MAP NO.: 105 L 11,14, 15

ASSESSMENT REPORT X
PROSPECTUS
CONFIDENTIAL X
OPEN FILE

DOCUMENT NO: 093013
MINING DISTRICT: WHITEHORSE
TYPE OF WORK: DIAMOND DRILLING
MAG-VLF, GEOCHEM, GEOLOGY

REPORT FILED UNDER: TOTAL ENERGOLD CORPORATION

DATE PERFORMED: MARCH 9 - SEPT 7, 1991 **DATE FILED:** MARCH 3, 1992

LOCATION: **LAT.:** 62°48'N **AREA:** CLEAR LAKE

LONG.: 135°10'W **VALUE $:** 314,000

CLAIM NAME & NO.: CLEAR 1-448 YB25815-26262; CLEAR 451-490 YB26265-26304
CLEAR 491-593 YB27222-27324; CLEAR 594-598 YB27376-27380
CLEAR 599-674 YB36109-36184; SUE 611-616 Y81261-81266; SUE 635 Y81285
SUE 2010-2015 YA22730-22735; SUE 2018-2019 YA22946-47; SUE 2026 YA22748;
SUE2028 YA22746; SUE 3003FR-3005FR YA59692-694; SUE 3040FR YA61583; SUE 339-346 Y80989-996

WORK DONE BY: RICHARD BASNETT; RICK ZURAN

WORK DONE FOR: TOTAL ENERGOLD - MITSUI KINZOKU RESOURCES OF CANADA INCORPORATED

DATE TO GOOD STANDING:

REMARKS: 105L 045 THE WORK CONSISTED OF 4588.2 M OF DIAMOND DRILL ING, SURFACE MAPPING, IP & GRAVITY, GEOCHEMISTRY, TRENCHING, LINE CUTTING AND CLAIM STAKING. 19 HOLES WERE DRILLED. ELEVEN TARGETS WERE DELINEATED. PB-ZN MINERALIZATION OCCUPIES TWO HORIZONS. THERE ARE THREE MASSIVE SULPHIDE LENSES WITH >5% COMBINED PB-ZN ARE ELONGATE AND 5 TP 30 METERS THICK. A TUFF-BARITE LENSE OCCURRS 75 METERS IN THE HANGING WALL AND CONTAINS INTERSECTIONS OF MORE THAN 10% ZN WITH WIDTHS OF 1 TO 6 METERS.

Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada

R.M.M.R. file no.

Date forwarded 3 Mar '92

TRANSMITTAL FORM

From ▶ Mining Recorder at: Whitehorse

To ▶ Regional Manager, Mineral Rights at Whitehorse, Y.T.

For action are:

- ☐ NEW APPLICATION FOR PLACER LEASE TO PROSPECT — Name
- ☐ RENEWAL APPLICATION PLACER LEASE TO PROSPECT — Name — Lease no.
- ☐ AFFIDAVIT OF EXPENDITURE ON PLACER LEASE — Name — Lease no.
- ☐ SECURITY DEPOSIT
- ☐ FINANCIAL ABILITY
- ☐ ASSIGNMENT OF PLACER LEASE NO. — From — To
- ☐ GROUPING APPLICATION UNDER SEC. 52(2) PLACER MINING ACT. — Owner
- ☒ DIAMOND DRILL LOGS — Claims — Claim sheet no.
- ☒ QUARTZ ASSESSMENT REPORT — Claims: Clear — Claim sheet no.

Type of report: GEOLOGICAL — Submitted by: TOTAL Energold Corp.

Cls. work performed on: Clear Clms — $ req. for ren. application: ~~$~~1,000.00 3/4

OFFICE OF THE REGIONAL MANAGER MINERAL RIGHTS MAR 03 1992 WHITEHORSE YUKON TERRITORY

M Sandwick
Signature

Date returned

REPLY ACTION

093013

Signature

802-37 (7-88)

RECEIVED
MAR - 3 1992
MINING
RECORDERS OFFICE
WHITEHORSE, Y.T.

GEOLOGICAL, PHYSICAL, GEOPHYSICAL, GEOCHEMICAL AND DIAMOND DRILLING ASSESSMENT REPORT ON THE CLEAR LAKE PROPERTY

Whitehorse M.D., Yukon
March 09 - September 07, 1991

Claims: Clear 1-448 (YB25815-26262)
Clear 451-490 (YB26265-26304)
Clear 491-593 (YB27222-27324)
Clear 594-598 (YB27376-27380)
CLEAR 599-674 (YB36109-36184)
SUE 611-616 (Y81261-81266)
SUE 635 (Y81285)
SUE 2010-2015 (YA22730-22735)
SUE 2018-2019 (YA22946-22947)
SUE 2026, 2028 (YA22748, 22746)
SUE 3003FR-3005FR (YA59692-59694)
SUE 3040FR (YA61583)
SUE 339-346 (Y80989-80996)

Location: 1. 225 km N of Whitehorse, Yukon
2. NTS 105L/11, 14, 15
3. Latitude 62° 48' N
Longitude 135° 10' W

By: Richard Basnett, B.Sc.
Rick Zuran, B.Sc.
TOTAL ENERGOLD CORPORATION.
#21 - 1114 1st Avenue
Whitehorse, Yukon
Y1A 1A3

February 10, 1992

093013

This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 14,000.

Dennis J Ouellette

for Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

EXECUTIVE SUMMARY

In 1991, Total Energold Corporation operated the Clear Lake Project, a joint venture between Total Energold Corporation and Mitsui Kinzoku Resources of Canada Inc. The Clear Lake zinc-lead-silver property is located on the height of land between the Pelly and MacMillan Rivers, 225 kilometres north of Whitehorse, Yukon Territory.

The Clear Lake deposit is a shale hosted stratiform deposit. The grade and tonnage of the deposit is discussed in a separate report.

The 1991 exploration program, at an expenditure of $1.3 million, consisted of 4588.2 metres of drilling in 19 holes of which all but 5 were within the known Clear Lake Zone. Surface mapping, IP & gravity, geochemistry, trenching, linecutting, and claim staking were also carried out in 1991.

Pb-Zn mineralization in the Clear Lake Zone occupies two stratigraphic horizons, the massive sulphide-siliceous horizon and tuff-barite horizon (Figure 5). In the massive sulphide-siliceous horizon, combined Zn-Pb mineralization grading more than 5% occupies three elongate-shaped lenses 5 to 30 metres thick, 450 metres in length and 300 metres down dip. Although the sulphide layer pinches with depth, the same stratigraphy continues down dip providing the possibility of another sulphide lense at depth.

The tuff-barite horizon is 75 metres in the hanging wall of the massive sulphide Pb-Zn mineralization. It has a number of intersections over 10% Zn with widths between 1 and 6 metres.

Surface exploration has identified 11 target areas based on geology, gravity, IP, and geochemistry. These are shown in Table 1 and more fully discussed under Exploration Targets (Section 10.0).

Based on an evaluation and rating of targets, a program of geological mapping, geochemistry, IP, gravity, and diamond drilling at an estimated cost of 1.0 to 1.2 million dollars is recommended for 1992. This program will evaluate targets in the areas with the highest potential for finding other deposits similar to the Clear Lake Zone.

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1.0 CONCLUSIONS

1.1 THE CLEAR LAKE ZONE

Diamond drilling has indicated that the Clear Lake massive sulphide zone pinches with depth but the siliceous envelope and the tuff and barite zone that accompany the the massive sulphide layer are still present at depth. Because the stratigraphy continues it is possible that another sulphide lense is present below the known ore body.

The Clear Lake Zone coincides with a prominent gravity anomaly. IP/Resistivity shows the massive sulphides as a very good conductor (values of 17 to 40 ohm-metres) with chargeability highs (values of 40 to 45 mv/v) on the shoulders. A strong residual gravity anomaly is coincident with the IP/Resistivity anomaly. No anomalies with all of the distinctive characteristics of the Clear Lake deposit were found although many anomalies have low resistivity with one shoulder containing a chargeability high. Gravity highs found in other areas of the deposit have a low magnitude compared to the residual anomaly over the Clear Lake zone.

IP/Resistivity adds a quantitative element that is lacking in EM results.

A large conductor trending northwest and southeast from the Clear Lake Zone has been trenched and drilled in two locations. Although a graphitic argillite corresponded to the best IP/resistivity response, massive sulphides were found on POW line 2+50 W immediately south of the conductor. These relate to high chargeability but less prominent resistivity lows. A number of IP/resistivity anomalies south of the graphitic argillite remain to be tested.

Drill hole 91-64 and 91-65 intersected a barite bed below a broad 1.0 mgal gravity anomaly with a prominent peak. In hole 91-65, 30 metres of massive pyrite were intersected approximately 20 m south of the barite. The massive pyrite occurs on the shoulder of the 1.0 mgal gravity anomaly corresponding to a reading of 0.3 mgal. The massive pyrite underlies an IP/resistivity response which is lower than numerous anomalies in all three of the major rock groups.

The source of a conductor parallel to the southeastern part of the deposit was found to be a graphitic argillite which contains 3.5 meters of massive sphalerite with very little pyrite. The massive sulphides of the Clear Lake Zone remain open to the southeast.

Although the southeast extension of the conductor from Clear Lake deposit has been tested by drilling in two localities the stratigraphic position is not known, and other conductors within the same unit have not been tested. Step-out drilling is required. Once the stratigraphy is known the small gravity anomalies in Area 17 may also be significant enough to drill.

The Clear Lake Zone has a dispersed geochemical signature.

1.2 OTHER AREAS

Exploration criteria were used to identify and prioritize exploration targets. These are: (i)the presence of or direct extension of sulphide mineralization; (ii) underlain by Earn Group rocks; (iii) associated gravity response; (iv) direct geochemical response; and (v) IP/Resistivity anomaly, EM conductor.

In Area 1, close to the Macmillan River, the IP/Resistivity anomalies are associated with moderate gravity and geochemical anomalies. Drilling is required to determine if the anomalies are caused by sulphide mineralization or conductive stratigraphy.

Ninety-six ohm-meters resistivity and a 0.2 mgal gravity response on the north flank of Hammer Hill coincide with high Pb and Ba values. This is downgraded because Hammer Hill is underlain by Askin Group rocks.

Although Area 12 has 39 mv/v IP, 186 ohm-meters resistivity and greater than 300 ppm Zn, the Askin Group rocks underlying the area are not suspected of hosting a sedex type deposit.

Pb-Zn barite veins in the Askin Group rocks were remobilized from the underlying Earn Group by intrusives acting as a heat source.rce.

Prospecting Area 23 has revealed a chert pebble conglomerate that appears to be part of the Earn Group. This area has had very little exploration and may be significant if it is underlain by Earn Group rocks. Five lakes were resampled confirming the anomalous values from 1979.

Soil geochemistry did not identify any targets on Area 5 & 6 possibly because of the thick glacial cover.

2.0 RECOMMENDATIONS

The 1992 exploration program should focus on the discovery of additional reserves. Diamond drilling is recommended on a number of targets developed in 1991.

Additional geophysical exploration supplemented by geology and geochemistry to define new targets for following years is proposed. The geophysical methods to be used are: gravity and IP/Resistivity. Power Line Magneto-telluric (PMLT) will be tested as a potentially more cost effective method.

Budgets are proposed for two optional programs at 2710 meters and 4000 meters of drilling at a cost of $1 million and $1.2 million, respectively.

The proposed field program will start with linecutting in March followed by the gravity surveys in April. Fuel, drill mud, drill rods, etc., will be flown in from Pelly Crossing in May prior to drilling. IP/Resistivity should commence in June. The program will be finished in early September.

The exploration targets recommended for 1992 are explained and categorized according to priority in section 10.0 of this report and further details are shown in Table 1 and Appendix E.

TABLE 1

SUMMARY OF 1992 EXPLORATION PROPOSALS

(in order of priority)

Nov 14/91

AREA	LINECUTTING (km) firm	option	ACCESS ROADS (km) firm	option	IP (km) firm	option	GRAVITY firm	option	PHLT firm	option	TRENCHING (hr) firm	option	GEOCHEM (samples) firm	option	GEOLOGY (sq.km.) firm	option	DRILLING (m) firm	option
CLEAR L									2				30					
11	18				18		5	2	6	12			300		3		1360	840
11W	16.5		1		3				16.5				150		3			
17	6		3	1	6		6										570	560
1		9				9				6				80		5	780	600
3										1.5			100					
13	2.2				2.2		2.2						40					240
23			7						5				100		13.5			
16	9.8				9		9											400
12	1.6	4			1.6	4	1.6				6		40					660
MUSHROOM LAKE			2.5						2.5									
NOT SPECIFIED			1.5								14	20		100				
TOTALS	54.1	13	15	1	39.8	13	23.8	2	32	19.5	20	20	760	180	19.5	5	2710	3300

3.0 INTRODUCTION

The purpose of report is to describe the 1991 exploration program and to satisfy assessment requirements of the Yukon Quartz Mining Act through a description of exploration work carried out from March 9th - September 7th, 1991.

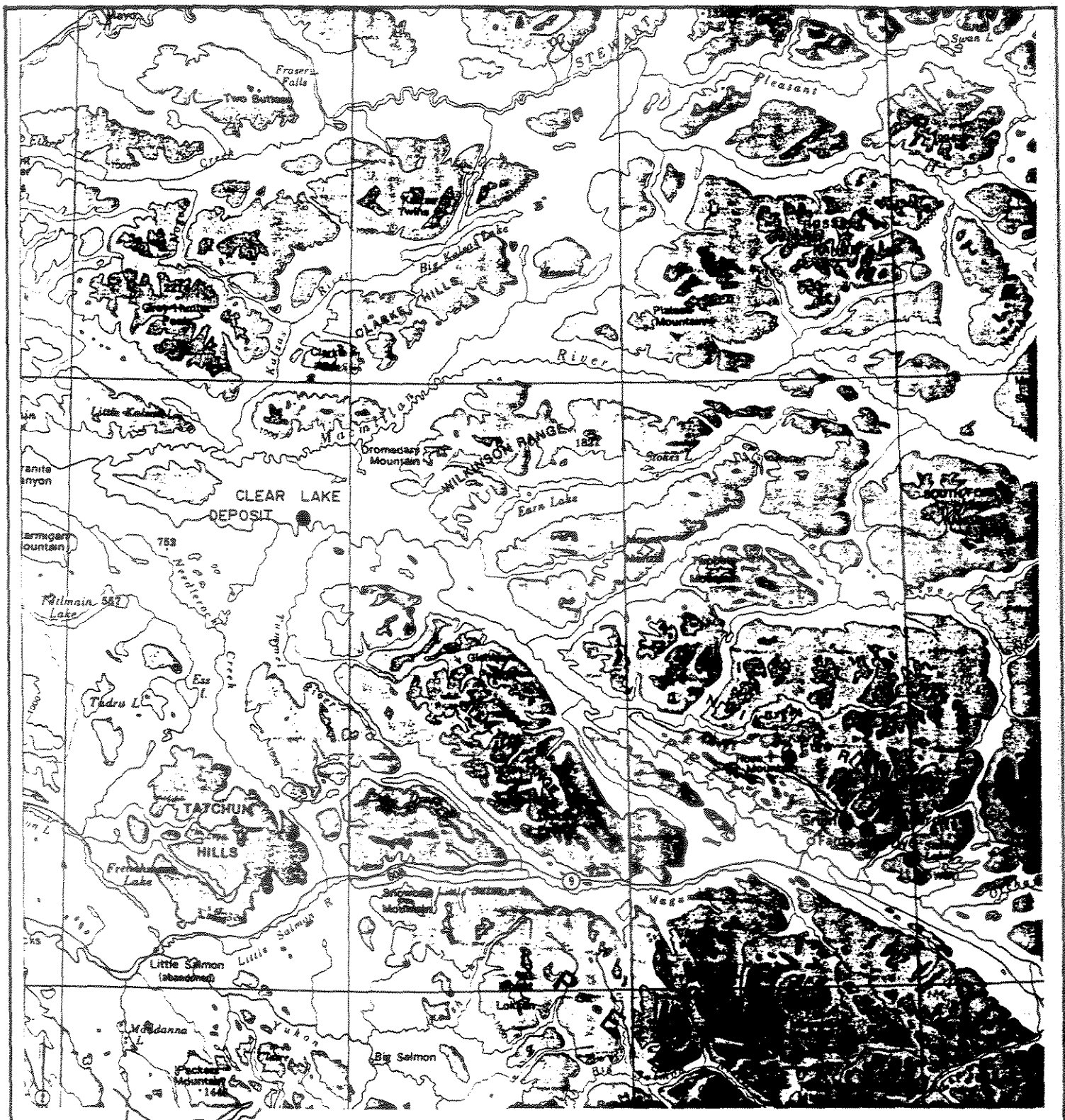
Exploration work consisted of geological mapping, geophysics, geochemistry, trenching linecutting, claim staking, and diamond drilling for the purpose of locating base metal sedex type deposits.

4.0 LOCATION AND ACCESS

The Clear Lake Property is located in southcentral Yukon, 225 kilometers south of Whitehorse. The property covers the height of land between the Pelly and Macmillan Rivers near their confluence. The approximate center of the claim block is located at 62° 48' North latitude and 135° 10' West longitude on NTS map area 105 L/14. Portions of the property also cover parts of NTS map areas 105 L/15 and 105 L/11

The town of Whitehorse has twice daily jet service to southern Canada.

Access to the property is via helicopter based in Carmacks, located approximately 90 kilometers to the southwest, or from Whitehorse. A dirt airstrip approximately 1000 meters long located at the Clear Lake lead-zinc deposit is capable of handling bush planes. A winter road links the property to the North Klondike Highway (an all-weather road) at Pelly Crossing, located approximately 65 kilometers to the west (Figure 1).


CLEAR LAKE DEPOSIT
WILKINSON RANGE
CLARKE HILLS
TATCHUN HILLS
STEWART
River
Big Salmon
Little Salmon (abandoned)
Mt. McIntyre
Bromedary Mountain
Earn Lake
Tadru L.
Millman Lake
Frenchman Lake
Mt. Skukum
Mt. Nansen
Mt. Sumanik
Mt. Freegold
Packers Mountain
Mt. Mye
Mt. Mary Ann
Mt. Munger
Mt. Hinton
Mt. Hundere
Mt. Hoffman
Mt. Hoffman
Mt. Hoffman

5.0 CLIMATE, TOPOGRAPHY & VEGETATION

The climate in southwestern Yukon is one of contrast with short, moderately dry summers (30 cm annual precipitation) and long, cold winters with moderate snowfall. The exploration season extends from mid-May through to late September-early October.

The property covers rolling upland between the Macmillan and Pelly Rivers with numerous small lakes and swampy basins contained by low hills. Topography is moderate with approximately 200 meters of relief. The highest point of the property is 800 meters above sea level.

Vegetation on north and east facing slopes consists of stunted white and black spruce, willow, labrador tea and moss. South and west facing slopes sustain white spruce, aspen poplar, lodgepole pine, and various grasses and shrubs. Cottonwood is restricted to river and stream valleys and stands of lodgepole pine grow on some dry, flat areas. Large areas have been burned within the last 25 years. These areas are now covered by stands of small spruce, poplar, and pine along with extensive growths of alder, and willow. Windfall is usually a serious hindrance to travel in these areas.

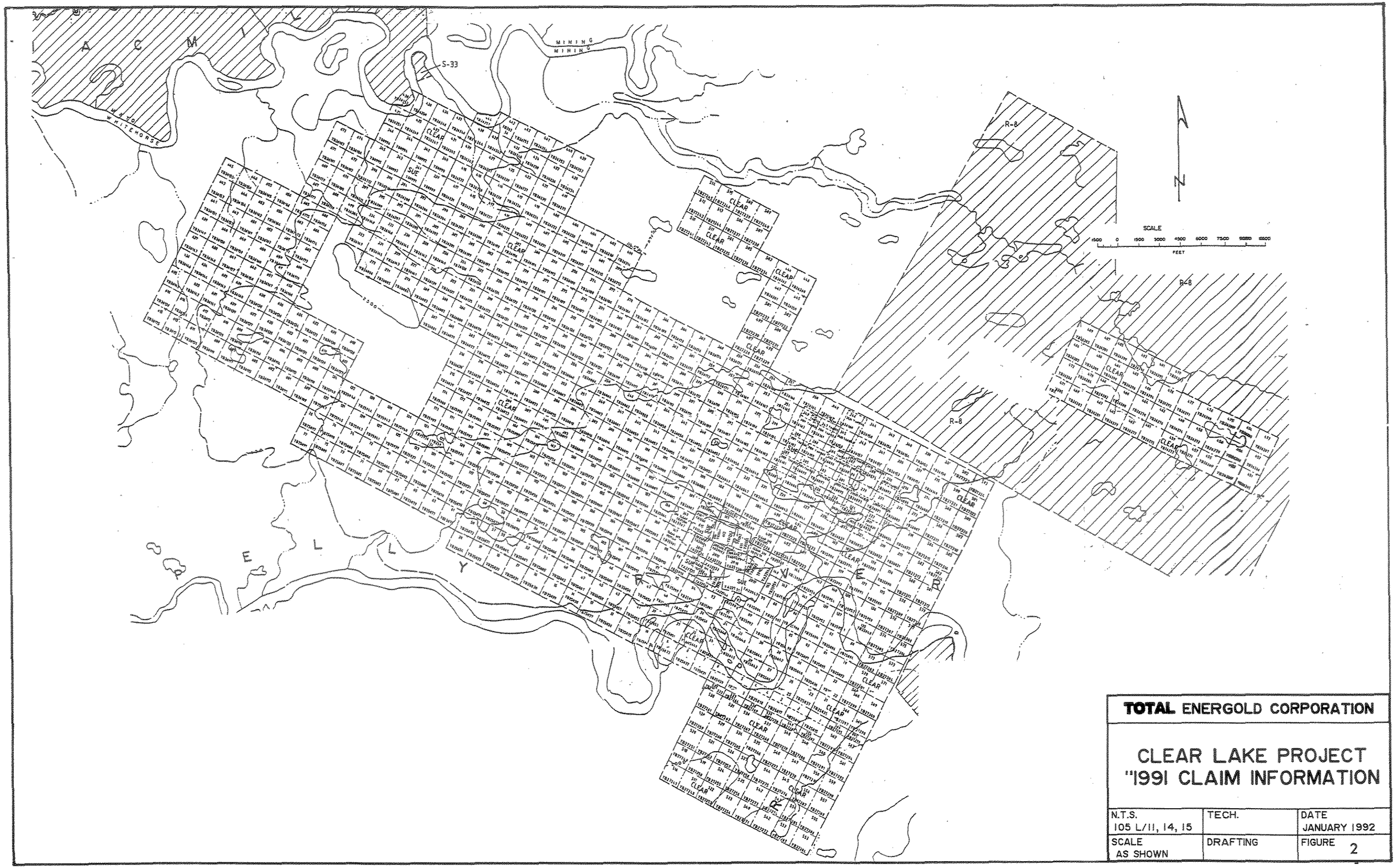
6.0 CLAIM STATUS

The property consists of 701 surveyed and unsurveyed mineral claims covering a total of 14,608 hectares, staked in accordance with the Yukon Quartz Mining Act (Figure 2). The claims are shown on D.I.A.N.D. Quartz and Placer Map sheets 105 L/11, 14, 15. Twenty-one claims covering the Clear Lake deposit have been surveyed. Claims data for the entire property are summarized in the table below.

CLEAR LAKE CLAIMS

Claim Name	Grant Number	Record Date	Expiry Date
SUE 611-616	Y81261-81266	11/09/74	01Dec1998*
SUE 635	Y81285	11/09/74	01Dec1998*
SUE 339-346	Y80989-80996	11/09/74	01Dec1996*
SUE 2010-2015	YA22730-22735	06/07/78	01Dec1998*
SUE 2018-2019	YA22946-22947	06/07/78	01Dec1998*
SUE 2026	YA22746	17/07/78	01Dec1998*
SUE 2028	YA22748	17/07/78	01Dec1998*
SUE 3003FR-3005FR	YA59692-59694	07/04/81	01Dec1998*
SUE 3040FR	YA61583	13/07/81	01Dec1998*
CLEAR 1-269	YB25815-26083	06/06/89	01Dec1996*
CLEAR 270-272	YB26084-26086	06/06/89	01Dec1995*
CLEAR 273-324	YB26087-26138	06/06/89	01Dec1996*
CLEAR 325-334	YB26139-26148	06/06/89	01Dec1995*
CLEAR 335-386	YB26149-26200	06/06/89	01Dec1996*
CLEAR 387-490	YB26201-26304	06/06/89	01Dec1995*
CLEAR 491-496	YB26222-27227	04/04/90	01Dec1996*
CLEAR 497-515	YB27228-27246	04/04/90	01Dec1995*
CLEAR 516-593	YB27247-27324	04/04/90	01Dec1996*
CLEAR 594-598	YB27376-27380	14/05/90	01Dec1996*
CLEAR 599-674	YB36109-36184	15/07/91	15Jul1993*

* Subject to approval of 1991 assessment work.



TOTAL ENERGOLD CORPORATION

CLEAR LAKE PROJECT "1991 CLAIM INFORMATION

N.T.S. 105 L/11, 14, 15	TECH.	DATE JANUARY 1992
SCALE AS SHOWN	DRAFTING	FIGURE 2

7.0 HISTORY

The area was first explored in 1965 by Conwest who staked 1000 claims followed by a Mark IV Input EM survey. After ground EM and six AQ diamond drilling their claims were allowed to lapse.

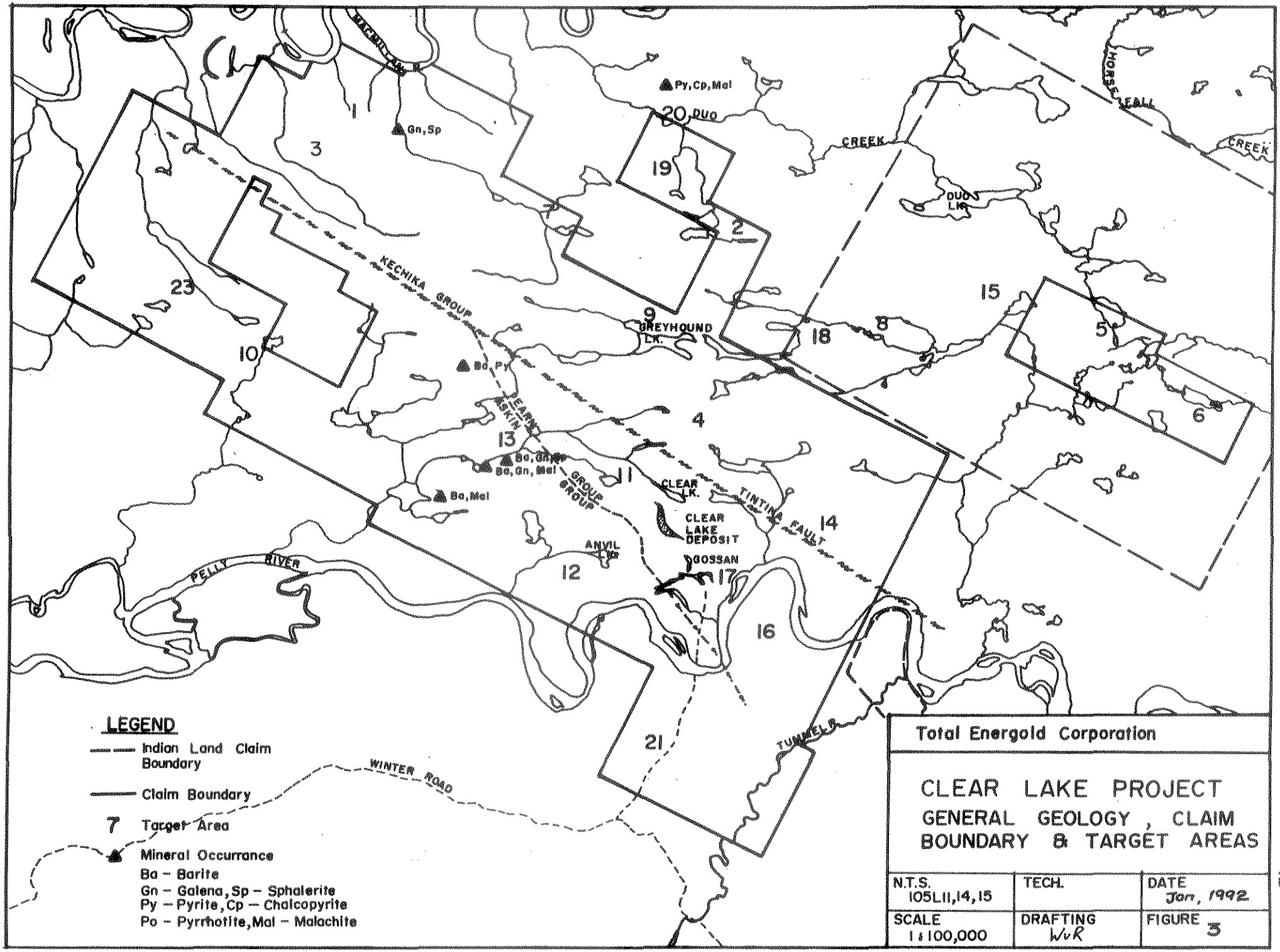
In 1974, 1074 claims were staked and explored by a joint venture between Essex Minerals and Conwest. Between 1975 and 1977, ground EM-17 and magnetic surveys were done over the entire claim group, and gravity surveys over selected portions, on bulldozer grid lines spaced 1,000 feet apart. In 1978, seven gravity-EM targets were drilled in Anvil Range Stratigraphy, without success. The Clear Lake deposit was then discovered in 1978 by drilling an EM-17/lake sediment anomaly south of Clear Lake. Getty bought out Conwest in 1980.

Between 1978 and 1984, thirty-six diamond drill holes totalling 34,309 feet were drilled on the Clear Lake deposit. Max-Min II, gravity, VLF EM, Mise-a-la-masse, soil sampling, and overburden drilling were also used to further delineate the deposit. Linecutting, electromagnetic surveys, magnetic surveys, gravity surveys, mapping, overburden sampling and 2,228 feet of BQ diamond drilling were carried out over 12 regional areas. In 1984 the project wound down and claims outside the Clear Lake area were allowed to lapse.

In 1989, Total Energold Corporation, subsequent to the purchase of Getty's assets, staked the Clear 1-490 claims to cover target areas outside the Clear Lake area. During the following year, the Clear 491-598 claims were staked to cover additional target areas outside the Clear Lake area, and a soil geochemistry program was carried out in conjunction with re-examination of key outcrops and previous data. A total of 18 target areas were examined outside the designated area and 977 samples (45 rock, 932 soil) were collected and analyzed for silver, copper, lead, zinc and barium (see Figure 3 for Target Areas).

Mitsui Kinzoku Resources of Canada Inc. signed an agreement with Total Energold in 1991, subsequently buying out Essex.

For further details on the history refer to the 1990 assessment report by Basnett.



Py, Cp, Mal
Gn, Sp
DUO
CREEK
HORSE FALL
CREEK
DUO LK.
KECHIKA GROUP
GREYHOUND LK.
Ba, Py
EARN
ASKIN
GROUP
GROUP
Ba, Gn, Sp
Ba, Gn, Mal
Ba, Mal
CLEAR LK.
TINTINA FAULT
CLEAR LAKE DEPOSIT
ANVIL LK.
GOSSAN
PELLY RIVER
TUMMEL R.
WINTER ROAD
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
23
LEGEND
Indian Land Claim Boundary
Claim Boundary
7 Target Area
Mineral Occurrance
Ba – Barite
Gn – Galena, Sp – Sphalerite
Py – Pyrite, Cp – Chalcopyrite
Po – Pyrrhotite, Mal – Malachite
Total Energold Corporation
CLEAR LAKE PROJECT
GENERAL GEOLOGY, CLAIM BOUNDARY & TARGET AREAS
N.T.S. 105L11,14,15
TECH.
DATE Jan, 1992
SCALE 1:100,000
DRAFTING WvR
FIGURE 3

8.0 GEOLOGY

8.1 REGIONAL GEOLOGY

The Glenlyon 1:250,000 map sheet (105L) was first mapped by Campbell in 1967 (Campbell, R.B., 1967). This was revised on the 1:1,000,000 scale Macmillan River map sheet by Gabrielse in 1977 (Gabrielse et al., 1977).

The region comprises deep sea clastic sedimentary rocks of the Selwyn Basin, deformed intermediate to mafic volcanic rocks of the Anvil Allochthon, distinctive platformal rocks of the Cassiar Belt and local intrusive rocks. All rocks are Paleozoic in age except the intrusive rocks which are Mesozoic. The Tintina Fault separates the Selwyn Basin and Anvil Allochthon in the northeast from the Cassiar Belt in the southwest.

Thrust sheets and parallel faults have complicated the geology particularly in the Clear Lake area. The Anvil Allochthon was formed by westerly derived thrust sheets that were active during late Triassic to mid-Cretaceous. Recent interpretation of regional geology suggests that numerous major faults occur in the area (1991, Abbott, G., pers. comm.). Key tectonic elements and stratigraphy are shown below.

Tectonic Element	Group or Formation	Age	Deposits
Selwyn Basin			
Anvil Allochthon	Anvil Range	Miss-Triassic	Faro
	Earn	Devono-Miss	Clear Lk Tea, Cathy
	Road River	Ord.-Sil.	Howards Pass
	Rabbitkettle	Cambrio-Ord.	
Omineca Crystalline Belt			
Cassiar Belt	McDame (Askin)	Sil.-Dev.	
	Kechika	Cambro-Ord.	

The geologic setting, deposit type, and host rocks (Earn Group) of the Clear Lake zone are similar to the Jason deposit at MacMillan Pass in the Yukon.

During the Pleistocene two lobes of the Cordilleran ice sheet during the Pleistocene epoch scoured a westerly glacial fabric across the region resulting in hundreds of drumlins, eskers, moraines and outwash deposits. Overburden in the Clear Lake area ranges from 1 to over 50 metres and outcrop exposure is poor.

TABLE 2

LITHOLOGY LEGEND

INTRUSIVE ROCKS

TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 — MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite; b) Diabase
- K_1 — FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DM_{CPC} — CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP

MISSISSIPPIAN

- DM_B — BARITE
- DM_A — MASSIVE SULPHIDE
- DM_6 — MAFIC VOLCANIC FLOW ROCKS
- DM_5 — TUFF a) Lapilli; b) Ash
- DM_4 — CHERT dark grey, massive
- DM_3 — BRECCIA, CONGLOMERATE
- DM_2 — ARGILLITE/SHALE a) massive, carbonaceous; b) with minor sandstone, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- ? DM_1 — SANDSTONE a) massive; b) laminated
- DM_{LST} — LIMESTONE
- DM_{CHT} — CHERT Dark green to brown, banded

DEVONIAN

——— UNCONFORMITY (ST CYR FAULT?) ———

ASKIN GROUP

DEVONIAN

- SD_4 — QUARTZITE
- SD_3 — DOLOSTONE locally replaced by chert
- SD_2 — ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 — AMYGDALOIDAL ANDESITE

SILURIAN

ROAD RIVER FORMATION

SILURIAN

- 0S — SHALE graptolitic

ORDOVICIAN

∿∿∿ TINTINA FAULT ∿∿∿

KECHIKA GROUP MENZIE CK FORMATION

ORDOVICIAN

- CO_{4c} — MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} — VOLCANICS green, chloritic tuffs intercalated with vari-coloured: siltstones, mudstones and limestones. (formerly 6A2
- CO_{4a} — SEDIMENTARY ROCKS vari-coloured mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION

- CO_{3c} — PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} — MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} — PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} — PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3G). -
- CO_{2d} — PHYLLITE graphitic (formerly 3E)
- CO_{2c} — PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} — MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} — PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION

ORDOVICIAN

- CO_1 — ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

8.2 PROPERTY GEOLOGY

8.2.1 Introduction

The Clear Lake property is underlain by Kechika Group and Rabbit Kettle Formation in the north and Earn Group, Askin Group, and Road River Formation in the south. The Tintina Fault separates these two packages and strikes northwest across the middle of the property (Figure 7). Table 2 is a lithological legend for the property.

Property geology is shown on 1:20,000 scale (Figure 7) and 1:5,000 scale maps (Figures 13 to 15). Area 12 (Anvil Lake) and Area 13 (Honobono Lake) are shown on 1:2,000 scale maps (Figures 39, 29, and 30). Two selected property geologic cross-sections are available (Figure 16).

8.2.2 Lithologies North of the Tintina Fault

Lithological descriptions by the authors during the 1991 field season were observed at Area 1 and Area 14. This includes the Rabbitkettle Formation, Mt. Mye Formation, and the Menzie Creek Formation. The Vangorda Formation lithological descriptions are from previous years work.

8.2.2.1 Rabbitkettle Formation (unit CO1)

The oldest rocks exposed on the property are calcareous rocks of the Cambro-ordovician Rabbitkettle Formation (Figure 12). These rocks consist of tan to reddish-brown weathering dolomitic to calcareous arenite, micaceous silty 'wavy-banded' limestone and calc-silicate. These rocks resemble those of the Rabbitkettle Formation exposed to the west and southwest of the property (Carne, 1983). The only known locality of these rocks on the property is at Area 1.

8.2.2.2 Kechika Group

The following described rocks of the Mt. Mye, Vangorda, and Menzie Ck. formations have previously been described under the Anvil Range Group of Mississippian or later age. It has been suggested that these rocks are more likely Cambro-ordovician Kechika Group rocks (1990, Abbott,G., personal communication). The formation names have been kept to correlate with previous years mapping.

8.2.2.2.1 Mt. Mye Formation (unit CO2)

Cambrian Mount Mye Formation overlies the Rabbitkettle Formation at Area 1. The rocks consist of undifferentiated phyllite (subunit CO2a), mafic metavolcanic rocks which comprise a minor part of the formation (subunit CO2b), calcareous phyllite (subunit CO2c), graphitic phyllite (subunit CO2d), and chloritic phyllite +/- sericite +/- biotite +/- calcareous laminae. The Mount Mye phyllite subunits typically weather a reddish-brown, a characteristic that helps distinguish it from noncalcareous portions of the overlying Vangorda Formation (Pigage, 1990).

8.2.2.2.2. Vangorda Formaion (CO3)

Late Cambrian to early Ordovician Vangorda Formation conformably overlies the Mount Mye Formation. The Vangorda Formation is characterized by calcareous undifferentiated phyllites (subunit CO3a), fine to medium-grained chloritc tuffaceous mafic metavolcanic rocks (subunit CO3b), and calcareous phyllite interbedded with limestone and dolostone (subunit CO3c).

8.2.2.2.3 Menzie Creek Formation (CO4)

The lower Paleozoic Menzie Creek Formation overlies the Vangorda formation. The lithologies include: vari-coloured interbedded sedimentary rocks of mudstone, siltstone, chert, limestone, and greywacke (subunit CO4a); green chloritc tuffaceous volcanic rocks intercalated with vari-coloured siltstones, mudstones, and limestones (subunit CO4b); and green chloritic mafic volcanic tuffs (subunit CO4c).

8.2.3 Lithologies South of the Tintina Fault

Rocks south of the Tintina Fault consist of Road River Formation shale, Askin Group platformal sedimentary rocks, and the Earn Group shales which include the Clear Lake deposit. Lithologies described by the authors during the 1991 field season were observed in drill core of the Clear Lake deposit and at areas 11, 12, 13, 17, and 23.

8.2.3.1 Road River Formation (OS)

Upper Ordovician to lower Silurian mudstone and graptolite bearing shale of the Road River Formation (unit OS) were intersected in 1983 in a Cominco drillhole on Area 21 south of the Pelly River. Possible Road River Formation rocks were mapped on the south bank of the Pelly River on the southwest corner of the old Grid 5 East. The rocks consist of turbidites and calcareous phyllite with lesser, very carbonaceous, variable calcareous, black argillite interbeds.

8.2.3.2 Askin Group

Askin Group rocks of Silurian to Devonian age consist of amygdaloidal andesite (unit SD1), shale (unit SD2), dolostone (unit SD3), and quartzite (unit SD4). These rocks indicate a shallow marine, platformal, depositional environment. They are found west of the Earn Group rocks in the southwest part of the property.

8.2.3.2.1 Amygdaloidal Andesite (SD1)

Tan to reddish brown weathering amygdaloidal andesite occurs as an isolated outcrop 300 metres southwest of Anvil Lake (Figure 29) on the south flank of a drumlin. These rocks are difficult to distinguish from other andesitic units elsewhere on the property.

8.2.3.2.2 Shale (SD2)

Shale is a recessive weathering unit at the base of the Askin Group. It is a brown weathering, thin-bedded silty to micaceous, locally dolomitic and fossiliferous. A true thickness of approximately 250 metres is exposed at Area 12 south of Anvil Lake (Figure 16).

8.2.3.2.3 Dolostone (SD3)

Well-exposed outcrops of massive thick-bedded dolostone conformably overlie SD2. The dolostone is characterized by a tan to grey weathered serrated surface. Local silty, sandy, or fossiliferous facies are replaced by irregular patches of green-grey chert or chert beds up to one metre thick. South of Anvil Lake in Area 12 where the unit is well-exposed, the average true thickness is 80 metres.

8.2.3.2.4 Quartzite (SD4)

Beds of quartzite, 0.5 to 10 metres thick, conformably overlie and are interbedded with SD3. It is characteristically light grey, resistant weathering, composed of fine to medium-grained fused quartz detritus. Outcrops are generally massive with local dark grey laminations, tangential cross-bedding which indicate stratigraphic tops. The unit is approximately 30 to 100 metres true thickness at Areas 13 and 12, respectively (Figure 16).

8.2.3.3 Earn Group

The Earn Group section located on the property is divided into the following units:: massive sulphides (DMA); distal barite (DMB); massive and laminated sandstone (DM1a, DM1b); shale subdivided into carbonaceous, minor sandy/silty laminae, major sandy/silty laminae, siliceous, calcareous laminae, and dolomitic laminae (subunits DM2a to DM2f); breccia/conglomerate (DM3); chert (DM4); lapilli and ash tuff (DM5a, DM5b); and mafic volcanic flow rocks (DM6). Earn Group rocks are indicative of a deep ocean bottom environment and they are found east of the Askin Group in the southeast part of the property (Figure: 7).

To assist in correlation with geophysical data, and to position units relative to the sulphide horizon, the Clear Lake Deposit with the surrounding host rocks have been divided into five statigraphic horizons. From footwall to hanging wall these are: the black shale zone; the massive sulphide - siliceous zone; the tuff - barite zone; the sandy shale zone; and the sandstone zone (Figure 5).

8.2.3.3.1 Black Shale Zone

The "black shale zone" in the hanging wall is composed mainly of pyritic black shale with minor sand laminae. Thin layers of massive sulphide and siliceous shale are locally interlayered. The black shale zone is over 200 metres thick.

8.2.3.3.2 Massive Sulphide and Siliceous Zone

The "massive sulphide and siliceous zone" host the zinc-lead-silver ore. Although zinc and lead can be found throughout the thickness of massive sulphides and in the hanging wall shale, zinc mineralization occurs mainly in the central and footwall section of the massive sulphides. The massive sulphide layer is up to 120 metres thick and extends over 1,100 metres along strike and 300 metres in depth. Siliceous beds, 5 to 10 meters thick, of shale and chert envelope the massive sulphides. These siliceous beds continue to depth after the massive sulphides narrow and pinch out. Thin lenses of siliceous rock are found to be contained in or interfingered with massive sulphides in the southern portion of the deposit.

8.2.3.3.3 Tuff-Barite Zone

The "tuff-barite zone" is located in the hanging wall of the massive sulphides. It consists of ash to lapilli tuff beds up to 25 metres thick and fine-grained barite beds up to 30 metres thick traceable over 700 metres. A horizon averaging 2.5 metres thick of Zn-Pb mineralization is present within the tuff. Fine-grained barite is found in minor amounts within the tuff or in finely laminated barite beds with up to 5% pyrite. The barite beds are interpreted as being a facies of the tuff. A sharp facies change between tuff and barite occurs near the 450 metre level on section 390N BL2000E (Figure 43). The tuff-barite zone also contains interbeds of massive pyrite (10 cm thick), siliceous shale, massive black shale, and sandy shale. The tuff- barite zone is 25 to 60 metres thick.

8.2.3.3.4 Sandy Shale Zone

The "sandy shale zone" is a mixture of clay and silt with minor lenses of sand sized particles. Graphite is present in shale-rich sections. The sandy shale zone is between 10 and 100 m thick.

8.2.3.3.5 Sandstone Rich Zone

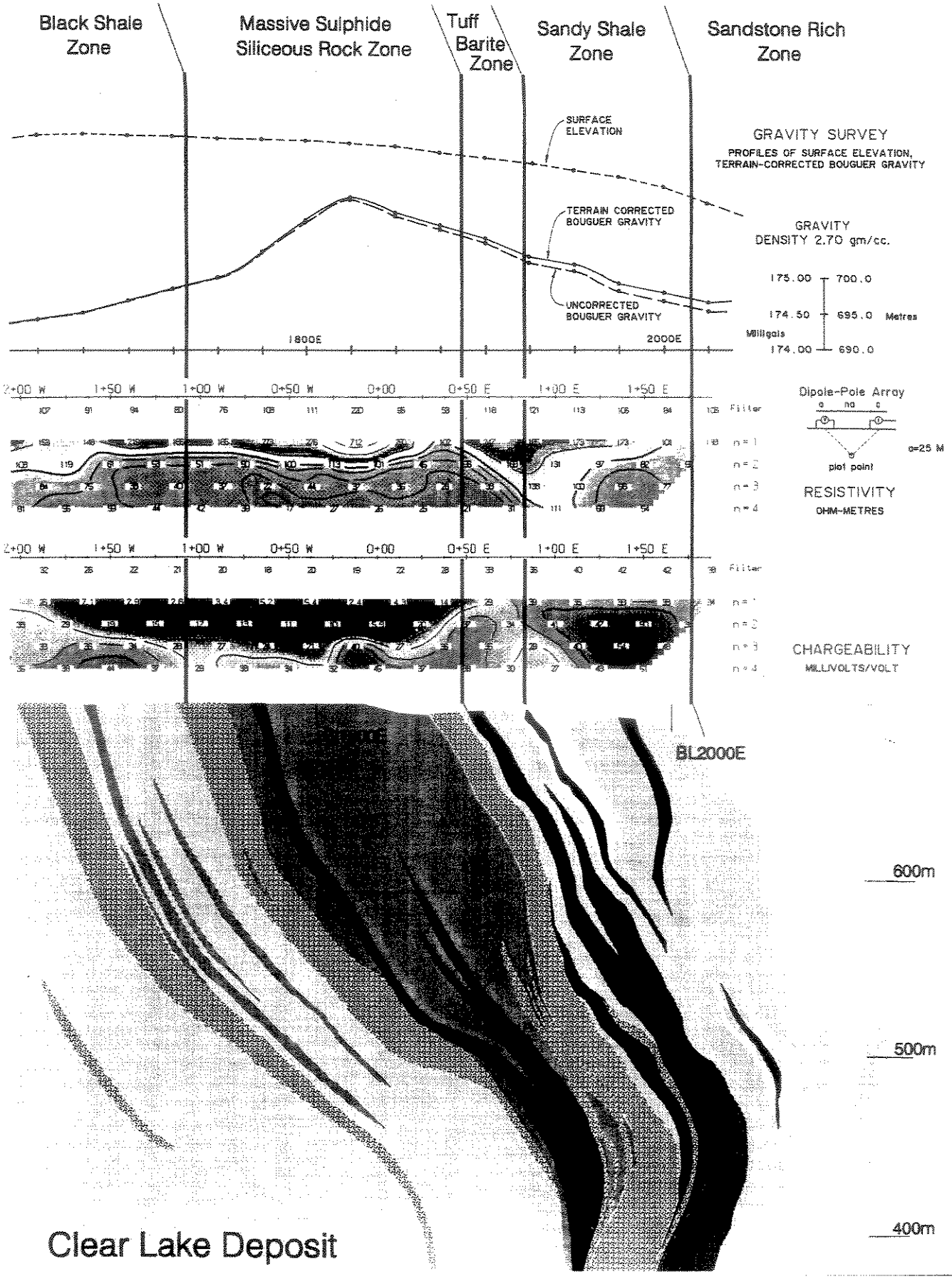
The "sandstone rich zone" consists predominantly of fine-grained sandstone interbedded with lesser amounts of shale. Massive sandstone can be up to 45 metres thick and has a strike length of over 600 metres. Bouma sequences average 3/4 of a metre thick. A 2 meter breccia/conglomerate bed (DM3) is in this zone. The entire zone is greater than 150 metres thick.

Surface mapping of Earn Group stratigraphy located previously unknown outcrops to the east of Clear Lake and to the east of camp (Figure 11). Prior to 1990, rocks in this area were interpreted to be part of the Askin Group, however, lithological characteristics and structural position relates them to the Earn Group. The outcrops include grey cherts (unit DMCHT), brown micritic limestone locally brecciated and/or conglomeratic (unit DMLST) , and massive fine grained sandstone - siltstone (unit DM1). A heterolithic conglomerate (DMCPC) north of the deposit near the Tintina Fault has poorly consolidated fragments of quartz, chert, argillite, mica schist and phyllite indicating a possible fault scarp in the area of the present day Tintina Trench. Conodont age dating results from an outcrop immediately west of Scumbag Lake are pending (Figure 14).

TOTAL ENERGOLD CORPORATION

GEOLOGICAL and GEOPHYSICAL SECTION of the CLEAR LAKE DEPOSIT

FIGURE 5



8.3.4 Intrusive Rocks

The intrusive rocks have been assigned Mesozoic by the G.S.C. They include: granodiorite (K); felsite (K1); gabbro/diorite (K2a) and diabase (K2b). They occur mainly in the vicinity of the Earn-Askin contact.

Earn Group rocks are intruded by felsite dykes (K1) 400 metres south of the Clear Lake deposit. Felsites were also intersected in drill core. They have been dated 108 Ma (1991, Mortinsen J.,personal communication). A series of scattered outcrops (500 by 100 meters), approximately 400 metres south of the Clear Lake deposit, include: gabbro/diorite with porphyritic derivatives (K2a) and diabase (K2b). Also, one granodiorite outcrop (K) lies 100 metres north of Toofar Lake in Area 23.

8.2.5 Structure

The Mount Mye and Vangorda formations are structurally complex and have undergone polyphase deformation. In contrast, the structural geology of the overlying Menzie Creek Formation is characterized by open and upright folds. Fold axes in both units are sub-parallel to the trend of the Tintina Fault.

Askin Group rocks have both tight and open folds. Bedding is generally sub-parallel to the Tintina Fault and dips moderately northeast. Good exposures on the north bank of the Pelly River show near vertical, possibly overturned, bedding. Strata in the vicinity of Honobono Lake are locally fractured. Barite veins with minor lead-zinc occur near gabbro/diorite intrusive rocks.

Airphoto interpretation suggests that strata are folded into an antiform 3 kilometres northeast of Toofar Lake.

The Clear Lake deposit is folded into a sinusoidal Z-shaped fold that can be divided into three sections. The northern section dips steeply southwest while the central and southern sections are overturned and dip northeast. The centre portion of the deposit is up to 120 metres thick. An east-west fault apparent from diamond drilling and geophysics separates the northern section from the rest of the deposit.

Foliations, bedding and folding within the Earn Group parallel the contacts with the Askin and Kechika Groups. Recumbent folding appears to be tight, possibly isoclinal, particularly in the shale.

Sedimentary structures such as tangential cross-bedding, flame structures, loading, grading and Bouma b-c-e sequences suggest the deposit has been overturned to the west. Other sedimentary structures such as contorted bedding and slumping are apparent in drill core but are difficult to distinguish from tectonic structures.

8.3 MINERALIZATION & ALTERATION

8.3.1 Clear Lake Zone

Fifteen definition diamond drill holes were drilled on the Clear Lake Zone in 1991. Following is a list of mineralized intercepts calculated at both a 5% and 7% cut off.

Hole #	5% Cut off					7% Cut off					Location
	Intersection	Width	Zn	Pb	Ag	Intersection	Width	Zn	Pb	Ag	
	m m	m	%	%	g/t	m m	m	%	%	g/t	
91-50	83.70~ 86.83	3.13	17.36	0.92	18.6	83.70~ 86.83	3.13	17.36	0.92	18.6	Tuff, S510
	137.00~138.60	1.60	7.19	1.70	12.8	137.00~138.60	1.60	7.19	1.70	12.8	Py-U,
	157.00~166.00	9.00	9.04	1.07	24.7	159.30~166.00	6.70	10.66	1.17	28.6	Py-M,
	181.21~185.01	3.80	6.70	0.93	12.1	181.21~184.15	2.94	7.21	1.04	12.4	Py-ML,
	194.80~202.08	7.28	7.60	1.51	7.1	194.80~198.61	3.81	10.05	1.75	9.5	Py-L,
91-51	166.00~169.30	3.30	7.83	2.32	15.4	166.00~169.30	3.30	7.83	2.32	15.4	Py M, S390
	207.30~210.80	3.50	8.83	2.25	39.2	207.30~210.80	3.50	8.83	2.25	39.2	Py-L,
91-52	215.50~219.40	3.90	7.86	1.94	27.3	215.50~217.40	1.90	10.14	2.67	32.0	Py-U, S330
	243.70~247.70	4.00	6.53	1.24	18.5	244.70~247.70	3.00	7.12	1.12	19.6	Py-M,
	266.85~268.05	1.20	12.10	0.26	40.6	266.85~268.05	1.20	12.10	0.26	40.6	Py-ML,
	284.00~287.10	3.10	9.22	0.72	31.8	284.00~287.10	3.10	9.22	0.72	31.8	Py-L,
91-54	223.38~235.80	12.42	9.54	1.36	34.4	223.38~230.25	6.87	12.50	1.85	41.9	Py-M, S390
	239.23~250.37	10.90	6.62	0.67	24.9	239.23~246.00	6.77	8.02	0.75	29.1	Py-L,
91-55	52.05~ 60.60	8.55	7.75	0.77	9.6	52.05~ 60.60	8.55	7.75	0.77	9.6	Py-U, S210
	96.80~ 99.63	2.83	6.50	0.61	24.0	96.80~ 99.63	2.83	6.50	0.61	24.0	Py-L,
91-56	95.15~110.04	15.89	9.38	0.55	12.5	95.15~110.04	15.89	9.38	0.55	12.5	Py-U, S-P2
	134.40~136.00	1.60	7.94	0.75	21.4	134.40~136.00	1.60	7.94	0.75	21.4	Py-M,
	148.00~153.85	5.85	5.30	0.78	16.6	- - - - - - -					Py-L,
91-58	142.87~147.57	4.70	6.13	1.20	13.1	142.87~147.57	4.70	6.13	1.20	13.1	Py-M, S270
	161.16~166.73	5.57	4.90	0.83	8.8	- - - - - - -					Py-L,
91-59	230.35~238.91	8.56	9.21	0.99	31.1	231.12~238.91	7.79	9.81	1.01	33.2	Py-L S270
91-60	212.45~216.66	4.21	5.14	0.80	11.7	212.45~214.30	1.85	8.05	1.33	18.8	Py-U, S510
	224.15~234.80	10.65	4.47	0.88	8.0	- - - - - - -					Py-M,
	238.90~243.45	4.55	5.98	0.64	16.5	241.15~243.45	2.30	6.98	0.69	18.8	Py-ML,
	248.77~253.22	4.45	5.30	0.84	5.3	250.33~253.22	2.89	6.64	0.74	12.1	Py-L,
91-61	121.53~126.00	4.47	6.01	1.10	15.2	121.53~124.00	2.47	6.75	1.42	19.4	Py-M, S510

The Clear Lake deposit is a shale-hosted stratiform deposit containing approximately 30 million tons of sulphide (mostly pyrite). Ore reserves are dealt with in a separate report. Several horizons of massive pyrite, exhalite or altered tuff, laminated barite, intercalated with silicified argillite and chert are found in the hanging wall, footwall and adjacent to the main sulfide lens. The deposit is approximately 1000 meters long and up to 120 meters thick.

The massive sulphides consist mainly of massive, fine to coarse-grained pyrite that is locally collofom, spheroidal, bladed, framboidal, nodular-crackled, and rarely laminated and biotubated. Laminated and framboidal pyrite often shows contorted, disrupted laminations with fragmental sections. These structures developed through slumping of massive sulfide `encrustations', as opposed to beds of detrital sulphide (Verley, 1982).

Lead-zinc mineralization occupies two stratigraphic horizons, the massive sulphide-siliceous horizon and the tuff-barite horizon. In the massive sulphide-siliceous horizon, Zn-Pb mineralization grading more than 5% combined Zn and Pb forms 5 to 10 meter thick elongate-shaped lenses and layers. These are 450 metres in length and extend 300 metres down dip. Several mineralized lenses and layers have a 25 to 30 meter combined thicknesses of Zn and Pb. The higher grade mineralization is located in areas where massive sulphides and siliceous shale and tuff are interfingered.

Ore minerals are: coarse to medium-grained reddish-brown to blackjack sphalerite, fine-grained honey yellow and dark brown sphalerite, and fine to coarse-grained grey galena. Reddish-brown sphalerite disseminations and veinlets are in pyrite and siliceous rocks. Honey-yellow to dark-brown sphalerite occurs as fine-grained aggregates intergranular with pyrite grains. Honey to brown sphalerite is more abundant than reddish-brown sphalerite. Galena mainly occurs in fine-grained aggregates with the honey-yellow to dark-brown sphalerite and pyrite.

Ore minerals in tuff are coarse-grained honey to pale brown sphalerite and coarse-grained galena. These are disseminated or within discordant veinlets.

8.3.1.1 Alteration

Silicification and argillic alteration occur on both the hanging wall and footwall of the massive sulphides. Silicification extends up to 50 metres into argillite, chert and tuff. The width of the massive sulphides does not determine the intensity or thickness of the siliceous units, but as the deposit narrows with depth, the silicification on the hanging wall widens. Irregular stringers and masses of pyrite and siderite are common in the hanging wall. Tuff in the hanging wall may also be altered to a soft grey clayey material which constitutes the matrix as well as clasts.

8.3.2 Other Areas

8.3.2.1 Area 12 (Anvil Lake)

Mineralization in Area 12 is limited to a discordant barite vein at 500W 1700S on Pow Grid. This vein, 0.17m wide and 2 metres long, is orientated at 110/50 SW. It assays 3000 ppm Zn, 20 ppm Pb, 12 ppm Cu, <0.1 ppm Ag, and >10,000 Ba (Basnett R., 1990).

8.3.2.2 Area 13 (Honobono Lake)

Mineralization consists of half a dozen barite veins and networks hosted in Askin Group rocks in the vicinity of Clyde Lake, primarily in SD3. The veins and vein networks are characteristically coarse-crystalline tabular barite with local sphalerite, galena and malachite staining (avg. 2% sulphides). They range from 0.01 to 1.00 metre in thickness (avg. 0.64 m) and are discordant with stratigraphy. Five rock chip samples taken in 1990 averaged: 4822 ppm Zn, 4098 ppm Pb, 181 ppm Cu, 4.2 ppm Ag, and 8860 Ba over 0.64 metres. The highest results were from the southeast edge of Clyde Lake (Figure 15).

The structural fabric of rock packages near the Tintina Fault parallel the fault, striking northwest as observed in the folded stratigraphy at Area 12. An exception to this is at Area 13 where near-surface intrusives have uplifted strata causing gentle folds with axes plunging northeast. Subsequent brittle fracturing of overlying Askin Group rocks coupled with the injection of hydrothermal fluids from the intrusive "heat pump" have formed the Zn-Pb barite veins and networks at Area 13. The intrusive has remobilized Earn Group distal barite (DMB) into Askin Group rocks during or shortly after the Cretaceous period.

8.3.2.3 Area 23 (Toofar Lake)

Area 23 (Toofar Lake) is located approximately 10 kilometres northwest of Clear Lake on claims staked in 1991. No significant mineralization was discovered, however, more Earn Group rocks have been found.

Prospecting north of Toofar Lake along reconnaissance soil geochemistry lines, revealed small outcrops less than 10 metres long of Earn Group chert pebble conglomerate (DMCPC). The conglomerates are light to medium grey with coarse to pebble size sub-rounded chert fragments in a compact sandy quartz matrix. Intrusive granodiorite outcrops were found 150 metres north of Toofar Lake.

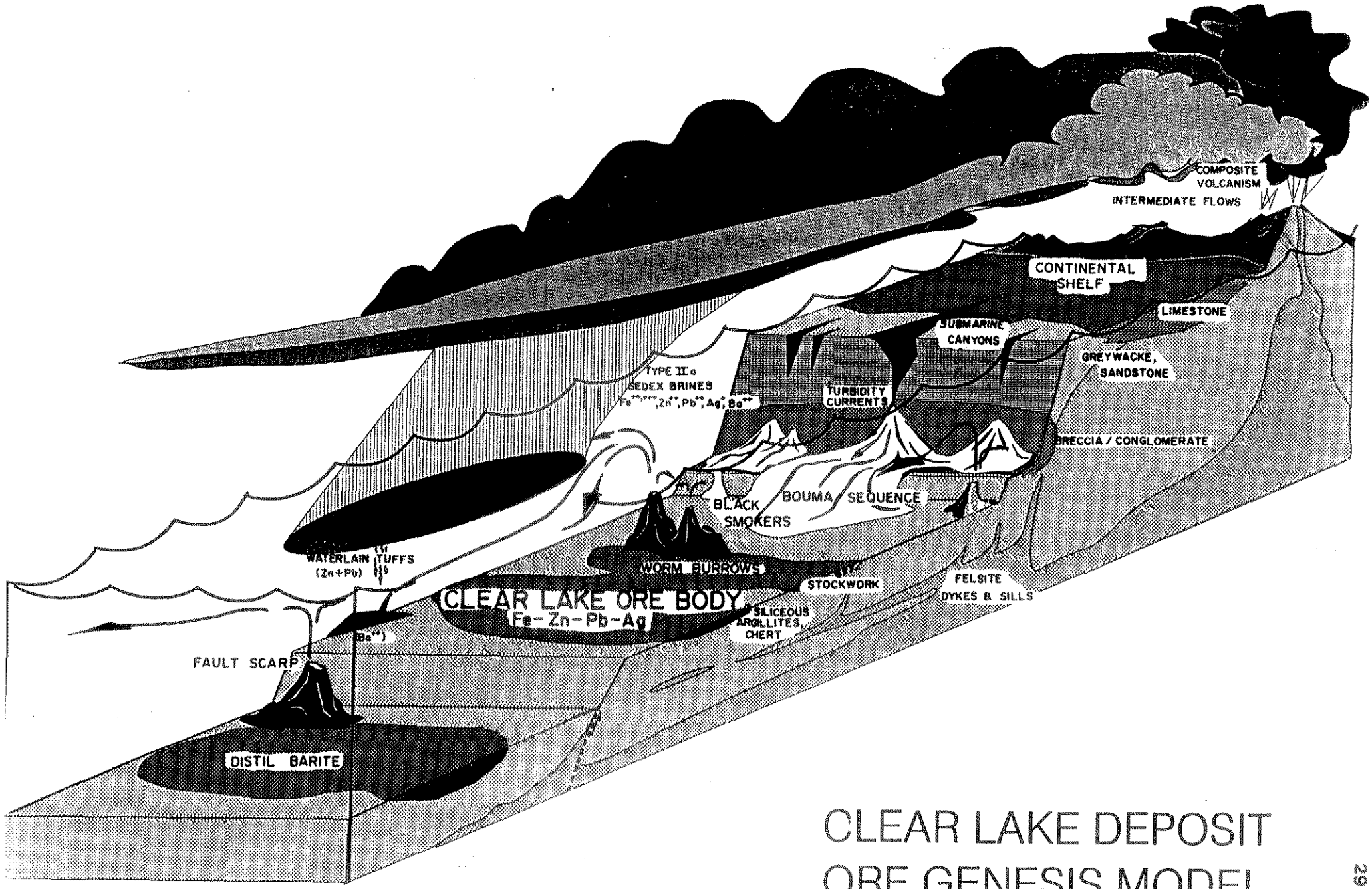
8.4 ORE GENISIS MODEL AND HISTORY

The Clear Lake Deposit is thought to be formed from exhaling Devono-Mississipian metaliferous brines similar to modern seafloor black smokers found off the west coast of North America (Figure 4).

A whole rock geochemical study of the exhalitive (or tuff) (DM5)by Morin (1981) yielded high Ti, P, and high K2O/Na2O ratios that infer a volcanic parentage with alkaline chemistry. Morin (1981) concluded that the geological and geochemical characteristics of the Clear Lake deposit are consistent with its formation in a rifting enviroment.

Criterion with respect to the formation of the deposit leading up to its present state include: the nature of the mineralizing fluids; mechanisms for sulphide precipitation; paleogeographic enviroment; and tectonic events (Grapes K., 1987).

Mineralized magmatic fluids have leached metaliferous ions from underlying shales and tuffs before leaving black smoker vents at temperatures between 150 to 300° C. The presence of wurtzite, a hexagonal dimorphous mineral of sphalerite, and colloform pyrite, support this temperature range. Metaliferous ions were transported along fractures and fault planes as chloride complexes in acid solutions. These locally created stockworks by hydraulic brecciation just below the seafloor surface.



CLEAR LAKE DEPOSIT ORE GENESIS MODEL

FIGURE 4

Mechanisms for sulphide precipitation reflect the variety of textures found in the deposit. Generally, fine-grained sulphides form rapidly as a result of mixing and cooling of the hot brines by cold seawater. Coarse-grained sulphides reflect low rates of change regarding: a decrease in temperature; dilution of the hot brine; an increase in pH due to seawater mixing; and an increase in the concentration of reduced sulphur.

The paleogeographic environment involves a back-arc basin along the west margin of the North American Craton during the Devono-Mississippian periods. The main features are illustrated in Figure 4 which is a `blow up' of the back arc basin. The following is a summary of events responsible for the Clear Lake Deposit:

1. The deposition of a thick package of sandy silts regressing to deep sea carbonaceous muds overlie conformable (?) Road River Formation which in turn overlie conformable (?) Rabbit Kettle Formation.

2. Rifting and subsequent normal faulting triggered turbitity currents and the deposition of breccia /conglomerate and Bouma sequences from continental slopes and submarine canyons into the euxinic basin.

3. Volcanic activity deposited zinc-lead rich ash and lapilli tephra on the sea and sink into the basin.

4. Hydrothermal fluids were driven up through fractures and faults forming silicification, hydraulic brecciation and local stockworks.

5. The Clear Lake Deposit was deposited in a paleotopographic depression: black smokers and possibly white smokers developed on the seafloor from the precipitation of massive sulphides and barite. Local biological activity developed around these vents and is represented by trace fossils (worm burrows) within the massive sulphides. Drilling indicated that at least one episode of barite precipitate was contemporaneous with waterlain tuff.

6. The main massive sulphide body was overlain by waning exhalitive episodes of chert and/or carbonaceous muds that became locally silicified.

7. Deep burial, compaction, dewatering, and lithification of the package is illustrated by feather fractures across laminae in the shale/argillite and stylolites in the cherts.

8. During the lower Cretaceous, just prior to major tectonic activity, felsic intrusives dated 108 Ma intruded the succession locally remobilizing sulphides along fractures and fault planes.

9. Increasing tectonic activity due to accreted terrains coming from the west initiated 450 km of dextral movement along the Tintina Fault during the mid to late Cretaceous period. During this event the Earn Group rocks containing the Clear Lake Deposit were overturned and splayed off the western edge of the Selwyn Basin and onto Askin Group rocks moving from the south. The dextral motion of the Tintina Fault to the north combined with the adjacent competent platformal Askin Group rocks to the south produced brittle-ductile Z-shaped folding in the Earn Group stratigraphy.

10. During or shortly after this active tectonic period, gabbro to granodiorite stocks intruded along the Earn-Askin contact fracturing the brittle Askin strata. Barium, minor zinc, lead and trace copper were remobilized from the Earn Group.

11. Glaciation of the area involved two lobes of the Cordilleran ice sheet during the Pleistocene epoch; the westerly flowing Selwyn Lobe; and the northwesterly flowing Cassiar Lobe (Campbell R.B., 1967). Together a westerly glacial movement scoured the Clear Lake area generating hundreds of drumlins, eskers, moraines. and outwash. This was preceeded and followed by several episodes of erosion. Leaching out and oxidizing of the upper 40 metres of sulphides of the Clear Lake ore body was a result of these processes.

12. The deposition of the White Ash Formation and further soil erosion were the last significant events.

9.0 1991 EXPLORATION PROGRAM

9.1 PHYSICAL WORK

Physical work on the Clear Lake property consisted of mobilization, linecutting, line picketing, and trenching (Figure 8).

9.1.1 Road Construction and Mobilization

Mobilization of the equipment for the drilling program began March 7th. An existing winter road, beginning at Pelly Crossing, was plowed clear of snow for 90 kilometers along the south side of the Pelly River. Equipment was pulled along the road by a D7 and D6 caterpillar bulldozer. The Pelly River was crossed, after reaching the Clear Lake claims, on an ice bridge. A highboy was used to carry drill mud, a 3000 gallon empty tank, core boxes, lumber, a Longyear Super 38 diamond drill rig and 3 sloops full of rods. A specially designed fuel sloop on skids was used to transport 8000 gallons of diesel. By April 8th, the equipment was at the main base camp.

The D6 plowed the 850 metre airstrip to allow further camp mobilization by fixed-wing aircraft. The expenditures for this road work totalled $76,000.00 dollars and employed 125 man days.

9.1.2 Line Cutting

Construction of three grids named Pow, Pin, and Snafu began April 5th, using a D6 caterpillar bulldozer, under survey control. Approximately 1.2 km of line were cut per day. A total of 54 line kilometres and 14 tie line kilometres were cut by May 15th.

Starting May 22nd, two line cutters were flown by helicopter to a fly camp within the Clear Lake claims and were contracted to cut the `Area 1 Grid'. By May 26th they had handcut a total of 8 line kilometres and 0.7 tie line kilometres. In total, 62 line kilometres and 14.7 tie line kilometres were established using 92 man days and costing $70,573.00 dollars.

9.1.3 Line Picketing

All grid lines cut during the 1991 field season were picketed using wooden stakes with metal station number tags. These were erected at 25 metre intervals with no slope correction. A clinometer was utilized to measure slope angles to allow for terrain corrections during later plotting. The picketed grids were then used for control during geophysical, geochemical and geological surveys. This labour intensive task was done between April 13th to July 12th at a rate of 2.5 km per day for two people.

9.1.4 Trenching

A total of four trenches were excavated during the 1991 field season (Figure 14).

The trench located between 6+50S and 7+25S on tieline 2+00E of the SNAFU grid (58 x 2.4 x 2 metres depth) was dug to encounter the south extension of the Clear Lake massive sulphides. Three zones of dark brown to yellow brown gossanous material up to a width of 0.5 metres were intersected . Pale green clay, possibly representing the tuff unit, DM5a, was also encountered. Bedding in a dark grey to black sheared graphitic argillite was orientated at $125^{O}/55^{O}N$. Due to the weathered and sheared nature of the material uncovered,the entire trench may still be within the footwall of the massive sulphides.

Two trenches were dug to test a high gravity anomaly and IP conductive zone on the northwestern extension of the Clear Lake deposit. One located at 2+75N on line 2+52W of the POW grid, had dimensions 21 by 2.4 by 3.5 metres. This encountered weathered argillite and reddish soil, transported approximately 100 meters downslope from the deposit. The trench located at 3+30N on line 3+50W of the POW grid was unsuccessful due to permafrost.

