85-813-14157

eldorado

ELDOR RESOURCES LIMITED

HEAD OFFICE: 255 Albert Street, Ottawa, Ontario

WESTERN DISTRICT OFFICE: 2115-11th St. W., Saskatoon, Sask.

Geological, Geophysical, Geochemical, and Diamond Drilling Report

HD1 to 4 Claim Group

Omineca Mining Division

NTS 93L/7E

Lat. 54°27'N, Long. 126°39'W

Owner and Operator: Eldor Resources Limited

GEOLOGICAL BRANCH ASSESSMENT REPORT

14,157

NOVEMBER 1985

R.D. CRUICKSHANK

ELDOR RESOURCES LIMITED

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I. INTRODUCTION

The centre of the Hilltop-HD claim group is located on Mt. Harry Davis, about 5 km north of the town of Houston, B.C. (Figure 1). Access to the area is provided by a road which leads to radio towers and an M.O.T. facility on top of the mountain. The road is easily accessible to two-wheel drive vehicles. Elevations on the property range from about 670 metres to about 1280 metres. Northern and eastern slopes of the mountain are very steep, but elsewhere gentler slopes predominate. Most of the area is forested, and no part of the group extends above timberline.

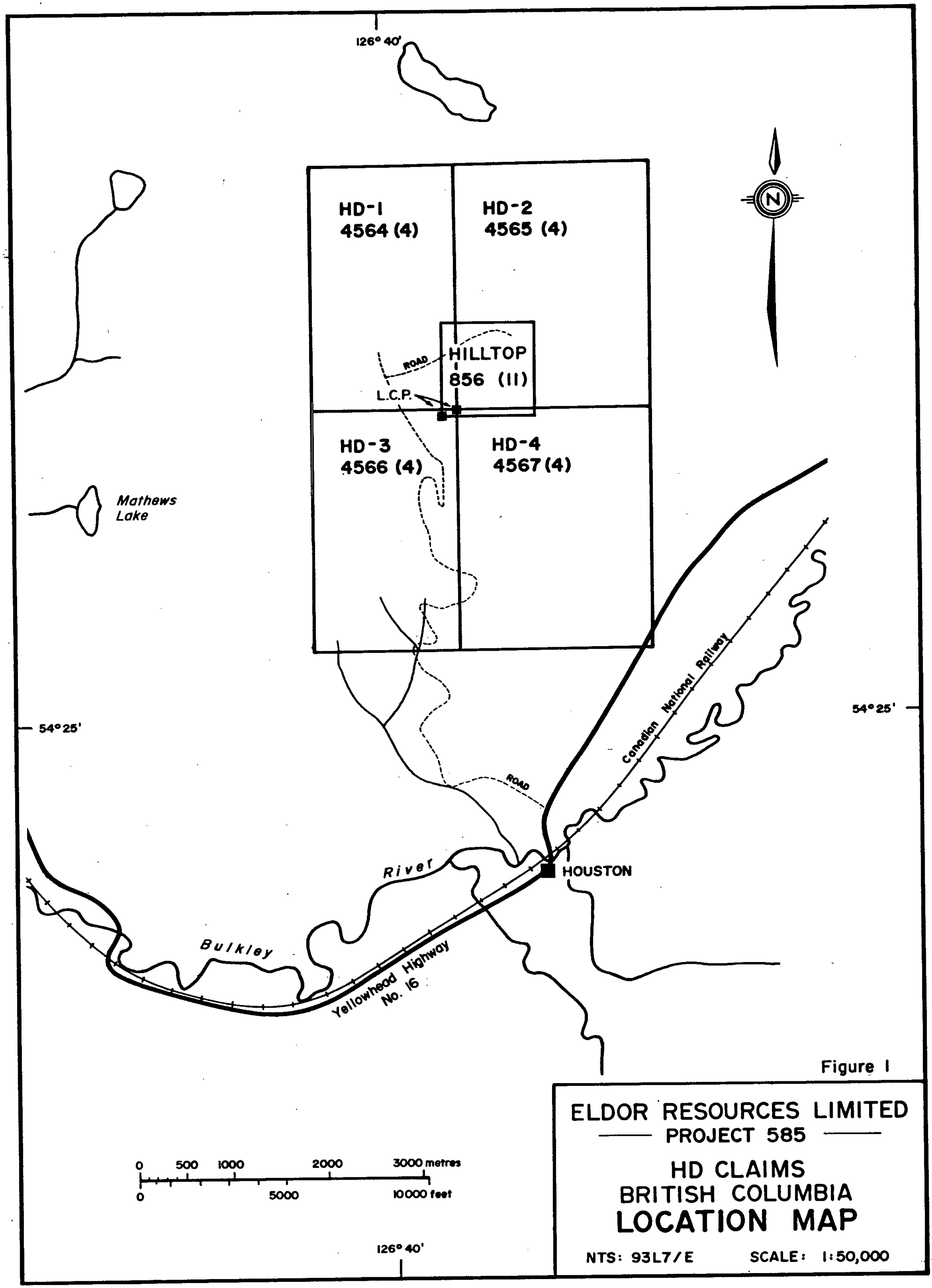
The property consists of five modified grid claims, as shown on Figure 1 and listed in Table 1. The HD 1 to 4 claims were staked over the pre-existing Hilltop claim.

TABLE 1
MINERAL CLAIMS

Claim Name	No. of Units	Date Recorded	Record No.
Hilltop	4	17 Nov. 1977	856
HD-1	15	21 April 1982	4564
HD-2	20	21 April 1982	4565
HD-3	15	21 April 1982	4566
HD-4	20	21 April 1982	4567

Eldor Resources Limited is the registered owner of these claims, which are being explored under the terms of an option agreement with Mr. J.W. Moll, Mr. D. Merkley, and Mrs. G. Merkley, all of Houston, B.C.

Mt. Harry Davis has been prospected by many individuals and companies over a period of several decades. The Hilltop-HD property was formerly optioned by the Endako Mines Division of Placer Development Limited. Some of their results have been reported in Bulmer and Peters (1981), and Bulmer, Peters, and Buckley (1982). Tipper (1976) shows the claims area to be underlain by volcanic rocks of the Telkwa Formation



126° 40'
HD-1
4564 (4)
HD-2
4565 (4)
HILLTOP
856 (11)
ROAD
L.C.P.
HD-3
4566 (4)
HD-4
4567 (4)
Mathews
Lake
54° 25'
54° 25'
Canadian National Railway
ROAD
HOUSTON
River
Bulkley
Yellowhead Highway
No. 16
0 500 1000 2000 3000 metres
0 5000 10000 feet
126° 40'
Figure 1
ELDOR RESOURCES LIMITED
PROJECT 585
HD CLAIMS
BRITISH COLUMBIA
LOCATION MAP
NTS: 93L7/E
SCALE: 1:50,000

(oldest part of the Jurassic Hazelton Group). The mountain is underlain principally by pyroclastic rocks of rhyolitic composition; lesser quantities of intermediate to mafic volcanics, and some related intrusive rocks also occur. Most previous exploration activity was attracted by fracture-controlled copper-silver occurrences. Some zinc-lead showings are also present; the appearance of some of these suggested a stratabound, volcanogenic origin, and led to Eldor's interest in the property. The present Eldor grid was designed to cover only the area of known zinc occurrences.

Work in 1984 consisted of a property inspection, a topographic survey (Cruickshank, 1984), and sampling of known occurrences. The topographic survey was performed in order to provide control for a proposed gravity survey. Appendix III of this report is a detailed analysis of the economic and gravity models, and the likely effectiveness of the gravity survey (prepared prior to the field season).

The 1985 field work consisted of a gravity survey (9.5 km at 10 m intervals); geological mapping at a scale of 1:2,000 (about 3.8 km^2); follow-up of two gravity anomalies with SP, VLF-EM, and soil sample surveys; limited additional rock sampling; and the completion of two short, "Winkie", diamond drill holes (total 45.8 m). All activities except drilling were conducted in the period June 20 to July 16, 1985; drilling was undertaken from August 22 to 26, 1985. Eldor personnel on the job consisted of P. Gudjurgis (geophysicist), who conducted the gravity survey and all pertinent calculations; and R.D. Cruickshank (project geologist) who handled all other tasks (with geophysical advice from P.G.), including drill supervision. The diamond drilling was performed with a Winkie drill and two-man crew, contracted from Van Alphen Exploration Services of Smithers, B.C.

Geological mapping and gravity surveying were conducted on all four HD claims (HD1, 2, 3, 4). One drill hole was completed on each of HD3 and HD4.

II. GEOLOGY

1. Regional Geology: Bedrock in the HD area is part of the Telkwa Formation (Lower Jurassic age), which is the lowest formation of the Hazelton Group. The Telkwa Formation consists of volcanic and sedimentary rocks related to island arc volcanism. Tipper and Richards (1976) assign rocks in the HD area to the "Babine Shelf Facies", which are transitional from non-marine volcanic rocks that underlie the Telkwa Range, 40 km to the west, to thick deposits of marine rocks in the vicinity of Babine Lake, some 50 km to the northeast. Rocks of the Babine Shelf Facies are described as "calc-alkaline basalt to rhyolite; subaerial and subaqueous flow, breccia, and tuff; limestone, greywacke, siltstone, and shale" (Tipper and Richards, 1976).

2. Mineralization

Two principal types of mineralization are present on the property: copper-silver-arsenic, and zinc-lead with enhanced (but uneconomic) gold-silver-moly. The copper-silver-arsenic showings have received almost all of the past exploration activities. At least one shaft was sunk on a copper occurrence in previous decades. Some copper showings have been plotted on the geology map (Figures 3 and 4); many more are present outside of the grid area. It is the author's conclusion that these Cu-Ag-As occurrences are small, fracture-controlled, and unlikely to be economic.

Zinc has several modes of occurrence. In the chert horizon exposed in the area known as the Hilltop Showings (Figure 4), Zn appears to be syngenetic. The chert is dark grey, finely crystalline (medium grain size about 50 microns, as seen in thin section), and varies from massive to laminated. Brown, honey-coloured sphalerite occurs as large (to several mm) irregular patches, which conform to the lamination, if present. Largish (1 mm) fluorite inclusions occur within the sphalerite. Discordant quartz or calcite veinlets (both ± sphalerite) are also present. Showings in the Hilltop area which are not hosted by chert are similar to the Switchback Showings (described below), but with more abundant fluorite.

At the Switchback area (Figure 4), zinc occurs in silicified pyroclastic rocks of rhyolitic affinities. In some of these rocks, faint outlines of pyroclasts are visible, and in others, the rock appears massive. Sphalerite occurs as disseminated ragged grains, usually less than 1 mm in diameter, and is usually rimmed by white mica. Rocks here contain a large number of very thin carbonate veinlets, which sometimes carry sphalerite. Secondary carbonate is also scattered through the matrix of these rocks. No thin sections of rocks from the Tower Showing (Figure 3) have been made, but in outcrop it appears similar to the Switchback area. Some rocks in the Tower area are a silicified tectonic breccia.

Zinc occurrences in the Baseline area (Figure 3) are clearly fracture controlled, and range from thin fracture coatings to a large calcite-sulphide vein several decimeters in width. A grab sample from a similar vein at 20+90E on line 32+00N (Figure 4) returned an analysis of about 28% Zn (Table II).

There is, therefore, a transition from apparently syngenetic zinc mineralization in a chert horizon, to clearly epigenetic zinc in quartz and carbonate veins. Disseminated sphalerite occurrences may be related to silicification of felsic pyroclastic and tectonic breccias.

3. Geological Mapping

(a) Introduction

The grid area was mapped at a scale of 1:2000; results are presented in Figures 3 and 4; the legend is included separately as Figure 2. This map covers only that part of the property known to have zinc showings. The designation of volcanic lithologies is based upon appearance in the field, upon petrography and whole rock analyses performed in the winter of 1984-85, and upon whole rock analyses of a few rocks collected during the summer mapping program (Table II). The legend (Figure 2) is very complete and descriptive, so only a brief description of the various rock units will be included here. The presence of numerous trenches put in by previous explorationists facilitated mapping in poorly exposed areas on the southern part of the grid.

(b) Lithologies

Most rocks exposed on Mt. Harry Davis belong to the Telkwa Formation of Lower Jurassic age. Virtually all are of volcanic origin.

Chert was found at only two locations, and the two are quite dissimilar. Chert at the Hilltop Showing (discussed previously) is dense, dark grey to almost black in colour, carries moderate to heavy sphalerite mineralization, and varies from massive to laminated. The other chert occurrence, near the east end of line 30+00N (Figure 4) is red, well laminated, contains laminations of felsic ash tuff, and is unmineralized. Chert therefore appears to be very restricted in occurrence. This lithology does not necessarily indicate submarine conditions; exhalative subaqueous cherts can also be present in a predominantly subaerial environment, as reported by Sillitoe, et. al. (1984) from a late Tertiary maar volcano in Papua-New Guinea.

TABLE II

WHOLE ROCK (Major Oxide) Analyses

ACME ANALYTICAL LABORATORIES LTD.
852 E. HASTINGS, VANCOUVER B.C.
PH: (604)253-3158 COMPUTER LINE:251-1011

DATE RECEIVED JULY 18 1985
DATE REPORTS MAILED July 24/85

GEOCHEMICAL ASSAY CERTIFICATE

SAMPLE TYPE : ROCK - CRUSHED AND PULVERIZED TO -100 MESH.
WHOLE ROCK RESULTS ARE DETERMINED BY ICP FROM .100 GM
SAMPLE FUSED BY LIBO2 AND DISOLVED BY 50 ML 5% HNO3.

ASSAYER T. Saundry . DEAN TOYE OR TOM SAUNDRY. CERTIFIED B.C. ASSAYER

ELDOR RESOURCES PROJECT 585 FILE# 85-1450

SAMPLE	SIO2 %	AL2O3 %	lithology
22706	73.15	11.37	rhyolite lappilli tuff
22707	67.27	14.42	dacite porphyry
22708	71.91	10.76	rhyolite laminated tuff
22709	70.66	13.02	rhyolite ash tuff
22710	61.44	14.79	andesitic tuff
22711	68.79	1.15	laminated chert
22713	66.56	14.14	dacite porphyry

Jurassic basalt occurs only at the extreme southeast corner of the grid area (Figure 4). Basalt is more common outside of the grid to the south, where it contains other copper showings.

The hematitic tuff unit ("Ht" on the map) is a very distinctive lithology. It is usually noticeably red in colour, and displays bedding, lamination, and/or preferred orientation of pyroclasts. It commonly contains accretionary lapilli. Whole rock analyses indicate that this unit is very siliceous (over 70% silica), and therefore of rhyolitic composition. All outcrops of this unit are polymictic pyroclastic rocks; most are ash or lapilli tuffs. These characteristics generally agree with Tipper and Richards (1976) criteria for sub-aerially-erupted Hazelton rocks. The well-defined bedding and apparent chilling of the outer layers of individual accretionary lapilli may indicate deposition in a lake or shallow sea.

A few beds or lenses of andesitic tuff are present. These are dark green, polymictic rocks in which bedding is occasionally discernable; both ash and lapilli tuffs are present. One whole rock analysis yielded results of about 61% SiO_2 and 15% Al_2O_3 (Table II), indicating andesitic composition.

Pale rhyolites are the most abundant rocks in the grid area, and are host to most of the zinc showings. A wide variety of sub-units were recognized, as can be seen by reference to the map legend (Figure 2). With few exceptions, these sub-units were not mappable over very great distances. A mappable body of coarse tuff (lapilli tuff and agglomerate) occurs along the north end of the baseline (Figure 3), and aphanitic varieties are locally mappable. Most outcrops are clearly pyroclastic in origin. The massive, aphanitic rocks (Rf) are more problematical, and may include dust tuffs, highly silicified coarser pyroclastics, or sub-volcanic intrusives. Analyses of rocks from this unit always produce SiO_2 contents of greater than 70% (Table II).

The dacite porphyry (Dp) is a very distinctive unit of uncertain origin. This rock has an aphanitic, dark grey matrix, with abundant euhedral white feldspar phenocrysts 1 to 2 mm in size. Close inspection of most outcrops also reveals the presence of angular, ash or lapilli-sized lithic fragments. The unit is therefore either a crystal-lithic tuff, or else a porphyry intrusion which contains a great many smallish inclusions. This rock is extremely uniform in appearance wherever found, and never displays bedding or preferred orientation of constituents; for these reasons, the author believes it to be an intrusive porphyry. The silica and alumina content of two rocks from this unit, from widely separated locations, are nearly identical: about 67% SiO_2 and 14% Al_2O_3 (Table II).

Dark green basalt or andesite dykes (unit Bd) are abundant but volumetrically insignificant. They probably belong to the Endako Group of Tertiary age.

Till (unit Q) has been mapped where exposed in road cuts or trenches, and approximate thickness indicated. Overburden is usually thin, being 1 m or less, but attains a maximum of greater than 5 m in a road cut at the extreme south end of the map area. Till in excess of 1 m thick only occurs on lower slopes of the mountain. An unstable slope of continually slumping glacio-fluvial material is present a few hundred metres east of the southern end of the grid.

c) Alteration

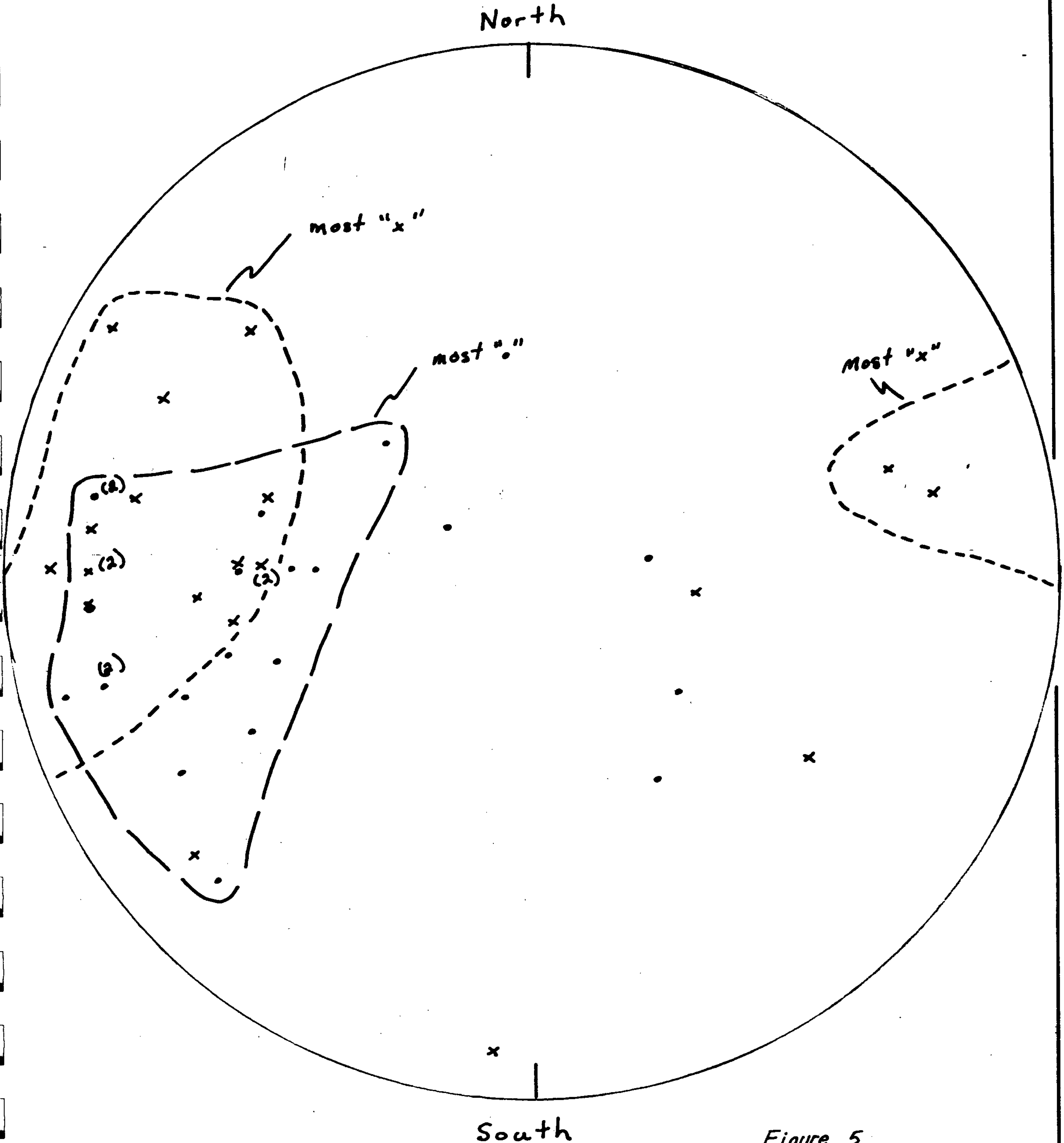
Silicification, and carbonitization (the later accompanied by numerous carbonate veinlets) were observed or inferred to occur at several locations, especially where zinc mineralization was present. However, argillic alteration or chloritization, such as might be expected to accompany volcanogenic massive sulphide deposits, was nowhere observed. Units mapped as chert are believed to be primary, and not due to silicification.

(d) Structural Geology

Folding is not believed to be important on a property scale. The steep dip of most bedding may have resulted from much larger, regional scale folds. However, minor folding has never been observed in outcrop, and none of the mappable units, when traced along strike, appear to be folded. A stereo plot of poles to bedding, and to preferred clast orientation (Figure 5), does not show the arcuate pattern that would result from concentric folding. Instead, most poles are scattered in an area indicating north to northwest strike, and steep, usually westerly dips. The observed scatter is best explained by relative rotation on faults. A few poles in the centre of the stereonet represent relatively flat-lying beds.

Faults on all scales are the most characteristic structural features on Mt. Harry Davis. Smaller faults observed in outcrop most commonly trend northerly, and dip steeply either east or west (Figure 6). Several such faults are indicated on the map. Fractures in this set are the most common sites for copper or zinc mineralization and carbonate veins.

Two major faults trending about 55^{o} to 60^{o} have been identified. The first crosses the access road at about 23+00N; it is marked by a prominent gully on both sides of the mountain, and is inferred to cut off several mapped lithological units (Figure 4). Drill hole 85HD-1 was drilled in this structure, revealing it to consist of breccia and several generations of quartz veins. The fault zone is several

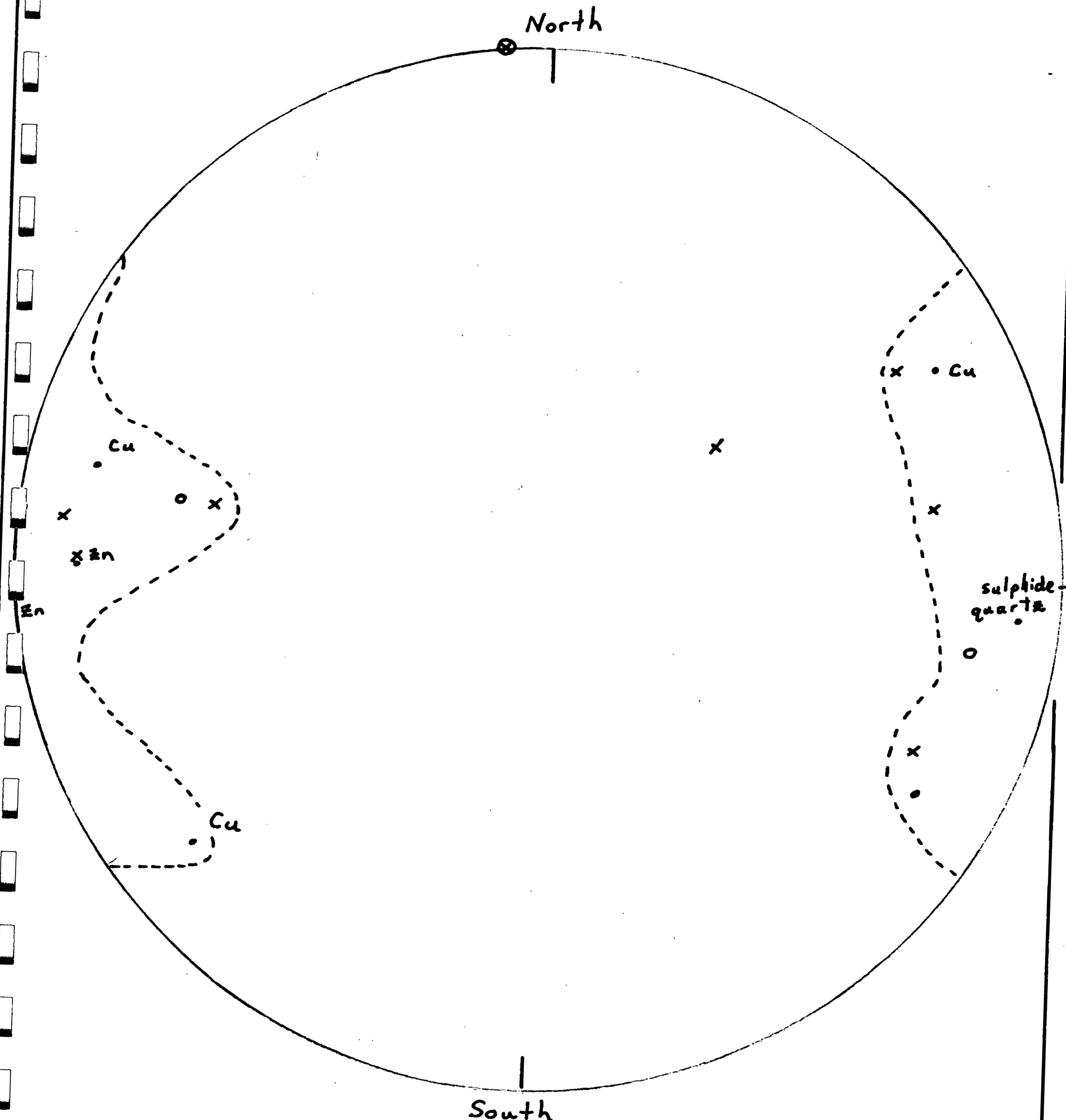


Legend
Lower hemisphere poles:
• bedding
x preferred orientation of pyroclasts
Stereographic (Wulff) Net

Figure 5

PROJECT 585 - HD CLAIMS
BRITISH COLUMBIA

ORIENTATION OF BEDDING SURFACES



Legend:
- • mineralised fracture
- × carbonate vein
- o fault

lower hemisphere poles
Stereographic (Wulff) Net

Figure 6

PROJECT 585 - HD CLAIMS
BRITISH COLUMBIA

ORIENTATION OF FAULTS, VEINS, AND MINERALIZED FRACTURES tens of metres wide. No slickensides were observed on any fault surfaces. This is interpreted to be a normal fault. The northern fault, with nearly identical strike, cuts the baseline at about 39+00N (Figure 3). The presence of this northern fault is indicated by the outcrop pattern of the dacite porphyry, and by local topography. Movement on this fault must have been largely vertical, as the dacite porphyry is much wider on the south side than on the north. The presence of two major normal faults in this area must have regional significance.

An extensive area of rocks displaying closely-spaced north-south shear fractures occurs west of the diorite porphyry contact between lines 38+00N and 46+00N.

