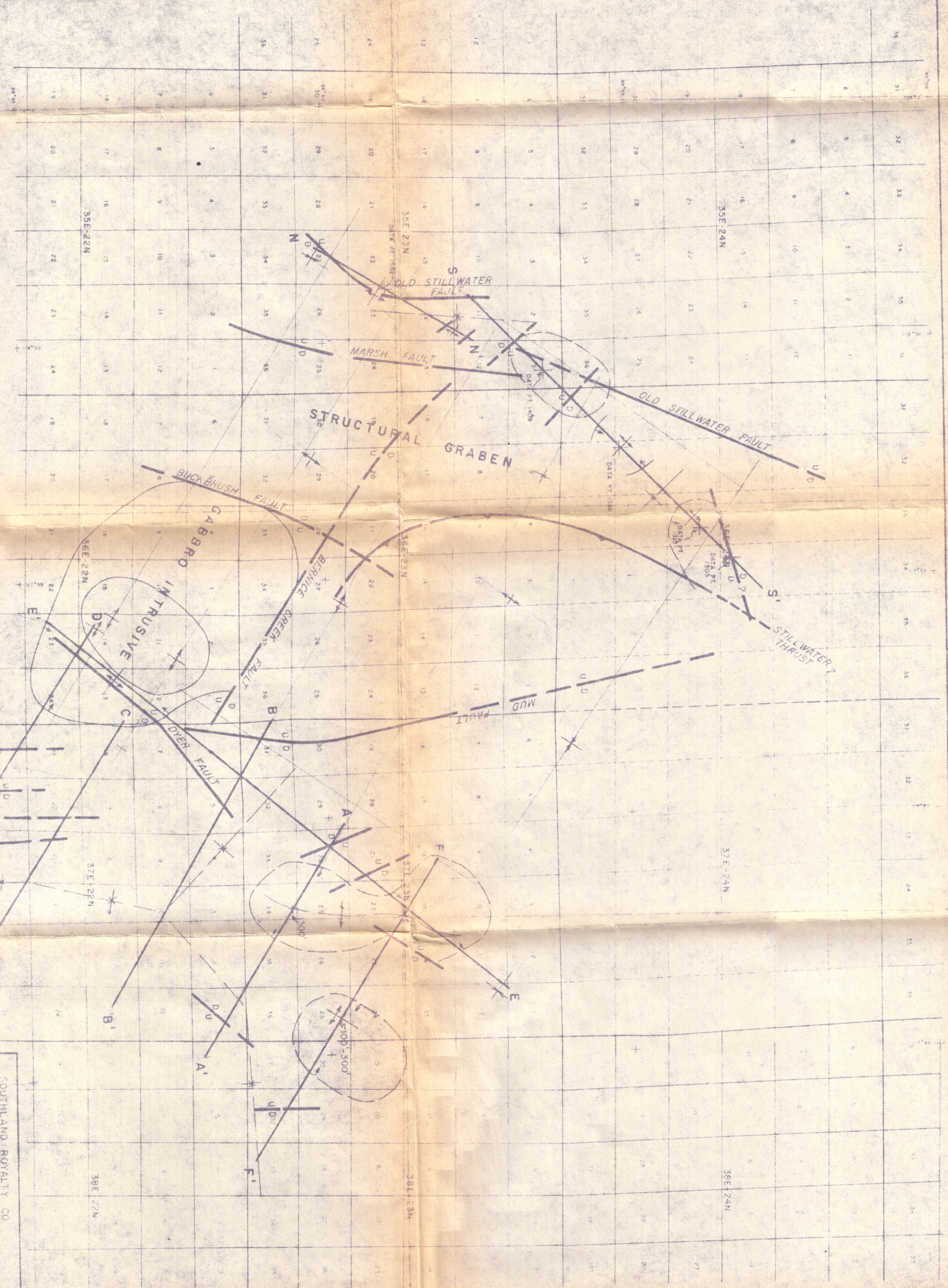
LEGEND

PROFILES FROM DIME 1
 2-F SINGLE LEVEL TO LINE

A-A' MULTILEVEL CONTOUR
 B-B' PROFILE
 C-C' PROFILE
 D-D' PROFILE
 E-E' PROFILE
 F-F' PROFILE

FAULT
 STRUCTURAL MON
 STRUCTURAL CON
 THRUST FAULT

ABNORMAL GRADIENTS
 REFLECTION POINT
 INDEFINITE ANTIPODALS
 OF MAGNETIC MON



SOUTHLAND ROYALTY CO
 AREA SOUTH DIXIE 2
 COUNTY CHURCHILL
 STATE NEVADA

MAGNETIC FEATURES MAP

DATE OF ACQUISITION: MAY 1978

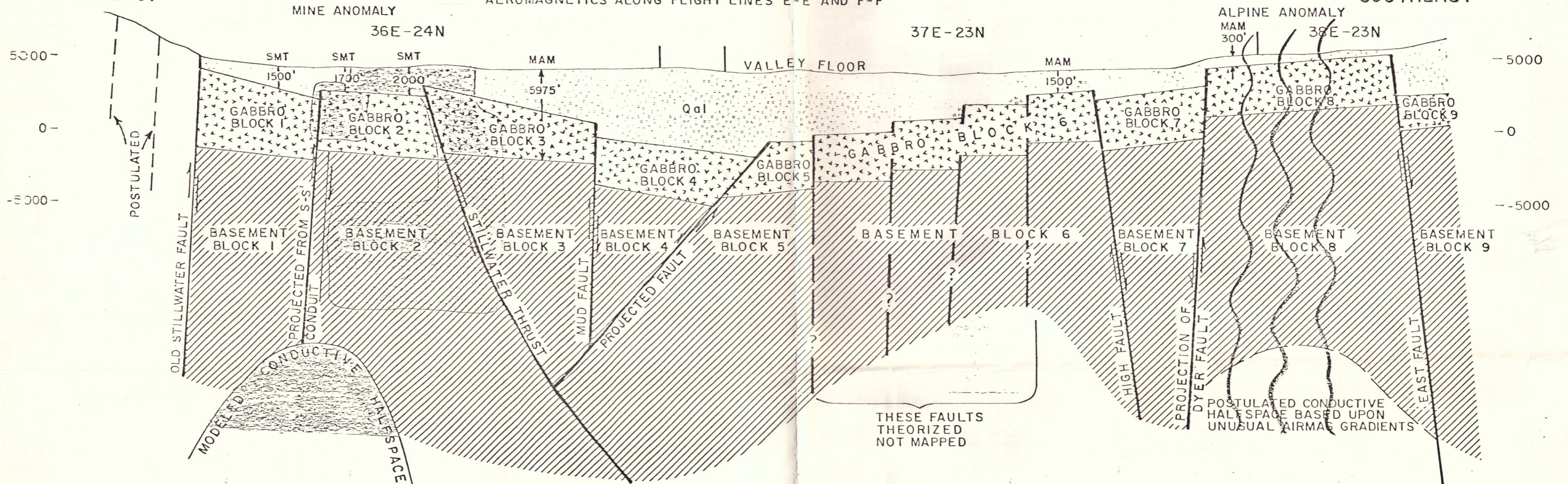
0 1 2 3
 MILES

SEVLUMON SCIENCES, INC.

A
NORTHWEST

IDEALIZED CROSS SECTION A-A', DIXIE VALLEY, NEVADA
DATA DERIVED FROM SCALAR MAGNETOTELLURICS AND MULTILEVEL
AEROMAGNETICS ALONG FLIGHT LINES E-E' AND F-F'