A trench, located at 3+55N on line 10+50W of the POW grid, was dug to test a low resistivity and high chargeability zone. The trench was dug 32 m long by 2.4 m wide and 3.8 m deep without encountering bedrock.

9.1.5 Diamond Drilling

The 1991 drill program was directed towards better definition of the Clear Lake deposit. Diamond drilling included 4588.2 metres of NQ and BQ wireline drilling in 19 holes (Appendix F). Fifteen holes were drilled on the Clear Lake deposit. Four reconnaissance holes were drilled to test other targets in the immediate vicinity of the known deposit.

The average drilling cost was $95.75/m. This can be broken down into the following components: overburden and drilling at $77/m; moving at $2/m; and reducing, down hole losses, reaming and core storage at $16.75/m.

A total of 1480 man hours were spent drilling with 56 man hours required for taking Sperry Sun surveys and acid tests. Out of 77 days of drilling, 13 were spent moving the drill.

Drilling averaged 35m per 12 hour shift and required an average of 11 bags of mud per shift for a total of 1405 bags for the entire job.

The contractor, Kluane Drilling Ltd. of Whitehorse, supplied 4 drillers, a catskinner, a Longyear "Super 38" drill, and a D6 bulldozer between June 4th and August 18th.

A total of 658 core samples were assayed for zinc, lead and silver by Northern Analytical Laboratories Ltd. of Whitehorse. Twenty-eight of these samples were checked by Bondar-Clegg and Co. Ltd. of Vancouver and compared well (Refer to Appendix D for analytical proceedure).

All diamond drill hole collars were surveyed with a theodolite and EDM. All drill hole azimuths and dips were surveyed except 91-54 and 91-55. Down hole Sperry Sun surveys proved to be unreliable and inconsistant due to trace amounts of pyrrhotite in the massive sulphides and regional rocks.

Drill data was reported on three baselines: BL 2000E oriented 000° with sections every 60 metres; BL 200N oriented 118° with sections every 90 metres; and BL 700N with sections every 90 metres. Level plans were made from 400 to 650 metre levels at 50 m intervals (refer to Figures 31 to 55).

A survey summary, and a list of intersections can be found in Appendices F and G. Refer to section 8.3.1 for geology and results regarding the drilling.

9.2 GEOPHYSICS

9.2.1 Introduction

The geophysical program included 16.5 km of gravity and 60.7 km of IP/Resistivity.

An orientation survey of gravity and both pole -dipole and gradient IP/Resistivity was done over the known mineral deposit. The Clear Lake Deposit coincided with anomalous IP/Resistivity and gravity.

9.2.2 Gravity

9.2.2.1 Previous Work

A 6125 station gravity survey was done by Kenting Exploration Services between 1975 and 1977. Readings were taken every 100 feet on grid lines spaced at 1000 foot intervals. The Bouguer correction factor was based on a density of 2.6 grams per cc. Forty-one anomalies were identified in the gravity survey, none of which were considered to represent large tonnages of near surface sulphides. In 1977, attention was drawn to the Clear Lake area after Clear Lake sediments were found to contain 1.9% Zn. At this time the gravity survey did not include the Clear Lake area.

Gravity on the Clear Lake area was done by W. J. Sharpe in March 1979 after the discovery of massive sulphides in 1978. A high magnitude anomaly (3.2 milligals), representative of a large tonnage sulphide zone, led to further drilling on the Clear Lake deposit. The remainder of the survey was unimpressive. Sharpe used a Bouguer correction factor based on a density of 2.67 grams per cc.

Additional gravity surveys were carried out on the property between 1980 and 1983.

9.2.2.2 1991 Gravity Survey

Gravity was carried out over four grids, the PIN, POW A, POW B, & POW C with measurements of relative gravity made every 25 metres. Elevations at each of the gravity stations were obtained with a theodolite and rod using the stadia method. A density of 2.7 gm/cc, water depth where applicable, and latitude was used to apply corrections to the observed gravity.

The survey was done by Peter E. Walcott & Associates Ltd. and interpretation was made by Patrick Jamet (Total Energold Corporation). Walcott has supplied text, maps and profiles that are available in Appendix B.

The purpose of the 1991 gravity survey was to look for anomalies in selected areas extending from the Clear Lake deposit to the north, west, and east and produce a type gravity section across the deposit (Figure 5). The excess masses over the massive sulphides were very distinguishable as in previous surveys. Gravity over the PIN grid was done in order to see if a possible northwestern extension of the massive sulphides could be located in the immediate vicinity of the deposit. Conflicting gravity results east of the massive sulphides on POW C grid (Area 17) were also checked.

9.2.2.2.1 Gravity on the PIN Grid

The north portion of the masssive sulphides transects the PIN grid. A 50 metre thickness of massive sulphide on line 100 N shows a distinct anomaly with a peak of 1.35 to 1.7 mgal located in the centre of the sulphides.

On line 200 N the anomaly has a similar extension of 0.7 mgal although it has no obvious peak, perhaps due to the influence of two different massive sulphide and/or barite bodies on each side of the profile.

A sharp peak of 0.8 to 1.0 mgal is still present on line 300 N. The peak corresponds to a 20 m thick barite bed. A 20 m thickness of massive sulphides found in holes 91-64 and 91-65 is represented by 0.3 mgal on the shoulder of the anomaly. There is no peak to this 0.3 mgal anomaly.

The anomaly weakens on line 400 N and shows 0.1 to 0.2 mgal at 200 W and 300 W which probably corresponds to the same unit of barite and pyrite as on line 300 N. The northernmost lines, 500 to 700 N, are not showing any high values. A possible north extension of the deposit projected on a north-south strike that would be expected at approximately L300N/40E, L400N/60E, L500N/75E, L600N/85E and L700N/100E is denied by lack of gravity anomalies.

9.2.2.2.2 Gravity on POW E and W Grids

Gravity on lines 11+50 E and 13+50 E on the POW grid was done to check the location of a gravity high from two former surveys on Getty line 540 W. It was found that there were several discrepancies in elevation, from 1.5 to 6.0 m. The anomalies found in 1980 and 1981 surveys were thought to be attributable to the previous surveyor starting from a station with the wrong elevation. After terrain corrections were made, weak residual anomalies were located on both

lines established in 1991. Because these are only observed on the terrain corrected profiles, other evidence is needed to support their existence before commitment to borehole investigation.

A residual anomaly on POW line 1450 W at the southernmost part of the line is apparent on the Bouguer profile. This is considerably enhanced by the terrain corrections and is undefined to the south. It requires an extension of the line.

Several anomalies of 0.2 to 0.4 mgal, often 100 m wide, can be interpreted on the north and south flank of Hammer Hill and also south of Anvil Lake on lines 650 W and 850 W. There is a strong possibility that they originated from the hill slope. Further investigation is necessary.

9.2.3 Induced Polarization/Resistivity

Although no Induced Polarization was done on the property prior to 1991, horizontal loop (HLEM) located a coincident strong conductor over the deposit using 444 and 1777 Hz with coil separations of 200 to 600 feet. The coinciding lake bottom sample of 10,000 ppm Zn enhanced the priority of this EM anomaly. A rusty stain was also seen on the southern shore of the lake. The EM anomaly was subsequently drilled and the Clear Lake deposit discovered.

Horizontal Loop EM was done on lines 1000 feet apart by Kenting between 1975 and 1977. Some EM was done on the property every year up to 1984 when work ceased. Although there was no scarcity of EM, magnetic or gravity anomalies, coincident responses frequently were off-set by just enough distance to create doubts about the related nature of their sources.

An IP/Resistivity survey was decided upon for 1991 to help in geological mapping and to attempt to separate conductors that are caused by faults or dry shears versus those which reflect mineralization or graphitic units.

Between June 5th and July 18th, 1991, Peter E. Walcott & Associates Limited carried out IP/resistivity over six grids, the SNAFU, PIN, POW E, POW W, Area 1, POW area 12 & POW Area 13. An Interpretation was done by Patrick Jamet. Measurements (first to fourth separation) of apparent resistivity and chargeability - the I.P. response parameter - were made every 25 metres along the lines using the pole-dipole method of surveying after initial tests with the gradient method proved to be a little more difficult to get homogenized data with. The maps and profiles from this work are located in Appendix C.

Measurements (first to fourth separation) of apparent resistivity and chargeability - the I.P. response parameter - were made every 25 metres along the lines using the pole-dipole method of surveying after initial tests with the gradient method proved to be a little more difficult to get homogenized data with. The maps and profiles from this work are located in Appendix C.

A total of 60.7 km of I.P. was done. Following is a summary of the grids that were done by pole-dipole and gradient I.P.

Grid	Kilometres	Type of Survey
SNAFU	2.1	Gradient
SNAFU	4.2	Pole-Dipole
POW	45.4	Pole-Dipole
PIN	6.3	Gradient
AREA 1	4.8	Pole-Dipole
Total	60.7	

9.2.3.1 Vicinity of the Clear Lake deposit (Snafu and PIN Grids)

An IP/Resistivity survey was done over the deposit to determine the resistivity/chargeability response related to a detailed stratigraphic section. The deposit's response is a very low resistivity with values of 17 to 40 ohm-metres, centered on the vertical projection from 30 to 60 m depth to surface.

The most conductive axis lies within a low resistivity unit (under 100 ohm-m), 100 to 200 m wide. This corresponds to a unit of black shales and silts and can be traced over several kilometres to the east and west of the deposit. The associated IP effect is very strong, showing chargeabilities of 30 to 45 mv/v over a background of 18 to 30 mv/v in black shales and silts and 5 to 12 mv/v in non porous siltstones, sandstones, quartzites, limestone and dolomite. Sometimes, the chargeability shows a low in the center of the ore body, with high shoulders caused by the extreme conductivity associated with the massive sulphides.

The model shown in Figure 5 serves as a model that is used to interpret geophysical anomalies and in determining the priority of targets.

9.2.3.2 Area 11 and 17

The most prominent IP/resistivity response is a northwest-southeast orientated anomaly, very conductive and chargeable, that includes the Clear Lake Zone. This structure has been traced, in part, previously by EM and extends at least 2500 m northwest of the deposit and 1300 m southeast of the deposit (Figure 13). It is 150 to 200 m wide with very low resistivity values below 100 ohm metres. The broadest part of this anomaly is in the vicinity of the Clear Lake deposit where a lower IP (29-37 mv/v) between two high shoulders (44 and 45 mv/v) indicates the massive sulphides. In other areas this linear anomaly may have only one side of the conductor marked with high chargeability.

This anomaly was drill tested in two localities west of the Clear Lake deposit on lines POW 2+50 W and 10+50 W. A trench on 2+50 W from 250 N to 300 N found a sheared graphitic shale representing the high conductive anomaly (28 -46 ohm-metres). Drill holes 91-64 tested the anomaly and intersected the highly graphitic unit that was located in the trench but contained no sulphides. A barite bed shows up as a slightly more resistant unit (104 ohm-metres) with a high chargeability of 47 mv/v probably due to disseminated conductive iron sulfates (hydrated). Knowing that barite is in the hanging wall of the massive sulphides, hole 91-65 was drilled to test for the stratigraphic position of the massive sulphides. Twenty-five metres of massive pyrite were found in this hole, corresponding better to the highest chargeability rather than to the lowest resistivity.

The same anomaly was further tested along strike on line POW 10+50 W by drill hole 91-66 . This hole tested a conductor with values between 13 and 51 ohm-metres with a corresponding chargeability of 48 mv/v on the south shoulder of the conductor. The drilling determined that the conductive anomaly was again caused by graphitic argillite. It is postulated that in this area the possible massive sulphide horizon matches with the highest chargeability more than with the highest conductivity.

This large conductor shown to trend northwest from the deposit represents an argillite bed particularly high in graphite (Horizon 1 on Figure 13). Other conductors with high IP, found immediately south of this unit are high priority targets. These are listed under recommendations for work in 1992.

The conductor corresponding to the sigmoidal shape of the deposit also trends to southeast of the massive sulphides.

Drill hole 91-63, located on section 360 E in the southeast end of the deposit, tested an anomaly of low resistivity and high chargeability parallelling the massive sulphides 70 m to the south. Under the anomaly, 100 to 150 metres below surface, a graphitic argillite was intersected. Within this argillite, a zone 3.46 m wide contained a network of sphalerite-calcite-quartz veins orientated parallel to foliation. This zone graded 16.17% Zn, 0.01% Pb, and 0.9 g/t over 3.46 m. Consequently, this geophysical target is worth following up in 1992.

The conductor trending southeast from the massive sulphides was tested in previous years by two drill holes, 78-16 and 81-30. Both holes intersected graphitic argillite; 81-30 intersected several 2-3 cm wide bands of massive pyrite and some disseminated sphalerite.

The IP survey also served to map out a resistive Earn Group chert bed that was found to outcrop near the camp, and also, approximately 1 km north of Basil Lake (Figure 11).

9.2.3.3 Area 12

Although Area 12 is located within Askin Group rocks, several significant geophysical anomalies exist. South of Anvil Lake a very low resistivity anomaly trends east-west for 900 m. This is 250 m wide with values generally below 100 ohm-metres. Within this anomaly on L12+50 W from 1625 to 1675 S, very conductive values (30 to 50 ohm-metres) are located with a corresponding chargeable IP of 48 to 59 mv/v. South of this anomaly, at 1680 to 1700 S, one low IP between high shoulders is also very significant. This anomaly is open to the west, and therefore, geophysics should be extended for 400 m to the west.

The quartzite-dolomite unit north of Anvil Lake shows a high resistivity generally above 500 ohm-metres. On lines 6+50 and 8+50 W there are strong contrasts between high resistivity, moderate resistivity, and corresponding high Zn values in soil. On L6+50 W between 980 and 950 S a contrasted conductor of 186 ohm-meters in a background of 450 to 680 has a narrow coinciding IP peak of 39 mv/v (background 28 -30). There is also a mag low and coinciding weak gravity anomaly of 0.25 mgal. On 8+50 W, between 1150 to 1200 S, a contact between high resistivity (400 - 500 ohm-metres) and moderate resistivity (300 - 350 ohm-metres) is located with a corresponding maximum chargeable IP of 39 mv/v.

9.2.3.4 Area 13

Two northwest - southeast trending low resistivity anomalies were found in Area 13 north of Clyde Lake (Figure 13). These have resistivity values ranging between 34 and 87 ohm metres but no associated chargeability. They likely correspond to a stratigraphic conductor. The contact between Earn and Askin Group rocks trends northeast across Area 13 and is possibly reflected by the southern contact of the conductive anomaly north of Clyde Lake. This contact could be the St. Cyr fault. The exact location of this contact in not known because of the lack of outcrop in the area.

On line 40+00 W at 690 to 750 S an excellent 25 m wide conductor (33 ohm-metres) is found centred in relatively resistant ground with values of 200 to 600 ohm-metres. This corresponds with a high IP of 39 mv/v in a broad high IP background making it the best anomaly in this area. Further geophysics should be done to test for a possible northern extension of this anomaly.

9.2.3.5 Area 1

Area 1 is located in Kechika Group phyllites which are generally not very conductive and have a background of 300 to 700 ohm-metres.

Five anomalies with extremely low resistivity (values less than 20 ohm-metres) were found in Area 1. The most significant is a 125 m wide super conductor of 2 ohm-metres located on line 87+00 W from 4800 to 4900N. This is near narrow carbonate-barite-zinc lenses that outcrop in the creek and just east of a gravity anomaly. Very high IP values from 48 to 62 mv/v are located on the shoulders of the conductor.

Two other important super contuctors are located in Area 1. One super conductor with high IP and associated weak gravity and soil geochem anomalies is located at 8500W/5130N. Another super conductor with high IP and a partial gravity anomaly of 0.4 mgal is traced from 8500W/4640N to 8200W/4685N.

9.3 GEOCHEMISTRY

9.3.1 Introduction

A total of 626 soil, 13 silt, and 2 rock chip samples were taken on surface within Clear Lake property in 1991. Samples were analysed for zinc, lead, copper, silver, and barium. Rock chip samples were not analysed for barium. Geochemical determination of zinc, lead, copper and silver were done by HNO3/HCl extraction-flame atomic absorption spectroscopy with reporting limits of 1 to 20,000 ppm for zinc and copper, 2 to 20,000 ppm for lead, and 0.0 to 50 ppm for silver. Barium was analysed by X-ray fluorecence with reporting limits of 20 to 20,000 ppm. All samples were analysed at Bondar-Clegg in Vancouver, British Columbia.

Soil samples were taken with a hand auger which could reach a maximum depth of 2.0 metres with an extension. Silt samples were exclusively taken along lake shores. Sampled areas include: Pow Grid, Area 2, Areas 5 and 6, Area 14, and the new claims to the west; Area 23. High values are categorized in the following table:

Anomalous Values			
Element (ppm)	Possibly Anomalous	Probably Anomalous	Highly Anomalous
Zn	120-150	150-240	>240
Pb	30-50	50-80	>80
Cu	40-60	60-70	>70
Ag	0.5-0.8	0.8-1.1	>1.1
Ba	1800-2250	2250-2700	>2700

9.3.2 Pow, Pin, and Snafu Grids

A total of 295 soil samples were taken on Pow Grid at 50 metre intervals. This data was contoured with data taken in 1990 (FIGURE 13).

Zinc occurred as six "highly anomalous" zones along Rusty Creek and around Clyde Lake. These are thought to have resulted from hydromorphic action in the low-lying drainage below highly anomalous Clear Lake.

Other highly anomalous zinc values occur: immediately south of Clear Lake, along the airstrip, on the north and south facing slopes of Hammer Hill, and dispersed down the slope facing the Pelly River. The highest result was 5748 ppm zinc taken on the south facing slope of Hammer Hill. It is possible that the Hammer Hill anomalies were caused from

glacial transportation of the Clear Lake deposit.

Lead, silver, and barium were small local anomalies with respect to zinc and copper soil anomalies. Coincident, highly anomalous zones involving more than one element included: lead-zinc at Clyde Lake, copper-barium-zinc on line 2350W just south of Rusty Creek, lead-zinc-barium on the north facing slope of Hammer Hill, zinc-copper and zinc-silver at Anvil Lake, copper-barium on line 850w on Ginger Hill, lead-silver just south of Clear Lake, zinc-lead-barium on the airstrip, copper-zinc-barium on line 350E tie line 450S , and at the bottom of the slope facing the Pelly River between lines 1150E and 1250E.

9.3.3 Area 2

A total of 22 soil samples at 50 metre intervals were taken along L 630W, 250 metres east of DDH 78-6. The soil line crossed two ground magnetic anomalies, several EM-17 conductors, and two broad zone gravity anomalies (0.3 and 0.4 mgal).

Two anomlous samples were found. One contained a spot high of 666 ppm zinc and the other contained 70 ppm lead, 0.6 ppm silver and 1800 ppm barium.

9.3.4 Areas 5 and 6

Two rock chip and 195 soil samples were taken at 50 meter intervals along lines 270W, 280W, 290W, 300W, 320W, 330W, 360W, 370W 380W, and 390W. These soil lines crossed several EM-17 conductors and weak gravity anomalies (0.2 to a 0.6 mgal).

Many small east-southeast oriented zinc and copper soil anomalies were found throughout areas 5 and 6, however, the most prominant anomaly was a "probably anomalous" zinc-copper zone with "possibly anomalous" silver located 150 metres southwest of DDH 78-11. This zone, approximately 150 by 1000m, was elongated east-southeast with the EM-17 conductors in the area. A spot high of 365 ppm zinc was located at the edge of a bog on line 330W. No anoumalous lead or barium were present. A rock chip sample assayed 743 ppm copper.

9.3.5 Area 14

Two lake shore sediment and two soil samples were taken 1.5 kilometres east-northeast of camp. No anomalous results were reported.

9.3.6 Area 23

A total of 11 lakeshore sediment and 112 soil samples were taken at 50 metre spacings. Five lakes were sampled to confirm previous anomalous values reported in 1979. Five reconnaissance soil lines averaging 1200 metres in length were oriented southwest to cover the areas between these anomalies.

A high of 188 ppm zinc was reported from a lake not previously sampled. The anomalous lake sediment sample (136 ppm lead) taken at Toofar Lake in 1979 could not be reproduced, however, a soil sample containing 210 ppm zinc was taken within twenty metres of the same lake. A spot high of 308 ppm zinc was also located.

10.0 EXPLORATION TARGETS

A number of exploration targets were developed from the 1991 exploration program. These exploration targets were identified and assigned a priority from the following criteria:

(i) presence of or direct extension of sulphide mineralization;

(ii) underlain by Earn Group rocks;

(iii) associated gravity response;

(iv) direct geochemical response; and

(v) IP/Resistivity anomaly, EM conductor.

Ore samples obtained in drilling indicate a high threshold for mercury. Mercury should be analysed for as an additional indicator.

The following summary gives the highlights of the target areas in order of priority. More specific details of the 1992 exploration can be found in Table 1 and Appendix E.

10.1 CLEAR LAKE ZONE

The Clear Lake deposit is found within Earn Group stratigraphy. It has coincident gravity, IP/Resistivity, and geochemical anomalies. The deposit is buried under an average of 14 meters of glacial till.

Between 1978 and 1991, 14,098 meters in 51 holes were drilled to define the mineral deposit. Further infill drilling is not recommended for 1992 although there is still a possibility of locating mineralization at depth.

10.2 AREA 11

Both massive sulphides and Earn Group stratigraphy extend into Area 11 from the Clear Lake Zone. In 1991, a grid approximately 2300 meters by 800 meters was explored by IP/resistivity, three diamond drill holes and a minimal amount of gravity. IP/Resistivity has indicated three anomalous horizons (Figure 13). Horizon 1 is a conductive anomaly between two high IP shoulders. This represents a 150 meter graphitic shear zone that trends northwest for 2.3 kilometers. Horizon 2 parallels the graphitic shear 50 to 100 meters to the south. Horizon 3 begins at POW 2+50 W and continues for 650 meters west.

A 20 - 25 meter thickness of pyrite was found on line POW 2+50 W and could represent either Horizon 1 or Horizon 2. Six diamond drill holes are proposed to test the three horizons for massive sulphides (Appendix E).

Eighteen kilometers of IP/Resistivity and 5 kilometers of gravity are recommended to test the area south of the present grid for additional anomalies. The area between 650W and 3000W from 85N to 1150S (Area 11 & 12) should be sampled every 50 metres to close off open anomalies, particularly the zinc-lead-barium and copper anomalies on Hammer Hill, and to cover potentially favorable Earn Group stratigraphy. Three hundred soil samples are recommended.

Geologic mapping at 1:5,000 scale should be done to locate Earn Group rocks and rocks associated with an arcuate geophysics conductor in the western portion of area 11 formerly referred to the area between 10 and 13. A 16.5 line kilometre grid should be cut for control, geochem soil sampling, and a geophysical survey (PLMT). One hundred soil auger samples at 50 metre stations are recommended.

10.3 AREA 17

Two IP/Resistivity horizons extend southeast from the deposit into Area 17. Area 17 is underlain by Earn Group rocks. These are thought to be equivalent to Horizon 1 and 2 in Area 11. Several weak residual gravity and geochemical anomalies are found within these horizons.

Three drill holes are recommended to test coincident anomalies and aid in the enterpretation of the stratigraphic position of the anomalous IP/Resistivity horizons. Additional gravity (6 km) and IP/Resistivity are proposed on a grid 500 by 200 meters that will parallel the hill to eliminate possible terrain correction problems and extend IP/resistivity coverage.

10.4 AREA 1

This area is underlain by Kechika Group rocks. A mineral showing with galena and sphalerite in narrow bands (1-2 cm wide) occurs within graphitic phyllites that are exposed in a creek gouge.

Three super conductors (2-6 ohm-meters) with very high IP on the shoulders (up to 72 mv/v) were located in Area 1. Weak gravity (0.2-0.4 mGal) is coincident with two of the conductors. Four holes are recommended to test the three conductors.

Additional linecutting to extend the present grid to the east, west, and south is dependent upon drilling results.

10.5 AREA 3

Area 3 is underlain with Kechika Group rocks. Three untested 1.0 mgal gravity anomalies place this area in a relatively high priority.

Additional soil geochemistry is recommended to be done over the area of the gravity anomalies.

10.6 AREA 13

The northern portion of Area 13 is underlain by Earn Group rocks while the southern half is underlain by less favourable Askin Group rocks. Pb-Zn-barite veins are found in the Askin Group rocks south of Clyde lake.

IP/Resistivity has located a number of anomalies coincident with Pb-Zn-Ba geochemistry. Further IP/Resistivity is recommended to improve targets. Two IP/Resistivity lines west of the present grid will better define the western anomalies and help locate the Earn-Askin Group contact.

10.7 AREA 23

The stratigraphy underlying Area 23 is not known. Two outcrops of chert pebble conglomerate thought to belong to the Earn Group were located during 1991. This information along with anomalous Pb-Zn lake bottom geochemistry substantiates further work.

Geologic mapping is recommended to focus on locating Earn Group rocks. Once favourable stratigraphy is found, soil sampling should be done to indicate the mineral potential. Soil geochemistry is also recommended between lake sediment anomalies.

10.8 AREA 16

The Earn Group - Road River Formation contact is extrapolated to pass through this area. A coincident gravity-HLEM anomaly possibly reflects the presence of massive sulphides. Further gravity and IP/resistivity is recommnended to delineate this anomaly.

10.9 AREA 12

Area 12 is entirely underlain by Askin Group rocks. The numerous coincident IP/Resistivity-Pb/Zn anomalies found in this area are less significant because of the lack of Earn Group rocks.

Trenching is proposed for two anomalies. Additional IP/Resistivity and geochemistry is recommended to be done on two additional lines east of the present grid.

10.10 MUSHROOM LAKE

A road is proposed to be cut to Mushroom Lake to improve geological information and provide access for preliminary PLMT.

11.0 REFERENCES

Basnett, R., May 25-June 5, 1990: Geochemical and Geological Assessment Report on the Clear Lake Property; 32p.

Basnett, R., July 5-19, October 2-8, 1990: Geochemical and Geological Assessment Report on the Clear Lake Property; 45p.

Campbell, R.B., 1967: Geology of Glenlyon Map-Area, Yukon Territory (105 L); Geological Survey fo Canada, Memoir 352.

Gabrielse, H., Templeman-Kluit, D.J., Blusson, S.L., and Campbell, R.B., 1980: Macmillan River Map 1398A; Geological. Survey of Canada.

Grapes, K.J., 1987, Lithological and Textural Study of the Clear Lake Fe-Zn-Pb-Ag-Ba Massive Sulphide Deposit, Yukon Territory, Canada; Unpublished M.Sc. thesis; Carleton University; 331p.

12.0 STATEMENT OF QUALIFICATIONS

I, RICHARD BASNETT, hereby certify that:

1. I am a graduate of the University of British Columbia, having obtained a B.Sc. in Geology in 1975.

2. I have been employed as a geologist in the mining and mineral exploration industry in Canada for 16 years.

3. I directly supervised the work in this report as Yukon Exploration Manager for Total Energold Corporation.

Date: Mar 03/82

Richard Basnett, B.Sc.

13.0 STATEMENTS OF COSTS

Assessment Work valuation to apply to the Clear lake property.

1. Physical Work

A. Road Construction (March 9th-April 8th) $76000.00
125 man days

B. Diamond Drilling (June 3rd-Aug.19th) $443339.00
273 man days

C. Trenching (July 12th-Sept.3rd) $1673.00
3 man days

D. Line Cutting (April 5th-May 26th) $67930.00
92 man days

E. Picketing Lines (April 13th-July 14th) $21600.00
72 man days

2. Geological, Geophysical and Geochemical

A. Fieldwork

R. Basnett, B.Sc.,of Whitehorse, Yukon.
12 days @ $400.00/day: 4800.00

A. Gomi, B.Sc., of Whitehorse, Yukon.
51 days @ $350.00/day: 17850.00

R. Zuran, B.Sc., of Whitehorse, Yukon.
46 days @ $350.00/day: 16100.00

M. Machida, M.Sc., of Whitehorse, Yukon.
33 days @ $300.00/day: 9900.00

J. vanRanden, B.Sc., of Whitehorse, Yukon.
25 days @ $300.00/day: 7500.00

W. vanRanden, B.C.I.T. Tech.,of Whitehorse, Yukon.
24 days @ $300.00/day 7200.00

B. Analytical Analyses

658 core samples:	9052.00
644 soil samples:	4250.00

C. Geophysical Surveys

gravity, gradient,& pole-dipole	75045.00
226 man days	

D. Support Costs

Camp Accom. & Board:		26632.00
Fuel:	46.00	
Cook (145 days @ $135/day):		19575.00
Radio and couriers :		14457.00
Field supplies:		30162.00
Aircraft charter:		87971.00
Vehicles:		35221.00
Equipment Rental:		34027.00
Stationary and supplies:		52595.00

D. Research and Report Preparation

R. Basnett,B.Sc.,14 days @ $400.00/day:	5600.00
A. Gomi,B.Sc.,14 days @ $350.00/day:	4900.00
R. Zuran, B.Sc., 14 days @ 350.00/day:	4900.00
M. Machida,M.Sc.,14 days@ $300.00/day:	4200.00
J. vanRanden,B.Sc.,14 days@ $300.00/day:	4200.00
W.vanRanden,T.,1h.,14 days@ $300.00/day:	4200.00
Drafting and Publication	15526.00
Reprographics and binding:	325.00

Total Valuation of 1991 Assessment Work: $1059440.00

APPENDIX A

PETROGRAPHIC STUDIES

CLEAR LAKE ORE PETROLOGY

A microscopic study of the Clear Lake ore is summarized below:

1. Ore minerals and their textures

-Ore minerals listed in order of abundance are: pyrite, sphalerite, and galena. No copper or silver minerals are observed under the microscope.

-Gangue minerals mainly consist mainly of quartz and minor amounts of carbonates, sericite sphene and rutile.

sphalerite occurs intergranularly between grains of pyrite while galena occurs as veinlets in pyrite aggregates. The structure of pyrite varies from coarse-grained anhedral massive to fine-grained euhedral laminated aggregates with occassional colloform or framboidal textures.

The grain size of sphalerite varies between 10 um several mm. White sphalerite occurs anhedrally between pyrite grains in fine-grained ore. The pale colour of sphalerite suggests a low iron content. Coarse-grained sphalerite is dark brown and occurs in gangue.
Very fine-grained pyrite several um in diameter are usually enclosed in sphalerite grains.

-Galena occurs in fine grains 10 um in size within fractures and interstitial to pyrite grains. Galena also occurs as inclusions in sphalerite.

2. Ore characteristics

Fine-grained ore

-Fine-grained ore appears in massive and pyritic form.

-Spalerite is white to pale yelleters) with a high (and maximum) IP of 47 ms probably due to disseminated conductive iron sulfates (hydrated).

A thick, weathered pyrite formation (20 to 25 m true thickness), concordant with stratification, found in hole 91-65, close to surface, and above the barite, shows conductive values (99 ohm-meters) with relatively high IP (32 ms).

A gravity anomaly (0.4 / 0.5 mGal) matches fairly well with the pyrite close to surface and the barite bed deeper.

Vancouver Petrographics Ltd.

JAMES VINNELL, Manager
JOHN G. PAYNE, Ph.D. Geologist
CRAIG LEITCH, Ph.D. Geologist
JEFF HARRIS, Ph.D. Geologist
KEN E. NORTHCOTE, Ph.D. Geologist

P.O. BOX 39
8080 GLOVER ROAD,
FORT LANGLEY, B.C.
V0X 1J0
PHONE (604) 888-1323
FAX. (604) 888-3642

Rick J. Zuran
Total Energold Corporation
21-1114 First Ave.
Whitehorse, Yukon
Y1A 1A3

Tel (403) 668-6121
FAX (403) 668-3968

Oct. 28, 1991
JOB # 247

Dear Rick,

Re: Askin and Clear Suites

The final report for the above samples has been completed and the report is enclosed.

Please be advised the rock samples and thin sections will be returned via bus, collect.

Yours very truly,

K.E. Northcote, Ph. D., P.Eng. (604) 796-2068

Askin 1
Siliceous sedimentary carbonate (dolomite)

General description
Siliceous carbonate (dolomite), layered, fine and slightly coarser layers interlocking carbonate grains. Carbonate; very weak effervesce in cold HCl; dolomite? Interlocking and carbonate groundmass supported subrounded quartz grains. Some concentration into layers according to grain-size. Grains show some quartz overgrowths as from quartzite. Few composite grains with outlines of original round quartz grains marked by layers of dust. Stand in relief on weathered surfaces. Scattered rounded lithic grains of very fine granular carbonate (dolomite), to several mm and irregular partially recrystallized masses.

Cut by narrow quartz veinlets. More conspicuous in hand specimen than in thin section. Carbonate veinlets. Discontinuous sericitic partings, irregular grains.

Opaque grains; 1%, clusters of small grains. Some with red internal reflection (hematite). Nonmagnetic.

Microscopic description
Groundmass

Carbonate; 65%, anhedral scattered euhedral (<0.1 to >0.2 mm). Forms irregular granular interlocking groundmass. Scattered rounded clouded microgranular textured grains to >1.0 mm and irregular clots to several mm, many with recrystallized margins and embayments. Scattered euhedral crystals also indicating recrystallization. Fine and coarser grains with quartz segregated into layers.

Quartz; 35%, anhedral (<.05 to <1.0 mm). Most grains subrounded to subangular, some show quartz overgrowths as from quartzite with original quartz boundaries outlined by layers of dust. Shows concentration into layers. Weak strained extinction.

Accessories

Epidote; traces, anhedral, (<.05 mm), at contacts between a few quartz grains and dolomitic groundmass.

Sericite; <<1%, irregular grains, discontinuous partings.

Veinlets

Quartz, conspicuous in hand specimen, less conspicuous in thin section.

Carbonate; resulting from recrystallization

Sericite; discontinuous partings, irregular grains.

Opaques;

Hematite(?); 1%, anhedral/euhedral pseudomorphous, (<.05 to 0.2 mm) disseminated and microfracture controlled. Red external reflection and red brown streak.

Askin 2
Silty siliceous carbonate (dolomite).

General description
Layered/laminated very fine grained carbonate (dolomite) with abundantly disseminated fine subangular quartz granules. Lesser (<10%) disseminated sericite aligned in foliation plane.

Conspicuous foliation produced by discontinuous, irregular partings of semiopaque dustings.

Cut by carbonate (dolomite) with some intermixed quartz; and carbonate/sericite(?) veinlets.

Microscopic description
Groundmass

Carbonate (dolomite) 50%, anhedral, (<.01 to <0.1 mm). Irregular, generally elongate, interlocking grains aligned in foliation plane. Partially obscured by semiopaque microgranular dusting.

Quartz; 25%, anhedral, (<.05 to <0.1 mm). Generally as well separated irregular/elongate foliated grains in carbonate groundmass. Few lensoidal clusters aligned in foliation plane.

Sericite; <10%, anhedral, (<.05 to <0.1 mm) Small disseminated laths aligned in foliation plane.

Opaques; <<1%, anhedral, (<.05 mm). Hematite(?)

Superimposed foliation

Semiopaque (carbonaceous material); 15%, (microgranular). Irregular, discontinuous lensoidal partings produce conspicuous foliation.

Veinlets

Dolomite, some with lesser intermixed quartz.

Sericite(?) cuts across foliation, microgranular felted some intermixing with carbonate.

Askin 3
Silty siliceous granular carbonate (dolomite).

General description
Generally very fine grained interlocking granular carbonate (dolomite) with abundantly disseminated very fine quartz granules. Very slight effervescence in cold HCl. Widely disseminated weakly foliated sericitic laths. Minor feldspathic (albite(?)) grains. Intergranular semiopaque dusting, "crackle" control. Widely scattered siliceous/carbonate bivalve fragments.

Microscopic description
Groundmass

Carbonate (dolomite); >65%, anhedral/subhedral, (<.05 to 0.2 mm, generally about 0.1 mm). Interlocking grains, subhedral recrystallized grains. Weak microgranular semiopaque dusting.

Quartz; 15%, anhedral (<.05 to >0.1 mm), subangular/angular disseminated with some concentration in layers in carbonate groundmass.

Sericite; <5%, anhedral (<.05 to 0.1 mm). Widely disseminated laths aligned along foliation.

Plagioclase(?)5%, anhedral (<.05 to 0.1 mm).Very fine microgranular texture, partial replacement by sericite. Concentrated in certain layers.

Semiopaque

Carbonaceous material; 10%, (microgranular) intergranular dusting and "crackle" controlled irregular partings. Produces medium to dark grey colour of rock.

Organic fragments.

Scattered bivalve and (?) fragments, conspicuous in hand specimen. Appear as cross sections in thin section. Composed of fibrous /"snowflake" silica with intermixed recrystallized carbonate.

Askin 4
Recrystallized "crackled" dolomite, quartz veinlets.

General description
Medium grained interlocking crystalline dolomite?). Very weakly effervescent in cold HCl. Recrystallized. Very widely scattered fine quartz granules.

Crackle brecciation, offsets indicating more than one stage. Infilling by quartz. Locally crushed fabric. Calcite films in incipient fractures.

Microscopic description

Carbonate (dolomite); >90%, subhedral/euhedral (<.05 to >1.0 mm). Interlocking crystals. Recrystallized. In a locally fine crushed groundmass.

Quartz; >5%, anhedral/few euhedral (<.05 to >0.2 mm). Widely disseminated grains, clusters of grains. Some quartz derived from disrupted veinlets.

Opaques; <1%, anhedral/euhedral pseudomorphs (<.01 to .05 mm). Diffuse clusters of grains (hematite after pyrite?)

Veins

Quartz; anhedral/subhedral (to >1.0 mm), interlocking grains. Veinlets disrupted by subsequent crackle brecciation.

Carbonate; similar to groundmass, less microgranular dusting.

Late iron stained fractures.

Askin 5
Granodiorite/quartz monzonite

General description
Fine/medium-grained interlocking crystals of altered plagioclase (sericite) hornblende (chlorite). Interstitial K-feldspar, quartz. Trace accessory zircon.

Plagioclase altered to microgranular felted sericite with albitic(?) rims. Mafic (hornblende) altered to chlorite, lesser carbonate. K-feldspar, weak semiopaque (clay) dusting. Quartz has strained extinction.

Opaque 1%, clusters of grains in altered mafic, magnetic (magnetite).

Microscopic description

Plagioclase; 35%, subhedral/euhedral, (0.2 to >1.5 mm), clusters of crystals to >3 mm). Interlocking with altered mafic. Interstitial quartz, K-feldspar. Moderate/strong microgranular felted sericite alteration. Some albitic margins. Ghost-like remnant twinning.

Altered amphibole (hornblende); >20%, subhedral. Fibrous/shredded amphibole remnants in replacement chlorite(s) lesser carbonate. Very minor epidote clusters.

K-feldspar; 15%, anhedral, (0.2 to >2.0 mm). Irregular grains with quartz, interstitial to plagioclase and altered mafics.

Quartz; 20%, anhedral, (<0.1 to 1.5 mm). Irregular grains with K-feldspar, interstitial to plagioclase and altered mafics.

Accessories
Zircon; trace

Opaques; <5%, anhedral, (<.05 to 0.3 mm). Associated with altered mafics. Magnetite.

Alteration assemblage
Sericite; alteration of plagioclase
Albite(?) margins of plagioclase grains
Chlorite; alteration of amphibole
Carbonate; alteration of amphibole
Epidote; alteration of amphibole

Veinlets
Carbonate
Quartz (very minor)
Epidote

Askin 6
Altered porphyritic diorite/quartz diorite

General description
Composed of altered fine to medium-grained, plagioclase, lesser altered mafic (poikilitic hornblende) in a finer altered feldspathic (potassium free) groundmass with minor (<10%) disseminated interstitial quartz grains/aggregates of grains. Trace accessory apatite.

Plagioclase phenocrysts and groundmass strong, microcrystalline, felted sericitic alteration. Pseudomorphous replacement of hornblende by chlorite and carbonate.

Opaques 1%, clusters of grains associated with altered mafics, very minor disseminated grains in groundmass. Magnetic (magnetite).

Microscopic description

Plagioclase; >75%, subhedral (<0.2 to 2.5 mm). interlocking crystals. Strong, microcrystalline, felted, sericite alteration. Traces remnant twinning indicate composition in labradorite??? range. Ghost-like outlines of coarse crystals in a finer groundmass. porphyritic texture.

Altered mafic (amphibole); >10%, anhedral, subhedral pseudomorphs (0.1 to >2.0 mm) complete replacement by mixture of chlorite and carbonate.

Quartz; <10%; anhedral, (<.05 to 0.5 mm). Irregular interstitial grains, clusters of grains scattered throughout groundmass.

Opaques; <5%, anhedral, (<.05 to 0.3 mm). Associated with altered mafic. Magnetite.

Accessories

Apatite; traces
Zircon; trace
Sphene(?) traces, clouded by microgranular semiopaque brown dusting.

Alteration assemblage

Sericite; alteration of plagioclase (phenocrysts and groundmass).
Chlorite; alteration of mafics (amphibole)
Carbonate; alteration of mafics (amphibole)
Sphene; associated with altered mafics amphibole
Magnetite; associated with altered mafics (amphibole).

PETER E. WALCOTT
& ASSOCIATES LTD

A LOGISTICAL REPORT

ON

GRAVITY SURVEYING

Clear Lake Area, Y.T.
62° 48'N, 135° 12'W
N.T.S. 105L/14

FOR

TOTAL ENERGOLD CORPORATION

Vancouver, British Columbia

BY

PETER E. WALCOTT & ASSOCIATES LIMITED

Vancouver, British Columbia

AUGUST 1991

093013

PETER E. WALCOTT
& ASSOCIATES LTD

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APPENDIX

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INTRODUCTION.

Between April 8th and 28th, 1991, Peter E. Walcott & Associates Limited carried out gravity surveying over parts of the Clear Lake property, located in the Clear Lake Area, Yukon Territory, for Total Energold Corporation.

The surveying was carried out over four grids, respectively named the **PIN**, **POW A**, **POW B** & **POW C**, the lines of which were established in most places by a bulldozer.

Measurements of relative gravity were made every 25 metres along the lines. In addition elevations at each of the gravity stations were obtained with a theodolite and rod using the stadia method.

After corrections were applied the data were plotted and presented in profile form at 1:2000 and 1:5000 scales respectively. In addition the results from the PIN grid are presented in contour form on plan maps of the grid whereas those from the others are only posted on plan maps of the respective grids.

Additional measurements were made on an intermediate line on the PIN grid over the end of the orebody in June 1991, and the respective plots adjusted accordingly.

PROPERTY-LOCATION & ACCESS.

The property , encompassing the Clear Lake deposit, a shale-hosted lead-zinc-silver deposit, is situated some 36 kilometres east of the confluence of the Pelly and MacMillan Rivers in the Yukon Territory.

Access on the survey was obtained by means of fixed wing aircraft from Whitehorse, some 220 kilometres to the south - the property has a good all weather strip.

PURPOSE.

The gravity surveying was carried out (a) in an effort to see if any excess mass(es), that could be indicative of sulphide mineralization, was associated with the possible western projection of the ore horizon, (b) to see if the same was present over other postulated similar horizons on the POW A and B grids, and (c) to check the conflicting gravity results from two previously carried out surveys over the projected ore horizon on the POW C grid.

SURVEY SPECIFICATIONS.

The gravity survey was carried out using a Scintrex CG-2 gravimeter. This instrument measures variations in the earth's gravitational field to an accuracy of plus or minus 0.01 milligals.

Values of observed gravity were obtained every 25 metres along the picket lines. Corrections for meter drift were made by tying-in to previously established base stations at intervals not exceeding two hours. Loops with drifts of greater than 0.1 mgal per hour were rerun.

The elevation of the gravity stations - the locations of which were marked by large spikes - were determined by rod and transit (Sokkisha TM-20C theodolite) using the stadia method. Errors in the tying-in of loops were kept to a minimal, and did not exceed 0.2 metres per loop.

Water depth determinations were made at stations on the frozen lakes with the aid of an ice auger, and ball and chain.

Corrections were applied to the observed gravity for differences in elevation using a density of 2.7 gm/cc, water depth where applicable, and latitude to give the resultant Bouguer gravity.

In all some 17.3 kilometres of coverage were completed with the gravity method.

TERRAIN CORRECTIONS.

Gravity terrain corrections are needed to account for the upward pull of topographic features which are higher than the gravity station - hills - and the lack of downward pull from open spaces which are lower than the station - valleys.

In areas of rugged topography these can be higher than the anomalies being sought and uncertainties in them can limit the accuracy of the survey.

Calculations of these corrections can also require more time and effort than that expended in gathering the original data.

In this case corrections were made manually to compensate for the local topography by centering a transparent overlay over each station on the 1:2000 topographic map on which the grid has been correctly plotted, and estimating the average elevation within each compartment - out to zone D, outer radius 558 feet on Hammer correction tables. The algorithm used is for a segmented annulus with a horizontal top and bottom i.e. a flat top circular prism.

These corrections were applied to the Bouguer gravity and plotted as terrain-corrected Bouguer gravity.

DATA PRESENTATION.

Terrain-corrected Bouguer gravity, Bouguer gravity, surface elevation and water depths are shown in profile form for the PIN grid on Map No. W-485-1 at 1:2000 and 1:5000 scales. Contours of terrain-corrected Bouguer gravity and surface elevations are also shown at the same scales on Maps W-485-2 & 2E.

Terrain corrected Bouguer gravity, Bouguer gravity, surface elevations and water depths where applicable are shown in profile form for grids POW A, POW B & POW C at 1:2000 and 1:5000 on Maps W-485-3 to 5 respectively.

Postings of terrain-corrected Bouguer gravity for these grids at the same scales are given on Maps W-485-3G, 4G and 5G, while postings of the elevations are presented on Maps W-485-3E, 4E and 5E respectively.

The location of the survey lines are shown on the 1:5000 topo base on Maps W-485GRI & GR2, and on the 1:1000 topo base - Map W-485GD.

In addition the residual anomalies and their respective peaks and maximum amplitudes are noted on Map W-485GRI.

OBSERVATIONS.

Although it is not within the writer's mandate to discuss the results he nevertheless would like to make a few observations.

Perusal of the data from the two previous surveys showed several discrepancies in elevation with large discrepancies - 1.5 to 6 metres - on Line 540W, where the location of a gravity high occasioned the establishment of the POW ^C grid.

This suggested that the anomaly was purely attributable to elevation errors and was confirmed by the lack of response over its projected occurrence on the new grid, and by the 5.18 metre elevation difference between the surveys resulting from the previous surveyor starting from a station with the wrong elevation - two stations numbered the same with 15 odd feet difference in elevation.

The residual anomaly on Line 145OW - POW C grid- at the southernmost part of the line is apparent on the Bouguer profile but is considerably enhanced by the terrain corrections. It is as yet undefined to the south.

The residual anomalies on POWC grid are only observed on the terrain corrected profiles, and would need other evidence - stratigraphic location, etc. - to support their existence before commitment to borehole investigation.

Respectfully submitted,

PETER E. WALCOTT & ASSOCIATES LIMITED

Peter E. Walcott, P.Eng.
Geophysicist

Vancouver,
British Columbia

August 1991

APPENDIX

PETER E. WALCOTT
& ASSOCIATES LTD

PERSONNEL EMPLOYED ON SURVEY.

Name	Occupation	Address	Dates
Peter E. Walcott	Geophysicist	Peter E. Walcott & Associates Limited 605 Rutland Court Coquitlam, B.C. V3J 3T8	May 16th - 21st, 1991 Aug 19th - 27th, 1991
G. MacMillan	Geophysical Operator	"	Apr 8th - 28th, 1991 May 8th - 10th, 1991 Jun 10th - 18th, 1991
P. Charlie	"	"	Apr 8th - 28th, 1991 Jun 10th - 18th, 1991
J. Walcott	Typing	"	August 30th, 1991
R. Rollings	Plotting	Archean Graphics 1650 - 701 W. Georgia Vancouver, B.C.	August 29th, 1991

093013

TOTAL ENERGOLD CORPORATION

SCINTREX CG-2

GRAVITY SURVEY

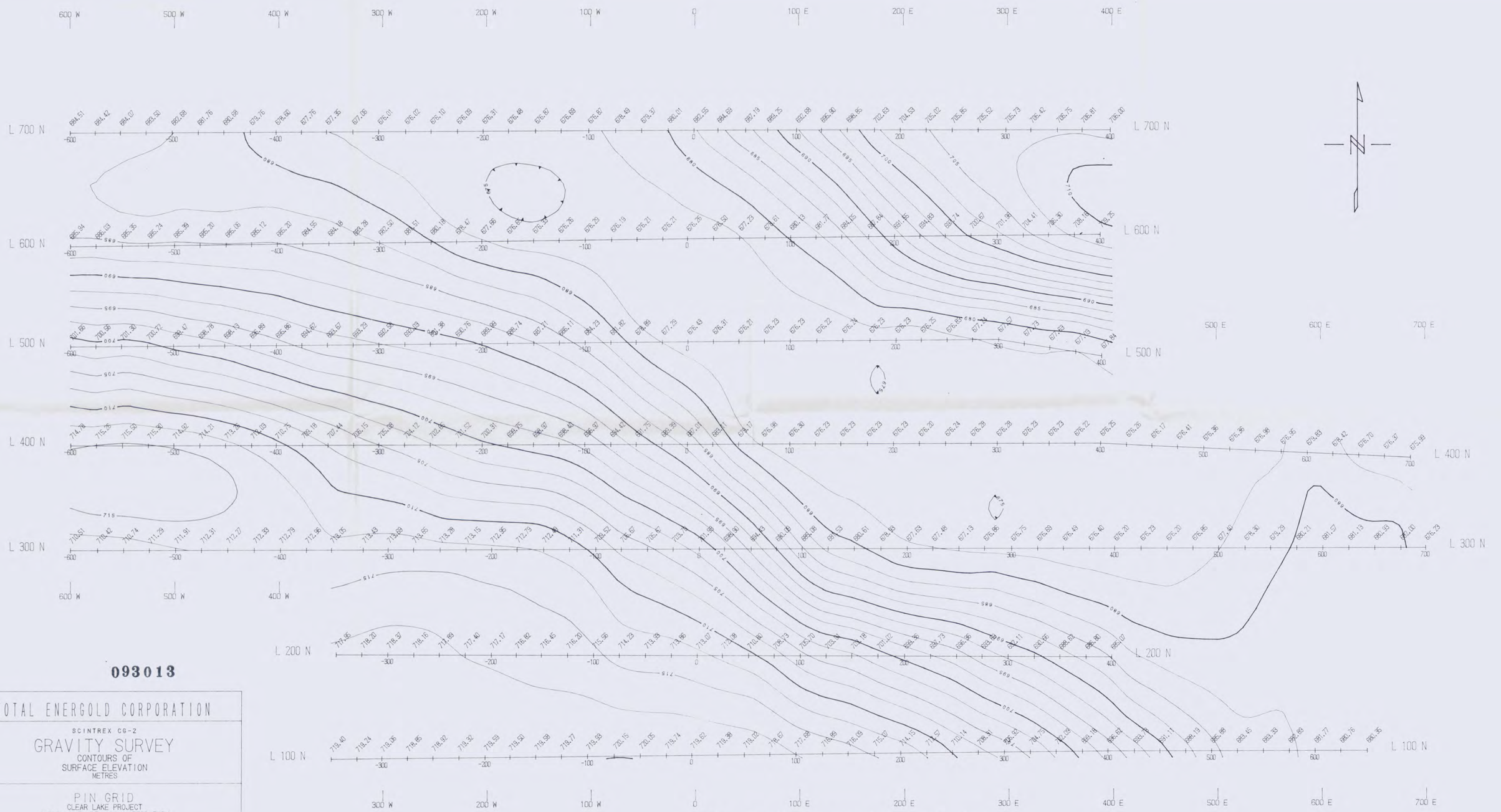
CONTOURS OF
TERRAIN-CORRECTED BOUGUER GRAVITY
DENSITY = 2.7 GM./CC.

PIN GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
APRIL 1991

Map No. W-485-2 N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.

NOTE Elevations are approximately 5.18 metres lower than on original surveys.



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TOTAL ENERGOLD CORPORATION

SCINTREX CG-2

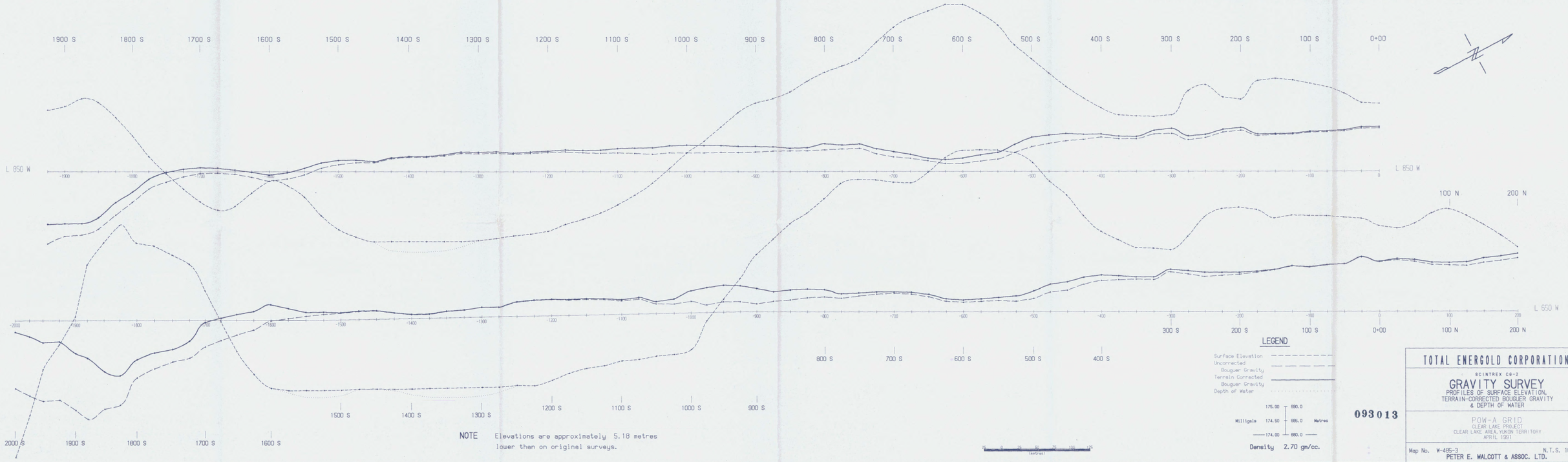
GRAVITY SURVEY

CONTOURS OF
SURFACE ELEVATION
METRES

PIN GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
APRIL 1991

Map No. W-485-2E N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.



NOTE Elevations are approximately 5.18 metres lower than on original surveys.

093013

TOTAL ENERGOLD CORPORATION

SCINTREX CG-2

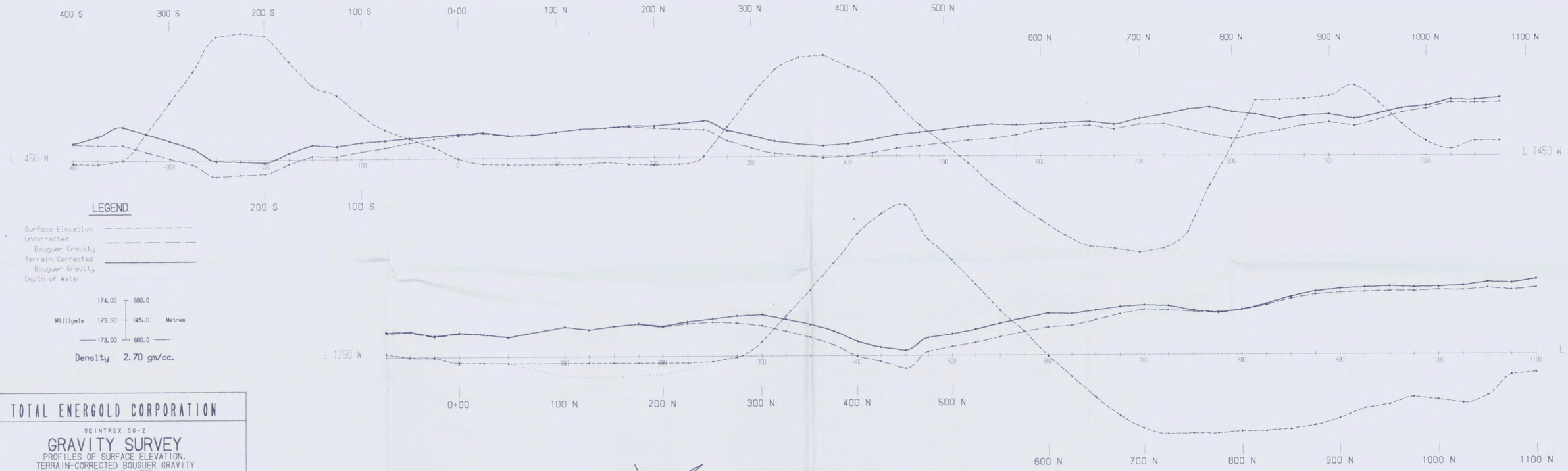
GRAVITY SURVEY

PROFILES OF SURFACE ELEVATION, TERRAIN-CORRECTED BOUGUER GRAVITY & DEPTH OF WATER

POW-A GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
APRIL 1991

Map No. W-485-3 N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.



LEGEND

Surface Elevation
Uncorrected Bouguer Gravity
Terrain Corrected Bouguer Gravity
Depth of Water

	174.00	690.0	
Milligals	173.50	685.0	Metres
	173.00	680.0	

Density 2.70 gm/cc.

NOTE Elevations are approximately 5.18 metres lower than on original surveys.

TOTAL ENERGOLD CORPORATION

SCINTREX CG-2

GRAVITY SURVEY

PROFILES OF SURFACE ELEVATION, TERRAIN-CORRECTED BOUGUER GRAVITY & DEPTH OF WATER

POW-B GRID

CLEAR LAKE PROJECT

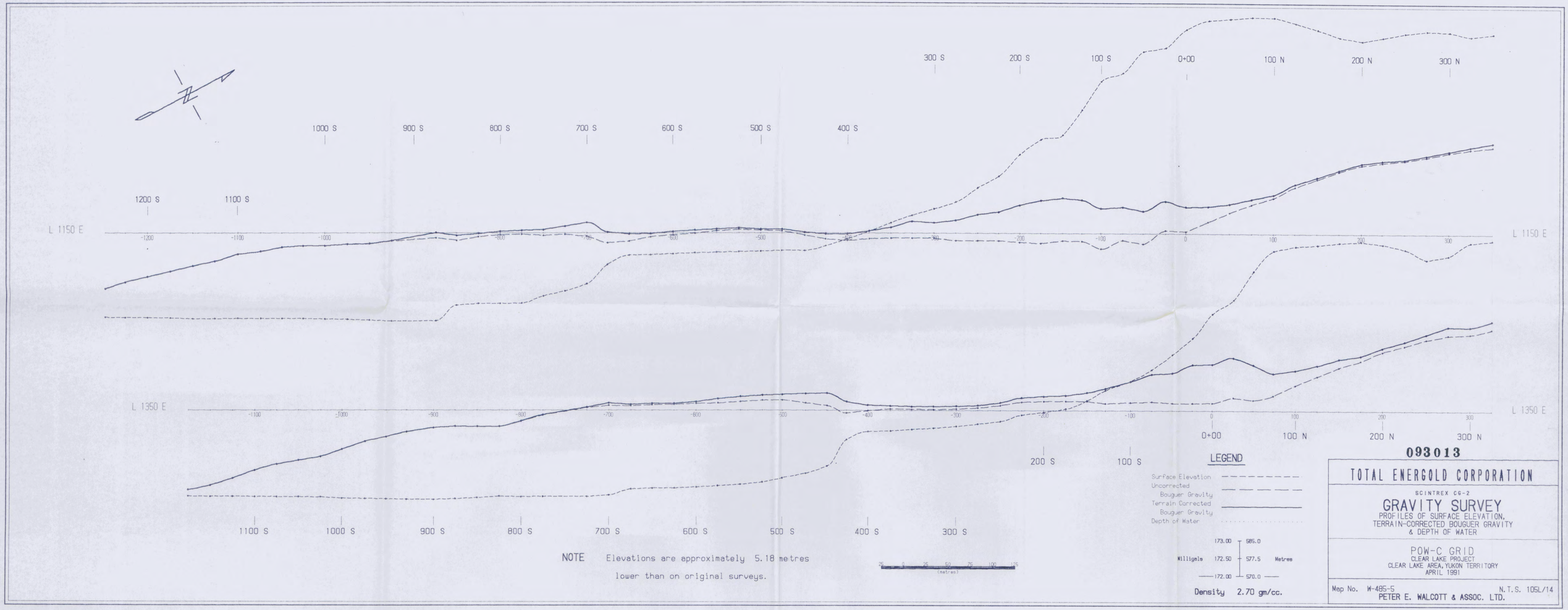
CLEAR LAKE AREA, YUKON TERRITORY

APRIL 1991

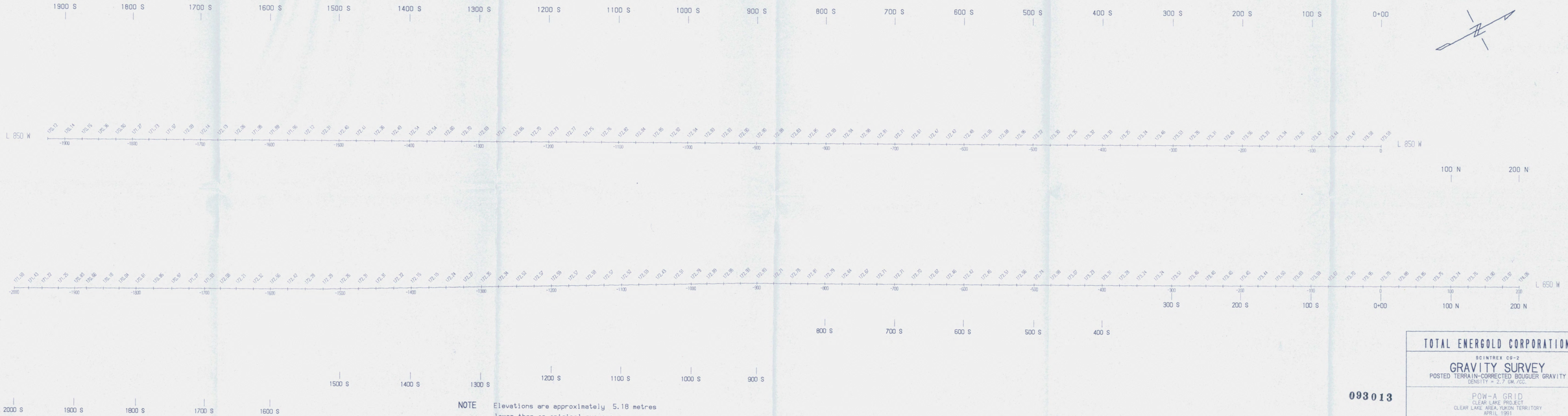
Map No. W-485-4 N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.

093013



L 1150 E
L 1350 E
1200 S
1100 S
1000 S
900 S
800 S
700 S
600 S
500 S
400 S
300 S
200 S
100 S
0+00
100 N
200 N
300 N
LEGEND
Surface Elevation
Uncorrected Bouguer Gravity
Terrain Corrected Bouguer Gravity
Depth of Water
Milligals
Metres
173.00
172.50
172.00
585.0
577.5
570.0
Density 2.70 gm/cc.
NOTE Elevations are approximately 5.18 metres lower than on original surveys.
093013
TOTAL ENERGOLD CORPORATION
SCINTREX CG-2
GRAVITY SURVEY
PROFILES OF SURFACE ELEVATION, TERRAIN-CORRECTED BOUGUER GRAVITY & DEPTH OF WATER
POW-C GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
APRIL 1991
Map No. W-485-5
N.T.S. 105L/14
PETER E. WALCOTT & ASSOC. LTD.



NOTE Elevations are approximately 5.18 metres lower than on original surveys.

093013

TOTAL ENERGOLD CORPORATION

SCINTREX CG-2

GRAVITY SURVEY

POSTED TERRAIN-CORRECTED BOUGUER GRAVITY

DENSITY = 2.7 GM./CC.

POW-A GRID

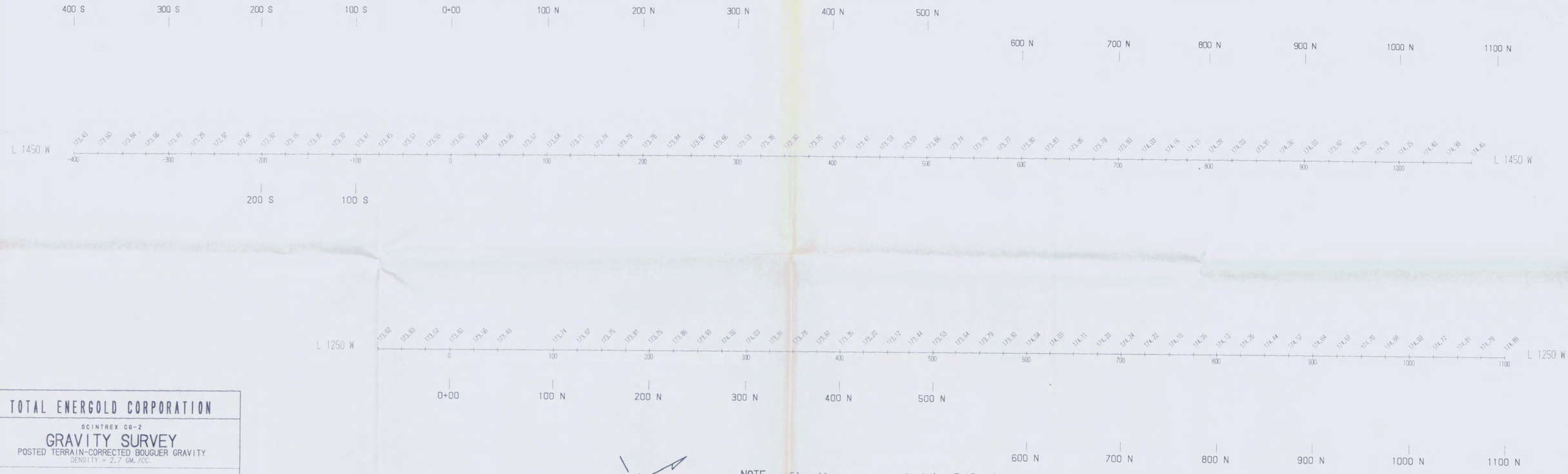
CLEAR LAKE PROJECT

CLEAR LAKE AREA, YUKON TERRITORY

APRIL 1991

Map No. W-485-3G N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.



TOTAL ENERGOLD CORPORATION

SCINTREX CG-2

GRAVITY SURVEY

POSTED TERRAIN-CORRECTED BOUGUER GRAVITY

DENSITY = 2.7 GM./CC.

POW-B GRID

CLEAR LAKE PROJECT

CLEAR LAKE AREA, YUKON TERRITORY

APRIL 1991

Map No. W-485-4G N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.

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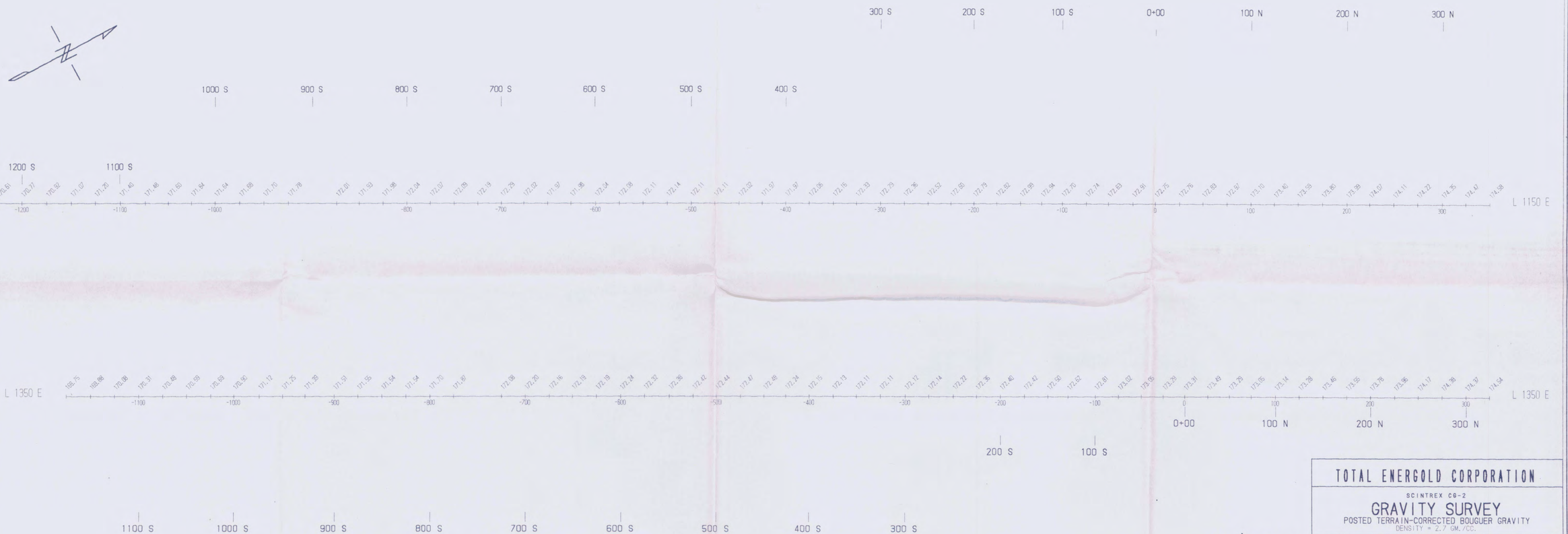
NOTE Elevations are approximately 5.18 metres lower than on original surveys.



NOTE Elevations are approximately 5.18 metres lower than on original surveys.

093013

TOTAL ENERGOLD CORPORATION

SCINTREX CG-2

GRAVITY SURVEY

POSTED TERRAIN-CORRECTED BOUGUER GRAVITY

DENSITY = 2.7 GM./CC.

POW-C GRID

CLEAR LAKE PROJECT

CLEAR LAKE AREA, YUKON TERRITORY

APRIL 1991

Map No. W-485-5G N.T.S. 105L/14

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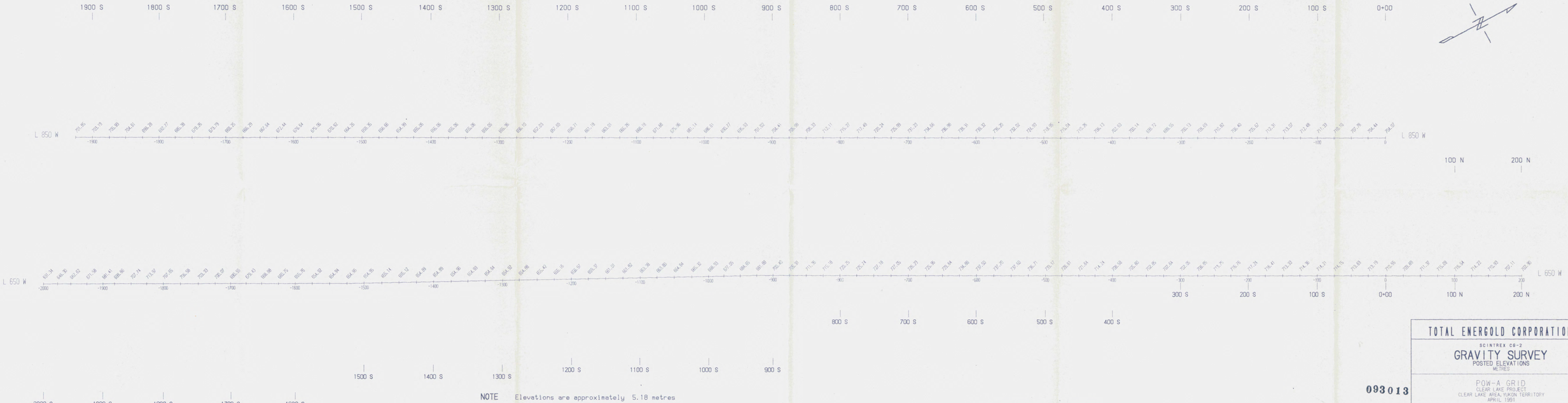


NOTE Elevations are approximately 5.18 metres lower than on original surveys.