(e) Rock Sampling

A number of rock samples were collected during the mapping program. Their locations are indicated on the geology maps, Figures 3 and 4. Most of the known showings had been sampled previously, so that these newer samples were principally collected in order to check on the tenor of mineralization in smaller showings. Results of the 30 element ICP + Au by fire assay - AA analyses are presented in Table III. Most of these samples were composite grab samples; all are from outcrop. Seven rocks were also analyzed for SiO_2 and Al_2O_3 content, as an aid in determining lithology; these are listed in Table II.

The three highest zinc values shown in the Table (samples 22701, 22704, and 22719), ranging from about 1.5% Zn to about 28% Zn, are all high grade grab samples from carbonate-sphalerite veins. Numbers 22703 (0.5% Zn) and 22705 (0.8% Zn) are rhyolite tuffs from the Baseline Showings

TABLE III
Rock Sample
Analyses

ACME ANALYTICAL LABORATORIES LTD. 852 E.HASTINGS ST.VANCOUVER B.C. V6A 1R6 PHONE 253-3158 DATA LINE 251-1011

GEOCHEMICAL ICP ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN.FE.CA.P.CR.MG.BA.TI.B.AL.NA.K.W.SI.ZR.CE.SN.Y.NB AND TA. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: ROCK CHIPS AU** ANALYSIS BY FA+AA FROM 10 GRAM SAMPLE. HG ANALYSIS BY FLAMLESS AA.

DATE RECEIVED: AUG 28 1985 DATE REPORT MAILED: Aug 30/85 ASSAYER. T. Saundry .DEAN TOYE OR TOM SAUNDRY. CERTIFIED B.C. ASSAYER

ELDOR RESOURCES PROJECT - 585 FILE # 85-2092 PAGE 1

SAMPLE#	Mo PPM	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Ni PPM	Co PPM	Mn PPM	Fe %	As PPM	U PPM	Au PPM	Th PPM	Sr PPM	Cd PPM	Sb PPM	Bi PPM	V PPM	Ca %	P %	La PPM	Cr PPM	Mg %	Ba PPM	Ti %	B PPM	Al %	Na %	K %	W PPM	Au** PPB	
22701	301	868	21182	263229	58.9	1	6	1131	.69	3	5	ND	1	16	1803	59	40	3	2.75	.02	15	1	.04	7	.01	2	.11	.01	.08	1	140	
22702	4	41	191	3526	.1	1	1	1297	1.05	5	5	ND	3	4	13	2	5	5	.23	.03	18	2	.12	10	.01	2	.18	.09	.02	1	3	
22703	9	48	734	5243	.7	3	10	4650	4.04	26	5	ND	1	6	19	2	3	25	.11	.06	7	4	.69	102	.01	2	1.22	.01	.14	1	11	
22704	16	16	1728	15848	5.2	1	2	44827	.65	5	5	ND	2	58	45	2	2	17	25.28	.01	2	1	.30	25	.01	2	.17	.01	.01	1	18	
22705	8	44	93	8526	.3	5	5	2962	1.93	2	5	ND	1	24	20	2	7	23	.61	.04	4	6	.56	49	.12	2	.99	.06	.06	1	10	
22706	2	5	37	1543	.1	1	3	3396	1.55	2	5	ND	1	9	5	2	2	10	1.30	.04	13	4	.38	196	.01	2	.72	.06	.09	1	2	
22707	1	1	24	169	.1	3	3	1568	1.93	2	5	ND	1	4	1	2	3	11	.70	.04	15	4	.19	58	.01	2	.53	.04	.16	1	1	
22708	5	391	210	388	1.1	3	3	1705	.69	225	5	ND	1	19	1	2	2	2	2.08	.03	15	3	.15	224	.01	2	.21	.01	.14	1	7	
22709	9	83	1494	1281	.3	1	4	2245	1.52	11	5	ND	1	8	3	2	3	8	.71	.03	17	1	.16	126	.01	2	.54	.02	.21	1	5	
22710	1	2	14	297	.1	17	10	3296	3.36	8	5	ND	1	45	1	2	2	46	1.42	.04	8	43	1.01	61	.05	3	1.51	.05	.14	1	21	
22711	2	3	27	134	.1	6	5	2893	2.62	13	5	ND	3	50	1	7	2	31	6.66	.03	2	4	1.35	12	.01	2	.06	.01	.02	1	1	
22712	2	1	18	106	.2	2	5	2416	3.07	14	5	ND	2	49	1	7	2	33	6.41	.02	2	3	1.39	28	.01	2	.05	.01	.02	1	1	
22713	2	1	13	118	.1	4	3	1609	1.84	2	5	ND	1	7	1	2	4	12	1.17	.04	11	4	.19	67	.01	2	.38	.02	.12	1	2	
22714	6	9	11	36	.1	1	3	471	.93	20	5	ND	1	3	1	2	4	1	.06	.02	8	1	.02	118	.01	2	.19	.01	.18	1	1	
22715	1	1	2	83	.1	3	2	828	1.14	5	5	ND	2	2	1	2	2	5	.11	.02	14	3	.18	39	.01	2	.44	.04	.12	1	2	
22716	1	1	7	52	.1	1	4	475	1.68	3	5	ND	1	21	1	2	3	17	.26	.03	5	4	.38	23	.10	2	.54	.06	.06	1	1	
22717	2	1	6	97	.1	2	3	1685	1.26	4	5	ND	1	6	1	2	3	6	.60	.04	18	3	.15	43	.01	2	.37	.06	.04	1	1	
22718	3	28	38	471	.1	8	10	4758	3.59	11	5	ND	1	21	1	2	2	45	3.27	.05	7	12	.69	246	.02	4	.38	.05	.11	1	1	
22719	16	468	3484	20342	5.3	16	17	6077	4.84	89	5	ND	1	18	98	2	3	62	3.79	.06	7	18	1.32	66	.01	4	.49	.05	.10	2	23	
22725	22	49	1702	7051	.5	2	4	1836	.86	19	5	ND	2	15	18	5	2	7	3.27	.03	7	1	.16	344	.01	2	1.37	.04	1.11	1	10	230
22726	325	148	6371	18921	9.9	2	13	1089	1.22	58	5	ND	1	7	92	28	2	10	.17	.06	13	3	.05	199	.01	2	.27	.02	.16	1	14	680

(Figure 3) with disseminated sphalerite. Besides containing 28% Zn, samples 22701 produced values of 2% Pb, 59 g/tonne Ag, 0.18% Cd, 59 ppm Sb, 40 ppm Bi, and 0.14 g/tonne Au; unfortunately, this sample is from a very narrow vein at 32+00N, 20+85E (Figure 4).

III. GRAVITY SURVEY

1. Rationale

The reasons for choosing the gravity method, calculation of mathematical models, and estimation of errors for this survey have all been discussed at length in a previous report (included here as Appendix III). That report concluded as follows:

> "It is concluded that further target definition by geophysical methods is desireable. Gravity is preferable to I.P. or E.M. methods because : (a) the target sphalerite mineralization may not be conductive, and (b) scattered, unrelated, fracture-controlled Cu showings would probably produce spurious anomalies. SP surveys may also be of value.
>
> It is further concluded that the proposed gravity survey has a good chance of discovering an economic zinc orebody if one is present. In fact, the survey as presently envisaged may be somewhat "over-specified", because the station spacing and terrain corrections may be more rigorous than required.
>
> The proposed station spacing is 10 m on profiles that are 200 m apart. This very close interval was selected so that a response from narrow orebodies (10 m or so) could be detected. The 200 m line spacing is reasonable since any orebody that may be present would be of variable width, grade, and depth below surface; therefore this interval increases the chance of discovery. The maximum number of gravity stations would be 2,050; this would be reduced if profiles in the north-east corner of the grid are eliminated because of extreme topography. It is hoped to have all latitude, terrain, free air, and Bouger corrections calculated prior to the field season, in order to expedite the daily data reductions.

It may be argued that calculating the terrain effect of the outer Hammer zones is unnecessary. The effect of these zones on individual profiles would certainly be negligible. However, the grid is large enough (3.8 km long in a north-south direction) that there would be some effect over the area as a whole. The principal reason for calculating the effect of all of the Hammer zones would be to improve the quality of a gravity map of the entire grid. This is admittedly a secondary priority, but as all calculations will be performed by computer, the additional cost would probably not be significant.

Finally, it should be emphasized that the chances of discovering an orebody with gravity methods increase in proportion to the economic value of the deposit. If a near-surface economic orebody occurs in the grid area, it should be detectable."

2. Method

All gravity surveying and correction was done by an Eldor Resources Limited geophysicist, P. Gudjurgis. Calculation of terrain corrections was contracted to Geoterrex Limited, of Ottawa, Ontario. Terrain corrections were based upon the topographic survey conducted by Eldor Resources in October, 1984 (Cruickshank, 1984), and upon a 1:5000 scale topographic map taken from Peters, Bulmer, and Buckley (1982); without such good topographic control, the gravity survey would have been meaningless. Tidal corrections were obtained from the Gravity Division of the Department of Energy, Mines, and Resources in Ottawa.

A gravity base station was established on a rock outcrop near the road junction at about 11+95E, 31+30N. This station was read at the beginning and end of each day. Field procedure was to walk quickly down the line to be surveyed, collecting 5 or 6 readings en route; this established a few points that would have little drift effect among them, and that could be repeated during routine surveying on the return trip. When returning back along the line, stations were read at 10 m intervals. All readings were corrected for scale constant, tripod height, drift, tidal effect, elevation, latitude, Bouger gravity, and terrain. Readings taken on different days were normalized according to base station readings on the respective days. The specific gravity employed in calculation of the Bouger and terrain corrections was 2.60, a value considered representative of unmineralized rhyolite from this area, based on specific gravity determinations conducted the preceding winter (Appendix III). Gravity profiles were hand-plotted in the field.

A LaCoste and Romberg model "G" gravity meter (serial number 333), rented from Enertec Geophysical Services Limited, was employed in this survey. This was a replacement for a similar instrument, rented from a different firm, that was found to create repeatability problems. All data presented here was acquired with number 333.

A total of about 950 gravity stations were read, some of them several times. Repeats were generaly less than .05 mgal. Nails placed in the ground during the elevation survey were nearly always still present; if a nail was missing, then the station was missed. Missing stations on the profiles may be due to this cause, or else because an obviously spurious reading was obtained. Most of these rare spurious values are probably attributable to erroneous terrain corrections. Time was insufficient to survey all grid lines. The southern part of the grid was emphasized because of the presence of more zinc showings, and gentler topography.

3. Results

Gravity profiles are presented in Figures 7 to 19; Figure 20 is a stacked profile of all surveyed lines. All gravity values have had 4920 mgal subtracted; ie. a value of 7.90 was 4927.90 mgal in the field calculation. In general, the data are very smooth, indicating that potential sources of error have been controlled properly. All profiles show a gravity gradient trending to lower values to the east, regardless of topography. This reflects a regional trend of lower values to the southeast (Figure 20). Corrected gravity data are included as Appendix I of this report.

This survey was seeking short wave-length anomalies (Appendix III). A number of these were detected, and are listed in Table IV. The chert occurrence with Zn mineralization occurs between lines 30+00N and 32+00N; unfortunately neither of these lines showed a related anomaly. Gravity anomalies in proximity to zinc showings are present only on lines 20+00N and 48+00N. The two "definite" anomalies listed in Table IV were selected for further investigation.

TABLE IV
HD - POSITIVE GRAVITY ANOMALIES

Definite Anomalies

LINE	FROM	TO	PEAK	PEAK AMPLITUDE (mgals)	COMMENTS
24N	16+20E	17+30E	16+80 - 17+00E	.20 mgal	near fault
38N	14+20E	14+90E	14+40 - 14+60E	.15 mgal	poss. b/r high?

Possible Anomalies

LINE	FROM	TO	PEAK	PEAK AMPLITUDE (mgals)	COMMENTS
18N	18+50E	19+20E	18+80E	.10 mgal	
20N	15+40E	16+50E	16+10E	.10 mgal	switchback Shwg
22N	14+10E	14+70E	14+50E	.10 mgal	near fault
22N	17+00E	17+30E	17+10E	.10 mgal	weak
28N	16+60E	17+10E	16+90E	.10 mgal	very weak
30N	11+50E	11+90E?	11+70E	.15 mgal	2 bad readings on flank
48N	18+90E	19+80E	19+30E	.10 mgal	near Zn Shwg.
48N	24+00E	25+10E	24+50E	.10 mgal	very weak

IV. ANOMALY FOLLOW-UP

1. Introduction

Two of the gravity anomalies were selected for further investigation. This consisted of prospecting and sampling adjacent outcrops, soil sampling, SP surveys, VLF-EM surveys, and in one instance, diamond drilling.

2. Anomaly on Line 38+00N

This anomaly occurs between about 14+20E and 14+90E. This occurs between an outcrop of quartz-rich rhyolite ash tuff to the west, and hematitic lapilli tuff to the east. Neither outcrop displays noticeable alteration, mineralizaton, or structure, and rock samples (numbers 22715 and 22716 on Table III) failed to produce interesting analyses. Soil sample (Figure 21 and Table V) and VLF-EM surveys were also negative, but a weak SP low is present between about 14+10E and 14+70E (Figure 22). In light of these results, it was concluded that no further investigation was justified, and the gravity result remains unexplained.

3. Anomaly on Line 24+00N

This anomaly was investigated in a similar manner. Zinc in soil results and soil sample locations are shown in Figure 21, and other analytical results listed in Table V. Results of SP and VLF-EM surveys are shown on Figure 22.

This anomaly, between about 16+30 and 17+20E, occurs in proximity to a major fault zone (Figures 4 and 11), and a smaller anomaly is also present on line 22+00N where crossed by the fault (Figure 10). A zinc showing is present where the fault zone crosses the access road (samples 22718 and 22719, Figure 4 and Table III), and Cu stain was noted on an outcrop immediately to the west of the anomaly (Figure 4).

TABLE V
SOIL SAMPLE
Analyses Page 1

ACME ANALYTICAL LABORATORIES LTD.
852 E.HASTINGS ST.VANCOUVER B.C. V6A 1R6
PHONE 253-3158 DATA LINE 251-1011

DATE RECEIVED: JULY 18 1985

DATE REPORT MAILED: July 24/85

GEOCHEMICAL ICP ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN.FE.CA.P.CR.MG.BA.TI.B.AL.NA.K.W.SI.ZR.CE.SN.Y.NB AND TA. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: P1-2 -80 MESH SOILS P3-ROCKS AU* ANALYSIS BY AA FROM 10 GRAM SAMPLE.

ASSAYER: T. Saundry DEAN TOYE OR TOM SAUNDRY. CERTIFIED B.C. ASSAYER

ELDOR RESOURCES PROJECT - 585 FILE # 85-1450 PAGE 1

SAMPLE#	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Cd PPM	Au* PPB
585-40B-1	15	26	339	.1	1	1
585-40B-2	16	19	222	.1	1	1
585-40B-3	11	13	266	.1	2	1
585-40B-4	15	10	192	.1	1	2
585-40B-5	13	12	111	.2	1	2
585-40B-6	10	16	162	.1	1	6
585-40B-7	11	11	92	.2	1	4
585-40B-8	9	10	95	.2	1	4
585-40B-9	11	13	115	.1	1	3
585-40B-10	7	5	102	.1	1	3
585-40B-11	23	27	331	.3	2	2
585-40B-12	27	30	304	.2	1	2
585-40B-13	32	14	252	.1	1	1
585-40B-14	67	18	494	.2	2	2
585-40B-15	15	16	220	.1	1	2
585-40B-16	22	19	733	.1	1	2
585-40B-17	54	26	1540	.3	6	1
585-40B-18	22	21	439	.1	1	1
585-40B-19	121	39	480	.2	2	2
585-40B-20	14	10	248	.1	1	1
585-40B-21	87	22	226	.1	1	2
585-40B-22	42	9	93	.1	1	3
585-40B-23	9	14	167	.1	1	6
585-40B-24	11	11	153	.1	1	3
585-40B-25	11	13	179	.1	1	2
585-40B-26	67	14	344	.1	1	3
585-40B-27	11	11	189	.1	1	2
585-40B-28	39	22	266	.1	1	3
585-40B-29	17	16	336	.1	2	2
585-40B-30	14	15	289	.1	1	2
585-40B-31	12	12	100	.1	1	2
585-40B-32	14	12	184	.1	1	3
585-40B-33	11	10	52	.1	1	1
585-40B-34	11	10	62	.1	1	2
585-40B-35	16	8	111	.1	1	2
585-40B-36	11	10	99	.1	1	2
STD C/AU 0.5	58	41	135	7.2	17	485

TABLE V
SOIL SAMPLE
Analyses

ELDOR RESOURCES PROJECT - 585 FILE # 85-1450

SAMPLE#	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Cd PPM	Au* PPB
585-40B-37	13	15	87	.2	1	1
585-40B-38	17	15	113	.3	1	1
585-40B-39	10	20	91	.1	1	2
585-40B-40	10	16	117	.1	1	1
585-40B-41	16	15	150	.2	1	1
585-40B-42	8	10	52	.2	1	2
585-40B-43	10	15	102	.2	1	1
585-40B-44	16	13	108	.1	1	1
585-40B-45	17	17	101	.1	1	2
585-40B-46	8	15	62	.1	1	3
STD C/AU 0.5	60	44	132	7.2	19	480

SP and VLF-EM both failed to produce coincident anomalies (Figure 22), but there is a partially coincident Zn in soil response (Figure 21). Because of the apparent coincidence of interesting structure and soil geochemistry with the gravity anomaly, it was decided to test this area with two shallow "Winkie" diamond drill holes. This work is discussed in the next section of this report.

4. Diamond Drilling

Two diamond drill holes were completed in order to test the gravity anomaly on line 24+00N, discussed in section IV.3. above. The drill and two-man crew were contracted from Van Alphen Exploration Services of Smithers, B.C. Figure 23 is a section through both drill holes; analytical results are tabulated in Table VI , and drill logs comprise Appendix II of this report. Hole 85HD-1 was collared at 24+00N, 17+15E; and hole 85HD-2 on the same line at 16+60E. Both holes were drilled at a vertical angle of -45° and an azimuth of 270°.

The first hole was completed at 29.2 m after being entirely drilled in the major fault zone. Core recovery was poor. Recovered rocks consisted mainly of siliceous tectonic breccia with several generations of quartz veins, and much clay gouge. The hole was unmineralized, except for traces of pyrite, and analytical results were all negative (Table VI). Two intervals of intermediate dykes were also intersected.

Hole 85HD-2, completed to 16.6 m, encountered fractured rhyolite, with numerous veinlets of white, grey, rose, and amethystine quartz, and calcite. the few sulphides present were mainly pyrite in quartz veinlets. A chloritized mafic dyke was also encountered. The entire drill hole was submitted for analysis, with negative results (Table VI).

This gravity anomaly remains unexplained.

TABLE VI
DRILL CORE
Analyses

ACME ANALYTICAL LABORATORIES LTD. 852 E.HASTINGS ST.VANCOUVER B.C. V6A 1R6 PHONE 253-3158 DATA LINE 251-1011

GEOCHEMICAL ICP ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN.FE.CA.P.CR.MG.BA.TI.B.AL.NA.K.W.SI.ZR.CE.SN.Y.NB AND TA. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: ROCK CHIPS AU** ANALYSIS BY FA+AA FROM 10 GRAM SAMPLE. HG ANALYSIS BY FLAMLESS AA.

DATE RECEIVED: AUG 28 1985 DATE REPORT MAILED: Aug 30/85 ASSAYER. T. Saundry .DEAN TOYE OR TOM SAUNDRY. CERTIFIED B.C. ASSAYER

ELDOR RESOURCES PROJECT - 585 FILE # 85-2092 PAGE 1

Drill Hole 85HD-1

SAMPLE#	Mo PPM	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Ni PPM	Co PPM	Mn PPM	Fe %	As PPM	U PPM	Au PPM	Th PPM	Sr PPM	Cd PPM	Sb PPM	Bi PPM	V PPM	Ca %	P %	La PPM	Cr PPM	Mg %	Ba PPM	Ti %	B PPM	Al %	Na %	K %	W PPM	Au** PPB	Hg PPB
22727	4	76	52	683	.2	5	10	3761	2.01	25	5	ND	1	22	3	2	2	5	2.10	.05	5	4	.38	58	.01	3	.26	.01	.16	4	4	50
22728	3	154	39	252	.3	2	9	2507	1.31	34	5	ND	1	19	1	2	2	2	1.66	.04	10	1	.23	47	.01	2	.26	.01	.16	1	2	50
22729	1	79	11	29	.1	2	6	2082	.98	33	5	ND	1	19	1	2	2	1	1.42	.04	11	2	.27	58	.01	2	.22	.02	.14	1	1	30
22730	1	6	5	29	.1	1	2	2802	1.29	6	5	ND	1	37	1	2	2	2	2.07	.03	14	1	.38	682	.01	3	.25	.02	.14	1	1	20
22731	2	3	8	29	.1	4	5	4590	1.87	6	5	ND	2	64	1	2	2	9	6.46	.08	7	1	.30	1081	.01	3	.44	.01	.12	1	2	20
22732	1	3	15	59	.1	4	5	4958	2.46	5	5	ND	1	40	1	2	2	15	6.16	.09	9	1	.30	91	.01	2	.40	.01	.11	1	1	30
22733	2	6	8	46	.1	9	6	5104	2.36	2	5	ND	2	48	1	2	2	9	4.01	.10	8	4	.78	65	.01	2	.33	.03	.13	1	1	20
22734	3	6	20	234	.2	42	17	7271	5.25	4	5	ND	1	81	1	2	3	43	5.83	.10	6	43	1.86	67	.01	3	.64	.01	.17	1	1	20
22735	5	3	4	28	.1	2	3	3460	1.51	6	5	ND	1	29	1	2	2	2	3.37	.03	3	3	.49	24	.01	2	.22	.04	.07	1	2	30
22736	5	3	19	100	.2	3	9	12947	4.85	2	5	ND	2	115	1	2	5	3	9.43	.01	4	1	1.72	11	.01	2	.07	.01	.04	1	2	20

Drill Hole 85HD-2

SAMPLE#	Mo PPM	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Ni PPM	Co PPM	Mn PPM	Fe %	As PPM	U PPM	Au PPM	Th PPM	Sr PPM	Cd PPM	Sb PPM	Bi PPM	V PPM	Ca %	P %	La PPM	Cr PPM	Mg %	Ba PPM	Ti %	B PPM	Al %	Na %	K %	W PPM	Au** PPB	Hg PPB
22741	2	8	12	49	.1	1	3	891	1.50	23	5	ND	1	8	1	2	2	3	.52	.03	15	2	.16	38	.01	2	.21	.05	.08	1	2	40
22742	2	9	4	53	.1	3	2	1119	1.54	5	5	ND	1	10	1	2	2	4	.75	.03	14	1	.20	48	.01	2	.22	.05	.11	1	1	20
22743	1	27	5	37	.1	3	2	1063	.99	2	5	ND	1	10	1	2	2	1	.91	.02	13	1	.27	29	.01	2	.22	.03	.10	25	1	30
22744	1	9	3	64	.2	3	4	1569	1.50	2	5	ND	1	19	1	2	2	2	1.33	.02	9	1	.53	40	.01	2	.24	.04	.10	1	1	30
22745	2	10	20	642	.2	102	23	4940	6.86	2	5	ND	1	37	1	2	5	79	3.84	.03	7	111	2.18	22	.01	3	1.95	.02	.09	2	1	40

V. CONCLUSIONS

It is unlikely that a large, near-surface, massive zinc deposit is present on that part of the claims covered by the gravity survey. Results of the gravity survey are largely negative, especially considering that the two best anomalies were investigated and found wanting. The zinc in chert occurrence at the Hilltop Showings is very interesting, but no other similar occurrence has been located, and no gravity anomalies are present on the adjacent grid lines. Argillic or chloritic alteration that should accompany the volcanogenic type of deposit do not appear to be present in this area. The vast majority of zinc showings are clearly epigenetic in origin.

To obtain a clearer picture of zinc mineralization in this area, the coincident Zn showings - gravity anomalies on lines 20+00N and 48+00N, and the Hilltop chert-zinc occurrence would have to be tested by drilling.

There are many mineral showings on this property. It is possible that it may attract the attention of explorationists interested in some other deposit model. However, the specific type of deposit sought by Eldor is unlikely to occur in the area covered by our grid.

VI. RECOMMENDATIONS

It is recommended that no further work be undertaken on this property, primarily because further indications of massive sulphide mineralization were not located by this field program.

Respectfully submitted,

R Douglas Cruickshank

R. Douglas Cruickshank

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VII. BIBLIOGRAPHY

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VIII. COST STATEMENT

R.D. Cruickshank (Project Geologist) and P. Gudjurgis (Geophysicist) were in Houston from June 20 to July 16, 1985 (inclusive); Cruickshank returned for the Winkie drill program from August 21 to 26, (inclusive). This is a total of 60 man-days in the field area.

Field Costs

Room, board, gasoline, supplies	$ 4,360.93
Truck rental	607.50
Shipping costs (samples, instruments)	314.82
Telephone (long distance charges)	114.68
Geophysical costs:	
- calculation of terrain corrections (Geoterrex)	4,640.00
- gravity meter rental (Airbourne)	700.00
- gravity meter rental (Enertec)	3,000.00
- SP meter rental (McPhar)	410.50
Laboratory analyses:	
- 46 soils at $8.60 ea.	395.60
- 14 drill core at $17.50 ea.	241.50
- 21 outcrop at $17.50 ea.	362.25
- 7 whole rock at $7.00 ea.	49.00
Salaries and burden (60 man-days x $230)	13,800.00
Drilling (5 days at $650)	3,250.00

Office Costs

Analysis of gravity method, preparation, reporting (R.D. Cruickshank): 30 days x $230	6,900.00
TOTAL	$40,146.78

IX. AUTHOR'S QUALIFICATIONS

I, Roy Douglas Cruickshank, of #60-1 Columbia Drive, Saskatoon, Saskatchewan, hereby certify as follows:

1. That I am a graduate of the University of Calgary, in Calgary, Alberta, with a B.Sc. (hons.) degree in geology in 1969, and an M.Sc. degree (metamorphic petrology) in 1976.

2. That, since 1969, I have practised my profession as an exploration geologist in Saskatchewan, Alberta, British Columbia, Yukon, N.W.T., Ontario, Quebec, Western Australia, and Spain.

3. That I have been employed by Eldor Resources Limited as an exploration geologist continuously for the past nine years.

4. That I am a fellow of the Geological Association of Canada, and a member of the Canadian Institute of Mining and Metallurgy.