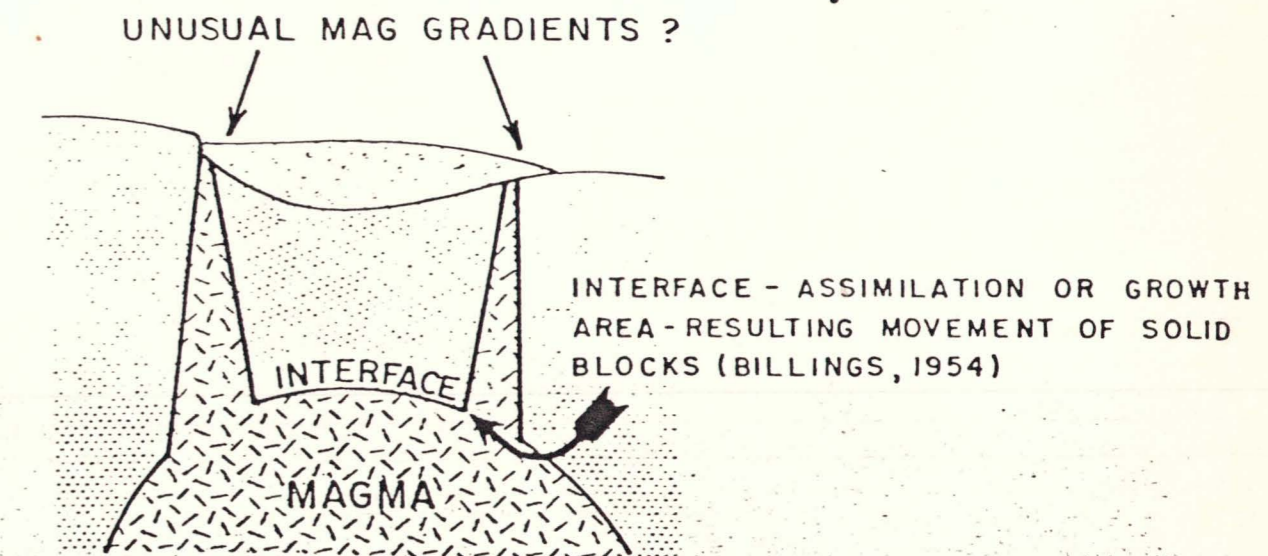
A'
SOUTHEAST



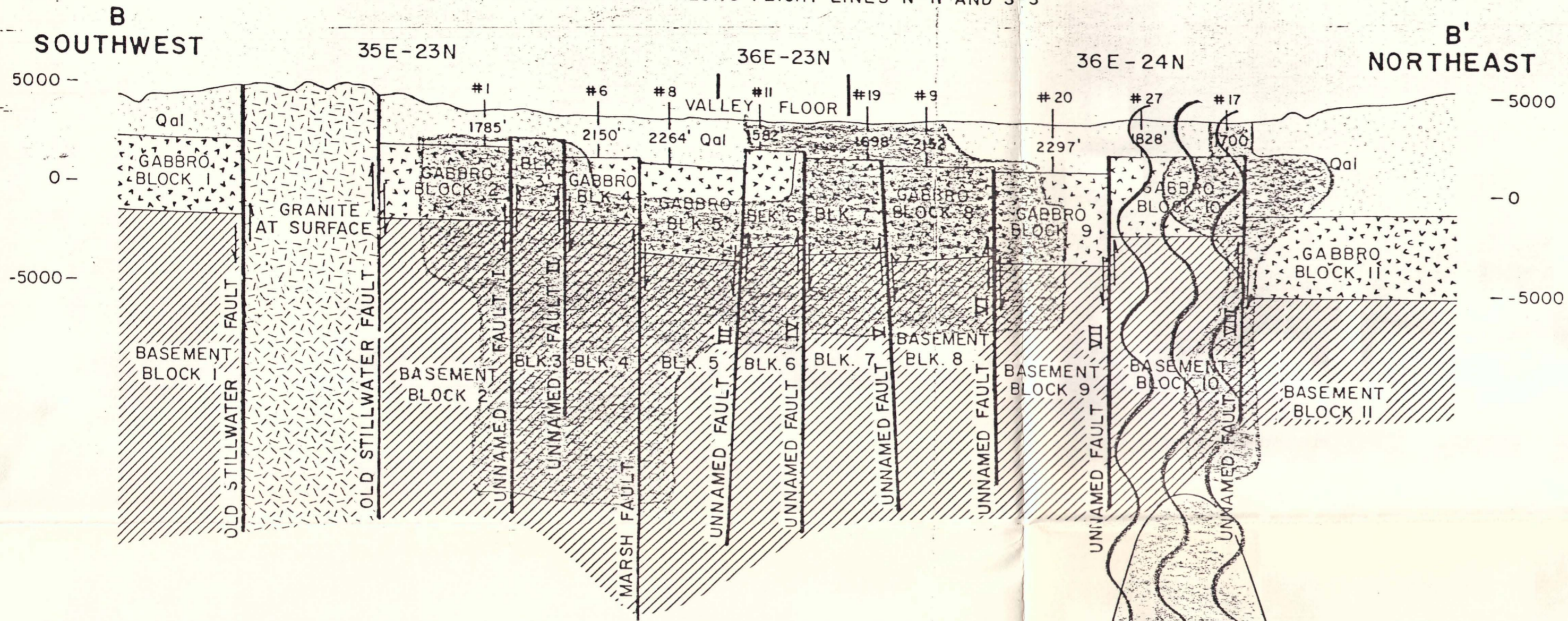
LEGEND

- HORIZONTAL AND VERTICAL SCALE: 1" = 1 MILE
 SMT: SCALAR MAGNETOTELLURICS
 MAM: MULTILEVEL AEROMAGNETICS
 OLD STILLWATER FAULT - ATTITUDE, MOTION AND POSITION MAPPED BY MAM
 PROJECTED FAULT FROM PROFILE S-S' - MOTION MAPPED BY MAM
 DEPTH TO GABBRO COMPLEX FROM SMT
 STILLWATER THRUST FAULT - ATTITUDE, MOTION AND POSITION MAPPED BY MAM
 DEPTH TO BASEMENT FROM MAM
 MUD FAULT - ATTITUDE, MOTION AND POSITION MAPPED BY MAM
 PROJECTED FAULT FROM A-A' EXTENSION - MOTION MAPPED BY MAM
 FOUR SECONDARY FAULTS - THEORIZED
 DEPTH TO GABBRO COMPLEX FROM MAM
 HIGH FAULT - MOTION AND POSITION MAPPED BY MAM
 DYER FAULT - PROJECTED INTO PROFILE - PROBABLY OBSCURED BY UNUSUAL GRADIENTS IN BASEMENT BLOCK 8, MOTION MAPPED BY MAM
 DEPTH TO GABBRO COMPLEX FROM MAM