TOTAL ENERGOLD CORPORATION

SCINTREX CG-2

GRAVITY SURVEY

POSTED ELEVATIONS

METRES

093013

POW-A GRID

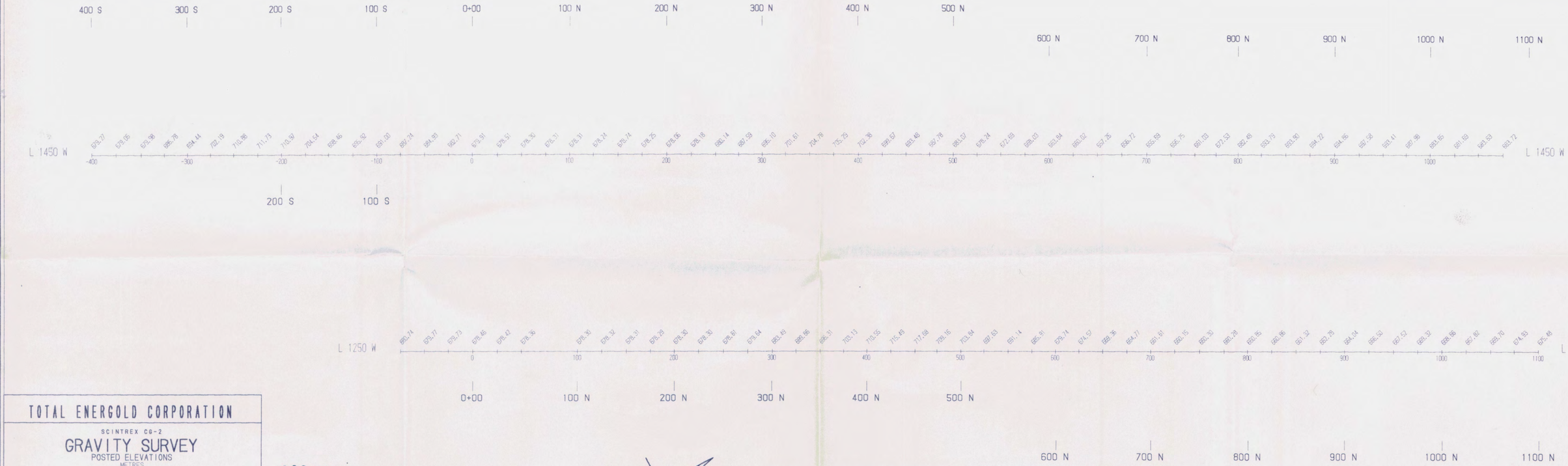
CLEAR LAKE PROJECT

CLEAR LAKE AREA, YUKON TERRITORY

APRIL 1991

Map No. W-485-3E N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.



TOTAL ENERGOLD CORPORATION

SCINTREX CG-2

GRAVITY SURVEY

POSTED ELEVATIONS

METRES

POW-B GRID

CLEAR LAKE PROJECT

CLEAR LAKE AREA, YUKON TERRITORY

APRIL 1991

Map No. W-485-4E N.T.S. 105L/14

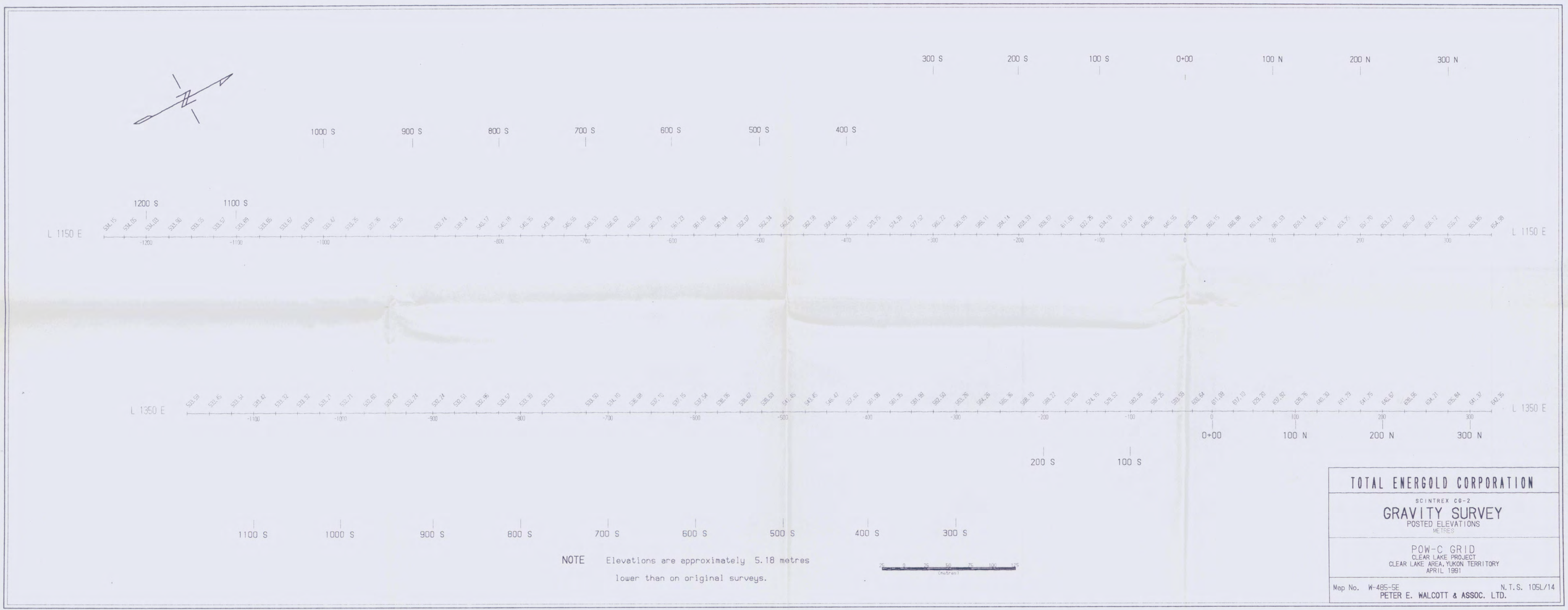
PETER E. WALCOTT & ASSOC. LTD.

093013

25 0 25 50 75 100 125

(metres)

NOTE Elevations are approximately 5.18 metres lower than on original surveys.



NOTE Elevations are approximately 5.18 metres lower than on original surveys.

TOTAL ENERGOLD CORPORATION

SCINTREX CG-2

GRAVITY SURVEY

POSTED ELEVATIONS

METRES

POW-C GRID

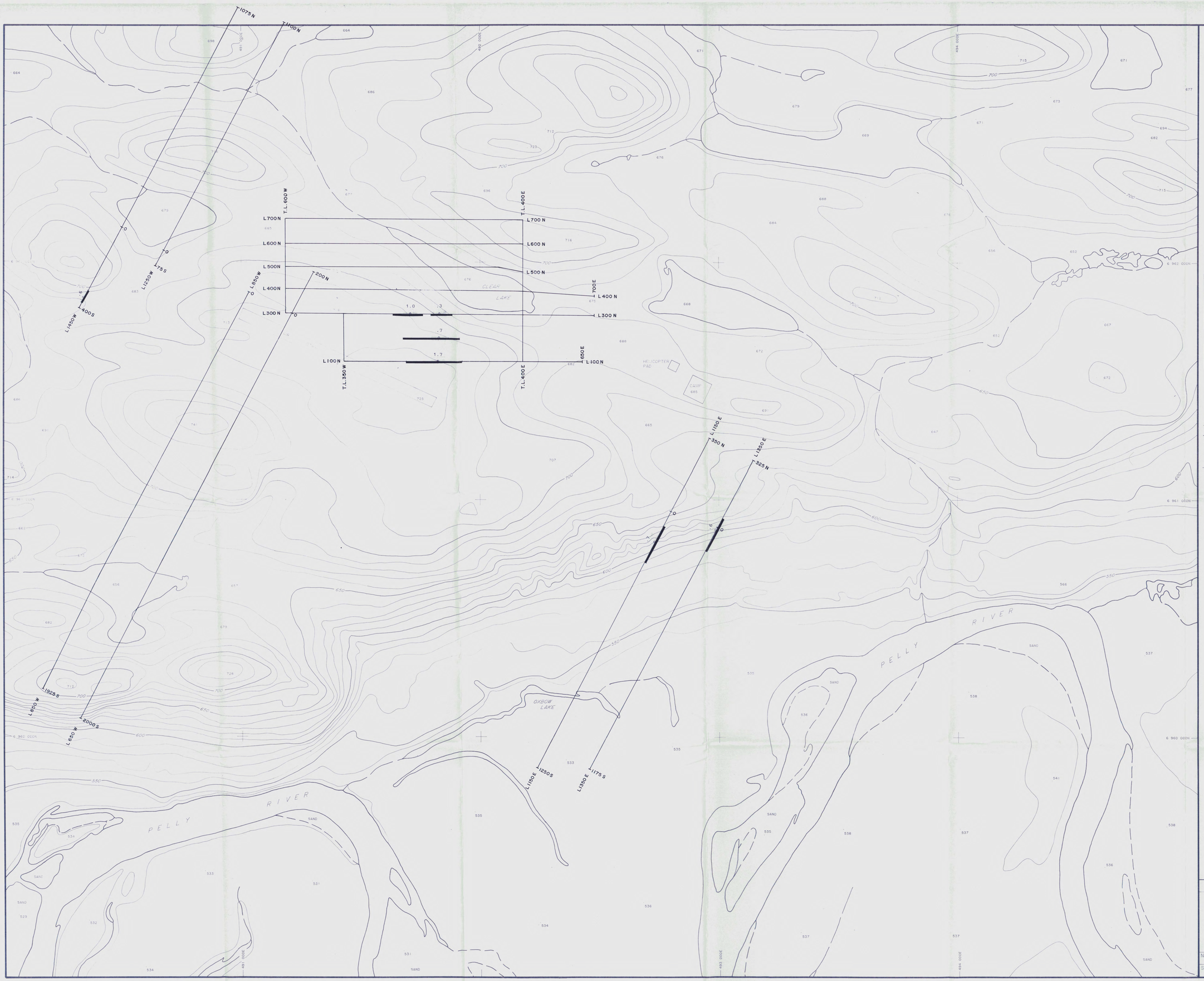
CLEAR LAKE PROJECT

CLEAR LAKE AREA, YUKON TERRITORY

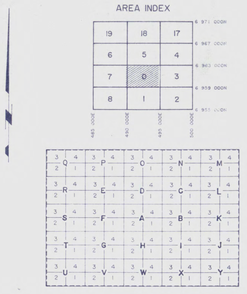
APRIL 1991

Map No. W-485-5E N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.



AREA INDEX



ENLARGEMENT OF AREA

LEGEND

AGE — LITHOLOGY

CRETACEOUS — INTRUSIVE ROCKS

- 21 — DIORITE, PORPHYRITIC DIORITE, GABBRO
- 20 — FELSITE

INTRUSIVE CONTACT ?

CLEAR LAKE STRATIGRAPHY

MISSISSIPPIAN

- 19 — ARGILLITE (=UNIT 4)
- 18 — MASSIVE SULPHIDE (=UNIT 3)
- 17 — EXHALITE (=UNIT 3A)
- 16 — SAND BANDED ARGILLITE (=UNIT 2)
- 15 — SANDSTONE (SILTSTONE) (=UNIT 1)
- 14 — LIMESTONE
- 13 — CHERT
- 12 — SILTY ARGILLITE
- 11 — CHERT PEBBLE CONGLOMERATE

DEVONIAN

UNCONFORMITY ?

ASKIN GROUP

DEVONIAN

- 13 — QUARTZITE
- 9 — DOLOMITE
- 8 — ARGILLITE
- 7 — SILTY DOLOMITE

SILURIAN

FAULT CONTACT ?

ANVIL RANGE STRATIGRAPHY

MENZIE CREEK (?) VOLCANICS (?)

LOWER PALEOZOIC

- 641 — PREDOMINATELY GREEN CHLORITIC MAFIC VOLCANICS (TUFFS)
- 642 — GREEN CHLORITIC VOLCANICS (TUFFS) INTERCALATED WITH VARICOLORED, SILTSTONES, MUDSTONES AND LIMESTONE.
- 643 — VARICOLORED MUDSTONE, SILTSTONE, CHERT, LIMESTONE AND GREYWACKE.

GRADATIONAL CONTACT ?

VANGORDA FORMATION

ORDOVICIAN

- 33 — CALCAREOUS PHYLLITE, INTERBEDDED LIMESTONE AND DOLOMITE, CHLORITIC PHYLLITE.
- 30 — MAFIC METAVOLCANIC ROCKS, FINE MED GRAINED, CHLORITIC TUFFACEOUS ROCKS.
- 5 — CALCAREOUS PHYLLITE, UNDIFFERENTIATED

GRADATIONAL CONTACT ?

MT. MYE FORMATION

- 33 — CHLORITE TEBRACITE TEBRACITE PHYLLITE, MAY CONTAIN CALCAREOUS LAMINAE
- 30 — GRAPHITIC PHYLLITE
- 30.1 — CALCAREOUS GRAPHITIC PHYLLITE
- 30 — MAFIC METAVOLCANIC ROCKS, CHLORITE RICH TUFFACEOUS ROCKS
- 3 — PHYLLITE UNDIFFERENTIATED

CAMBRIAN

SYMBOLS

- Bedding (tops unknown, known)
- First Foliation (S_1) (inclined, vertical)
- Second foliation (S_2) (inclined vertical)
- Joint inclined
- Lineation (included plunge unknown)
- Outcrop
- Geological Boundary (defined, approximate, assumed)
- Syncline
- Anticline (Arrow indicates plunge)
- Multiple Fold (arrow indicates plunge)
- Drag Fold (Arrow indicates plunge)
- Shearing and Dip
- Fault Assumed
- Fossil Locality
- Mineral Occurrence — Ba-barite, Gn-galena, Sp-sphalerite, Py-pyrite, Cp-chalcopyrite, Po-Pyrrhotite, Mal-Malachite
- Trench
- Subcrop Trace of Clear Lake Deposit
- Gossan
- Spot Elevations (metres ASL)
- Water Elevation (metres ASL)
- Contour Elevation (metres ASL) Contour Interval 10 metres
- Cut Grid Line
- Diamond Drill Hole (year, number)
- Road
- Stream
- Swamp

GEOPHYSICS

- EM Conductor Axis (EM-17, Max.-Min.)
- Mk VI Input Survey 2 or 3 Channel Anomaly
- 4, 5 or 6 Channel Anomaly
- .3 — Gravity Anomaly Peak (mgals)
- .4 — Gravity Anomaly, Broad Zone with Peak Value (mgals)
- Ground Magnetic Anomaly
- 2 — Geophysical Anomaly and Category
- 3 — Exploration Target Area

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TOTAL ENERGOLD CORPORATION

GRAVITY SURVEY

CLEAR LAKE PROJECT

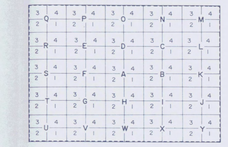
1991 SURVEY LINES

N.T.S.: 105L/14	TECH.:	DATE: MAY 91
SCALE: 1:5000	DRAUGHTING: HANDESIGN	FIGURE: W-485GR1

491 000E
492 000E
493 000E
494 000E
6 966 000N
6 965 000N
6 964 000N
1075N L1450W
1100N L1250W

AREA INDEX





ENLARGEMENT OF AREA

LEGEND

AGE | LITHOLOGY

INTRUSIVE ROCKS

CRETACEOUS
- K — DIORITE, PORPHYRITIC DIORITE, GABBRO
- PE — FELSITE

INTRUSIVE CONTACT ?

CLEAR LAKE STRATIGRAPHY

MISSISSIPPIAN
- 19 — ARGILLITE (UNIT 4)
- 18 — MASSIVE SULPHIDE (=UNIT 3)
- 17 — EXHALITE (=UNIT 3A)
- 16 — BAND BANDED ARGILLITE (=UNIT 2)
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DEVONIAN

UNCONFORMITY ?

ASKIN GROUP

DEVONIAN
- 10 — QUARTZITE
- 9 — DOLOMITE
- 8 — ARGILLITE
- 7 — SILTY DOLOMITE

SILURIAN

FAULT CONTACT ?

ANVIL RANGE STRATIGRAPHY

MENDIE CREEK (?) VOLCANICS (?)

LOWER PALEOZOIC
- EA1 — PREDOMINATELY GREEN CHLORITIC MAFIC VOLCANICS (TUFFS)
- EA2 — GREEN CHLORITIC VOLCANICS (TUFFS) INTERCALATED WITH MAROON COLORED SILTSTONES, MUDSTONES AND LIMESTONE
- EA3 — VARICOLORED MUDSTONE, SILTSTONE, CHERT, LIMESTONE AND GREYWACKE

GRADATIONAL CONTACT ?

VANGORDA FORMATION:

ORDOVICIAN
- SO — CALCAREOUS PHYLLITE, INTERBEDDED LIMESTONE AND DOLOMITE, CHLORITIC PHYLLITE.
- MC — MAFIC METAVOLCANIC ROCKS, FINE MED GRAINED, CHLORITIC TUFFACEOUS ROCKS.
- S — CALCAREOUS PHYLLITE, UNDIFFERENTIATED.

GRADATIONAL CONTACT ?

MT. MYE FORMATION

CAMBRIAN
- XC — CALCAREOUS GRAPHITIC PHYLLITE, MAY CONTAIN CALCAREOUS LAMINAE
- M — GRAPHITIC PHYLLITE
- M1 — CALCAREOUS GRAPHITIC PHYLLITE
- MC — MAFIC METAVOLCANIC ROCKS, CHLORITE RICH TUFFACEOUS ROCKS
- S — PHYLLITE UNDIFFERENTIATED

SYMBOLS

- Bedding (tops unknown, known)
- First Foliation (S_1) (inclined, vertical)
- Second foliation (S_2) (inclined vertical)
- Joint inclined
- Lineation (included plunge unknown)
- Outcrop
- Geological Boundary (defined, approximate,assumed)
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- Drag Fold (Arrow indicates plunge)
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- Gossan
- Spot Elevations (metres ASL)
- Water Elevation (metres ASL)
- Contour Elevation (metres ASL); Contour Interval 10 metres
- Cut Grid Line
- Diamond Drill Hole (year, number)
- Road
- Stream
- Swamp

GEOPHYSICS

- EM Conductor Axis (EM-17, Max.-Min.)
- Interpreted fault or fault contact G for Gravity EM from max min II EM Anomaly Identification B
- .3 — Gravity Anomaly Peak (mgals)
- .4 — Gravity Anomaly, Broad Zone with Peak Value (mgals)
- Ground Magnetic Anomaly
- Strong EM and Gravity Anomaly
- EM Anomaly Only
- Gravity Anomaly Only

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TOTAL ENERGOLD CORPORATION

GRAVITY SURVEY

CLEAR LAKE PROJECT

1991 SURVEY LINES

N.T.S. : 105L/14	TECH. :	DATE : MAY 91
SCALE : 1 : 5000	DRAUGHTING : HANDESIGN	FIGURE : W-485GR2



093013

CLEAR LAKE PROJECT

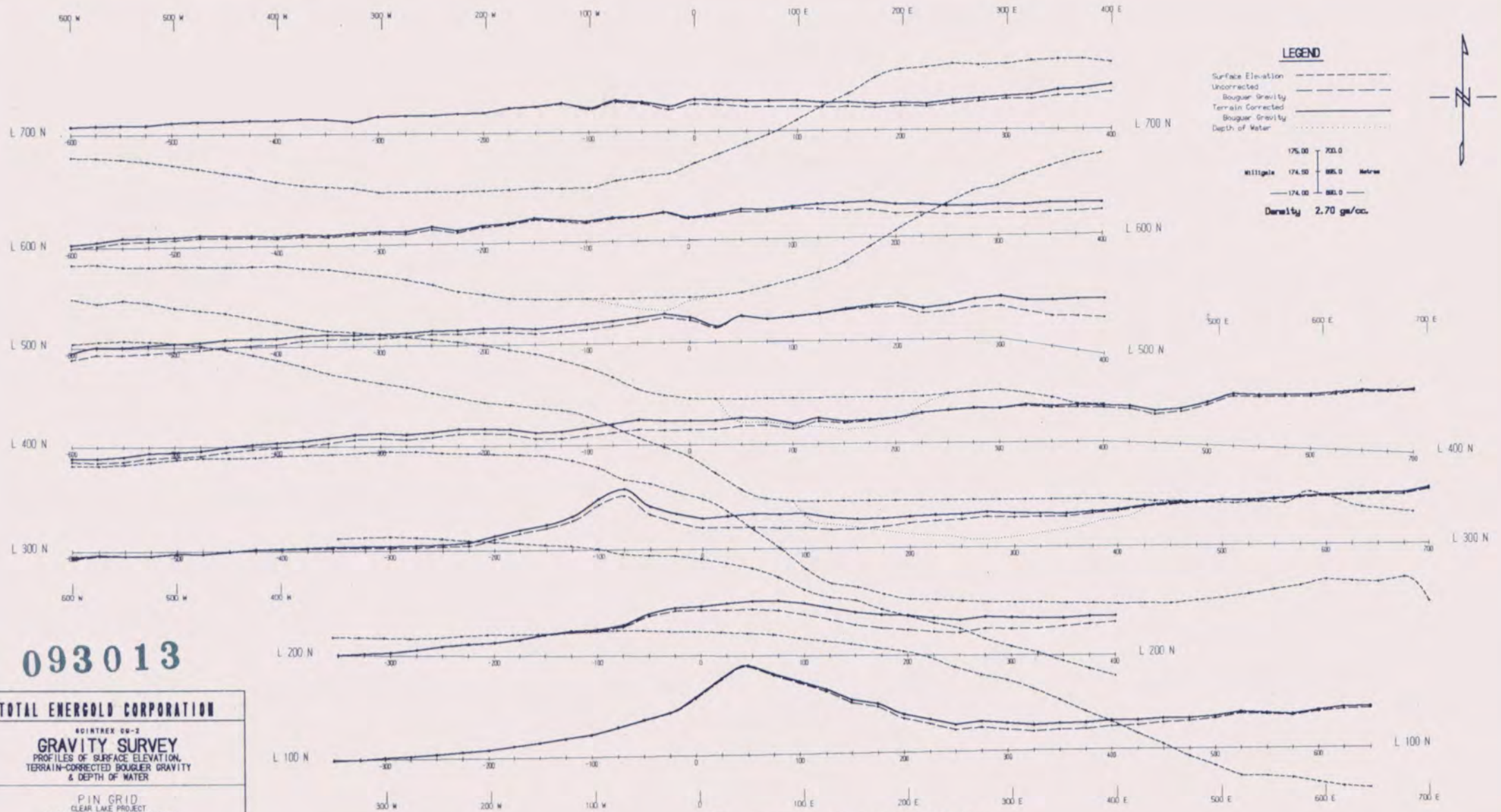
GRAVITY SURVEY

1991 SURVEY LINES

DRAWN BY:	DATE: MAY 1991
CHECK'D BY:	DRAWING No. W-485GD
N.T.S. 105L/14	SCALE 1:10 000

Total Energold Corporation

Pacific Survey Corporation



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TOTAL ENERGOLD CORPORATION

ACINTREX CG-2

GRAVITY SURVEY

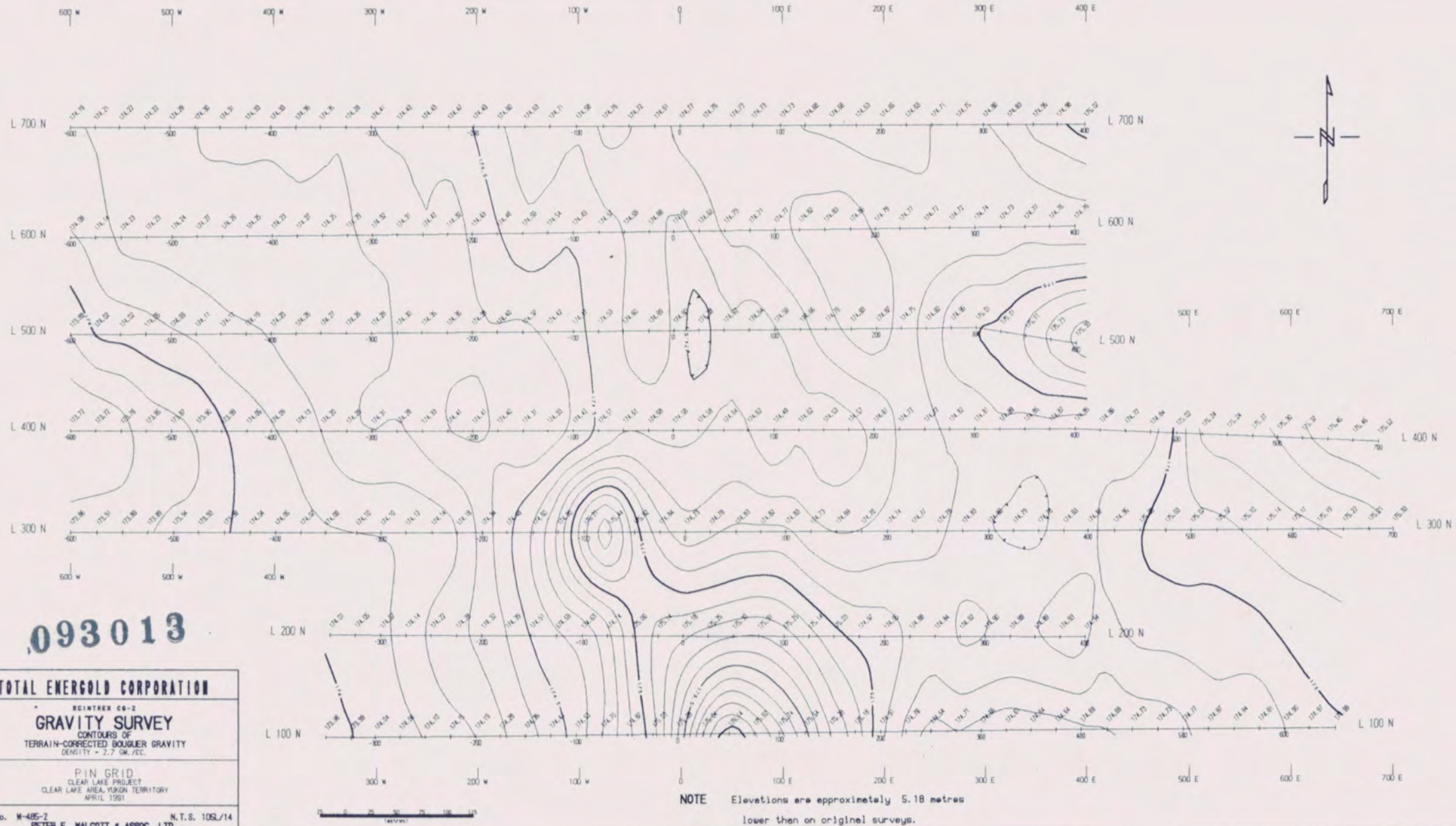
PROFILES OF SURFACE ELEVATION, TERRAIN-CORRECTED BOUGUER GRAVITY & DEPTH OF WATER

PIN GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
APRIL 1991

Map No. M-485-1 N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.

NOTE Elevations are approximately 5.18 metres lower than on original surveys.



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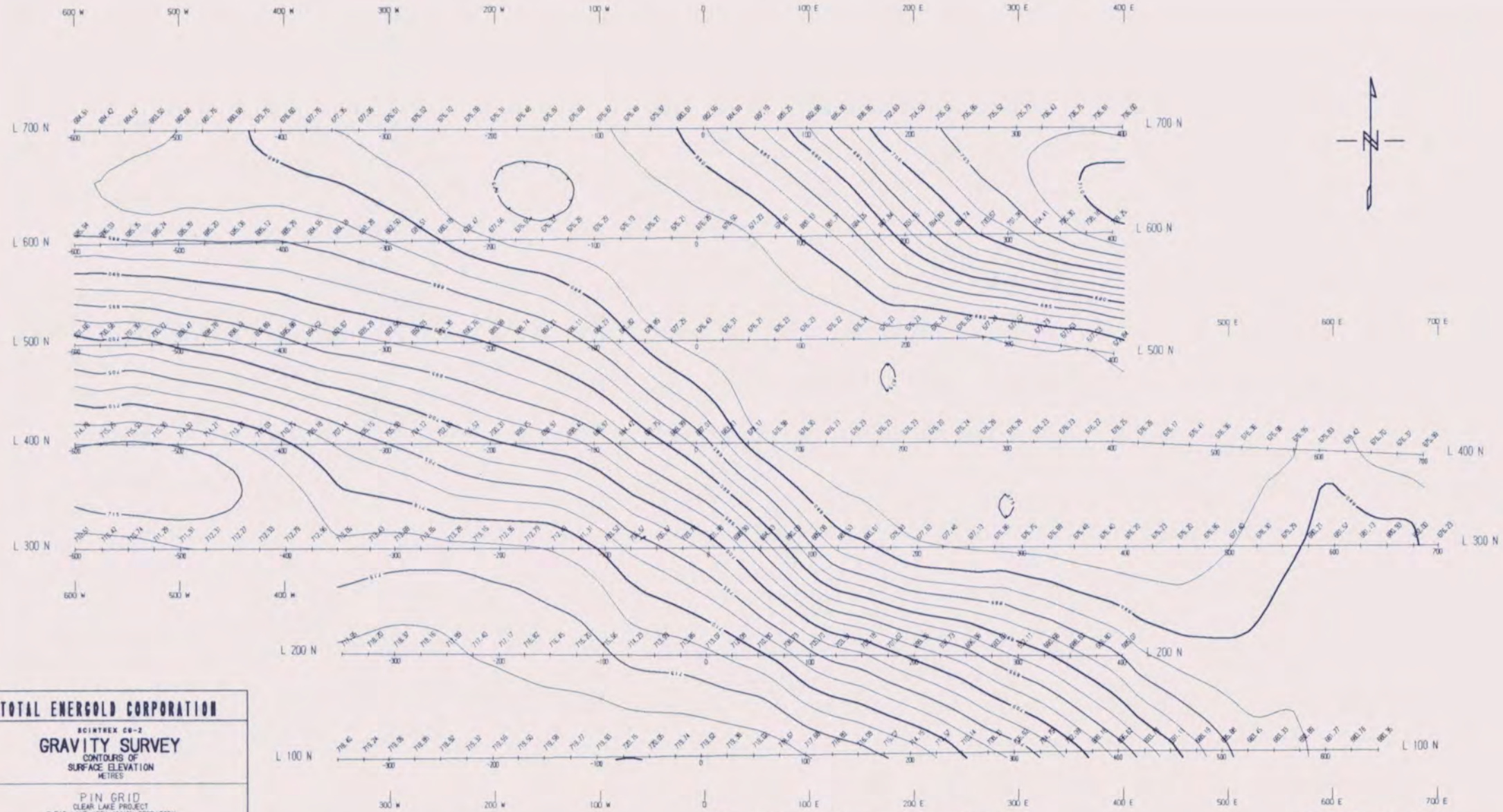
TOTAL ENERGOLD CORPORATION
SCINTREX CG-2 GRAVITY SURVEY CONTOURS OF TERRAIN-CORRECTED BOUGUER GRAVITY DENSITY = 2.7 GM./CC.
PIN GRID CLEAR LAKE PROJECT CLEAR LAKE AREA, YUKON TERRITORY APRIL 1991
Map No. M-485-2 N.T.S. 105L/14 PETER E. WALCOTT & ASSOC. LTD.

NOTE Elevations are approximately 5.18 metres lower than on original surveys.



TOTAL ENERGOLD CORPORATION

SCINTREX CG-2

GRAVITY SURVEY

CONTOURS OF
SURFACE ELEVATION
METRES

PIN GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
APRIL 1991

Map No. W-485-2E N.T.S. 105L/14
PETER E. WALCOTT & ASSOC. LTD.

NOTE Elevations are approximately 5.18 metres lower than on original surveys.

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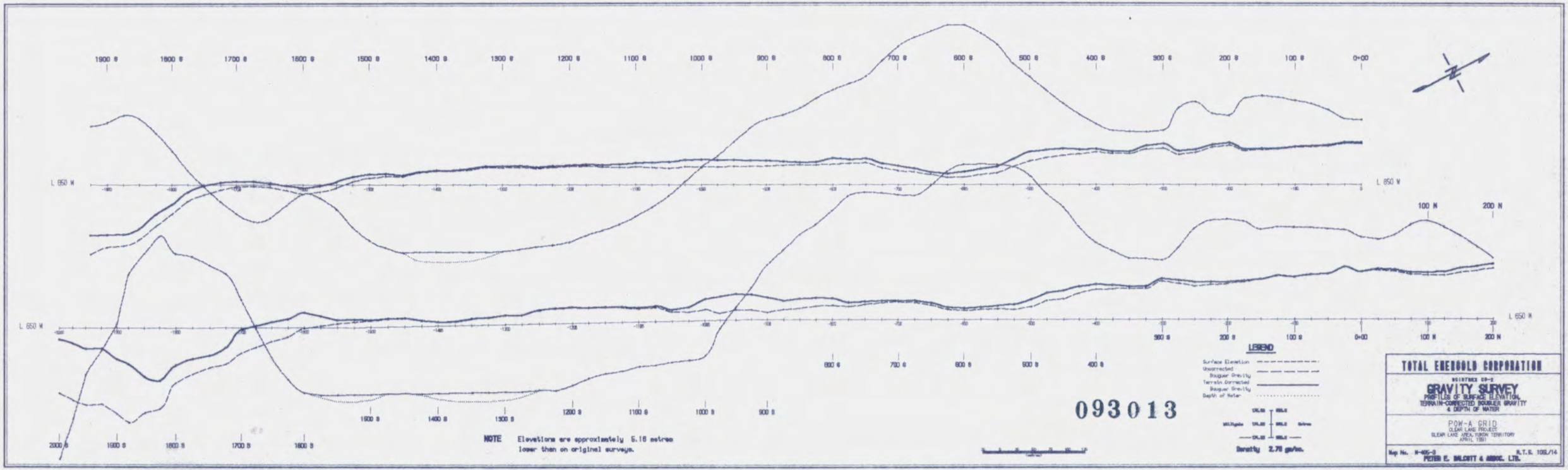
1900 S
1800 S
1700 S
1600 S
1500 S
1400 S
1300 S
1200 S
1100 S
1000 S
900 S
800 S
700 S
600 S
500 S
400 S
300 S
200 S
100 S
0+00
100 N
200 N
L 650 W
L 650 W
L 650 W
L 650 W
2000 S
1900 S
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1400 S
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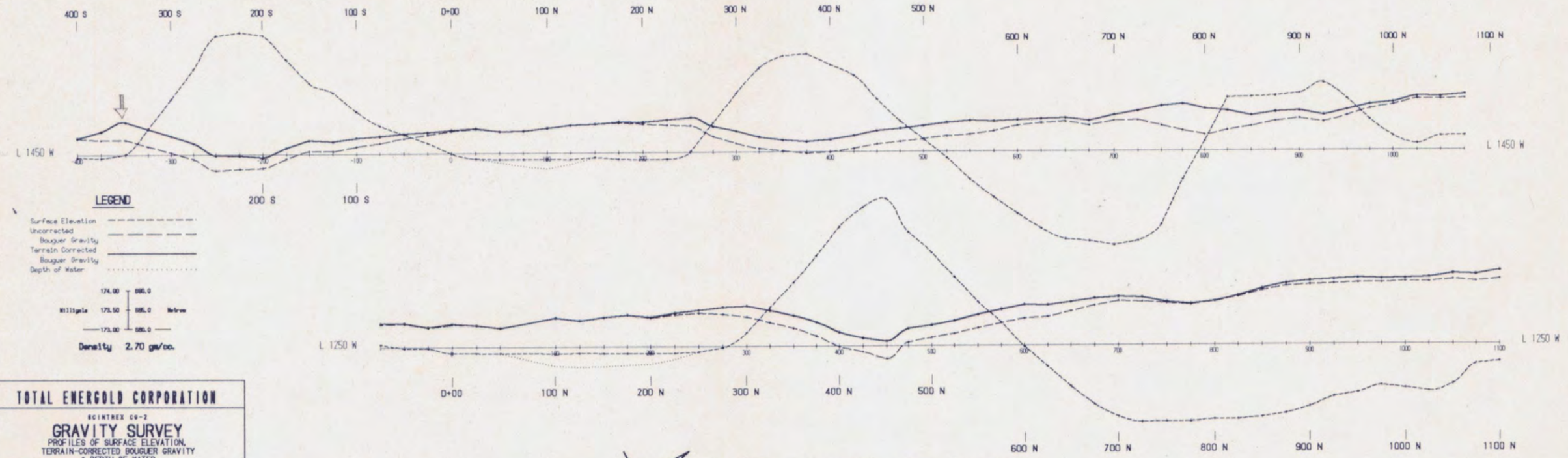
200 S
100 S
0+00
100 N
200 N
LEGEND
Surface Elevation
Uncorrected
Bouguer Gravity
Terrain Corrected
Bouguer Gravity
Depth of Water
Density 2.76 gm/cm.
093013
NOTE Elevations are approximately 5.18 metres lower than on original surveys.
TOTAL ENERGOLD CORPORATION
GRAVITY SURVEY
PROFILES OF SURFACE ELEVATION, TERRAIN-CORRECTED BOUGUER GRAVITY & DEPTH OF WATER
POW-A GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
APRIL 1991
Map No. 8-405-G
N.T.S. 105J/14
PETER E. WALCOTT & ASSOC. LTD.



TOTAL ENERGOLD CORPORATION

SCINTREX CG-2

GRAVITY SURVEY

PROFILES OF SURFACE ELEVATION, TERRAIN-CORRECTED BOUGUER GRAVITY & DEPTH OF WATER

POW-B GRID

CLEAR LAKE PROJECT

CLEAR LAKE AREA, YUKON TERRITORY

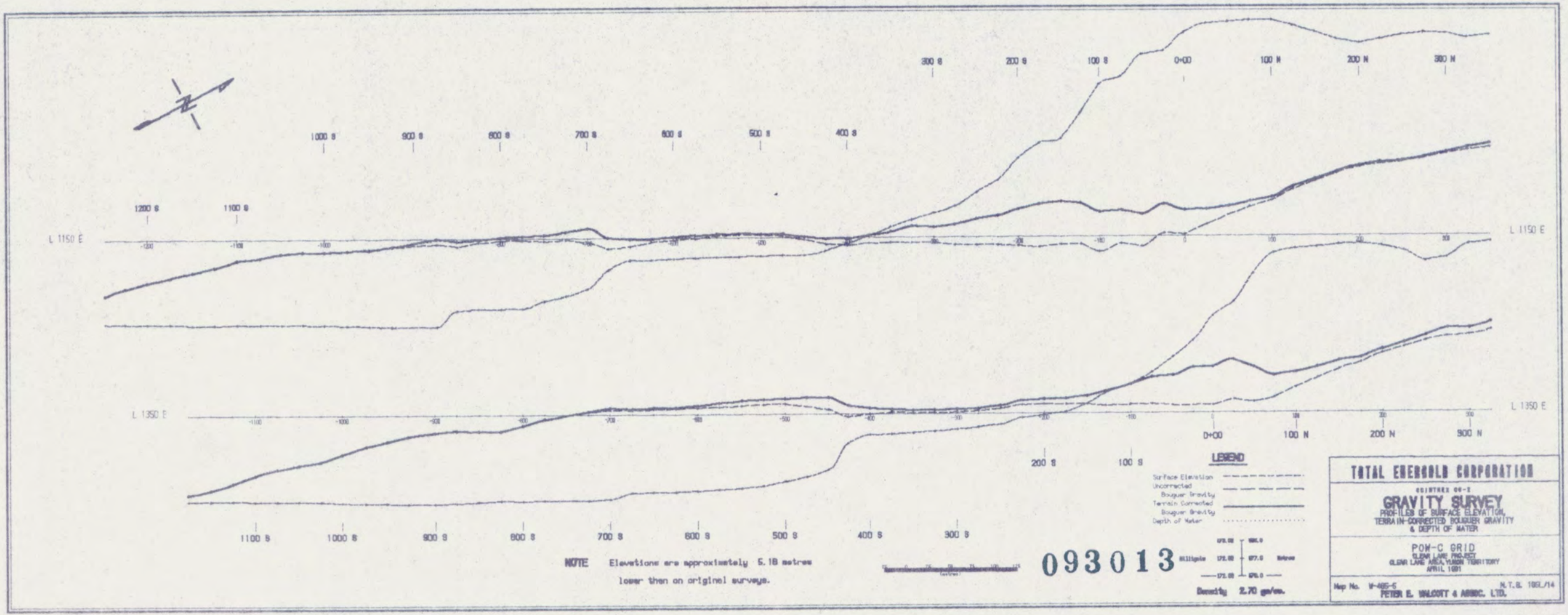
APRIL 1991

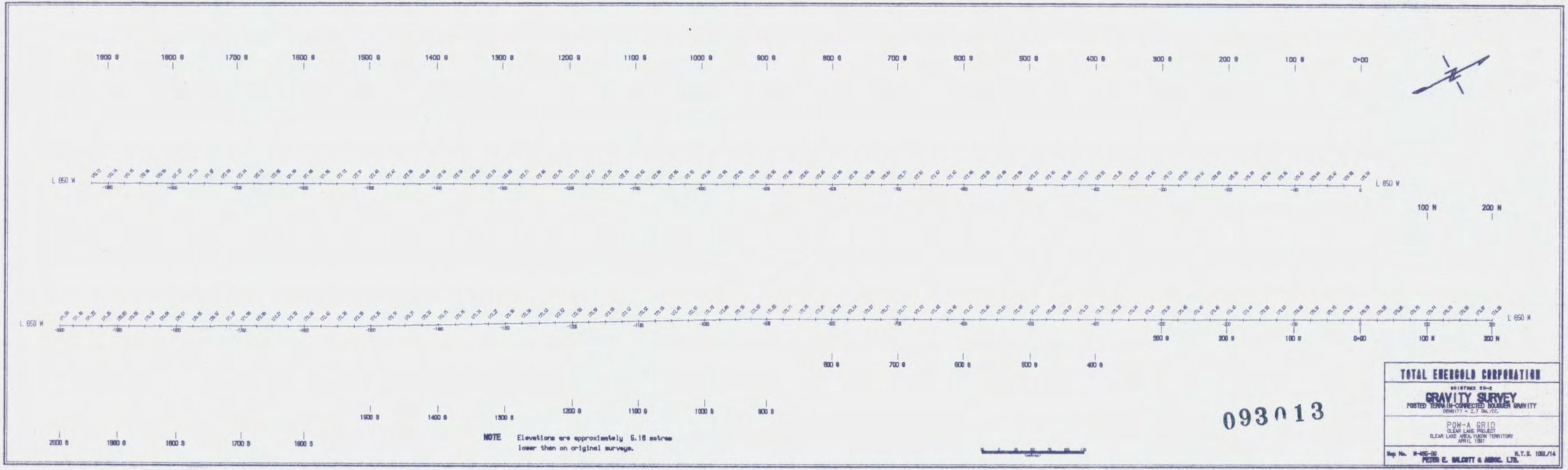
Map No. W-485-4 N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.

NOTE Elevations are approximately 5.18 metres lower than on original surveys.

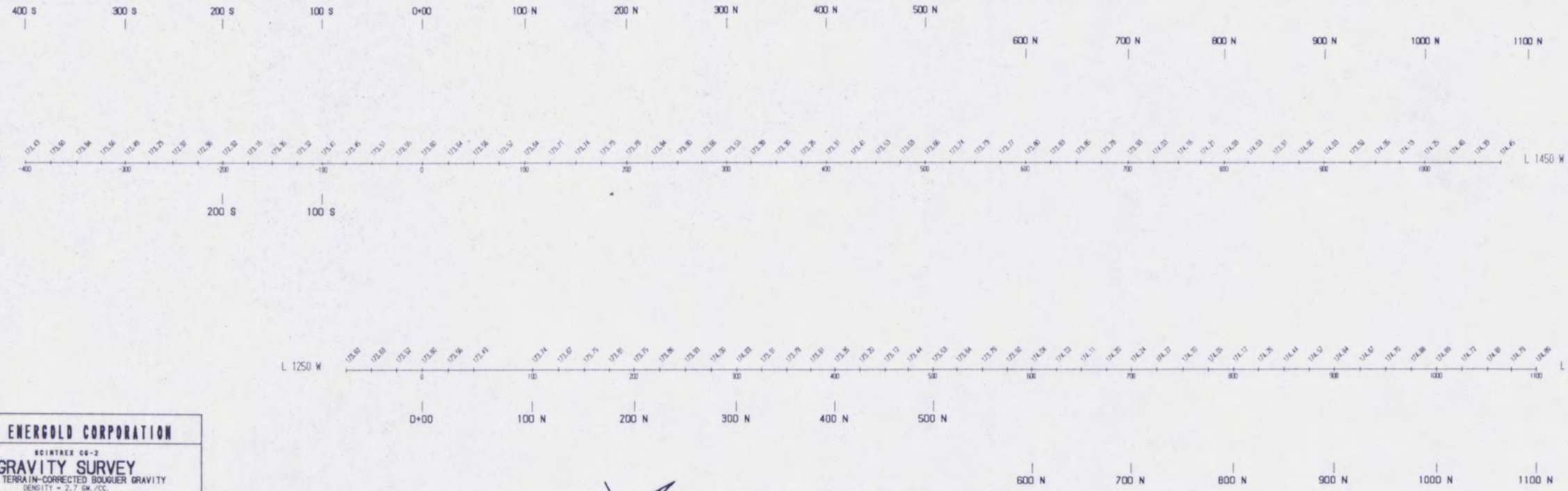
093013


300 S
200 S
100 S
0+00
100 N
200 N
300 N
1000 S
900 S
800 S
700 S
600 S
500 S
400 S
1200 S
1100 S
L 1150 E
L 1350 E
D+00
100 N
200 N
300 N
200 S
100 S
1100 S
1000 S
900 S
800 S
700 S
600 S
500 S
400 S
300 S
LEGEND
Surface Elevation Uncorrected
Bouguer Gravity
Terrain Corrected Bouguer Gravity
Depth of Water
093013
Density 2.70 gm/cc.
NOTE Elevations are approximately 5.18 metres lower than on original surveys.
TOTAL ENERGOLD CORPORATION
GRAVITY SURVEY
PROFILES OF SURFACE ELEVATION, TERRAIN-CORRECTED BOUGUER GRAVITY & DEPTH OF WATER
POW-C GRID
GLENN LAKE PROJECT
GLENN LAKE AREA, YUKON TERRITORY
APRIL 1991
Map No. W-485-G
N.T.S. 105L/14
PETER E. WALCOTT & ASSOC. LTD.



1900 S
1800 S
1700 S
1600 S
1500 S
1400 S
1300 S
1200 S
1100 S
1000 S
900 S
800 S
700 S
600 S
500 S
400 S
300 S
200 S
100 S
0+00
L 650 W
100 N
200 N
2000 S
NOTE Elevations are approximately 5.18 metres lower than on original surveys.
TOTAL ENERGOLD CORPORATION
GRAVITY SURVEY
POSTED TERRAIN-CORRECTED BOUGUER GRAVITY
DENSITY = 2.7 GM./CC.
POW-A GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
APRIL 1991
PETER E. WALCOTT & ASSOC. LTD.
N.T.S. 105L/14

093013



TOTAL ENERGOLD CORPORATION

RCINTREX CG-2

GRAVITY SURVEY

POSTED TERRAIN-CORRECTED BOUGUER GRAVITY

DENSITY = 2.7 GM./CC.

POW-B GRID

CLEAR LAKE PROJECT

CLEAR LAKE AREA, YUKON TERRITORY

APRIL 1981

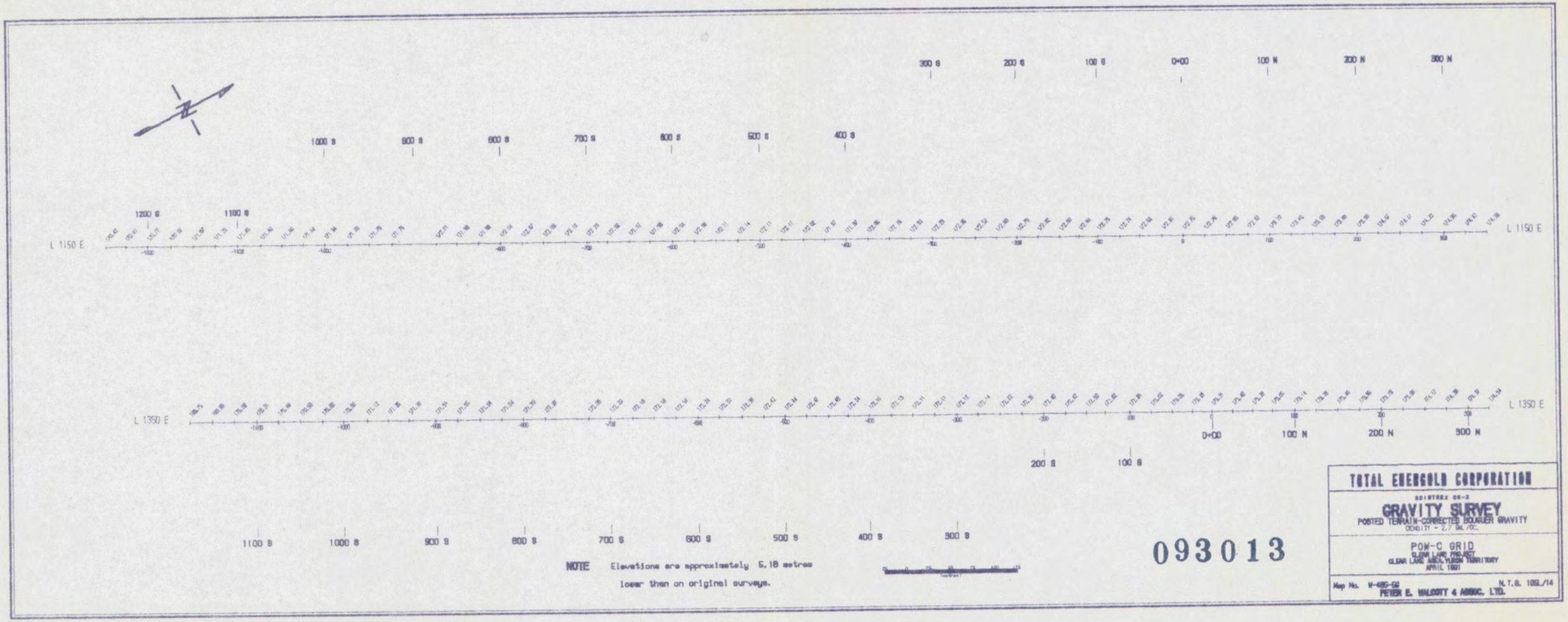
Map No. M-485-4G N.T.S. 105J/14

PETER E. WALCOTT & ASSOC. LTD.

25 0 25 50 75 100 125 (metres)

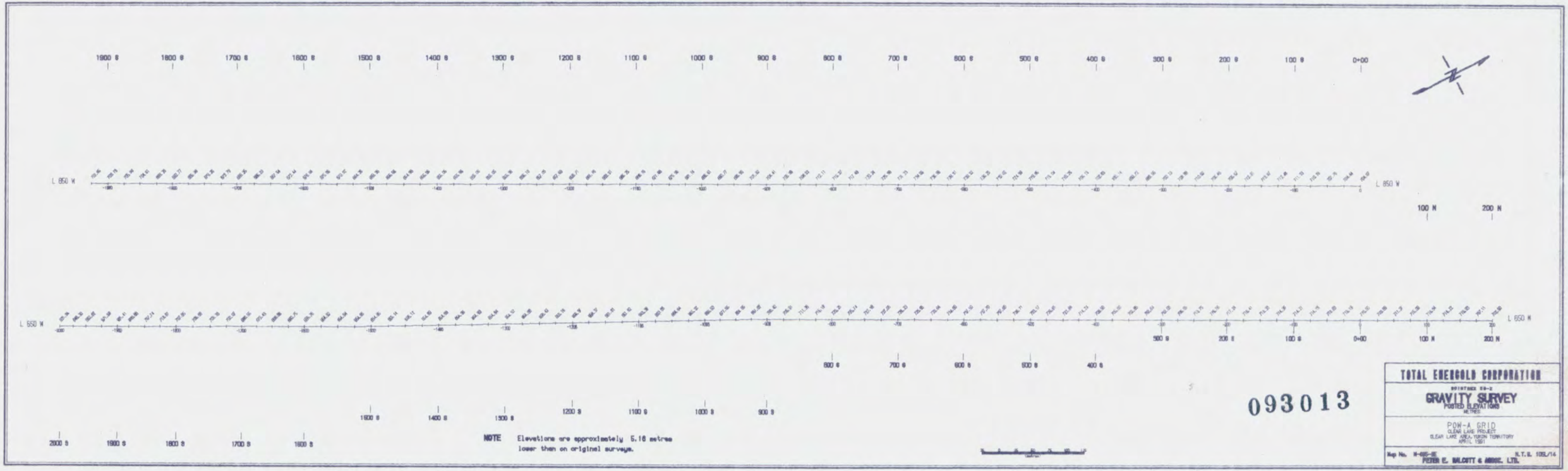
NOTE Elevations are approximately 5.18 metres lower than on original surveys.

093013

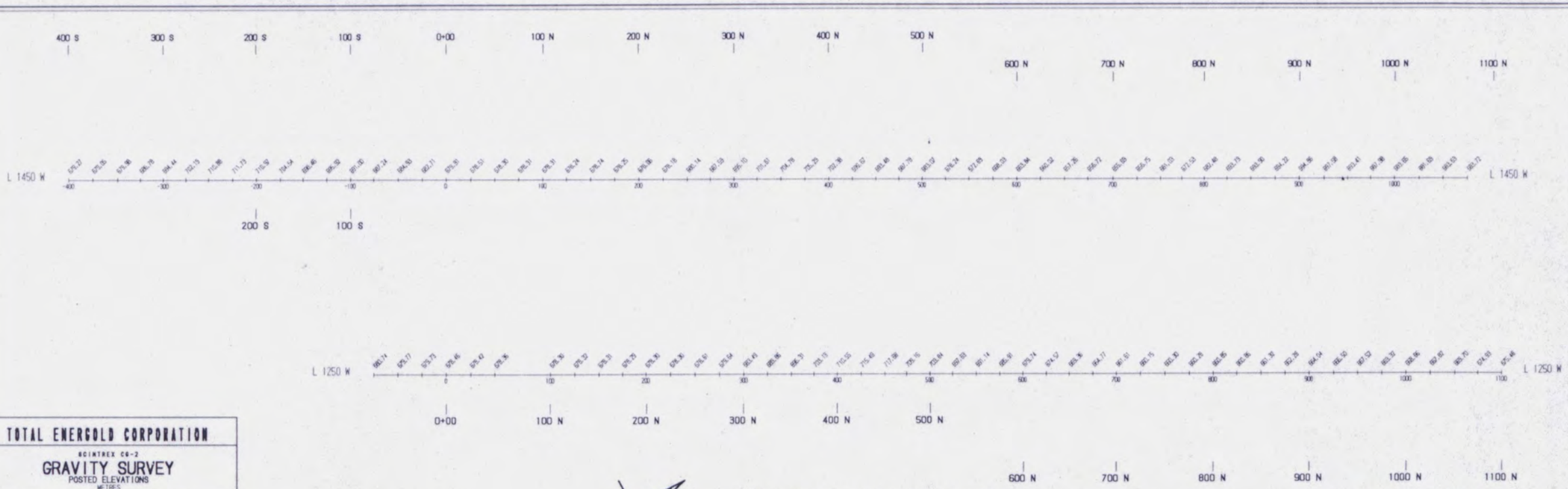


300 S
200 S
100 S
0+00
100 N
200 N
300 N
1000 S
900 S
800 S
700 S
600 S
500 S
400 S
1200 S
1100 S
L 1150 E
L 1350 E
0+00
100 N
200 N
300 N
200 S
100 S
1100 S
1000 S
900 S
800 S
700 S
600 S
500 S
400 S
300 S
NOTE Elevations are approximately 5.18 metres
lower than on original surveys.
TOTAL ENERGOLD CORPORATION
GRAVITY SURVEY
POSTED TERRAIN-CORRECTED BOUGUER GRAVITY
DENSITY = 2.7 GM./CC.
POW-C GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
APRIL 1991
Map No. W-485-GG
N.T.S. 105L/14
PETER E. WALCOTT & ASSOC. LTD.

093013



1900 S
1800 S
1700 S
1600 S
1500 S
1400 S
1300 S
1200 S
1100 S
1000 S
900 S
800 S
700 S
600 S
500 S
400 S
300 S
200 S
100 S
0+00
L 850 W
L 650 W
100 N
200 N
2000 S
NOTE Elevations are approximately 5.16 metres lower than on original surveys.
093013
TOTAL ENERGOLD CORPORATION
SPINTREX SS-2
GRAVITY SURVEY
POSTED ELEVATIONS
METRES
POW-A GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
APRIL 1991
Map No. N-695-SE
N.T.S. 105L/14
PETER E. BALCOTT & ASSOC. LTD.



TOTAL ENERGOLD CORPORATION

SCINTREX CG-2

GRAVITY SURVEY

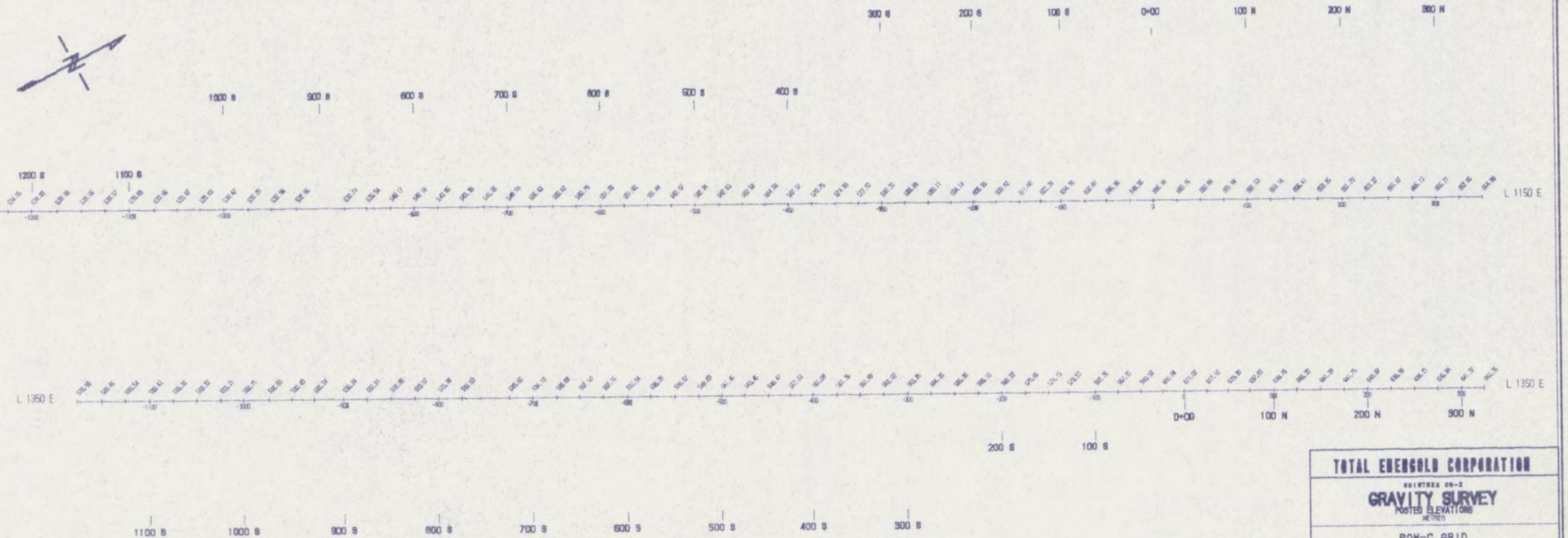
POSTED ELEVATIONS
METRES

POW-B GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
APRIL 1991

Map No. W-485-4E N.T.S. 105L/14
PETER E. WALCOTT & ASSOC. LTD.

NOTE Elevations are approximately 5.18 metres lower than on original surveys.

093013



NOTE Elevations are approximately 5.18 metres lower than on original surveys.

093013

TOTAL ENERGOLD CORPORATION

EQUINOX 86-2

GRAVITY SURVEY

POSTED ELEVATIONS

METRES

POW-C GRID

GLENN LAKE PROJECT

GLENN LAKE AREA, YUKON TERRITORY

APRIL 1991

Map No. V-405-SE N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.

APPENDIX C

GEOPHYSICS: IP SURVEY

(in pocket)

PETER E. WALCOTT
& ASSOCIATES LTD

A LOGISTICAL REPORT

ON

INDUCED POLARIZATION SURVEYING

Clear Lake Area, Y.T.
62° 48'N, 135° 12'W
N.T.S. 105L/14

FOR

TOTAL ENERGOLD CORPORATION

Vancouver, British Columbia

093013

BY

PETER E. WALCOTT & ASSOCIATES LIMITED

Vancouver, British Columbia

SEPTEMBER 1991

PETER E. WALCOTT
& ASSOCIATES LTD

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INTRODUCTION	1
PROPERTY-LOCATION & ACCESS	2
PURPOSE	3
SURVEY SPECIFICATION	4
DATA PRESENTATION	5

APPENDIX

PERSONNEL EMPLOYED ON SURVEY

ACCOMPANYING MAPS - 1:2000

I.P. PSEUDO SECTIONS		Line #
PROFILES OF RESISTIVITY, CHARGEABILITY, METAL FACTOR	SNAFU grid	W-485SNA
" " " "	"	W-485SNB
" " " "	"	W-485SNL
" " " "	PIN grid	W-485PINA
" " " "	"	W-485PINB
" " " "	"	W-485PINC
" " " "	"	W-485PIND

1:2000 & 1:5000

CONTOURS OF APPARENT RESISTIVITY	a=25m n=3	SNAFU grid	W-485-8
" " " "	- gradient array	PIN grid	W-485-10
" " " "	a=25m n=4	POW E	W-485-12
" " " "	a=25m n=4	POW W	W-485-14
" " " "	a=25m n=4	POW area 12	W-485-16
" " " "	a=25m n=3	POW area 1	W-485-18
" " " "	a=25m n=4	POW area 13	W-485-20

TABLE OF CONTENTS cont'd

CONTOURS OF APPARENT CHARGEABILITY				a=25m n=3	SNAFU grid	W-485-9
"	"	"	"	gradient array	PIN grid	W-485-11
"	"	"	"	a=25m n=4	POW E	W-485-13
"	"	"	"	a=25m n=4	POW W	W-485-15
"	"	"	"	a=25m n=4	POW area 12	W-485-17
"	"	"	"	a=25m n=3	POW area 1	W-485-19
"	"	"	"	a=25m n=4	POW area 13	W-485-21

INTRODUCTION.

Between June 5th and July 18th, 1991, Peter E. Walcott & Associates Limited carried out induced polarization surveying over parts of a large property, encompassing the Clear Lake deposit, for Total Energold Corporation.

The surveying was carried out over six grids, referred to as the PIN, POW E, POW W, POW Area 1, POW Area 12 & POW Area 13, after a series of test work on the SNAFU grid. The lines of these grids were established where possible with the aid of a bulldozer with the exception of Area 1 which was cut by hand.

Measurements (first to fourth separation) of apparent resistivity and chargeability - the I.P. response parameter - were made every 25 metres along the lines using the pole-dipole method of surveying after initial tests with the gradient method proved disappointing due to poor signal to noise ratios, etc.

The pole-dipole data are presented in contour form on individual pseudosections that accompany this report whereas those from the gradient work are shown in profile form on plan maps of the individual gradient blocks.

In addition the fourth separation resistivity and chargeability - third separation on SNAFU and Area 1 - and those of the combined gradient on the PIN are shown in contour form on Maps W-485-8 to 21 that accompany this report.

PROPERTY - LOCATION & ACCESS.

The property , encompassing the Clear Lake deposit, a shale-hosted lead-zinc-silver deposit, is situated some 36 kilometres east of the confluence of the Pelly and MacMillan Rivers in the Yukon Territory.

Access on the survey was obtained by means of fixed wing aircraft from Whitehorse, some 220 kilometres to the south - the property has a good all weather strip.

PURPOSE.

The purpose of the survey was to determine the I.P. signature of the Clear Lake deposit, and to use the same - if any - in an effort, directly or indirectly, combined with the results of other exploration methods to define other similar targets in the general area.

SURVEY SPECIFICATIONS.

The induced polarization (I.P.) survey was conducted using a pulse type system, the principal components of which are manufactured by Huntec Limited of Metropolitan Toronto, Ontario, and BRGM of Orleans, France.

The system consists basically of three units, a receiver (BRGM), a transmitter and a motor generator (Huntec). The transmitter, which provides a maximum of 7.5 kw d.c. to the ground, obtains its power from a 7.5 kw 400 c.p.s. three phase alternator driven by a gasoline engine. The cycling rate of the transmitter is 2 seconds "current-on" and 2 seconds "current-off" with the pulses reversing continuously in polarity. The data recorded in the field consists of careful measurements of the current (I) in amperes flowing through the current electrodes C_1 and C_2, the primary voltages (V) appearing between any two potential electrodes, P_1 through P_5, during the "current-on" part of the cycle, and the apparent chargeability (M_a) presented as a direct readout in millivolts per volt using a 200 millisecond delay and a 1000 millisecond sample window by the receiver, a digital receiver controlled by a micro-processor - sample window is actually the total of ten individual windows of 100 millisecond widths.

Unfortunately on the fourth day into the survey the transformer of the transmitter arced under mysterious circumstances, and the transmitter had to be replaced by a 2.5kw unit of the same manufacture and similar specifications.

The apparent resistivity (ρ_a) in ohm dmetres is proportional to the ratio of the primary voltage and the measured current, the proportionality factor depending on the geometry of the array used. The chargeability and resistivity are called apparent as they are values which that portion of the earth sampled would have if it were homogeneous. As the earth sampled is usually inhomogeneous the calculated apparent chargeability and resistivity are functions of the actual chargeability and resistivity of the rocks.

The orientation survey work was carried out using the "gradient" and the "pole-dipole" methods of surveying. With the former the current electrodes are set out a large distance, 2A, apart - 1 to 3 kilometres - and a pair of potential electrodes, with a separation in the order of A/20, is used to traverse a rectangular area between them up to A by A in size. This method generally yields poor signal to noise ratios, particularly in areas of high conductivity, and poor resolution with depth.

In the latter method, the current electrode C_1, and the potential electrodes, P_1 through P_5, are moved in unison along the survey lines at multiples of the spacing "a" (the dipole) apart, while the second current electrode C_2 is kept

SURVEY SPECIFICATIONS cont'd.

constant at "infinity". The distance, "na" between C_1 and the nearest potential electrode generally controls the depth to be explored by the particular separation, "n", traverse. This method, though asymmetrical, gives good resolution and subsurface coverage.

After studying the results from the SNAFU grid, and reviewing the gradient coverage on the PIN grid, where the poor signal to noise ratio mandated the use of small blocks - absolute standard deviation of the chargeability averaged around 12 mv/v with values up to 26 with relative deviation of around 2% in the primary voltage versus an average of less than 1 mv/v and 0% on the two on the pole-dipole work - with impending level shift problems it was decided to complete the coverage in the main area with the "pole-dipole" technique.

It should be mentioned here that the signal to noise ratio was not helped by the unprecedented solar flare activity during the period.

The gradient array was tried once more on the Area 1 grid with even more distastrous results - primary voltages less than 0.1 millivolts with standard deviation of the secondary voltage for the most greater than 50 mv/v for the entire line attempted - and again coverage was completed with the pole-dipole method.

In all some 8.6 kilometres of gradient coverage and some 50.2 kilometres of pole-dipole work were completed on the property.

DATA PRESENTATION.

The results of the pole-dipole work are shown in contour form on individual pseudosections at a scale of 1:2000. The ten point moving average - Fraser filter - of the apparent resistivity, chargeability and metal factor (M_a/ρ_a x 100) are also plotted as profiles on these plans.

The gradient array results are presented in profile form on individual plans of the respective gradient blocks on Maps W-485 SNL, SNA, SNB, PIN A, PIN B, PIN C & PIN D at 1:2000.

The resistivity and chargeability results from the gradient work on the four PIN blocks - the PIN grid - have been adjusted for level shift, averaged and plotted in contour form on Maps W-485-10 and 11 at 1:2000 and 1:5000 respectively.

At the request of the interpreter, the chief geologist of Total Energold, black line contour maps of the fourth separation resistivity and chargeability results - third separation on SNAFU and Area 1, the latter due to lack of fourth separation values - have been prepared at 1:2000 and 1:5000 scale - Maps W-485-8 to 9 and 12 to 21.

In addition at his further request colour contour translucent bond plots of the same have been prepared to facilitate comparison with other methods and aid interpretation.