R Douglas Cruickshank

R.Douglas Cruickshank
Project Geologist

APPENDIX I

HD CLAIMS 1985 GRAVITY RESULTS

APPENDIX I

HD Claims 1985 Gravity Results

North	East	Elev. meters	Corrected Grav. mgal
1600.00	1160.00	1013.16	8.06
1600.00	1170.00	1014.68	8.00
1600.00	1180.00	1015.83	8.00
1600.00	1200.00	1017.72	8.01
1600.00	1210.00	1018.75	7.98
1600.00	1220.00	1019.44	8.06
1600.00	1230.00	1020.26	8.06
1600.00	1240.00	1021.21	8.09
1600.00	1250.00	1022.65	8.09
1600.00	1260.00	1024.37	8.07
1600.00	1270.00	1026.20	8.06
1600.00	1280.00	1028.14	8.04
1600.00	1310.00	1034.52	7.93
1600.00	1320.00	1036.74	7.83
1600.00	1330.00	1038.75	7.75
1600.00	1340.00	1040.63	7.68
1600.00	1350.00	1042.29	7.68
1600.00	1360.00	1043.88	7.66
1600.00	1370.00	1045.92	7.59
1600.00	1380.00	1047.11	7.63
1600.00	1390.00	1049.75	7.58
1600.00	1400.00	1051.02	7.58
1600.00	1410.00	1052.56	7.56
1600.00	1420.00	1054.70	7.49
1600.00	1430.00	1056.92	7.47
1600.00	1440.00	1059.64	7.44
1600.00	1450.00	1062.46	7.40
1600.00	1460.00	1065.38	7.36
1600.00	1470.00	1068.41	7.30
1600.00	1490.00	1075.03	7.15
1600.00	1500.00	1077.77	7.10
1600.00	1510.00	1080.96	7.08
1600.00	1520.00	1084.12	7.06
1600.00	1530.00	1087.61	7.00
1600.00	1540.00	1090.87	7.02
1600.00	1550.00	1095.59	7.02
1600.00	1560.00	1100.93	6.97
1600.00	1570.00	1106.49	6.93
1600.00	1580.00	1111.66	6.91
1600.00	1590.00	1116.24	6.83
1600.00	1600.00	1120.84	6.79
1600.00	1610.00	1125.51	6.63
1600.00	1620.00	1129.66	6.69
1600.00	1630.00	1132.53	6.63
1600.00	1640.00	1133.70	6.64
1600.00	1650.00	1133.39	6.67
1600.00	1660.00	1133.71	6.72
1600.00	1670.00	1133.43	6.74
1600.00	1680.00	1133.03	6.72
1600.00	1690.00	1131.95	6.75
1600.00	1700.00	1130.77	6.72
1600.00	1710.00	1129.15	6.77
1600.00	1720.00	1126.30	6.70
1600.00	1730.00	1126.37	6.62
1600.00	1740.00	1125.24	6.65
1600.00	1750.00	1123.96	6.64
1600.00	1760.00	1122.74	6.59
1600.00	1770.00	1120.39	6.63
1600.00	1780.00	1117.96	6.59
1600.00	1790.00	1114.42	6.57
1600.00	1800.00	1110.06	6.58
1600.00	1810.00	1106.95	6.60
1600.00	1820.00	1104.42	6.51
1600.00	1830.00	1101.47	6.51
1600.00	1840.00	1097.85	6.52

Note: all values have had 4920 mgal subtracted from the calculated value (ie 8.00 was originally 4928.00)

1600.00	1850.00	1095.48	6.47
1600.00	1860.00	1093.87	6.48
1600.00	1870.00	1093.47	6.43
1600.00	1880.00	1092.34	6.40
1600.00	1890.00	1089.77	6.38
1600.00	1900.00	1086.64	6.36
1600.00	1910.00	1082.21	6.31
1600.00	1920.00	1077.23	6.31
1600.00	1930.00	1074.06	6.28
1600.00	1940.00	1072.29	6.20
1600.00	1950.00	1070.42	6.20
1600.00	1960.00	1067.77	6.20
1600.00	1970.00	1064.08	6.17
1600.00	1980.00	1063.34	6.08
1600.00	1990.00	1059.65	6.11
1600.00	2000.00	1057.85	6.06
1600.00	2010.00	1056.70	6.07
1600.00	2020.00	1055.50	6.04
1600.00	2030.00	1054.76	6.02
1600.00	2040.00	1054.41	5.96
1600.00	2050.00	1053.33	5.98
1600.00	2060.00	1050.94	5.96
1600.00	2070.00	1048.78	5.93
1600.00	2080.00	1046.30	5.90
1600.00	2090.00	1043.28	5.88
1600.00	2100.00	1040.16	5.79
1800.00	1160.00	1062.07	7.88
1800.00	1170.00	1065.60	7.85
1800.00	1180.00	1068.88	7.82
1800.00	1190.00	1072.25	7.75
1800.00	1200.00	1074.87	7.79
1800.00	1210.00	1077.84	7.80
1800.00	1220.00	1079.96	7.77
1800.00	1230.00	1082.25	7.75
1800.00	1250.00	1086.44	7.72
1800.00	1260.00	1088.23	7.65
1800.00	1270.00	1090.35	7.59
1800.00	1280.00	1090.29	7.59
1800.00	1290.00	1089.00	7.61
1800.00	1300.00	1087.72	7.60
1800.00	1320.00	1085.32	7.62
1800.00	1330.00	1084.52	7.57
1800.00	1340.00	1084.61	7.56
1800.00	1350.00	1085.58	7.51
1800.00	1360.00	1087.71	7.43
1800.00	1370.00	1089.61	7.37
1800.00	1380.00	1090.93	7.36
1800.00	1400.00	1095.95	7.33
1800.00	1420.00	1103.16	7.24
1800.00	1430.00	1106.41	7.28
1800.00	1440.00	1111.00	7.26
1800.00	1450.00	1115.49	7.25
1800.00	1460.00	1119.19	7.25
1800.00	1470.00	1123.12	7.21
1800.00	1480.00	1127.94	7.10
1800.00	1490.00	1130.54	7.08
1800.00	1500.00	1134.23	7.08
1800.00	1510.00	1138.01	7.06
1800.00	1520.00	1143.00	6.95
1800.00	1530.00	1146.47	6.95
1800.00	1540.00	1150.81	6.94
1800.00	1550.00	1154.51	6.96
1800.00	1560.00	1157.48	6.93
1800.00	1570.00	1159.98	6.91
1800.00	1580.00	1163.06	6.92
1800.00	1590.00	1165.02	6.85
1800.00	1600.00	1166.20	6.87
1800.00	1610.00	1165.95	6.87
1800.00	1620.00	1166.01	6.84
1800.00	1630.00	1165.67	6.83
1800.00	1650.00	1160.87	6.84
1800.00	1660.00	1157.24	6.84
1800.00	1680.00	1153.94	6.82
1800.00	1690.00	1152.66	6.85
1800.00	1700.00	1150.63	6.81

1800.00	1710.00	1148.25	6.82
1800.00	1720.00	1146.82	6.75
1800.00	1730.00	1145.31	6.76
1800.00	1740.00	1143.57	6.81
1800.00	1750.00	1140.32	6.77
1800.00	1760.00	1136.53	6.76
1800.00	1770.00	1133.51	6.78
1800.00	1780.00	1132.16	6.70
1800.00	1790.00	1131.25	6.68
1800.00	1800.00	1129.19	6.70
1800.00	1810.00	1126.03	6.73
1800.00	1820.00	1122.43	6.72
1800.00	1830.00	1120.73	6.64
1800.00	1850.00	1113.91	6.71
1800.00	1860.00	1109.42	6.72
1800.00	1870.00	1104.36	6.74
1800.00	1880.00	1098.60	6.80
1800.00	1890.00	1093.21	6.80
1800.00	1900.00	1087.51	6.75
1800.00	1910.00	1083.73	6.77
1800.00	1920.00	1083.50	6.70
1800.00	1930.00	1082.90	6.60
1800.00	1940.00	1083.86	6.44
1800.00	1950.00	1084.54	6.40
1800.00	1960.00	1085.67	6.33
1800.00	1970.00	1085.44	6.33
1800.00	1980.00	1083.92	6.35
1800.00	1990.00	1080.51	6.32
1800.00	2000.00	1076.33	6.41
1800.00	2010.00	1071.92	6.48
1800.00	2020.00	1067.41	6.54
1800.00	2030.00	1064.09	6.58
1800.00	2040.00	1059.80	6.56
1800.00	2050.00	1055.45	6.62
1800.00	2060.00	1052.35	6.60
1800.00	2070.00	1050.95	6.53
1800.00	2080.00	1049.94	6.48
1800.00	2090.00	1047.10	6.50
1800.00	2100.00	1042.74	6.52
2000.00	1460.00	1144.93	7.36
2000.00	1470.00	1146.20	7.31
2000.00	1480.00	1146.59	7.27
2000.00	1490.00	1145.69	7.23
2000.00	1510.00	1145.00	7.18
2000.00	1520.00	1146.16	7.19
2000.00	1530.00	1148.86	7.18
2000.00	1540.00	1153.88	7.22
2000.00	1560.00	1162.78	7.22
2000.00	1580.00	1167.28	7.22
2000.00	1590.00	1169.95	7.23
2000.00	1600.00	1171.98	7.22
2000.00	1610.00	1174.17	7.25
2000.00	1620.00	1177.49	7.22
2000.00	1630.00	1179.07	7.18
2000.00	1640.00	1178.98	7.15
2000.00	1650.00	1177.61	7.12
2000.00	1660.00	1175.98	7.08
2000.00	1670.00	1173.98	7.04
2000.00	1680.00	1172.83	7.06
2000.00	1690.00	1170.45	7.05
2000.00	1700.00	1167.13	7.03
2200.00	1210.00	1096.96	8.14
2200.00	1220.00	1100.50	8.13
2200.00	1230.00	1103.00	8.10
2200.00	1240.00	1105.80	8.11
2200.00	1250.00	1108.14	8.07
2200.00	1260.00	1109.74	8.06
2200.00	1270.00	1111.32	8.01
2200.00	1280.00	1112.90	7.99
2200.00	1290.00	1113.88	7.97
2200.00	1300.00	1115.04	7.91
2200.00	1310.00	1116.06	8.01
2200.00	1320.00	1117.71	7.98
2200.00	1330.00	1118.68	7.98
2200.00	1350.00	1122.99	7.96

2200.00	1360.00	1124.64	7.95
2200.00	1370.00	1126.21	7.98
2200.00	1380.00	1127.66	7.94
2200.00	1390.00	1128.33	7.93
2200.00	1400.00	1129.41	7.89
2200.00	1410.00	1130.65	7.94
2200.00	1420.00	1131.62	7.95
2200.00	1430.00	1132.56	7.96
2200.00	1440.00	1133.71	7.95
2200.00	1450.00	1134.80	7.95
2200.00	1460.00	1136.03	7.90
2200.00	1470.00	1138.31	7.76
2200.00	1480.00	1139.95	7.76
2200.00	1490.00	1142.15	7.72
2200.00	1500.00	1144.96	7.78
2200.00	1510.00	1148.40	7.63
2200.00	1520.00	1152.71	7.57
2200.00	1530.00	1157.56	7.58
2200.00	1540.00	1161.58	7.56
2200.00	1550.00	1165.96	7.55
2200.00	1560.00	1170.18	7.53
2200.00	1580.00	1179.53	7.51
2200.00	1610.00	1187.47	7.38
2200.00	1620.00	1190.49	7.37
2200.00	1630.00	1190.78	7.32
2200.00	1640.00	1189.02	7.35
2200.00	1650.00	1187.37	7.29
2200.00	1660.00	1185.70	7.25
2200.00	1670.00	1185.00	7.26
2200.00	1680.00	1181.16	7.29
2200.00	1690.00	1175.50	7.27
2200.00	1700.00	1170.04	7.32
2200.00	1710.00	1166.44	7.38
2200.00	1720.00	1165.42	7.33
2200.00	1730.00	1166.34	7.25
2200.00	1740.00	1167.18	7.18
2200.00	1750.00	1166.09	7.20
2200.00	1760.00	1165.30	7.19
2200.00	1770.00	1165.13	7.11
2200.00	1780.00	1164.37	7.12
2200.00	1790.00	1161.28	7.19
2200.00	1800.00	1157.76	7.20
2200.00	1810.00	1152.66	7.20
2200.00	1820.00	1149.87	7.41
2400.00	1180.00	1118.26	8.39
2400.00	1190.00	1122.55	8.35
2400.00	1210.00	1129.76	8.37
2400.00	1220.00	1131.80	8.37
2400.00	1230.00	1133.83	8.42
2400.00	1240.00	1135.92	8.45
2400.00	1250.00	1138.81	8.44
2400.00	1260.00	1141.74	8.39
2400.00	1270.00	1144.53	8.37
2400.00	1280.00	1148.96	8.25
2400.00	1290.00	1153.81	8.26
2400.00	1300.00	1159.14	8.17
2400.00	1310.00	1164.46	8.15
2400.00	1320.00	1170.06	8.13
2400.00	1330.00	1176.57	8.15
2400.00	1340.00	1181.84	8.02
2400.00	1350.00	1186.12	8.04
2400.00	1360.00	1189.84	8.05
2400.00	1370.00	1194.07	8.04
2400.00	1380.00	1197.38	8.07
2400.00	1400.00	1201.22	7.99
2400.00	1410.00	1203.35	8.00
2400.00	1420.00	1205.18	7.97
2400.00	1430.00	1207.12	7.97
2400.00	1440.00	1208.51	7.95
2400.00	1460.00	1208.74	7.98
2400.00	1470.00	1207.22	7.92
2400.00	1480.00	1206.72	7.93
2400.00	1490.00	1207.32	7.87
2400.00	1510.00	1207.10	7.88
2400.00	1520.00	1207.27	7.86

2400.00	1530.00	1207.76	7.84
2400.00	1540.00	1207.93	7.86
2400.00	1550.00	1207.02	7.84
2400.00	1560.00	1208.02	7.83
2400.00	1570.00	1209.23	7.79
2400.00	1580.00	1210.58	7.73
2400.00	1590.00	1210.92	7.70
2400.00	1600.00	1209.45	7.70
2400.00	1610.00	1206.81	7.70
2400.00	1620.00	1204.90	7.71
2400.00	1630.00	1200.69	7.79
2400.00	1640.00	1196.66	7.84
2400.00	1650.00	1193.32	7.87
2400.00	1660.00	1190.20	7.86
2400.00	1670.00	1186.88	7.87
2400.00	1680.00	1183.31	7.91
2400.00	1690.00	1178.66	7.84
2400.00	1700.00	1175.10	7.94
2400.00	1710.00	1173.04	7.90
2400.00	1720.00	1171.86	7.86
2400.00	1740.00	1171.20	7.69
2400.00	1750.00	1171.11	7.67
2400.00	1760.00	1171.70	7.62
2400.00	1770.00	1172.44	7.55
2400.00	1780.00	1171.80	7.55
2400.00	1790.00	1171.00	7.49
2400.00	1800.00	1172.60	7.36
2400.00	1810.00	1172.00	7.31
2400.00	1820.00	1169.88	7.33
2400.00	1830.00	1167.15	7.33
2400.00	1840.00	1164.30	7.29
2400.00	1850.00	1161.36	7.21
2400.00	1860.00	1156.16	7.29
2400.00	1870.00	1152.95	7.25
2400.00	1880.00	1151.98	7.15
2400.00	1890.00	1150.60	7.14
2400.00	1900.00	1146.22	7.21
2400.00	1910.00	1141.87	7.18
2400.00	1920.00	1141.20	7.09
2400.00	1930.00	1141.40	7.07
2400.00	1940.00	1142.03	7.04
2400.00	1950.00	1142.83	6.99
2400.00	1960.00	1143.37	6.99
2400.00	1980.00	1141.33	6.96
2400.00	1990.00	1139.13	6.90
2400.00	2000.00	1137.30	6.84
2400.00	2010.00	1136.67	6.85
2400.00	2020.00	1136.20	6.88
2400.00	2030.00	1134.54	6.85
2400.00	2050.00	1132.16	6.85
2400.00	2060.00	1129.68	6.81
2400.00	2070.00	1127.28	6.79
2400.00	2080.00	1126.02	6.76
2400.00	2090.00	1123.19	6.77
2400.00	2100.00	1120.20	6.78
2600.00	1380.00	1220.35	8.28
2600.00	1390.00	1220.66	8.40
2600.00	1400.00	1220.82	8.37
2600.00	1410.00	1219.97	8.38
2600.00	1420.00	1220.45	8.37
2600.00	1430.00	1221.30	8.36
2600.00	1440.00	1221.54	8.32
2600.00	1450.00	1221.28	8.31
2600.00	1460.00	1217.69	8.31
2600.00	1470.00	1214.90	8.29
2600.00	1480.00	1215.83	8.28
2600.00	1490.00	1217.86	8.24
2600.00	1500.00	1217.92	8.21
2600.00	1510.00	1216.97	8.17
2600.00	1520.00	1216.39	8.19
2600.00	1530.00	1219.77	8.07
2600.00	1540.00	1219.52	8.11
2600.00	1550.00	1219.25	8.06
2600.00	1560.00	1220.19	8.06
2600.00	1570.00	1218.98	8.03

2600.00	1580.00	1218.47	8.03
2600.00	1590.00	1219.30	8.04
2600.00	1600.00	1217.34	8.04
2600.00	1610.00	1214.00	8.03
2600.00	1620.00	1212.60	7.96
2600.00	1630.00	1210.55	7.94
2600.00	1640.00	1210.85	7.94
2600.00	1660.00	1209.76	7.96
2600.00	1670.00	1209.52	7.94
2600.00	1680.00	1207.93	7.93
2600.00	1690.00	1206.85	7.88
2600.00	1700.00	1209.43	7.94
2600.00	1710.00	1209.62	7.92
2600.00	1720.00	1209.63	7.86
2600.00	1730.00	1211.79	7.85
2600.00	1740.00	1211.23	7.81
2600.00	1750.00	1210.54	7.84
2600.00	1760.00	1207.87	7.85
2600.00	1770.00	1206.94	7.75
2600.00	1780.00	1205.37	7.73
2600.00	1790.00	1203.39	7.72
2600.00	1800.00	1202.50	7.73
2600.00	1810.00	1198.00	7.72
2600.00	1820.00	1192.44	7.61
2600.00	1830.00	1188.82	7.45
2600.00	1840.00	1186.99	7.43
2600.00	1860.00	1183.40	7.38
2600.00	1870.00	1181.04	7.39
2600.00	1880.00	1178.37	7.31
2600.00	1900.00	1172.10	7.22
2600.00	1910.00	1167.10	7.21
2600.00	1920.00	1162.06	7.10
2600.00	1930.00	1156.92	7.10
2600.00	1940.00	1151.24	7.10
2600.00	1950.00	1147.06	7.06
2600.00	1960.00	1141.74	7.08
2600.00	1970.00	1136.16	6.98
2600.00	1980.00	1131.49	6.97
2600.00	1990.00	1126.30	6.99
2600.00	2000.00	1121.52	7.00
2800.00	1150.00	1168.29	8.55
2800.00	1160.00	1174.39	8.53
2800.00	1170.00	1180.76	8.48
2800.00	1180.00	1184.76	8.38
2800.00	1190.00	1187.26	8.37
2800.00	1200.00	1188.34	8.39
2800.00	1220.00	1189.69	8.53
2800.00	1230.00	1192.66	8.53
2800.00	1240.00	1194.98	8.56
2800.00	1250.00	1198.80	8.61
2800.00	1260.00	1201.25	8.57
2800.00	1280.00	1204.40	8.58
2800.00	1300.00	1206.99	8.52
2800.00	1310.00	1206.39	8.55
2800.00	1320.00	1205.45	8.57
2800.00	1330.00	1204.56	8.55
2800.00	1340.00	1202.52	8.53
2800.00	1350.00	1201.79	8.55
2800.00	1360.00	1201.48	8.54
2800.00	1370.00	1201.44	8.51
2800.00	1380.00	1201.08	8.53
2800.00	1390.00	1201.02	8.46
2800.00	1400.00	1200.21	8.49
2800.00	1410.00	1199.40	8.49
2800.00	1420.00	1198.81	8.44
2800.00	1430.00	1197.79	8.50
2800.00	1440.00	1196.84	8.50
2800.00	1450.00	1195.56	8.47
2800.00	1460.00	1194.10	8.48
2800.00	1470.00	1192.78	8.44
2800.00	1480.00	1192.40	8.42
2800.00	1490.00	1190.71	8.46
2800.00	1500.00	1189.01	8.41
2800.00	1510.00	1187.09	8.39
2800.00	1520.00	1185.41	8.36

2800.00	1530.00	1184.06	8.32
2800.00	1540.00	1182.80	8.29
2800.00	1550.00	1180.46	8.28
2800.00	1560.00	1179.12	8.28
2800.00	1570.00	1178.49	8.21
2800.00	1580.00	1177.77	8.15
2800.00	1590.00	1177.60	8.14
2800.00	1600.00	1177.83	8.07
2800.00	1610.00	1177.73	8.00
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2800.00	1630.00	1174.18	8.11
2800.00	1640.00	1171.38	8.08
2800.00	1650.00	1169.68	8.04
2800.00	1660.00	1170.13	8.03
2800.00	1670.00	1170.03	8.02
2800.00	1680.00	1169.42	8.02
2800.00	1690.00	1167.22	8.03
2800.00	1700.00	1164.77	7.98
2800.00	1710.00	1162.42	7.91
2800.00	1720.00	1159.86	7.79
2800.00	1730.00	1158.51	7.80
2800.00	1740.00	1154.30	7.79
2800.00	1750.00	1151.51	7.72
2800.00	1760.00	1148.16	7.70
2800.00	1770.00	1144.96	7.68
2800.00	1780.00	1142.04	7.64
2800.00	1790.00	1139.58	7.58
2800.00	1800.00	1137.26	7.59
2800.00	1810.00	1135.91	7.53
2800.00	1820.00	1135.29	7.52
2800.00	1830.00	1134.68	7.52
2800.00	1840.00	1134.56	7.51
2800.00	1850.00	1133.16	7.48
2800.00	1860.00	1131.41	7.46
2800.00	1870.00	1129.76	7.38
2800.00	1880.00	1127.68	7.39
2800.00	1890.00	1125.13	7.36
2800.00	1900.00	1122.74	7.35
2800.00	1910.00	1120.62	7.33
2800.00	1920.00	1118.75	7.31
2800.00	1930.00	1116.81	7.30
2800.00	1940.00	1114.86	7.32
2800.00	1950.00	1113.50	7.28
2800.00	1960.00	1111.98	7.26
2800.00	1970.00	1110.57	7.24
2800.00	1980.00	1108.54	7.24
2800.00	1990.00	1106.54	7.20
2800.00	2000.00	1105.05	7.25
3000.00	1150.00	1206.37	9.09
3000.00	1160.00	1208.63	9.13
3000.00	1170.00	1209.99	9.14
3000.00	1200.00	1215.62	8.85
3000.00	1210.00	1216.06	8.82
3000.00	1220.00	1216.90	8.83
3000.00	1230.00	1216.88	8.77
3000.00	1240.00	1216.72	8.77
3000.00	1250.00	1216.23	8.76
3000.00	1260.00	1215.84	8.80
3000.00	1270.00	1215.47	8.86
3000.00	1280.00	1215.28	8.85
3000.00	1290.00	1216.23	8.83
3000.00	1300.00	1218.16	8.81
3000.00	1310.00	1218.92	8.82
3000.00	1320.00	1220.31	8.79
3000.00	1330.00	1221.59	8.80
3000.00	1340.00	1222.71	8.78
3000.00	1350.00	1224.64	8.78
3000.00	1360.00	1224.73	8.79
3000.00	1370.00	1224.64	8.74
3000.00	1380.00	1224.13	8.75
3000.00	1390.00	1223.07	8.76
3000.00	1400.00	1220.70	8.76
3000.00	1410.00	1219.77	8.75
3000.00	1430.00	1216.01	8.76
3000.00	1440.00	1214.97	8.74

3000.00	1450.00	1214.96	8.68
3000.00	1460.00	1214.32	8.69
3000.00	1470.00	1212.87	8.68
3000.00	1480.00	1211.09	8.64
3000.00	1510.00	1200.89	8.64
3000.00	1520.00	1197.86	8.70
3000.00	1530.00	1195.26	8.65
3000.00	1540.00	1193.01	8.68
3000.00	1550.00	1191.11	8.69
3000.00	1560.00	1189.51	8.64
3000.00	1570.00	1187.75	8.56
3000.00	1580.00	1186.85	8.56
3000.00	1590.00	1186.25	8.49
3000.00	1600.00	1184.70	8.54
3000.00	1610.00	1182.73	8.46
3000.00	1620.00	1181.03	8.45
3000.00	1630.00	1179.06	8.48
3000.00	1640.00	1175.55	8.58
3000.00	1650.00	1175.52	8.44
3000.00	1660.00	1175.70	8.42
3000.00	1670.00	1176.94	8.36
3000.00	1680.00	1178.39	8.23
3000.00	1690.00	1179.53	8.22
3000.00	1700.00	1178.00	8.15
3000.00	1710.00	1176.76	8.10
3000.00	1720.00	1175.49	8.10
3000.00	1730.00	1173.98	8.12
3000.00	1740.00	1171.79	8.09
3000.00	1750.00	1170.38	8.03
3000.00	1760.00	1168.75	8.07
3000.00	1770.00	1167.76	8.02
3000.00	1780.00	1168.01	7.96
3000.00	1790.00	1168.00	7.95
3000.00	1800.00	1166.47	7.95
3000.00	1810.00	1164.37	7.95
3000.00	1820.00	1162.24	7.94
3000.00	1830.00	1160.55	7.84
3000.00	1840.00	1159.73	7.75
3000.00	1850.00	1157.83	7.81
3000.00	1860.00	1155.49	7.76
3000.00	1870.00	1153.37	7.72
3000.00	1880.00	1151.78	7.66
3000.00	1890.00	1150.15	7.65
3000.00	1900.00	1148.29	7.65
3000.00	1910.00	1146.82	7.61
3000.00	1920.00	1144.95	7.62
3000.00	1930.00	1144.24	7.53
3000.00	1940.00	1142.55	7.53
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3000.00	1980.00	1133.84	7.44
3000.00	1990.00	1132.70	7.39
3000.00	2000.00	1129.77	7.42
3200.00	1150.00	1233.07	9.36
3200.00	1160.00	1232.29	9.37
3200.00	1170.00	1229.56	9.35
3200.00	1180.00	1226.84	9.37
3200.00	1190.00	1225.85	9.36
3200.00	1200.00	1223.46	9.34
3200.00	1210.00	1221.05	9.30
3200.00	1240.00	1220.48	9.31
3200.00	1250.00	1221.58	9.29
3200.00	1260.00	1222.83	9.21
3200.00	1270.00	1222.88	9.19
3200.00	1280.00	1222.72	9.16
3200.00	1290.00	1224.80	9.14
3200.00	1300.00	1228.27	9.13
3200.00	1310.00	1230.59	9.03
3200.00	1320.00	1231.37	9.06
3200.00	1330.00	1234.87	9.04
3200.00	1340.00	1238.04	9.09
3200.00	1350.00	1238.70	9.07
3200.00	1360.00	1237.64	9.05
3200.00	1370.00	1236.30	9.03
3200.00	1380.00	1232.55	8.99