 EAST FAULT - MOTION AND POSITION MAPPED BY MAM
- SMT CONDUCTIVE ANOMALIES
 MODELED CONDUCTIVE HALFSPACE DERIVED FROM SMT
 UNUSUAL MAGNETIC GRADIENTS MAPPED BY MAM

THESE FAULTS
THEORIZED
NOT MAPPED



IDEALIZED CROSS SECTION B-B', DIXIE VALLEY, NEVADA
 DATA DERIVED FROM SCALAR MAGNETOTELLURICS AND MULTILEVEL
 AEROMAGNETICS ALONG FLIGHT LINES N-N' AND S-S'



LEGEND

HORIZONTAL AND VERTICAL SCALE: 1" = 1 MILE

SMT: SCALAR MAGNETOTELLURICS

MAM: MULTILEVEL AEROMAGNETICS

OLD STILLWATER FAULT - MOTION AND POSITION MAPPED BY MAM (DETECTED TWICE)

DEPTH TO GABBRO COMPLEX AT SMT STATIONS AS NOTED

UNNAMED FAULT I - MOTION AND POSITION MAPPED BY MAM

UNNAMED FAULT II - MOTION AND POSITION MAPPED BY MAM

MARSH FAULT - ATTITUDE, MOTION AND POSITION MAPPED BY MAM

UNNAMED FAULT III - PROBABLY OBSCURED BY UNUSUAL GRADIENTS IN BASEMENT ALONG FLIGHT LINE S-S'