Respectfully submitted

PETER E. WALCOTT & ASSOCIATES LIMITED

Peter E. Walcott, P.Eng.
Geophysicist

Vancouver,
British Columbia

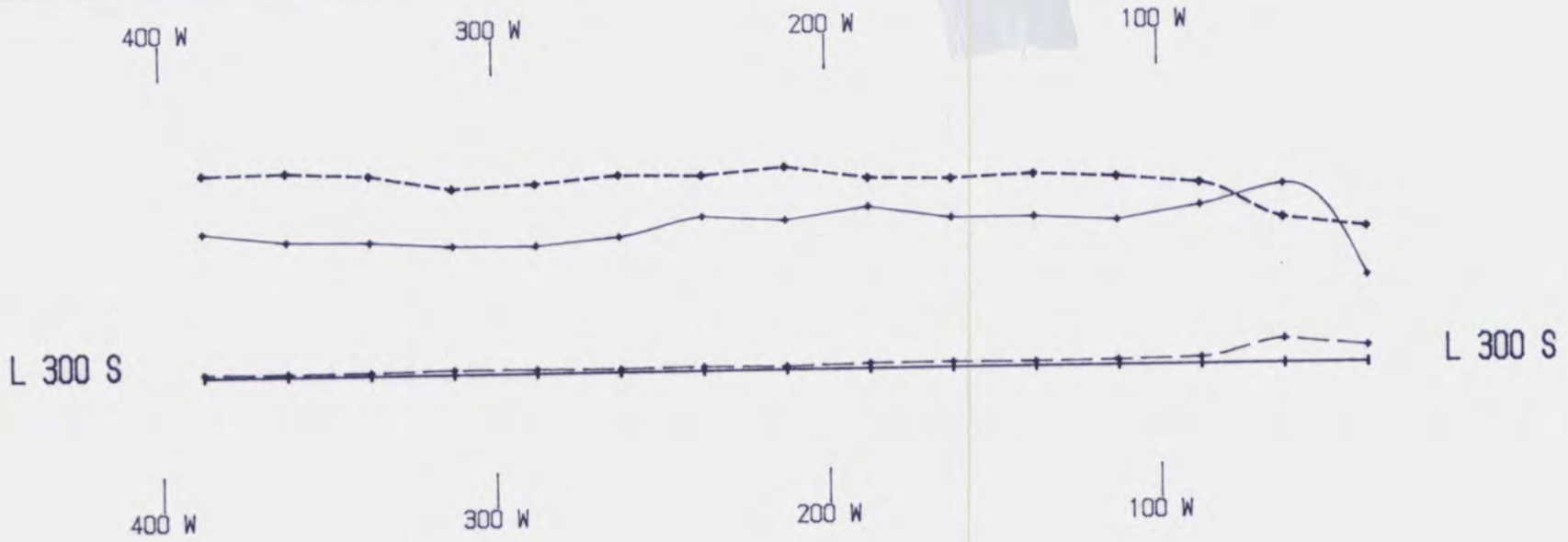
September 1991

APPENDIX

PETER E. WALCOTT
& ASSOCIATES LTD

PERSONNEL EMPLOYED ON SURVEY

Name	Occupation	Address	Dates
Peter E. Walcott	Geophysicist	Peter E. Walcott & Associates Limited 605 Rutland Court Coquitlam, B.C. V3J 3T8	Aug 4-6th, 13th-15th Aug 28th-31st Sept 3rd, 10th-13th 1991
G. MacMillan	Geophysical Operator	"	June 6th - July 18th 1991
A. Walcott	"	"	June 5th - July 18th Aug. 3rd - 8th, 1991
T. Kocan	Helper	"	June 5th - July 18th 1991
P. Charlie	Geophysical Operator	"	June 6th - July 18th 1991
J. Walcott	Typing	"	Sept. 13th, 1991
R. Rollings	Plotting	Archean Graphics 1650 - 701 W. Georgia Vancouver, B.C.	Aug 22nd, 23rd & 26th 1991



PROFILES

CHARGEABILITY ————————
RESISTIVITY — — — — — —
METAL FACTOR —— —— ——

CHARGEABILITY	RESISTIVITY	METAL FACTOR
30	100	150
15	10	75
0	1	0

Instruments: BRGM Elrec 6 Rx., Huntec 2.5 or 7.5 kw. Tx.

C1-C2 (2A) = 0.9 km.

C1 400S, 200E

C2 400S, 700W

Dipole (a) = 25 ms.

50 0 50 100 150 200

(metres)

093013

TOTAL ENERGOLD CORPORATION

GRADIENT ARRAY

INDUCED POLARIZATION SURVEY
PROFILES OF APPARENT CHARGEABILITY, RESISTIVITY & METAL FACTOR

SNAFU GRID

CLEAR LAKE PROJECT

CLEAR LAKE AREA, YUKON TERRITORY

JUNE 1991

Map No. W-485SNA N.T.S. 105L/14

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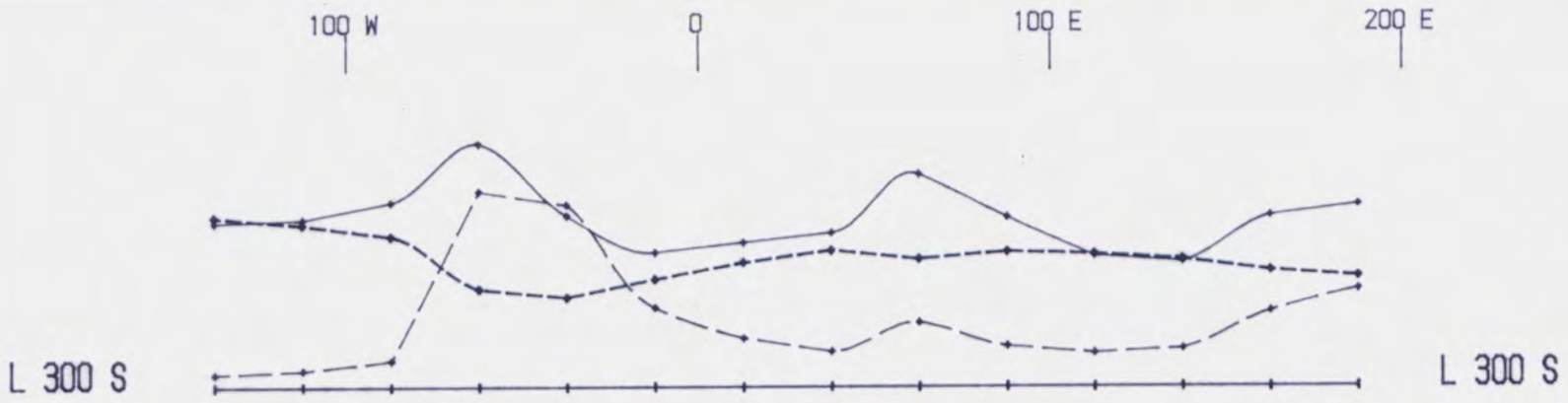

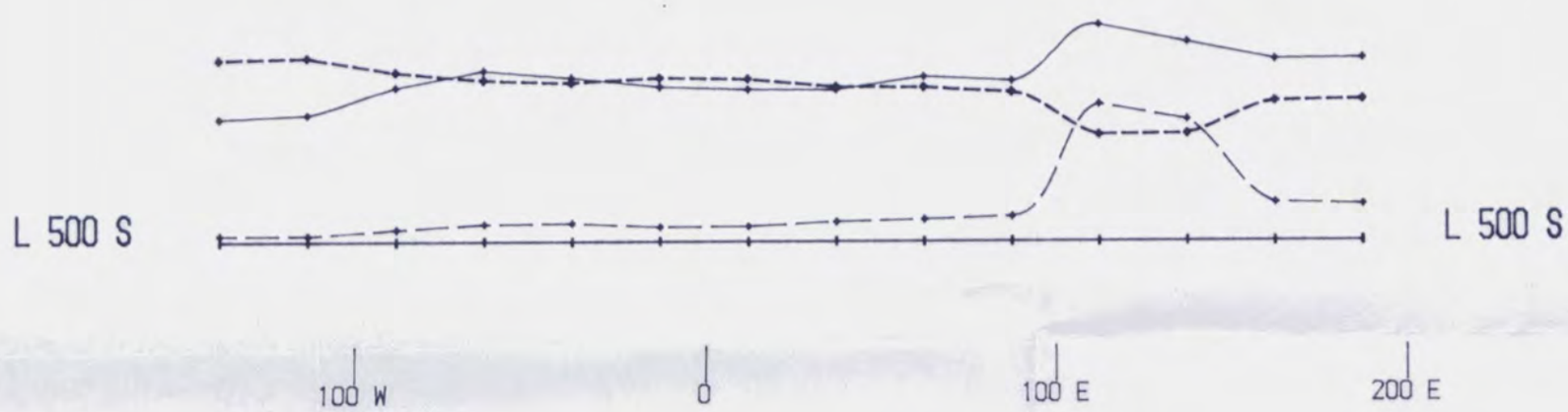

PROFILES

CHARGEABILITY ————————
RESISTIVITY — — — — — —
METAL FACTOR —— —— ——

CHARGEABILITY	RESISTIVITY	METAL FACTOR
30	100	150
15	10	75
0	1	0

Instruments: BRGM Elrec 6 Rx., Huntec 2.5 or 7.5 kw. Tx.

C1-C2 (2A) = 0.9 km.

C1 400S, 500E

C2 400S, 400W

Dipole (a) = 25 ms.



50 0 50 100 150 200

(metres)

093013

TOTAL ENERGOLD CORPORATION

GRADIENT ARRAY

INDUCED POLARIZATION SURVEY
PROFILES OF APPARENT CHARGEABILITY, RESISTIVITY & METAL FACTOR

SNAFU GRID

CLEAR LAKE PROJECT

CLEAR LAKE AREA, YUKON TERRITORY

JUNE 1991

Map No. W-485SNB N.T.S. 105L/14

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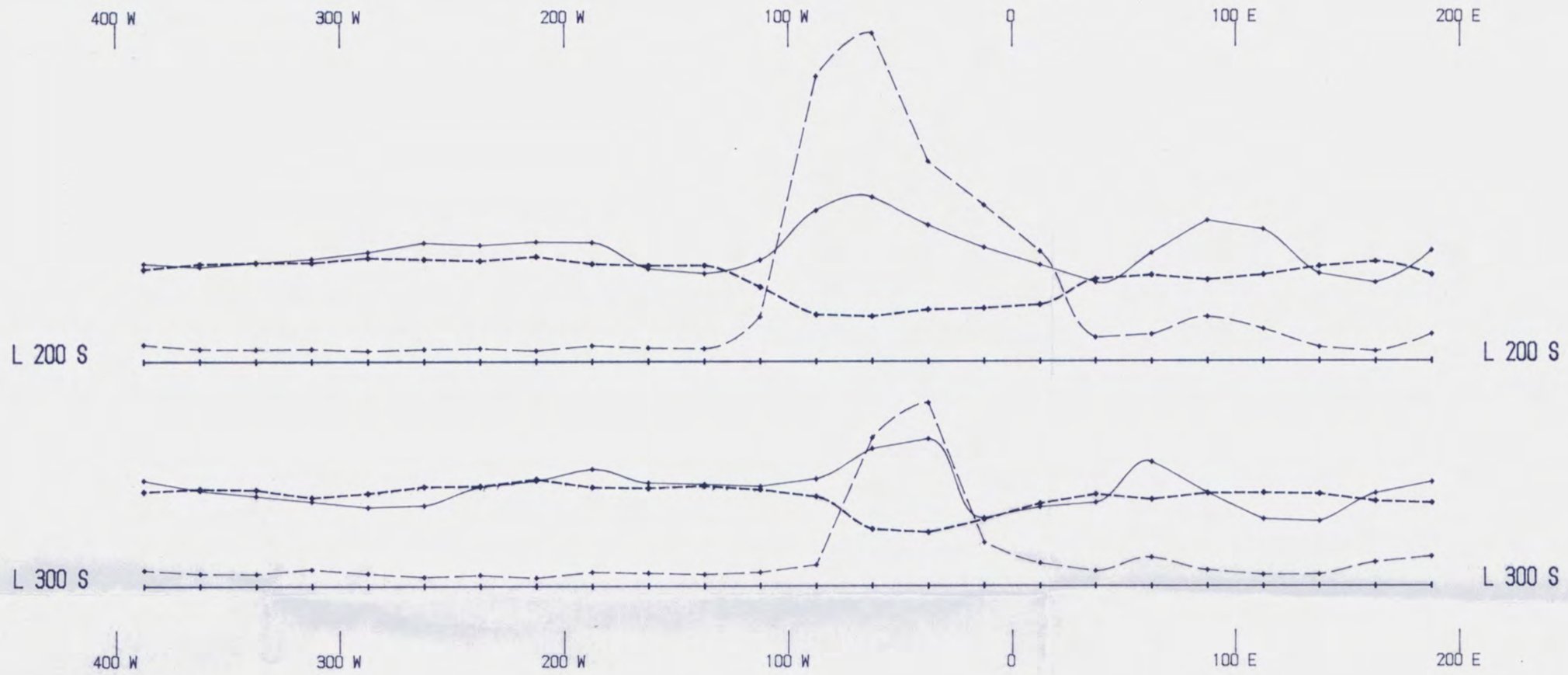

PROFILES

CHARGEABILITY ——————
RESISTIVITY – – – – – –
METAL FACTOR —— —— ——

CHARGEABILITY	RESISTIVITY	METAL FACTOR
30	100	150
15	10	75
0	1	0

Instruments: BRGM Elrec 6 Rx., Huntec 2.5 or 7.5 kw. Tx.

C1-C2 (2A) = 0.9 km.

C1 400S, 500E

C2 400S, 400W

Dipole (a) = 25 ms.





093013

TOTAL ENERGOLD CORPORATION

GRADIENT ARRAY

INDUCED POLARIZATION SURVEY
PROFILES OF APPARENT CHARGEABILITY, RESISTIVITY & METAL FACTOR

SNAFU GRID

CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

Map No. W-485SNL N.T.S. 105L/14

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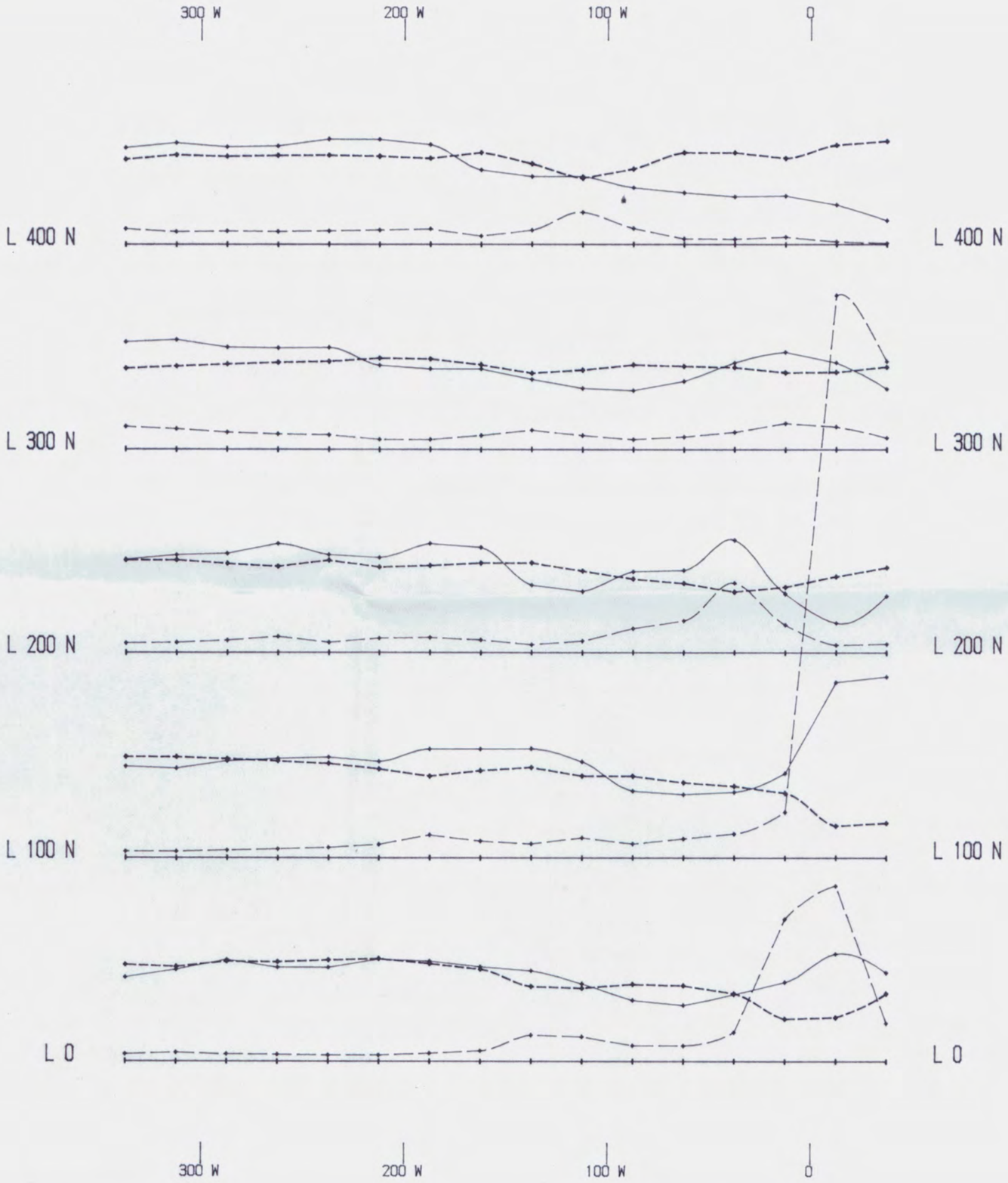




PROFILES

CHARGEABILITY
RESISTIVITY
METAL FACTOR

CHARGEABILITY	RESISTIVITY	METAL FACTOR
30	100	150
15	10	75
0	1	0

Instruments: BRGM Elrec 6 Rx., Huntec 2.5 or 7.5 kw. Tx.

C1-C2 (2A) = 1.2 km.

C1 200N, 800W

C2 200N, 400E

Dipole (a) = 25 ms.

50 0 50 100 150 200
(metres)

093013

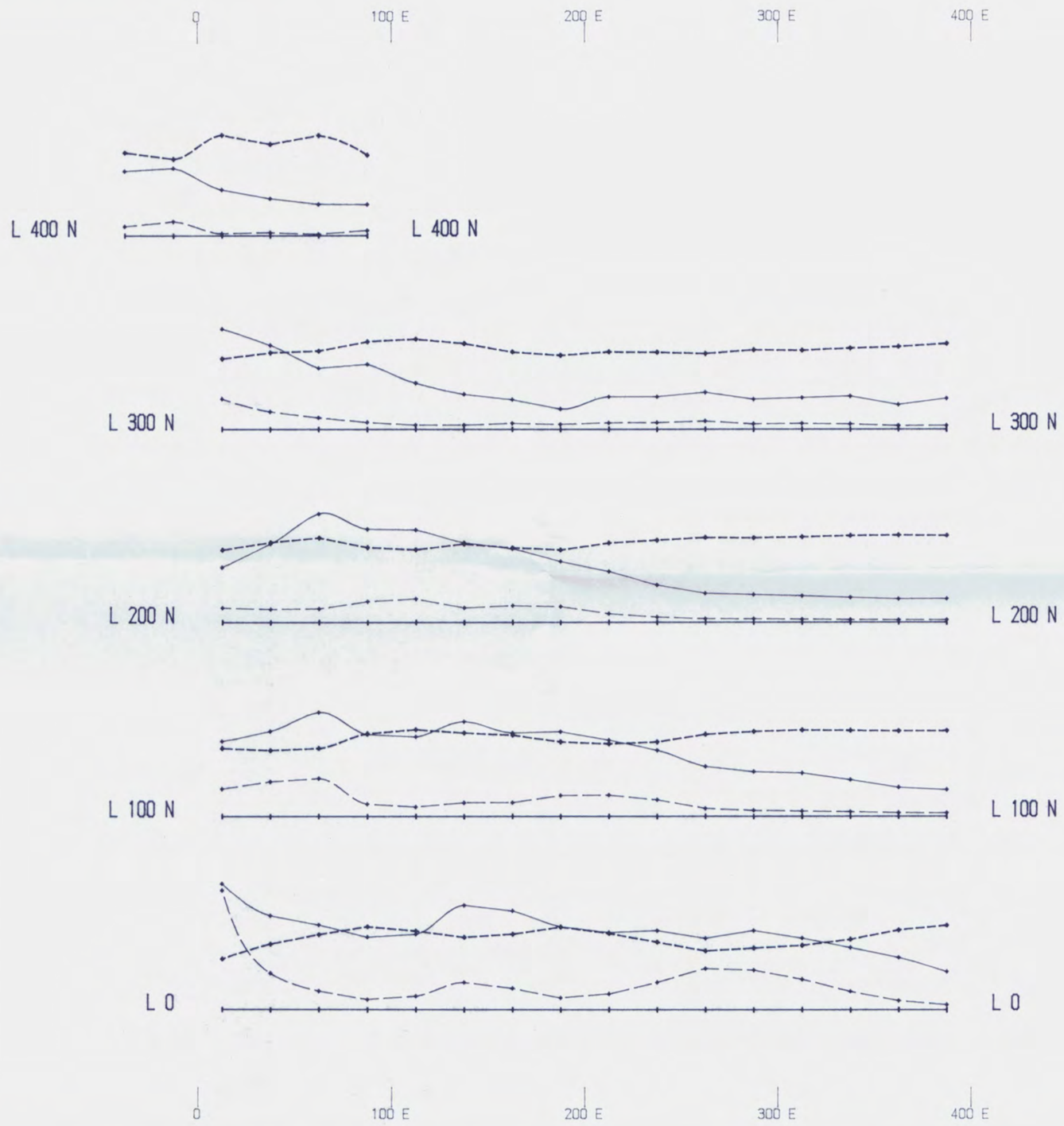
TOTAL ENERGOLD CORPORATION

GRADIENT ARRAY

INDUCED POLARIZATION SURVEY
PROFILES OF APPARENT CHARGEABILITY, RESISTIVITY & METAL FACTOR

PIN GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

Map No. W-485PINA N.T.S. 105L/14
PETER E. WALCOTT & ASSOC. LTD.





PROFILES

CHARGEABILITY ————————
RESISTIVITY – – – – – – –
METAL FACTOR —— —— ——

CHARGEABILITY	RESISTIVITY	METAL FACTOR
30	100	150
15	10	75
0	1	0

Instruments: BRGM Elrec 6 Rx., Huntec 2.5 or 7.5 kw. Tx.

C1-C2 (2A) = 1.2 km.

C1 200N, 400W

C2 200N, 800E

Dipole (a) = 25 ms.

50 0 50 100 150 200
(metres)

093013

TOTAL ENERGOLD CORPORATION

GRADIENT ARRAY
INDUCED POLARIZATION SURVEY
PROFILES OF APPARENT CHARGEABILITY,
RESISTIVITY & METAL FACTOR

PIN GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

Map No. W-485PINB N.T.S. 105L/14
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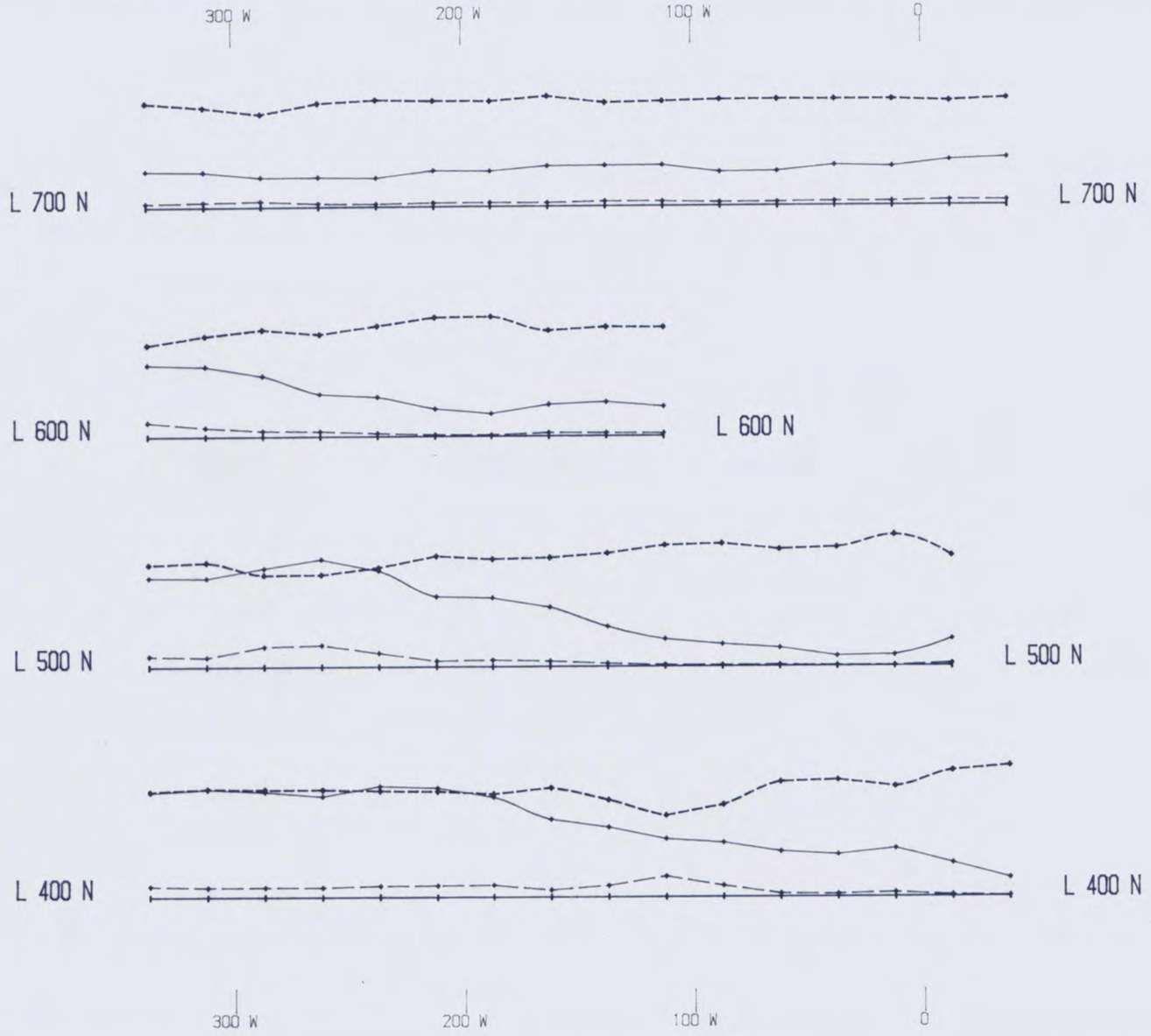


PROFILES

CHARGEABILITY ——————

RESISTIVITY - - - - - - -

METAL FACTOR — — — —

CHARGEABILITY	RESISTIVITY	METAL FACTOR
30	100	150
15	10	75
0	1	0

Instruments: BRGM Elrec 6 Rx., Huntec 2.5 or 7.5 kw. Tx.

C1-C2 (2A) = 1.2 km.

C1 500N, 800W

C2 500N, 400E

Dipole (a) = 25 ms.

50 0 50 100 150 200

(metres)

093013

TOTAL ENERGOLD CORPORATION

GRADIENT ARRAY

INDUCED POLARIZATION SURVEY
PROFILES OF APPARENT CHARGEABILITY, RESISTIVITY & METAL FACTOR

PIN GRID

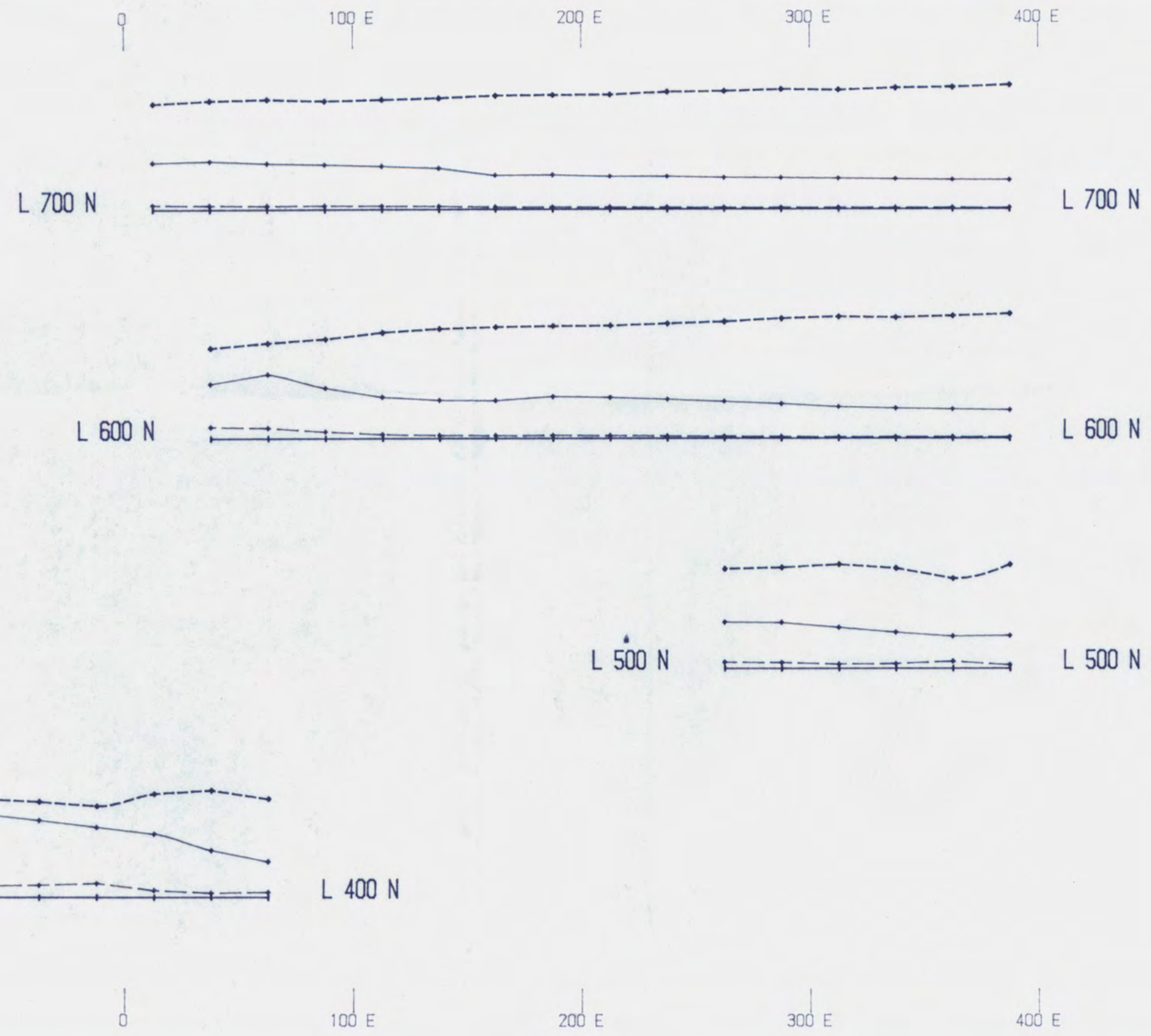
CLEAR LAKE PROJECT

CLEAR LAKE AREA, YUKON TERRITORY

JUNE 1991

Map No. W-485PINC N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.



PROFILES

CHARGEABILITY ——————

RESISTIVITY — — — — —

METAL FACTOR —— —— ——

CHARGEABILITY	RESISTIVITY	METAL FACTOR
30	100	150
15	10	75
0	1	0

Instruments: BRGM Elrec 6 Rx., Huntec 2.5 or 7.5 kw. Tx.

C1-C2 (2A) = 1.2 km.

C1 500N, 400W

C2 500N, 800E

Dipole (a) = 25 ms.

50 0 50 100 150 200

(metres)

093013

TOTAL ENERGOLD CORPORATION

GRADIENT ARRAY

INDUCED POLARIZATION SURVEY
PROFILES OF APPARENT CHARGEABILITY, RESISTIVITY & METAL FACTOR

PIN GRID

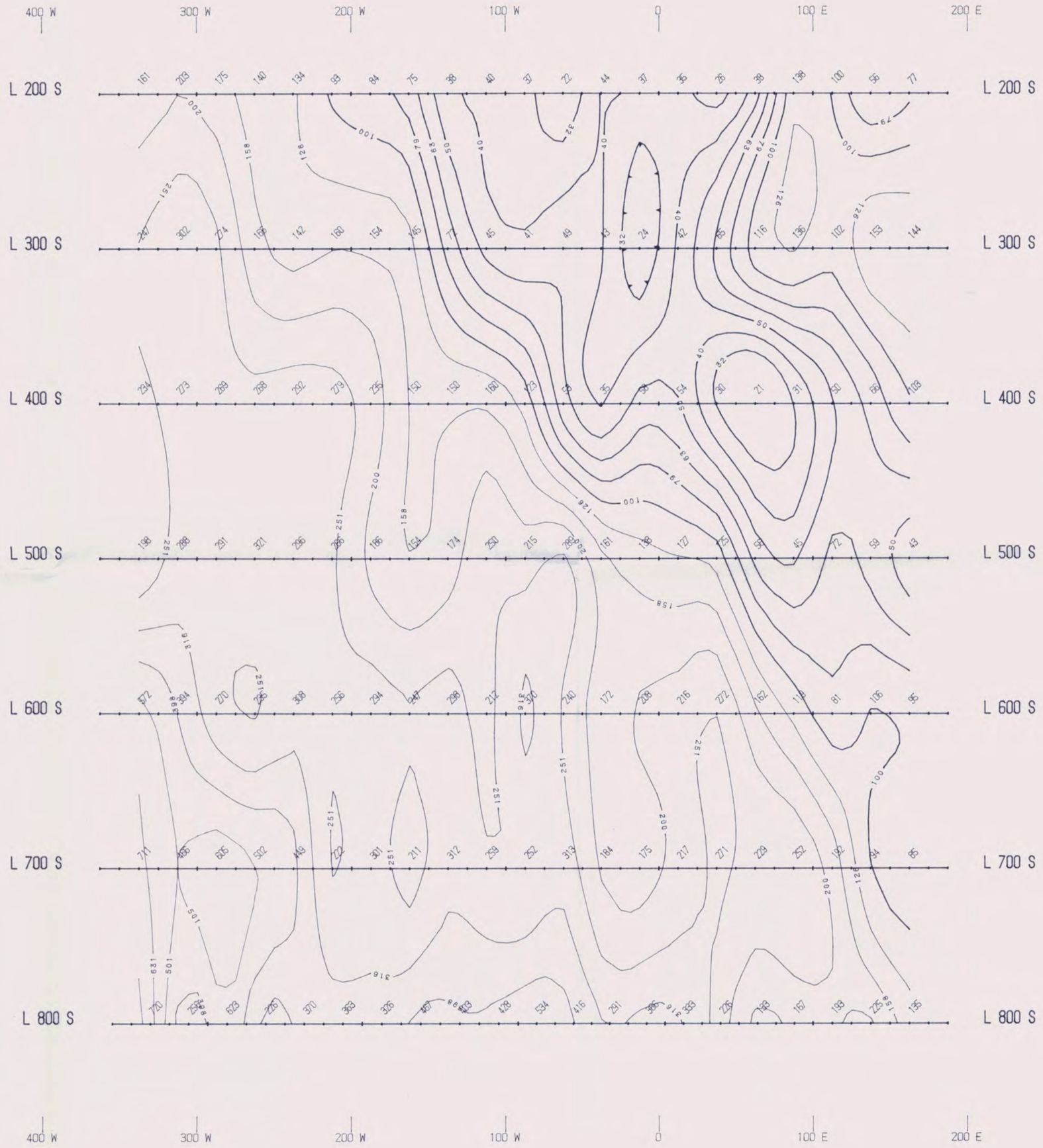
CLEAR LAKE PROJECT

CLEAR LAKE AREA, YUKON TERRITORY

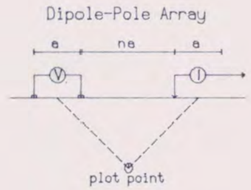
JUNE 1991

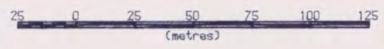
Map No. W-485PIND N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.









093013

TOTAL ENERGOLD CORPORATION

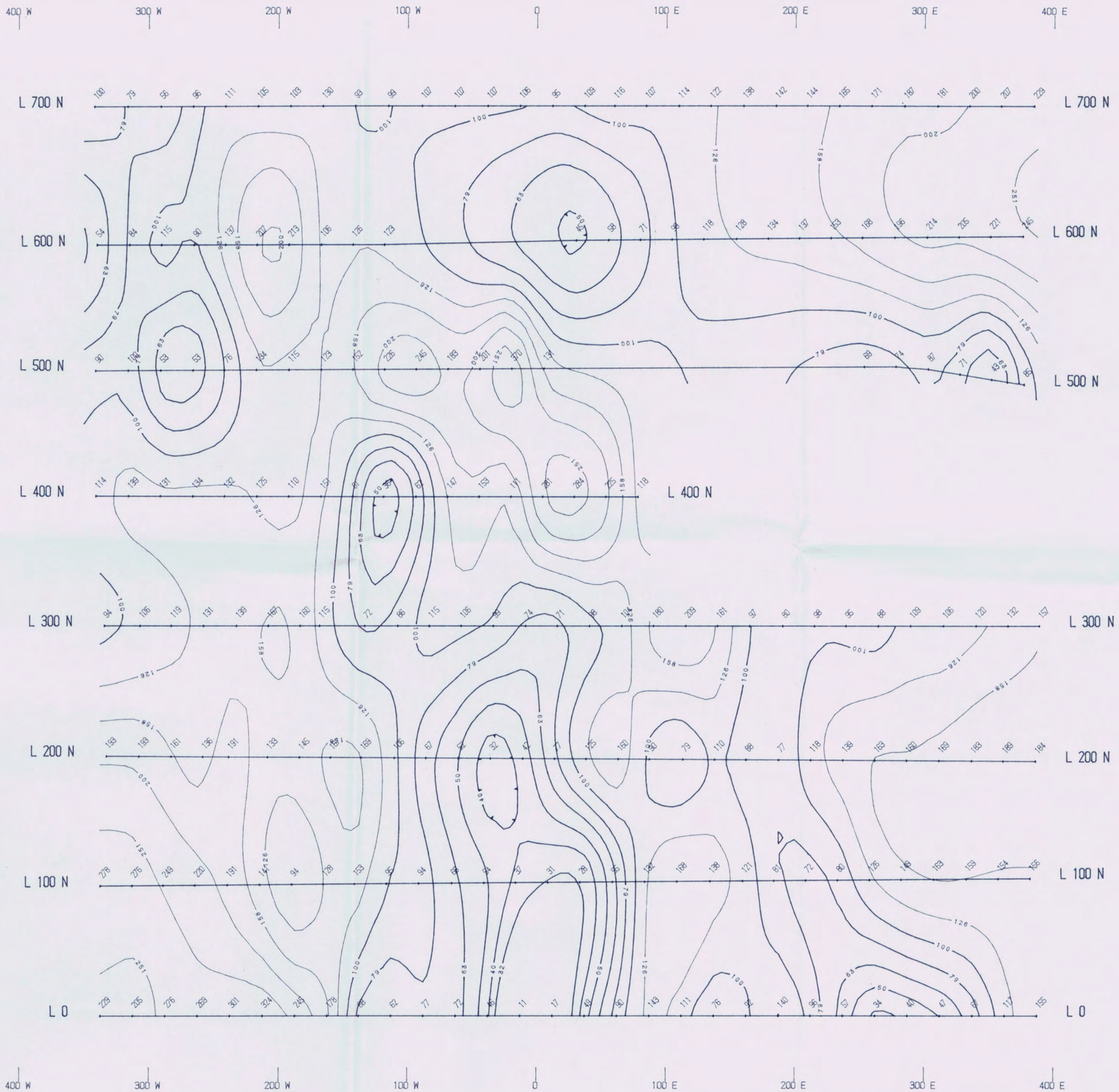
POLE-DIPOLE ARRAY

INDUCED POLARIZATION SURVEY
CONTOURS OF APPARENT RESISTIVITY
A - 25 MS., N - 3

SNAFU GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

Map No. W-485-8 N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.



25 0 25 50 75 100 125
(metres)

093013

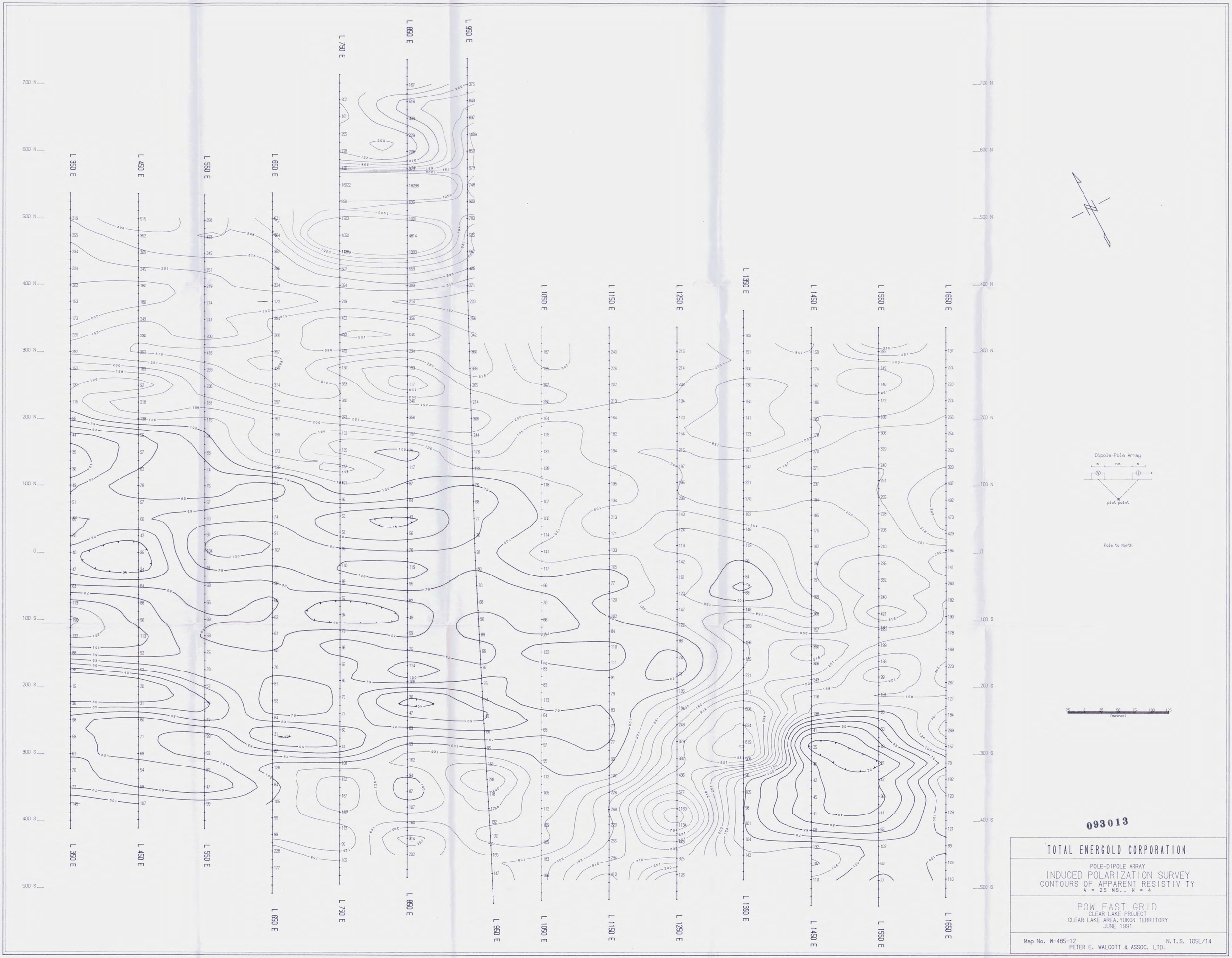
TOTAL ENERGOLD CORPORATION

GRADIENT ARRAY

INDUCED POLARIZATION SURVEY
CONTOURS OF APPARENT RESISTIVITY
A = 25 MS.

PIN GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

Map No. W-465-10 N.T.S. 105L/14
PETER E. WALCOTT & ASSOC. LTD.



093013

TOTAL ENERGOLD CORPORATION

POLE-DIPOLE ARRAY
INDUCED POLARIZATION SURVEY
CONTOURS OF APPARENT RESISTIVITY
A = 25 MS., N = 4

POW EAST GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

Map No. W-485-12 N.T.S. 105L/14
PETER E. WALCOTT & ASSOC. LTD.

L 2550 W
L 2450 W
L 2150 W
L 1950 W
L 1850 W
L 1750 W
L 1650 W
L 1550 W
L 1450 W
L 1350 W
L 1250 W
L 1150 W
L 1050 W
L 950 W
L 850 W
L 750 W
L 650 W
L 550 W
L 450 W
L 350 W
L 250 W

1100 N
1000 N
900 N
800 N
700 N
600 N
500 N
400 N
300 N
200 N
100 N
0
100 S
200 S
300 S
400 S

Pole-Dipole Array

Pole to North

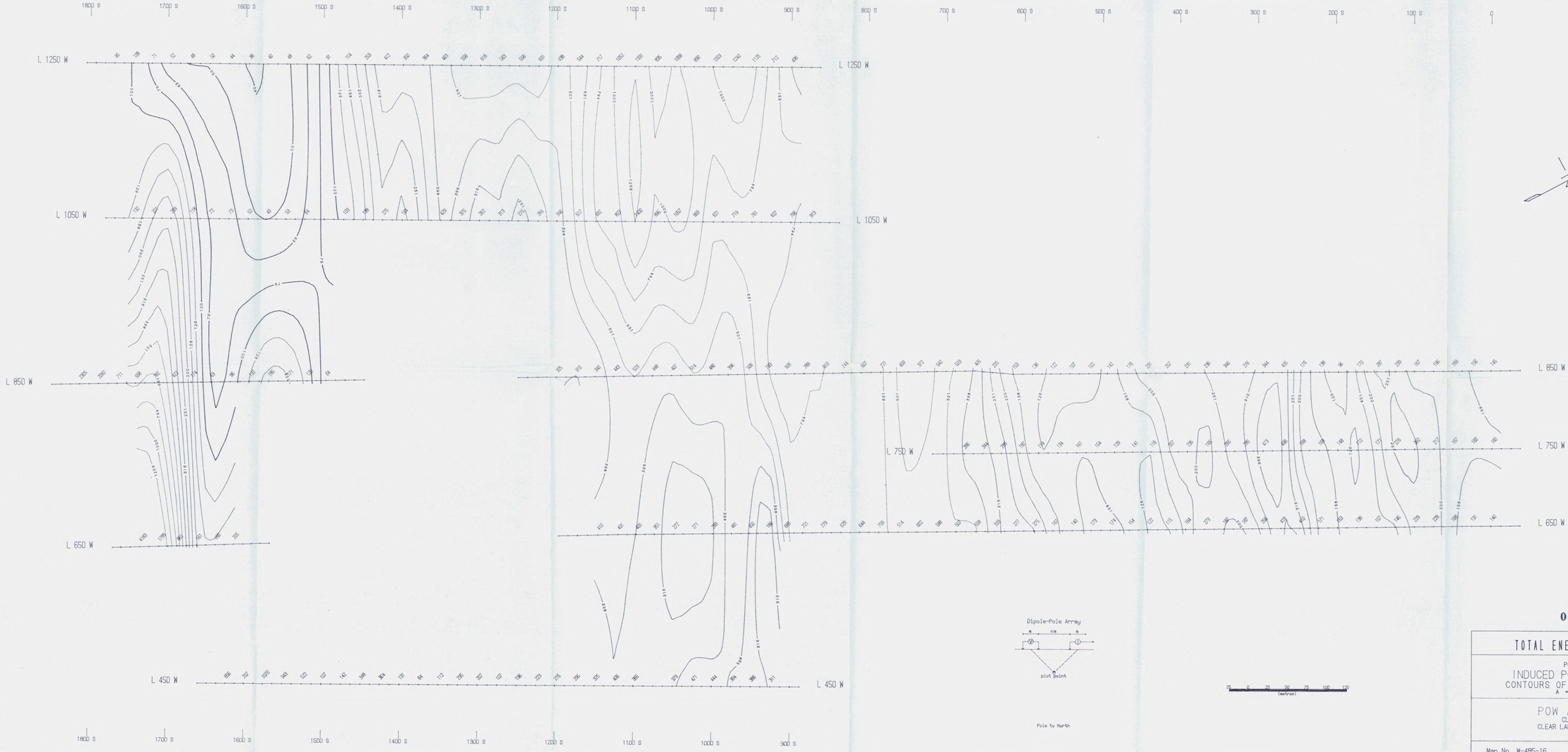
093013

TOTAL ENERGOLD CORPORATION

POLE-DIPOLE ARRAY
INDUCED POLARIZATION SURVEY
CONTOURS OF APPARENT RESISTIVITY
A = 25 M., N = 4

POW WEST GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

Map No. W-485-14 N.T.S. 105L/14
PETER E. WALCOTT & ASSOC. LTD.



Pole to North

093013

TOTAL ENERGOLD CORPORATION

POLE-DIPOLE ARRAY

INDUCED POLARIZATION SURVEY
CONTOURS OF APPARENT RESISTIVITY
A = 25 MS., N = 4

POW AREA 12 GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

Map No. W-485-16 N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.

4500 N 4600 N 4700 N 4800 N 4900 N 5000 N 5100 N 5200 N 5300 N

L 9000 W

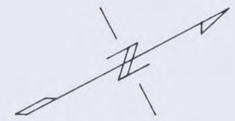
L 8800 W

L 8700 W

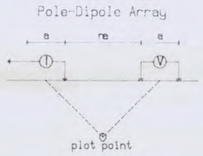
L 8500 W

L 8400 W

L 8200 W



Pole-Dipole Array



Pole to South

25 0 25 50 75 100 125
(metres)

093013

TOTAL ENERGOLD CORPORATION

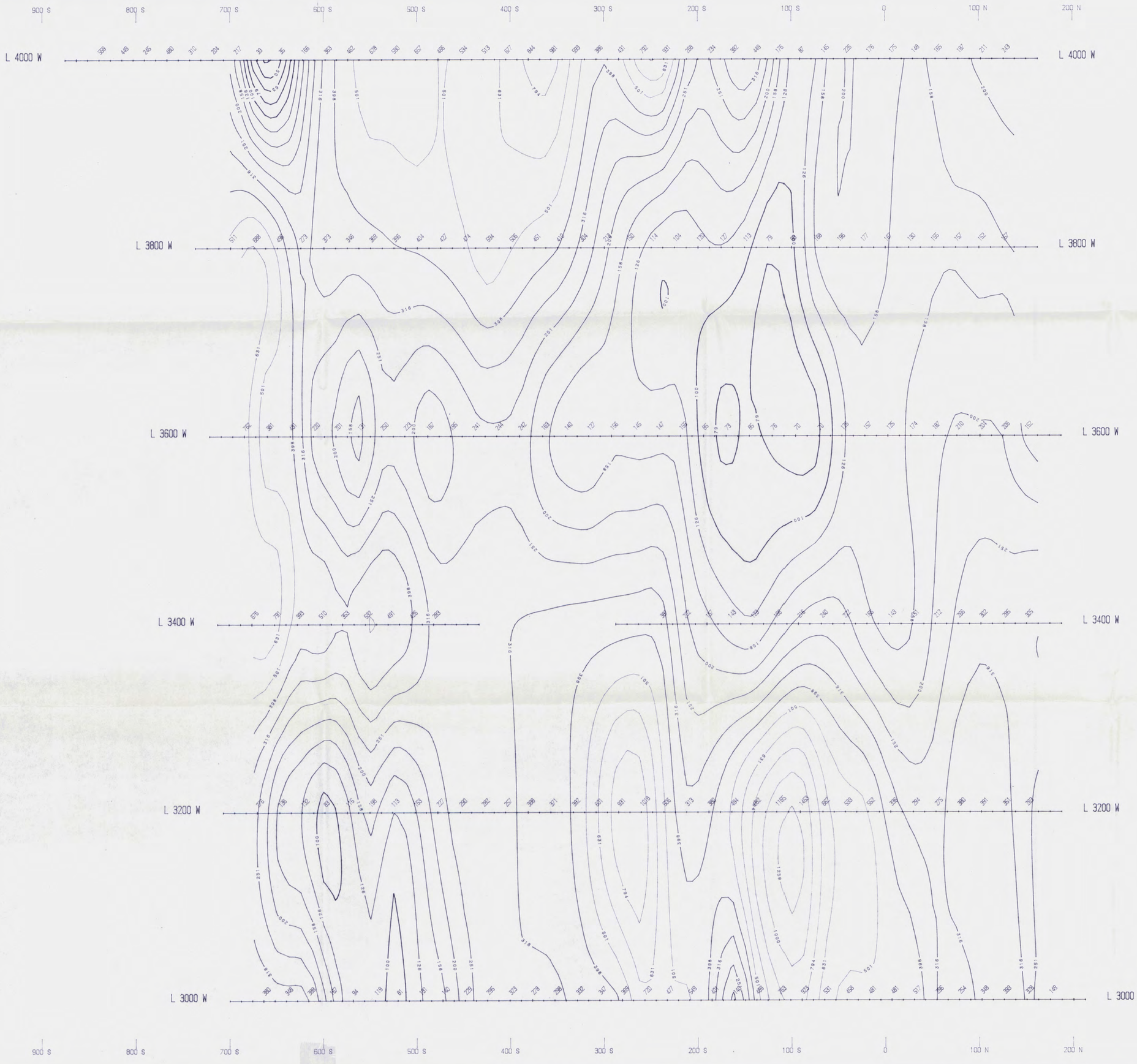
POLE-DIPOLE ARRAY

INDUCED POLARIZATION SURVEY
CONTOURS OF APPARENT RESISTIVITY
A - 25 MS., N - 3

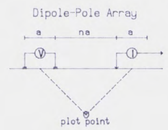
POW AREA 1 GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

Map No. W-485-18 N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.



Dipole-Pole Array



Pole to North

25 0 25 50 75 100 125
(metres)

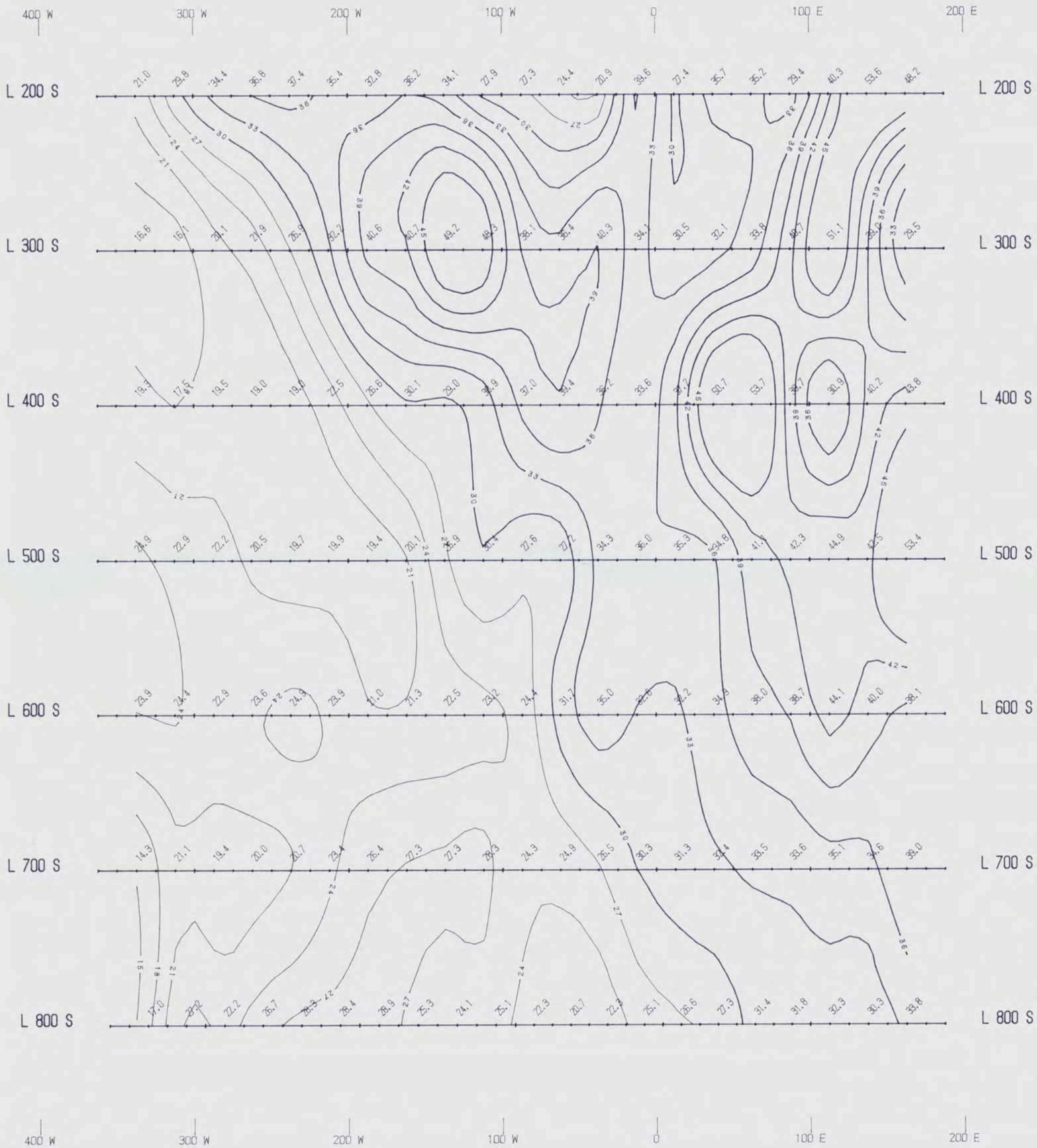
093013

TOTAL ENERGOLD CORPORATION

DIPOLE-POLE ARRAY
INDUCED POLARIZATION SURVEY
CONTOURS OF APPARENT RESISTIVITY
A - 25 MS., N - 4

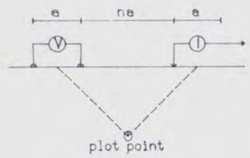
POW AREA 13 GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

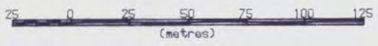
Map No. W-485-20 N.T.S. 105L/14
PETER E. WALCOTT & ASSOC. LTD.





Dipole-Pole Array





093013

TOTAL ENERGOLD CORPORATION

POLE-DIPOLE ARRAY

INDUCED POLARIZATION SURVEY
CONTOURS OF APPARENT CHARGEABILITY

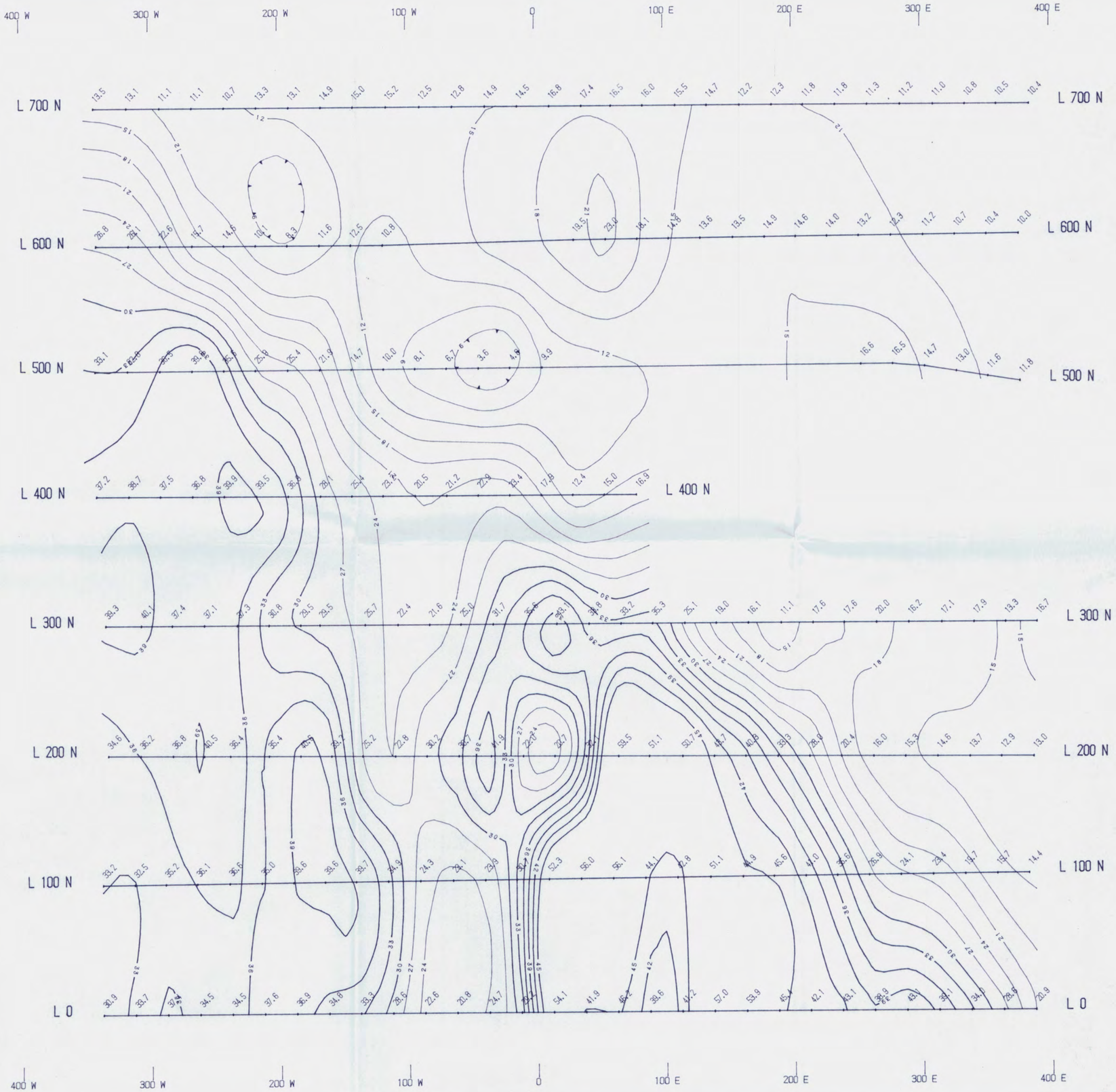
A = 25 MS., N = 3

SNAFU GRID

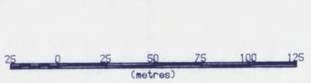
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

Map No. W-485-9 N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.







093^13'

TOTAL ENERGOLD CORPORATION

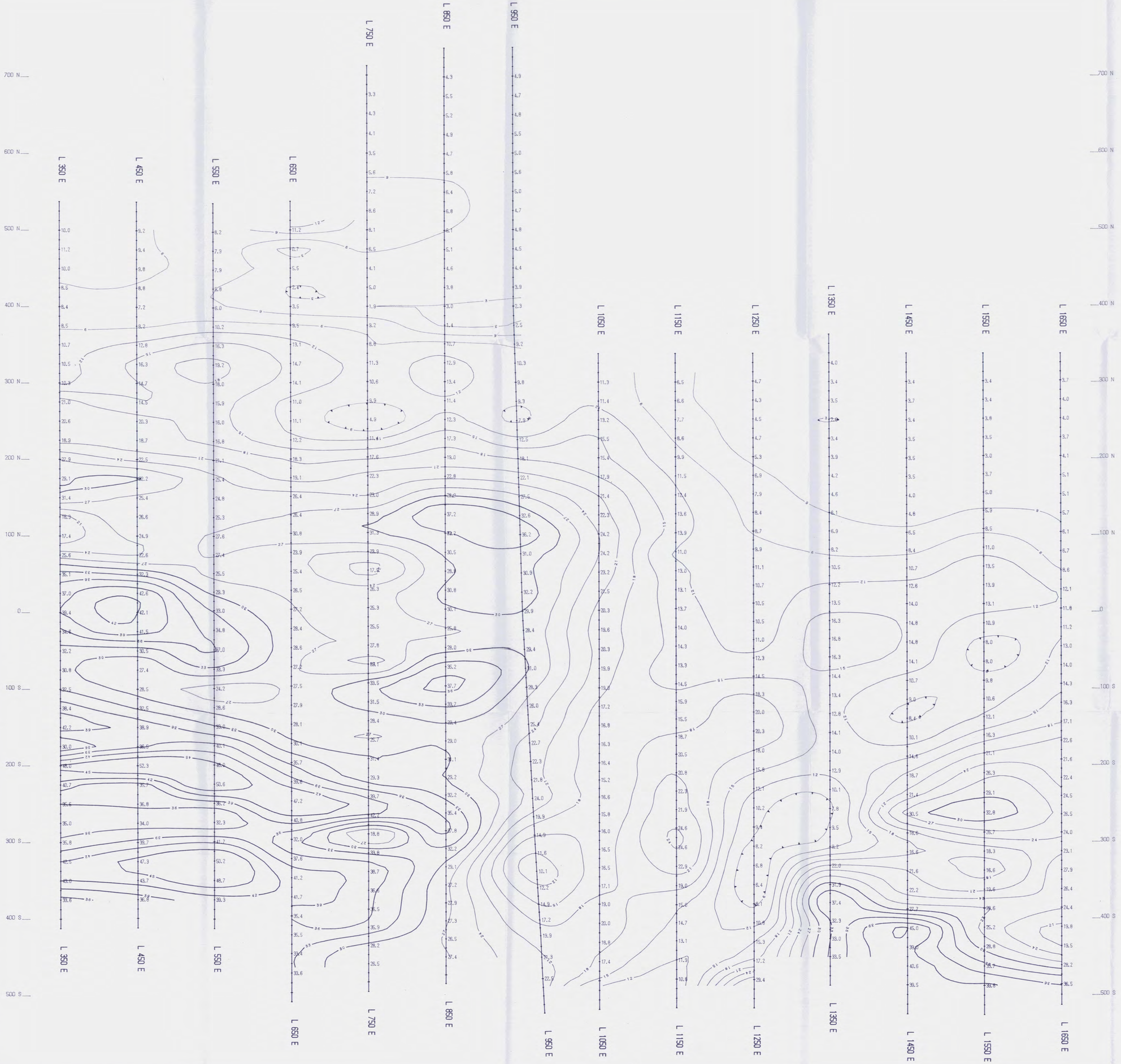
GRADIENT ARRAY

INDUCED POLARIZATION SURVEY
CONTOURS OF APPARENT CHARGEABILITY
A = 25 MS.

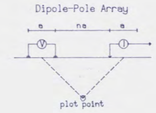
PIN GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

Map No. W-465-11 N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.







Pole to North



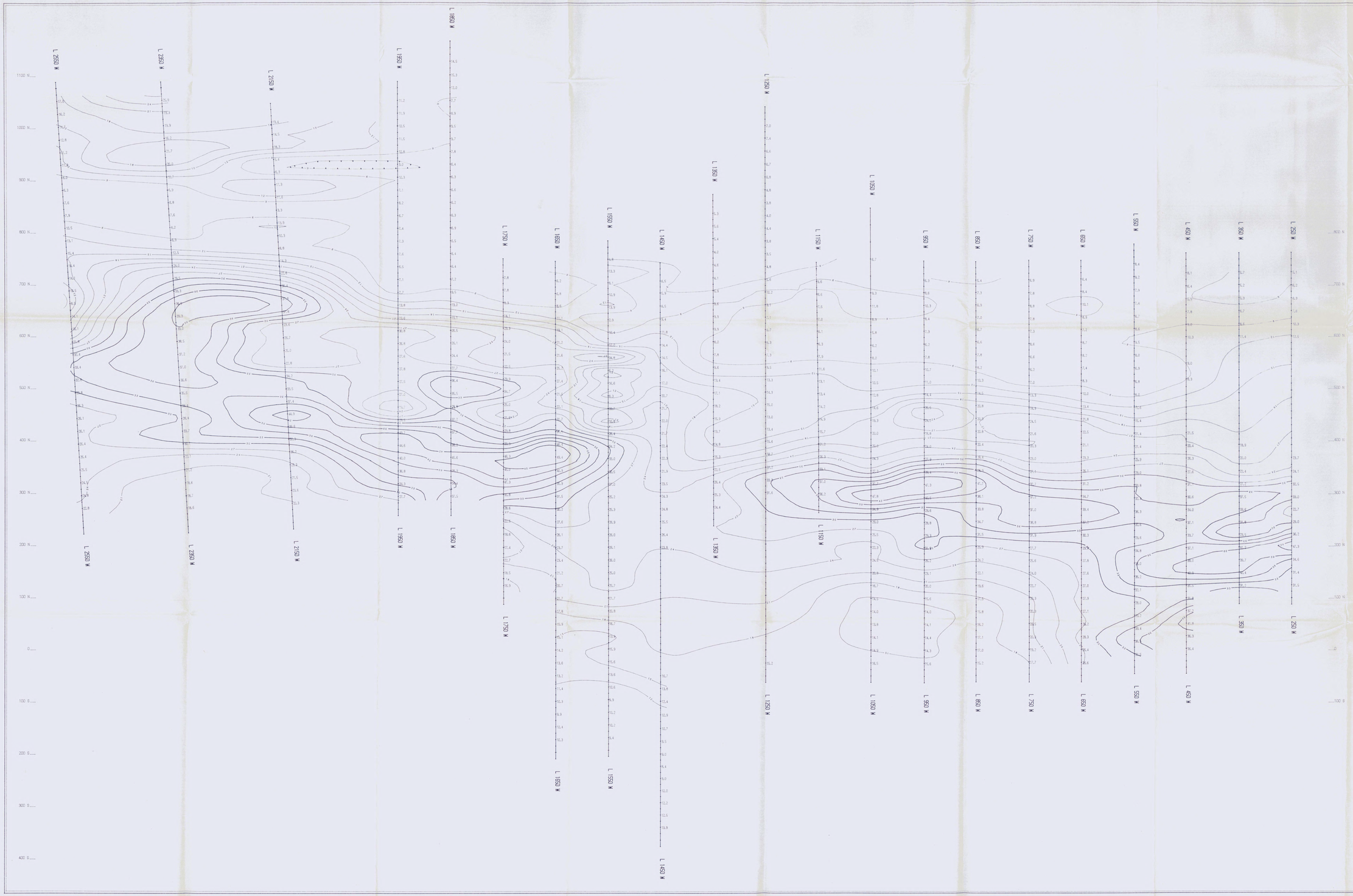
083013

TOTAL ENERGOLD CORPORATION

POLE-DIPOLE ARRAY
INDUCED POLARIZATION SURVEY
CONTOURS OF APPARENT CHARGEABILITY
A = 25 MS., N = 4

POW EAST GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

Map No. W-485-13 N.T.S. 105L/14
PETER E. WALCOTT & ASSOC. LTD.



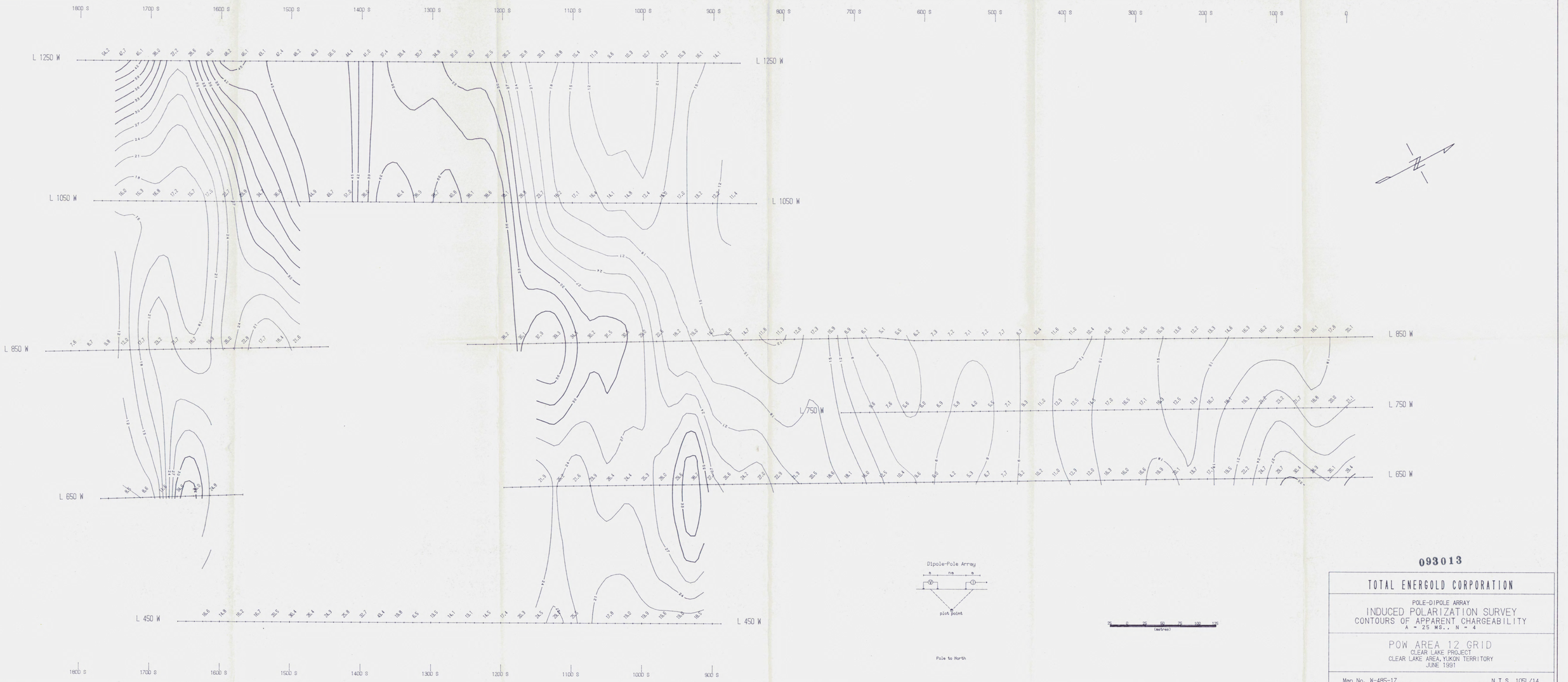
093013

TOTAL ENERGOLD CORPORATION

POLE-DIPOLE ARRAY
INDUCED POLARIZATION SURVEY
CONTOURS OF APPARENT CHARGEABILITY
A = 25 MS., N = 4

POW WEST GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

Map No. W-485-15 N.T.S. 105L/14
PETER E. WALCOTT & ASSOC. LTD.