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3200.00	1400.00	1227.26	8.91
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3200.00	1430.00	1221.03	8.85
3200.00	1440.00	1219.94	8.81
3200.00	1490.00	1217.29	8.76
3200.00	1500.00	1219.97	8.72
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3200.00	1520.00	1222.77	8.67
3200.00	1530.00	1222.71	8.64
3200.00	1540.00	1224.99	8.70
3200.00	1550.00	1228.12	8.63
3200.00	1560.00	1228.83	8.64
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3200.00	1580.00	1229.66	8.62
3200.00	1590.00	1230.43	8.65
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3200.00	1620.00	1227.63	8.55
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3200.00	1660.00	1220.90	8.41
3200.00	1670.00	1218.92	8.36
3200.00	1680.00	1217.33	8.29
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3200.00	1700.00	1218.75	8.30
3200.00	1710.00	1219.39	8.32
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3200.00	1730.00	1218.04	8.28
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3200.00	1750.00	1214.86	8.21
3200.00	1760.00	1212.58	8.16
3200.00	1770.00	1211.35	8.12
3200.00	1780.00	1209.43	8.10
3200.00	1790.00	1204.76	8.09
3200.00	1800.00	1202.39	7.95
3200.00	1810.00	1199.04	7.93
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3200.00	1840.00	1194.11	7.89
3200.00	1850.00	1192.84	7.88
3200.00	1860.00	1190.10	7.88
3200.00	1870.00	1186.07	7.82
3200.00	1880.00	1183.35	7.79
3200.00	1890.00	1179.57	7.80
3200.00	1900.00	1176.55	7.73
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3200.00	1920.00	1171.37	7.69
3200.00	1930.00	1168.98	7.69
3200.00	1940.00	1166.81	7.67
3200.00	1960.00	1155.05	7.73
3200.00	1970.00	1150.08	7.77
3200.00	1980.00	1148.16	7.74
3200.00	1990.00	1145.26	7.77
3200.00	2000.00	1145.50	7.78
3200.00	2010.00	1147.10	7.73
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3200.00	2030.00	1150.41	7.56
3200.00	2040.00	1148.07	7.68
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3200.00	2080.00	1158.19	7.34
3200.00	2110.00	1158.36	7.37
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3200.00	2130.00	1157.29	7.39
3200.00	2160.00	1168.96	7.28
3200.00	2170.00	1170.51	7.27
3200.00	2190.00	1170.54	7.30
3200.00	2200.00	1169.49	7.35
3200.00	2210.00	1168.55	7.38
3200.00	2220.00	1167.60	7.39
3200.00	2230.00	1166.49	7.43

3200.00	2240.00	1166.03	7.49
3200.00	2250.00	1165.50	7.51
3200.00	2260.00	1165.35	7.50
3200.00	2270.00	1165.40	7.53
3200.00	2280.00	1167.17	7.53
3200.00	2290.00	1169.72	7.50
3200.00	2300.00	1172.36	7.48
3600.00	1300.00	1163.06	9.59
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3600.00	1330.00	1174.06	9.54
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3600.00	1350.00	1178.85	9.54
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3600.00	1370.00	1183.05	9.52
3600.00	1380.00	1185.58	9.50
3600.00	1390.00	1187.25	9.46
3600.00	1400.00	1188.55	9.41
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3600.00	1450.00	1195.72	9.29
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3600.00	1480.00	1201.59	9.17
3600.00	1490.00	1202.92	9.18
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3600.00	1540.00	1205.97	9.00
3600.00	1550.00	1206.22	8.97
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3600.00	1580.00	1207.28	8.91
3600.00	1590.00	1209.36	8.89
3600.00	1600.00	1212.57	8.88
3600.00	1610.00	1215.03	8.81
3600.00	1620.00	1216.03	8.87
3600.00	1630.00	1216.28	8.78
3600.00	1640.00	1214.77	8.78
3600.00	1650.00	1216.41	8.74
3600.00	1660.00	1216.01	8.75
3600.00	1670.00	1215.21	8.72
3600.00	1680.00	1216.31	8.66
3600.00	1690.00	1215.68	8.65
3600.00	1700.00	1217.13	8.65
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3600.00	1720.00	1217.45	8.61
3600.00	1730.00	1216.82	8.62
3600.00	1740.00	1215.87	8.63
3600.00	1750.00	1214.68	8.63
3600.00	1760.00	1212.26	8.60
3600.00	1770.00	1211.52	8.64
3600.00	1780.00	1212.08	8.62
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3600.00	1800.00	1214.75	8.53
3600.00	1810.00	1215.71	8.55
3600.00	1820.00	1219.81	8.50
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3600.00	1850.00	1230.18	8.35
3600.00	1860.00	1231.49	8.28
3600.00	1870.00	1232.85	8.18
3600.00	1880.00	1234.07	8.20
3600.00	1890.00	1234.89	8.14
3600.00	1900.00	1234.75	8.15
3600.00	1910.00	1232.39	8.18
3600.00	1920.00	1230.52	8.17
3600.00	1930.00	1229.31	8.17
3600.00	1940.00	1229.45	8.15
3600.00	1950.00	1230.58	8.15
3600.00	1960.00	1233.06	8.20
3600.00	1970.00	1236.67	8.03
3600.00	1980.00	1238.64	8.07

3600.00	1990.00	1239.60	8.06
3600.00	2000.00	1242.04	8.06
3600.00	2010.00	1243.68	8.08
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3600.00	2040.00	1242.37	8.04
3600.00	2050.00	1243.05	8.08
3600.00	2060.00	1246.64	8.00
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3600.00	2110.00	1249.67	7.81
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3600.00	2190.00	1246.94	7.81
3600.00	2200.00	1247.38	7.87
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3800.00	1390.00	1159.25	9.48
3800.00	1400.00	1160.00	9.46
3800.00	1410.00	1158.73	9.48
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3800.00	1460.00	1171.58	9.57
3800.00	1470.00	1173.50	9.55
3800.00	1480.00	1177.91	9.52
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3800.00	1500.00	1182.13	9.39
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3800.00	1520.00	1181.98	9.36
3800.00	1530.00	1182.21	9.33
3800.00	1540.00	1182.79	9.34
3800.00	1550.00	1183.81	9.32
3800.00	1560.00	1184.57	9.29
3800.00	1570.00	1183.90	9.30
3800.00	1580.00	1184.30	9.30
3800.00	1590.00	1185.49	9.30
3800.00	1600.00	1186.95	9.31
3800.00	1610.00	1189.31	9.25
3800.00	1620.00	1190.90	9.24
3800.00	1630.00	1192.04	9.27
3800.00	1640.00	1193.68	9.30
3800.00	1650.00	1196.02	9.25
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3800.00	1720.00	1209.82	9.05
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3800.00	1740.00	1207.82	8.98
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3800.00	1880.00	1236.88	8.57
3800.00	1890.00	1237.64	8.56
3800.00	1900.00	1240.53	8.54
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3800.00	1920.00	1241.64	8.47
3800.00	1930.00	1242.67	8.44
3800.00	1940.00	1242.52	8.47
3800.00	1950.00	1240.96	8.45
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3800.00	1970.00	1242.90	8.37
3800.00	1980.00	1246.43	8.29
3800.00	2000.00	1247.68	8.24
3800.00	2010.00	1250.95	8.28
3800.00	2020.00	1251.98	8.20
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3800.00	2060.00	1255.43	8.04
3800.00	2070.00	1256.93	8.01
3800.00	2080.00	1262.64	8.05
3800.00	2090.00	1266.59	8.11
3800.00	2100.00	1264.93	8.09
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4800.00	1660.00	1172.37	10.31
4800.00	1670.00	1173.29	10.30
4800.00	1680.00	1173.66	10.28
4800.00	1690.00	1172.29	10.26
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4800.00	1730.00	1169.11	10.06
4800.00	1740.00	1167.16	10.04
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4800.00	1770.00	1155.23	9.79
4800.00	1780.00	1150.37	9.77
4800.00	1790.00	1147.39	9.69
4800.00	1800.00	1148.35	9.67
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4800.00	1840.00	1156.86	9.59
4800.00	1850.00	1157.01	9.57
4800.00	1860.00	1155.64	9.57
4800.00	1870.00	1155.55	9.54
4800.00	1880.00	1155.51	9.52
4800.00	1890.00	1155.64	9.56
4800.00	1900.00	1156.16	9.58
4800.00	1910.00	1158.31	9.58
4800.00	1920.00	1159.18	9.60
4800.00	1930.00	1158.44	9.61
4800.00	1940.00	1156.94	9.56
4800.00	1950.00	1154.33	9.49
4800.00	1960.00	1150.29	9.47
4800.00	1970.00	1150.11	9.39
4800.00	1980.00	1149.17	9.39
4800.00	1990.00	1145.08	9.33
4800.00	2000.00	1145.92	9.31
4800.00	2010.00	1149.37	9.38

4800.00	2020.00	1151.22	9.30
4800.00	2030.00	1150.97	9.32
4800.00	2040.00	1150.76	9.33
4800.00	2050.00	1151.81	9.33
4800.00	2060.00	1150.75	9.32
4800.00	2070.00	1149.15	9.32
4800.00	2080.00	1147.06	9.34
4800.00	2090.00	1144.49	9.28
4800.00	2100.00	1143.19	9.26
4800.00	2110.00	1141.12	9.22
4800.00	2120.00	1137.88	9.24
4800.00	2130.00	1133.18	9.23
4800.00	2140.00	1129.91	9.20
4800.00	2150.00	1124.81	9.16
4800.00	2160.00	1119.16	9.16
4800.00	2180.00	1110.91	8.95
4800.00	2190.00	1105.38	8.92
4800.00	2200.00	1098.72	8.89
4800.00	2220.00	1084.54	8.73
4800.00	2240.00	1067.25	8.47
4800.00	2250.00	1059.64	8.37
4800.00	2260.00	1053.96	8.27
4800.00	2270.00	1048.02	8.23
4800.00	2280.00	1043.55	8.14
4800.00	2290.00	1039.21	8.09
4800.00	2310.00	1030.93	8.06
4800.00	2320.00	1026.53	8.05
4800.00	2330.00	1023.35	8.02
4800.00	2340.00	1020.78	8.02
4800.00	2350.00	1020.45	7.92
4800.00	2360.00	1018.94	7.88
4800.00	2370.00	1017.37	7.91
4800.00	2380.00	1015.46	7.89
4800.00	2390.00	1013.15	7.89
4800.00	2400.00	1010.79	7.99
4800.00	2410.00	1006.77	8.00
4800.00	2430.00	1005.58	7.99
4800.00	2440.00	1002.00	8.04
4800.00	2450.00	995.57	8.05
4800.00	2460.00	989.09	8.04
4800.00	2470.00	985.97	8.02
4800.00	2490.00	973.41	8.03
4800.00	2500.00	971.18	8.00
4800.00	2510.00	969.90	7.89
4800.00	2520.00	967.76	7.88
4800.00	2530.00	963.44	7.96
4800.00	2540.00	959.31	7.90
4800.00	2550.00	956.66	7.99
4800.00	2560.00	956.73	7.95
4800.00	2570.00	958.17	7.93
4800.00	2580.00	959.47	7.98
4800.00	2590.00	961.05	8.00
5000.00	2000.00	1075.05	9.53
5000.00	2010.00	1074.66	9.49
5000.00	2020.00	1075.65	9.50
5000.00	2030.00	1074.75	9.46
5000.00	2040.00	1070.78	9.34
5000.00	2050.00	1062.93	9.29
5000.00	2060.00	1055.70	9.32
5000.00	2080.00	1041.79	9.26

APPENDIX II

DRILL LOGS

HD CLAIMS

ELDORADO
Eldorado Resources Limited
Eldor Resources Limited

DIAMOND DRILL HOLE LITHOLOGIC RECORD

PROJECT NO. 585
HOLE NO. 85 HD-1

LOCATION: HD
PROGRAM: 1985 - Winkie
GRID NAME: HD
HOLE CO-ORDINATES: 24+00N, 17+15E
PURPOSE OF HOLE: test gravity and soil (Zn) anomalies
ELEVATION: 1172.5 m (interpolated)
AZIMUTH: 270° ANGLE: -45°
FINAL DEPTH: 29.2 m
GEOLOGY BY: R.D. Cruickshank

CORE SIZE: EW
CONTRACTOR: Van Alphen Exploration
DATE STARTED: 1985 August 22
DATE COMPLETED: 1985 August 24
CEMENTED: no
CORE STORAGE: lab and Saskatoon
GEOPHYSICAL LOGS: none
CASING: pulled

COLLAR SURVEY CO-ORDINATES:
GRID:
DOWN HOLE SURVEY

METHOD	DEPTH	CORRECTED ANGLE	CORRECTED AZIMUTH

SUMMARY OF RESULTS

0-4.3 m	Casing.
4.3-25.9 m	Siliceous tectonic breccia. Several generations of quartz veins; clay gouge.
25.9-26.8 m	Intermediate dyke. Plagioclase and hornblende microphenocrysts. No breccia; quartz veinlets present.
26.8-27.2 m	Siliceous breccia. Relict pyroclasts visible (silicified rhyolite tuff).
27.2-27.7 m	Intermediate dyke.
27.7-29.2 m	Siliceous tectonic breccia.

STRUCTURE: Hole drilled in major fault zone. Several periods of fracturing and veining.

MINERALIZATION:
- Traces of disseminated pyrite, especially from 4.3-17.0 m; pyrite in grey quartz veins, especially at 27.9-28.0 and 29.0-29.2 m
- Flecks (very minute) of (?) native copper 11.1-11.6 and 13.7-15.1 m.

CORE RECOVERY: Generally very poor (see detailed log).

DIAMOND DRILL HOLE LITHOLOGIC RECORD

ELDORADO RESOURCES LIMITED

Hole No. 85 HD-1

Date Drilled August 22 to 24, 1985

METRES From	METRES To	Description	STRUCTURE AND FABRIC Depth	Angle to Core	Faulting	Bedding	Gneissosity
0	4.3	Casing.					
4.3	25.9	FORMATION: Siliceous tectonic breccia; major fault zone. Includes vein quartz and probably some silicified rhyolite tuff. COLOUR: Generally pale grey-green. TEXTURE AND COMPOSITION: - usually aphanitic and highly brecciated - possibly nearly 100% quartz - traces of pyrite, native copper (?), calcite. STRUCTURE: - entire interval highly fractured, brecciated - evidence for several periods of fracturing and quartz veining - abundant thin veinlets of grey quartz-pyrite and white quartz-calcite; in every possible orientation - drillers report many seams of clay gouge (not recovered) - recovered core is generally completely full of fractures and veinlets on a millimetric scale ALTERATION: Probable silicification of entire interval. Green colour may be due to traces of chlorite or sericite. MINERALIZATION: Traces disseminated pyrite common from 4.3 to 17.0 m. For other details see below. CORE RECOVERY: Very poor. From 4.3 to 16.8 m is about 15%; from 16.8 to 25.9, about 32% FURTHER COMMENTS: - 3 mm sphalerite crystal at about 6 m.					

SAMPLES -

No.	From	To	Width
22727	4.3	9.8	5.5
22728	9.8	13.1	3.3
22729	13.1	16.3	3.2
22730	16.3	19.1	2.8
22731	19.1	21.6	2.5
22732	21.6	24.4	2.8
22733	24.4	25.9	1.5
22734	25.9	27.7	1.8
22735	27.7	29.0	1.3
22736	29.0	29.2	0.2

DIAMOND DRILL HOLE LITHOLOGIC RECORD

ELDORADO RESOURCES LIMITED

Hole No. 85 HD-1

Date Drilled August 22 to 24, 1985

METRES		Description	STRUCTURE AND FABRIC					SAMPLES -			
From	To		Depth	Angle to Core	Faulting	Bedding	Gneissosity	No.	From	To	Width
		- very minute flecks of pyrite and (?) native copper from 11.1-11.6 m - very minute pyrite flecks from 11.6-13.1 m; pyrite more abundant in grey quartz veinlets - tiny flecks of (?) native copper 13.7-15.1 m - green (epidote or chlorite) matrix and flecks of native copper from 16.8-17.1 m - brecciated grey quartz is predominant in recovered material from 21.0-22.7 m - veinlets of dark green mineral (epidote or chlorite) from 24.4 to about 25.0 m									
25.9	26.8	FORMATION: Intermediate dyke. COLOUR: Dark grey-green. TEXTURE AND COMPOSITION: - fine to medium crystalline; micro-phenocrysts to 2 mm long; generally less than 1 mm - generally unoriented or radiating plagioclase microlites (50% of rock) and a mafic mineral (hornblende?) (5% of rock) in an aphanitic matrix - from 26.1 to 26.3, is about 30% hornblende STRUCTURE: - no breccia as such - randomly oriented quartz-calcite veins are less than 5% of rock; various orientations. ALTERATION : Soft, easily scratched by steel; probable sericitic or chloritic alteration. MINERALIZATION: None visible.									

DIAMOND DRILL HOLE LITHOLOGIC RECORD

ELDORADO RESOURCES LIMITED

Hole No. 85 HD-1

Date Drilled August 22 to 24, 1985

METRES From	METRES To	Description	STRUCTURE AND FABRIC Depth	Angle toCore	Dyke Contact			SAMPLES No.	From	To	Width
		CORE RECOVERY; About 93%.									
26.8	27.2	FORMATION: Siliceous tectonic breccia as from 4.3-25.9. COMMENTS: - contains indistinct pink, grey, and whitish angular clasts from 1 to 15 mm in size - these are probable relict pyroclasts - rock still appears silicified									
27.2 and at	27.7 27.78	FORMATION: Intermediate dyke as at 25.9 to 26.8. COMMENT: At 27.78, the unit is about 2 cm wide and has contacts at about 45° to core axis.									
27.7	29.2	FORMATION: Siliceous breccia as from 4.3-25.9. COMMENTS: - more cohesive here; core recovery is about 67% - intervals 27.9-28.0 and 29.0-29.2 are dark grey quartz with ubiquitous disseminated pyrite (less than 5%), some red quartz, and many white quartz and quartz-calcite veinlets.	27.78	45°							
29.2		End of Hole.									

R Douglas Cruickshank.

ELDORADO
Eldorado Resources Limited
Eldor Resources Limited

DIAMOND DRILL HOLE LITHOLOGIC RECORD

LOCATION HD Claims
PROGRAM 1985
GRID NAME HD
HOLE CO-ORDINATES 24+00N, 16+60E
PURPOSE OF HOLE test gravity/soil Zn anomaly
ELEVATION 1190.2 m
AZIMUTH 270° ANGLE -45°
FINAL DEPTH 16.6 m
GEOLOGY BY R.D. Cruickshank

CORE SIZE EW
CONTRACTOR Van Alphen Exploration Services
DATE STARTED August 25, 1985
DATE COMPLETED August 26, 1985
CEMENTED no
CORE STORAGE all sampled
GEOPHYSICAL LOGS none
CASING none

PROJECT NO. 585
HOLE NO. 85 HD-2
COLLAR SURVEY CO-ORDINATES
GRID
DOWN HOLE SURVEY

METHOD	DEPTH	CORRECTED ANGLE	CORRECTED AZIMUTH

SUMMARY OF RESULTS

0-4.3 Casing.

4.3-16.0 Rhyolite intrusive or flow.

16.0-16.6 Mafic dyke.

STRUCTURE:
- entire interval highly fractured (many different orientations)
- clay gouge at 12.2 m and 16.6 m

ALTERATION AND MINERALIZATION:
- fractures filled with stringers of white and grey quartz, rose quartz-amethystine quartz, calcite
- pyrite commonly in quartz veinlets
- rhyolite possibly silicified
- mafic dyke entirely chloritized

DIAMOND DRILL HOLE LITHOLOGIC RECORD

ELDORADO RESOURCES LIMITED

Hole No. 85 HD-2 Page 2 of 4

Date Drilled August 25-26, 1985

METRES		Description	STRUCTURE AND FABRIC					SAMPLES -				
From	To		Depth	Angle toCore	Faulting	Bedding	Gneissosity	No.	From	To	Width	U(ppm)
0	4.3	CASING.						22741	4.3	7.8		
								22742	7.8	10.8		
4.3	16.0	FORMATION:						22743	10.8	13.1		
		Rhyolite flow or intrusive.						22744	13.1	16.0		
								22745	16.0	16.6		
		COLOUR: Purple when dry; reddish-brownish-orange when wet										
		COMPOSITION: - 4.3 to 12.0 m, is about 10% pale grey quartz microphenocrysts about 5% vein material (mainly quartz, some calcite); remainder or rock aphanitic - 12.0 to 16.0 m, as above except no phenocrysts										
		TEXTURE: - porphyritic from 4.3 to 12.0 m; phenocrysts form wormy, myrmekite-like pattern - otherwise massive										
		STRUCTURE: - rock highly fractured, but not brecciated - fractures in many different orientations; no attempt at measurement made. - no slickensides on fractures; therefore most are probably tension gashes - thin quartz (sometimes calcite) stringers on most fractures - pale buff clay gouge encountered after 12.2 m (8 cm of gouge in box)										
		ALTERATION AND MINERALIZATION: - white or grey quartz veinlets ubiquitous - quartz-pyrite stringers common - rose quartz-amethystine quartz ± pyrite stringers are common from 9.0-16.0 m - rhyolite is very hard, possibly silicified										

ELDORADO RESOURCES LIMITED

AMOND DRILL HOLE LITHOLOGIC RECORD

Hole No. 85 HD-2

Date Drilled August 25-26, 1985

METRES From	METRES To	Description	STRUCTURE AND FABRIC Depth	Angle to Core	Faulting	Bedding	Gneissosity	SAMPLES No.	From	To	Width	U(ppm)
		CORE RECOVERY: - 4.3 to 7.8 m: 26% - 7.8 to 10.8 m: 57% - 10.8 to 14.0 m: 30% - 14.0 to 15.8 m: 6% COMMENTS: - at 5.0 thin dark grey quartz stringers parallel core axis - 4.3-6.4 very broken, much limonite stain - 8.0 speck (2mm) of sphalerite - 9.7-10.0 heavy limonite stain - 10.4, 10.9 specks of sphalerite (1-3 mm) - 15.8-15.85 highly fractured, much amethystine quartz in veinlets; white quartz veinlets often vuggy										
16.0	16.6	FORMATION: Finely-crystalline mafic dyke. COLOUR: Medium and dark green COMPOSITION: - no primary minerals visible - rock soft, green, probably mostly chlorite - about 10% vein material (quartz > calcite) TEXTURE: - alternating patches of medium green (90%) and dark green (10%) rock - dark green patches often bounded by fractures and veinlets, have angular or fibrous outlines, millimetric in scale. STRUCTURE: - highly fractured with many narrow veinlets in may orientations - high fracture density on millimetric scale - no slickensides seen										

ELDORADO RESOURCES LIMITED

[DIA]MOND DRILL HOLE LITHOLOGIC RECORD

Hole No. 85 HD-2

Date Drilled August 25-26, 1985

METRES		Description	STRUCTURE AND FABRIC					SAMPLES -				
From	To		Depth	Angle toCore	Fault-ing	Bedd-ing	Gneiss-osity	No.	From	To	Width	U(ppm)
		- upper contact: preserved in core; is 15° to core axis, "fingers" of this rock extend 1 to 2 cm into the rhyolite - hole stopped in clay gouge zone ALTERATION AND MINERALIZATION: - fractures have veinlets of white quartz, rose quartz, and calcite - no sulphides seen; some flecks native copper in quartz veinlets - chlorite is probably secondary CORE RECOVERY: From 15.8 to 16.6 is 69% COMMENT: - 8 mm wide calcite vein at 16.3 m										
16.6		End of Hole.										

R.Douglas Cruickshank

APPENDIX III

ANALYSIS OF A GRAVITY SURVEY

PROPOSED FOR THE SUMMER OF 1985

(Note: A reproduction of an Eldor Resources Limited internal report, prepared prior to the field season)

ELDOR RESOURCES LIMITED
502-45th Street West
Saskatoon, Saskatchewan

PROJECT 585
(HD Claims - British Columbia)
Analysis of a Gravity Survey
Proposed for the Summer of 1985

APRIL 1985

R.D. CRUICKSHANK

ELDOR RESOURCES LIMITED
502-45th Street West
Saskatoon, Saskatchewan

PROJECT 585
(HD Claims - British Columbia)
Analysis of a Gravity Survey
Proposed for the Summer of 1985

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1. INTRODUCTION

The HD claims (Project 585), located near Houston, B.C., are being explored by Eldor Resources Limited under a recently-completed option agreement. It was decided to attempt a gravity survey on the property, and consequently a program of linecutting and levelling was undertaken in October of 1984 (Cruickshank, 1984). That program was undertaken after consideration of the probable size, shape, and gravity response of a hypothetical target orebody.

This report is an analysis of the proposed gravity survey. It addresses the following questions:

(a) Why is a geophysical survey required?

(b) Why gravity, rather than other geophysical methods?

(c) What are the size, shape, and potential density contrast of an economic orebody?

(d) Is it possible to detect an economic orebody with the survey as proposed?

2. WHY GEOPHYSICS?

Overburden on the claims area is generally quite thin, usually less than 1 m. It is arguable that geological mapping, prospecting, and geochemistry might be more cost-effective than geophysical surveys.

The entire area is forested, and a thin layer of till (20 to 40 cm) has been observed. Therefore although not thick, a cover of till, soil, and forest litter is extensive in area. Two of the three known zinc showings (Tower and Switchback

Zones) were only discovered upon the construction of road cuts, although the area has a long history of prospecting. A geological mapping program has been proposed, but its usefulness will be limited in some areas by this thin cover.

3. COMPARISON OF GRAVITY TO ELECTRICAL METHODS

Gravity was chosen for two principal reasons:

(a) The known mineralization consists mainly of sphalerite, which is not a good electrical conductor. These showings do not contain appreciable quantities of other, more conductive, sulphide minerals. This conclusion is partially supported by the lack of VLF response over the Hilltop Zone.

(b) Many small fracture-related copper occurrences are present on the property; I believe that these are unrelated to the zinc mineralization. These copper showings would probably produce many spurious anomalies in an IP or EM survey.

Another method that might work is self potential (SP). Anomalies have been detected over sphalerite orebodies, a phenomenon that is difficult to explain theoretically, given the poor conductivity of the mineral (Telford, et. al., p. 460). Overburden is thin over much of the property in Cruickshank, 1985), so SP may have some chance of success. SP is subject to topographic noise, but given our excellent topographic control, this is probably not a major negative factor. SP is also cheap and fast. We suggest that it be considered for secondary use, such as follow-up on gravity anomalies.

There are some non-technical considerations that also favour gravity methods. The unproven potential and grass-roots nature of this project preclude large budgets; we therefore cannot afford the luxury of experimenting with a number of different geophysical surveys - we must choose the one method that is likely to give definitive results. Gravity is simpler logistically, since only one operator is required. We have already committed ourselves to this survey, having obtained the required elevation data last fall (reported in Cruickshank, 1984).

4. SIZE, GEOMETRY, AND DENSITY OF THE POTENTIAL TARGET

In our initial calculations last fall, we worked on the hypothesis that a deposit containing about 400,000 tonnes of Zn metal would be required. In order to refine this estimate further, computer-generated economic models were used to evaluate the size and grade for several potential orebodies. This extra work was recently conducted by Don Ward, using his own program. The results of some of these models are included in Appendix III. A large number of assumptions were used in arriving at these estimtes, including:

- the ore body is a tabular body of vertical dip (this is reasonable given volcanic country rocks and relatively steep observed dips)
- width of the bottom of the open pit was given as 20 m; length and depth were varied.

- only zinc production was considered; ie. other possible products such as Pb or Au were ignored.
- 15% or 20% within ore dilution
- Zn price taken to be \$0.60/lb = \$1.32/kg
- no overburden (there is no appreciable overburden over most of the grid area)
- pit slopes of 45°
- distance to mill 5 km (this would put it beside the CN railway line)
- Rabbit Lake values were used for mining, milling, administration, and transport costs.
- approximate total capital costs, in 1985 dollars, were calculated from the formula

  $$\text{cap costs} = \$630{,}000\ T^{0.6}$$

  where T = daily production in tonnes
- taxes and royalties were not considered

The "bottom line" on each page in Appendix III-1 gives the calculated net profit or loss, before taxes. The factors that were varied in the different models were length and depth of the open pit, and ore grade. Size of the various orebodies ranged from about 4 to 14 million tonnes (diluted). It was found that ore grade was more important that the size of the orebody in determination of profitability.