UNNAMED FAULT IV - MOTION AND POSITION MAPPED BY MAM

UNNAMED FAULT V - COINCIDES WITH INFLECTION POINT MAPPED BY MAM

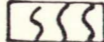
UNNAMED FAULT VI - COINCIDES WITH INFLECTION POINT MAPPED BY MAM

UNNAMED FAULT VII - PROBABLY OBSCURED BY UNUSUAL GRADIENTS IN BASEMENT

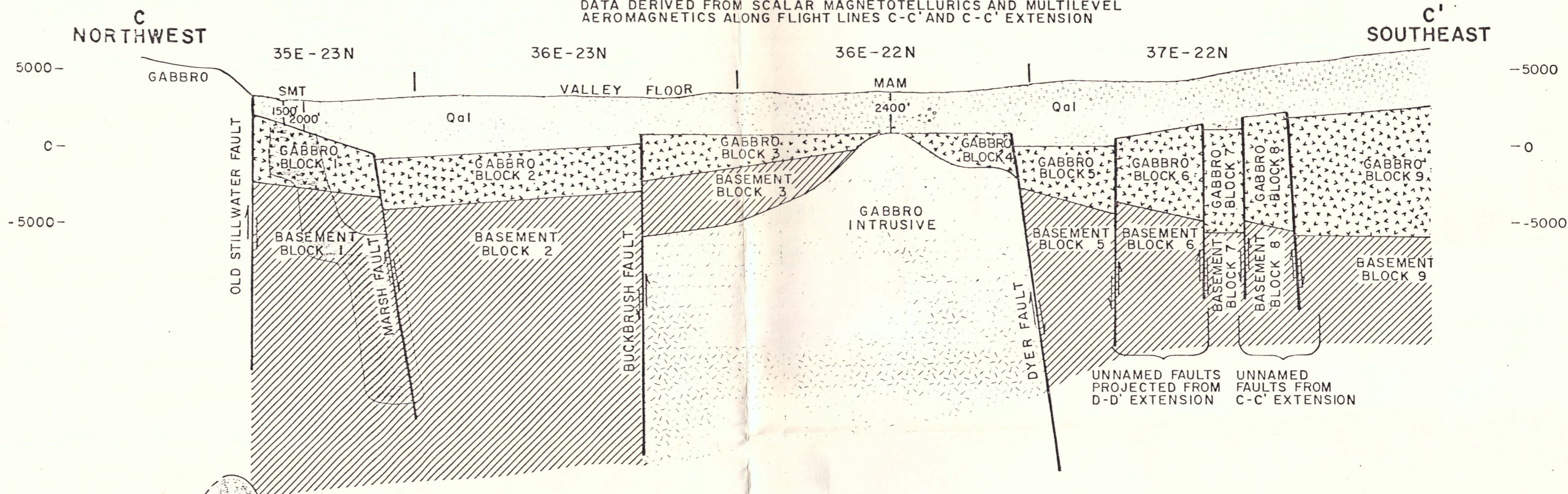
UNNAMED FAULT VIII - MOTION AND POSITION MAPPED BY MAM

 SMT CONDUCTIVE ANOMALIES

 MODELED CONDUCTIVE HALFSPACE DERIVED FROM SMT

 UNUSUAL MAGNETIC GRADIENTS MAPPED BY MAM

IDEALIZED CROSS SECTION C-C', DIXIE VALLEY, NEVADA
 DATA DERIVED FROM SCALAR MAGNETOTELLURICS AND MULTILEVEL
 AEROMAGNETICS ALONG FLIGHT LINES C-C' AND C-C' EXTENSION