093013

TOTAL ENERGOLD CORPORATION

POLE-DIPOLE ARRAY

INDUCED POLARIZATION SURVEY
CONTOURS OF APPARENT CHARGEABILITY

A = 25 MS., N = 4

POW AREA 12 GRID

CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

Map No. W-485-17 N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.

4500 N 4600 N 4700 N 4800 N 4900 N 5000 N 5100 N 5200 N 5300 N

L 9000 W

L 8800 W

L 8700 W

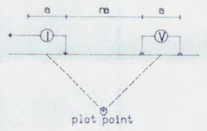
L 8500 W

L 8400 W

L 8200 W



Pole-Dipole Array



Pole to South

25 0 25 50 75 100 125
(metres)

093 13

TOTAL ENERGOLD CORPORATION

POLE-DIPOLE ARRAY

INDUCED POLARIZATION SURVEY
CONTOURS OF APPARENT CHARGEABILITY
A - 25 MS., N - 3

POW AREA 1 GRID
CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

Map No. W-485-19 N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.

900 S | 800 S | 700 S | 600 S | 500 S | 400 S | 300 S | 200 S | 100 S | 0 | 100 N | 200 N

L 4000 W

L 3800 W

L 3600 W

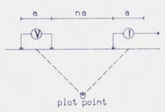
L 3400 W

L 3200 W

L 3000 W



Dipole-Pole Array



Pole to North

25 0 25 50 75 100 125
(metres)

093013

TOTAL ENERGOLD CORPORATION

DIPOLE-POLE ARRAY

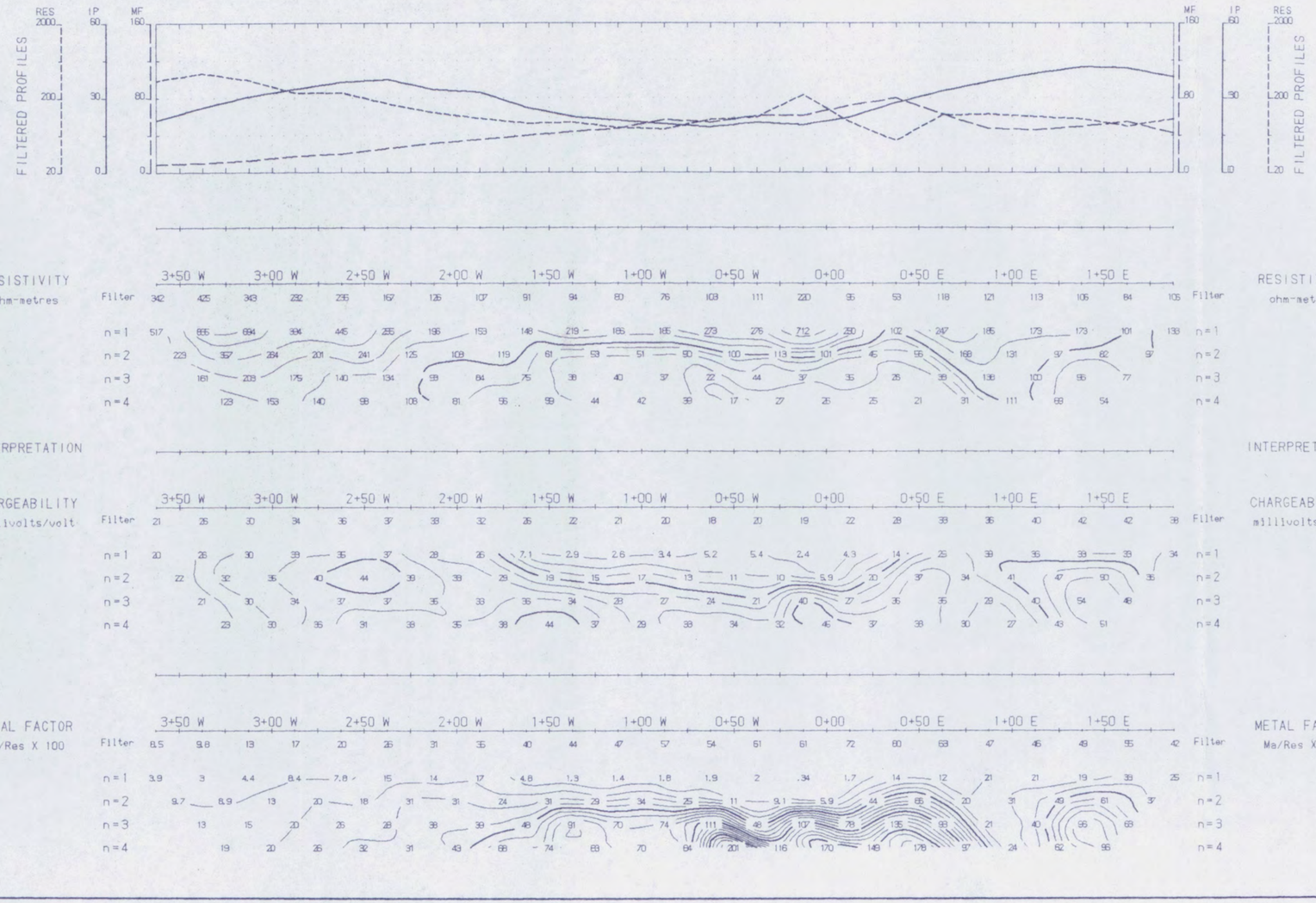
INDUCED POLARIZATION SURVEY
CONTOURS OF APPARENT CHARGEABILITY
A = 25 MS., N = 4

POW AREA 13 GRID

CLEAR LAKE PROJECT
CLEAR LAKE AREA, YUKON TERRITORY
JUNE 1991

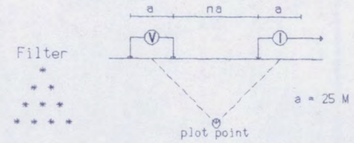
Map No. W-485-21 N.T.S. 105L/14

PETER E. WALCOTT & ASSOC. LTD.



Line 200 S

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

Well defined, strong increase in polarization with or without marked decrease in resistivity.

Fairly well defined moderate increase in polarization.

Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

25 0 25 50 75 100 125
(metres)

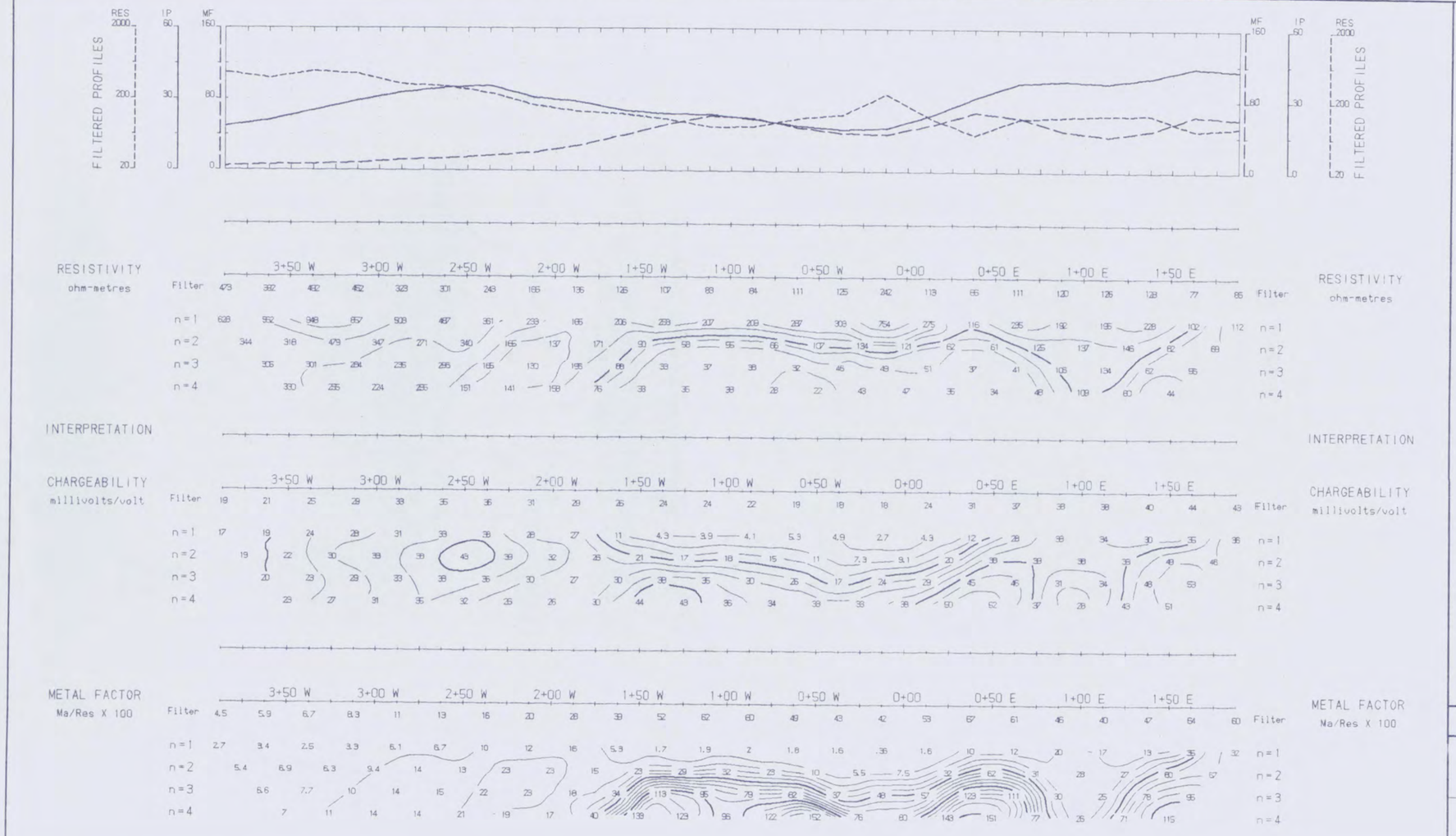
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
SNAFU GRID
CLEAR LAKE PROJECT, Y.T.

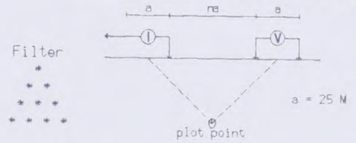
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 200 S

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

Well defined, strong increase in polarization with or without marked decrease in resistivity.

Fairly well defined moderate increase in polarization.

Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

25 0 25 50 75 100 125 (metres)

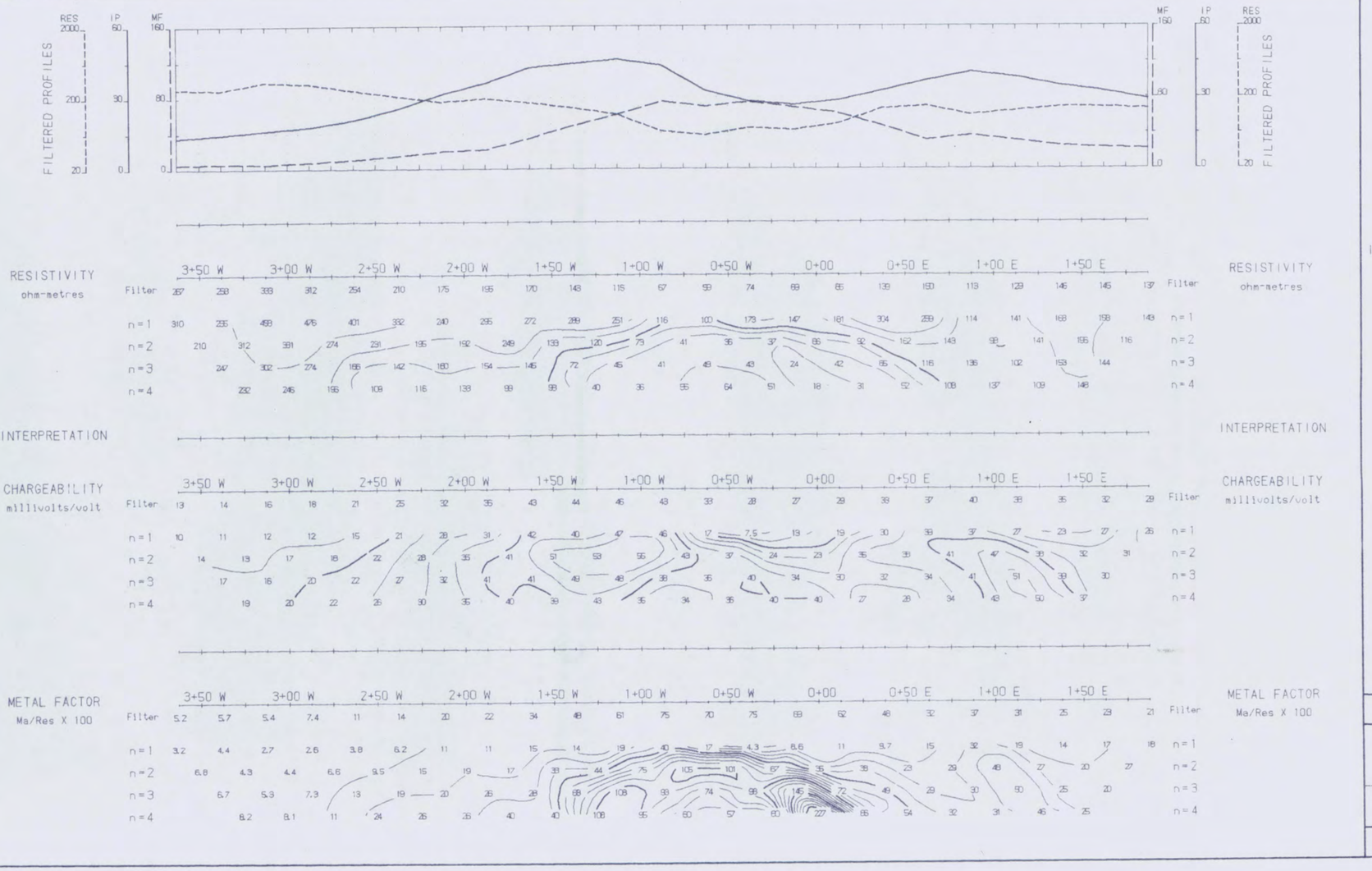
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
SNAFU GRID
CLEAR LAKE PROJECT, Y.T.

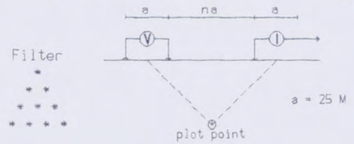
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 300 S

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

Well defined, strong increase in polarization with or without marked decrease in resistivity.

Fairly well defined moderate increase in polarization.

Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

25 0 25 50 75 100 125
(metres)

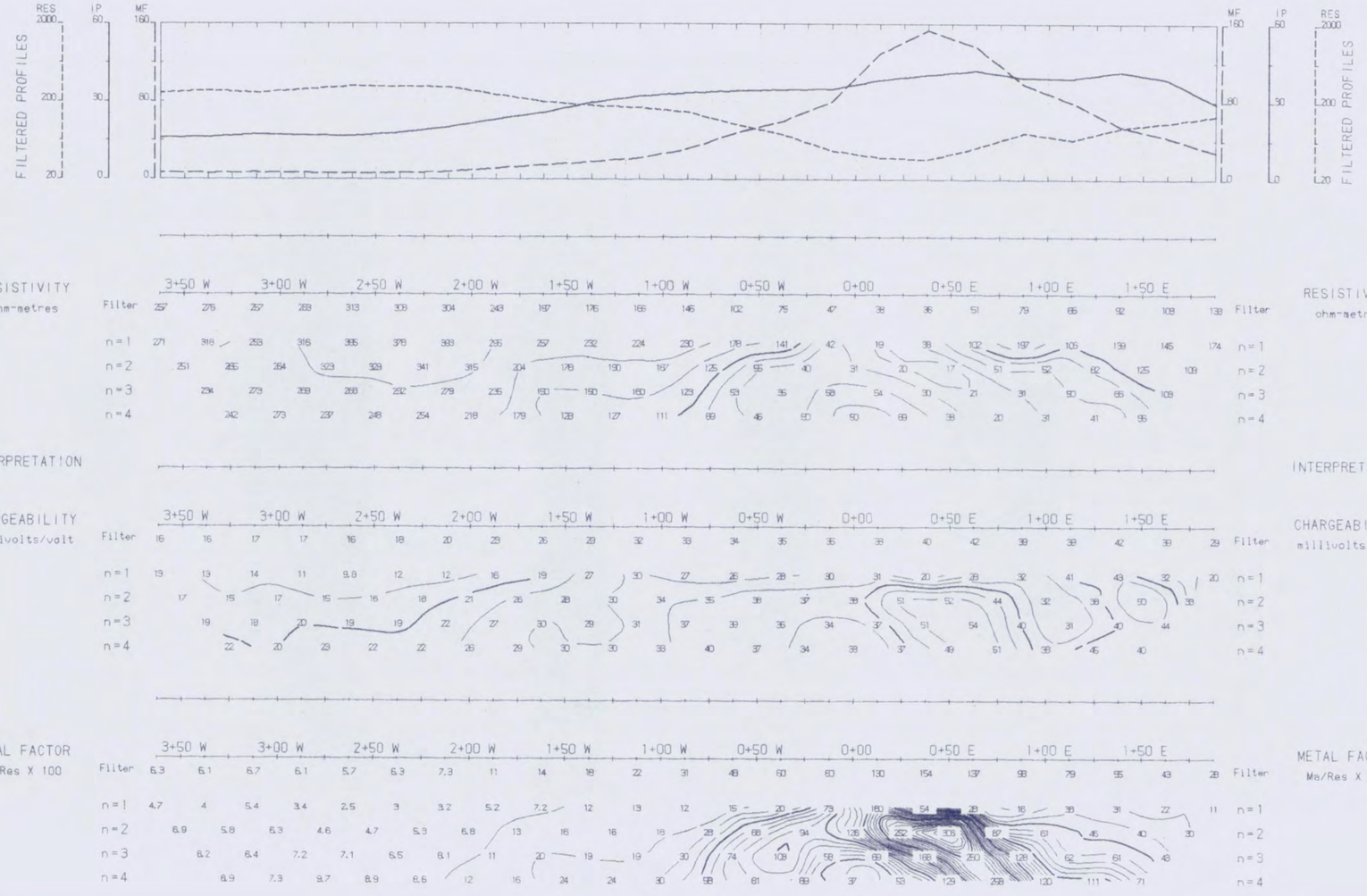
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
SNAFU GRID
CLEAR LAKE PROJECT, Y.T.

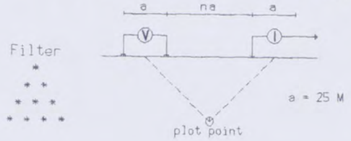
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 400 S

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

Well defined, strong increase in polarization with or without marked decrease in resistivity.

Fairly well defined moderate increase in polarization.

Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

25 0 25 50 75 100 125
(metres)

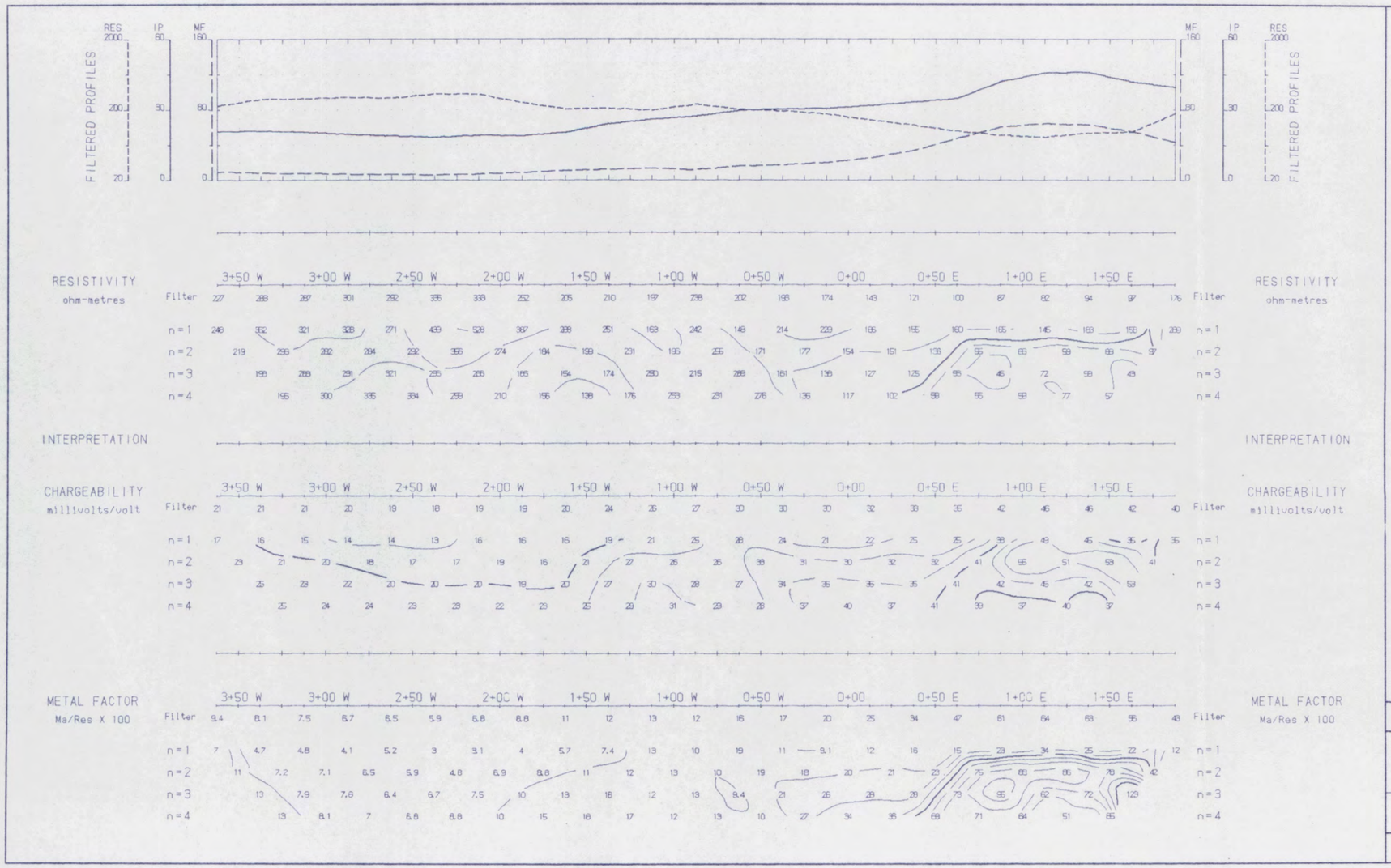
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
SNAFU GRID
CLEAR LAKE PROJECT, Y.T.

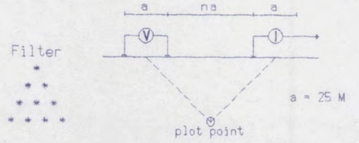
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 500 S

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,....

INTERPRETATION

Well defined, strong increase in polarization with or without marked decrease in resistivity.

Fairly well defined moderate increase in polarization.

Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

25 0 25 50 75 100 125
(metres)

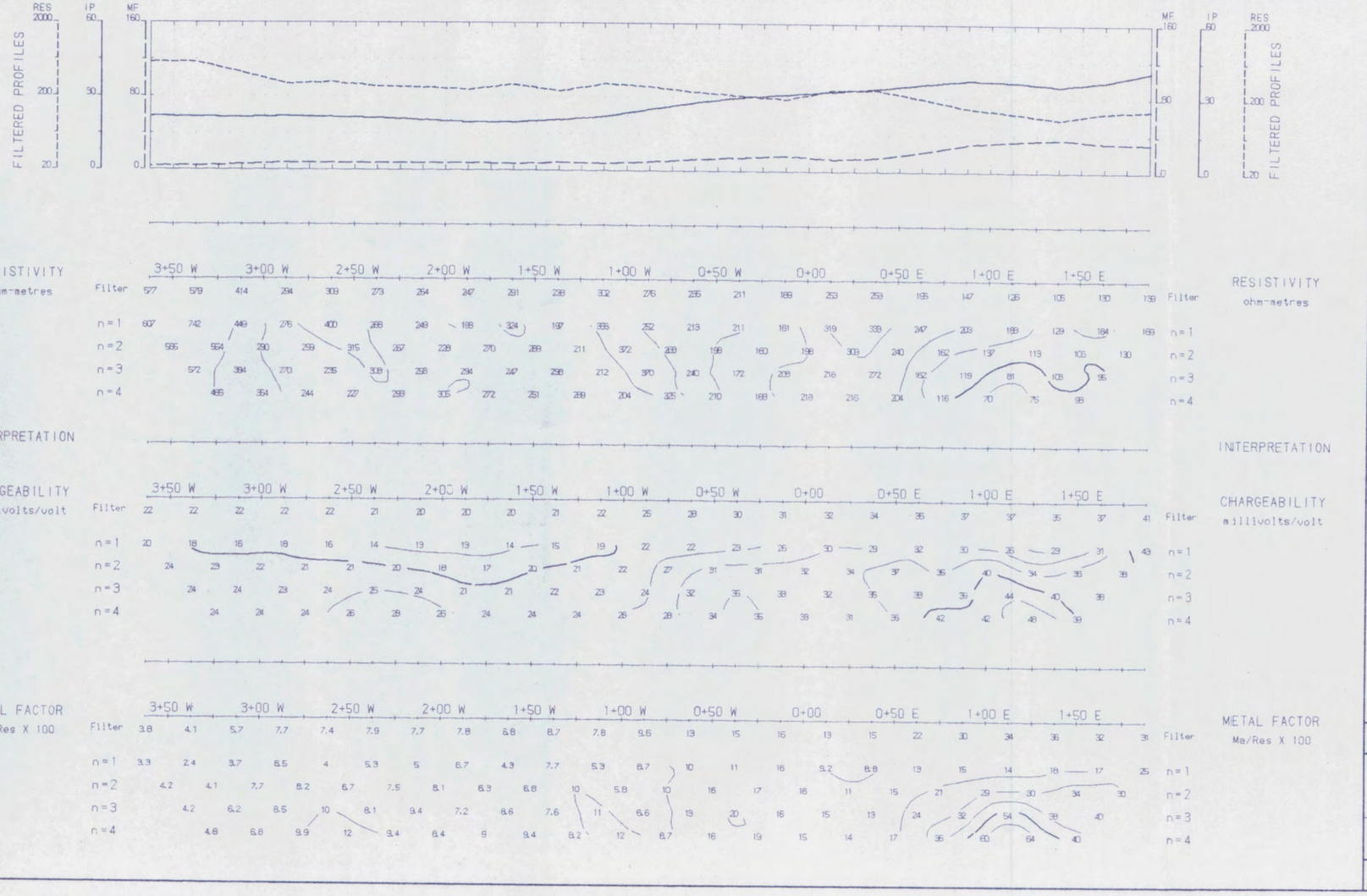
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
SNAFU GRID
CLEAR LAKE PROJECT, Y.T.

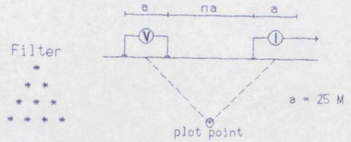
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 600 S

Dipole-Pole Array



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CLEAR LAKE PROJECT, Y.T.

Date: June - July 1991 N.T.S.: 105L/14
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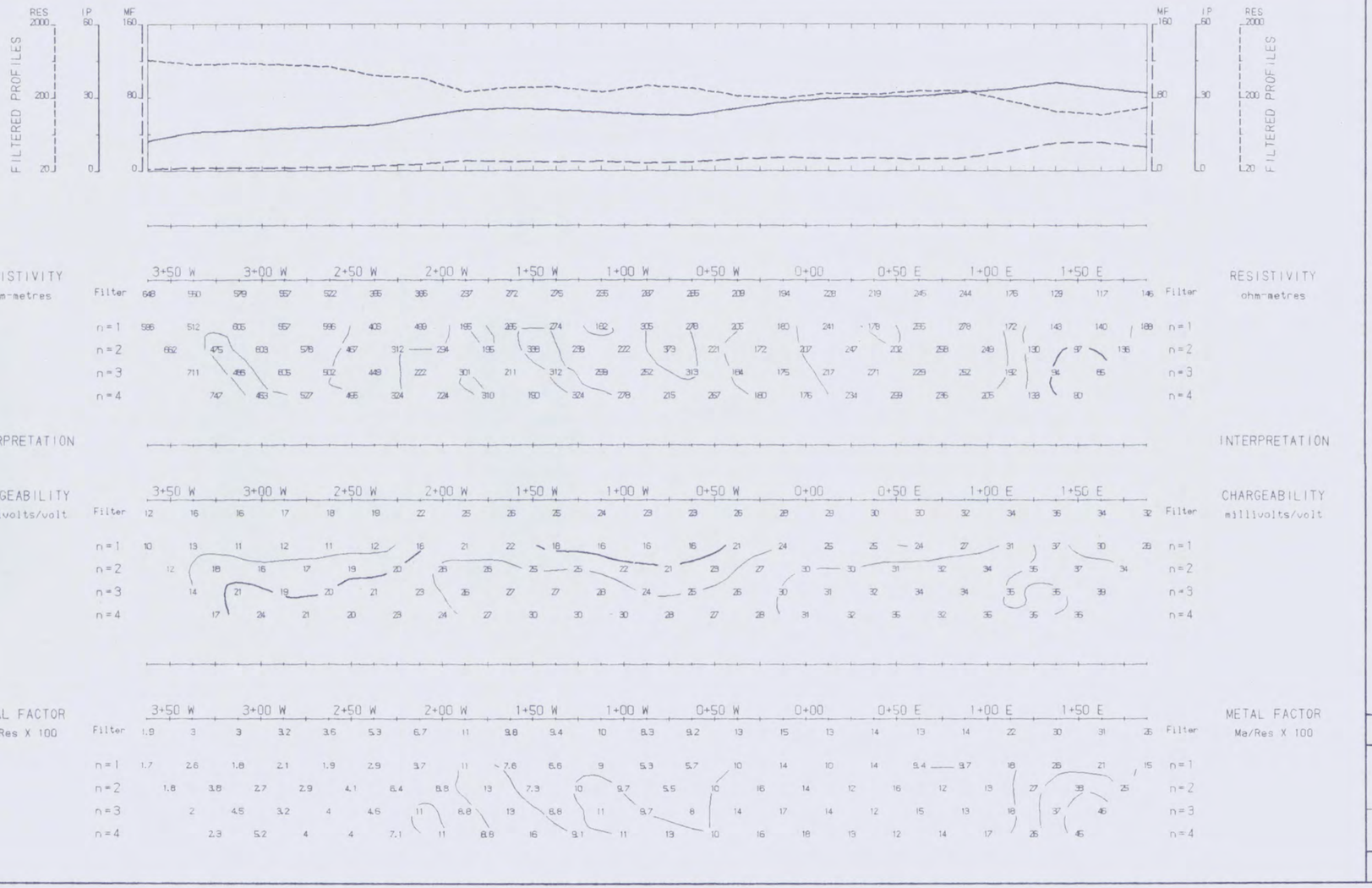
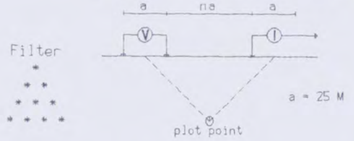


Line 700 S

Dipole-Pole Array



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CLEAR LAKE PROJECT, Y.T.

Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

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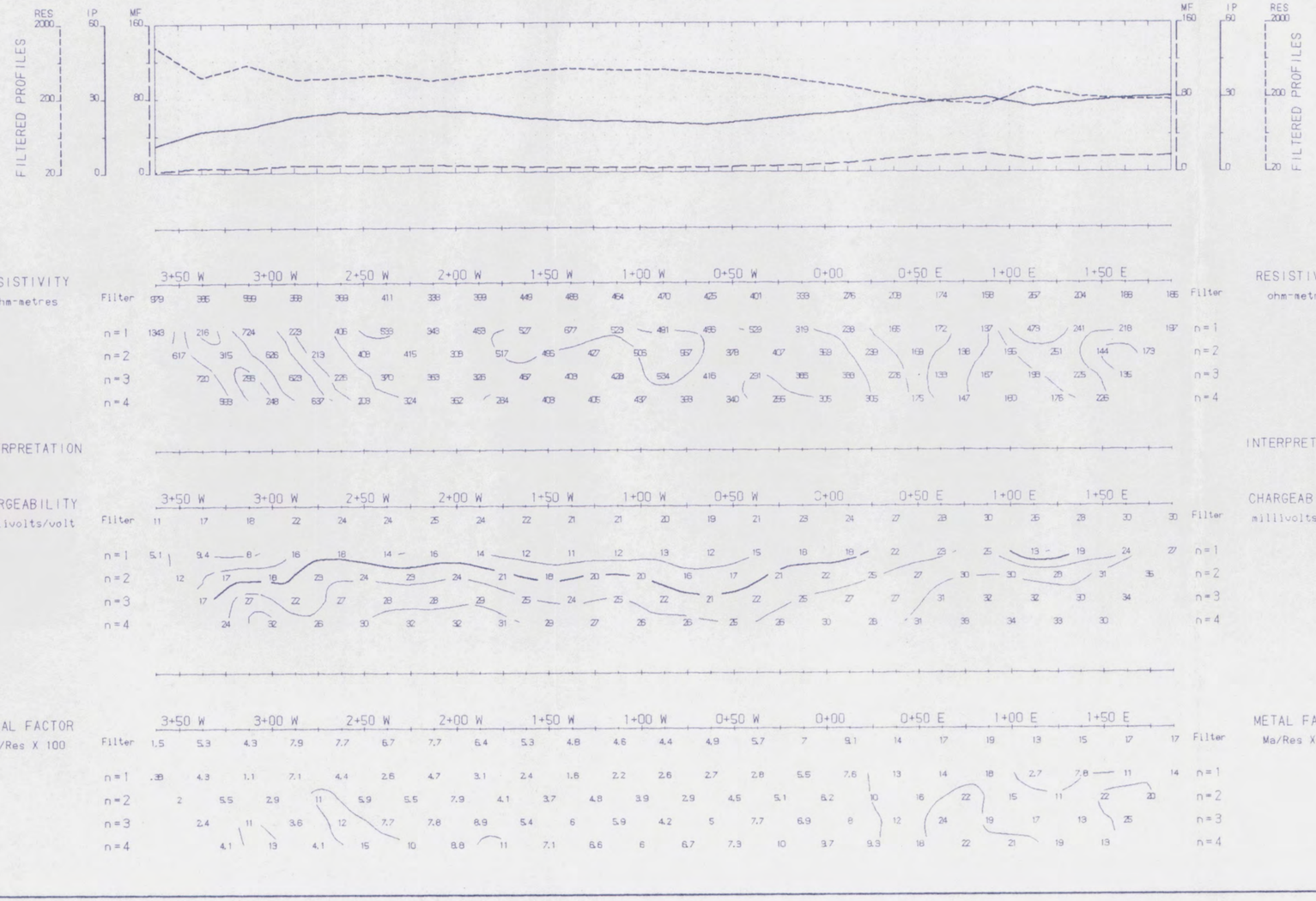
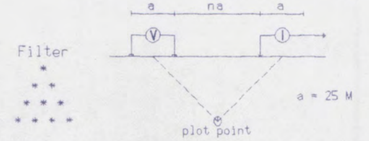


Line 800 S

Dipole-Pole Array



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Date: June - July 1991 N.T.S.: 105L/14
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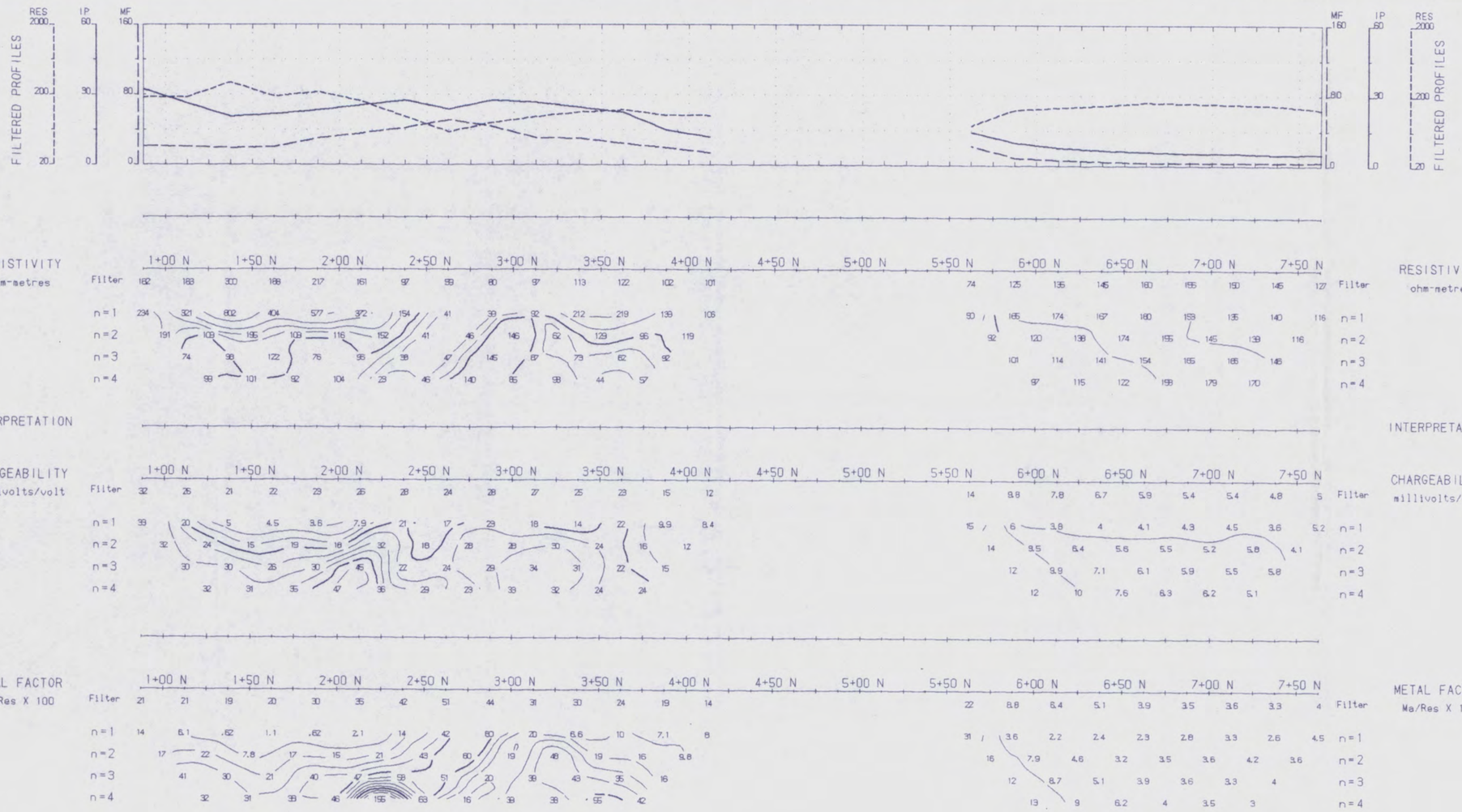
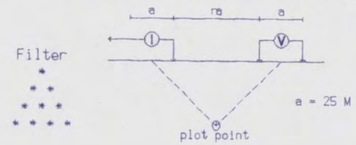


Line 250 W

Pole-Dipole Array



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CLEAR LAKE PROJECT, Y.T.

Date: June - July 1991 N.T.S.: 105L/14
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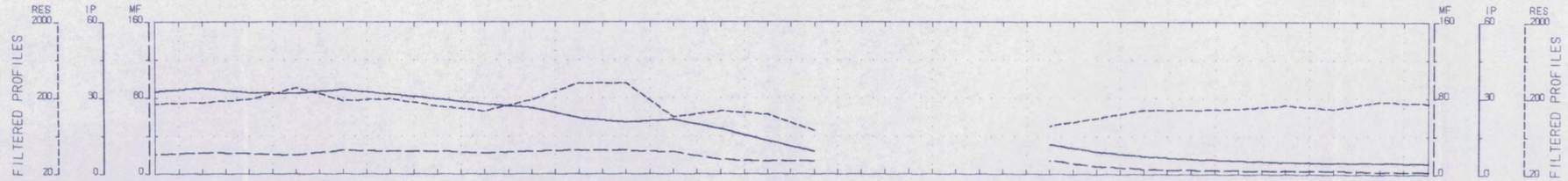
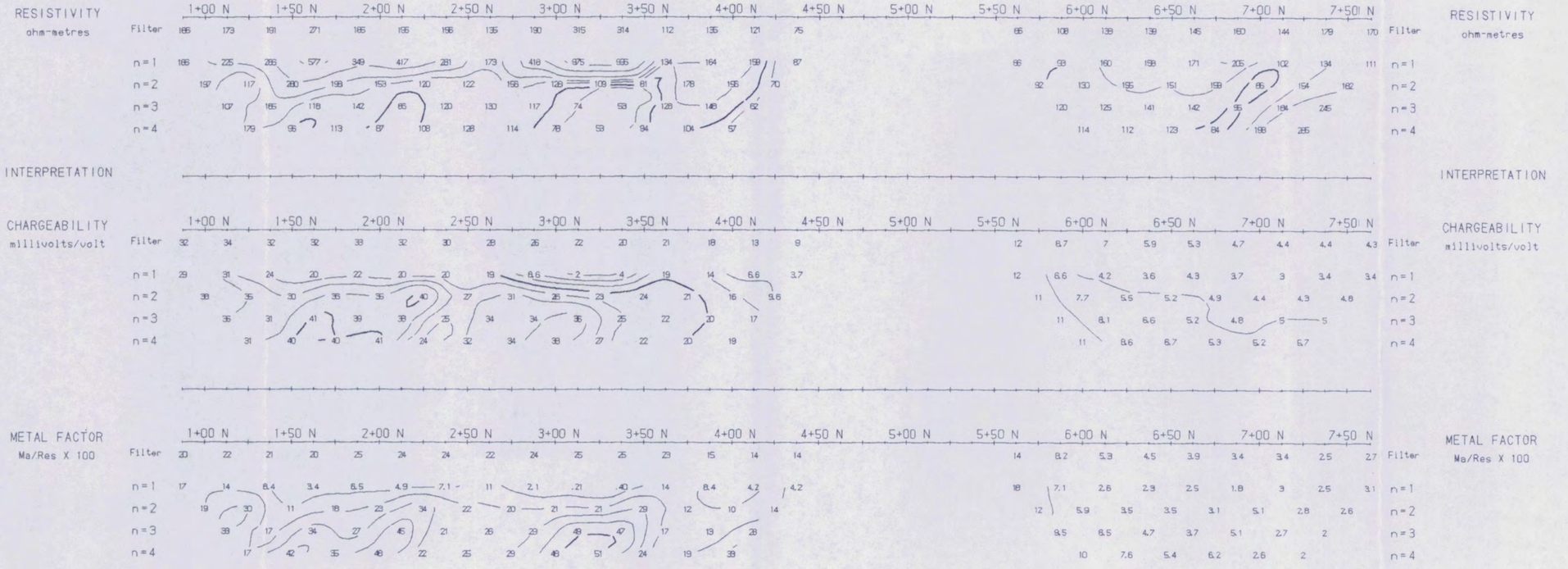
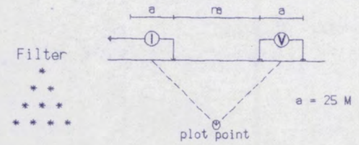




Line 350 W

Pole-Dipole Array



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Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P. J.

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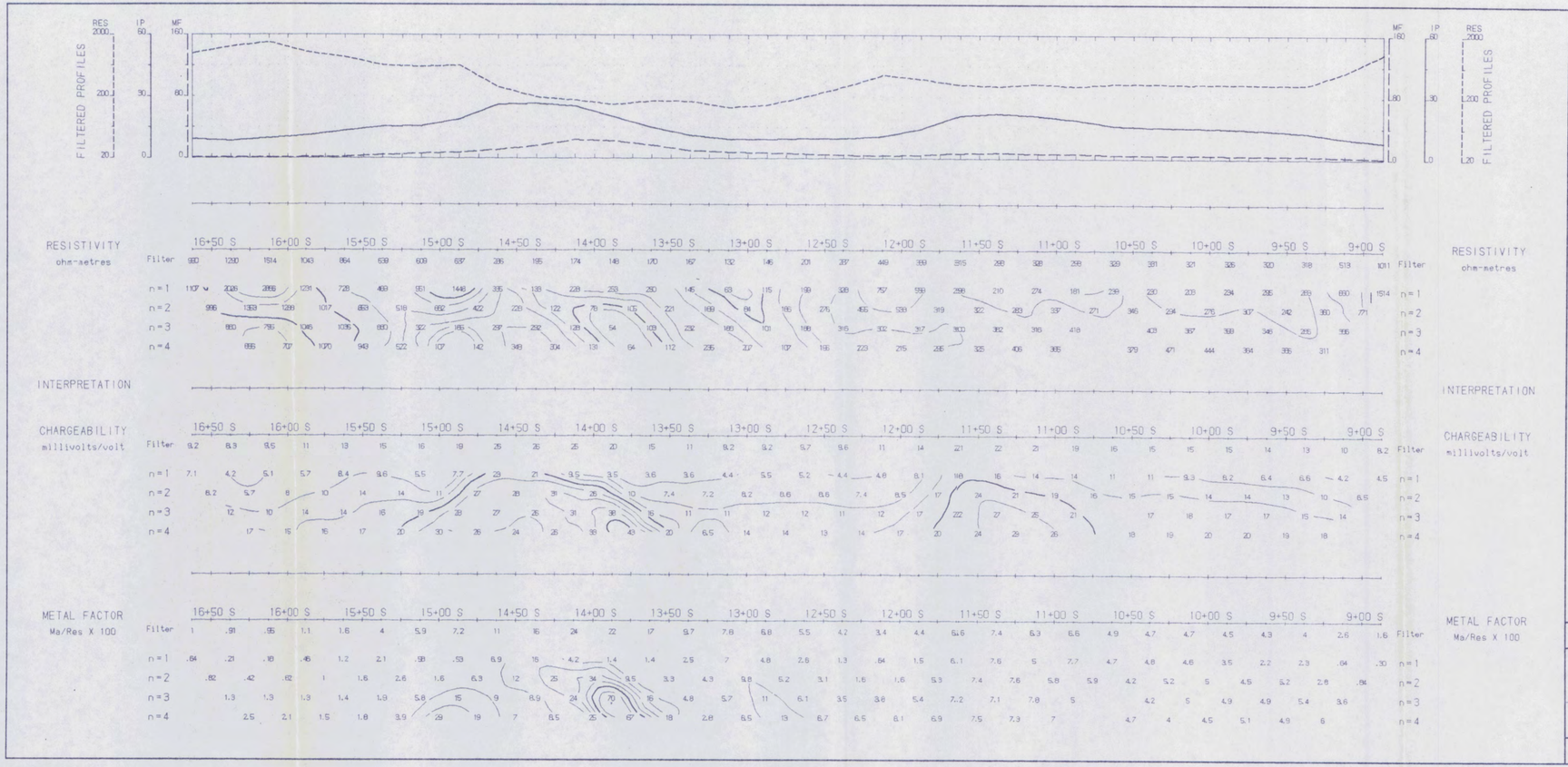
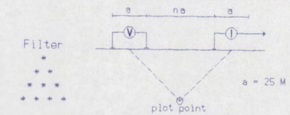


Line 450 W

Dipole-Pole Array



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Date: June - July 1991 N.T.S.: 105L/14
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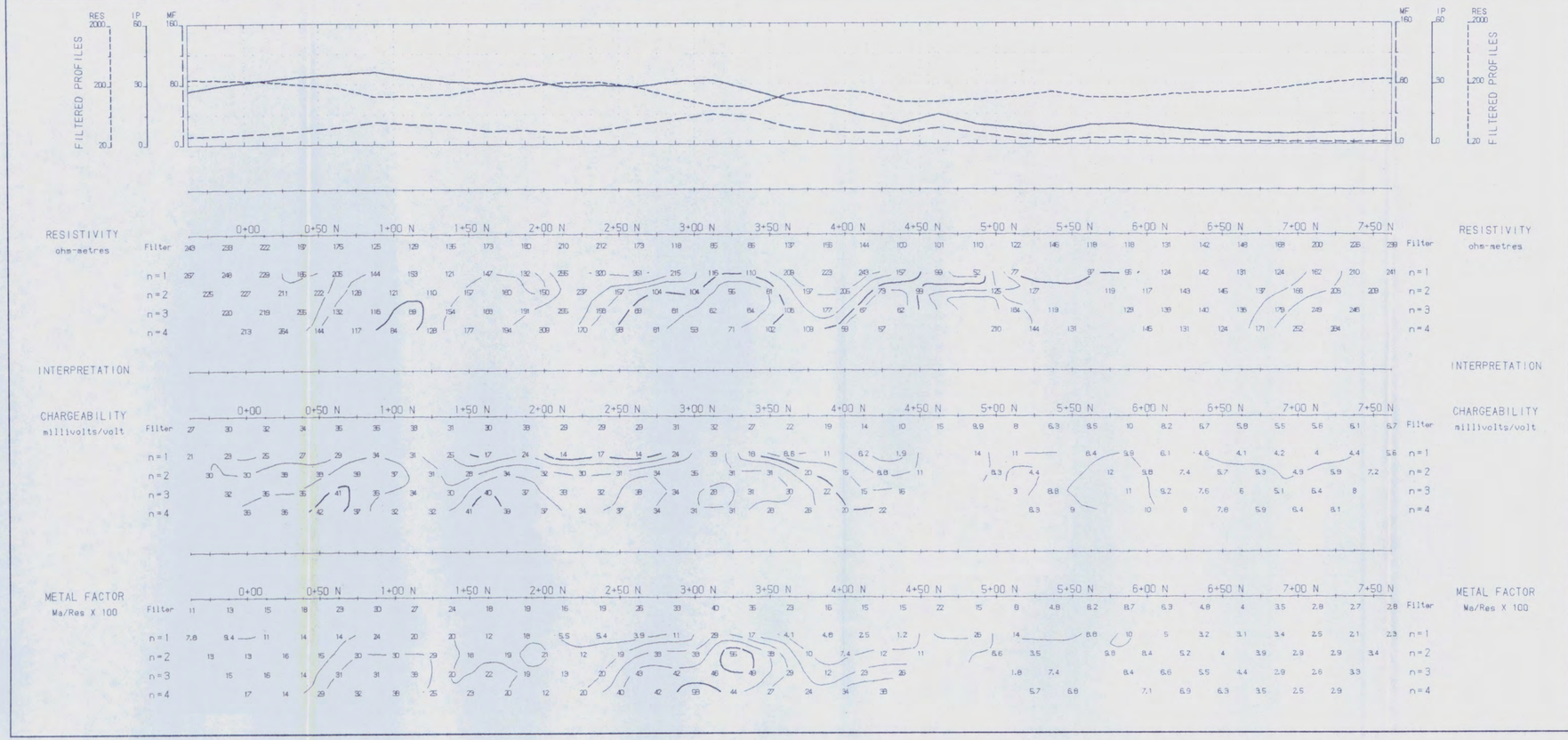
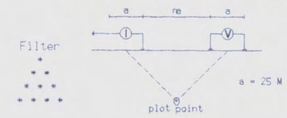


Line 450 W

Pole-Dipole Array



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Date: June - July 1991 N.T.S.: 105L/14
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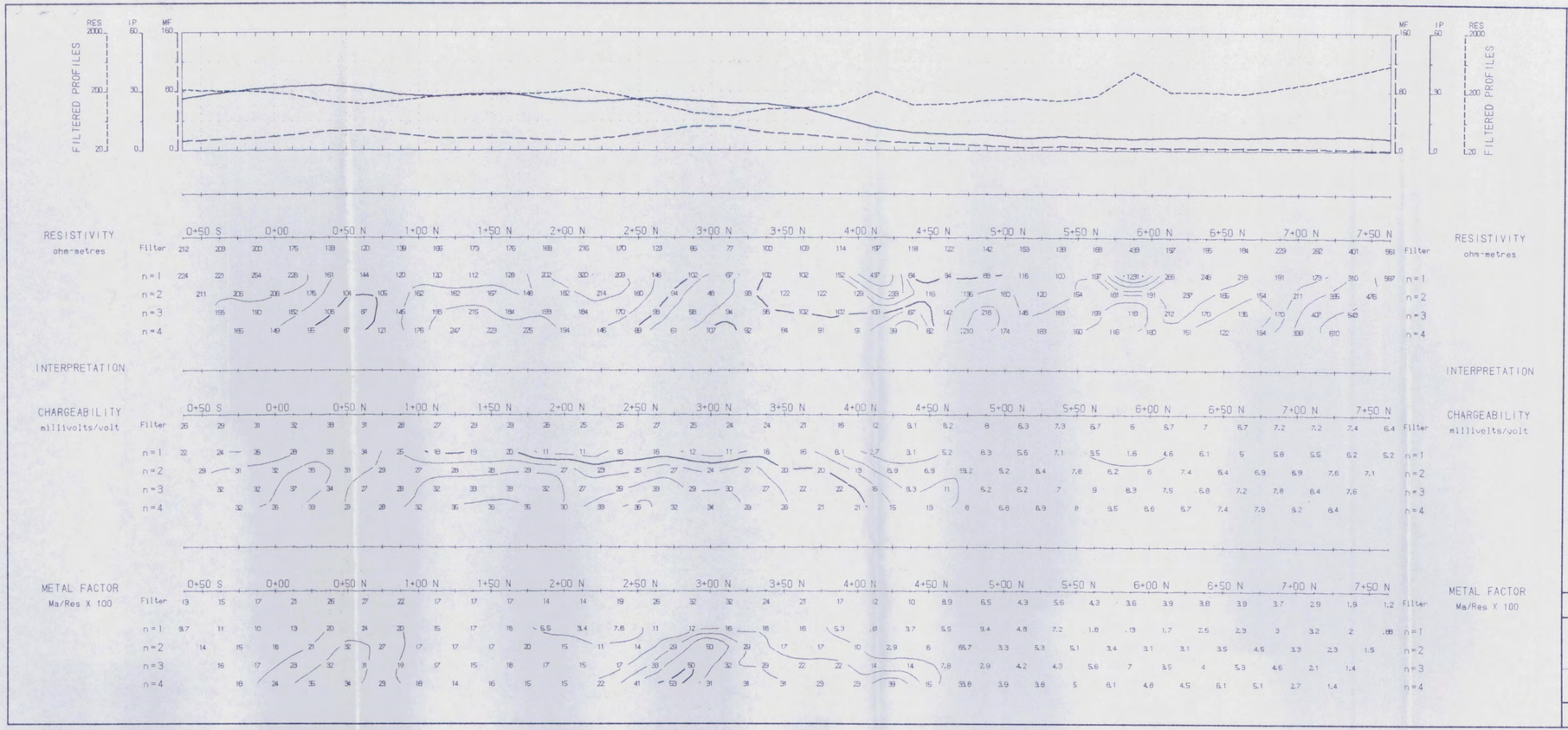
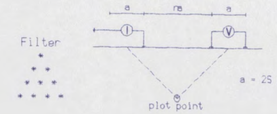


Line 550 W

Pole-Dipole Array



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CLEAR LAKE PROJECT, Y.T.

Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

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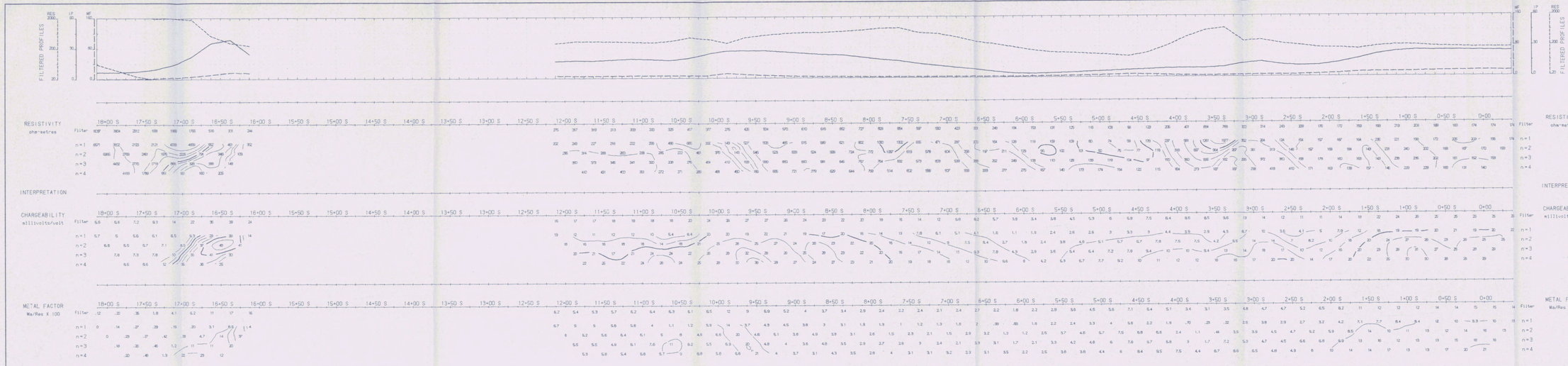
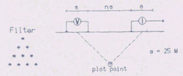


Line 650 W

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
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Date: June - July 1991 N.T.S.: 105L/14
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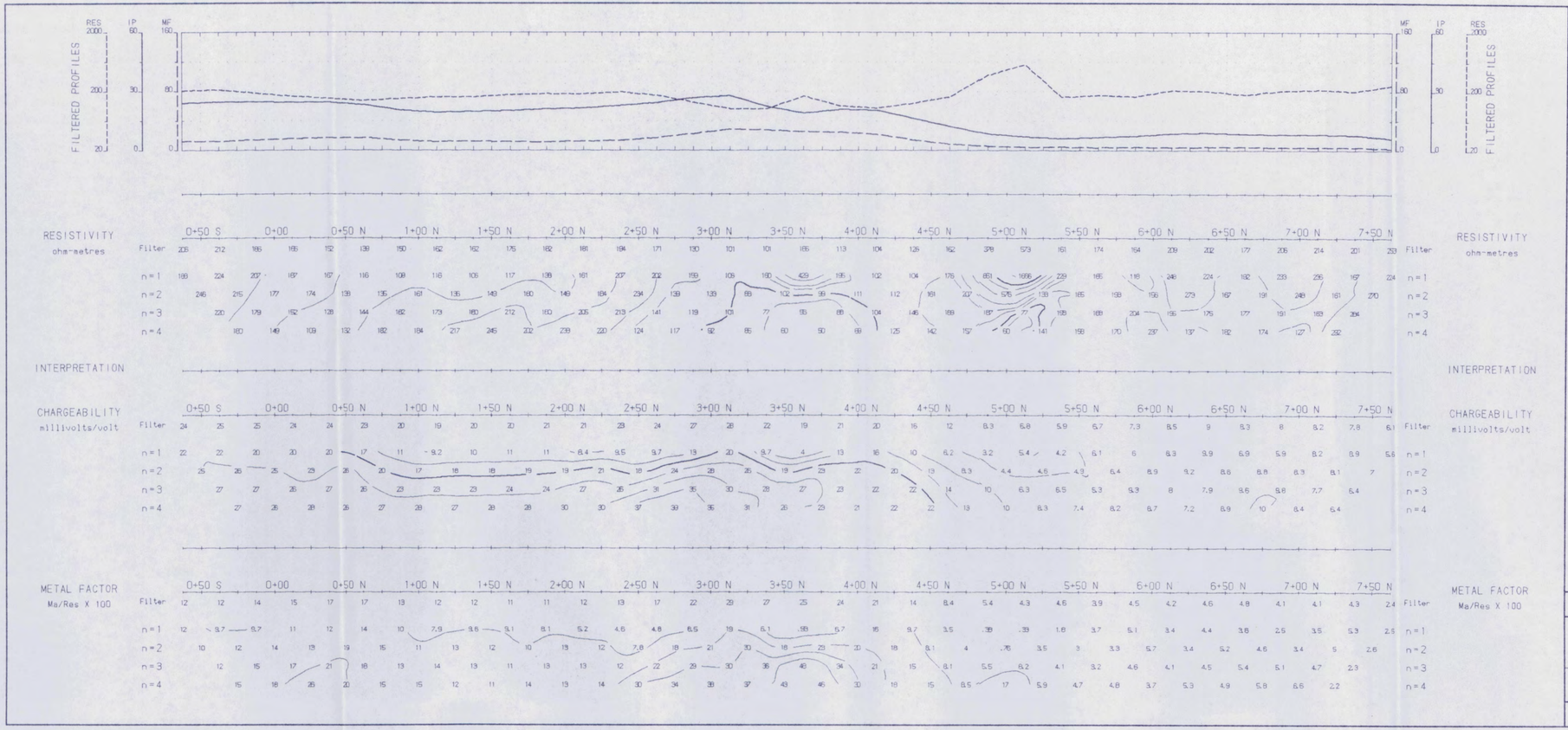
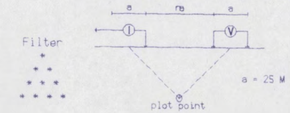


Line 650 W

Pole-Dipole Array



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Date: June - July 1991 N.T.S.: 105L/14
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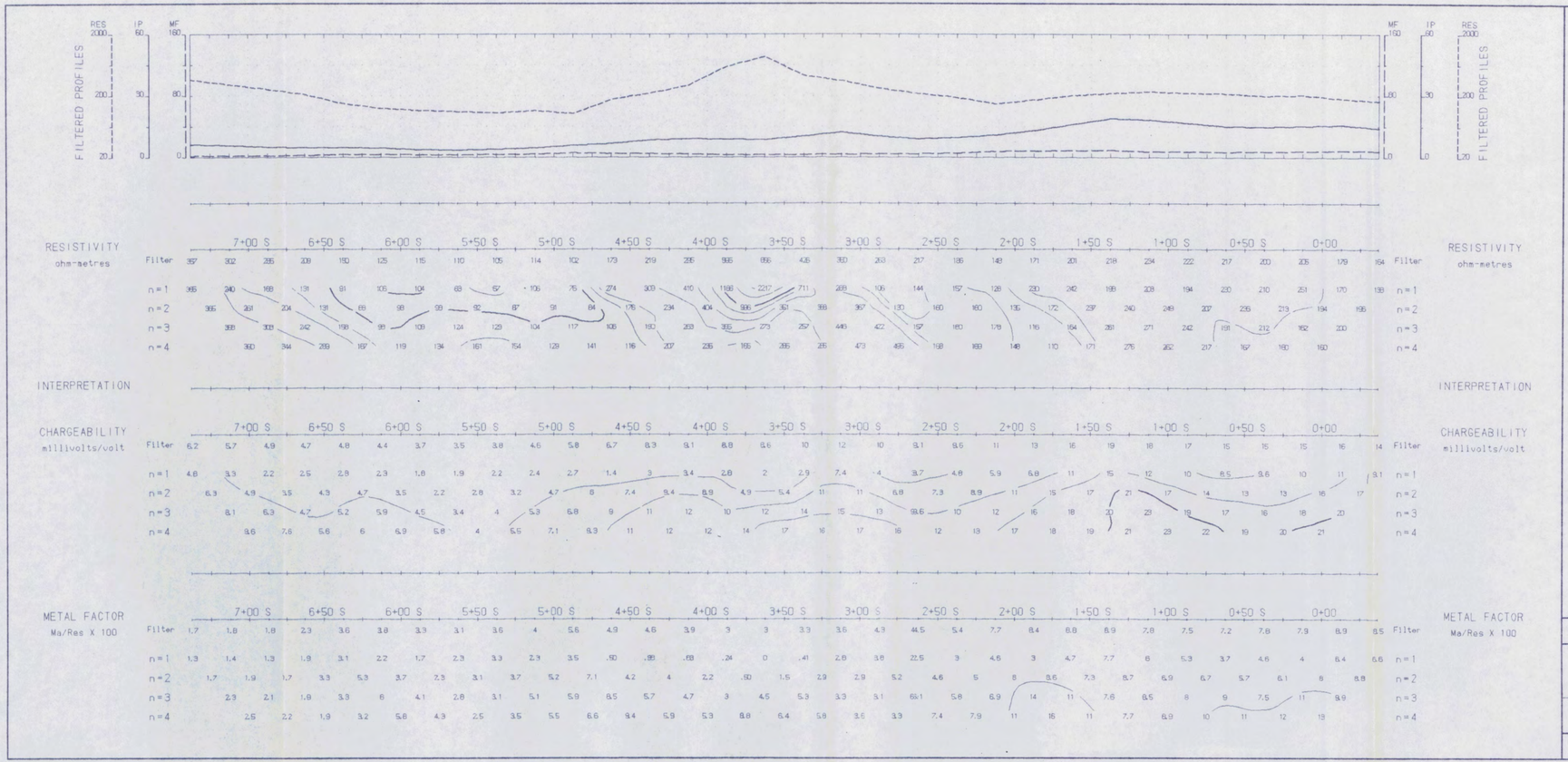
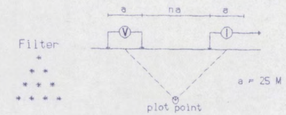


Line 750 W

Dipole-Pole Array



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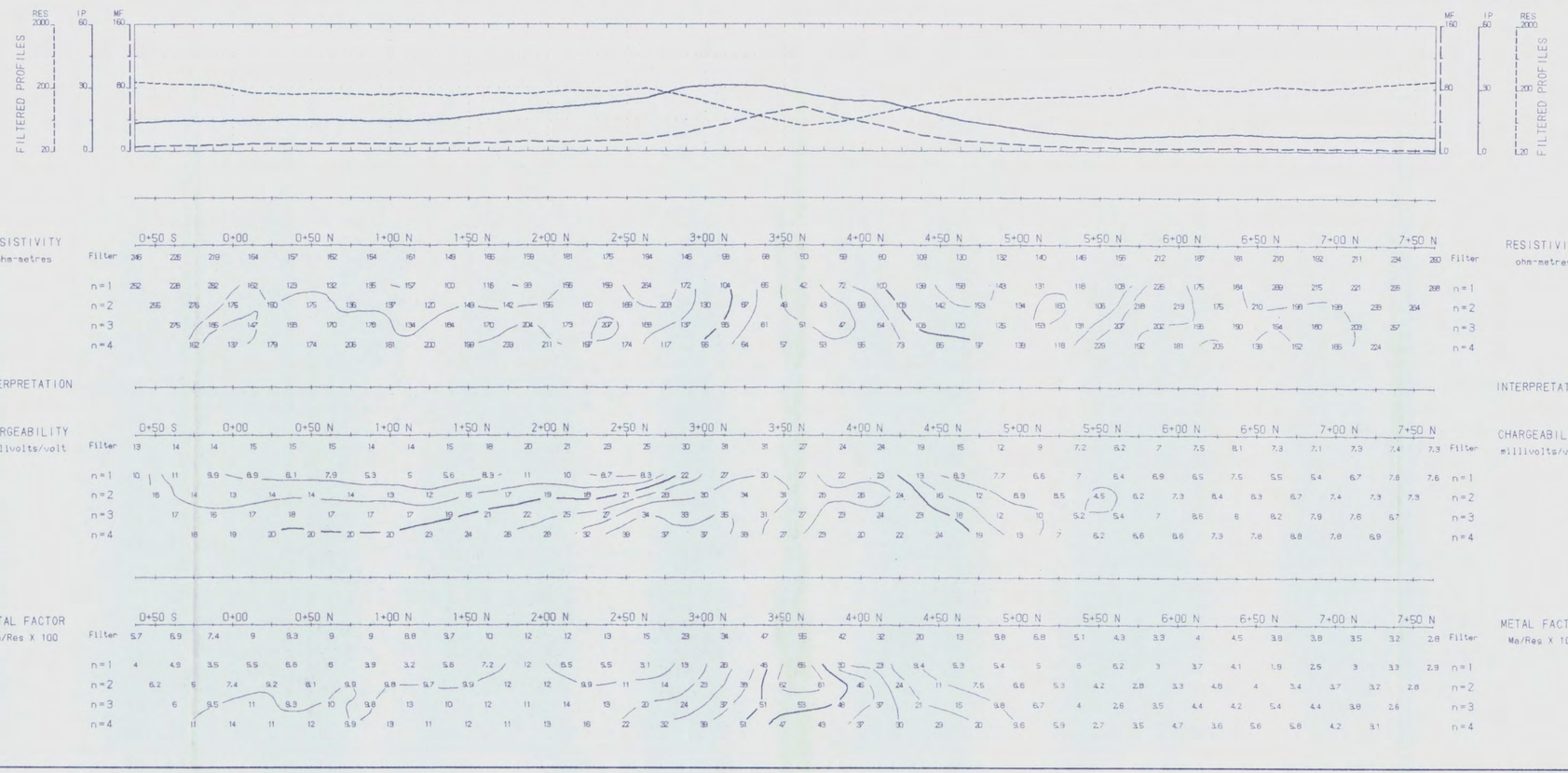
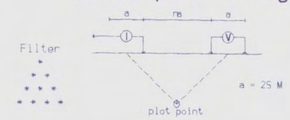


Line 750 W

Pole-Dipole Array



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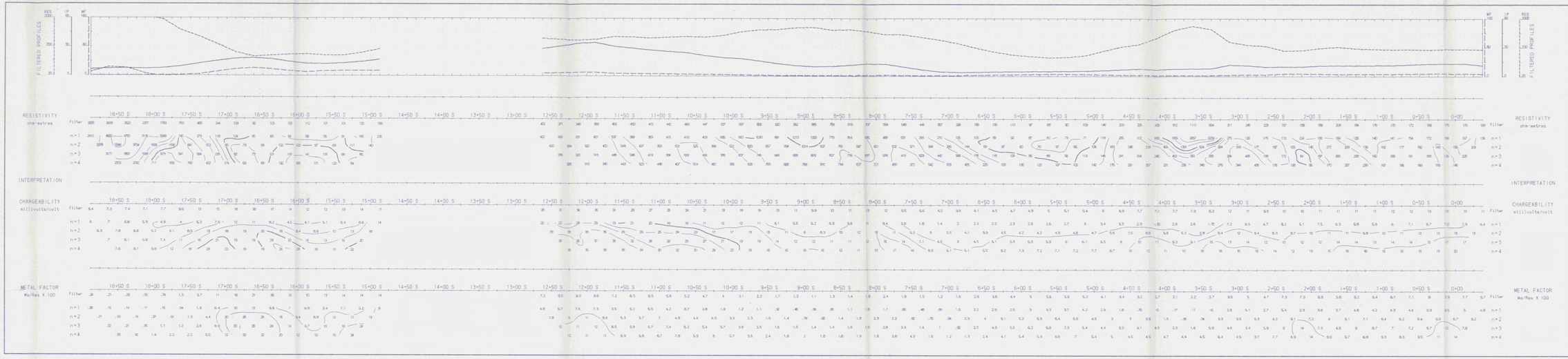
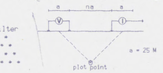


Line 850 W

Dipole-Pole Array



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CLEAR LAKE PROJECT, Y.T.