Four ore grades (pre-dilution) were tried: 8%, 10%, 12%, and 15% Zn. A grade of 8% Zn appears to be uneconomic within the constraints listed above, while 10% seems to be at about the break-even point. A model for 12% Zn, with a pit measuring 1000 m long x 100 m deep x 20 m wide (bottom of pit) was found to return a profit of \$49 million after expenses of \$767 million. Any deposits in the 15% Zn range (12.5% Zn diluted) would be very profitable; a profit of \$214 million was calculated for a pit 1500 m long x 100 m deep; and of $126 million for one 1000 m long x 100 m deep (see Appendix 1). Pits of similar horizontal measurements, but only 50 m deep would be proportionately even more profitable.

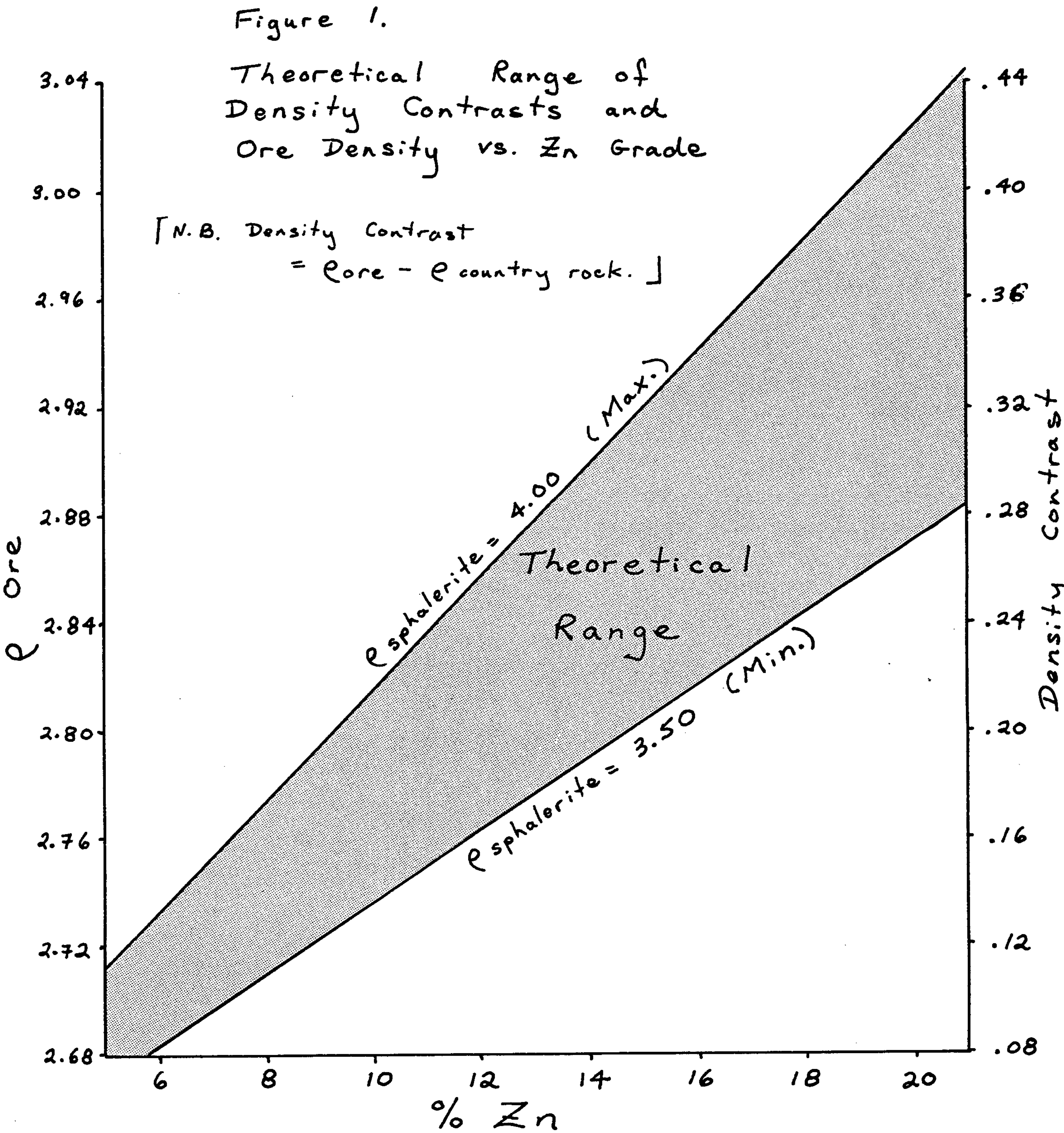
Strike lengths for these profitable models were given as either 1000 m or 1500 m. It is probable that for higher grade ore, strikes of 700 or 800 m would be sufficient for profitability. Lower-grade orebodies would have to be longer, say 1500 m or so.

The range of theoretical densities for zinc ore is shown on Figure 1. The density range for sphalerite is given by Telford et. al. (1976) as 3.50 to 4.00. The density of sphalerite ore should lie between the two straight lines on the curve, given the following assumptions:

- % sphalerite = % Zn x 1.5
- gangue density = wall rock density = 2.60 (this value is taken from rock samples shown in Table 1)

The second assumption would almost certainly under-estimate the ore density, as Fe sphalerite and some other, denser sulphide minerals would be present (the other gangue material also may be denser than 2.60). Densities of rocks collected at HD show a correlation with Zn content (Table 1), but no attempt should be made to project these to higher grades, given the uncertainty in the method of geochemical analysis employed. (ICP may not be sufficiently accurate at those levels of Zn content, and the analysis was not performed on the identical sub-sample as the density determination). The lower boundary of the density range shown on Figure 1 is very conservative, and probably too low.

As is shown on Figure 1, subeconomic ore (8% Zn) should have density contrasts of .11 to .17; marginally economic ore (10% Zn) should range from .13 to .21; and high-grade (15% Zn) ought to fall between .20 and .32. Ore that contains 20% Zn ought to be between .27 and .42. Of course, no ore body



Assumptions: 1. % sphalerite = % Zn × 1.5
2. ZnS only sulphide mineral present
3. ρ gangue = ρ country rock = 2.60

eldorado

TABLE 1

Zinc Analyses and Specific Gravities of Six Rocks
from the HD Claims

Specimen No.	Lithology	Specific Gravity	Zn (ppm)*
84-585-1	chert	2.70	83,600
-2	tuff	2.64	13,300
-3	chert	2.65	34,400
-4	tuff	2.62	102
-5	tuff	2.58	183
-6	tuff	2.61	2,049

* Zn determined by ICP technique; only semi-quantitative for higher concentrations. The analysis was not performed on the same sub-sample as was the density determination.

is of completely uniform grade throughout, and zones of ore that have higher than average density ought to be present. Thus, it may happen that higher grade portions of a given ore body may be detectable by gravity, while lower-grade tails are not. Ore bodies are also variable in cross-sectional area, so that wider-than-average zones, even if of lower grade, may also be detectable by gravity. The next section of ths report treats gravity models in more detail.

5. MODELING OF PROBABLE GRAVITY RESPONSE

Several gravity models were calculated prior to the 1984 linecutting and leveling program. The calculations were is of completely uniform grade throughout, done on a TI59 calculator, using a program based on the twodimensional method of Talwani, et. al. (1959). Again, a vertically dipping, tabular orebody was assumed. The model assumes "infinite" strike extension. Factors that were varied in the different models included: density contrast, width ("x"), and vertical extent of the body ("z"), and depth of overburden (most cases assumed no overburden). Results of the various models are summarized in Table 2, while the actual curves are presented in Appendix 2.

Table 2 shows that the ranges for various factors used in the modeling are +0.2 to +0.4 for density contrast, 10 to 20 m for x, 50 to 100 m for z, and 0 to 20 m for depth of overburden. The maximum value for x (horizontal width) is probably quite conservative, given that large ore bodies could be quite variable in width - increasing the width would certainly improve the gravity response.

Half of the ten calculated gravity responses listed in Table 2 are in the +0.2 $\pm$ .02 mgal range. Three responses are below this range, because of the narrowness of the ore body and/or the presence of appreciable overburden (models 2, 3b, 6b). Models 3a and 7a demonstrate that for density constrasts of +0.3 or better, and with reasonable widths (20 m) and depths (100 m), much better gravity responses can be obtained. Comparison with Figure 1 indicates that a density contrast of 0.3 would coincide with Zn grades of about 14% to 21% (a high estimate, as it does not allow for extra Fe sphalerite or other sulphides). For these relatively narrow targets, density contrasts of 0.15 to 0.20 may be the minimum values that could be detected (corresponding to Zn grades of about 7% to 14%). Any widening of the orebody would be beneficial. It is apparent from Models 3, 6, and 7 that the presence of appreciable overburden would have a marked attenuating effect on the gravity response; fortunately there is very little overburden over most of the grid area.

The calculated gravity profiles in Appendix III-2 show that the peaks are quite narrow. The highest parts of the peaks seem to be only as wide as the subcrop extent of the ore body; a body 10 m wide is near its maximum intensity only over a length of 10 m. For this reason, the survey was designed for station spacings of 10 m. The grid is picketted at 10 m intervals, and the elevation at each picket was determined during the level survey. An additional benefit of such a close spacing is that it eliminates most of the topographic effect between adjacent stations on a profile (terrain corrections are discussed in the following section).

6. ANALYSIS OF EFFOR IN THE PROPOSED GRAVITY SURVEY

Holtz et. al. (1981) state that the total probable error in the Bouger gravity value is given by the expression:

$$e_{B_g}{}^2 = e_g{}^2 + e_{g_\phi}{}^2 + (C.e_h)^2 + e_{g_T}{}^2$$

where:

e_{B_g}	is the total probable error
e_g	is the error in the observed gravity value
e_{g_ϕ}	is the error in the theoretical gravity value
C	is the combined free air and Bouger effect
e_h	is the error in the elevation value
e_{g_T}	is the error in the terrain correction

Each of these four sources of error will be discussed separately in the following paragraphs.

The error in the observed gravity value is the error involved in obtaining repeatable instrument readings in the field. Holtz et. al. (1981) outline the proceedures for

TABLE 2

SUMMARY OF RESULTS OF GRAVITY MODELS

Model No.	Density Contrast	x(m)	z(m)	Depth to Top (m)	Peak gravity response (milligals)
1	+ 0.2	20	100	0	0.18
2	+ 0.3	10	100	0	0.16
3a	+ 0.3	20	100	0	0.26
3b	+ 0.3	20	100	20	0.14
4	+ 0.3	20	50	0	0.21
5	+ 0.4	10	50	0	0.18
6a	+ 0.4	10	100	0	0.21
6b	+ 0.4	10	100	20	0.10
7a	+ 0.4	20	100	0	0.35
7b	+ 0.4	20	100	20	0.19

Where x is horizontal width of the body
z is vertical extent of the body

Assumption: vertically dipping tabular body of "infinite" strike extent and homogeneous density.

correcting tidal effects and instrument drift, and show that, with care, the error in the observed gravity would be about 0.025 milligals (which is the standard deviation estimated from the repeat difference histogram). We propose to obtain our tidal correction tables from the Department of Energy, Mines, and Resources in Ottawa.

The second source of error lies in the value of the theoretical gravity at a station, that is, the error in the correction for station latitude. Holtz et. al. (1981) state that "latitude corrections for stations misplotted by 50 metres north or south will be in error by a maximum of .04 mgal." Since all of our gravity profiles at HD will be run on cut lines oriented true east-west, we should be well below this limit.

The correction for station elevation is more sensitive to error; Holtz et. al. (1981) estimate a value of 0.2 mgal/m. Our station elevations at HD were determined with a GDD electronic level, in a series of closed-loop traverses (Cruickshank, 1984). The distributed closure errors were always less than 1 cm per station. It is therefore likely that the error in relative elevations between two adjacent stations is probably less than 2 cm; the corresponding error in the gravity values, due to error in elevations, should therefore be less than .005 mgal. Station locations in the field are marked with pickets, and the actual point on the ground used for the elevation determination is spotted by a nail with a piece of orange flagging attached. In the majority of cases, then, it will be possible to recover the exact spot on the ground that corresponds to the measured elevation.

The terrain correction will undoubtedly be the largest source of error in this survey. We propose to use the method of Hammer (1939) to calculate this correction. This method involves the computation of the effects of the topography in a series of concentric rings (zones) at increasing distances from the station. All zones except the innermost one are subdivided into a number of sectors to improve the accuracy of the calculation. The gravity effect of a single sector is given by the formula:

$$dg_T = \gamma \rho \theta \{ (r_o - r_i) + \sqrt{(r_i^2 - z^2)} - \sqrt{(r_o^2 + Z^2)} \}$$

where θ = sector angle (radians), $z = |e_s - e_a|$, e_s = station elevation, e_a - average elevation in sector, r_a, r_i = outer and inner sector radii, ρ = rock density, and γ is the universal gravitational constant.

Table 3 shows Carl Johnson's calculations of the sort of accuracies in elevation required in each of the Hammer zones, assuming that: (a) maximum total allowable error is 0.1 mgal, (b) there is an equal contribution to the error from each compartment in the innermost 7 zones, and (c) that the error contribution from the outermost 3 zones is negligible. Actually, for station intervals of 10 m, the contributions of zones E, F, and G are also probably negligible, so that the values in Table 3 list more accuracy than is actually required. We feel, however, that we can meet the tabulated accuracies. If this level of accuracy can be attained, then the total error for zones A to D (ie. out to 170 m from the station) should be less than .04 mgal. As described above, station elevations are known to within 1 or 2 cm; these will be used to estimate zone A elevations. For zone B (4 compartments), two values will be estimated from the adjacent stations on the line, while the other two, orthogonal to the line, were estimated in the field during the level survey. Values for zones C to F will be taken from our 1:5,000 scale topographic map. This map was prepared by comparing our surveyed elevations on grid lines to a topographic map at this scale (with contour interval of 10 m) that was prepared for Endako Mines. The accuracy of this 1:5000 map is very good within the grid area, and diminishes somewhat as the limit of 900 m from the grid is approached; however it is always within

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TABLE 3

TERRAIN CORRECTION ZONES OF HAMMER (1939), ACCURACIES OF ELEVATION ESTIMATES REQUIRED FOR HD SURVEY, AND METHODS OF OBTAINING ESTIMATES

(see text for explanation)

Hammer Zone	Zone Radii (m)	Accuracy Required in Estimate of Mean Elevation	How Estimate Obtained
A	0–2	< ± .05	level survey
B	2–16	± 1	estimated in field
C	16–50	± 10	1:5,000 topo map
D	50–170	± 15	"
E	170–390	± 30	"
F	390–890	± 45	"
G	890–1530	± 80	1:50,000 topo map
H	1530–2610	larger yet	"
I	2610–4470	"	"
J	4470–6500	"	"

the limits specified in Table 3. This map has been digitized on our computer. The values for the outermost rings will be obtained from the government 1:50,000 topographic map; a 1:25,000 enlargement of this map has also been digitized.

Corrections from these outer zones will have no effect on individual profiles, where the values from outer rings will tend to be constant. Terrain corrections will be performed on our computer.

Certain individual stations, and certain portions of the profiles, are located in areas of very steep terrain (see maps accompanying Cruickshank, 1984). In these areas, local terrain may preclude the production of good gravity values. This particularly applies to the northeastern part of the grid. However, gentler terrain predominates and accuracy of the terrain correction should be excellent, perhaps around .05 mgal.

Overburden is a serious problem in many gravity surveys. Uncertainties about its thickness and density can seriously hinder interpretation. Over most of the grid area at HD, the overburden is known to be thin (less than 1 m). A few small swamps on top of the mountian, and a larger one on the northern boundary of the grid, would be exceptions in this regard. These areas of thicker overburden are proportionately small and easily recognized in the field, so should produce few problems. The thin overburden also improves the chances that some part of the target orebody (if present) will be near surface, and hence more easily detectable by the gravity method.

Using the equation of Holtz, et. al. (1981), and the figures given above, it follows that the total probable error for a gravity station here would be 0.11 mgal; for two adjacent stations, or short segments of a profile, the relative error would be about .05 mgal.

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7. CONCLUSIONS

It is concluded that further target definition by geophysical methods is desirable. Gravity is preferable to I.P. or E.M. methods because: (a) the target sphalerite mineralization may not be conductive, and (b) scattered, unrelated, fracture-controlled Cu showings would probably produce spurious anomalies. SP surveys may also be of value.

It is further concluded that the proposed gravity survey has a good chance of discovering an economic zinc orebody if one is present. In fact, the survey as presently envisaged may be somewhat over-specified", because the station spacing and terrain corrections may be more rigorous than required.

The proposed station spacing is 10 m on profiles that are 200 m apart. This very close interval was selected so that a response from narrow orebodies (10 m or so) could be detected. The 200 m line spacing is reasonable since any orebody that may be present would be of variable width, grade, and depth below surface; therefore this interval increases the chance of discovery. The maximum number of gravity stations would be 2,050; this would be reduced if profiles in the north-east corner of the grid are eliminated because of extreme topography. It is hoped to have all latitude, terrain, free-air, and Bouger corrections calculated prior to the field season, in order to expedite the daily data reductions.

It may be argued that calculating the terrain effect of the outer Hammer zones is unnecessary. The effect of these zones on individual profiles would certainly be negligible. However, the grid is large enough (3.8 km long in a north-south direction) that there would be some effect over the area as a whole. The principal reason for calculating the effect of all of the Hammer zones would be to improve the quality of a gravity map of the entire grid. This is admittedly a secondary priority, but as all calculations will be performed by computer, the additional cost would probably not be significant.

Finally, it should be emphasized that the chances of discovering an orebody with gravity methods increase in proportion to the economic value of the deposit. If a near-surface economic orebody occurs in the grid area, it should be detectable.

Respectfully submitted,

R.D. Cruickshank

2145A

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APPENDIX III-1

DEPOSIT MODELS

NPUT PARAMETERS		
ULTIMATE PIT DEPTH	50.	Meters
HORIZONTAL WIDTH	20.	Meters
* DEPOSIT LENGTH	2000.	Meters
VERTICAL THICKNESS	50.	Meters
DISTANCE TO MILL	5.	Km
SSUMED PARAMETERS		
ANNUAL MINING CAPACITY	2800000.	Tonnes
* PRODUCT UNIT VALUE	1.32	$/Kg
MINING COSTS	11.00	$/Tonne
TRANSPORT COSTS	.34	$/Tonne/K
MILLING & ADMIN COSTS	44.00	$/Tonne
MAXIMUM ANNUAL MILL FEED	655000.	Tonnes
ANNUAL MILL PRODUCTION	2272000.	Kg
MINIMUM TOLERABLE PRODUCTION	1360000.	Kg
* MINING RECOVERY	80.0	%
* DILUTION	20.0	%
* MILLING RECOVERY	95.0	%
PIT WALL SLOPE	45.0	Degrees
* TONNAGE FACTOR	2.8	Tonnes/M3
CAPITAL COST FOR ROAD	155000.	$/Km
CAPITAL COST FOR DEWATERING	155000.	$/Km
DEPOSIT GEOMETRY		
ANNUAL PRODUCTION	1028079.	Tonnes
TOTAL PROJECT LIFE	7.05	Years
TOTAL MATERIAL	19741164.	Tonnes
TOTAL WASTE	12492778.	Tonnes
STRIPPING RATIO	1: 1.7	

ORE RESERVES

UNDILUTED	7248386.Tonnes	08.00000%
DILUTED	8698064.Tonnes	06.66667%
CONTAINED PRODUCT	579870850Kg	

PRE-PRODUCTION PERIOD		
PRE-PRODUCTION PERIOD	0.00	Years
STRIPPING	0.	Tonnes
PRODUCTION PERIOD		
LIFE OF ORE	7.05	Years
ORE	6958451.	Tonnes
* AVERAGE GRADE	6.66667	%
MILL INPUT	463896640	Kg
MILL OUTPUT	440701820	Kg
WASTE	11043100.	Tonnes
MINING STRIPPING RATIO	1:2.7	
CAPITAL COSTS		
ROAD	M$ .77	
WATERLINES	M$ .77	
STRIPPING COSTS	M$ 0.00	
TOTAL CAPITAL COST	M$ 1.55	
OPERATING COSTS		
MINING COSTS	M$ 217.15	
	31.21	$/Tonne
	.47	$/Kg
TRANSPORTATION COSTS	M$ 11.83	
	1.70	$/Tonne
	.03	$/Kg
MILLING & ADMIN COSTS	M$ 306.17	
	44.00	$/Tonne
	.69	$/Kg
TOTAL OPERATING COST	M$ 535.15	
	76.91	$/Tonne
	1.21	$/Kg
TOTAL VALUE OF DEPOSIT	M$ 581.73	
TOTAL COSTS	M$ 536.70	
PROFIT	*** M$ 45.02	

Total Capital Cost M$ 74.

Net Loss M$ 29.

INPUT PARAMETERS

ULTIMATE PIT DEPTH	50.	Meters
HORIZONTAL WIDTH	20.	Meters
* DEPOSIT LENGTH	1500.	Meters
VERTICAL THICKNESS	50.	Meters
DISTANCE TO MILL	5.	Km

ASSUMED PARAMETERS

ANNUAL MINING CAPACITY	2800000.	Tonnes
* PRODUCT UNIT VALUE	1.32	$/Kg
MINING COSTS	11.00	$/Tonne
TRANSPORT COSTS	.34	$/Tonne/K
MILLING & ADMIN COSTS	44.00	$/Tonne
MAXIMUM ANNUAL MILL FEED	655000.	Tonnes
ANNUAL MILL PRODUCTION	2272000.	Kg
MINIMUM TOLERABLE PRODUCTION	1360000.	Kg
* MINING RECOVERY	80.0	%
* DILUTION	20.0	%
* MILLING RECOVERY	95.0	%
PIT WALL SLOPE	45.0	Degrees
* TONNAGE FACTOR	2.8	Tonnes/M3
CAPITAL COST FOR ROAD	155000.	$/Km
CAPITAL COST FOR DEWATERING	155000.	$/Km

DEPOSIT GEOMETRY

ANNUAL PRODUCTION	820508.	Tonnes
TOTAL PROJECT LIFE	5.30	Years
TOTAL MATERIAL	14841166.	Tonnes
TOTAL WASTE	10492134.	Tonnes
STRIPPING RATIO	1: 2.4	

ORE RESERVES

UNDILUTED	4349032.Tonnes	@10.0000%
DILUTED	5218839.Tonnes	@8.33333%
CONTAINED PRODUCT	434903230Kg	

PRE-PRODUCTION PERIOD

PRE-PRODUCTION PERIOD	0.00	Years
STRIPPING	0.	Tonnes

PRODUCTION PERIOD

LIFE OF ORE	5.30	Years
ORE	4175071.	Tonnes
* AVERAGE GRADE	8.33333	%
MILL INPUT	347922560	Kg
MILL OUTPUT	330526460	Kg
WASTE	9622328.	Tonnes
MINING STRIPPING RATIO	1:3.4	

CAPITAL COSTS

ROAD	M$	.77
WATERLINES	M$	.77
STRIPPING COSTS	M$	0.00
TOTAL CAPITAL COST	M$	1.55

OPERATING COSTS

MINING COSTS	M$ 163.25	
	39.10	$/Tonne
	.47	$/Kg
TRANSPORTATION COSTS	M$ 7.10	
	1.70	$/Tonne
	.02	$/Kg
MILLING & ADMIN COSTS	M$ 183.70	
	44.00	$/Tonne
	.56	$/Kg
TOTAL OPERATING COST	M$ 354.05	
	84.80	$/Tonne
	1.07	$/Kg

TOTAL VALUE OF DEPOSIT	M$ 436.29
TOTAL COSTS	M$ 355.60
PROFIT	*** M$ 80.69

Total Capital Cost m$ 65.

Net Profit M$ 15.

NPUT PARAMETERS		
ULTIMATE PIT DEPTH	100.	Meters
HORIZONTAL WIDTH	20.	Meters
* DEPOSIT LENGTH	1500.	Meters
VERTICAL THICKNESS	100.	Meters
DISTANCE TO MILL	5.	Km
SSUMED PARAMETERS		
ANNUAL MINING CAPACITY	2800000.	Tonnes
* PRODUCT UNIT VALUE	1.32	$/Kg
MINING COSTS	11.00	$/Tonne
TRANSPORT COSTS	.34	$/Tonne/K
MILLING & ADMIN COSTS	44.00	$/Tonne
MAXIMUM ANNUAL MILL FEED	655000.	Tonnes
ANNUAL MILL PRODUCTION	2272000.	Kg
MINIMUM TOLERABLE PRODUCTION	1360000.	Kg
* MINING RECOVERY	80.0	%
* DILUTION	20.0	%
* MILLING RECOVERY	95.0	%
PIT WALL SLOPE	45.0	Degrees
* TONNAGE FACTOR	2.8	Tonnes/M3
CAPITAL COST FOR ROAD	155000.	$/Km
CAPITAL COST FOR DEWATERING	155000.	$/Km
DEPOSIT GEOMETRY		
ANNUAL PRODUCTION	629680.	Tonnes
TOTAL PROJECT LIFE	18.20	Years
TOTAL MATERIAL	50964664.	Tonnes
TOTAL WASTE	39503448.	Tonnes
STRIPPING RATIO	1: 3.4	

ORE RESERVES		
UNDILUTED	11461220.Tonnes	@10.0000%
DILUTED	13753464.Tonnes	@8.33333%
CONTAINED PRODUCT	*********Kg	

PRE-PRODUCTION PERIOD		
PRE-PRODUCTION PERIOD	0.00	Years
STRIPPING	0.	Tonnes
PRODUCTION PERIOD		
LIFE OF ORE	18.20	Years
ORE	11002770.	Tonnes
* AVERAGE GRADE	8.33333	%
MILL INPUT	916897540	Kg
MILL OUTPUT	871052670	Kg
WASTE	37211200.	Tonnes
MINING STRIPPING RATIO	1:4.4	
CAPITAL COSTS		
ROAD	M$ .77	
WATERLINES	M$ .77	
STRIPPING COSTS	M$ 0.00	
TOTAL CAPITAL COST	M$ 1.55	
OPERATING COSTS		
MINING COSTS	M$ 560.61	
	50.95	$/Tonne
	.61	$/Kg
TRANSPORTATION COSTS	M$ 18.70	
	1.70	$/Tonne
	.02	$/Kg
MILLING & ADMIN COSTS	M$ 484.12	
	44.00	$/Tonne
	.56	$/Kg
TOTAL OPERATING COST	M$1063.44	
	96.65	$/Tonne
	1.22	$/Kg
TOTAL VALUE OF DEPOSIT	M$1149.79	
TOTAL COSTS	M$1064.99	
PROFIT	*** M$ 84.80	

Total Capital Cost M$55.

Net Profit M$40.