LEGEND

HORIZONTAL AND VERTICAL SCALE: 1" = 1 MILE

SMT: SCALAR MAGNETOTELLURICS

MAM: MULTILEVEL AEROMAGNETICS

OLD STILLWATER FAULT - ATTITUDE, MOTION AND POSITION MAPPED BY MAM

DEPTH TO GABBRO COMPLEX FROM SMT

MARSH FAULT - ATTITUDE, MOTION AND POSITION MAPPED BY MAM


BUCKBRUSH FAULT - ATTITUDE, MOTION AND POSITION MAPPED BY MAM

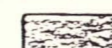
DEPTH TO GABBRO INTRUSIVE FROM MAM

DYER FAULT - ATTITUDE, MOTION AND POSITION MAPPED BY MAM

TWO UNNAMED FAULTS PROJECTED FROM D-D' EXTENSION - MOTION MAPPED BY MAM

TWO UNNAMED FAULTS FROM C-C' EXTENSION - MOTION AND POSITION MAPPED BY MAM

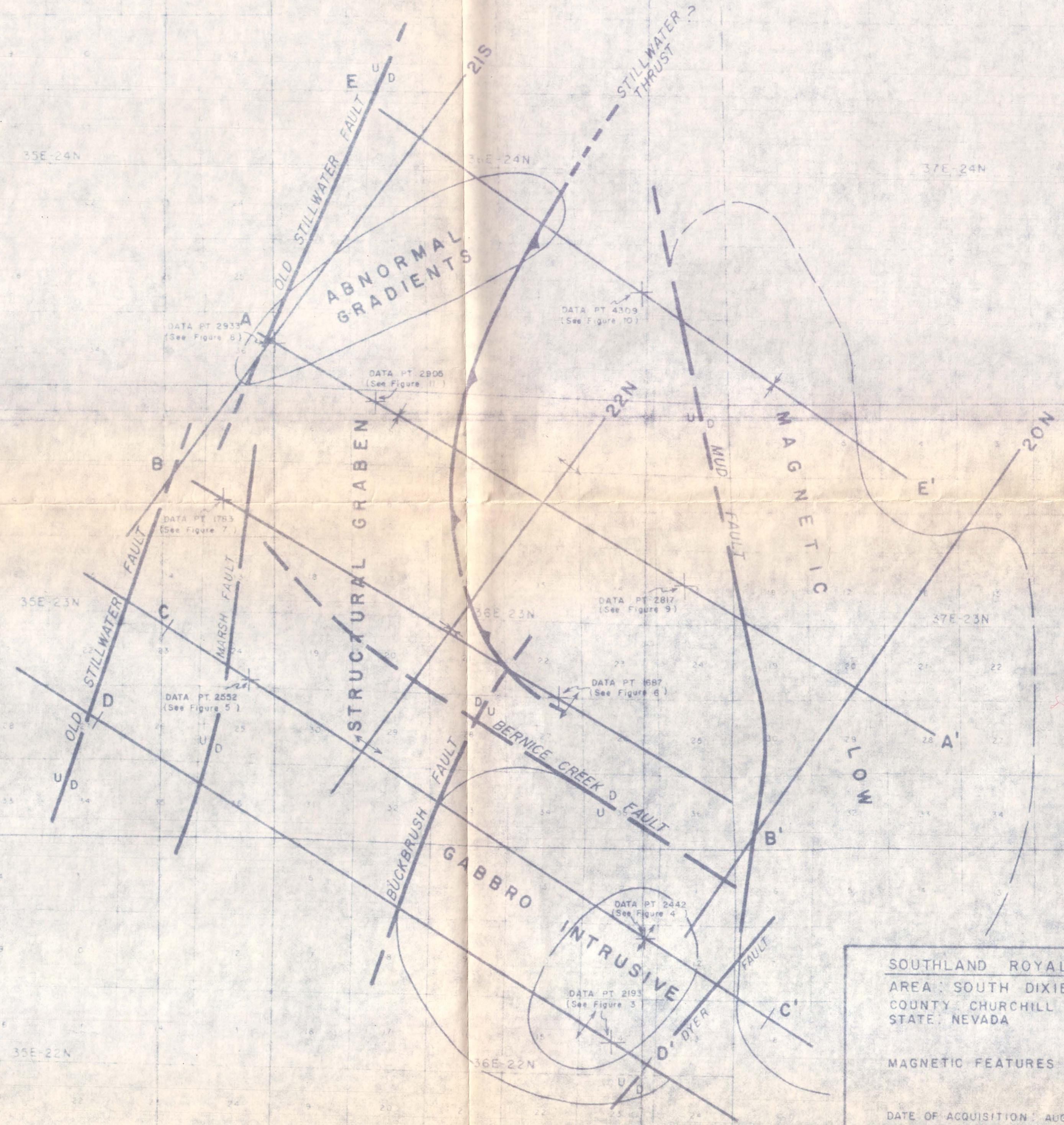
 SMT CONDUCTIVE ANOMALIES

 MODELED CONDUCTIVE HALFSPACE DERIVED FROM SMT

MODELED CONDUCTIVE
 HALFSPACE

LEGEND

- 20 N } SINGLE LEVEL TIE LINES
- 21 S }
- 22 N }
- A-A } MULTILEVEL CONGRUENT
- B-B } PROFILES
- C-C }
- D-D }
- E-E }
- FAULT
- STRUCTURAL HIGH
- STRUCTURAL LOW
- THRUST FAULT



SOUTHLAND ROYALTY CO.
 AREA: SOUTH DIXIE
 COUNTY: CHURCHILL
 STATE: NEVADA

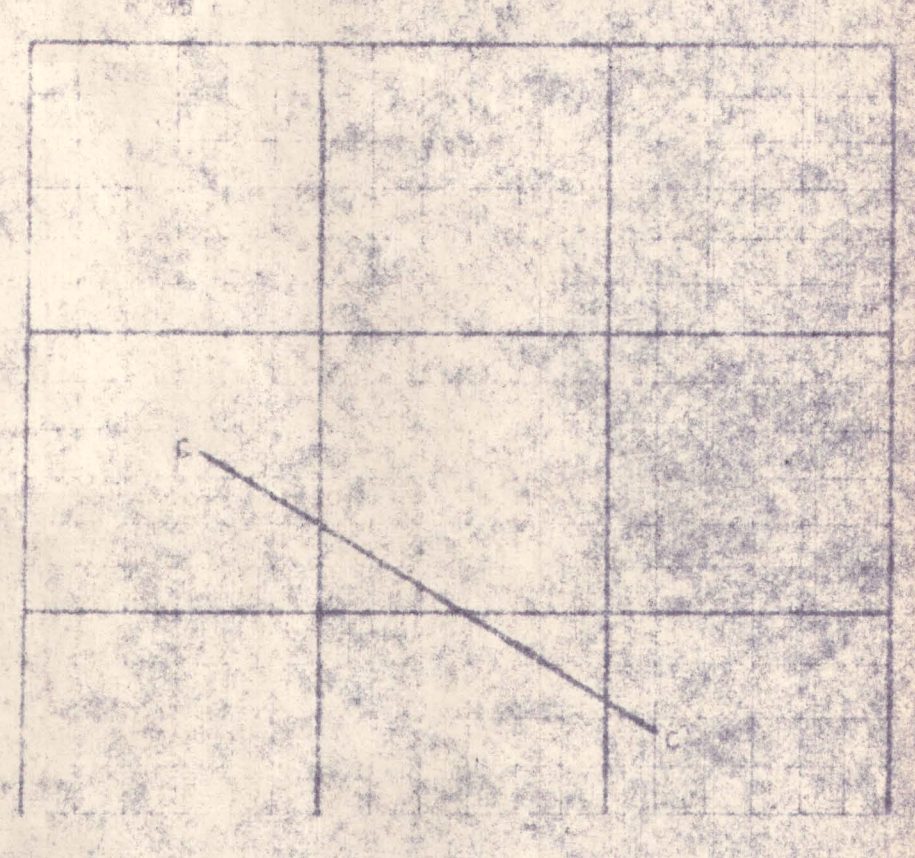
MAGNETIC FEATURES MAP

DATE OF ACQUISITION: AUGUST 25, 1977

0 1 2 3
 MILES

PLATE 1 SENTURION SCIENCES, INC

PROPERTY: ...
 STATE: ...
 DATE OF ACQUISITION: ...
 ...
 ...