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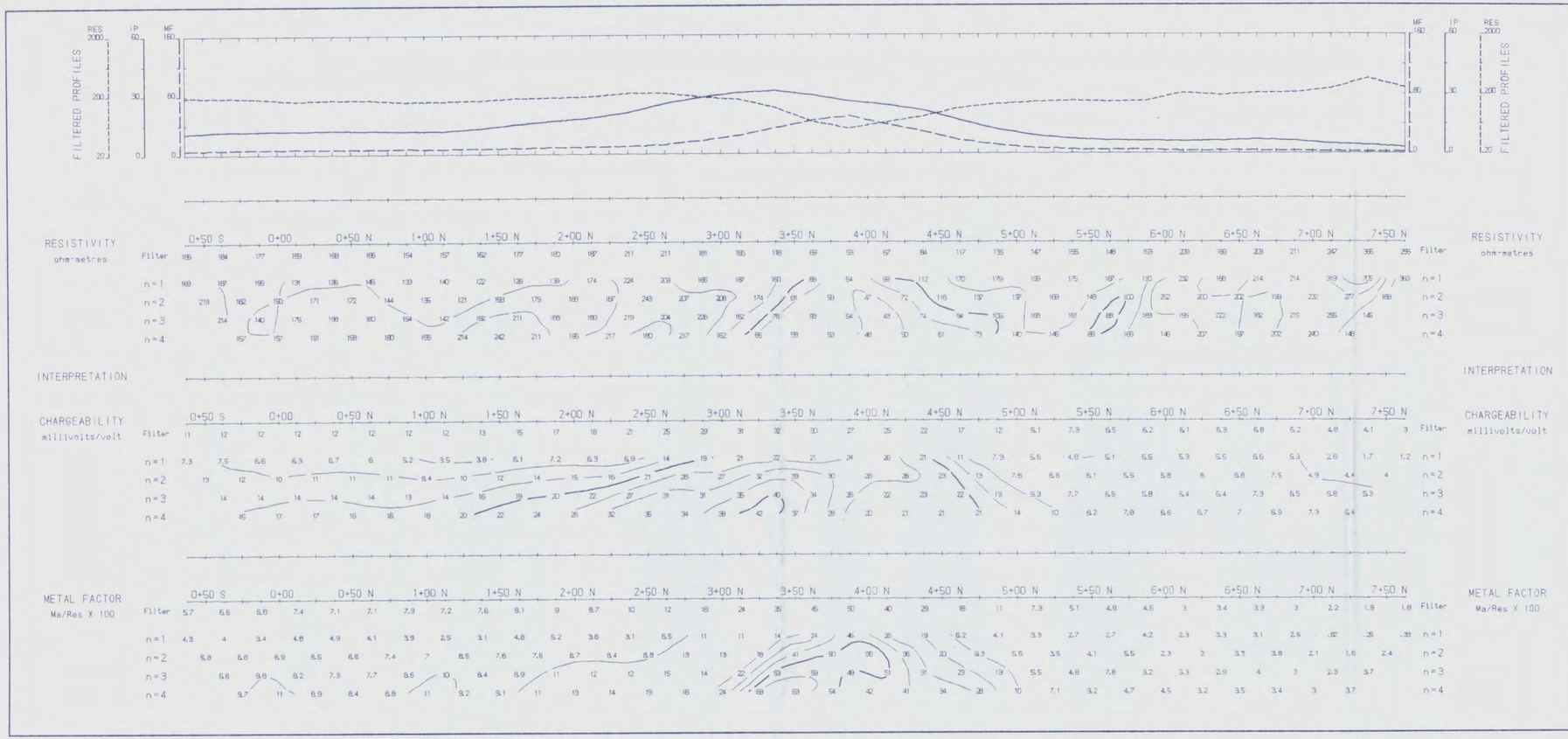
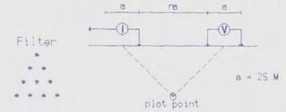


Line 850 W

Pole-Dipole Array



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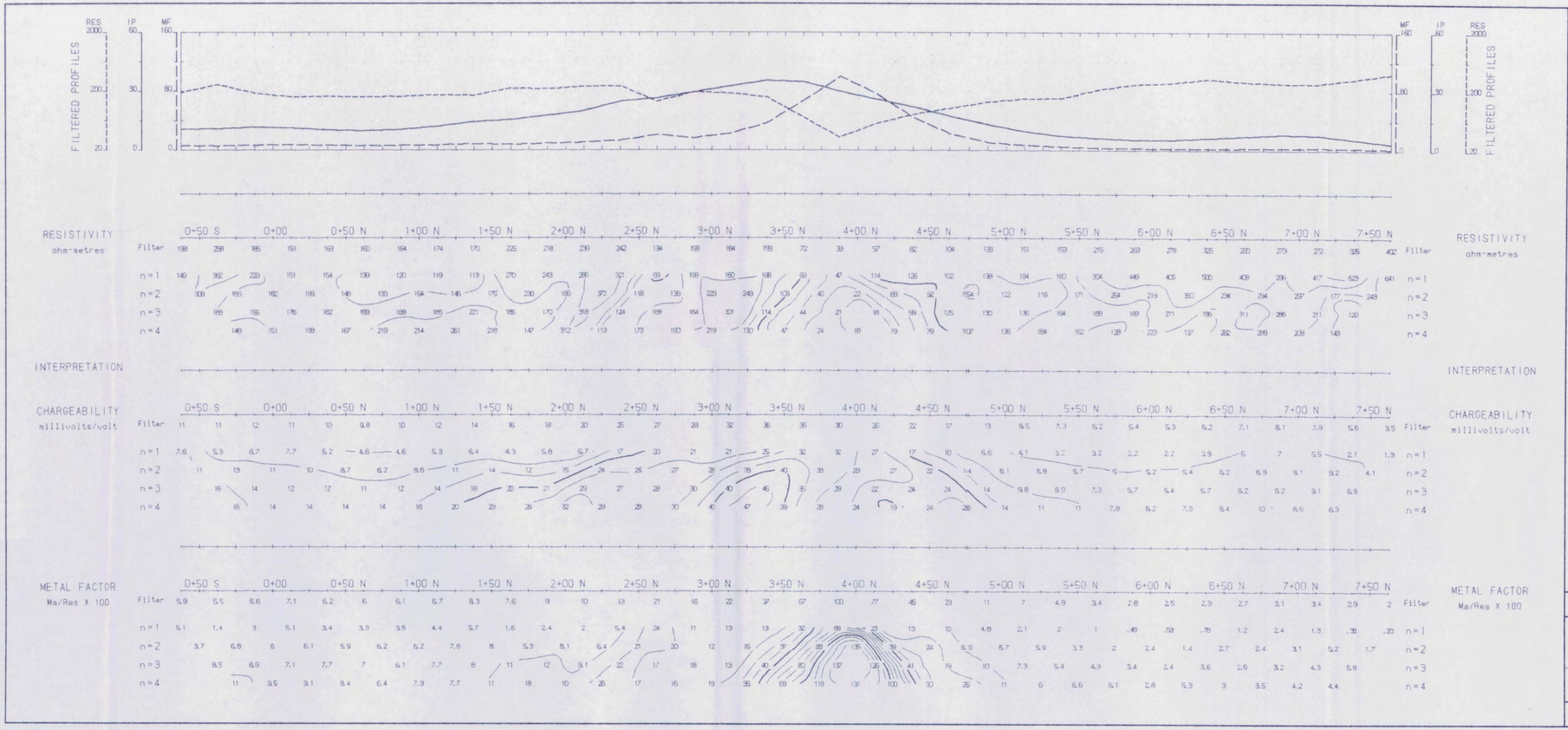
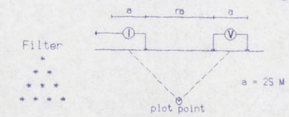


Line 950 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10....

INTERPRETATION

Well defined, strong increase in polarization with or without marked decrease in resistivity.

Fairly well defined moderate increase in polarization.

Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

25 0 25 50 75 100 125
(metres)

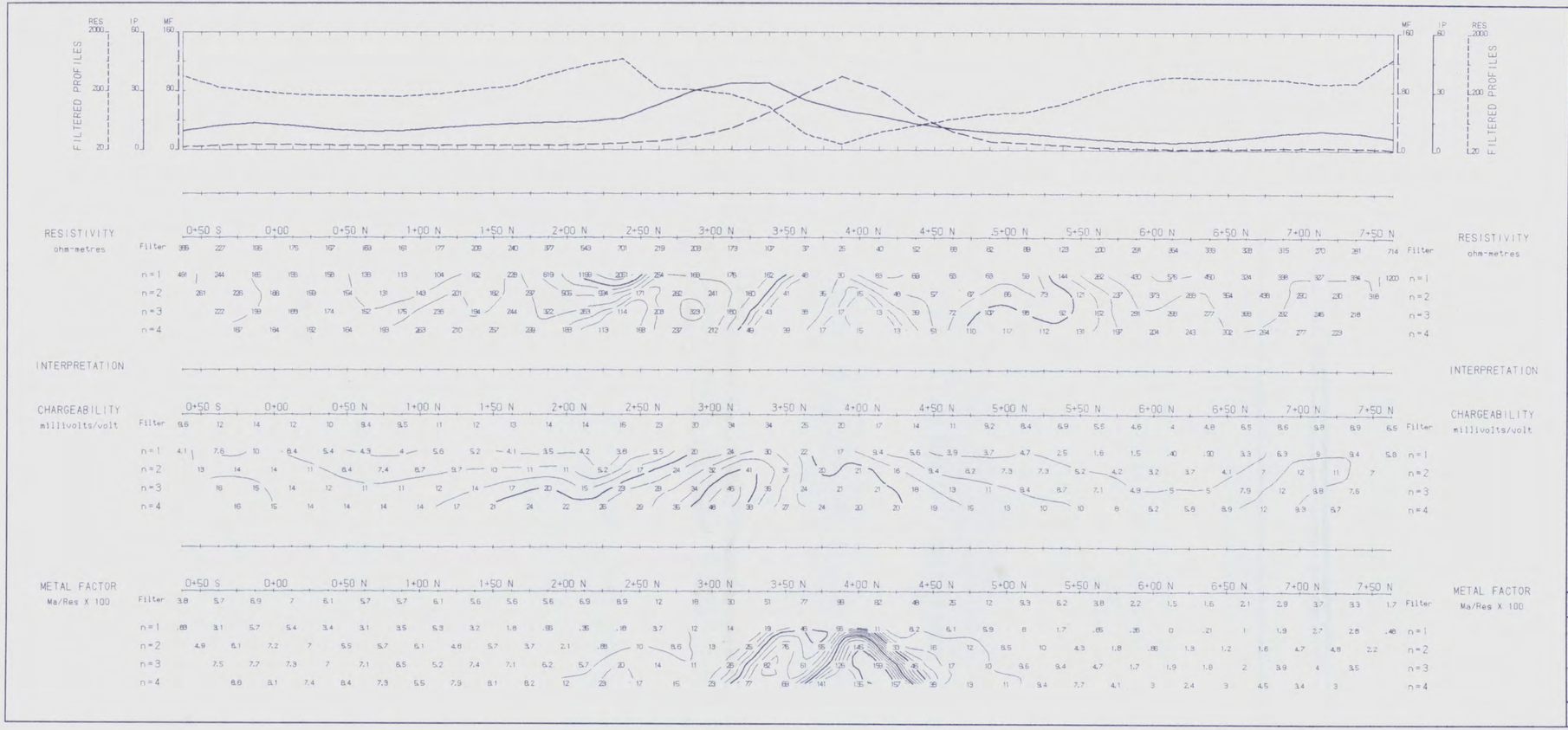
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

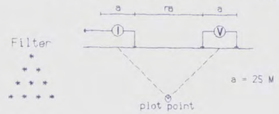
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 1050 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10....

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Resistivity feature.

Scale 1:2000

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(metres)

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CLEAR LAKE PROJECT, Y.T.

Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

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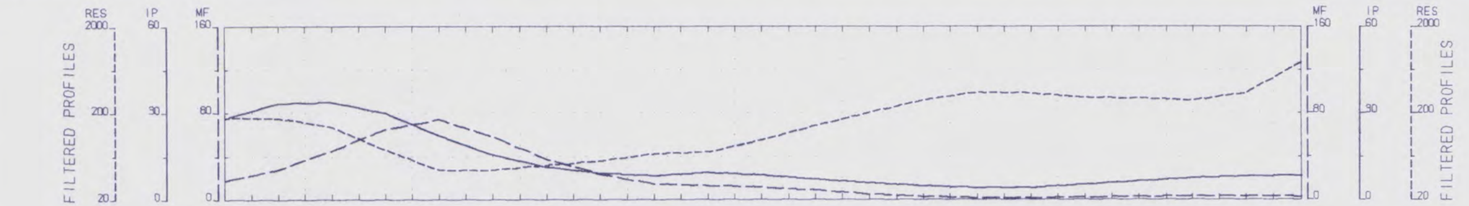
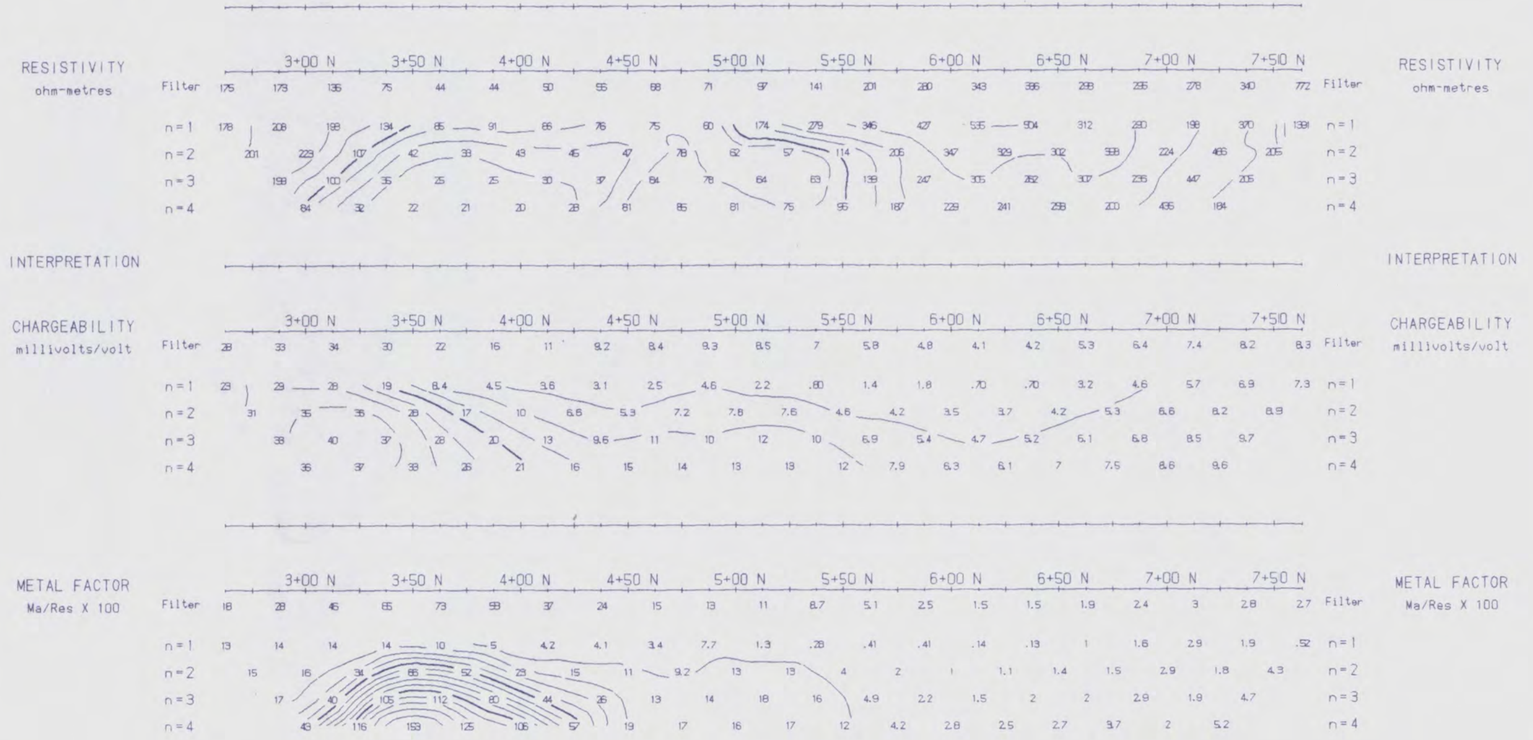
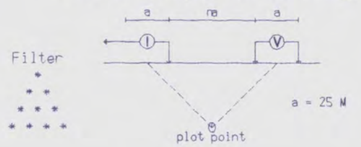




Line 1150 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

Well defined, strong increase in polarization with or without marked decrease in resistivity.

Fairly well defined moderate increase in polarization.

Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

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(metres)

093013

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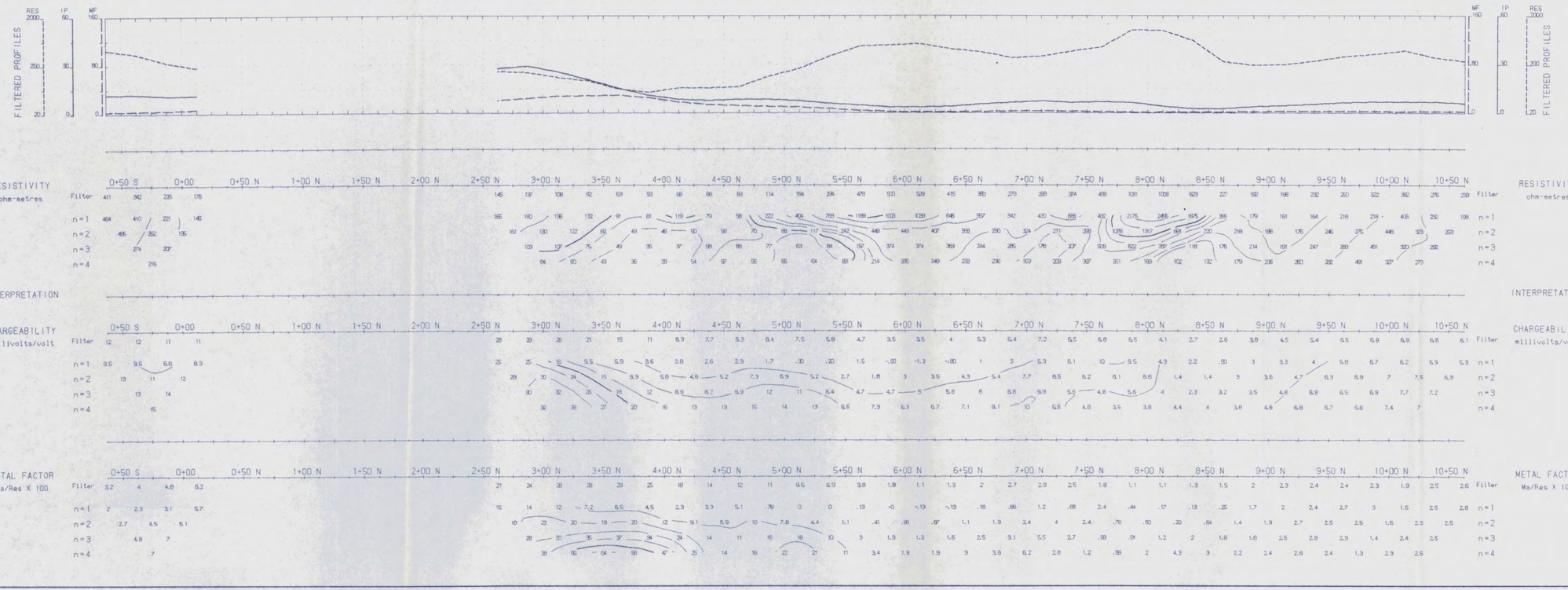
INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

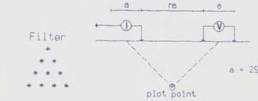
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 1250 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10....

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Poorly defined polarization increase.

Resistivity feature.

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INDUCED POLARIZATION SURVEY
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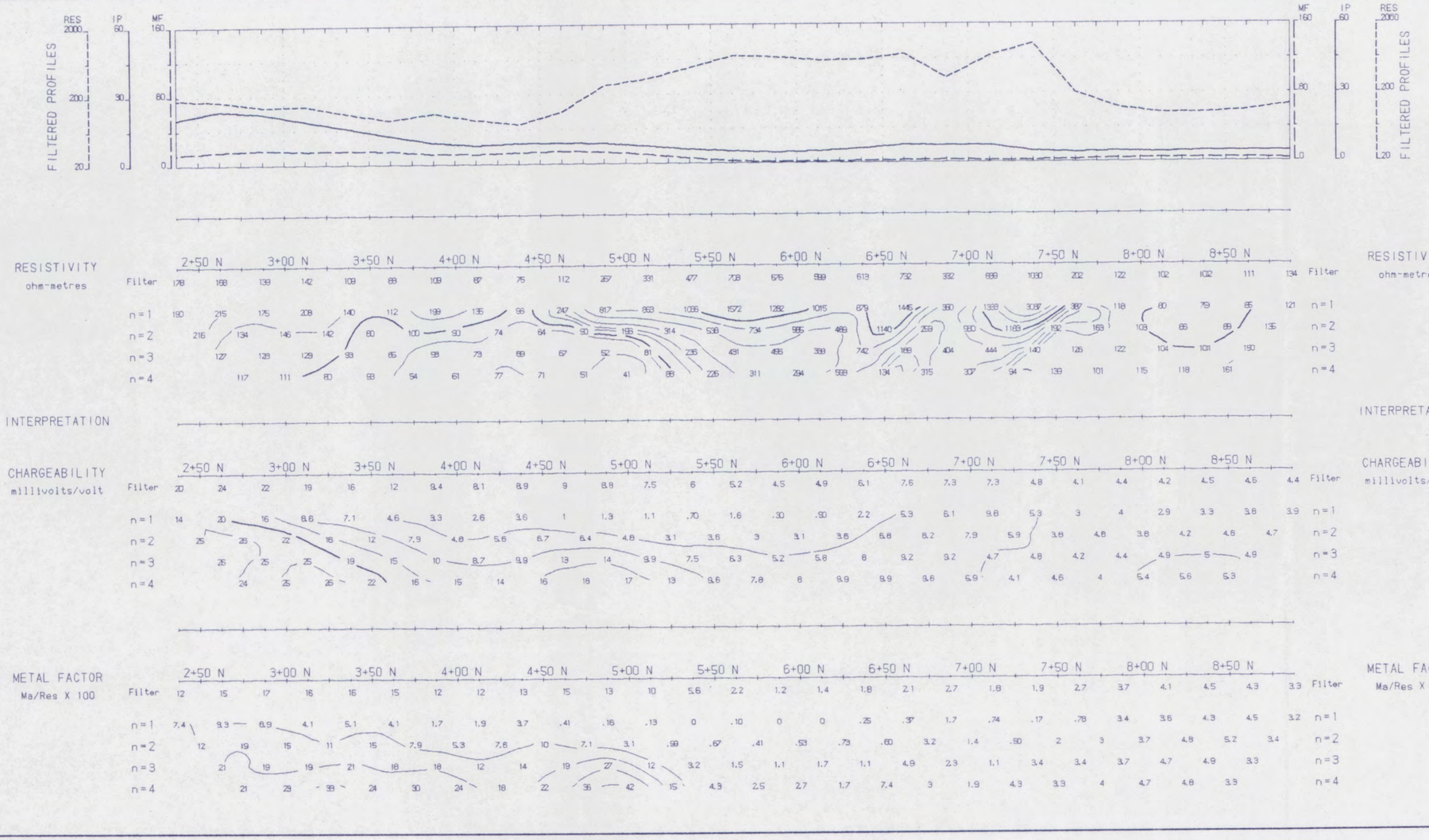
CLEAR LAKE PROJECT, Y.T.

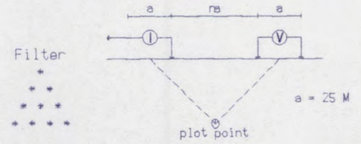
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 1350 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

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Fairly well defined moderate increase in polarization.

Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

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(metres)

093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
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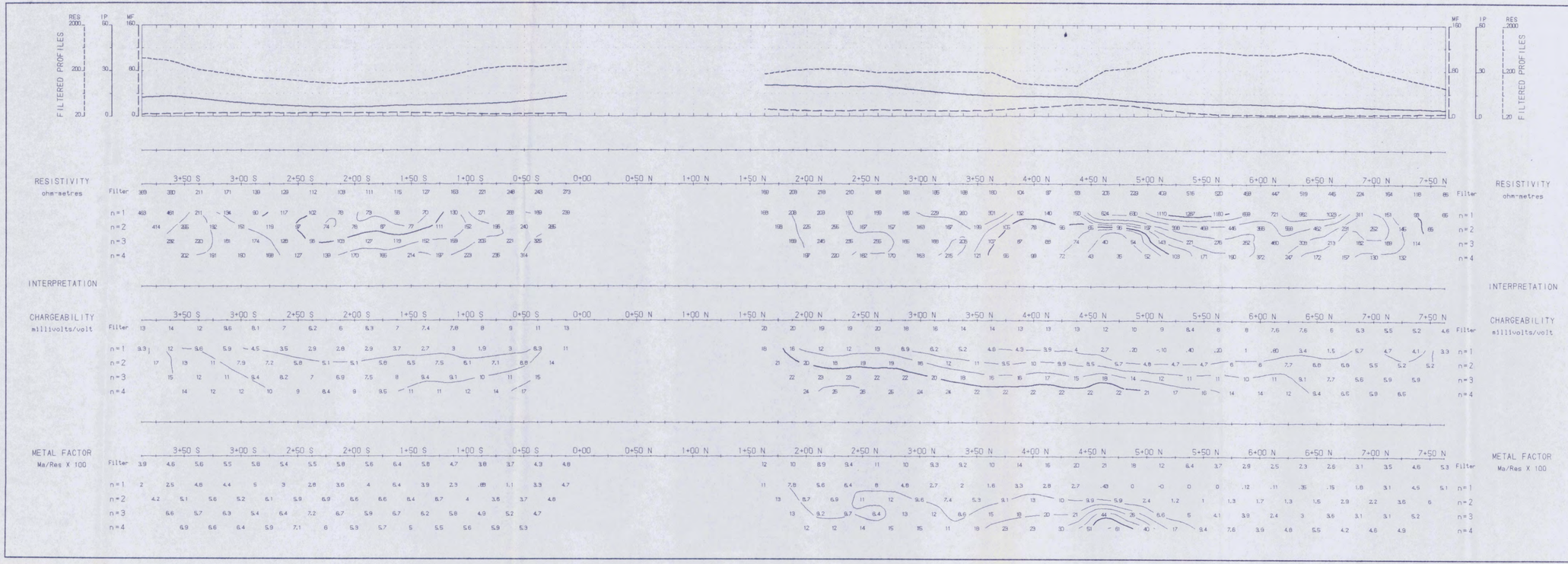
CLEAR LAKE PROJECT, Y.T.

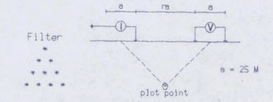
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 1450 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

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Fairly well defined moderate increase in polarization.

Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

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(metres)

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INDUCED POLARIZATION SURVEY
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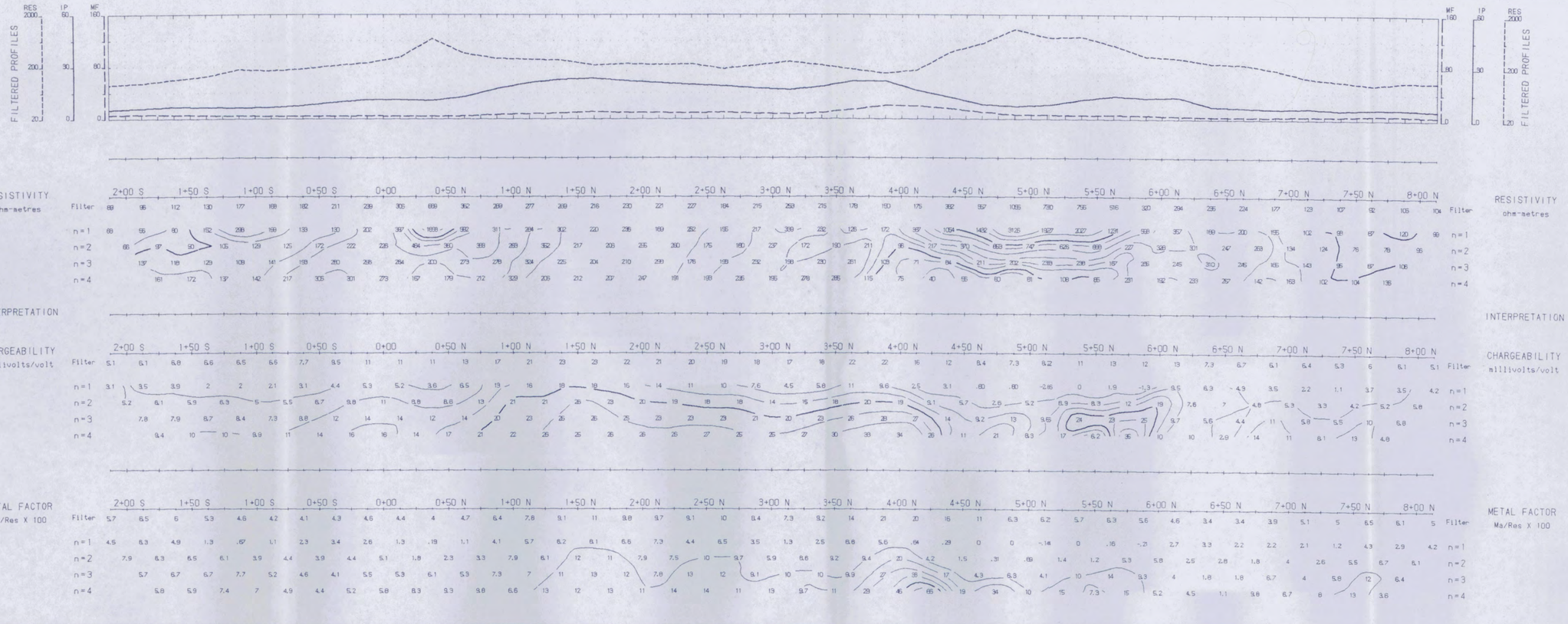
CLEAR LAKE PROJECT, Y.T.

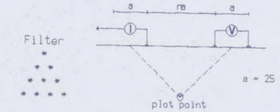
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 1550 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.W., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

Well defined, strong increase in polarization with or without marked decrease in resistivity.

Fairly well defined moderate increase in polarization.

Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

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(metres)

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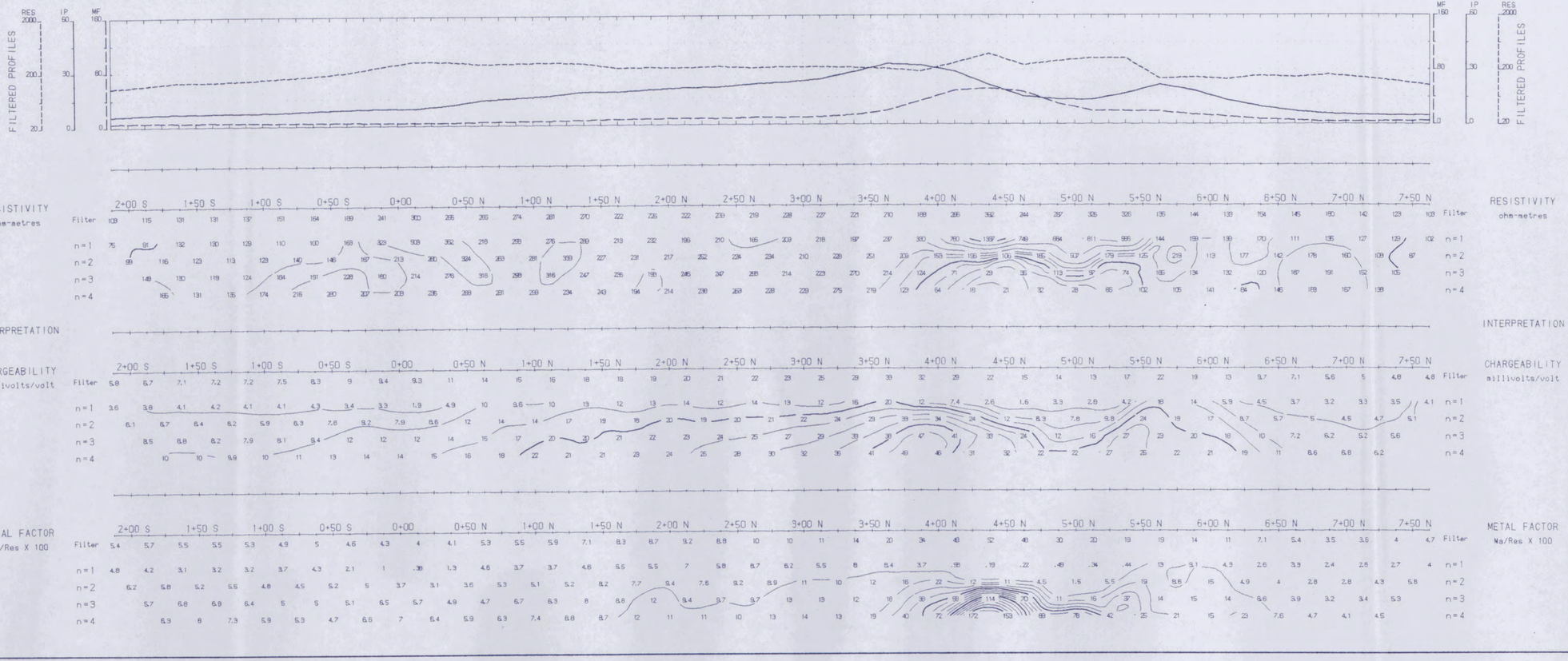
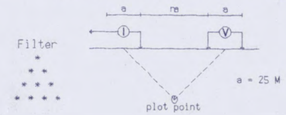
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 1650 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

Well defined, strong increase in polarization with or without marked decrease in resistivity.

Fairly well defined moderate increase in polarization.

Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

25 0 25 50 75 100 125
(metres)

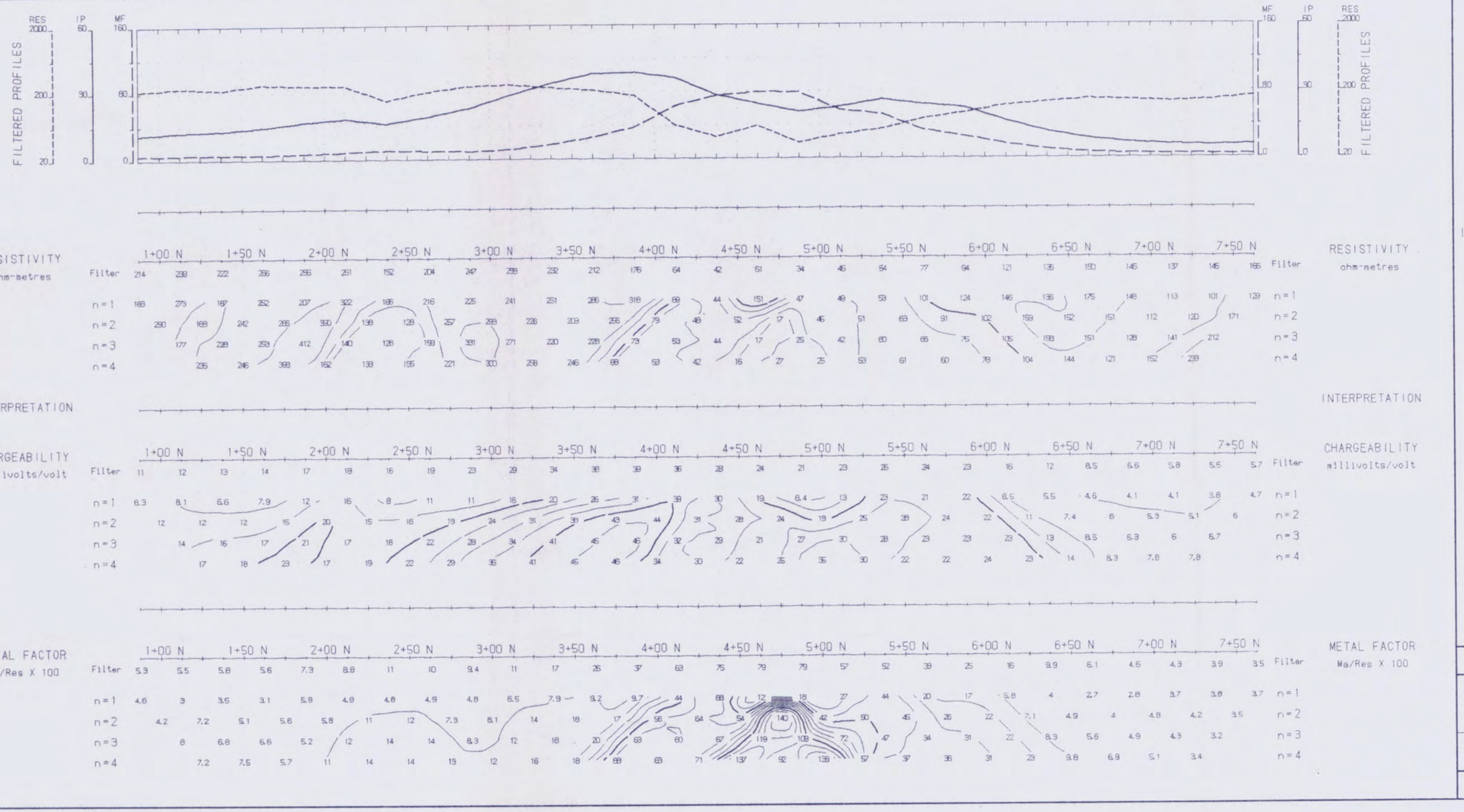
093O13

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

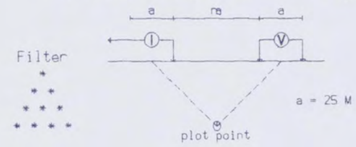
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 1750 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

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Resistivity feature.

Scale 1:2000

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(metres)

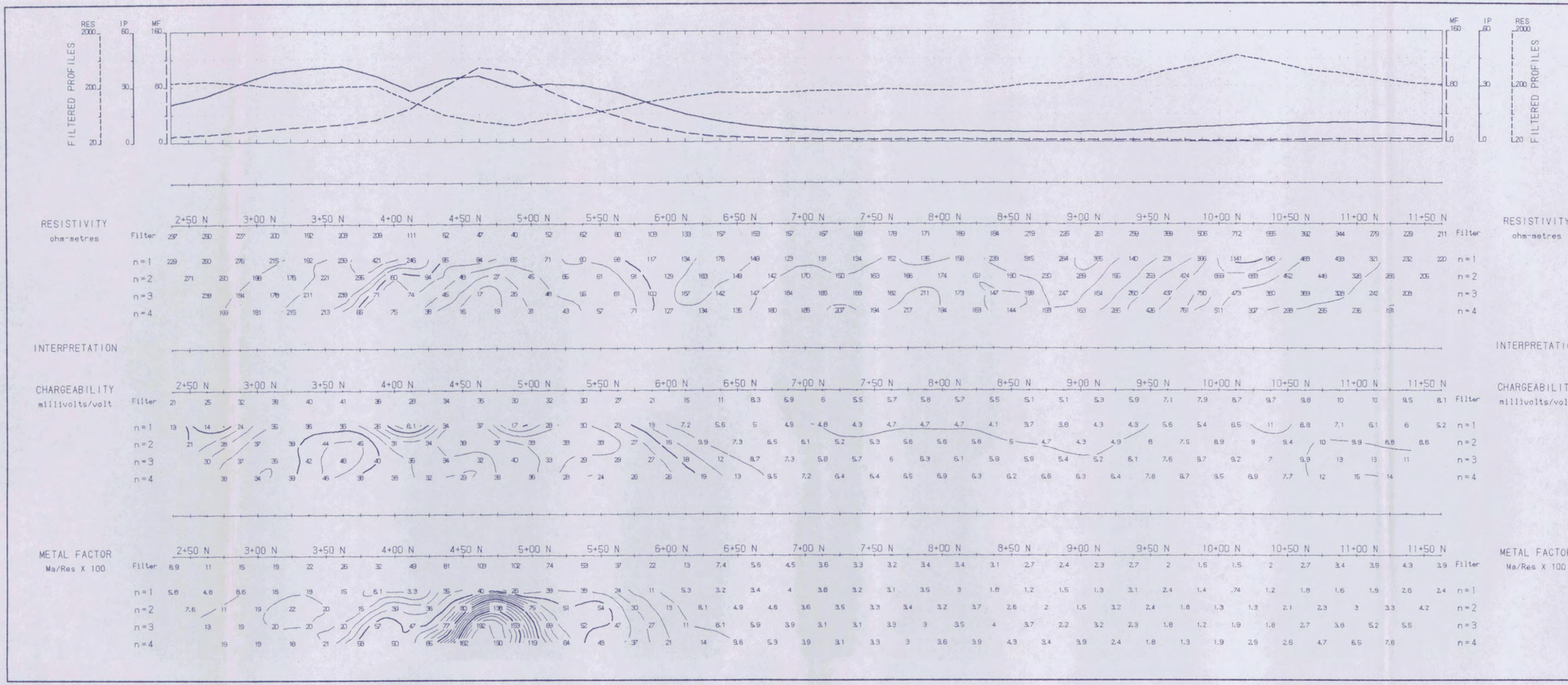
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

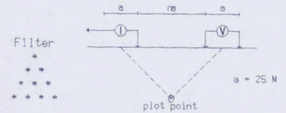
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 1850 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

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Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

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(metres)

093013

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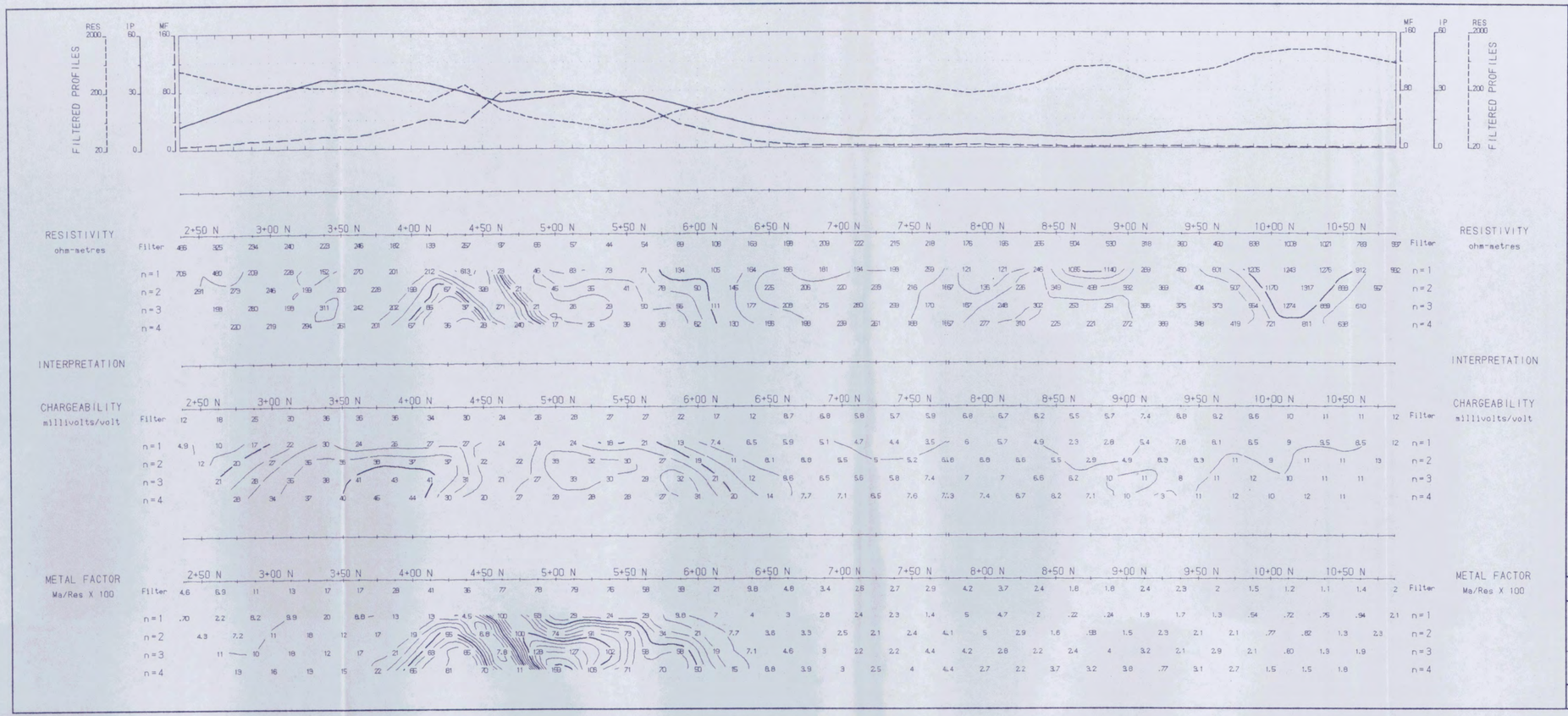
INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

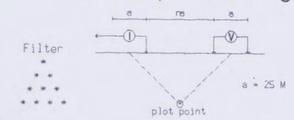
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 1950 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

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Resistivity feature.

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Date: June - July 1991 N.T.S.: 105L/14
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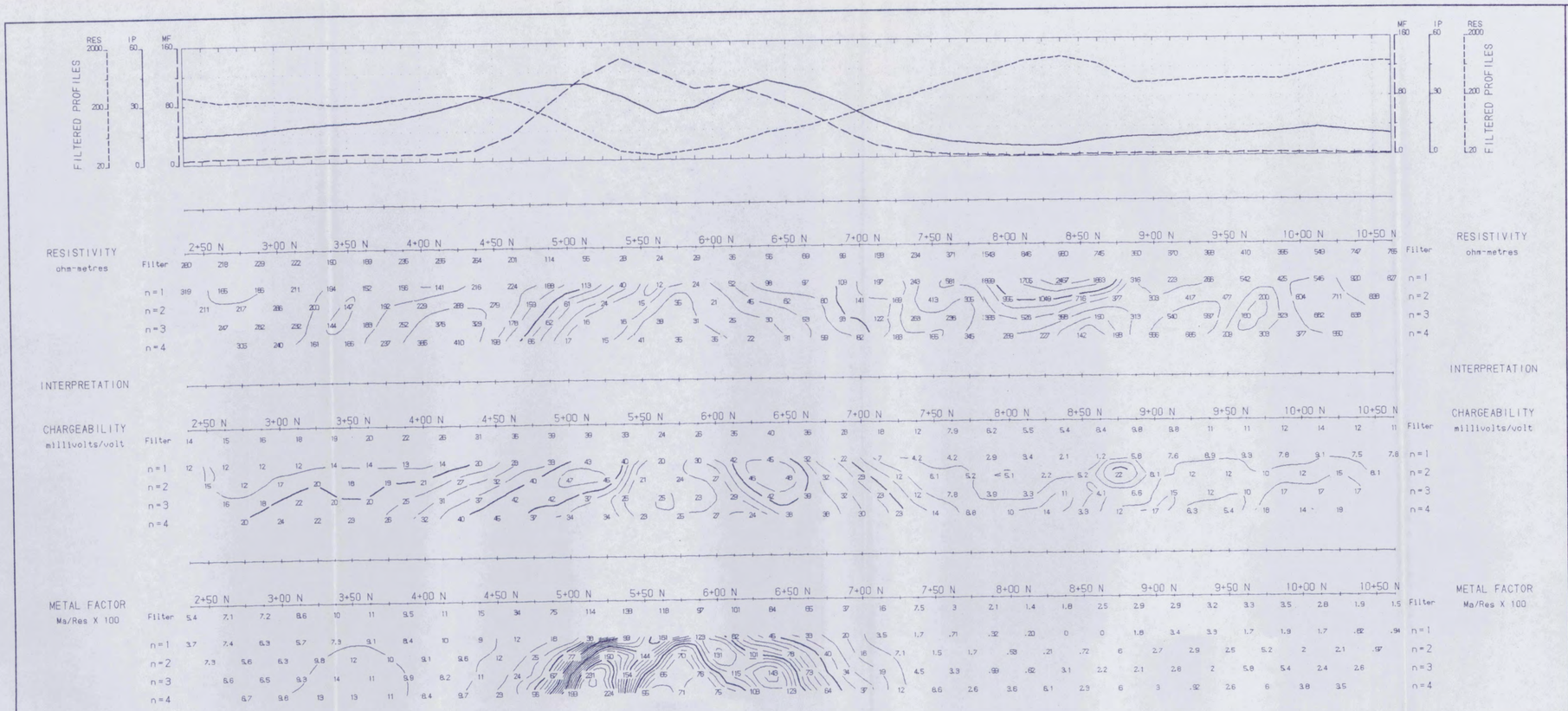
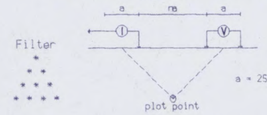


Line 2150 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

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Resistivity feature.

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(metres)

093 13

TOTAL ENERGOLD CORPORATION

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Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

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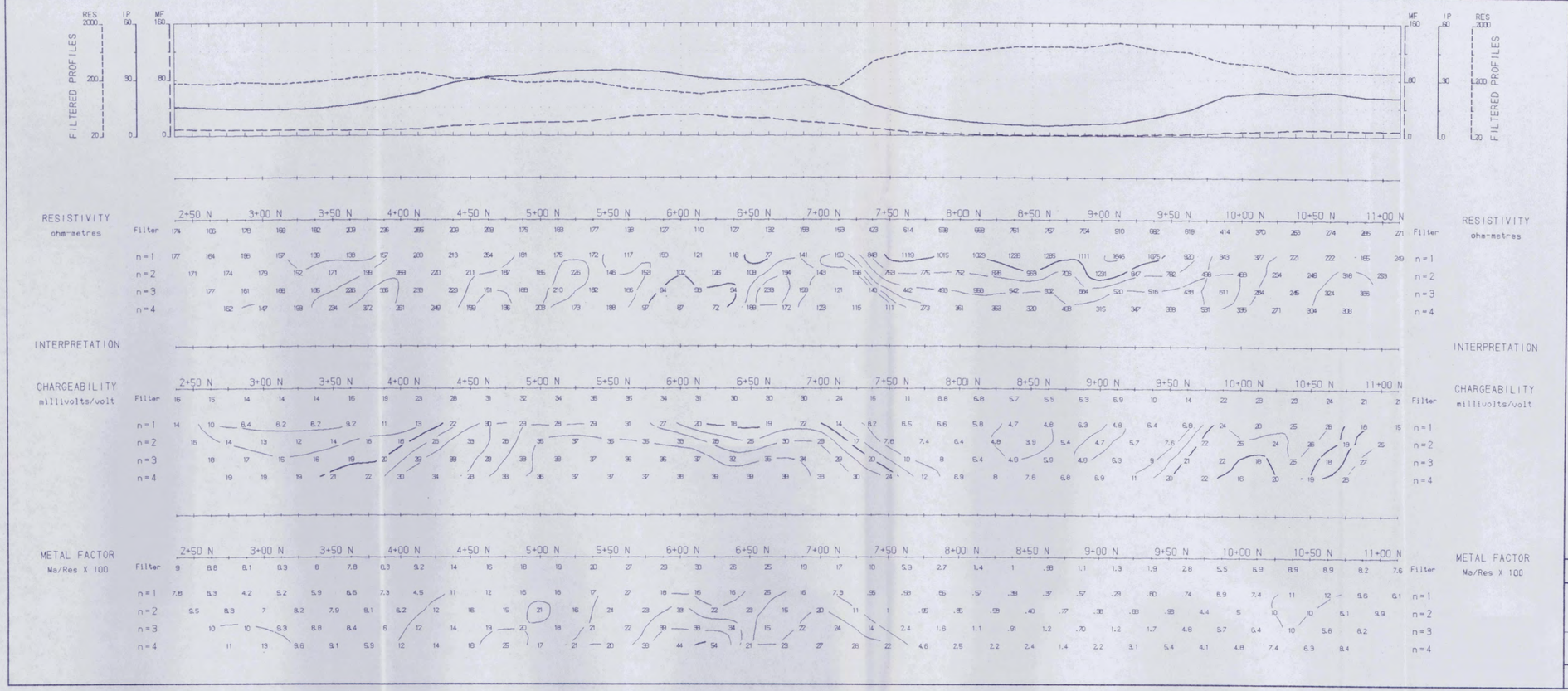
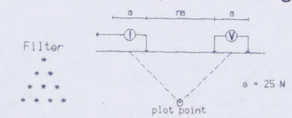


Line 2350 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

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CLEAR LAKE PROJECT, Y.T.

Date: June - July 1991 N.T.S.: 105L/14
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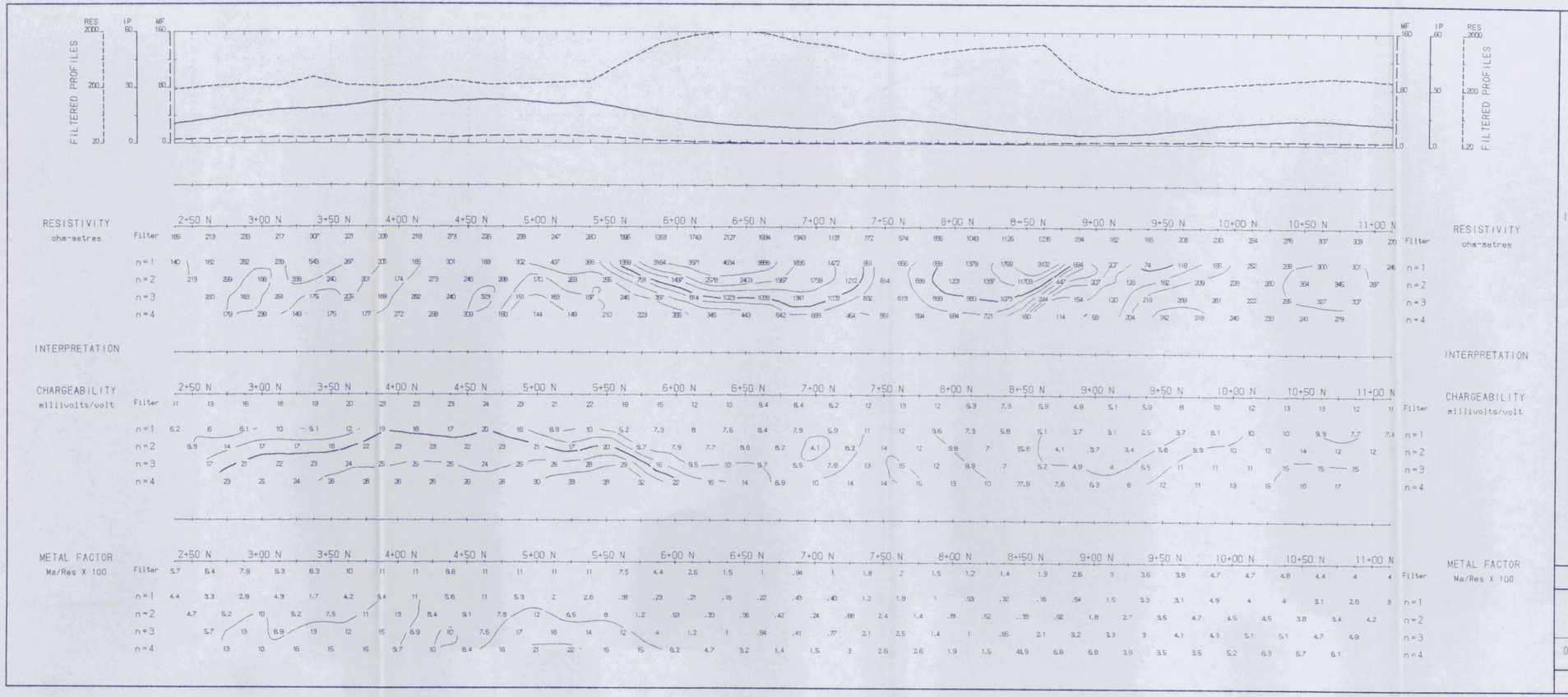
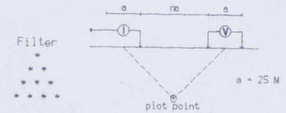


Line 2550 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

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Resistivity feature.

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(metres)

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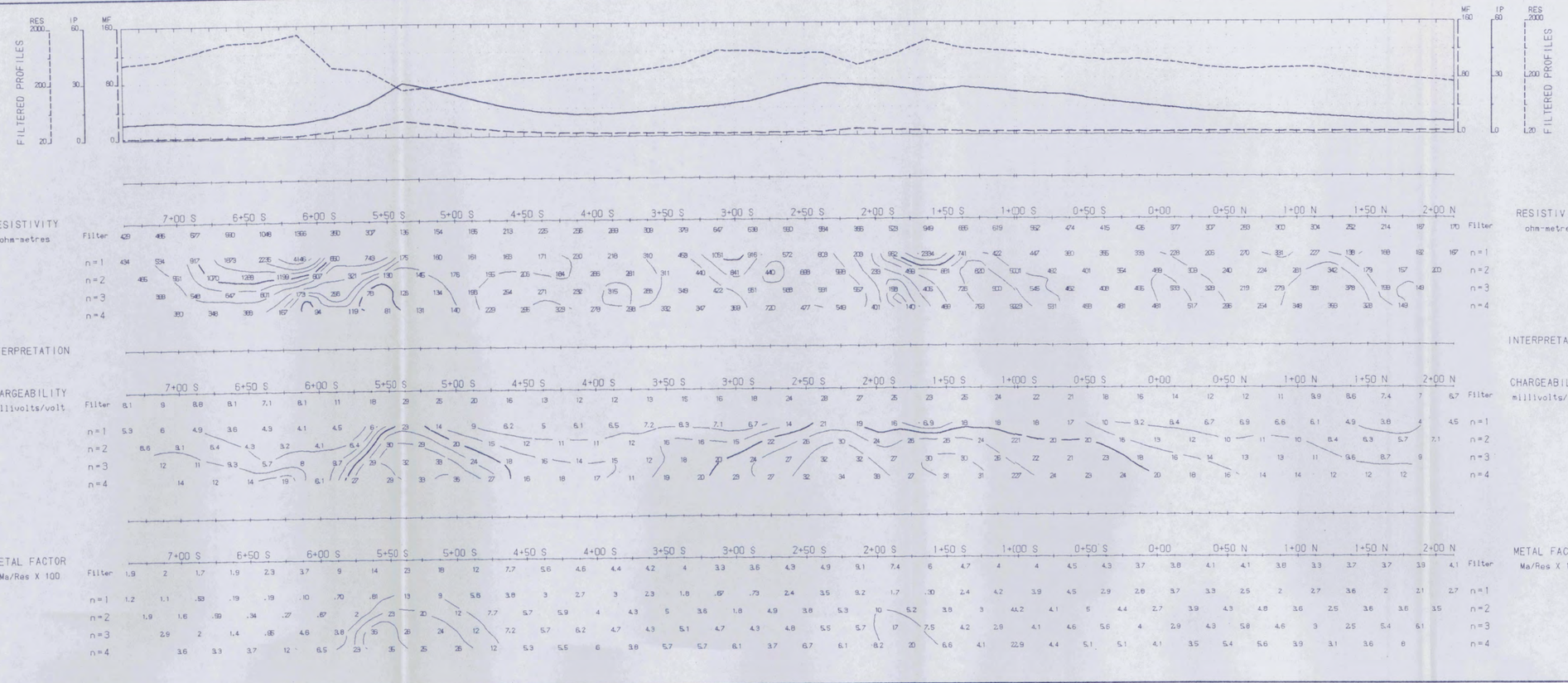
CLEAR LAKE PROJECT, Y.T.

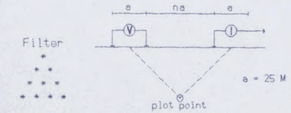
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P. J.

PETER E. WALCOTT & ASSOC. LTD.



Line 3000 W

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

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Resistivity feature.

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(metres)

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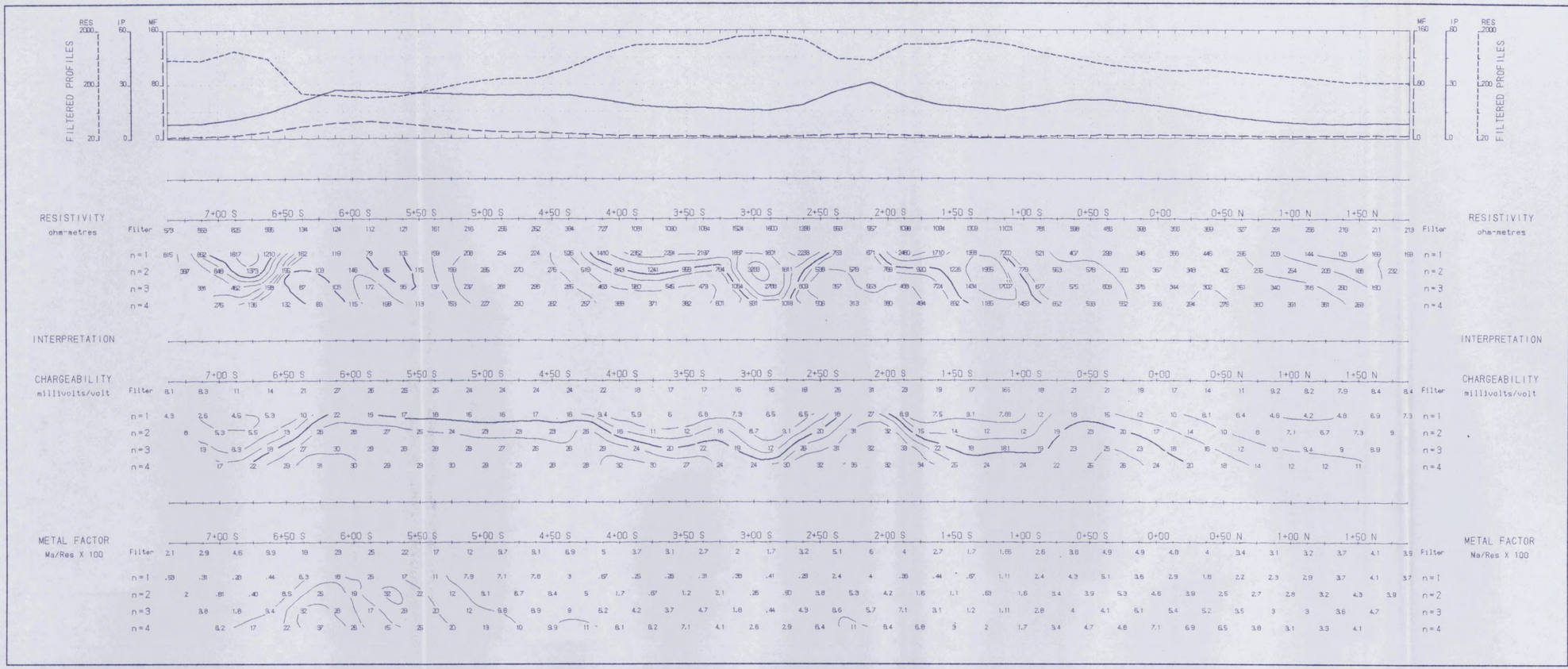
CLEAR LAKE PROJECT, Y.T.

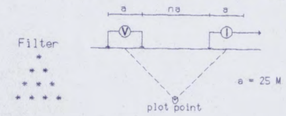
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 3200 W

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

Well defined, strong increase in polarization with or without marked decrease in resistivity.

Fairly well defined moderate increase in polarization.

Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

25 0 25 50 75 100 125
(metres)

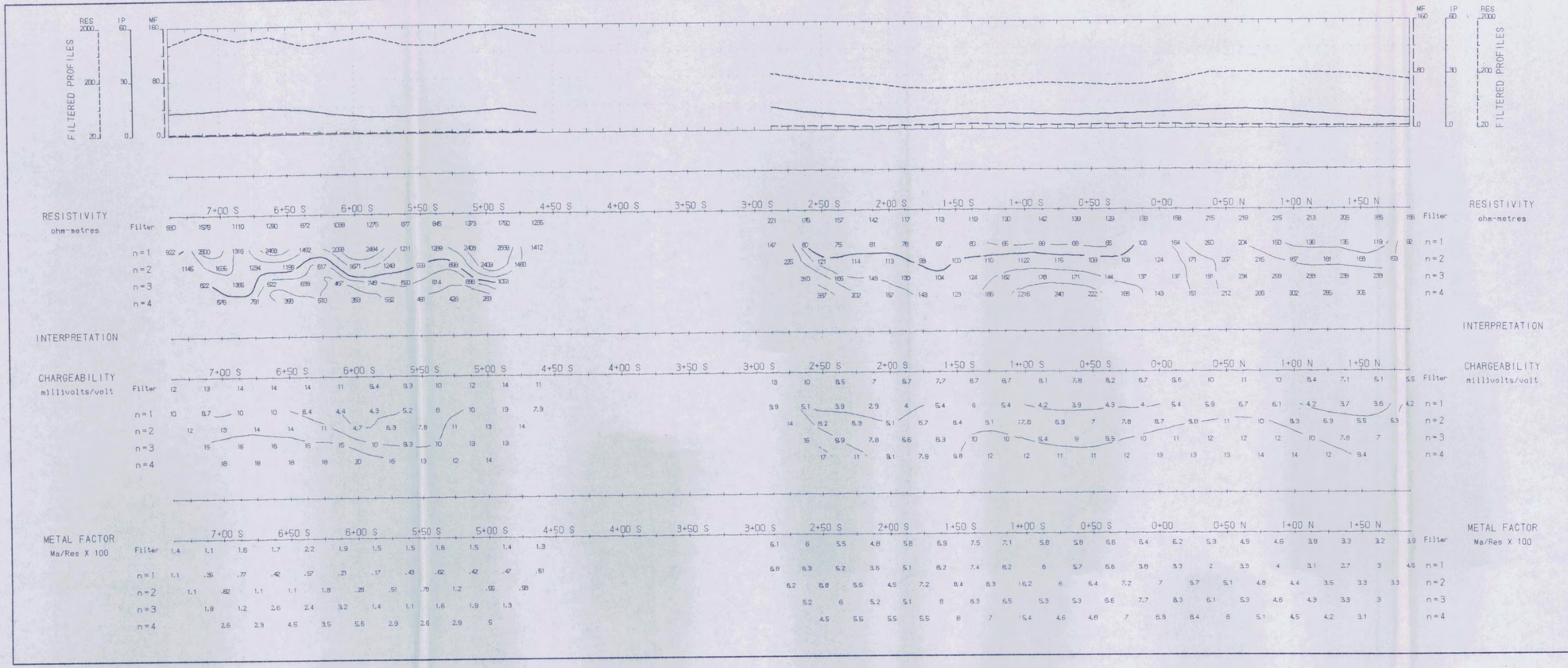
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

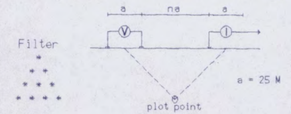
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 3400 W

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

Well defined, strong increase in polarization with or without marked decrease in resistivity.

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Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

25 0 25 50 75 100 125
(metres)

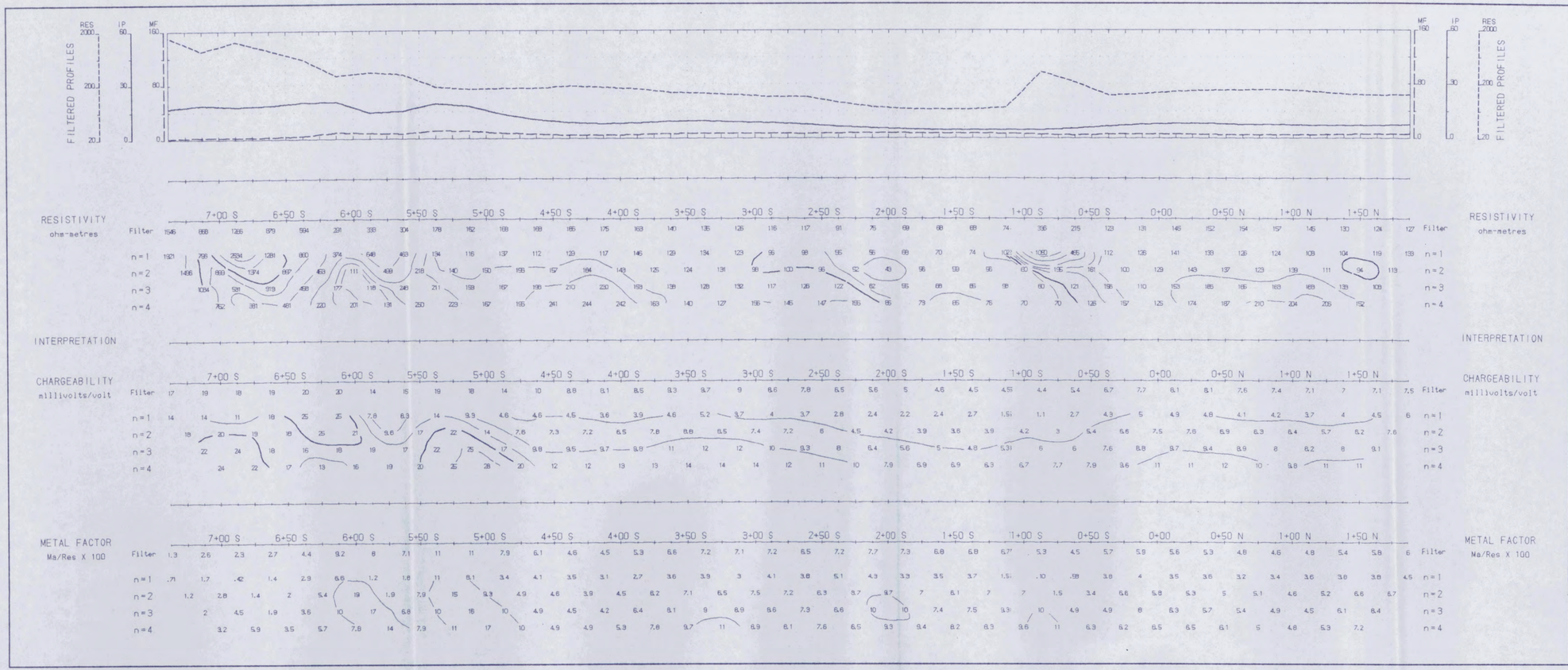
093 13

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

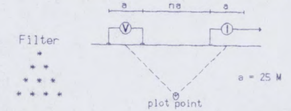
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 3600 W

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

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Poorly defined polarization increase.