INPUT PARAMETERS		
ULTIMATE PIT DEPTH	100.	Meters
HORIZONTAL WIDTH	20.	Meters
* DEPOSIT LENGTH	1000.	Meters
VERTICAL THICKNESS	100.	Meters
DISTANCE TO MILL	5.	Km
ASSUMED PARAMETERS		
ANNUAL MINING CAPACITY	2800000.	Tonnes
* PRODUCT UNIT VALUE	1.32	$/Kg
MINING COSTS	11.00	$/Tonne
TRANSPORT COSTS	.34	$/Tonne/K
MILLING & ADMIN COSTS	44.00	$/Tonne
MAXIMUM ANNUAL MILL FEED	655000.	Tonnes
ANNUAL MILL PRODUCTION	2272000.	Kg
MINIMUM TOLERABLE PRODUCTION	1360000.	Kg
* MINING RECOVERY	80.0	%
* DILUTION	20.0	%
* MILLING RECOVERY	95.0	%
PIT WALL SLOPE	45.0	Degrees
* TONNAGE FACTOR	2.8	Tonnes/M3
CAPITAL COST FOR ROAD	155000.	$/Km
CAPITAL COST FOR DEWATERING	155000.	$/Km
DEPOSIT GEOMETRY		
ANNUAL PRODUCTION	626211.	Tonnes
TOTAL PROJECT LIFE	12.20	Years
TOTAL MATERIAL	34164656.	Tonnes
TOTAL WASTE	26523844.	Tonnes
STRIPPING RATIO	1: 3.5	

ORE RESERVES

UNDILUTED	7640813.Tonnes	@10.0000%
DILUTED	9168976.Tonnes	@8.33333%
CONTAINED PRODUCT	764081280Kg	

PRE-PRODUCTION PERIOD		
PRE-PRODUCTION PERIOD	0.00	Years
STRIPPING	0.	Tonnes
PRODUCTION PERIOD		
LIFE OF ORE	12.20	Years
ORE	7335180.	Tonnes
* AVERAGE GRADE	8.33333	%
MILL INPUT	611265020	Kg
MILL OUTPUT	580701820	Kg
WASTE	24995680.	Tonnes
MINING STRIPPING RATIO	1:4.5	
CAPITAL COSTS		
ROAD	M$ .77	
WATERLINES	M$ .77	
STRIPPING COSTS	M$ 0.00	
TOTAL CAPITAL COST	M$ 1.55	
OPERATING COSTS		
MINING COSTS	M$ 375.81	
	51.23	$/Tonne
	.61	$/Kg
TRANSPORTATION COSTS	M$ 12.47	
	1.70	$/Tonne
	.02	$/Kg
MILLING & ADMIN COSTS	M$ 322.75	
	44.00	$/Tonne
	.56	$/Kg
TOTAL OPERATING COST	M$ 711.03	
	96.93	$/Tonne
	1.22	$/Kg
TOTAL VALUE OF DEPOSIT	M$ 766.53	
TOTAL COSTS	M$ 712.58	
PROFIT	*** M$ 53.95	

Total Capital Cost m$ 55

Net Loss m$ 1.

INPUT PARAMETERS		
ULTIMATE PIT DEPTH	100.	Meters
HORIZONTAL WIDTH	20.	Meters
* DEPOSIT LENGTH	1000.	Meters
VERTICAL THICKNESS	100.	Meters
DISTANCE TO MILL	5.	Km
ASSUMED PARAMETERS		
ANNUAL MINING CAPACITY	2800000.	Tonnes
* PRODUCT UNIT VALUE	1.32	$/Kg
MINING COSTS	11.00	$/Tonne
TRANSPORT COSTS	.34	$/Tonne/K
MILLING & ADMIN COSTS	44.00	$/Tonne
MAXIMUM ANNUAL MILL FEED	655000.	Tonnes
ANNUAL MILL PRODUCTION	2272000.	Kg
MINIMUM TOLERABLE PRODUCTION	1360000.	Kg
* MINING RECOVERY	80.0	%
* DILUTION	20.0	%
* MILLING RECOVERY	95.0	%
PIT WALL SLOPE	45.0	Degrees
* TONNAGE FACTOR	2.8	Tonnes/M3
CAPITAL COST FOR ROAD	155000.	$/Km
CAPITAL COST FOR DEWATERING	155000.	$/Km
DEPOSIT GEOMETRY		
ANNUAL PRODUCTION	521842.	Tonnes
TOTAL PROJECT LIFE	12.20	Years
TOTAL MATERIAL	34164656.	Tonnes
TOTAL WASTE	27797312.	Tonnes
STRIPPING RATIO	1: 4.4	

ORE RESERVES

UNDILUTED	6367344.Tonnes	@12.0000%
DILUTED	7640813.Tonnes	@10.0000%
CONTAINED PRODUCT	764081280Kg	

PRE-PRODUCTION PERIOD		
PRE-PRODUCTION PERIOD	0.00	Years
STRIPPING	0.	Tonnes
PRODUCTION PERIOD		
LIFE OF ORE	12.20	Years
ORE	6112650.	Tonnes
* AVERAGE GRADE	10.0000	%
MILL INPUT	611265020	Kg
MILL OUTPUT	580701820	Kg
WASTE	26523844.	Tonnes
MINING STRIPPING RATIO	1:5.4	
CAPITAL COSTS		
ROAD	M$ .77	
WATERLINES	M$ .77	
STRIPPING COSTS	M$ 0.00	
TOTAL CAPITAL COST	M$ 1.55	
OPERATING COSTS		
MINING COSTS	M$ 375.81	
	61.48	$/Tonne
	.61	$/Kg
TRANSPORTATION COSTS	M$ 10.39	
	1.70	$/Tonne
	.02	$/Kg
MILLING & ADMIN COSTS	M$ 268.96	
	44.00	$/Tonne
	.46	$/Kg
TOTAL OPERATING COST	M$ 655.16	
	107.18	$/Tonne
	1.13	$/Kg
TOTAL VALUE OF DEPOSIT	M$ 766.53	
TOTAL COSTS	M$ 656.71	
PROFIT	*** M$ 109.82	

Total Capital Cost M$ 49.

Net Profit M$ 60.

INPUT PARAMETERS

ULTIMATE PIT DEPTH	100.	Meters
HORIZONTAL WIDTH	20.	Meters
* DEPOSIT LENGTH	1000.	Meters
VERTICAL THICKNESS	100.	Meters
DISTANCE TO MILL	5.	Km

ASSUMED PARAMETERS

ANNUAL MINING CAPACITY	2600000.	Tonnes
* PRODUCT UNIT VALUE	1.32	$/Kg
MINING COSTS	11.00	$/Tonne
TRANSPORT COSTS	.34	$/Tonne/K
MILLING & ADMIN COSTS	44.00	$/Tonne
MAXIMUM ANNUAL MILL FEED	655000.	Tonnes
ANNUAL MILL PRODUCTION	2272000.	Kg
MINIMUM TOLERABLE PRODUCTION	1360000.	Kg
* MINING RECOVERY	80.0	%
* DILUTION	20.0	%
* MILLING RECOVERY	95.0	%
PIT WALL SLOPE	45.0	Degrees
* TONNAGE FACTOR	2.9	Tonnes/M3
CAPITAL COST FOR ROAD	155000.	$/Km
CAPITAL COST FOR DEWATERING	155000.	$/Km

DEPOSIT GEOMETRY

ANNUAL PRODUCTION	417474.	Tonnes
TOTAL PROJECT LIFE	12.46	Years
TOTAL MATERIAL	34896760.	Tonnes
TOTAL WASTE	29693732.	Tonnes
STRIPPING RATIO	1: 5.7	

ORE RESERVES

UNDILUTED	5203028.Tonnes	@15.0000%
DILUTED	6243634.Tonnes	@12.5000%
CONTAINED PRODUCT	780454270Kg	

PRE-PRODUCTION PERIOD

PRE-PRODUCTION PERIOD	0.00	Years
STRIPPING	0.	Tonnes

PRODUCTION PERIOD

LIFE OF ORE	12.46	Years
ORE	4994907.	Tonnes
* AVERAGE GRADE	12.5000	%
MILL INPUT	624363390	Kg
MILL OUTPUT	593145220	Kg
WASTE	28653128.	Tonnes
MINING STRIPPING RATIO	1:6.7	

CAPITAL COSTS

ROAD	M$ .77
WATERLINES	M$ .77
STRIPPING COSTS	M$ 0.00
TOTAL CAPITAL COST	M$ 1.55

OPERATING COSTS

MINING COSTS	M$ 383.86	
	76.85	$/Tonne
	.61	$/Kg
TRANSPORTATION COSTS	M$ 8.49	
	1.70	$/Tonne
	.01	$/Kg
MILLING & ADMIN COSTS	M$ 219.78	
	44.00	$/Tonne
	.37	$/Kg
TOTAL OPERATING COST	M$ 612.13	
	122.55	$/Tonne
	1.03	$/Kg

TOTAL VALUE OF DEPOSIT	M$ 782.95
TOTAL COSTS	M$ 613.68
PROFIT	*** M$ 169.27
Total Capital Cost	M$ 43.
Net Profit	M$ 126.

SPECIFICATION OF DEPOSIT [illegible]:00 AM THU., 18 APR., 1985

NPUT PARAMETERS

ULTIMATE PIT DEPTH	100.	Meters
HORIZONTAL WIDTH	20.	Meters
* DEPOSIT LENGTH	1500.	Meters
VERTICAL THICKNESS	100.	Meters
DISTANCE TO MILL	5.	Km

SSUMED PARAMETERS

ANNUAL MINING CAPACITY	2800000.	Tonnes
* PRODUCT UNIT VALUE	1.32	$/Kg
MINING COSTS	11.00	$/Tonne
TRANSPORT COSTS	.34	$/Tonne/K
MILLING & ADMIN COSTS	44.00	$/Tonne
MAXIMUM ANNUAL MILL FEED	655000.	Tonnes
ANNUAL MILL PRODUCTION	2272000.	Kg
MINIMUM TOLERABLE PRODUCTION	1360000.	Kg
* MINING RECOVERY	80.0	%
* DILUTION	20.0	%
* MILLING RECOVERY	95.0	%
PIT WALL SLOPE	45.0	Degrees
* TONNAGE FACTOR	2.9	Tonnes/M3
CAPITAL COST FOR ROAD	155000.	$/Km
CAPITAL COST FOR DEWATERING	155000.	$/Km

DEPOSIT GEOMETRY

ANNUAL PRODUCTION	419786.	Tonnes
TOTAL PROJECT LIFE	18.59	Years
TOTAL MATERIAL	52056760.	Tonnes
TOTAL WASTE	44252216.	Tonnes
STRIPPING RATIO	1: 5.7	

ORE RESERVES

UNDILUTED	7804543.Tonnes	@15.0000%
DILUTED	9365452.Tonnes	@12.5000%
CONTAINED PRODUCT	*********Kg	

PRE-PRODUCTION PERIOD

PRE-PRODUCTION PERIOD	0.00	Years
STRIPPING	0.	Tonnes

PRODUCTION PERIOD

LIFE OF ORE	18.59	Years
ORE	7492361.	Tonnes
* AVERAGE GRADE	12.5000	%
MILL INPUT	936545020	Kg
MILL OUTPUT	889717760	Kg
WASTE	42691312.	Tonnes
MINING STRIPPING RATIO	1:6.7	

CAPITAL COSTS

ROAD	M$ .77
WATERLINES	M$ .77
STRIPPING COSTS	M$ 0.00
TOTAL CAPITAL COST	M$ 1.55

OPERATING COSTS

MINING COSTS	M$ 572.62	
	76.43	$/Tonne
	.61	$/Kg
TRANSPORTATION COSTS	M$ 12.74	
	1.70	$/Tonne
	.01	$/Kg
MILLING & ADMIN COSTS	M$ 329.66	
	44.00	$/Tonne
	.37	$/Kg
TOTAL OPERATING COST	M$ 915.03	
	122.13	$/Tonne
	1.03	$/Kg

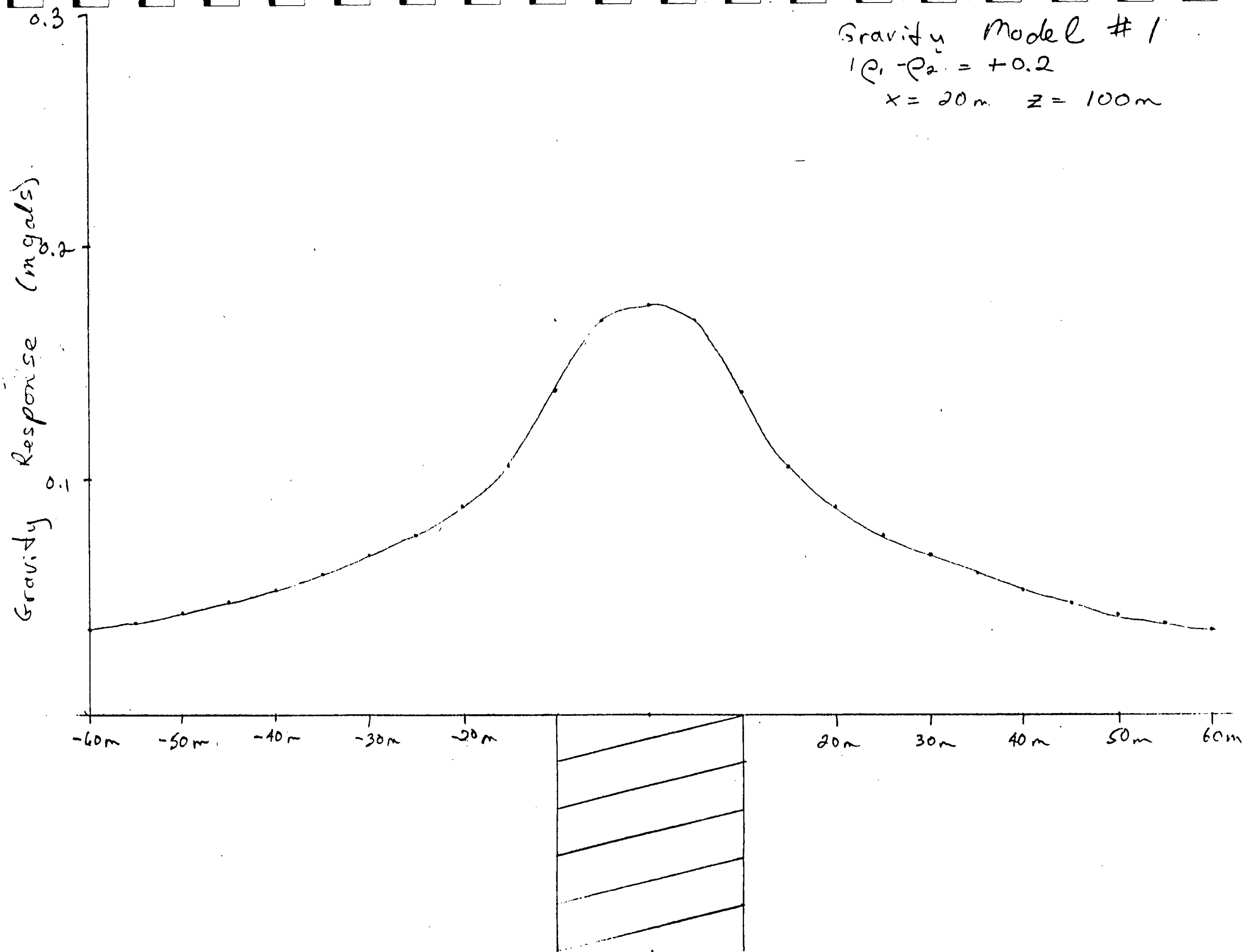
TOTAL VALUE OF DEPOSIT	M$1174.43
TOTAL COSTS	M$ 916.58
PROFIT	*** M$ 257.85

Total Capital Cost m$ 43.

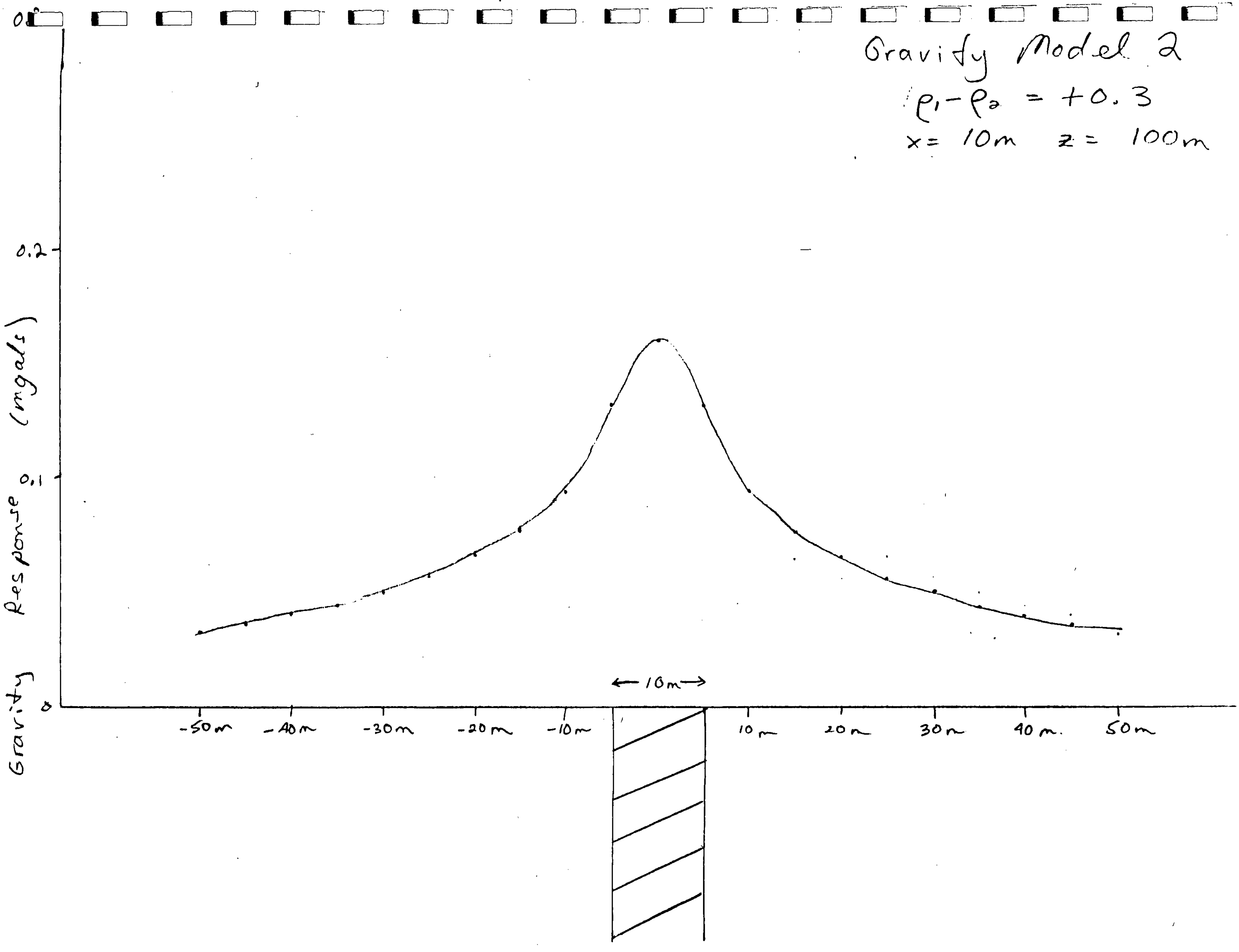
Net Profit m$ 214.

APPENDIX III- 2

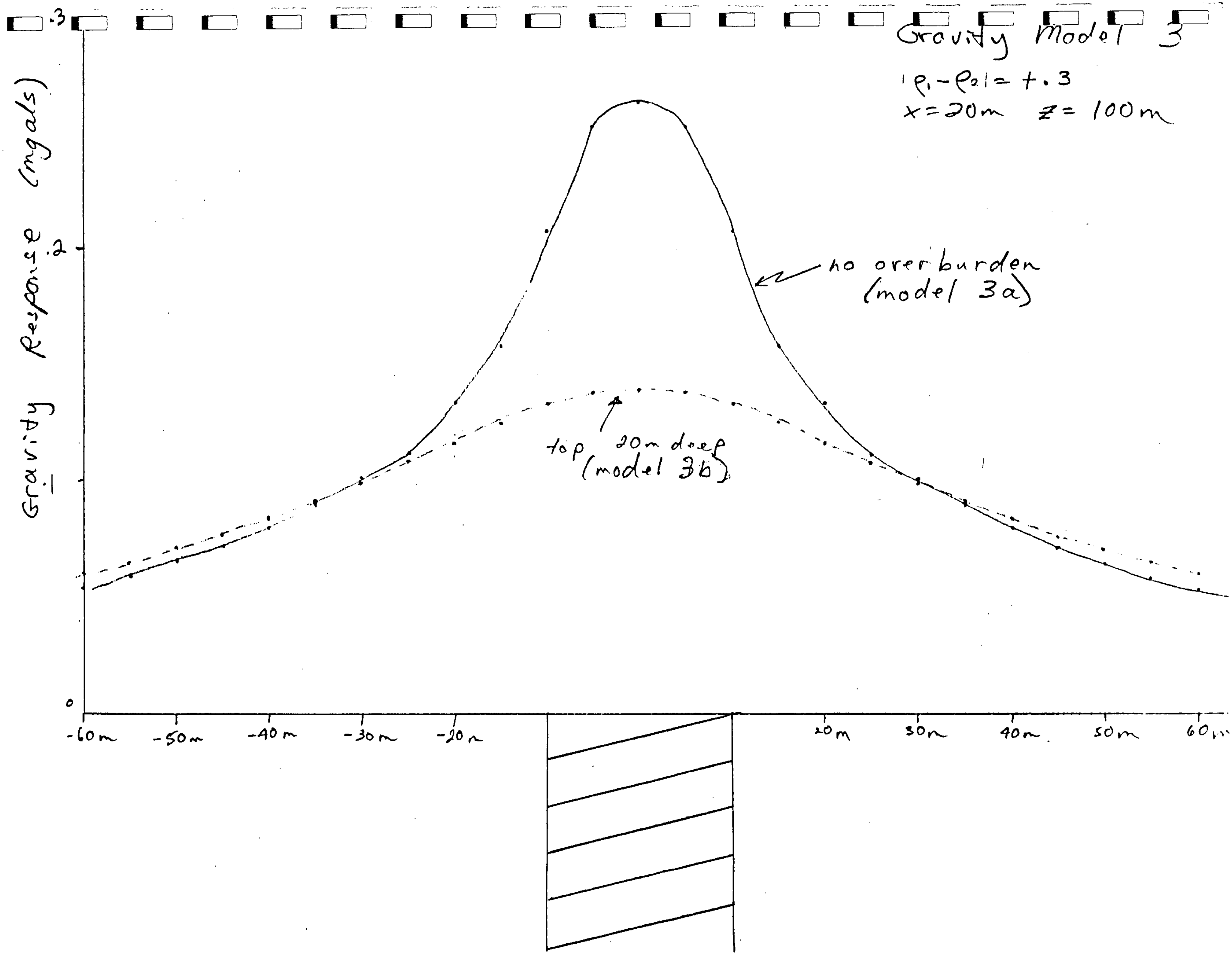
GRAVITY MODELS



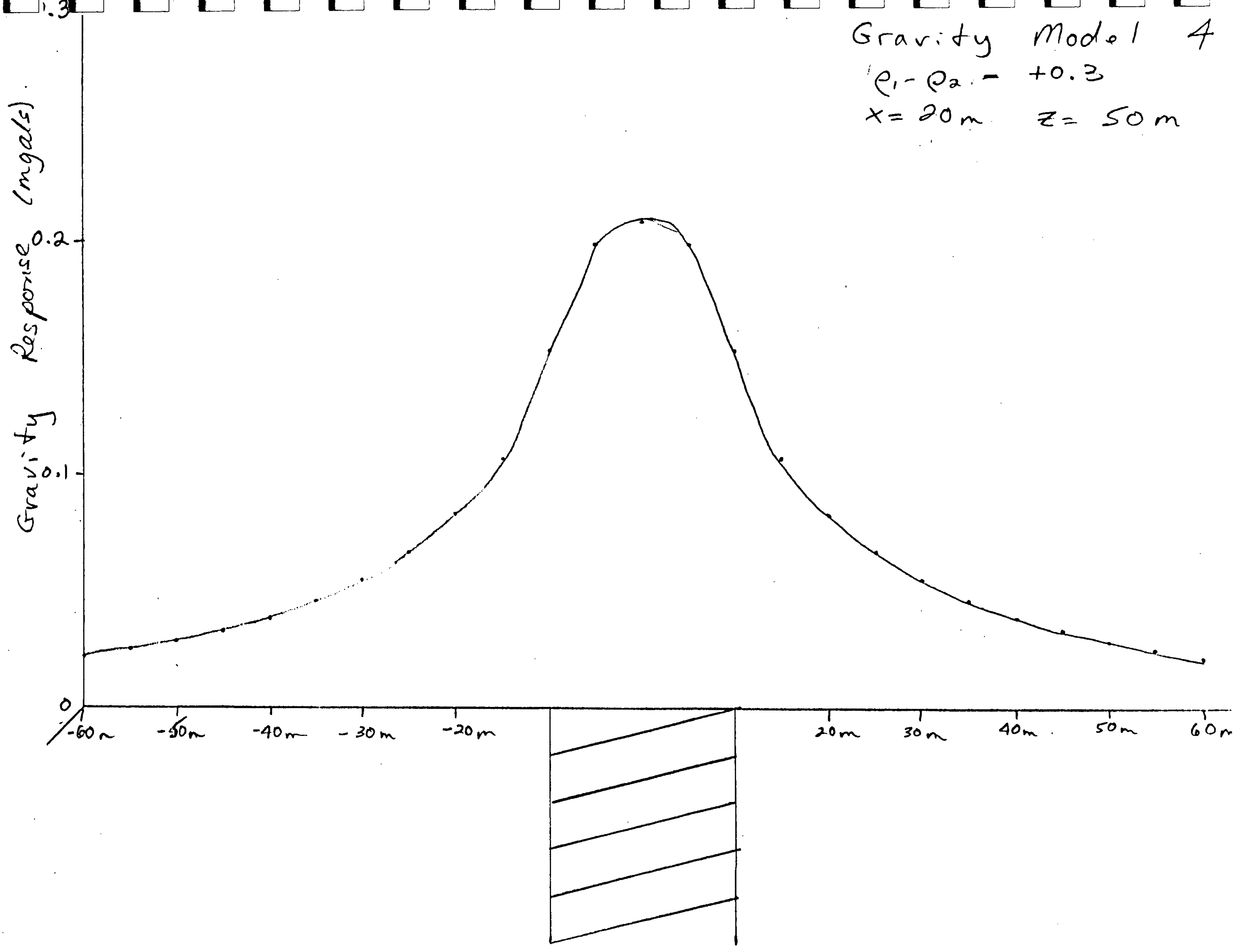
Gravity Model #1
$\rho_1 - \rho_2 = +0.2$
x = 20m z = 100m
Gravity Response (mgals)
0.3
0.2
0.1
-60m
-50m
-40m
-30m
-20m
20m
30m
40m
50m
60m