SOUTHLAND ROYALTY CO.
 PLATE 3 - GEOL. SCIENCES, INC.



PROFILE	ELEVATION	DEPTH	DEPTH
100	6000	210	5500
200	5000	230	5000
300	4000	250	4500
400	3000	270	4000
500	2000	290	3500
600	1000	310	3000
700	0	330	2500
800	-1000	350	2000
900	-2000	370	1500
1000	-3000	390	1000
1100	-4000	410	500
1200	-5000	430	0

SECTION SCIENCE APPROPRIATE

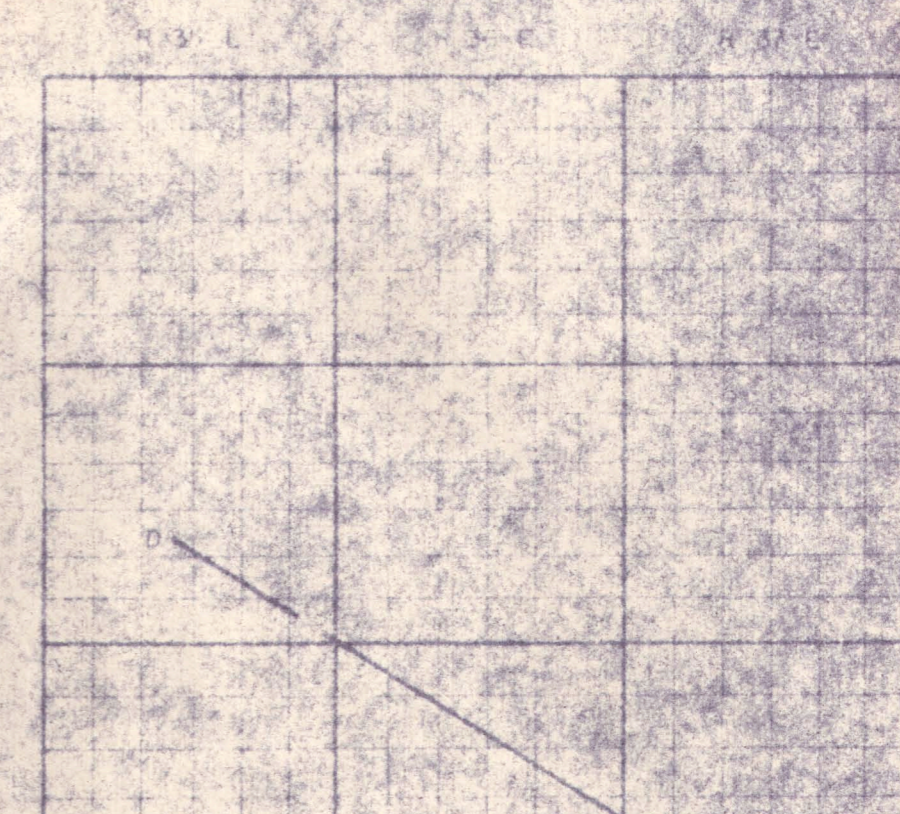
PROJECT: SOUTH DAKOTA

VERTICAL CONTROL: 1 EACH RODS 1000 FEET
MAGNETIC SCALE

MAP SCALE: GEOLOGIC IN ELEVATION
MAGNETIC SCALE

SYMBOLS:
XXXV'S
XXXXXX

AVERAGE SURFACE ELEVATION BUREAU PROFILE 7500 FT. MSL



SOUTHLAND ROYALTY CO.
PLATE 27 SOUTH DAKOTA

DEPTH	ELEVATION	N. OF	SCALE
0	5500	132	0.500
10	5500	132	0.500
20	5500	132	0.500
30	5500	132	0.500

NORTHWEST

sec 27

sec 26

sec 30

35E-25N

sec 36

sec 9

sec 5

sec 8

sec 10

sec 16

sec 14

SOUTHEAST

35E-22N



SECTION SCIENCE APPROPRIATE

(Small text at the bottom left corner)