Resistivity feature.

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(metres)

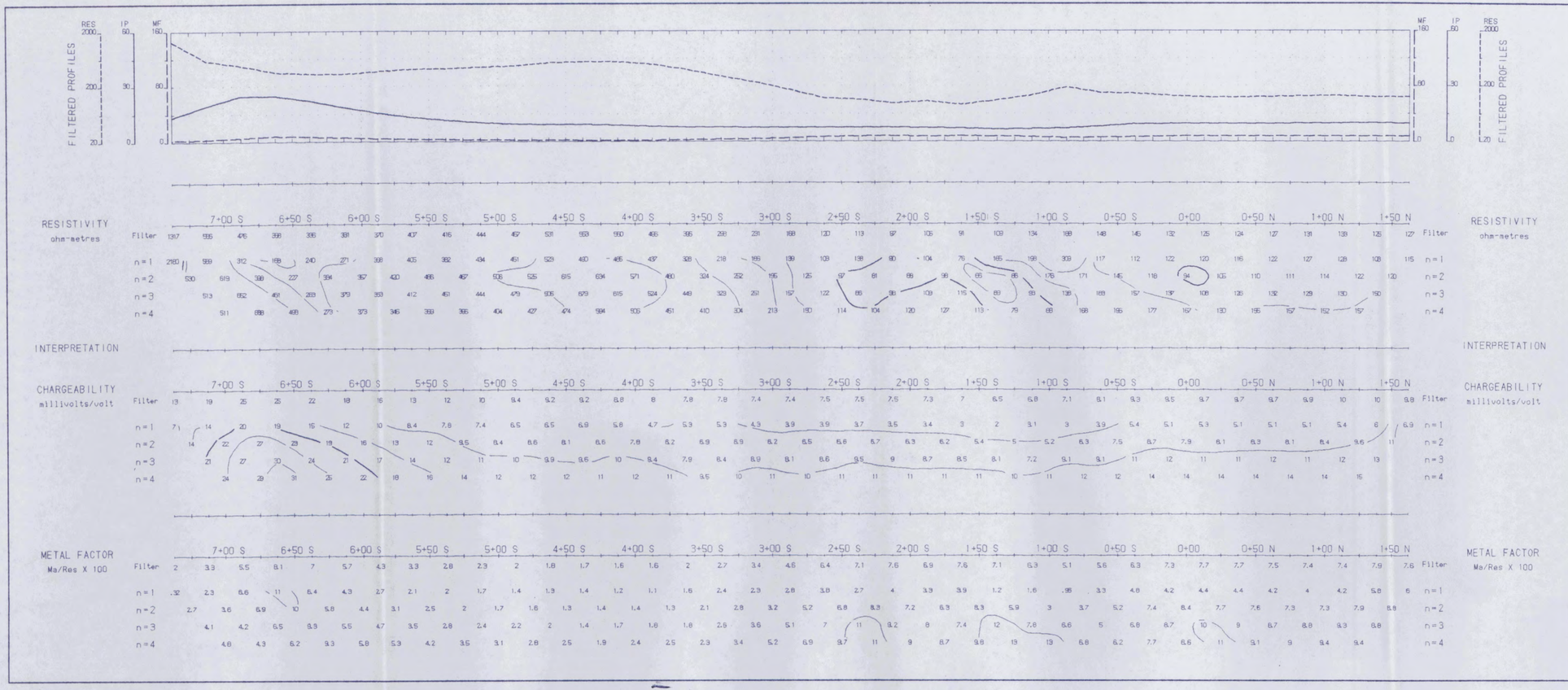
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

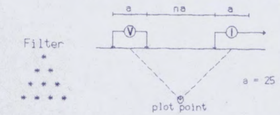
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 3800 W

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10....

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(metres)

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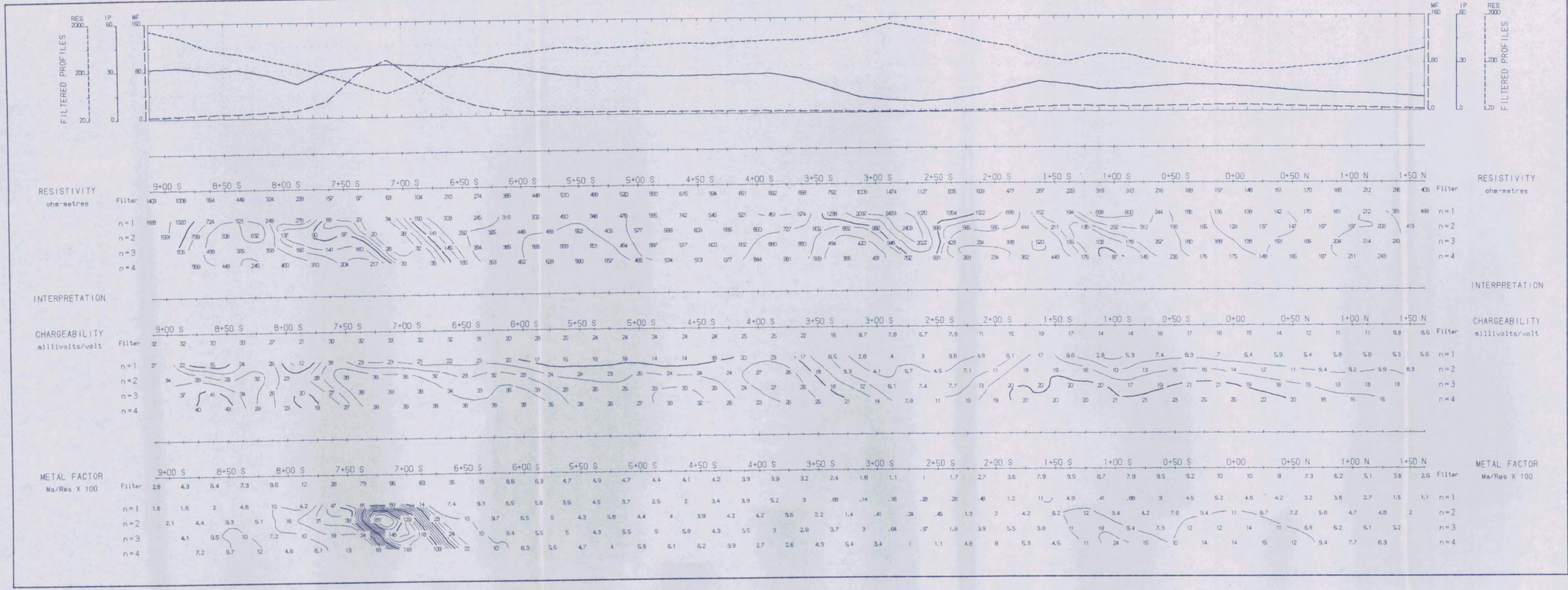
TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

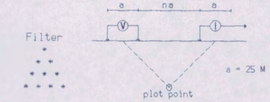
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 4000 W

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10....

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Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

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(metres)

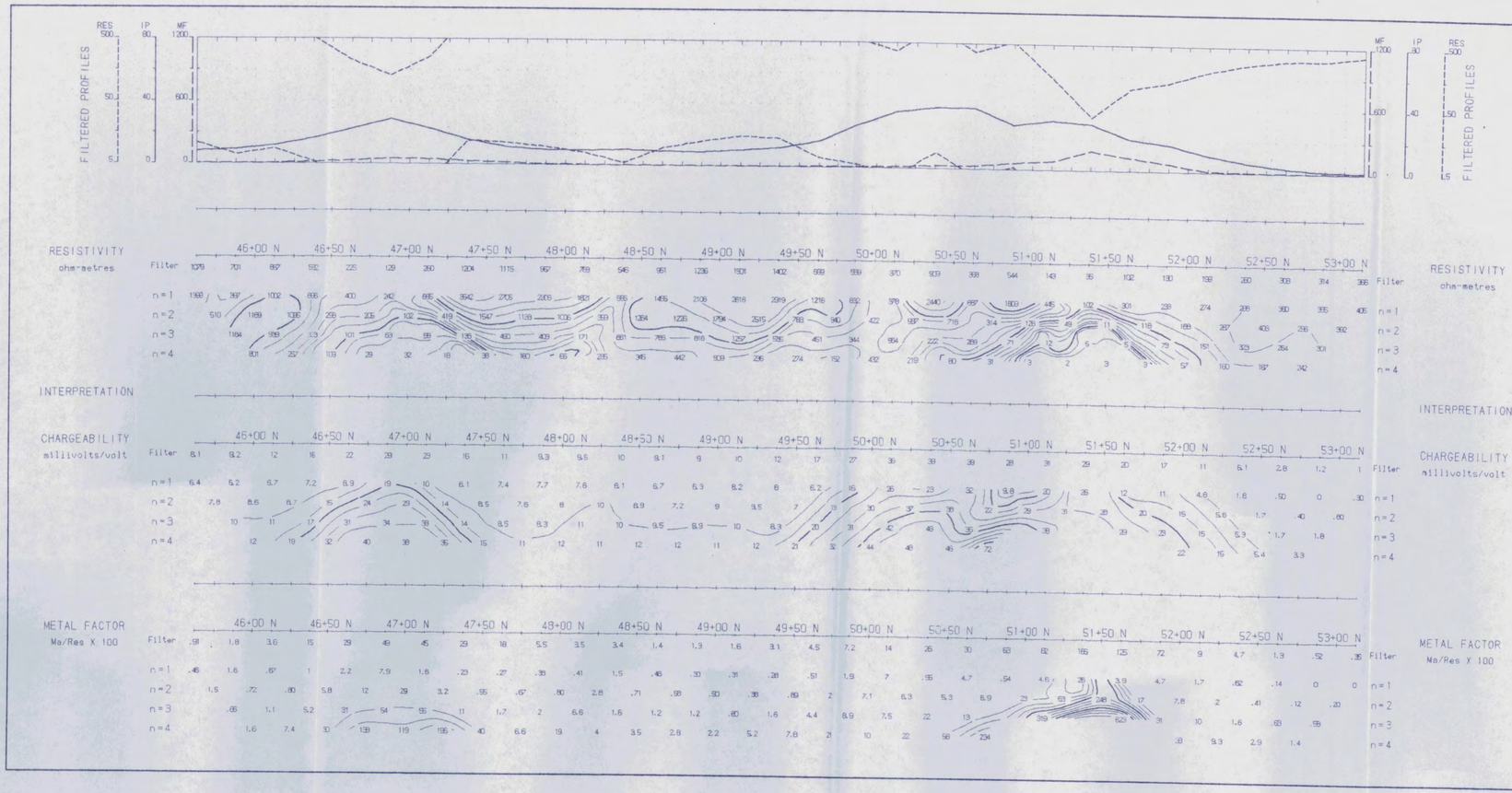
093 - 13

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

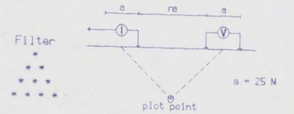
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 8200 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10....

INTERPRETATION

Well defined, strong increase in polarization with of without marked decrease in resistivity.

Fairly well defined moderate increase in polarization.

Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

25 0 25 50 75 100 125
(metres)

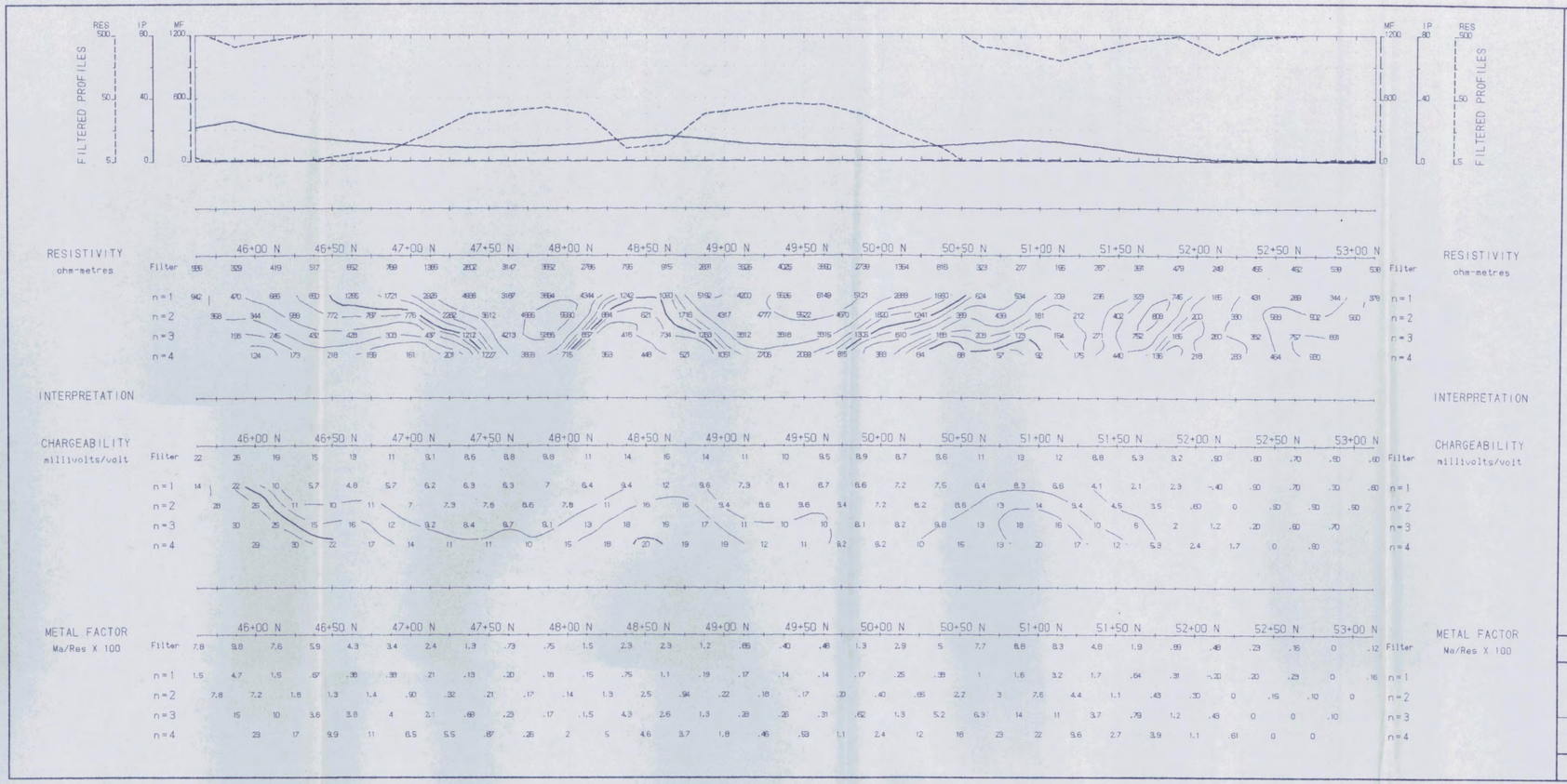
093313

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
P1 GRID - AREA 1
CLEAR LAKE PROJECT, Y.T.

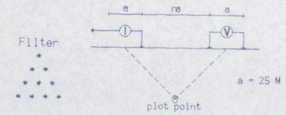
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P. J.

PETER E. WALCOTT & ASSOC. LTD.



Line 8400 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

Well defined, strong increase in polarization with or without marked decrease in resistivity.

Fairly well defined moderate increase in polarization.

Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

25 0 25 50 75 100 125
(metres)

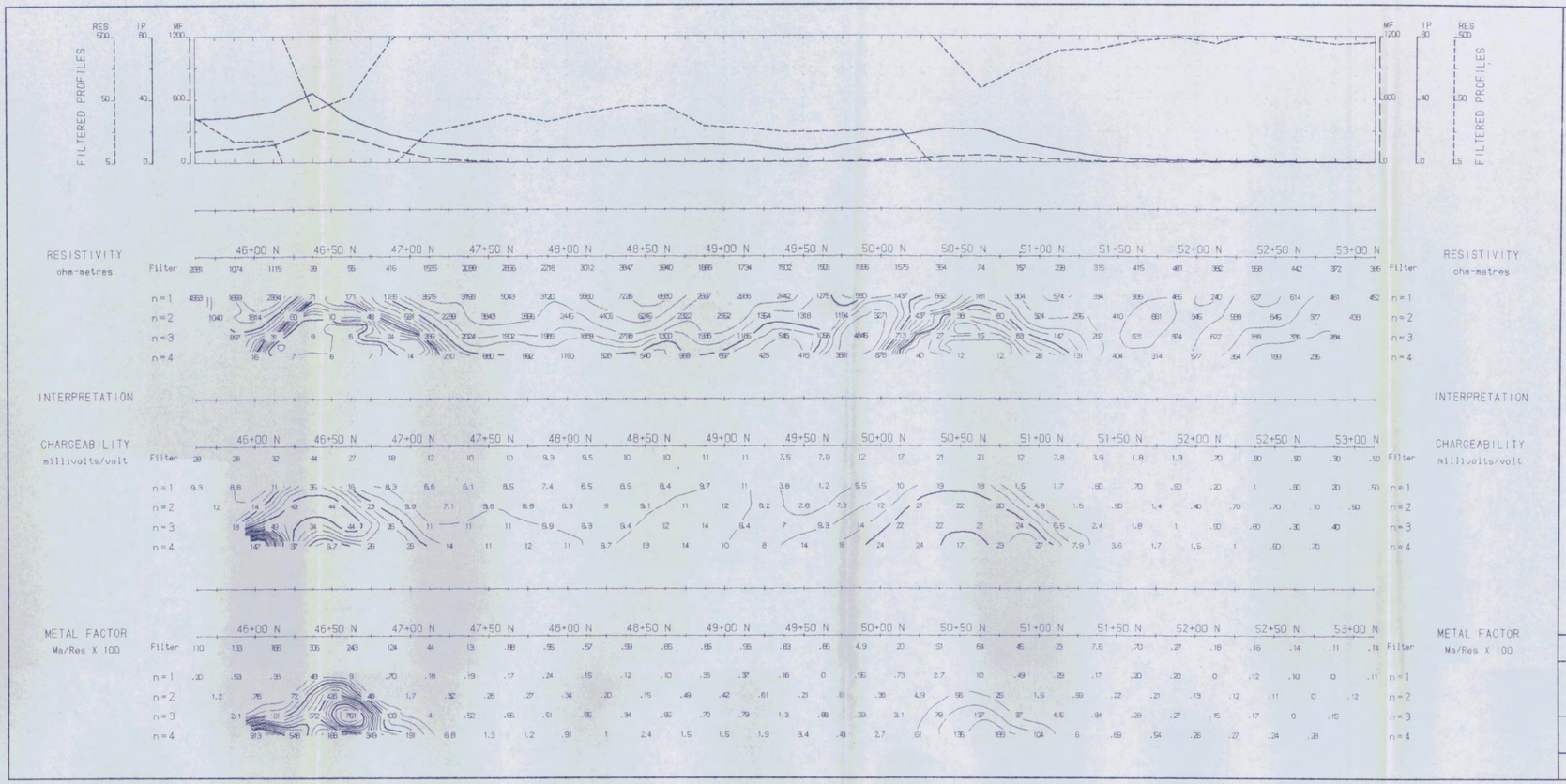
093 J 13

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
PI GRID - AREA 1
CLEAR LAKE PROJECT, Y.T.

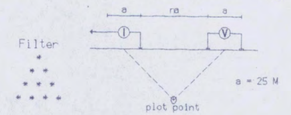
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 8500 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

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Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

25 0 25 50 75 100 125
(metres)

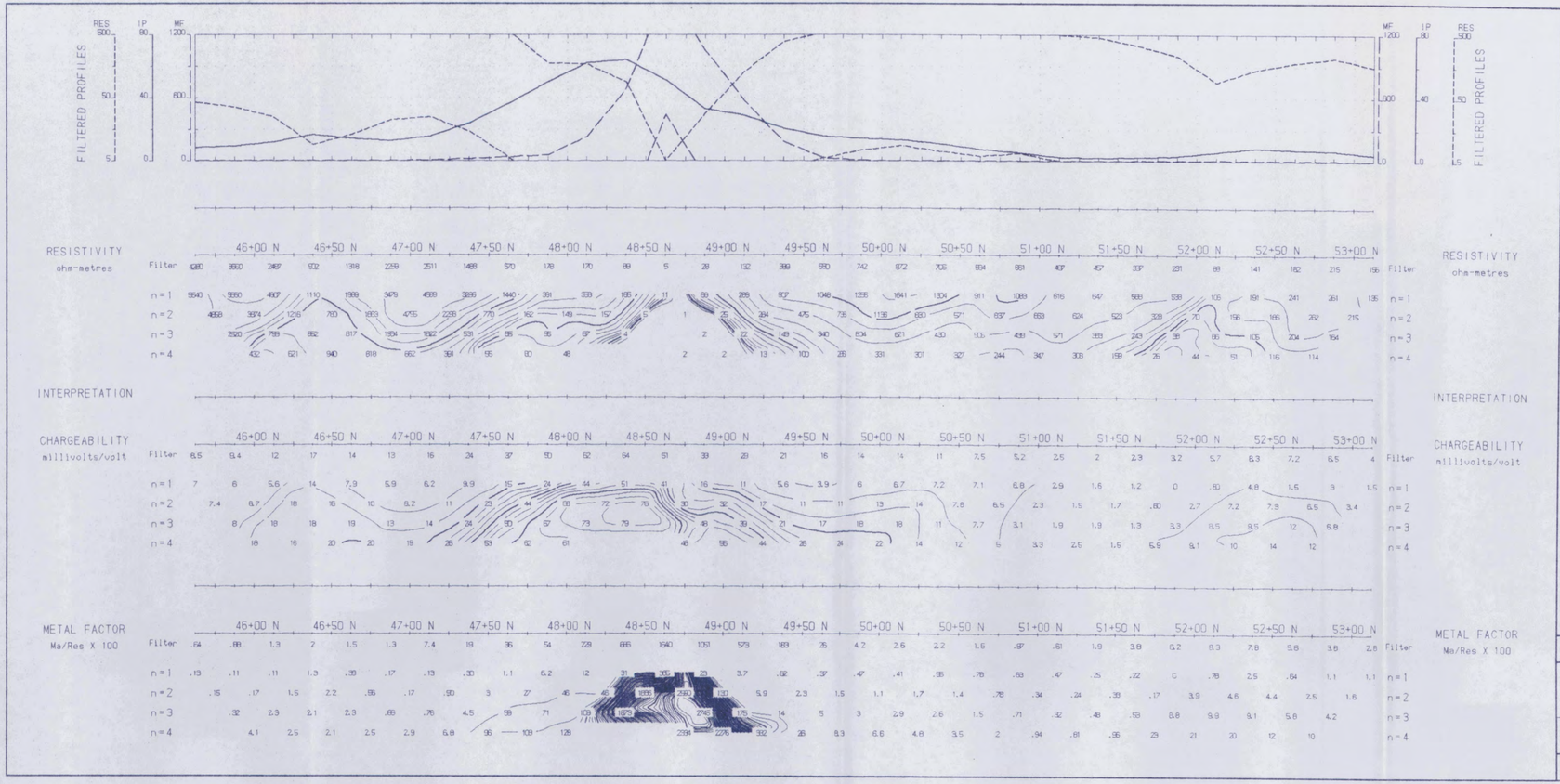
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
P1 GRID - AREA 1
CLEAR LAKE PROJECT, Y.T.

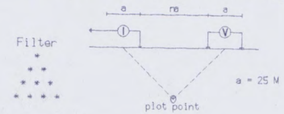
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 8700 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

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(metres)

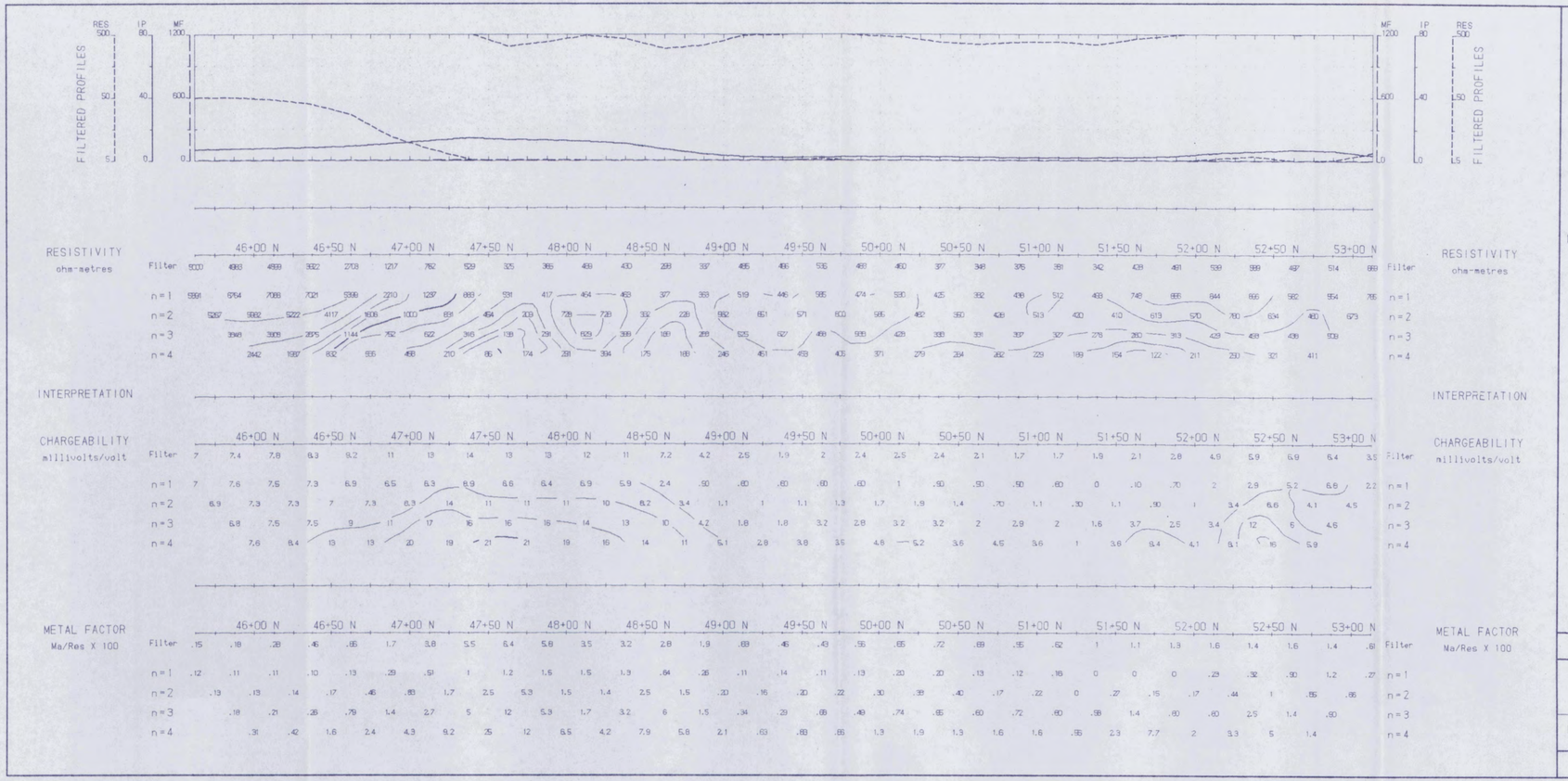
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
PI GRID - AREA 1
CLEAR LAKE PROJECT, Y.T.

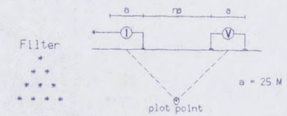
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P. J.

PETER E. WALCOTT & ASSOC. LTD.



Line 8800 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10....

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Resistivity feature.

Scale 1:2000

25 0 25 50 75 100 125
(metres)

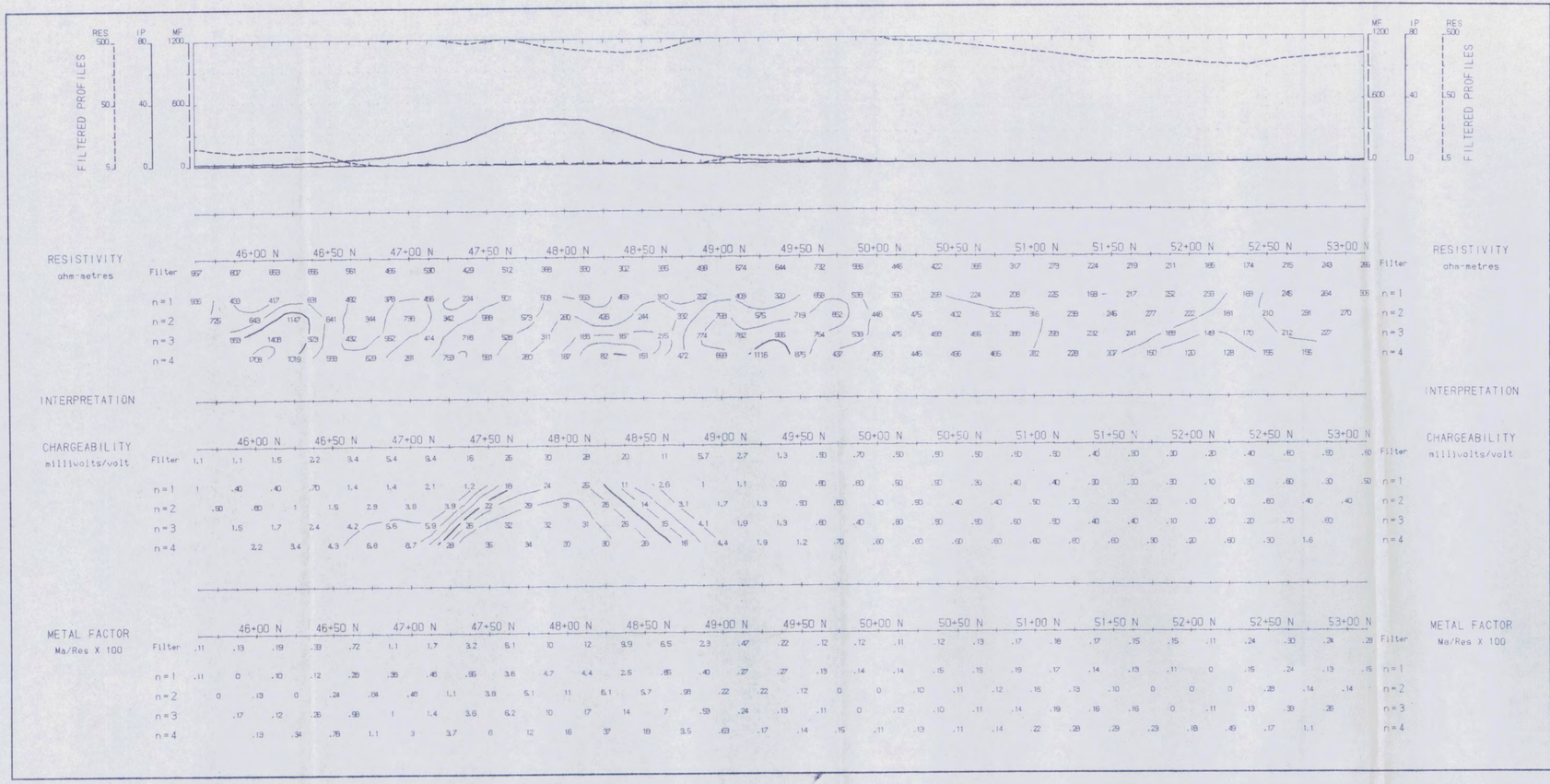
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
PI GRID - AREA 1
CLEAR LAKE PROJECT, Y.T.

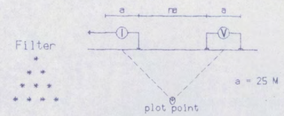
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 9000 W

Pole-Dipole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

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(metres)

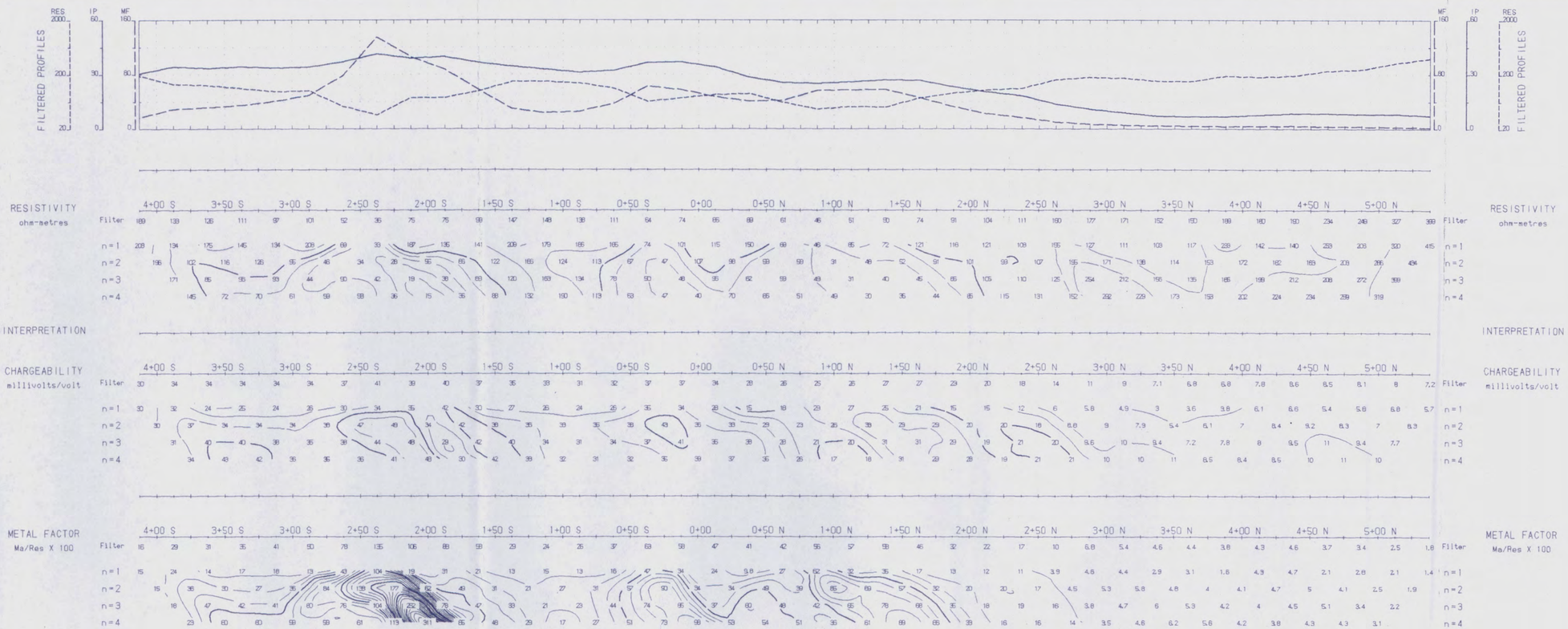
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
P1 GRID - AREA 1
CLEAR LAKE PROJECT, Y.T.

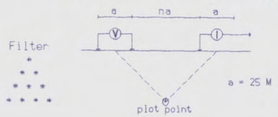
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 350 E

Dipose-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
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Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

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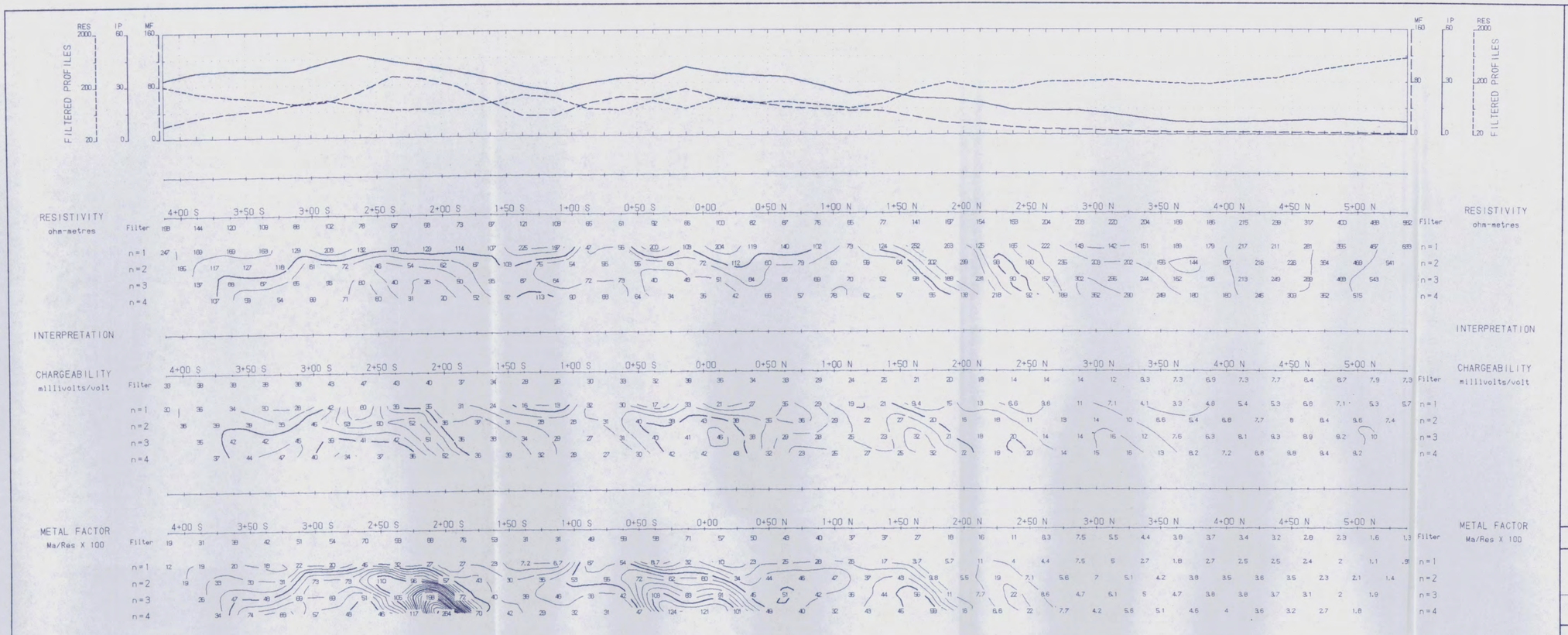
TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

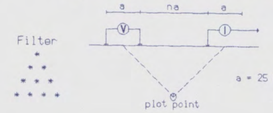
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 450 E

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

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Resistivity feature.

Scale 1:2000

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(metres)

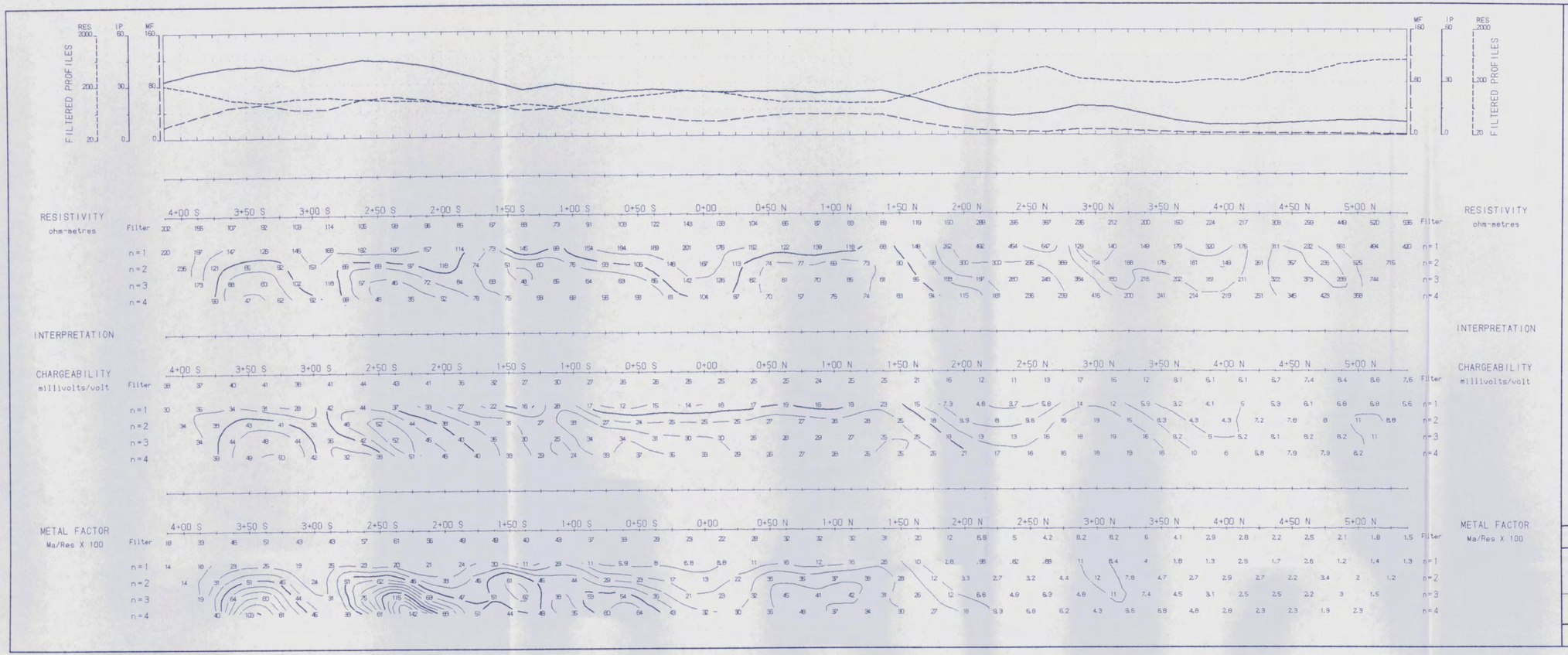
093 13'

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

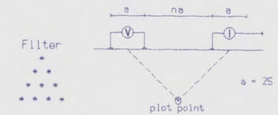
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 550 E

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
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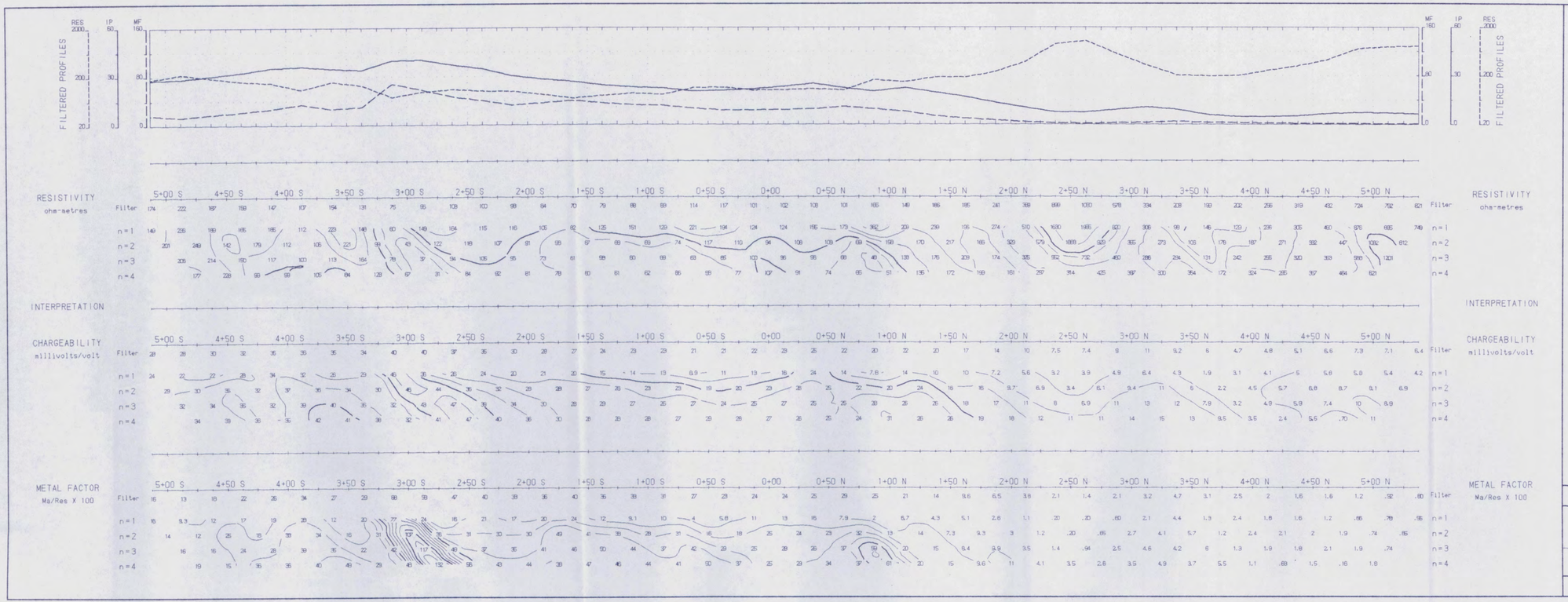
TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

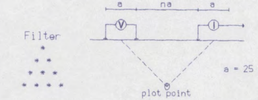
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 650 E

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10....

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(metres)

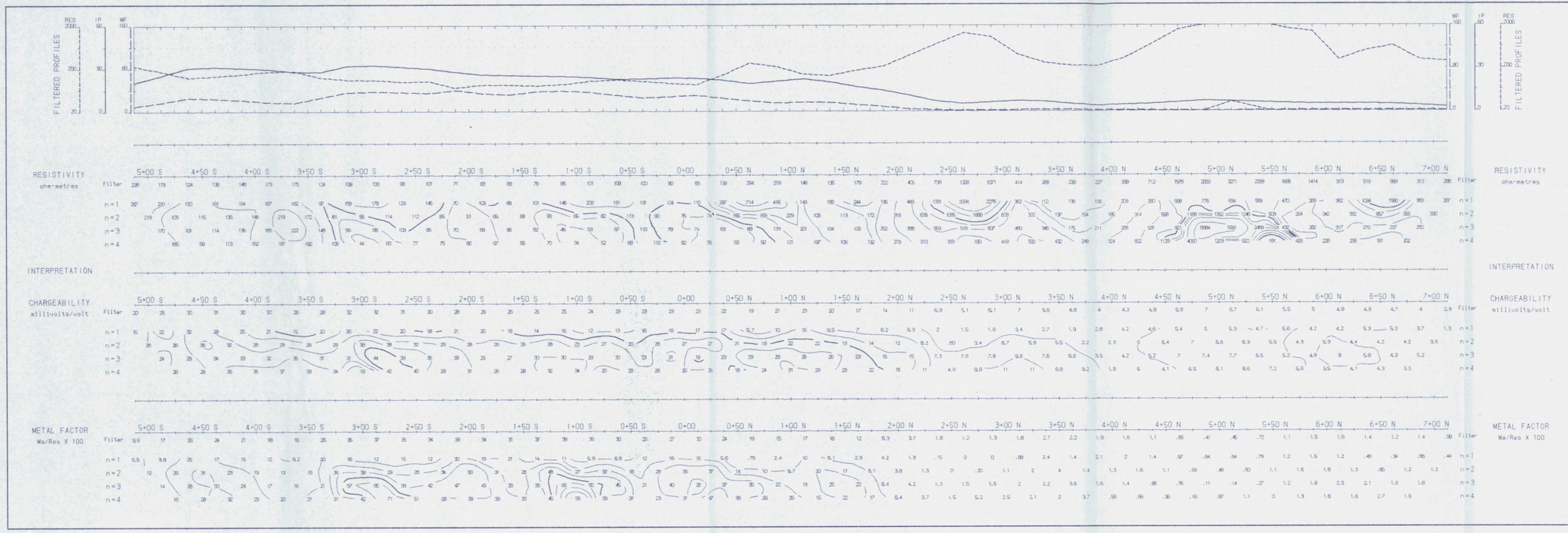
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

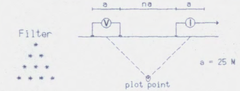
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 750 E

Dipose-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10....

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Resistivity feature.

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(metres)

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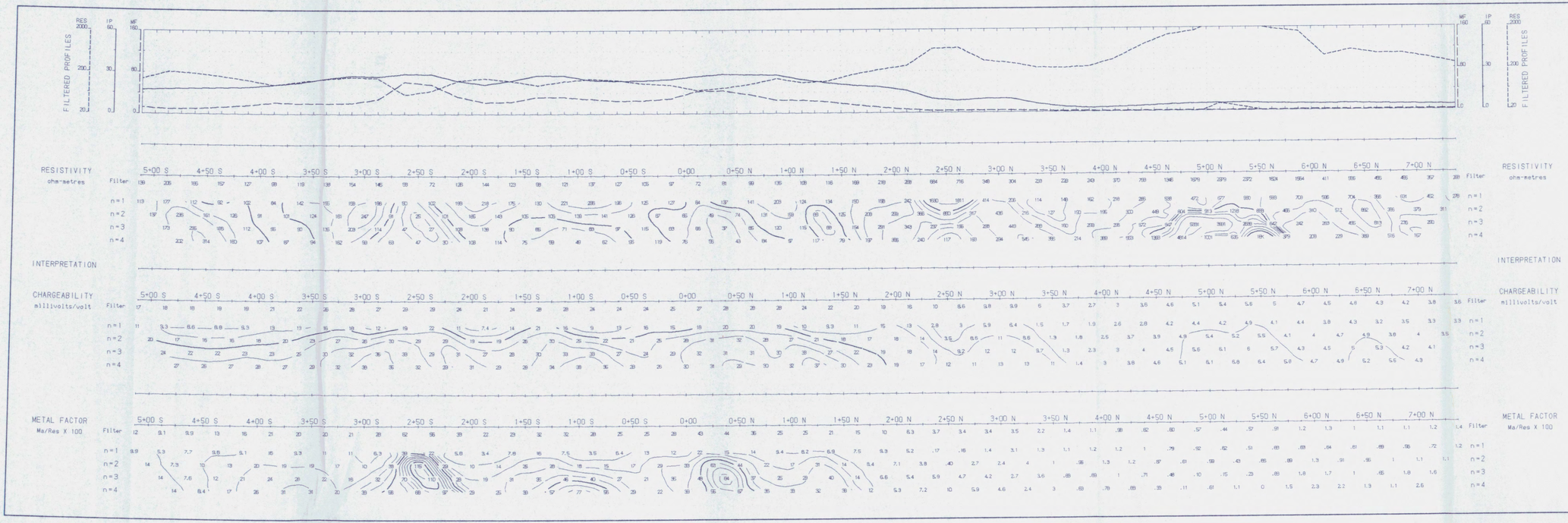
TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

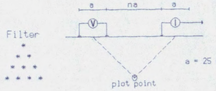
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 850 E

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10....

INTERPRETATION

Well defined, strong increase in polarization with or without marked decrease in resistivity.

Fairly well defined moderate increase in polarization.

Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

25 0 25 50 75 100 125
(metres)

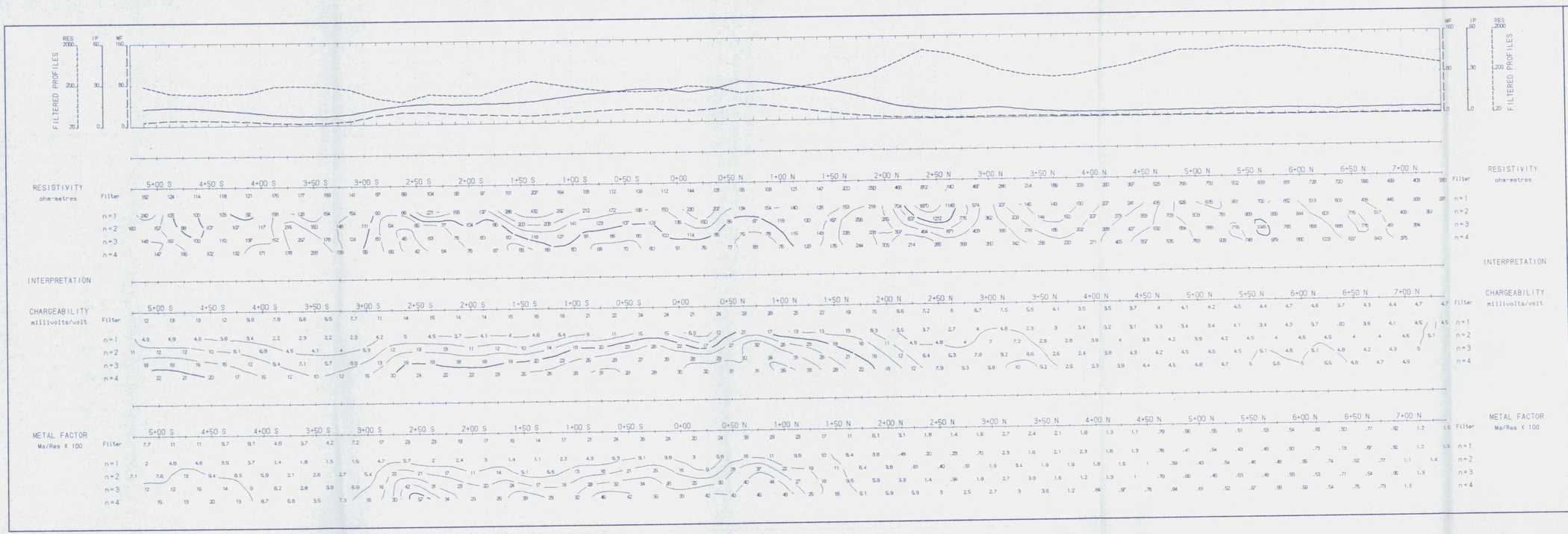
.093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

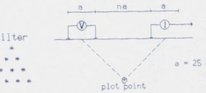
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 950 E

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10....

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Resistivity feature.

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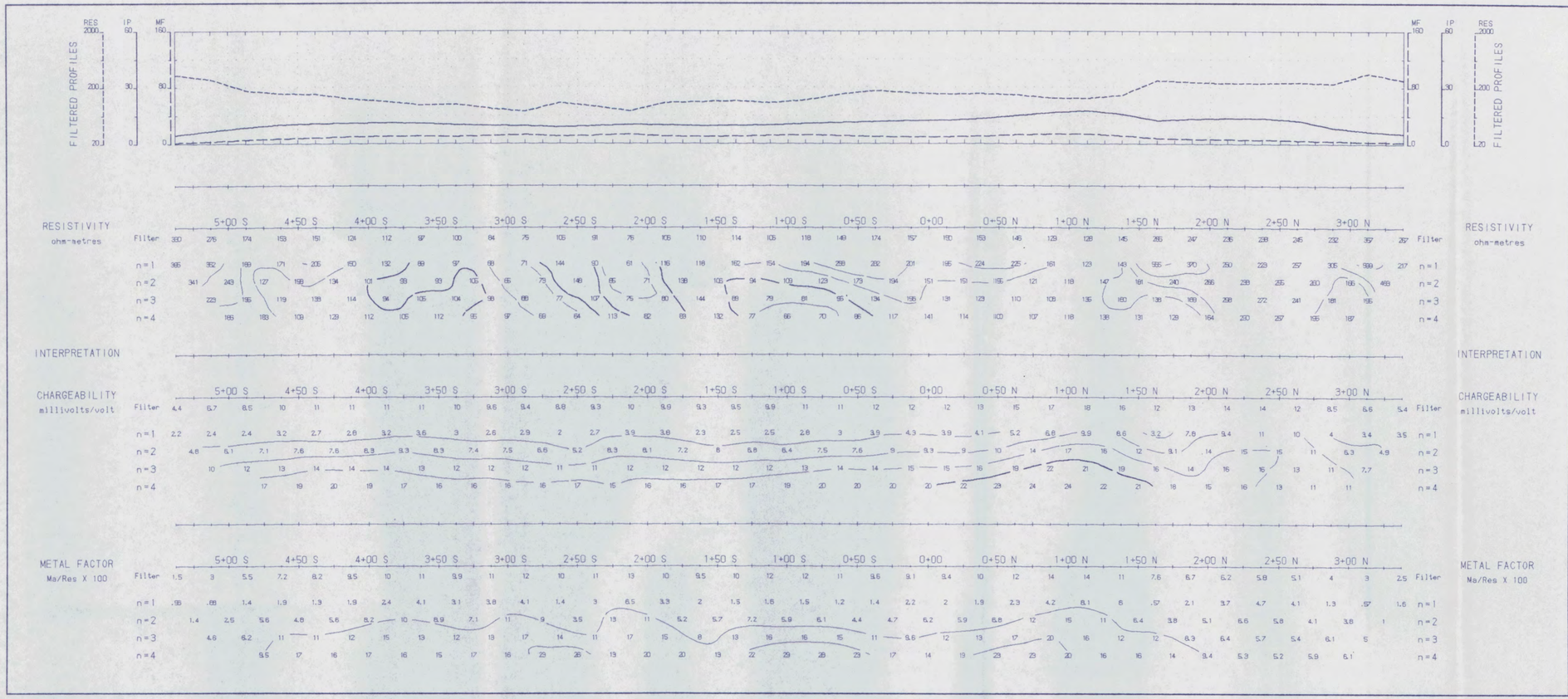
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

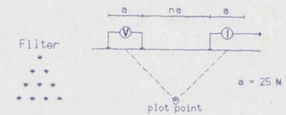
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 1050 E

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10...

INTERPRETATION

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Fairly well defined moderate increase in polarization.

Poorly defined polarization increase.

Resistivity feature.

Scale 1:2000

25 0 25 50 75 100 125
(metres)

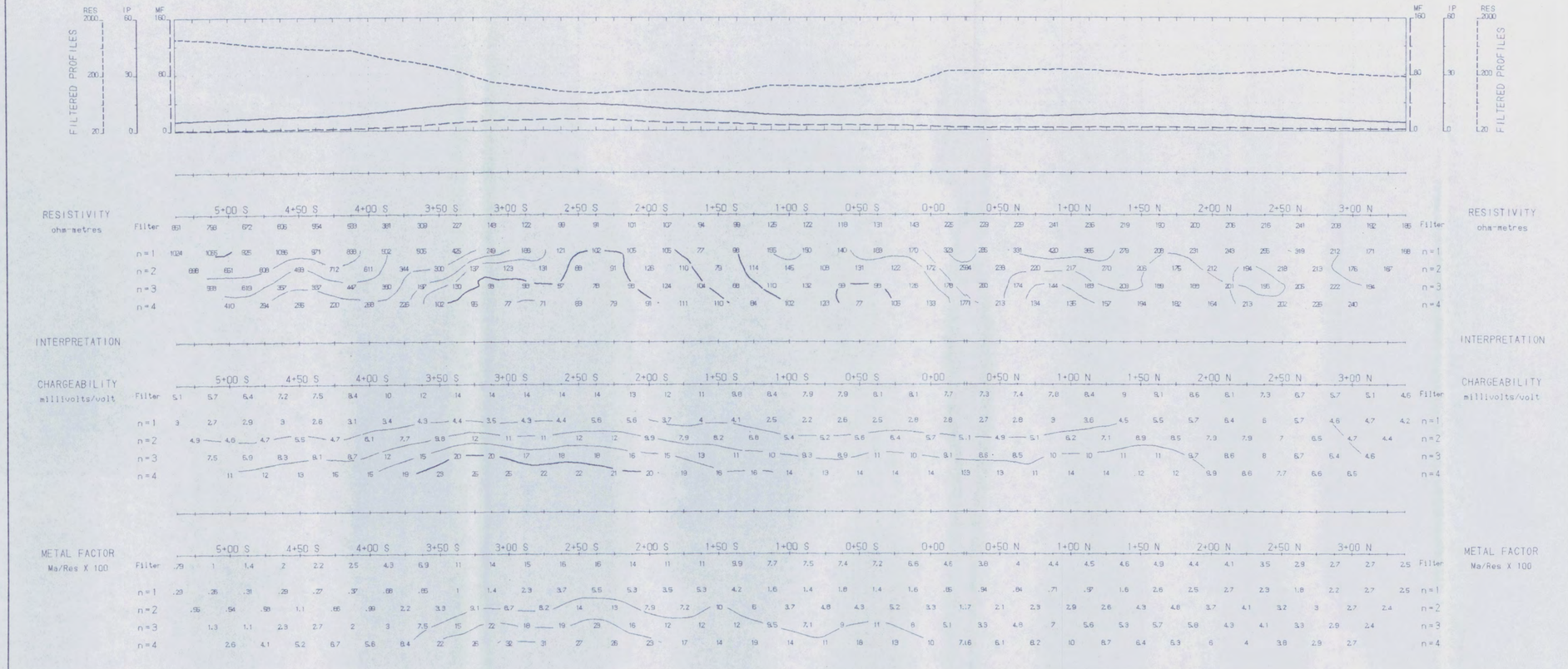
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
PDW GRID
CLEAR LAKE PROJECT, Y.T.

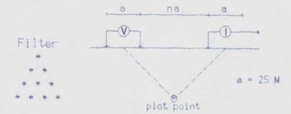
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 1150 E

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

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Resistivity feature.

Scale 1:2000

-25 0 25 50 75 100 125
(metres)

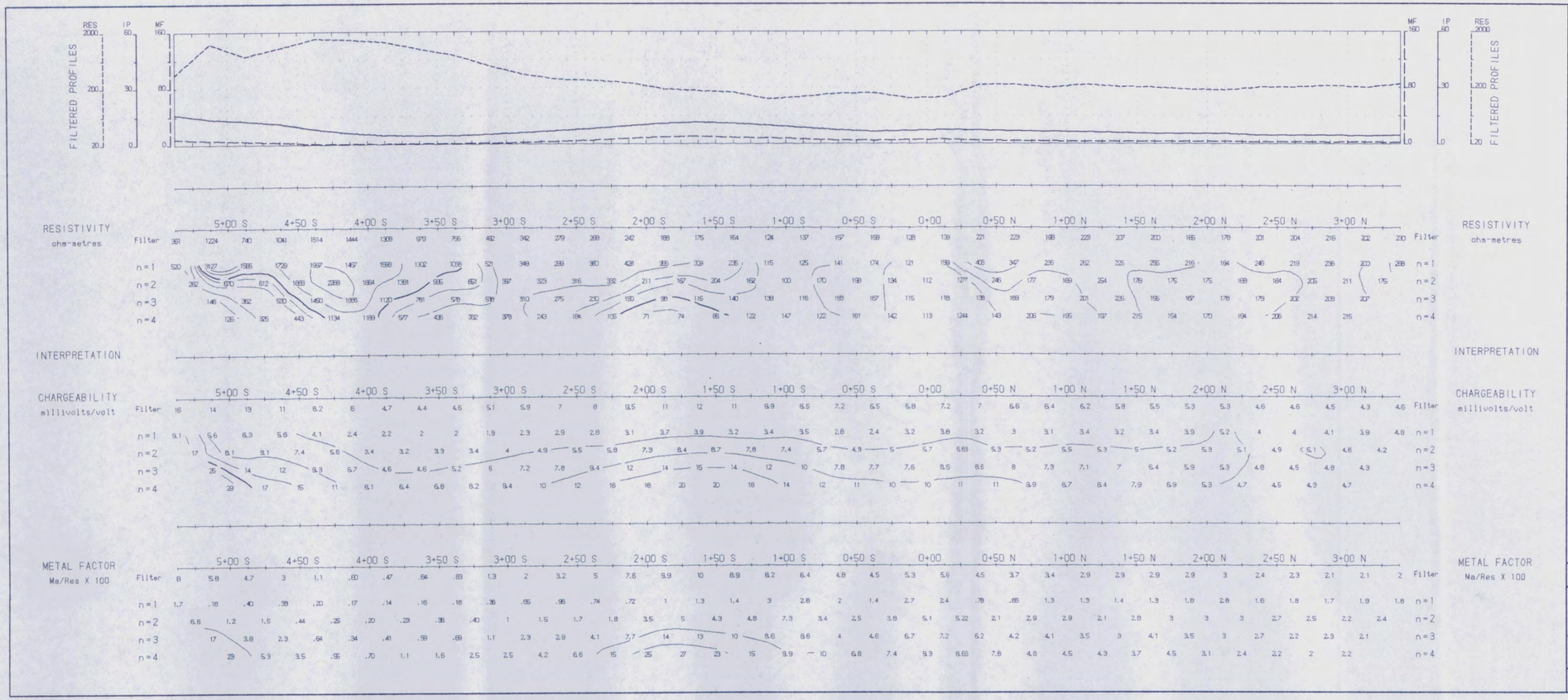
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

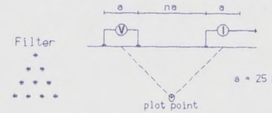
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 1250 E

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours : 1, 1.5, 2, 3, 5, 7.5, 10....

INTERPRETATION

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(metres)

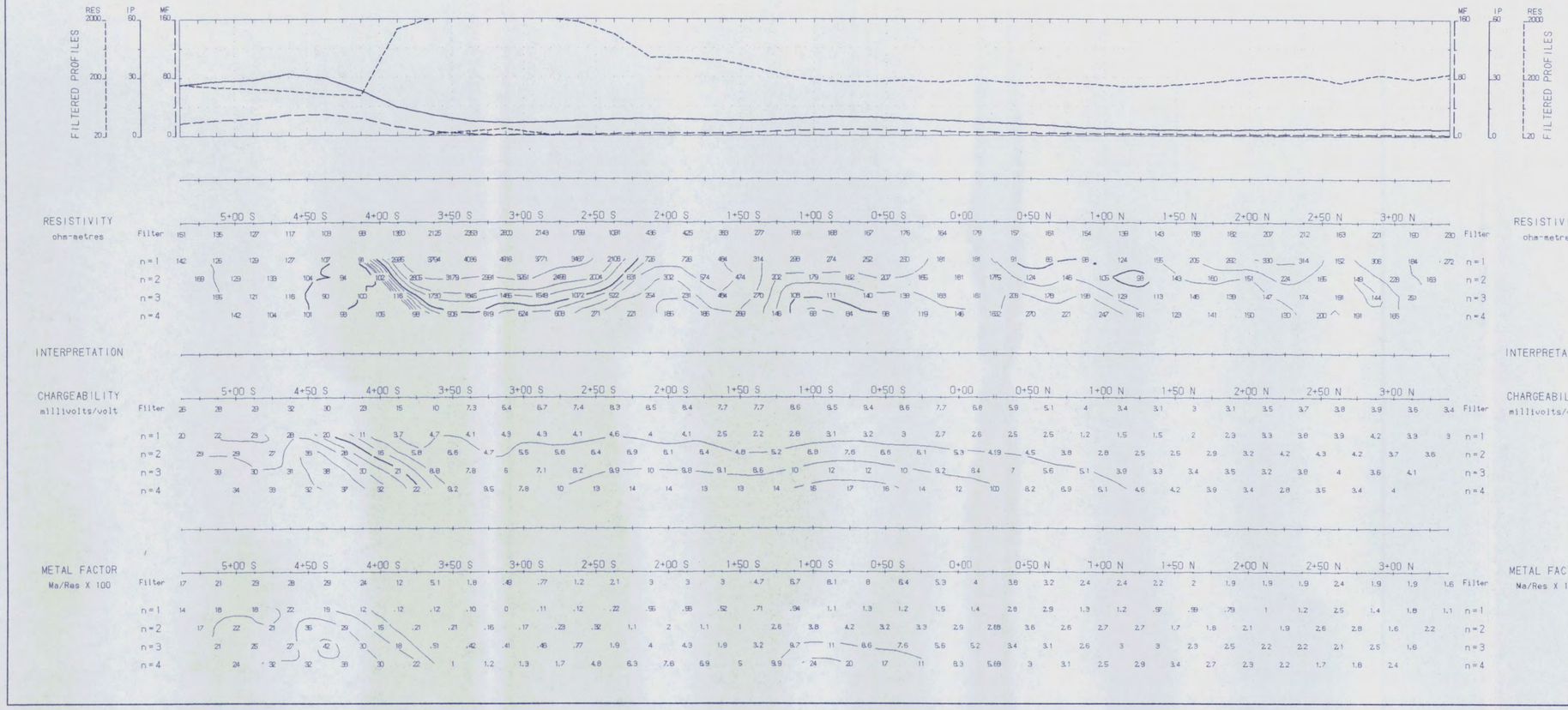
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

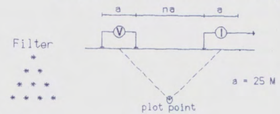
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 1350 E

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10....

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(metres)

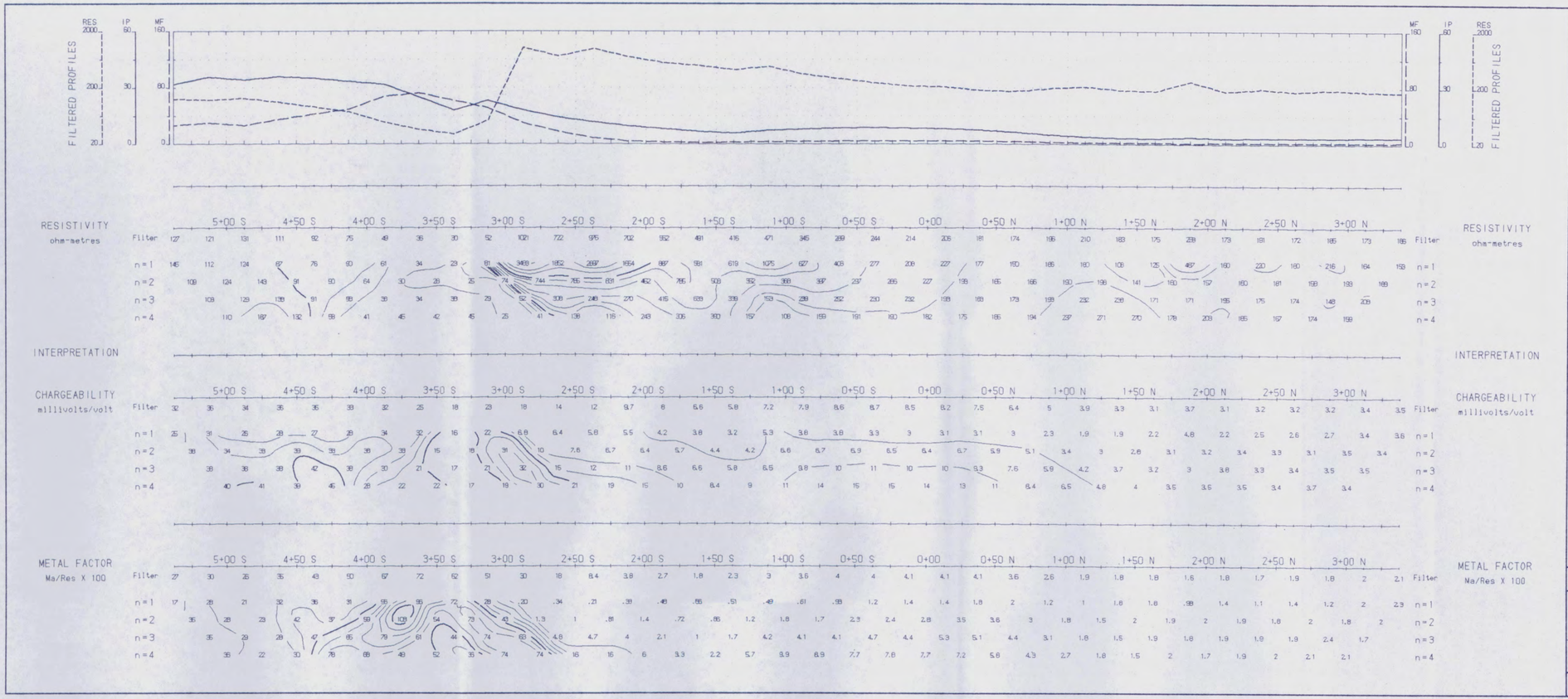
093013

TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

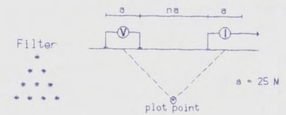
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 1450 E

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10....