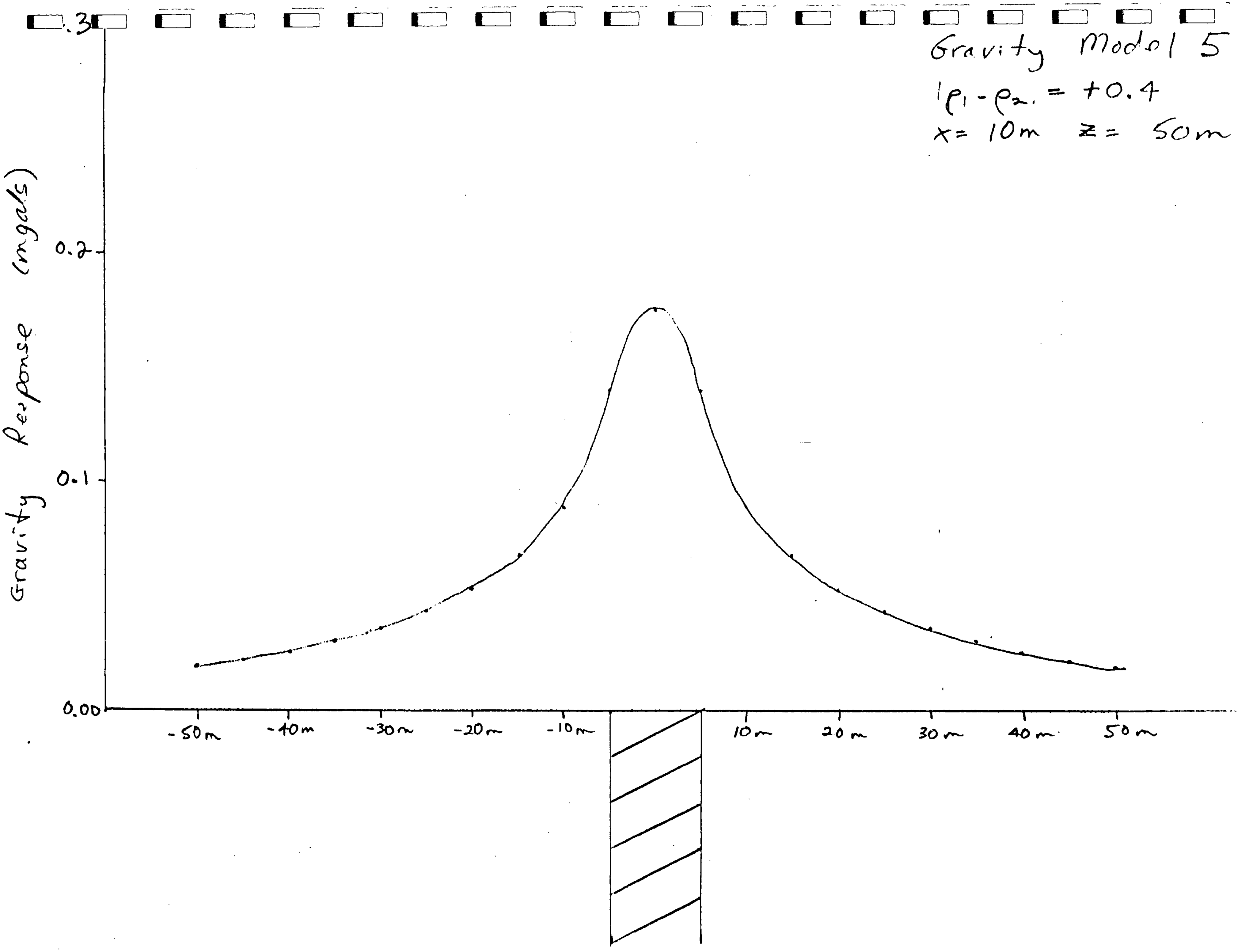


Gravity Model 2
$\rho_1 - \rho_2 = +0.3$
x = 10m z = 100m
0.2
0.1
0
Gravity Response (mgals)
← 10m →
-50m
-40m
-30m
-20m
-10m
10m
20m
30m
40m.
50m



Gravity Model 3
$|\rho_1 - \rho_2| = +.3$
x = 20m z = 100m
Gravity Response (mgals)
.3
.2
.1
0
no overburden (model 3a)
top 20m deep (model 3b)
-60m
-50m
-40m
-30m
-20m
20m
30m
40m
50m
60m

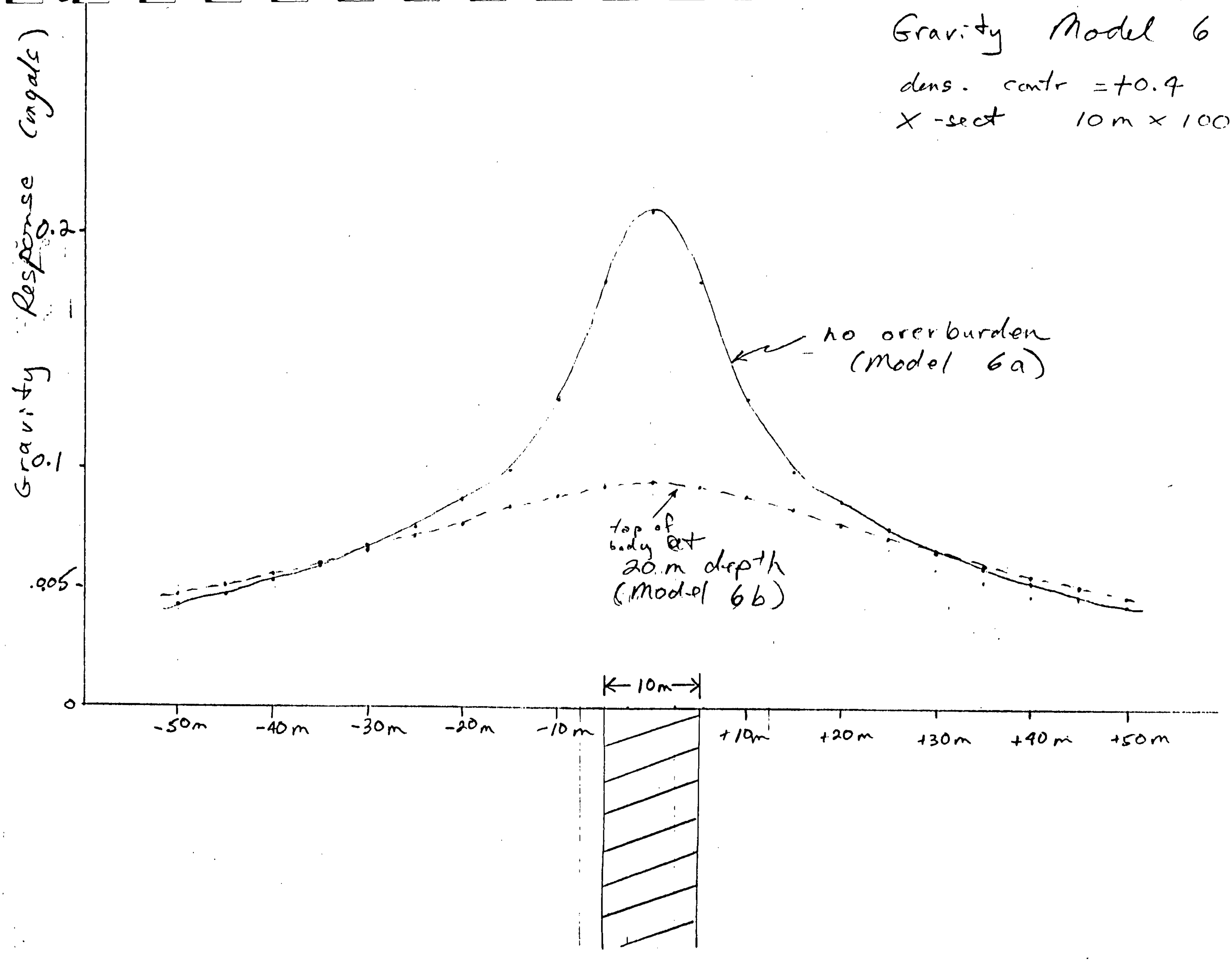

Gravity Model 4
ρ1 - ρ2 = +0.3
x = 20 m   z = 50 m
Gravity Response (mgals)
.3
0.2
0.1
0
-60 m
-50 m
-40 m
-30 m
-20 m
20 m
30 m
40 m
50 m
60 m

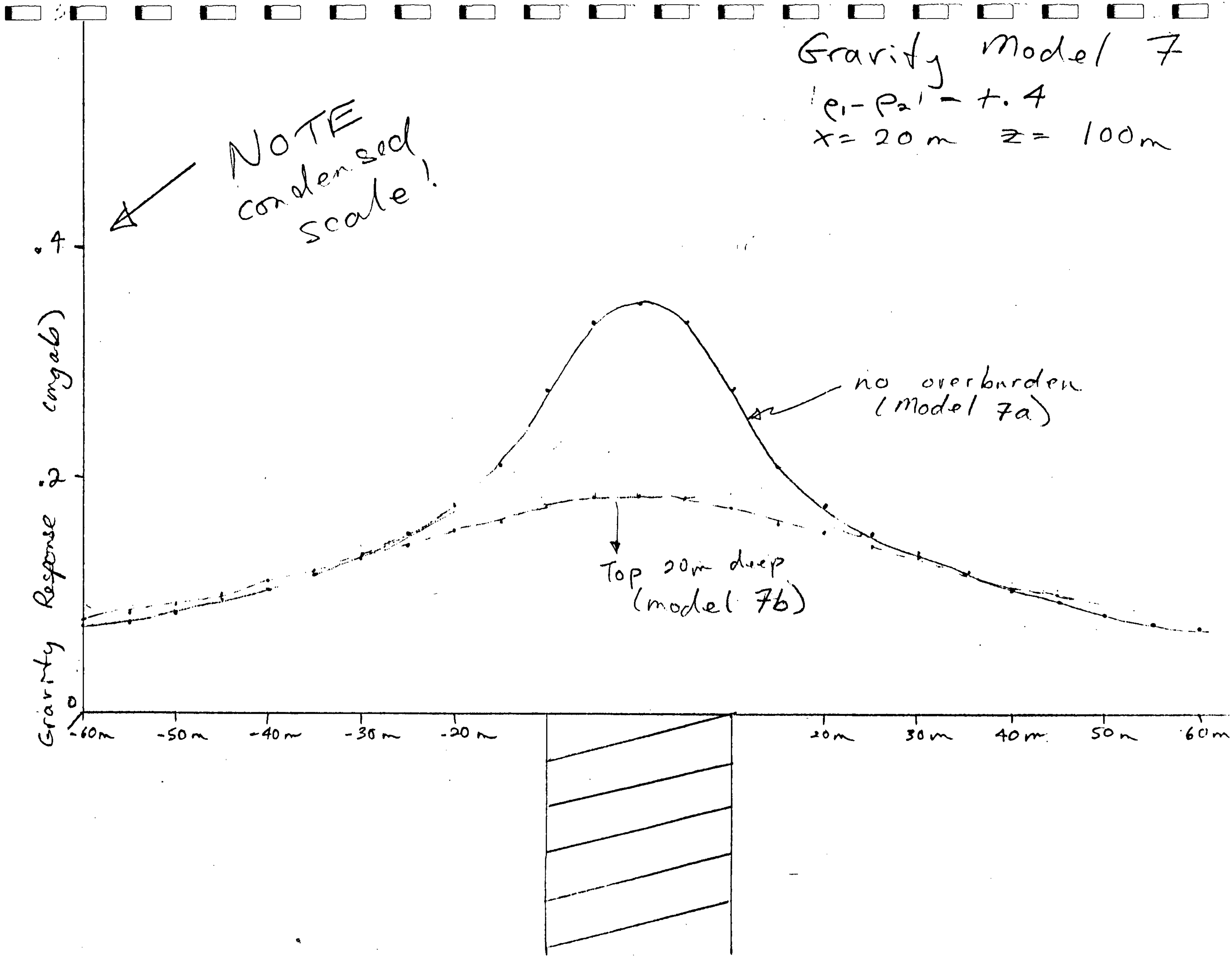


Gravity Model 5
$\rho_1 - \rho_2 = +0.4$
x= 10m z= 50m
Gravity Response (mgals)
.3
0.2
0.1
0.00
-50m
-40m
-30m
-20m
-10m
10m
20m
30m
40m
50m

Gravity Model 6

dens. contr = +0.4
X-sect 10 m × 100m





Gravity Model 7
$|\rho_1 - \rho_2| = +.4$
x = 20 m z = 100m
NOTE condensed scale!
Gravity Response (mgals)
.4
.2
0
no overburden (Model 7a)
Top 20m deep (model 7b)
-60m
-50m
-40m
-30m
-20m
20m
30m
40m
50m
60m

eldorado

FIGURE 2
HD CLAIMS - GEOLOGY MAP LEGEND

<u>PLEISTOCENE</u>

Q Till (where exposed in road cuts)

<u>TERTIARY</u> Endako Group?

Bd Basalt or andesite dykes. Dark green, brown weathering, finely crystalline, equigranular.

<u>UNKNOWN AGE</u> (possibly Cretaceous?)

Sm Micro syenite. Finely crystalline (about 1 mm) equigranular rock. Consists of 70% pink K-feldspar; remainder green, chloritic (chloritized mafic minerals?). Massive, unfoliated [one small outcrop only].

<u>JURASSIC?</u> (if a tuff) <u>OR YOUNGER</u> (if intrusive)

Dp Dacite porphyry. Dark grey aphanitic matrix, with 10 to 30% white lath-shaped feldspar phenocrysts, 1 to 3 mm long. Exotic inclusions to 3 cm in size range from sparse to abundant. Rock is entirely massive, with no prerferred orientation of phenocrysts or inclusions. Probably a sub-volcanic intrusion.

Dpi: abundant exotic inclusions

Dpq: numerous quartz phenocrysts

<u>JURASSIC</u>

Hazelton Group
Telkwa Formation

R Rhyolite. Most or all rocks are of pyroclastic origin. Pale to medium grey or green, buff; commonly pale green matrix with pink pyroclasts. Tuffs are usually matrix-supported and polymictic. Only rarely displays preferred orientation of pyroclasts, lamination, or accretionarey lapilli. Possibly largely subaqueous in origin.

Rtb: tuff with block-or bomb-sized (64 mm) clasts
Rti: lapilli tuff; many clasts 2 mm in size

Rta: ash tuff; most clasts less than 2 mm; frequently with sparse lapilli

Rtaq: Rta with abundant quartz crystals

Rtaa: Rta, very well sorted, equigranular, clast supported; probably an ash fall tuff

Rtl: laminated tuff, usually ash-sized to very fine (dust) clasts

Rf: Aphanitic rocks of rhyolite composition. Many may be silicified Rti or Rta. Some may be dust tuffs, or sub-volcanic intrusives. Quartz or feldspar phenocrysts occasionally present

Rfx: As for Rf, but brecciated

Ralt: fractured and altered (clays and heavy limonite stain) rock of probable rhyolitic composition

Rtiq: Rti with numerous quartz crystals

It Tuff of andesitic composition. Matrix dark green, lapilli and coarser ash are of felsic (light-coloured) aspect. Bedding occasionally discernable. Matrix-supported, polymictic. Interbedded with unit R.

Iti: lapilli tuff

Ita: ash tuff

Ht Red tuff; matrix of hematitic mud, rhyolitic in composition. Frequently displays pronounced preferred orientation of pyroclasts and flattened pummice lapilli. Commonly contains lamination, well-sorted beds, or acretionary lapilli. Probably a subaerially-erupted unit. Interbedded on small-or-large scale with unit R.

Htb: contains block-or bomb-sized (64 mm) clasts

Hti: lapilli tuff; many clasts 2 mm

Htil: Hti that is layered or laminated

Hta: ash tuff

Htaq: Hta with abundant quartz crystals

Tb Red basalt. Aphanitic matrix with sparse small (2 mm) feldspar phenocrysts. Weathers brown.

Ch: Chert, dense, black, aphanitic. Crude banding which may not correspond to bedding. Up to 10% sphalerite.

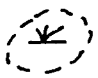
Chl: Chert, red, layered; includes layers of Rta.

eldorado

SYMBOLS

	limit of mapping
	geoligcal contact: defined
	: approximate
	: assumed
	fault: defined
	: approximate
	: assumed
20	inclined; vertical: bedding (b.), lamination (l.), preferred orientation of pyroclasts (c.), contact (ct.)
20	inclined; vertical: fault with gouge (flt.); prominent fracture or shear set (f.)
20	inclined, vertical: carbonate vein (cc.), mineralized vein or fracture
20	inclined, vertical: prominent joint set
Top	top determination; arrow points to stratigraphic top
	area of highly fractured rock with numerous veinlets of quartz and/or calcite
	outcrop (bedrock or till)
(2m)	thickness of till (Q) exposed in road cut
(sh)	sheared
Xl.	tuff comprised primarily of crystals
• 22709	rock sample (1985 program) and number
Zn	sphalerite occurrence
Cd	cadmium stain
Cu	significant amount of copper stain;
	cp: chalocopyrite
	bo: bornite
	mal: malachite
	az: azurite

eldorado

Pb	lead (galena) occurrence
cc	calcite vein(s)
qz	quartz
lim	much limonite (Fe) stain
sil	silicified
acc lap	accretionary lapilli
fl	fluorite
py	pyrite
vn	vein
f	fractured
	marsh or swamp

GEOLOGICAL BRANCH
ASSESSMENT REPORT

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Figure 3

ELDOR RESOURCES LIMITED

HD CLAIMS, B.C. PROJECT 585

NORTH SHEET

GEOLOGY

GEOLOGY LEGEND ON SEPARATE SHEET (FIGURE 2)

Compiled: R.D.C.	Drawn: R.D.C.	Scale: 1:2000	Revised:
Date: Oct. 1985	Date: Oct. 1985	NTS: 93L/7	


BC TEL
MICROWAVE TOWER
GATE
HD 1
HD 2
HD 3
HD 4
HILLTOP
Hilltop Showings
HD 1 to 4 LCP
HILLTOP LCP
CN RADIO
TOWER
Trenches
Switchback
Showings
Radio Masts.
No outcrop
No data
Clearing (former ski hill)
GEOLOGICAL BRANCH
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12+00E
13+00E
14+00E
16+00E
17+00E
18+00E
19+00E
20+00E
21+00E
22+00E
23+00E
32+00N
30+00N
28+00N
26+00N
24+00N
22+00N
20+00N
18+00N
16+00N
14+00N
LEGEND
Road
Minor Road
Claim Boundary
HD 4 Claim Name
Note: Legal corner posts located by chaining from grid lines
0 50 100 150 metres
Figure 4
ELDOR RESOURCES LIMITED
HD CLAIMS, B.C. PROJECT 585
SOUTH SHEET
GEOLOGY
GEOLOGY LEGEND ON SEPARATE SHEET (FIGURE 2)
Compiled: R.D.C.
Date: Oct. 1985
Drawn: R.D.C.
Date: Oct. 1985
Scale: 1:2000
NTS: 93L/7
Revised:

Figure 7

HD Claims

Gravity Profile

Line 16+00 N

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ASSESSMENT REPORT

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Figure 8

HD Claims
Gravity Profile
Line 18+00 N

GEOLOGICAL BRANCH ASSESSMENT REPORT

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Figure 9

HD Claims
Gravity Profile
Line 20+00 N

Figure 10

HD Claims
Gravity Profile
Line 22+00 N

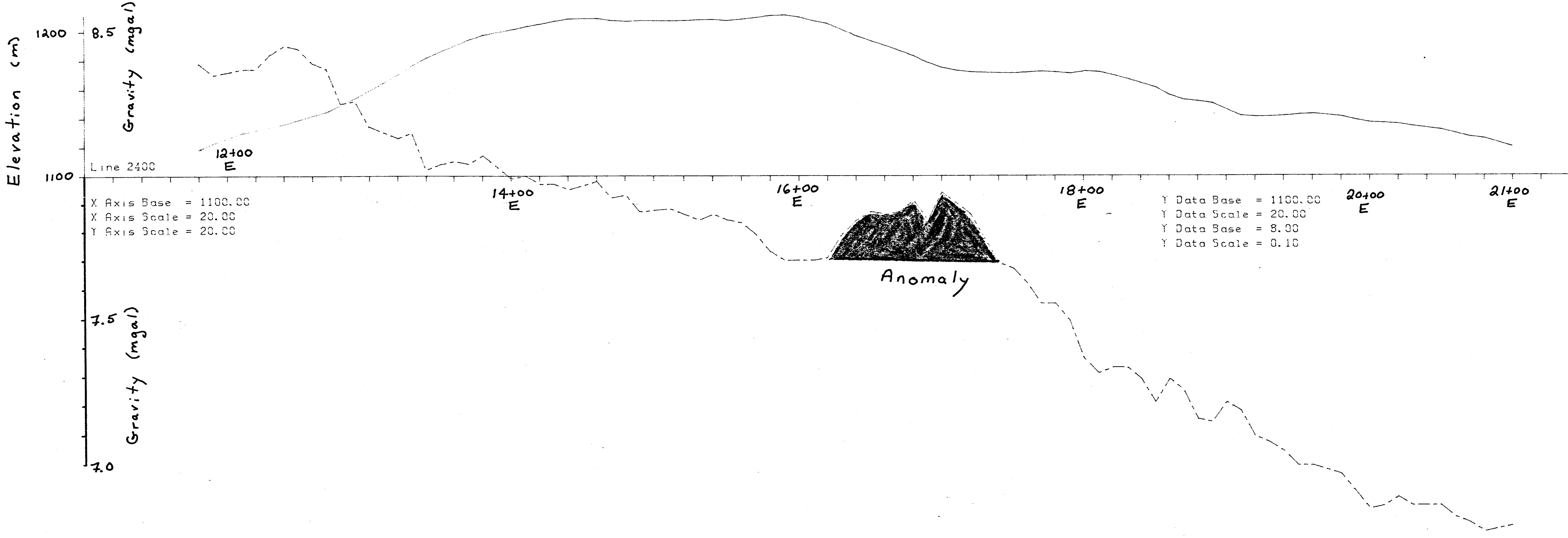

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Figure 11

HD Claims

Gravity Profile

Line 24+00 N

Figure 12

HD Claims
Gravity Profile
Line 26+00 N

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Figure 13

HD Claims
Gravity Profile
Line 28+00 N

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Figure 14

HD Claims

Gravity Profile

Line 30+00 N

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Figure 15

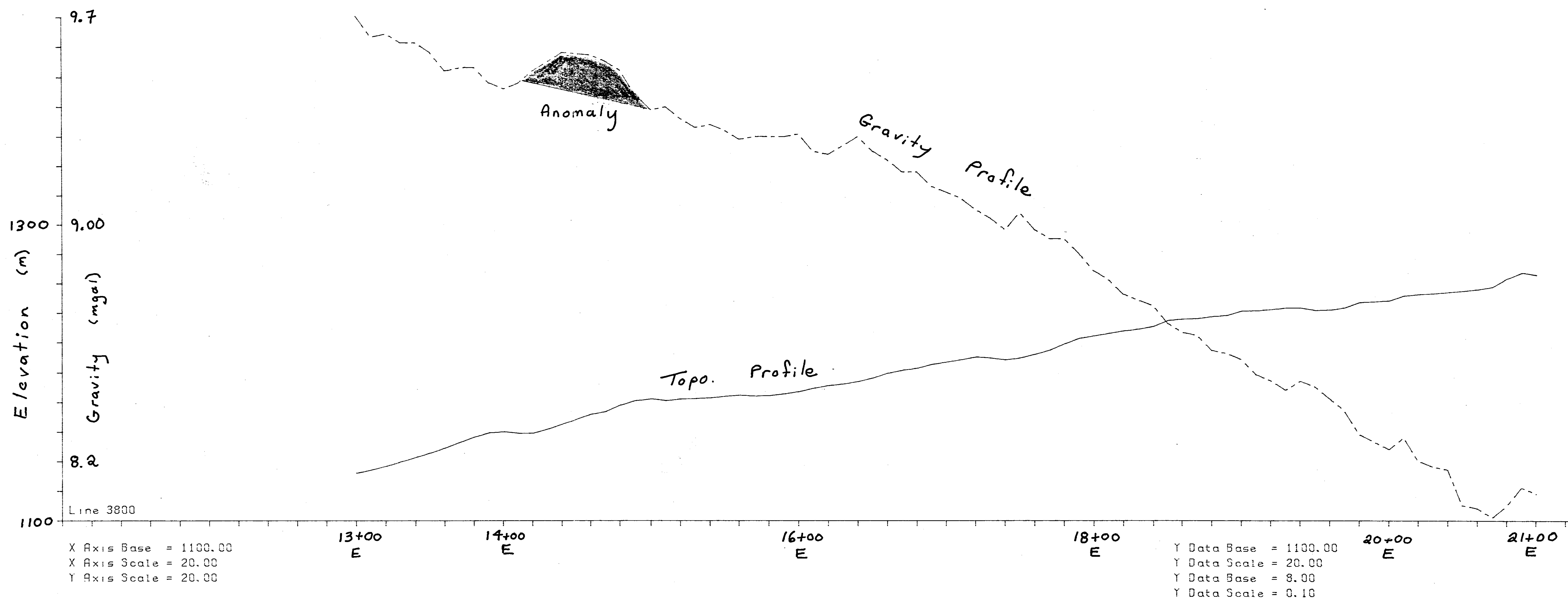
HD Claims
Gravity Profile
Line 32+00 N

Figure 16

HD Claims

Gravity Profile

Line 36+00 N



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ASSESSMENT REPORT

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Figure 17

HD Claims

Gravity Profile

Line 38+00 N

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Figure 18

HD Claims
Gravity Profile
Line 48+00 N

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Figure 19

HD Claims
Gravity Profile
Line 50+00 N

Note: for location of grid lines, refer to geology maps, Figs. 3 & 4

Figure 20

HD Claims

Stacked

Gravity Profiles

Scales: Topo. 1:4000
Gravity 1 cm = 0.4 mgal

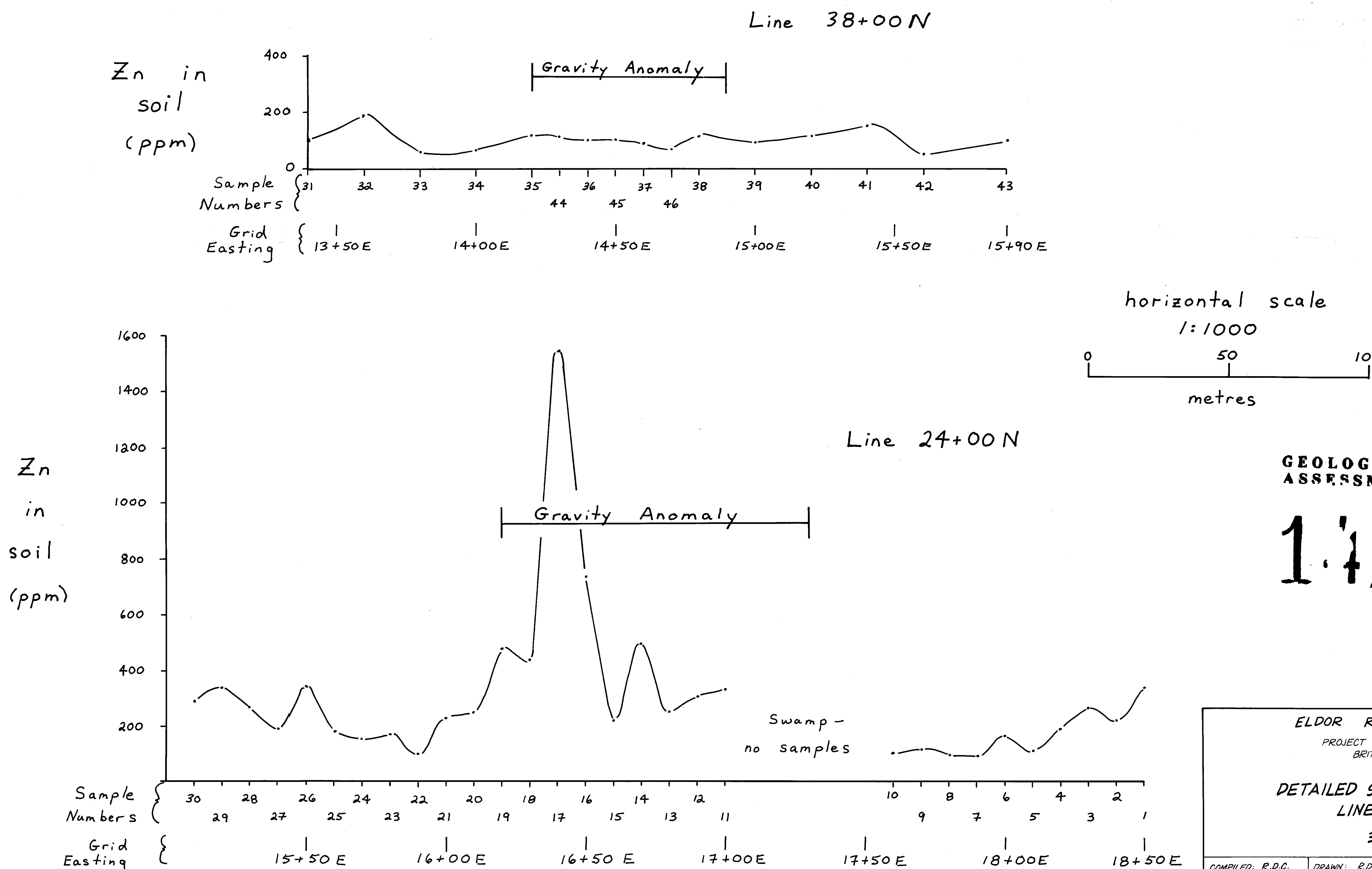

Figure 21

ELDOR RESOURCES LIMITED

PROJECT 585 HD CLAIMS
BRITISH COLUMBIA

DETAILED SOIL GEOCHEMISTRY
LINES: 24+00N AND 38+00N

COMPILED: R.D.C. DATE: OCT. 1985	DRAWN: R.D.C. DATE: OCT. 1985	SCALE: 1:1000 (HOR.) NTS: 93L/7	REVISED:

GEOLOGICAL BRANCH
ASSESSMENT REPORT

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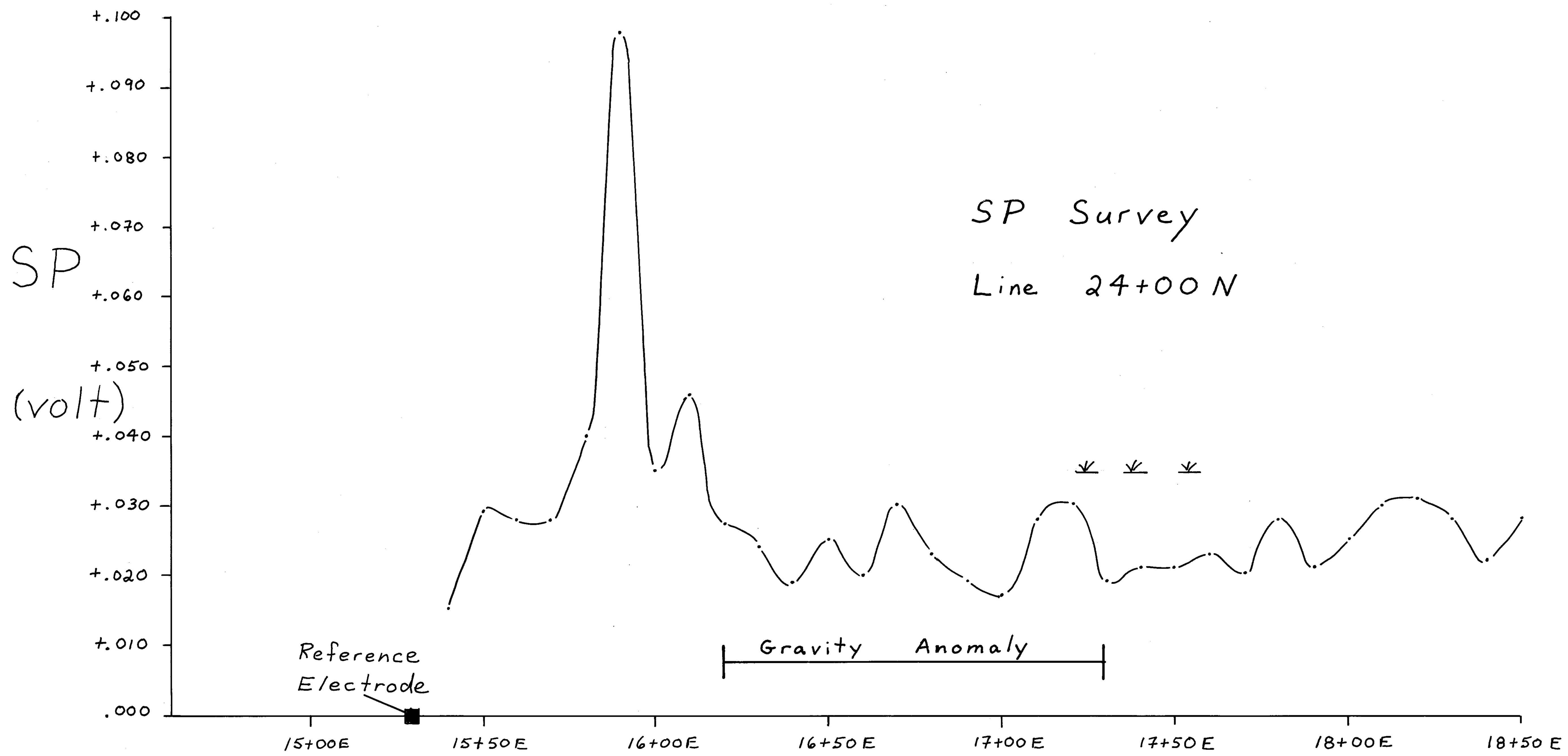
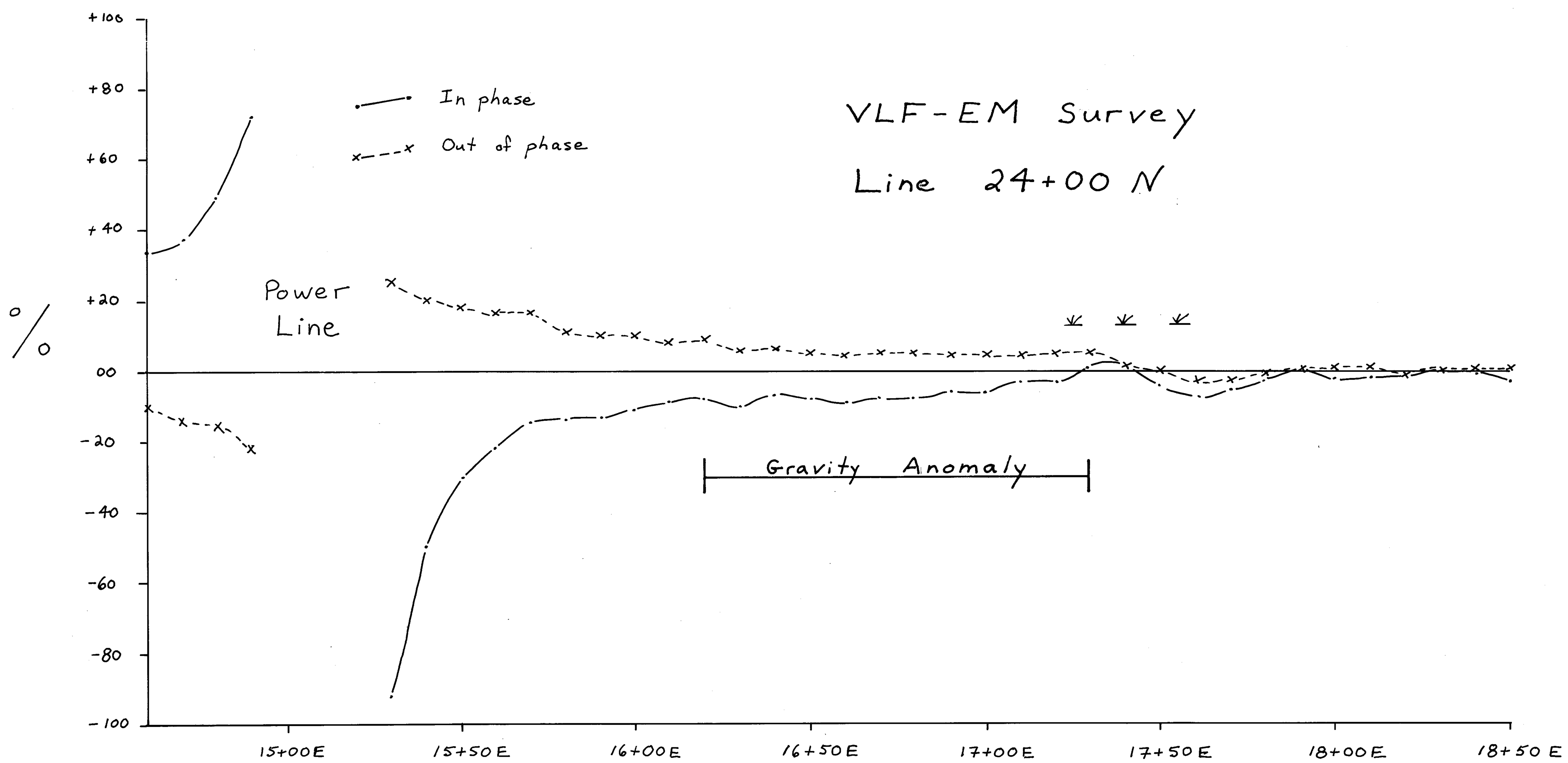
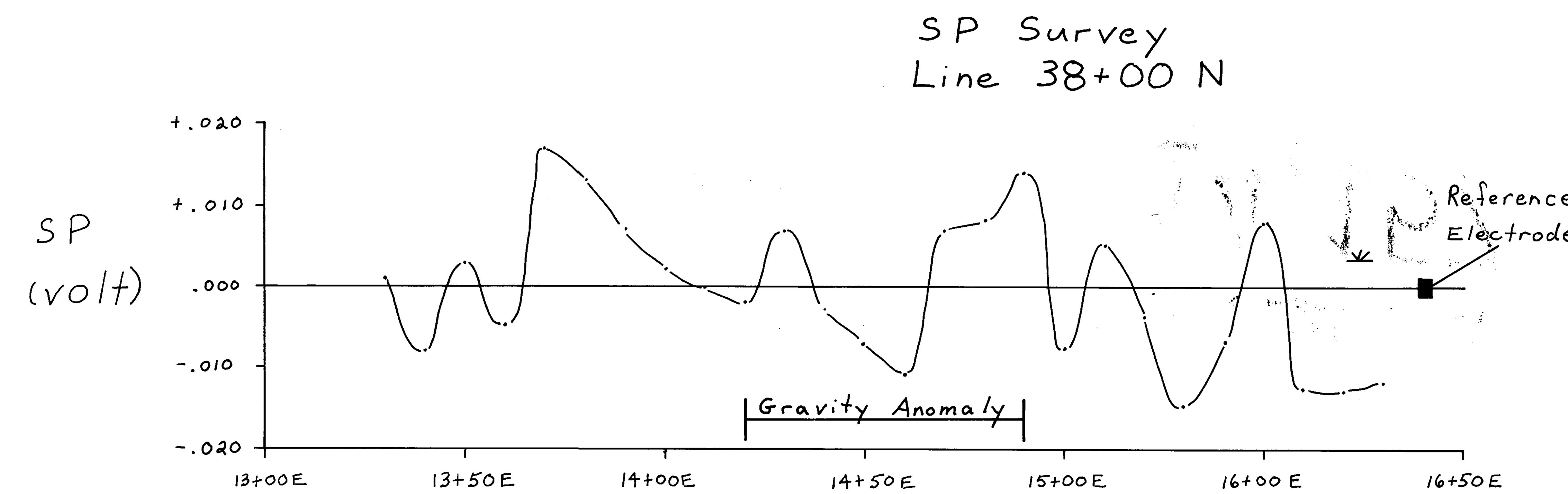
Self Potential (SP) Surveys:
- by "fixed electrode" method
- station spacing 10 m
- with a McPhar SP system

VLF-EM Surveys:
- transmitter NLK; Seattle, Washington
- read facing easterly
- station spacing 10 m
- instrument: Geonics EM-16

Horizontal Scale
1:1000
0 50 100
metres







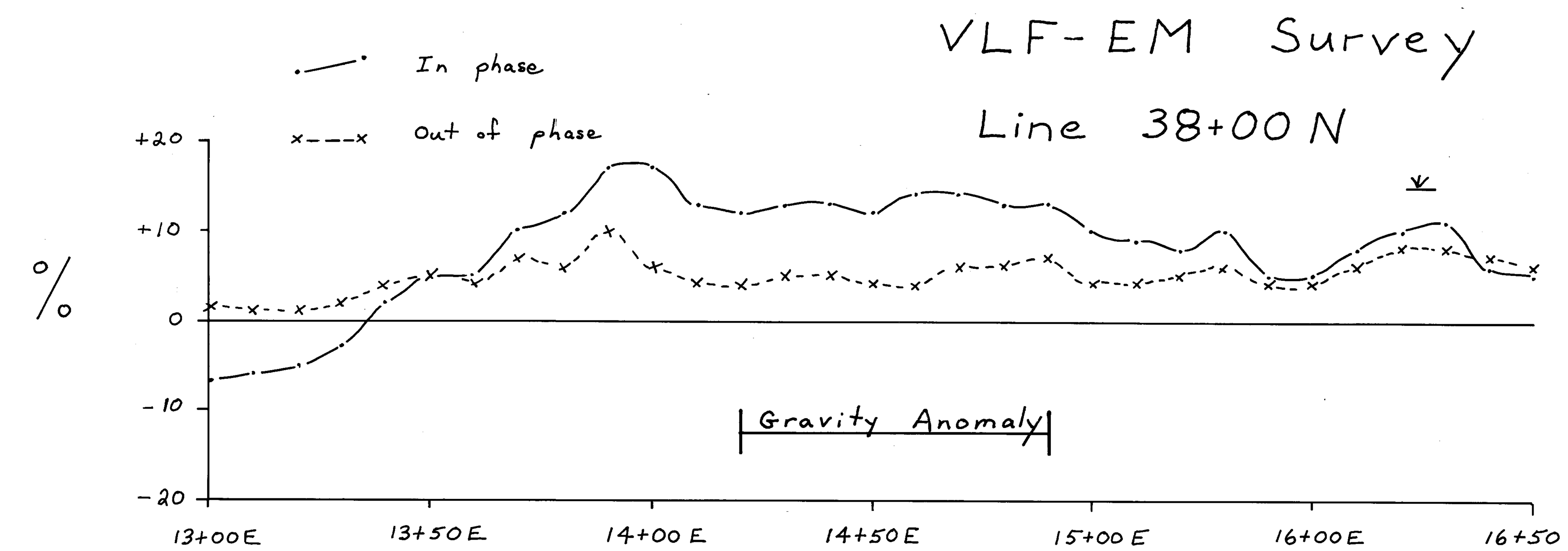


Figure 22

ELDOR RESOURCES LIMITED

PROJECT 585 HD CLAIMS
BRITISH COLUMBIA

VLF-EM AND SP SURVEYS
LINES: 24+00N
AND
38+00N

COMPILED: R.D.C. DATE: OCT. 1985	DRAWN: R.D.C. DATE: OCT. 1985	SCALE: 1:1000 (HOR) NTS: 93L/7	REVISED:

Zn in soil (ppm)
Gravity (mgal)
Zn in soil (ppm)
Gravity (mgal)
0
200
400
600
800
1000
1200
1400
1600
7.70
7.74
7.78
7.82
7.86
7.90
7.94
7.98
(interpolated)
Swamp – no soil samples
16+50E
16+60E
16+70E
16+80E
16+90E
17+00E
17+10E
17+20 E
Elevation
1190m
1180m
1170 m
1160m
1150 m
DDH 85HD-2
22741
Rfp
22742
Rfp
22743
22744
Rf
22745
16.6m
Dm
fractures, quartz stringers, trace pyrite throughout
DDH 85HD-1
22727
22728
22729
22730
22731
22732
22733
22734
22735
22736
29.2m
Py
Di
traces disseminated pyrite throughout
Legend
Δ Siliceous tectonic breccia
Rf Rhyolite, aphanitic
Rfp Rhyolite, quartz phenocrysts
Di Intermediate dyke
Dm Mafic dyke
Symbols
22747 Sample interval and number
~~~ Fault
py Pyrite
Scale
horizontal = vertical
= 1:100
0
5
10
metres
GEOLOGICAL BRANCH ASSESSMENT REPORT
14,157
Figure 23
ELDOR RESOURCES LIMITED
PROJECT 585 HD CLAIMS
BRITISH COLUMBIA
1985 DIAMOND DRILLING PROGRAM
SECTION: 24+00N
FACING NORTH
COMPILED: R.D.C.
DATE: OCT. 1985
DRAWN: R.D.C.
DATE: OCT. 1985
SCALE: 1:1000 (HOR.)
NTS: 93L/7
REVISED:
~~~

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO: GRANT CROOKER
P.O. BOX 234
KEREMEOS B.C.
PROJECT: TENORE OIL & GAS
TYPE OF ANALYSIS: GEOCHEMICAL

CERTIFICATE#: 85484
INVOICE#: 6123
DATE ENTERED: 85-11-25
FILE NAME: GC85484
PAGE # : 1

PRE FIX	SAMPLE NAME	-40M	PPM Ag	PPB Au
S	7+13N 12+50E	X	0.2	10
S	12+75E	X	0.2	10
S	13+00E	X	0.2	10
S	13+25E		0.2	10
S	13+50E		0.2	10
S	13+75E		0.2	10
S	14+00E		0.6	10
S	14+25E		0.2	10
S	14+50E	X	0.2	10
S	7+13N 14+75E		0.2	10
S	15+00E		0.2	10
S	15+25E		0.2	10
S	15+50E		0.2	10
S	15+75E		0.2	10
S	16+00E		0.2	10
S	16+25E	X	0.2	10
	16+50E	X	0.2	10
	16+75E		0.2	10
S	17+00E		0.2	10
S	7+13N 17+25E		0.2	10
S	17+50E		0.2	10
S	17+75E		0.2	10
S	18+00E	X	0.2	10
S	18+25E		0.2	10
S	18+50E		0.2	10
S	18+75E		0.2	10
S	19+00E		0.6	10
S	19+25E		0.4	10
S	7+13N 19+50E	X	0.6	10
S	7+50N 12+25E		0.4	10
S	12+50E		0.2	10
S	12+75E		0.2	10
S	13+00E		0.8	10
S	13+25E		0.2	10
S	13+50E		0.2	10
S	13+75E		0.4	10
S	14+00E		0.2	10
S	14+25E		0.2	10
S	14+50E		0.2	10
S	7+50N 14+75E	X	0.2	10

CERTIFIED BY : ____________________

ROSSBACHER LABORATORY LTD.

CERTIFICATE OF ANALYSIS

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TYPE OF ANALYSIS: GEOCHEMICAL

CERTIFICATE#: 85484
INVOICE#: 6123
DATE ENTERED: 85-11-25
FILE NAME: GC85484
PAGE # : 2

PRE FIX	SAMPLE NAME	-40M	PPM Ag	PPB Au
S	7+87N 12+25E		0.2	10
S	12+50E	X	0.2	10
S	12+75E		0.2	10
S	13+00E		0.2	10
S	13+25E		0.2	10
S	13+50E		0.2	10
S	13+75E	X	0.2	10
S	14+00E		0.2	10
S	14+25E		0.2	10
S	7+87N 14+50E		0.2	10
S	14+75E	X	0.2	10
S	15+00E		0.2	10
S	15+25E		0.2	10
S	15+50E		0.2	10
S	15+75E		0.2	10
S	16+00E		0.2	10
[illegible]	16+25E		0.2	10
S	16+50E		0.2	10
S	16+75E		0.2	10
S	7+87N 17+00E		0.2	10
S	17+25E		0.2	10
S	17+50E		0.2	10
S	17+75E		0.2	10
S	18+00E		0.2	10
S	18+25E		0.2	10
S	18+75E		0.6	10
S	19+00E	X	0.4	10
S	19+25E		0.8	10
S	7+87N 19+50E		0.6	10
S	8+25N 12+50E		0.2	10
S	12+75E	X	0.2	10
S	13+00E		0.2	10
S	13+25E		0.4	10
S	13+50E		0.2	10
S	13+75E		0.2	10
S	14+00E		0.2	10
S	14+25E	X	0.2	10
S	14+50E	X	0.2	10
S	8+25N 14+75E	X	0.6	10
S	8+62N 12+50E		0.8	10

CERTIFIED BY : J. Rossbacher

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

ROSSBACHER LABORATORY LTD.

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KEREMEOS B.C.
PROJECT: TENORE OIL & GAS
TYPE OF ANALYSIS: GEOCHEMICAL

CERTIFICATE#: 85484
INVOICE#: 6123
DATE ENTERED: 85-11-25
FILE NAME: GC85484
PAGE # : 3

PRE FIX	SAMPLE NAME	-40M	PPM Ag	PPB Au
S	8+62N 12+75E		0.6	10
S	13+00E		0.2	10
S	13+25E		0.2	10
S	13+50E	X	0.4	10
S	13+75E		0.2	10
S	14+00E		0.2	10
S	14+25E		0.2	10
S	14+50E		0.2	10
S	14+75E		0.4	10
S	8+62N 15+00E		0.2	10
S	15+25E		0.2	10
S	15+50E		0.2	10
S	15+75E		0.2	10
S	16+00E		0.2	10
S	16+25E		0.2	10
[illegible]	16+50E		0.2	10
[illegible]	16+75E		0.2	10
S	17+00E		0.2	10
S	17+25E		0.2	10
S	8+62N 17+50E	X	0.2	10
S	17+75E		0.2	10
S	18+00E	X	0.4	10
S	18+25E		0.2	10
S	18+50E		0.2	10
S	18+75E		0.2	10
S	19+00E		0.4	10
S	19+25E		0.6	10
S	8+62N 19+50E		0.4	10
S	8+75N 18+50E		0.2	10

CERTIFIED BY : [signature]

ROSSBACHER LABORATORY LTD.

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BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

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PAGE # : 1

PRE FIX	SAMPLE NAME	-40M	PPM Ag	PPB Au
S	7+13N 12+50E	X	0.2	10
S	12+75E	X	0.2	10
S	13+00E	X	0.2	10
S	13+25E		0.2	10
S	13+50E		0.2	10
S	13+75E		0.2	10
S	14+00E		0.6	10
S	14+25E		0.2	10
S	14+50E	X	0.2	10
S	7+13N 14+75E		0.2	10
S	15+00E		0.2	10
S	15+25E		0.2	10
S	15+50E		0.2	10
S	15+75E		0.2	10
S	16+00E		0.2	10
S	16+25E	X	0.2	10
	16+50E	X	0.2	10
	16+75E		0.2	10
S	17+00E		0.2	10
S	7+13N 17+25E		0.2	10
S	17+50E		0.2	10
S	17+75E		0.2	10
S	18+00E	X	0.2	10
S	18+25E		0.2	10
S	18+50E		0.2	10
S	18+75E		0.2	10
S	19+00E		0.6	10
S	19+25E		0.4	10
S	7+13N 19+50E	X	0.6	10
S	7+50N 12+25E		0.4	10
S	12+50E		0.2	10
S	12+75E		0.2	10
S	13+00E		0.8	10
S	13+25E		0.2	10
S	13+50E		0.2	10
S	13+75E		0.4	10
S	14+00E		0.2	10
S	14+25E		0.2	10
S	14+50E		0.2	10
S	7+50N 14+75E	X	0.2	10

CERTIFIED BY : ______________________

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO : GRANT CROOKER
P.O. BOX 234
KEREMEOS B.C.
PROJECT: TENORE OIL & GAS
TYPE OF ANALYSIS: GEOCHEMICAL

CERTIFICATE#: 85484
INVOICE#: 6123
DATE ENTERED: 85-11-25
FILE NAME: GC85484
PAGE # : 2

PRE FIX	SAMPLE NAME	-40M	PPM Ag	PPB Au
S	7+87N 12+25E		0.2	10
S	12+50E	X	0.2	10
S	12+75E		0.2	10
S	13+00E		0.2	10
S	13+25E		0.2	10
S	13+50E		0.2	10
S	13+75E	X	0.2	10
S	14+00E		0.2	10
S	14+25E		0.2	10
S	7+87N 14+50E		0.2	10
S	14+75E	X	0.2	10
S	15+00E		0.2	10
S	15+25E		0.2	10
S	15+50E		0.2	10
S	15+75E		0.2	10
S	16+00E		0.2	10
[illegible]	16+25E		0.2	10
S	16+50E		0.2	10
S	16+75E		0.2	10
S	7+87N 17+00E		0.2	10
S	17+25E		0.2	10
S	17+50E		0.2	10
S	17+75E		0.2	10
S	18+00E		0.2	10
S	18+25E		0.2	10
S	18+75E		0.6	10
S	19+00E	X	0.4	10
S	19+25E		0.8	10
S	7+87N 19+50E		0.6	10
S	8+25N 12+50E		0.2	10
S	12+75E	X	0.2	10
S	13+00E		0.2	10
S	13+25E		0.4	10
S	13+50E		0.2	10
S	13+75E		0.2	10
S	14+00E		0.2	10
S	14+25E	X	0.2	10
S	14+50E	X	0.2	10
S	8+25N 14+75E	X	0.6	10
S	8+62N 12+50E		0.8	10

CERTIFIED BY : J. Rossbacher

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO : GRANT CROOKER
P.O. BOX 234
KEREMEOS B.C.
PROJECT: TENORE OIL & GAS
TYPE OF ANALYSIS: GEOCHEMICAL

CERTIFICATE#: 85484
INVOICE#: 6123
DATE ENTERED: 85-11-25
FILE NAME: GC85484
PAGE # : 3

PRE FIX	SAMPLE NAME	-40M	PPM Ag	PPB Au
S	8+62N 12+75E		0.6	10
S	13+00E		0.2	10
S	13+25E		0.2	10
S	13+50E	X	0.4	10
S	13+75E		0.2	10
S	14+00E		0.2	10
S	14+25E		0.2	10
S	14+50E		0.2	10
S	14+75E		0.4	10
S	8+62N 15+00E		0.2	10
S	15+25E		0.2	10
S	15+50E		0.2	10
S	15+75E		0.2	10
S	16+00E		0.2	10
S	16+25E		0.2	10
S	16+50E		0.2	10
S	16+75E		0.2	10
S	17+00E		0.2	10
S	17+25E		0.2	10
S	8+62N 17+50E	X	0.2	10
S	17+75E		0.2	10
S	18+00E	X	0.4	10
S	18+25E		0.2	10
S	18+50E		0.2	10
S	18+75E		0.2	10
S	19+00E		0.4	10
S	19+25E		0.6	10
S	8+62N 19+50E		0.4	10
S	8+75N 18+50E		0.2	10

CERTIFIED BY : [signature]