***** VERTICAL GRADIENT MULTILEVEL GEOPHYSICAL PROFILE *****

PROJECT: 36E-24N

DATE: 4/25/77

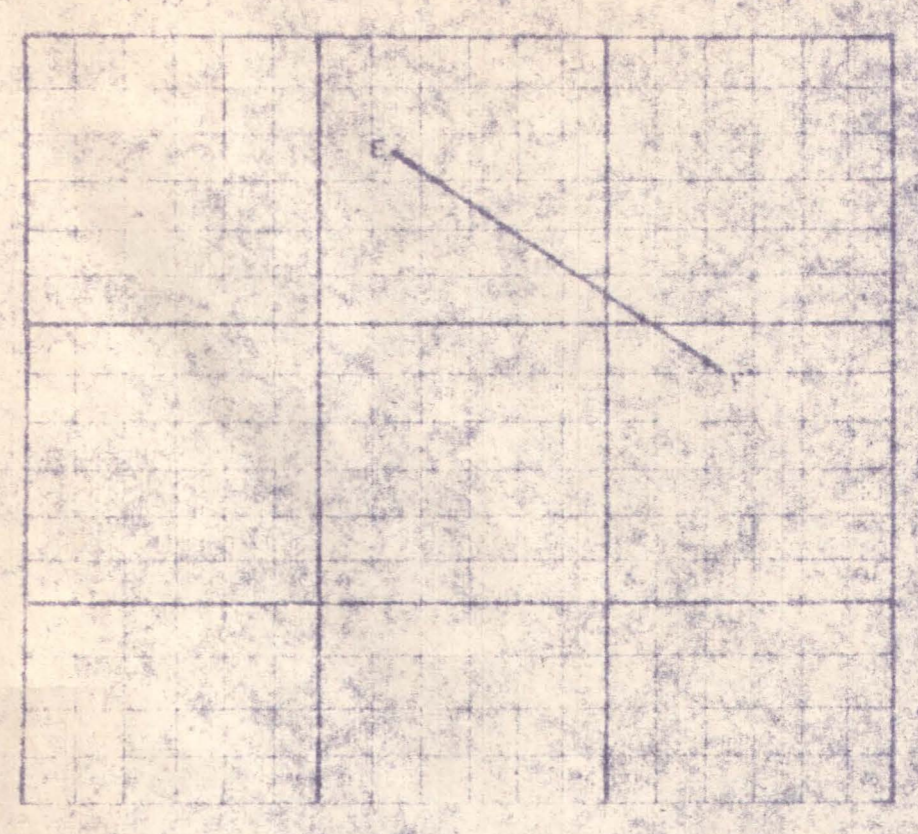
CROSS SECTION: 36E-24N

SCALE: HORIZONTAL - 1 INCH EQUALS 1 MILE
VERTICAL - 1 INCH EQUALS 1000 FEET

GRADIENT IDENTIFICATION:

5000 MSL MINUS 6000 MSL
7500 MSL MINUS 6000 MSL
10000 MSL MINUS 6000 MSL

AVERAGE SURFACE ELEVATION BENEATH PROFILE - 5000 FT. MSL



PROFILE	ELEVATION	NO. OF POINTS	SCALE FACTOR	CORRECTIONS START	CORRECTIONS STOP
1454	5000	157	0.200	0.0	0.0
1454	6000	157	0.200	0.0	0.0
1454	7500	157	0.200	0.0	0.0
1454	0	0	0.000	0.0	0.0

SOUTHLAND ROYALTY CO.
PLATE 6 - SEPTUORION SCIENCES, INC.

VALUES SHOWN ARE JAMES A. 14

NORTHWEST



36E - 24N

37E - 24N

37E - 23N

SOUTHEAST

END OF PROFILE

PROPERTY OWNERS

DATE OF ACQUISITION: 5/12/77

SCALE: 1" = 200'

TOWN & RANGE

SECTION

15 21 36 51 66 81 96 111 126 141 156 171 186 201 216 231 246 261 276 291 306 321 336 351 366 381 396 411 426 441 456 471 486 501 516 531 546 561 576 591 606 621 636 651 666 681 696 711 726 741 756 771 786 796 811 826 841 856 871 886 896 911 926 941 956 971 986 996 1011 1026 1041 1056 1071 1086 1096 1111 1126 1141 1156 1171 1186 1196 1211 1226 1241 1256 1271 1286 1296 1311 1326 1341 1356 1371 1386 1396 1411 1426 1441 1456 1471 1486 1496 1511 1526 1541 1556 1571 1586 1596 1611 1626 1641 1656 1671 1686 1696 1711 1726 1741 1756 1771 1786 1796 1811 1826 1841 1856 1871 1886 1896 1911 1926 1941 1956 1971 1986 1996 2011 2026 2041 2056 2071 2086 2096 2111 2126 2141 2156 2171 2186 2196 2211 2226 2241 2256 2271 2286 2296 2311 2326 2341 2356 2371 2386 2396 2411 2426 2441 2456 2471 2486 2496 2511 2526 2541 2556 2571 2586 2596 2611 2626 2641 2656 2671 2686 2696 2711 2726 2741 2756 2771 2786 2796 2811 2826 2841 2856 2871 2886 2896 2911 2926 2941 2956 2971 2986 2996 3011 3026 3041 3056 3071 3086 3096 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