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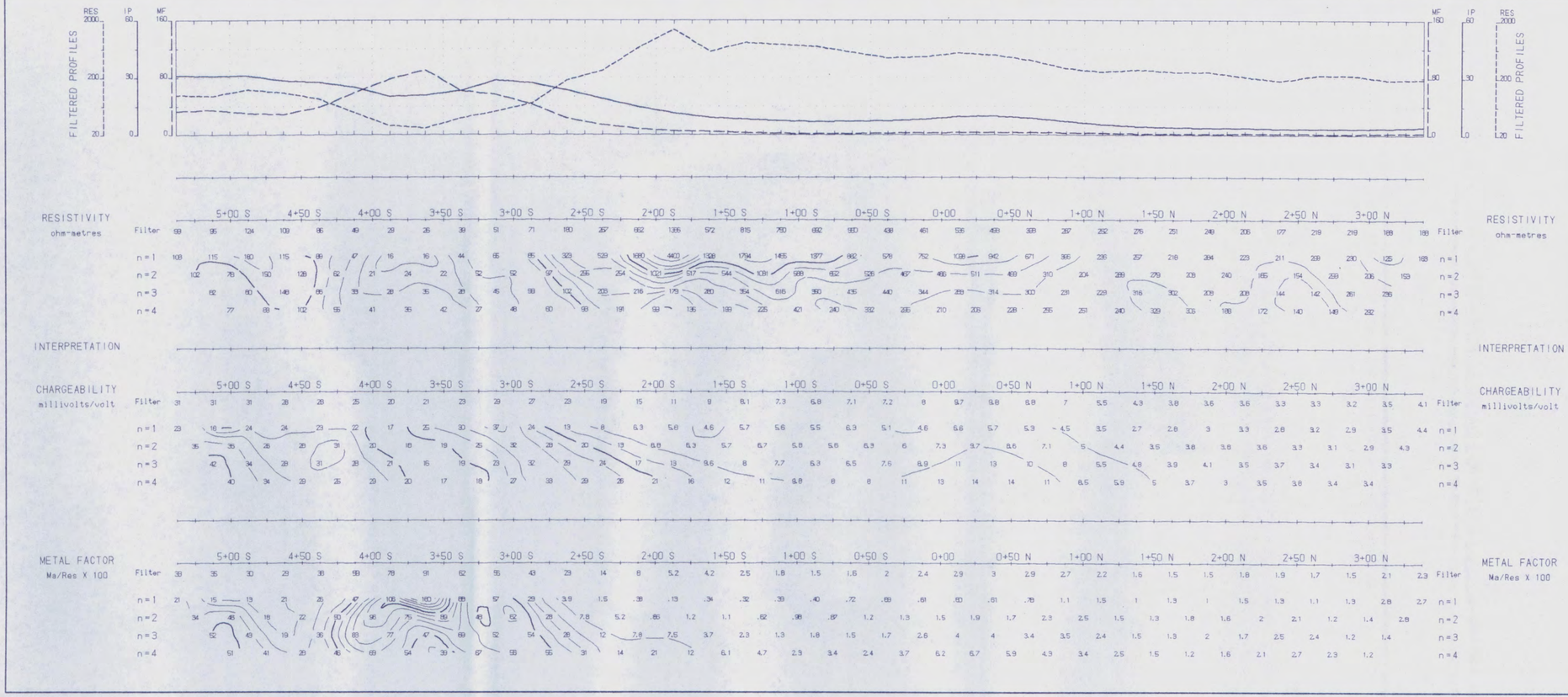
TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

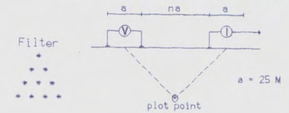
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 1550 E

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

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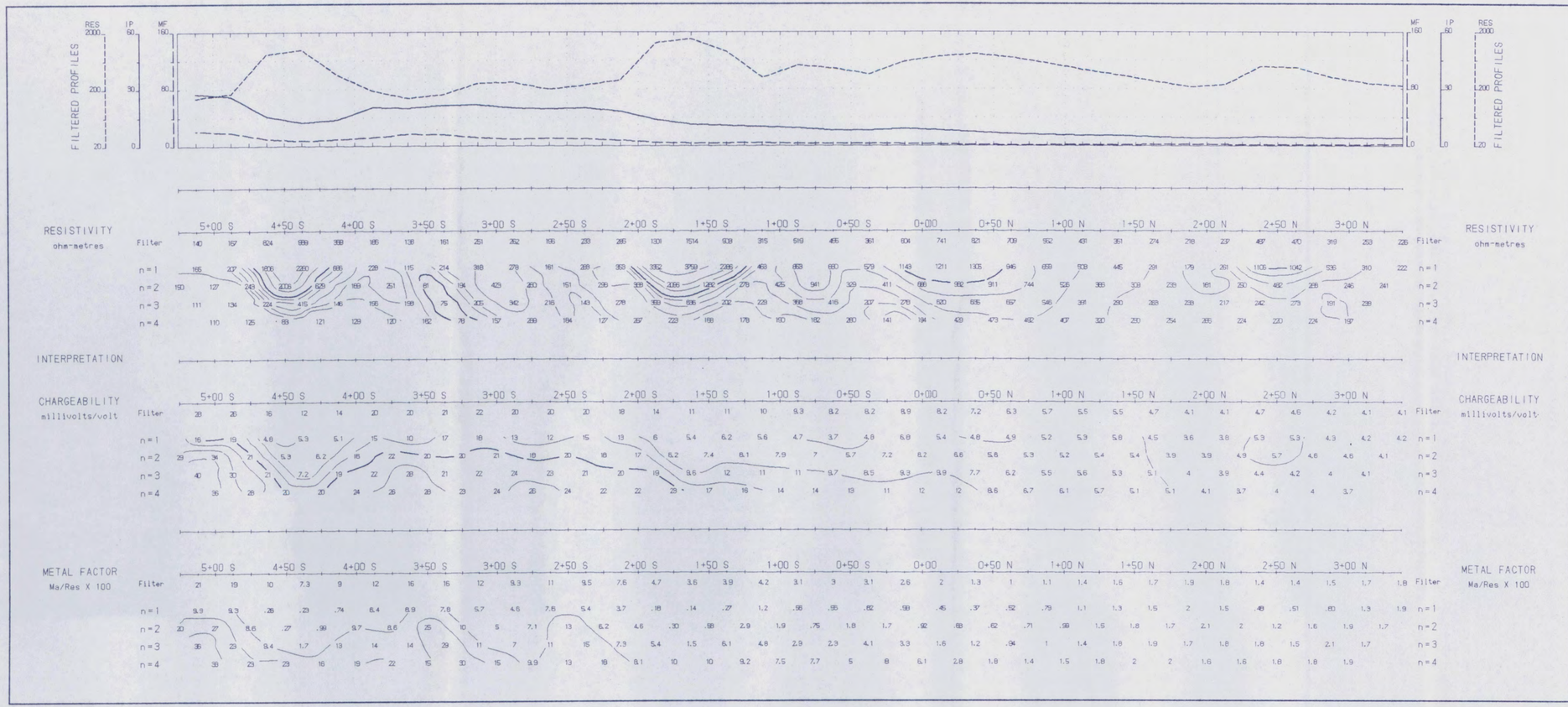
TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

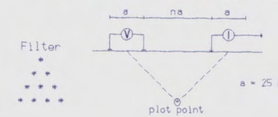
Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.



Line 1650 E

Dipole-Pole Array



Instrument: Huntec 2.5 kw. Tx., BRGM Elrec 6 Rx.
Frequency: 0.125 Hz.
Operators: G.M., A.W.

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10....

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TOTAL ENERGOLD CORPORATION

INDUCED POLARIZATION SURVEY
POW GRID
CLEAR LAKE PROJECT, Y.T.

Date: June - July 1991 N.T.S.: 105L/14
Interpretation: P.J.

PETER E. WALCOTT & ASSOC. LTD.

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MAR - 3 1992
MINING
RECORDERS OFFICE
WHITEHORSE, Y.T.

APPENDIX D

GEOCHEMICAL AND ASSAY ANALYTICAL PROCEDURES AND RESULTS

093J13

To Accompany:

CLEAR LAKE PROPERTY
1991 ASSESSMENT REPORT
By Basnett & Zuran

REAGENTS

Ammonia / Ammonium Chloride Wash Solution:

25g NH_4Cl, 50ml NH_4OH - make up to 1L with H_2O

Ammonium Molybdate Indicator:

Dissolve 0.8g ammonium molybdate in water and dilute to 100ml.

Potassium Ferrocyanide Solution:

Dissolve 21.53g $K_4Fe(CN)_6.3H_2O$ in water, add 2g Na_2SO_3 (sodium sulphite) and make up to 1L.

Standardization:

Weigh 0.100g, 0.150g, and 0.200g portions of pure zinc metal into 250ml or larger beakers. Also include two blanks. Add 10ml H_2O and 10ml HCl, cover and heat gently to dissolve. Dilute to 30 or 40 ml with H_2O, add ~4g NH_4Cl and 25ml NH_4OH. Using litmus paper, carefully acidify with HCl, then add an additional 5ml HCl. Dilute to 200ml with H_2O, add 10g test lead and boil for 20 minutes, covered. Titrate as follows:

Tritation:

Place beaker on hot plate / stirrer (stir with stirring bar) and adjust temperature to ~70C (maintain above 50C at least) Add Potassium Ferrocyanide titrant from 50ml burret to near end point :
.100g Zn = 20ml ; .150g Zn = 30ml ; .200g Zn = 40ml
Add titrant a drop at a time and test for end point by adding a drop of solution to a drop of ammonium molybdate on wax paper. A yellow tinge indicates the end point. Record volume of titrant used and add more titrant and test to verify no false end point.

$$\text{Proof Factor} = \frac{\text{Wt. of Zn in g}}{\text{Vol. of titrant in ml}}$$

CLASSICAL Zn

1. Weigh sample at 1 g (for typical ore) into 150ml beaker.

2. Add 50ml H_2O, 5ml HCl, and 5ml HNO_3. Digest on slow hot plate for 20-30 minutes.

3. Add 5ml 1:1 H_2SO_4 and evaporate to fumes.

4. Cool. Add 20ml H_2O and 2ml HCl. Warm to dissolve salts.

5. Add 10ml H_2O, ~2g NH_4Cl, 25ml NH_4OH and a pinch of ammonium persulphate.

6. Heat and boil for 10 minutes covered, with watch glass

7. Filter through #4 filter paper into a 250ml beaker.

8. Wash filter twice wtih hot ammonia/ammonium chloride solution (rinsing original beaker with this solution first.)

9. Wash the filtered out precipitate back into the original 150ml beaker using a minimum volume of hot water. Add 5ml HCl to dissolve.

10. Repeat steps 5 through 8, filtering into the 250ml beaker containing the first filtrate. (filter through original filter paper.)

11. To the 250ml beaker containing the filtrates, add a piece of blue litmus paper and carefully acidify with HCl. Remove the litmus paper, add an additional 5ml HCl and make up to 200ml with H_2O.

12. Add 10g test lead and boil for 20 minutes, covered. (this precipitates out Cu, ect.) If there is much precipitate add more lead until surface of lead remains clean.

13. If necessary, readjust volume to 200ml and bring to boil again. Add 1ml of HCl to hot solution and titrate with standard potassium ferrocyanide solution using ammonium molybdate solution as an extrnal indicator. Maintain temperature at about 70C, not less than 50C.
End point volume should be close to 2x wt. of sample x % Zn determined by AA.

$$\% \text{ Zn} = \frac{\text{ml titrant} \times \text{proof factor} \times 100}{\text{g sample}}$$

Assay Digestion for Pb & Zn

1. Weigh .100g of sample into 100ml flask.
2. Add 5ml HNO_3 and place on hot plate until red fumes are gone.
3. Add 20ml H_2O and then 10ml HCl return to hot plate and boil for 30 min.
4. Bulk up with H_2O, heat again and remove from hot plate placing in cold water bath until room temperature.
5. Bulk with H_2O to the line.
6. Shake and let stand before reading on A.A.

Geochem Digestion for Ag

1. Weigh .500g of sample in testube.
2. Add 1ml of HNO_3 let stand for 10 min.
3. Add 1/2ml HNO_3 if sample is reactive and then place in hot water bath for 30 min.
4. Add 3ml HCl place in hot water bath for 1 1/2 hours.
5. Bulk to 10ml and mix.
6. Read within 1 hour of removal from hot water bath.

Northern Analytical Laboratories ltd.

September 19,1991

Work Order # 13421

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13421

P.O. #

Assay Certificate for Samples Provided

Sample #	Zn %*
6654	12.93
6664	37.15

* Classical Assay

Certified by _____

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

15/Aug./91
M2

SAMPLE NUMBER	BONDAR – CLEGG				NAL			
	Ag ppm	Pb %	Zn %	Zn %	Ag ppm	Pb %	Zn %	
6009	19.1	0.59	18.30	18.76	16.3	0.58	19.50	
6010	14.0	2.20	3.92	—	11.9	2.21	3.64	
6011	38.6	1.78	28.40	29.39	34.3	1.26	27.80	
6012	16.5	0.42	17.60	17.42	15.0	0.36	16.40	
6065	34.9	0.53	15.60	15.74	38.0	0.53	14.60	
6066	7.6	0.13	0.82	—	9.1	0.13	0.93	
6067	34.1	1.29	12.55	12.66	43.1	1.30	10.80	
6068	3.8	0.12	0.68	—	2.3	0.11	0.70	
6098	5.3	0.24	1.17	—	7.1	0.26	1.20	
6099	5.6	0.34	0.66	—	5.8	0.37	0.56	
6100	6.1	0.52	1.37	—	6.7	0.61	1.53	
6101	6.1	0.52	2.50	—	6.5	0.76	2.62	
6102	17.4	2.43	7.40	—	14.1	4.26	8.46	
6103	18.3	2.05	7.42	—	16.9	2.62	7.60	
6104	18.4	1.84	7.32	—	15.3	0.60	7.53	
6105	7.5	0.32	1.28	—	7.1	0.31	1.49	
6106	5.8	0.21	2.87	—	4.4	1.38	2.61	
6107	9.3	0.58	6.13	—	7.2	0.53	6.13	
6108	6.5	0.37	1.19	—	6.4	1.41	1.36	
6109	5.2	0.50	0.75	—	3.3	0.62	0.87	
6110	5.8	0.31	0.84	—	4.3	0.37	0.91	
6111	12.4	1.68	4.98	—	9.0	1.93	5.28	
6112	8.1	0.69	4.08	—	4.5	0.83	4.15	
6113	6.2	0.41	1.50	—	4.4	0.53	1.58	
6114	42.2	1.93	10.00	9.88	32.2	2.22	9.10	
6115	47.8	1.93	9.75	9.71	39.0	1.97	9.93	
6116	44.7	1.94	7.25	—	37.9	2.17	6.91	
6117	63.7	2.80	11.10	11.13	55.9	2.80	9.80	

Bondar-Clegg & Company Ltd.
130 Pemberton Ave.
North Vancouver, B.C.
V7P 2R5
(604) 985-0681 Telex 04-352667

BONDAR-CLEGG

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

REPORT: V91-00882.0 (COMPLETE)

DATE PRINTED: 19-JUL-91

PROJECT: NONE GIVEN PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM
X2 E6009		19.1
X2 E6010		14.0
X2 E6011		38.6
X2 E6012		16.5
X2 E6065		34.9
X2 E6066		7.6
X2 E6067		34.1
X2 E6068		3.8
X2 E6098		5.3
X2 E6099		5.6
X2 E6100		6.1
X2 E6101		6.1
X2 E6102		17.4
X2 E6103		18.3
X2 E6104		18.4
X2 E6105		7.5
X2 E6106		5.8
X2 E6107		9.3
X2 E6108		6.5
X2 E6109		5.2
X2 E6110		5.8
X2 E6111		12.4
X2 E6112		8.1
X2 E6113		6.2
X2 E6114		42.2
X2 E6115		47.8
X2 E6116		44.7
X2 E6117		>50.0

Bondar-Clegg & Company Ltd.
130 Pemberton Ave.
North Vancouver, B.C.
V7P 2R5
(604) 985-0681 Telex 04-352667

BONDAR-CLEGG

Certificate of Analysis

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

DATE PRINTED: 26-JUL-91

REPORT: V91-00882.6 (COMPLETE)

PROJECT: NONE GIVEN PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Ag OPT
X2 E6117		2.08

Bondar-Clegg & Company Ltd.
130 Pemberton Ave.
North Vancouver, B.C.
V7P 2R5
[illegible]) 985-0681 Telex 04-352667

BONDAR-CLEGG

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Certificate of Analysis

REPORT: V91-00882.4 (COMPLETE)

DATE PRINTED: 22-JUL-91

PROJECT: NONE GIVEN PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Pb PCT	Zn PCT	Zn PCT	Zn PCT
X2 E6009		0.59	>10.00	18.30	18.76
X2 E6010		2.20	3.92		
X2 E6011		1.78	>10.00	28.40	29.39
X2 E6012		0.42	>10.00	17.60	17.42
X2 E6065		0.53	>10.00	15.60	15.74
X2 E6066		0.13	0.82		
X2 E6067		1.29	>10.00	12.55	12.66
X2 E6068		0.12	0.68		
X2 E6098		0.24	1.17		
X2 E6099		0.34	0.66		
X2 E6100		0.52	1.37		
X2 E6101		0.52	2.50		
X2 E6102		2.43	7.40		
X2 E6103		2.05	7.42		
X2 E6104		1.84	7.32		
X2 E6105		0.32	1.28		
X2 E6106		0.21	2.87		
X2 E6107		0.58	6.13		
X2 E6108		0.37	1.19		
X2 E6109		0.50	0.75		
X2 E6110		0.31	0.84		
X2 E6111		1.68	4.98		
X2 E6112		0.69	4.08		
X2 E6113		0.41	1.50		
X2 E6114		1.93	9.96	10.00	9.88
X2 E6115		1.93	9.75		9.71
X2 E6116		1.94	7.25		
X2 E6117		2.90	>10.00	11.10	11.12

Northern Analytical Laboratories ltd.

September 11,1991

Work Order #13378

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13378

P.O. #

Assay Certificate for Samples Provided

Sample #	Ag ppm	Pb %	Zn %
6701	6.4	0.25	0.95
6702	6.1	0.29	0.66
6703	3.5	0.32	0.53
6704	7.6	0.22	1.90
6705	3.2	0.27	0.42
6706	3.5	0.05	0.64

Certified by CHyokki

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

August 27,1991

Work Order # 13346

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13346a

P.O. #

Assay Certificate for Samples Provided

Sample #	Ag ppm	Pb %	Zn %
6668	1.6	0.02	<0.01
6669	3.8	0.09	<0.01
6670	6.4	0.25	<0.01
6671	3.0	0.07	<0.01
6672	2.9	0.09	<0.01
6673	2.7	0.04	0.18
6674	1.8	0.02	0.04
6675	0.9	0.02	<0.01
6676	2.1	0.05	<0.01
6677	2.9	0.06	<0.01
6678	3.8	0.07	<0.01
6679	2.5	0.04	<0.01
6680	0.9	0.01	0.39
6681	0.9	0.02	<0.01
6682	0.7	0.01	0.19
6683	0.8	0.03	0.02
6684	0.6	0.02	0.01
6685	0.5	0.02	0.16
6686	0.5	0.02	0.10
6687	0.7	0.01	0.17
6688	0.9	0.02	0.11
6689	0.5	<0.01	0.02
6690	0.4	0.01	0.09

Certified by _____

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

August 22,1991

Work Order # 13339

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13339

P.O. #

Assay Certificate for Samples Provided

Sample #	Ag ppm	Pb %	Zn%
6651	3.3	0.07	9.31
6652	8.6	0.08	0.15
6653	<0.1	0.04	0.61
6654	6.4	0.08	13.10
6655	0.6	0.07	0.58
6656	1.0	0.10	0.10
6657	1.3	0.06	0.04
6658	1.5	0.08	0.13
6659	1.0	0.06	0.04
6660	1.8	0.09	0.04
6661	3.1	0.10	0.33
6662	1.0	0.07	0.31
6663	<0.1	0.02	0.10
6664	2.1	0.01	37.50
6665	<0.1	<0.01	2.37
6666	0.5	0.03	8.21
6667	1.3	0.03	13.60

Certified by_____

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Aug/13/91

Please note that the Zn results for #6465 and #6466 were previously reported incorrectly. We have checked and the Ag + Pb results were reported correctly. We also checked some samples in the same set to ensure they are correct, also Sorry, for any inconvience this may have caused.

Thank you,
Carolyn
Heyoki

Northern Analytical Laboratories ltd.

August 13,1991

Work Order # 13325

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File #

P.O. #

Assay Certificate for Samples Provided

Sample #	Zn% *
6465	7.79
6466	8.00
6469	14.05
6470	19.23
6471	13.30
6472	14.50
6473	11.23
6480	10.48
6534	13.90

* Classical assay

Certified by _____

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

August 12,1991

Work Order # 13313

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File #

P.O. #

Assay Certificate for Samples Provided

Sample #	Ag ppm	Pb %	Zn %
6533	1.8	0.20	1.50
6534	10.0	1.17	13.60
6535	5.7	1.27	5.47
6536	1.7	0.11	2.45
6537	5.3	0.35	9.04
6538	1.3	0.13	2.17
6570	0.7	0.21	0.56
6571	0.5	0.22	0.84
6572	2.4	0.14	0.35
6573	<0.1	0.11	1.30
6574	<0.1	0.20	0.94

91-61 ✓

Certified by _____

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

August 8,1991

Work Order # 13311

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13311a

P.O. #

Assay Certificate for Samples Provided

Sample #	Ag ppm	Pb %	Zn %
6548	7.1	0.05	0.96
6549	7.5	0.17	1.95
6550	5.7	0.10	1.09
6551	9.3	0.33	1.88
6552	7.0	0.16	0.84
6553	10.3	0.27	2.28
6554	11.7	0.63	2.95
6555	14.1	0.97	3.62
6556	8.4	0.43	2.97
6557	5.3	0.11	0.50
6558	6.8	0.30	1.71
6559	8.6	0.50	2.87
6575	0.7	0.39	0.91
6576	1.1	0.38	3.94
6577	0.2	0.23	1.38
6578	0.1	0.26	1.42
6579	<0.1	0.21	0.83
6580	0.6	0.24	1.18
6581	2.3	0.39	3.22
6582	2.4	0.59	3.96
6583	1.4	0.31	0.68
6584	1.3	0.16	0.72
6585	2.3	0.59	3.79
6586	1.0	0.24	0.99
6587	1.3	0.72	4.69
6588	1.2	0.50	3.01
6589	0.8	0.31	1.73
6590	1.3	0.73	3.88

Certified by Chybicki

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

August 8,1991

Work Order # 13311

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13311b

P.O. #

Assay Certificate for Samples Provided

Sample #	Ag ppm	Pb %	Zn %
6602	0.9	0.32	3.19
6603	0.4	0.25	1.31
6604	2.9	0.58	4.85
6605	2.3	0.38	2.38
6606	1.5	0.37	0.98
6607	2.6	0.66	3.77
6608	0.8	0.22	1.23
6609	0.2	0.15	0.28
6610	0.4	0.16	0.18

Certified by _____

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

CAVENDISH ANALYTICAL LABORATORY LTD.
2225 S. Springer Ave., Bur
British Columbia, Can. V5B
Ph:(604)299-2560 Fax:299-

CERTIFICATE OF ANALYSIS

TO : NORTHERN ANALYTICAL LAB LTD.
105 COPPER RD.
WHITEHORSE YUKON
PROJECT : WO#13096
TYPE OF ANALYSIS : ICP

CERTIFICATE # : 91-422A
INVOICE # : NAL422A.IN
DATE ENTERED : APR-23-1991
FILE NAME : NAL422A2.E
PAGE # : 1

PRE FIX	SAMPLE NAME	mg/L SO4	mg/L Cl-	mg/L TDS	pH	FECAL COLIFORMS	TOTAL COLIFORMS
	#1	49.30	0.66	176	7.17	0	0
	#3	38.67	0.45	155	6.89	0	0

LOOKS LIKE WADE RAN

A COUPLE OF TESTS FOR COLIFORMS

JUST TO BE SURE e AS YOU CAN

SEE YOU HAVE NO PROBLEM THERE!

P.S. NO CHARGE FOR COLIFORM

TESTS, [redacted] (WE THOUGHT WE SHOULD

RUN THEM JUST TO BE SURE)

Wm

CAVENDISH ANALYTICAL LABORATORY LTD.

2225 S. Springer Ave., Burnaby,
British Columbia, Can. V5B 3H1
Ph:(604)299-2560 Fax:299-6252

CERTIFICATE OF ANALYSIS

TO : NORTHERN ANALYTICAL LAB LTD.
105 COPPER RD.
WHITEHORSE YUKON
PROJECT : WO#13096
TYPE OF ANALYSIS : ICP

CERTIFICATE # : 91-422A
INVOICE # : NAL422A.IN
DATE ENTERED : APR-23-1991
FILE NAME : NAL422A2
PAGE # : 1

PRE FIX	SAMPLE NAME	PPM AL	PPM CA	PPM FE	PPM MG	PPM P	PPM SI	PPM TI	PPM AS	PPM BE	PPM BI	PPM CD	PPM HG	PPM PB	PPM SB	PPM AG	PPM AU	PPM BA	PPM CO	PPM CR	PPM CU	PPM LA	PPM MO	PPM MN	PPM NI	PPM SR	PPM V	PPM W	PPM ZN	PPM B	PPM MA
	#1	0.96	15.3	0.84	14.7	0.03	1.24	0.037	<.02	<.001	<.04	<.002	0.00	<.02	<.02	<.003	<.003	0.079	<.005	<.005	0.008	<.005	0.002	0.026	<.005	0.098	0.003	0.23	0.016	0.21	2.9
	#2	3.24	13.2	2.61	10.9	0.04	2.02	0.098	<.02	<.001	<.04	<.002	0.00	<.02	<.02	<.003	<.003	0.146	<.005	<.005	0.003	<.005	<.002	0.026	<.005	0.086	0.005	<.02	0.004	0.12	2.0

Comment: Water is normal in most metals.
Please submit coliform + other analysis before consumption.

Northern Analytical Laboratories ltd.

August 6,1991 Invoice # 13296

Total Energold Corp. P.O. #
21 - 1114 - 1st Ave
Whitehorse, Yukon
Y1A 1A3

Invoice for Analytical Services

Drill core package	69 x $ 12.75	= $ 879.75

Subtotal	$ 879.75
GST @ 7% (REG #R121285662)	$ 61.58
Total due on receipt of invoice	$ 941.33

2% interest charge on accounts over 30 days

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

August 6,1991

Work Order # 13296

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13296a

P.O. #

Assay Certificate for Samples Provided

Sample #	Ag ppm	Pb %	Zn %
6480	8.2	0.09	10.90
6481	5.7	0.66	4.68
6482	2.8	0.21	0.90
6483	1.5	0.21	0.37
6495	5.9	1.26	4.05
6496	3.3	0.59	1.89
6497	8.3	3.28	5.04
6498	1.6	0.37	1.65
6499	4.9	0.63	6.05
6500	2.9	0.61	2.70
6501	5.8	0.53	4.63
6502	6.2	0.61	4.27
6503	15.1	1.84	4.90
6504	11.4	1.97	5.73
6505	8.3	1.27	4.72
6506	5.1	0.25	1.22
6507	6.8	0.89	4.17
6508	6.3	0.70	4.33
6509	5.2	0.45	2.09
6510	11.7	0.79	5.65
6511	12.1	1.16	8.31
6512	5.3	0.59	3.60
6513	3.8	0.53	5.74
6514	4.3	0.48	3.79
6515	3.4	0.33	2.30
6524	2.9	0.35	2.55
6525	7.8	2.29	4.99
6526	2.9	0.33	1.62
6527	9.4	1.12	6.32
6528	9.3	0.64	5.46

91-60

Certified by C Hyatt

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

August 6,1991

Work Order # 13296

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13296b

P.O. #

Assay Certificate for Samples Provided

Sample #	Ag ppm	Pb %	Zn %
6539	0.4	0.04	0.14
6540	1.4	0.03	0.31
6541	2.4	0.23	1.01
6542	2.5	0.14	0.65
6543	1.6	0.15	0.65
6544	3.2	0.25	1.29
6545	0.6	0.31	0.77
6546	1.2	0.07	0.81
6547	2.0	0.08	1.09
6560	5.3	0.59	2.76
6561	30.8	1.57	9.61
6562	14.8	1.26	5.10
6563	14.7	1.18	5.92
6564	11.0	0.73	5.32
6565	8.9	0.94	4.90
6566	2.5	0.39	1.51
6567	0.6	0.36	0.88
6568	<0.1	0.27	0.56
6569	<0.1	0.28	0.44
6591	<0.1	0.12	2.18
6592	<0.1	0.08	0.13
6593	<0.1	0.10	0.22
6594	<0.1	0.28	1.97
6595	<0.1	0.70	4.20
6596	<0.1	0.81	2.86
6597	<0.1	0.47	0.80
6598	<0.1	0.61	3.23
6599	<0.1	0.49	1.76
6600	<0.1	0.46	1.42
6601	<0.1	0.27	2.88

91-61

Certified by Chyoki

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

August 6,1991

Work Order # 13296

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13296c

P.O. #

Assay Certificate for Samples Provided

Sample #	Ag ppm	Pb %	Zn %
6611	<0.1	0.05	0.70
6612	<0.1	0.09	0.23
6613	<0.1	0.06	1.38
6614	<0.1	0.02	0.07
6615	<0.1	0.08	<0.01
6616	<0.1	0.10	0.05
6617	1.2	0.19	0.25
6618	0.7	0.13	0.22
6619	<0.1	0.10	0.02

91-61

Certified by C Hyde

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

copy for Clear Lake Camp

August 2,1991

Invoice # 13292

Total Energold Corp.
21 - 1114 - 1st Ave
Whitehorse, Yukon
Y1A 1A3

P.O. #

Invoice for Analytical Services

Drill core package	111 x $ 12.75 =	$ 1415.25
Subtotal		$ 1415.25
GST @ 7% (REG #R121285662)		$ 99.07
Total due on receipt of invoice		$ 1514.32

2% interest charge on accounts over 30 days

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

August 2,1991

Work Order # 13292

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13292a

P.O. #

Assay Certificate for Samples Provided

Sample #	Ag ppm	Pb %	Zn %	
6174	6.9	0.56	4.28	
6175	5.1	0.71	3.53	
6176	8.4	0.57	5.09	
6177	13.4	0.83	5.86	
6178	11.7	0.73	4.33	
6179	7.3	1.05	5.18	
6180	2.3	0.56	2.00	91-58 ✓
6181	6.9	1.17	5.66	
6182	1.0	0.41	1.80	
6183	7.3	0.32	2.09	
6184	6.6	0.81	5.05	
6185	<0.1	0.06	0.45	
6186	3.5	0.53	0.23	
6187	5.6	0.21	1.64	
6188	3.9	0.08	0.31	
6189	17.4	1.09	5.14	
6190	5.3	0.09	0.31	
6191	6.0	0.28	2.04	
6192	0.9	0.03	0.13	
6193	0.2	0.02	0.15	
6194	4.8	0.30	1.00	91-59 ✓
6195	3.0	0.05	0.29	
6196	2.2	0.04	0.57	
6197	1.6	0.01	0.11	
6198	3.2	0.06	1.31	
6199	7.6	0.10	2.17	
6200	5.8	0.33	0.92	
6241	4.8	0.07	2.11	
6242	4.8	0.14	1.47	91-59 ✓
6243	4.1	0.13	0.96	

Certified by Chris Yki

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

August 2,1991

Work Order # 13292

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13292b

P.O. #

Assay Certificate for Samples Provided

Sample #	Ag ppm	Pb %	Zn %	
6244	5.2	0.27	1.95	
6245	7.0	0.27	3.11	
6246	4.7	0.14	0.45	
6247	3.6	0.13	0.44	91-59 ✓
6248	3.2	0.06	0.59	
6249	2.9	0.09	0.29	
6250	2.9	0.11	0.16	
6406	1.7	0.04	0.02	
6407	2.8	0.09	0.49	
6408	1.8	0.02	0.76	
6409	1.5	0.01	0.35	
6410	1.9	0.03	1.67	
6411	3.3	0.01	2.68	
6412	3.2	0.01	1.97	
6413	1.6	0.02	1.61	
6414	0.7	0.04	0.08	
6415	1.3	0.13	0.32	
6416	2.4	0.21	1.10	
6417	5.2	0.56	2.38	
6418	11.5	0.14	1.71	91-58 ✓
6419	4.3	0.16	1.75	
6420	3.9	0.39	2.11	
6421	2.5	0.14	0.30	
6422	15.8	1.31	6.89	
6423	5.4	0.50	2.67	
6424	4.4	0.92	4.34	
6425	<0.1	0.06	1.25	
6426	<0.1	0.07	0.46	
6427	<0.1	0.04	0.38	
6428	<0.1	0.07	0.57	

Certified by CHyokki

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

August 2,1991

Work Order # 13292

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13292c

P.O. #

Assay Certificate for Samples Provided

Sample #	Ag ppm	Pb %	Zn %	
6429	4.7	0.35	0.09	
6430	3.3	0.11	0.32	
6431	11.9	0.65	3.74	
6432	4.8	0.33	0.18	
6433	0.8	0.01	0.11	
6434	1.7	0.05	0.37	
6435	4.9	0.18	1.05	
6436	9.4	0.71	7.83	
6437	4.4	0.27	1.12	
6438	11.6	0.99	5.87	
6439	16.1	1.70	6.34	
6440	18.8	1.76	6.89	
6441	7.1	0.61	2.26	91-58 ✓
6442	6.4	0.75	2.68	
6443	12.4	0.84	2.94	
6444	9.4	0.55	1.98	
6445	20.2	1.73	4.88	
6446	9.9	0.54	1.00	
6447	6.6	0.45	1.92	
6448	7.1	0.32	2.59	
6449	6.0	0.65	3.14	
6450	9.6	0.83	4.91	
6451	2.9	0.06	0.33	
6452	2.8	0.27	1.06	
6453	1.1	0.15	0.26	
6454	<0.1	0.03	0.01	
6455	2.6	0.08	1.56	91-59 ✓
6456	1.0	0.20	0.42	
6457	1.7	0.05	3.12	
6458	2.2	0.05	0.07	

Certified by _____

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

August 2,1991

Work Order # 13292

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13292d

P.O. #

Assay Certificate for Samples Provided

Sample #	Ag ppm	Pb %	Zn %
6459	2.2	0.12	0.25
6460	4.3	0.21	1.46
6461	11.9	1.08	4.36
6462	6.9	0.34	0.94
6463	19.8	1.39	6.28
6464	6.3	0.33	1.12
6465	14.2	1.39	20.80
6466	20.8	1.07	20.50
6467	14.8	0.63	7.33
6468	10.1	0.19	1.40
6469	36.3	1.07	15.80
6470	52.1	3.31	21.10
6471	40.9	0.89	13.40
6472	53.4	0.74	15.20
6473	73.0	0.85	11.40
6474	10.7	0.07	0.53
6475	2.0	0.04	0.35
6476	1.4	0.05	1.90
6477	1.1	0.02	2.32
6478	<0.1	0.02	0.97
6479	7.5	0.24	0.39

91-59 V

Certified by _____

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

August 2,1991

Invoice # 13293

Total Energold Corp.
21 - 1114 - 1st Ave
Whitehorse, Yukon
Y1A 1A3

P.O. #

Invoice for Analytical Services

Drill core package	23 x $ 12.75 =	$ 293.25
Subtotal		$ 293.25
GST @ 7% (REG #R121285662)		$ 20.53
Total due on receipt of invoice		$ 313.78

2% interest charge on accounts over 30 days

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

August 2,1991

Work Order # 13293

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13293

P.O. #

Assay Certificate for Samples Provided

Sample #	Ag ppm	Pb %	Zn %
6484	5.8	0.72	3.21
6485	4.5	0.18	1.09
6486	4.9	0.27	1.44
6487	3.4	0.19	0.73
6488	19.4	1.35	8.36
6489	18.0	1.30	7.68
6490	6.1	0.33	1.80
6491	6.0	0.47	4.68
6492	4.2	0.33	2.33
6493	4.3	0.44	1.75
6494	6.4	0.98	2.82
6516	10.6	0.57	3.27
6517	12.9	0.39	4.30
6518	17.4	0.52	5.88
6519	12.7	0.63	4.25
6520	20.0	0.59	7.82
6521	16.3	0.80	6.02
6522	9.7	0.59	2.08
6523	10.9	0.52	2.99
6529	15.4	0.66	7.68
6530	5.1	0.50	2.17
6531	6.4	0.63	0.73
6532	10.8	0.97	4.33

91-60 ✓

Certifed by CHyorki

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

July 25,1991

Work Order # 13265

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13265a

P.O. #

Assay Certificate for Samples Provided

Sample	ppm Ag	Pb%	Zn%	
6155	7.4	0.33	0.73	
6156	0.5	0.02	1.03	
6157	0.2	0.02	0.05	
6158	0.4	0.02	1.46	
6159	0.9	0.03	0.35	
6160	2.8	0.06	0.07	
6161	2.9	0.75	0.69	
6162	0.6	0.08	0.84	DDH
6163	<0.1	0.03	0.20	91-57 ✓
6164	<0.1	0.02	0.14	
6165	<0.1	0.02	0.17	
6166	25.4	2.91	0.17	
6167	22.3	1.74	6.79	
6168	2.4	0.06	0.67	
6169	13.5	2.54	0.44	
6170	6.5	0.09	5.49	
6171	0.4	0.04	0.17	
6172	1.3	0.07	0.57	
6173	2.6	0.07	0.22	
6174	10.1	1.95	4.33	DDH 91-58 ✓
6220	10.6	4.49	8.63	
6221	2.6	1.26	4.57	
6222	11.8	1.71	14.80	
6223	14.7	1.63	15.90	
6224	8.4	1.52	3.63	
6225	12.3	1.86	13.10	
6226	0.5	1.30	3.68	DDH
6227	<0.1	0.59	3.94	91-50 ✓
6228	3.9	1.52	7.82	
6229	8.4	1.50	4.76	

Certified by _____

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Northern Analytical Laboratories ltd.

July 25,1991

Work Order # 13265

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13265b

P.O. #

Assay Certificate for Samples Provided

Sample	Ag ppm	Pb%	Zn%
6230	9.2	1.55	4.49
6231	<0.1	0.40	0.55
6232	<0.1	1.50	1.24
6233	2.8	0.67	2.41
6234	8.3	1.58	9.97
6235	2.2	0.28	1.13
6236	2.2	0.23	0.55
6237	1.2	0.29	2.70
6238	2.8	0.26	1.79
6239	2.6	0.31	0.43
6240	2.1	0.13	0.07
6251	1.7	0.06	0.06
6252	1.5	0.04	0.02
6253	1.7	0.10	0.06
6254	5.7	0.12	1.10
6255	4.2	0.13	0.88
6256	15.4	0.28	5.56
6257	4.5	0.10	0.76
6258	12.5	0.49	9.83
6259	8.8	0.47	9.30
6260	17.8	0.63	17.40
6261	9.6	0.10	5.06
6262	17.9	0.84	17.30
6263	8.3	0.19	4.85
6264	2.9	0.05	0.68
6265	20.9	2.05	24.70
6266	7.1	0.49	5.19
6267	8.6	0.60	11.50
6268	11.5	0.92	9.21
6269	3.7	0.14	0.77

DDH 91-50 ✓

DDH 91-56 ✓

Certified by _____

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Northern Analytical Laboratories ltd.

July 25,1991

Work Order # 13265

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13265c

P.O. #

Assay Certificate for Samples Provided

Sample	Ag ppm	Pb %	Zn %	
6270	16.9	0.43	16.80	DDH 91-56 ✓
6271	15.6	0.45	13.90	
6272	5.9	0.12	1.80	
6273	11.9	0.41	4.94	
6274	26.1	1.37	11.60	
6275	16.1	0.70	7.26	
6276	12.1	0.44	7.31	
6277	2.8	0.07	0.40	
6278	2.9	0.08	0.78	
6279	1.9	0.13	7.51	
6280	7.5	0.25	1.58	
6281	52.1	0.80	13.80	
6282	10.4	0.45	8.39	
6283	3.0	0.08	4.31	
6284	5.6	0.11	6.28	
6285	6.5	0.39	0.62	
6286	10.4	2.32	3.49	
6287	3.3	0.20	0.80	
6288	4.4	0.23	1.61	
6289	9.2	0.76	4.48	DDH 91-54 ✓
6290	9.0	0.47	3.34	
6291	15.6	0.69	6.25	
6292	3.8	0.23	1.24	
6293	10.5	0.49	3.28	
6294	11.3	0.38	3.91	
6295	9.6	0.85	3.29	
6296	8.7	0.64	2.45	
6297	9.5	0.78	3.49	
6298	8.5	0.27	2.56	
6299	8.7	0.26	1.93	

Certified by _____

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Northern Analytical Laboratories ltd.

July 25,1991

Work Order # 13265

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13265d

P.O. #

Assay Certificate for Samples Provided

Sample	Ag ppm	Pb %	Zn %	
6301	2.6	0.06	0.44	
6302	2.8	0.07	0.78	
6303	3.0	0.08	0.29	DDH 91-56
6304	4.1	0.09	0.69	
6305	3.1	0.10	0.43	
6306	5.6	0.17	0.82	
6307	7.2	0.49	3.07	
6308	21.2	1.22	19.10	
6309	8.4	0.86	3.65	
6310	5.7	0.89	1.87	
6311	7.5	0.55	5.27	
6312	5.7	0.39	6.87	
6313	5.0	0.21	1.18	
6314	10.6	0.77	3.51	
6315	7.0	0.33	1.17	
6316	11.9	0.86	4.23	DDH 91-55
6317	3.5	0.11	0.58	
6318	5.3	0.28	1.24	
6319	5.6	0.58	1.90	
6320	4.9	0.24	1.67	
6321	9.0	0.50	2.76	
6322	6.7	0.38	1.92	
6323	6.8	0.51	1.61	
6324	6.4	0.26	1.44	
6325	10.2	0.98	1.92	
6326	13.3	2.53	2.32	
6327	5.4	0.36	1.19	
6328	3.7	0.12	0.24	
6329	5.7	0.16	0.79	
6330	5.0	0.21	0.53	

Certified by C Hyoki

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Northern Analytical Laboratories ltd.

July 25,1991

Work Order # 13265

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13265e

P.O. #

Assay Certificate for Samples Provided

Sample	Ag ppm	Pb %	Zn %
6351	4.5	0.07	0.41
6352	27.5	1.30	5.63
6353	27.9	0.62	7.55
6354	37.6	2.78	9.26
6355	53.8	2.22	12.40
6356	48.7	2.06	17.30
6357	43.6	2.43	14.30
6358	51.1	1.95	19.20
6359	48.8	1.96	15.10
6360	4.7	0.10	0.39
6361	28.2	0.46	5.08
6362	28.9	0.74	5.97
6363	27.3	0.73	5.69
6364	25.6	0.72	7.45
6365	34.9	1.28	9.34
6366	19.2	0.89	5.38
6367	10.5	0.70	2.52
6368	12.8	0.73	3.14
6369	8.9	0.62	2.55
6370	6.9	0.54	1.73

DDH 91-54 ✓

Certified by CHyokki

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Northern Analytical Laboratories ltd.

July 25,1991

Work Order # 13265

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13265f

P.O. #

Assay Certificate for Samples Provided

Sample	Ag ppm	Pb %	Zn %
6371	21.3	0.46	6.48
6372	26.5	0.91	9.72
6373	20.6	0.89	7.77
6374	32.6	0.54	6.95
6375	21.6	0.78	5.64
6376	7.8	0.66	2.56
6377	19.7	0.80	4.81
6378	76.0	1.07	17.90
6379	14.2	0.38	2.57
6380	16.9	0.76	4.15
6381	25.7	0.53	5.91
6382	14.7	0.56	3.77
6383	19.9	0.50	6.81
6384	10.7	0.31	2.51
6385	9.6	0.26	2.12
6386	1.8	0.02	0.03
6387	12.9	2.94	5.06
6388	5.3	0.59	2.93
6389	3.5	0.28	1.72
6390	3.9	0.08	0.70
6391	2.8	0.10	1.34
6392	2.1	0.12	0.14
6393	10.8	0.32	2.79
6394	26.0	0.80	8.90
6395	17.6	0.70	7.13
6396	3.5	0.18	0.89
6397	3.8	0.22	1.31
6398	7.9	0.31	3.35
6399	5.0	0.32	1.45
6400	8.5	0.81	2.82

91-54 ✓

91-56 ✓

Certified by Chlyokli

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NAL Northern Analytical Laboratories ltd.

July 25,1991

Work Order # 13265

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13265g

P.O. #

Assay Certificate for Samples Provided

Sample	Ag ppm	Pb %	Zn %
6401	2.4	0.10	0.17
6402	3.0	0.08	0.33
6403	3.1	0.13	0.56
6404	2.8	0.12	0.62
6405	2.0	0.07	0.86

91-56 ✓

Certified by C Hykoki

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Northern Analytical Laboratories ltd.

July 25,1991

Work Order # 13265

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13265h

P.O. #

Assay Certificate for Samples Provided

Sample	Ag ppm	Pb %	Zn %	
6331	5.9	0.45	0.70	
6332	7.3	0.32	1.79	
6333	31.8	0.86	8.14	
6334	7.2	0.16	0.99	91-55 ✓
6335	4.6	0.07	0.59	
6336	36.4	0.63	7.58	
6337	9.6	0.38	2.96	
6338	18.1	0.76	7.77	
6339	5.4	0.33	1.61	
6340	14.0	0.58	4.49	
6341	12.7	0.88	5.20	
6342	13.2	0.67	4.64	
6343	13.4	0.69	4.62	
6344	28.1	1.15	7.53	
6345	3.6	0.08	0.64	91-56 ✓
6346	2.5	0.07	0.89	
6347	4.1	0.13	1.30	
6348	6.0	0.09	0.92	
6349	4.1	0.07	2.99	
✓6350	3.6	0.08	0.19	

Certified by C Hyatt

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

July 31,1991

Work Order # 13285

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File #

P.O. #

Assay Certificate for Samples Provided

Sample	Zn % *
6222	14.48
6223	15.35
6224	12.88
6260	17.28
6262	17.00
6265	24.40
6267	11.15
6270	16.20
6271	13.38
6274	11.20
6281	13.68
6308	18.53
6355	10.98
6356	16.60
6357	13.55
6358	18.50
6359	14.28
6378	17.05

*Classical assay

Certified by C Hyatt

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

July 19,1991

Work Order # 13261

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File #

P.O. #

Assay Certificate for Samples Provided

Sample #	Zn % *	
6132	13.14	DDH 91-50
6133	14.75	
6134	13.80	
6135	11.94	
6136	17.35	
6137	10.08	
6009	19.71	
6011	28.75	
6012	16.83	
6023	9.73	DDH 91-52
6053	12.01	
6065	14.96	
6067	10.74	

* Classical Assay

Certified by _____

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

July 10,1991

Work Order # 13226

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13226a

P.O. #

Assay Certificate for Samples Provided

Sample	Ag ppm	Pb %	Zn %	
6001	0.4	0.01	<0.01	
6002	2.0	0.13	0.13	
6003	0.6	0.02	0.03	
6004	<0.1	<0.01	<0.01	
6005	0.1	<0.01	0.24	
6006	2.2	<0.01	<0.01	DDH
6007	1.2	<0.01	<0.01	91-50
6008	3.2	<0.01	1.56	
6009	16.3	0.58	19.50	
6010	11.9	2.21	3.64	
6011	34.3	1.26	27.80	
6012	15.0	0.36	16.40	
6013	1.3	0.03	0.29	
6014	1.4	<0.01	0.03	
6015	7.1	0.70	3.93	
6016	3.4	0.09	1.82	
6017	9.6	0.17	4.61	
6018	10.8	0.41	4.03	
6019	4.4	0.16	2.01	
6020	5.3	0.31	1.16	
6021	12.3	0.51	3.42	
6022	31.2	2.71	9.64	DDH
6023	32.5	2.64	10.50	91-52
6024	22.9	1.24	5.69	
6025	11.6	0.68	2.60	
6026	22.7	1.30	4.86	
6027	8.5	0.42	0.98	
6028	11.7	0.52	2.87	
6029	11.3	0.38	1.41	
6030	14.0	0.69	2.00	

Certified by

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403)668-4968

July 10,1991

Work Order # 13226

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13226b

P.O. #

Assay Certificate for Samples Provided

Sample	Ag ppm	Pb %	Zn %
6031	23.2	1.41	4.94
6032	15.7	0.71	2.46
6033	14.5	0.65	2.31
6034	8.5	0.36	1.54
6035	9.6	0.43	1.21
6036	9.1	0.55	2.02
6037	10.3	0.81	2.84
6038	15.4	1.57	4.74
6039	20.5	0.72	6.87
6040	19.2	1.14	6.70
6041	19.0	1.51	7.80
6042	10.6	0.65	3.06
6043	6.7	0.43	1.59
6044	8.0	0.41	1.60
6045	7.7	0.65	2.28
6046	7.9	0.61	2.63
6047	3.5	0.06	0.43
6048	<0.1	0.07	0.27
6049	1.9	0.03	0.23
6050	2.7	0.11	0.44
6051	6.1	0.22	1.89
6052	6.5	0.23	2.82
6053	40.6	0.26	12.10
6054	8.6	0.38	2.53
6055	12.0	0.22	2.17
6056	9.0	0.14	1.37
6057	9.6	0.26	3.61
6058	12.5	0.32	4.54
6059	8.6	0.27	3.13
6060	16.9	0.53	7.36

DDH 91-52

Certified by

105 Copper Road, Whitehorse, YT. Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

July 10.1991

Work Order # 13226

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13226d

P.O. #

Assay Certificate for Samples Provided

Sample	Ag ppm	Pb %	Zn %
6091	10.3	1.29	4.63
6092	9.0	0.57	3.01
6093	7.1	0.94	2.60
6094	6.1	0.27	1.57
6095	5.8	0.36	1.66
6096	10.6	0.50	2.60
6097	7.6	0.20	1.33
6098	7.1	0.26	1.20
6099	5.8	0.37	0.56
6100	6.7	0.61	1.53
6101	6.5	0.76	2.62
6102	14.1	4.26	8.46
6103	16.9	2.62	7.60
6104	15.3	0.60	7.53
6105	7.1	0.31	1.49
6106	4.4	1.36	2.61
6107	7.2	0.53	6.13
6108	6.4	1.41	1.36
6109	3.3	0.62	0.87
6110	4.3	0.37	0.91
6111	9.0	1.93	5.28
6112	4.5	0.83	4.15
6113	4.4	0.53	1.58
6114	32.2	2.22	9.10
6115	39.0	1.97	9.93
6116	37.9	2.17	6.91
6117	55.9	3.00	9.90

DDH
91-51

Certified by CHyokki

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

July 10,1991

Work Order # 13226

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13226e

P.O. #

Assay Certificate for Samples Provided

Sample	Pb ppm	Zn ppm
6001	147	133
6004	22	19
6005	59	--
6006	71	35
6007	103	--
6014	56	--

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

July 12,1991

Work Order # 13238

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13238a

P.O. #

Assay Certificate for Samples Provided

Sample	Ag ppm	Pb %	Zn %
6118	9.4	0.51	2.48
6119	7.5	0.63	2.15
6120	13.3	1.68	7.58
6121	11.9	1.72	6.55
6122	4.3	0.19	1.39
6123	3.9	0.16	0.88
6124	5.7	0.38	1.72
6125	6.7	0.38	2.26
6126	6.3	0.23	1.34
6127	6.7	0.27	1.38
6128	6.0	0.23	1.26
6129	6.4	0.34	1.51
6130	12.8	0.442	2.70
6131	14.8	0.86	4.24
6132	21.7	1.19	13.10
6133	34.4	1.15	14.80
6134	33.8	0.77	14.10
6135	32.3	0.48	11.20
6136	59.2	1.91	16.80
6137	26.9	1.57	10.30
6138	11.4	1.54	4.11
6139	17.8	0.95	6.03
6140	13.0	0.76	3.89
6141	8.3	0.61	2.28
6142	9.2	1.06	3.27
6143	7.8	0.55	1.85
6144	7.5	0.45	3.07
6145	7.1	0.33	2.06
6146	10.9	0.99	4.79
6147	6.1	0.32	0.27

DDH
91-50 ✓

Certified by CHyokki

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

July 12,1991

Work Order # 13238

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13238b

P.O. #

Assay Certificate for Samples Provided

Sample	Ag ppm	Pb %	Zn %
6148	10.3	0.27	3.81
6149	6.9	0.17	1.36
6150	12.7	0.68	3.38
6151	8.5	0.43	2.33
6152	7.0	0.23	2.11
6153	10.3	0.60	4.03
6154	12.0	0.73	4.37
6201	14.2	0.37	3.55
6202	13.6	0.64	6.49
6203	9.8	0.42	3.79
6204	7.7	0.45	2.91
6205	12.3	1.43	8.21
6206	11.0	0.89	5.89
6207	10.8	0.36	4.12
6208	14.0	1.22	8.86
6209	11.1	0.55	4.96
6210	7.3	0.45	2.41
6211	7.5	0.83	3.18
6212	5.7	0.43	2.10
6213	7.0	0.54	3.07
6214	7.6	0.25	2.58
6215	8.6	0.50	2.57
6216	10.7	0.37	6.26
6217	9.6	0.46	3.55
6218	8.1	0.65	2.20

DDH
91-50 ✓

Certified by C Hykri

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Northern Analytical Laboratories ltd.

July 10,1991

Work Order # 13226

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13226a

P.O. #

Assay Certificate for Samples Provided

Sample	Ag ppm	Pb %	Zn %
6001	0.4	0.01	<0.01
6002	2.0	0.13	0.13
6003	0.6	0.02	0.03
6004	<0.1	<0.01	<0.01
6005	0.1	<0.01	0.24
6006	2.2	<0.01	<0.01
6007	1.2	<0.01	<0.01
6008	3.2	<0.01	1.56
6009	16.3	0.58	19.50
6010	11.9	2.21	3.64
6011	34.3	1.26	27.80
6012	15.0	0.36	16.40
6013	1.3	0.03	0.29
6014	1.4	<0.01	0.03
6015	7.1	0.70	3.93
6016	3.4	0.09	1.82
6017	9.6	0.17	4.61
6018	10.8	0.41	4.03
6019	4.4	0.16	2.01
6020	5.3	0.31	1.16
6021	12.3	0.51	3.42
6022	31.2	2.71	9.64
6023	32.5	2.64	10.50
6024	22.9	1.24	5.69
6025	11.6	0.68	2.60
6026	22.7	1.30	4.86
6027	8.5	0.42	0.98
6028	11.7	0.52	2.87
6029	11.3	0.38	1.41
6030	14.0	0.69	2.00

Certified by CHyokki

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Northern Analytical Laboratories ltd.

July 10,1991

Work Order # 13226

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13226d

P.O. #

Assay Certificate for Samples Provided

Sample	Ag ppm	Pb %	Zn %
6091	10.3	1.29	4.63
6092	9.0	0.57	3.01
6093	7.1	0.94	2.60
6094	6.1	0.27	1.57
6095	5.8	0.36	1.66
6096	10.6	0.50	2.60
6097	7.6	0.20	1.33
6098	7.1	0.26	1.20
6099	5.8	0.37	0.56
6100	6.7	0.61	1.53
6101	6.5	0.76	2.62
6102	14.1	4.26	8.46
6103	16.9	2.62	7.60
6104	15.3	0.60	7.53
6105	7.1	0.31	1.49
6106	4.4	1.38	2.61
6107	7.2	0.53	6.13
6108	6.4	1.41	1.36
6109	3.3	0.62	0.87
6110	4.3	0.37	0.91
6111	9.0	1.93	5.28
6112	4.5	0.83	4.15
6113	4.4	0.53	1.58
6114	32.2	2.22	9.10
6115	39.0	1.97	9.93
6116	37.9	2.17	6.91
6117	55.9	3.00	9.90

Certified by C. Heyerdahl

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July 10,1991

Work Order # 13226

Total Energold Corp.
21 - 1114 - 1st Ave.
Whitehorse, Yukon
Y1A 1A3

File # 13226e

P.O. #

Assay Certificate for Samples Provided

Sample	Pb ppm	Zn ppm
6001	147	133
6004	22	19
6005	59	--
6006	71	35
6007	103	--
6014	56	--

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A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

TOTAL ENERGOLD CORPORATION
#21 - 1114 1ST AVE.
WHITEHORSE, Y.T.
Y1A 1A3

106133 - 106163	PLOTTED
123164 - 123185	PLOTTED
205051 - 205080	PLOTTED
223081 - 223107	PLOTTED
305142 - 305185	PLOTTED
323186 - 323216	PLOTTED
523001 - 523026	PLOTTED

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A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

REPORT: V91-01374.0 (COMPLETE)

REFERENCE INFO: CLEAR LAKE

CLIENT: TOTAL ENERGOLD CORPORATION
PROJECT: NONE GIVEN

SUBMITTED BY: W.R.
DATE PRINTED: 19-SEP-91

ORDER		ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Ag	Silver	211	0.1 PPM	HNO3-HCl Hot Extr.	Atomic Absorption
2	Cu	Copper	211	1 PPM	HNO3-HCl Hot Extr.	Atomic Absorption
3	Pb	Lead	211	2 PPM	HNO3-HCl Hot Extr.	Atomic Absorption
4	Zn	Zinc	211	1 PPM	HNO3-HCl Hot Extr.	Atomic Absorption
5	Ba	Barium	211	20 PPM		X-Ray Fluorescence

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
S SOILS	211	1 -80	211	DRY, SIEVE -80	211

REPORT COPIES TO: MR. PATRICK JAMET
#21 - 1114 1ST AVE.

INVOICE TO: #21 - 1114 1ST AVE.

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PROJECT: NONE GIVEN PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 106133		<0.1	15	9	67	1000
S1 106134		<0.1	33	10	85	1200
S1 106135		0.2	49	11	117	1400
S1 106136		0.2	32	12	89	1200
S1 106137		<0.1	23	8	67	1300
S1 106138		0.3	53	11	90	1300
S1 106139		<0.1	20	6	87	1000
S1 106140		<0.1	15	<2	28	630
S1 106141		0.2	28	15	92	1500
S1 106142		<0.1	19	4	83	730
S1 106143		<0.1	18	<2	86	520
S1 106144		0.1	23	7	75	1100
S1 106145		0.2	51	14	87	1400
S1 106146		<0.1	45	16	75	1400
S1 106147		<0.1	22	9	90	1600
S1 106148		0.2	38	11	99	1300
S1 106149		<0.1	18	12	133	1200
S1 106150		<0.1	14	<2	32	810
S1 106151		<0.1	17	<2	48	300
S1 106152		<0.1	12	4	38	780
S1 106153		<0.1	21	3	58	670
S1 106154		<0.1	17	3	47	250
S1 106155		<0.1	26	3	110	710
S1 106156		0.3	53	21	116	1700
S1 106157		<0.1	32	16	89	1400
S1 106158		0.3	45	16	87	1300
S1 106159		0.2	43	11	86	1400
S1 106160		<0.1	18	6	38	1100
S1 106161		0.4	43	13	106	2000
S1 106162		0.4	33	14	91	1600
S1 106163		0.6	48	12	95	1500
S1 123164		0.3	40	16	104	1400
S1 123165		0.2	25	10	80	1600
S1 123166		<0.1	25	11	88	1400
S1 123167		0.2	30	10	78	1400
S1 123168		<0.1	25	10	85	1600
S1 123169		<0.1	39	14	92	1500
S1 123170		<0.1	19	16	101	1200
S1 123171		<0.1	45	14	102	1800
S1 123172		0.3	45	16	142	1600

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PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 123173		0.2	23	15	97	1400
S1 123174		0.5	52	16	144	1600
S1 123175		0.2	30	11	97	1600
S1 123176		<0.1	24	13	90	1500
S1 123177		0.4	45	15	117	2200
S1 123178		<0.1	16	7	74	1300
S1 123179		0.3	61	20	107	1800
S1 123180		0.4	30	<2	73	1300
S1 123181		<0.1	21	11	90	1400
S1 123182		<0.1	20	11	116	1300
S1 123183		0.2	54	18	125	1700
S1 123184		0.3	47	16	138	1500
S1 123185		0.2	31	11	97	1700
S1 205051		0.5	64	13	162	1400
S1 205052		0.4	60	12	140	1300
S1 205053		0.3	46	11	114	1900
S1 205054		0.2	42	10	102	1700
S1 205055		0.2	27	10	90	1300
S1 205056		<0.1	15	4	60	1100
S1 205057		0.2	47	9	104	1400
S1 205058		0.4	50	13	110	1500
S1 205059		0.2	47	11	106	1300
S1 205060		0.3	49	10	113	1300
S1 205061		0.3	52	10	126	1300
S1 205062		0.2	41	7	86	1200
S1 205063		0.3	37	8	111	1300
S1 205064		0.3	44	9	126	1500
S1 205065		0.2	31	7	110	1400
S1 205066		0.5	72	13	173	1300
S1 205067		0.5	56	12	181	1400
S1 205068		0.4	54	11	156	1300
S1 205069		0.4	33	11	106	1400
S1 205070		<0.1	24	11	58	1000
S1 205071		<0.1	23	11	87	1200
S1 205072		0.3	45	13	92	1700
S1 205073		<0.1	17	7	46	1100
S1 205074		<0.1	19	7	67	1200
S1 205075		<0.1	17	8	68	1200
S1 205076		<0.1	21	6	65	1200
S1 205077		0.2	48	9	88	1300

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PROJECT: NONE GIVEN PAGE 3

SAMPLE NUMBER	FIRMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 205078		0.3	50	8	85	1200
S1 205079		0.2	39	8	62	1200
S1 205080		<0.1	20	4	86	920
S1 223081		<0.1	18	8	78	960
S1 223082		0.1	11	7	66	990
S1 223083		<0.1	24	9	82	1400
S1 223084		<0.1	21	31	77	1100
S1 223085		<0.1	24	10	75	1500
S1 223086		0.2	38	11	85	1600
S1 223087		0.2	27	10	76	1100
S1 223088		<0.1	14	8	59	1000
S1 223089		0.1	30	23	86	1500
S1 223090		<0.1	16	4	67	980
S1 223091		0.2	34	10	89	1700
S1 223092		<0.1	10	8	81	1100
S1 223093		0.4	39	13	141	1400
S1 223094		0.3	34	15	95	1500
S1 223095		<0.1	14	9	84	1000
S1 223096		0.3	50	12	109	1300
S1 223097		0.2	35	12	93	1500
S1 223098		<0.1	12	<2	38	710
S1 223099		0.1	31	10	88	1200
S1 223100		0.2	41	12	105	1300
S1 223101		<0.1	21	11	110	1200
S1 223102		<0.1	16	9	64	1100
S1 223103		<0.1	18	6	87	1100
S1 223104		0.2	44	11	95	1500
S1 223105		0.2	31	10	79	1400
S1 223106		0.2	36	13	90	1400
S1 223107		<0.1	18	10	67	1100
S1 305142		0.2	49	11	114	1800
S1 305143		<0.1	35	11	97	1300
S1 305144		0.3	45	9	120	1300
S1 305145		0.3	41	10	112	1300
S1 305146		0.5	59	13	167	1400
S1 305147		0.5	57	15	191	1400
S1 305148		0.3	47	10	114	1200
S1 305149		0.4	51	10	167	1200
S1 305150		0.4	44	10	126	1300
S1 305151		0.5	63	15	165	1500

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PROJECT: NONE GIVEN PAGE 4

SAMPLE NUMBER	FIRMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 305152		0.3	50	9	124	1300
S1 305153		<0.1	53	15	115	1600
S1 305154		<0.1	19	8	99	1300
S1 305155		0.2	33	11	96	1400
S1 305156		<0.1	20	11	88	1300
S1 305157		0.3	20	11	115	1200
S1 305158		0.2	38	10	84	1400
S1 305159		0.1	38	12	81	1300
S1 305160		<0.1	10	4	45	920
S1 305161		<0.1	17	8	70	1100
S1 305162		<0.1	18	9	72	1200
S1 305163		0.2	41	11	99	1500
S1 305164		0.2	27	10	89	1300
S1 305165		0.2	51	10	82	1300
S1 305166		0.3	38	12	107	1400
S1 305167		0.5	64	12	165	1400
S1 305168		0.5	73	14	175	1500
S1 305169		<0.1	34	<2	52	610
S1 305170		0.3	39	9	141	1300
S1 305171		0.5	58	12	170	1400
S1 305172		0.4	54	12	160	1400
S1 305173		0.4	42	10	119	1200
S1 305174		0.3	40	9	120	1400
S1 305175		0.3	58	12	149	1400
S1 305176		0.4	50	11	140	1400
S1 305177		0.3	48	10	131	1300
S1 305178		0.4	57	11	130	1400
S1 305179		0.3	45	9	126	1400
S1 305180		0.5	57	11	147	1400
S1 305181		0.5	60	12	196	1300
S1 305182		<0.1	21	11	94	1300
S1 305183		<0.1	8	<2	93	280
S1 305184		0.3	41	11	101	1600
S1 305185		0.2	33	13	98	1400
S1 323186		0.1	13	<2	81	540
S1 323187		<0.1	3	<2	57	60
S1 323188		<0.1	10	<2	27	920
S1 323189		<0.1	26	10	97	1600
S1 323190		0.2	7	8	73	1100
S1 323191		<0.1	5	6	54	880

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PROJECT: NONE GIVEN PAGE 5

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 323192		<0.1	9	6	51	1100
S1 323193		0.2	18	<2	50	730
S1 323194		0.4	43	14	135	1800
S1 323195		<0.1	22	5	62	1100
S1 323196		0.3	41	15	152	1900
S1 323197		<0.1	18	8	48	1200
S1 323198		0.2	20	10	103	1500
S1 323199		<0.1	12	9	72	1300
S1 323200		0.3	46	17	116	2000
S1 323201		0.4	34	13	111	1900
S1 323202		0.1	12	11	57	1200
S1 323203		<0.1	9	6	51	1100
S1 323204		0.2	31	11	107	1700
S1 323205		<0.1	8	6	49	920
S1 323206		<0.1	19	6	54	1100
S1 323207		<0.1	12	8	57	1200
S1 323208		0.3	30	12	76	1700
S1 323209		0.3	22	10	82	1700
S1 323210		<0.1	10	8	63	1100
S1 323211		0.2	25	10	81	1500
S1 323212		0.2	25	10	88	1600
S1 323213		<0.1	37	15	83	1300
S1 323214		<0.1	14	10	82	1300
S1 323215		0.3	36	11	70	1700
S1 323216		<0.1	23	10	82	1400
S1 523001		<0.1	12	3	153	160
S1 523002		0.1	6	3	148	110
S1 523003		<0.1	7	<2	144	180
S1 523004		0.4	17	12	111	1400
S1 523005		0.2	30	12	107	1600
S1 523006		<0.1	18	10	68	1300
S1 523007		<0.1	19	<2	90	490
S1 523008		<0.1	18	9	73	1100
S1 523009		0.2	34	13	113	1800
S1 523010		0.2	7	8	64	1100
S1 523011		<0.1	22	12	83	1300
S1 523012		<0.1	16	8	64	1200
S1 523013		0.2	38	15	121	1500
S1 523014		<0.1	15	4	148	400
S1 523015		<0.1	11	<2	117	530

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REPORT: V91-01374.0 (COMPLETE)

PROJECT: NONE GIVEN PAGE 6

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 523016		<0.1	5	<2	36	760
S1 523017		<0.1	7	4	33	900
S1 523018		<0.1	20	9	67	1300
S1 523019		0.3	42	14	130	2000
S1 523020		<0.1	22	10	67	1200
S1 523021		0.2	24	10	79	1500
S1 523022		0.2	32	12	95	1500
S1 523023		<0.1	16	11	93	1100
S1 523024		0.2	6	6	306	60
S1 523025		<0.1	20	10	70	1200
S1 523026		<0.1	17	9	58	1100

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PROJECT: NONE GIVEN

STANDARD NAME	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
GEO TRACE STD-2 1989		5.7	827	233	511	610
GEO TRACE STD-2 1989		5.6	854	249	555	590
Number of Analyses		2	2	2	2	2
Mean Value		5.67	840.5	241.0	533.3	600.0
Standard Deviation		0.067	19.53	10.78	30.98	14.14
Accepted Value		5.0	820	250	500	600
GEO TRACE STD1 1989		30.1	197	15	59	500
GEO TRACE STD1 1989		26.8	191	14	60	510
Number of Analyses		2	2	2	2	2
Mean Value		28.45	193.8	14.3	59.5	505.0
Standard Deviation		2.324	4.41	1.03	0.66	7.07
Accepted Value		36.0	190	15	62	480
ANALYTICAL BLANK		<0.1	<1	<2	<1	-
ANALYTICAL BLANK		<0.1	<1	<2	<1	-
ANALYTICAL BLANK		0.1	1	<2	<1	-
ANALYTICAL BLANK		<0.1	<1	<2	<1	-
ANALYTICAL BLANK		<0.1	<1	<2	<1	-
ANALYTICAL BLANK		<0.1	<1	<2	<1	-
Number of Analyses		6	6	6	6	-
Mean Value		0.06	0.6	1.0	0.5	-
Standard Deviation		0.020	0.20	0.00	0.00	-
Accepted Value		0.1	1	1	1	-
MISC STD		-	-	-	-	650
MISC STD		-	-	-	-	650
MISC STD		-	-	-	-	640
MISC STD		-	-	-	-	650
MISC STD		-	-	-	-	640
MISC STD		-	-	-	-	640
Number of Analyses		-	-	-	-	6
Mean Value		-	-	-	-	645.0
Standard Deviation		-	-	-	-	5.48
Accepted Value		-	-	-	-	-

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A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

DATE PRINTED: 19-SEP-91

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PROJECT: NONE GIVEN PAGE 8

STANDARD NAME	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
GEO TRACE STD 3 1989		0.4	287	31	255	-
GEO TRACE STD 3 1989		0.9	292	33	262	-
Number of Analyses		2	2	2	2	-
Mean Value		0.63	289.7	32.2	258.5	-
Standard Deviation		0.323	3.81	1.65	4.88	-
Accepted Value		0.5	290	33	255	420
GEOCHEM STD-1, 1988		-	-	-	-	1010
GEOCHEM STD-1, 1988		-	-	-	-	1010
Number of Analyses		-	-	-	-	2
Mean Value		-	-	-	-	1010.0
Standard Deviation		-	-	-	-	0.00
Accepted Value		6.5	400	325	443	1010

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
106137		<0.1	23	8	67	1300
Duplicate		<0.1	22	9	66	1300
106154		<0.1	17	3	47	250
Duplicate		<0.1	18	<2	48	300
123174		0.5	52	16	144	1600
Duplicate		0.5	49	15	140	1600
205056		<0.1	15	4	60	1100
Duplicate		<0.1	15	6	58	1100
205076		<0.1	21	6	65	1200
Duplicate		<0.1	21	5	67	1200
223093		0.4	39	13	141	1400
Duplicate		0.4	39	13	140	1400
305147		0.5	57	15	191	1400
Duplicate		0.6	58	15	194	1500
305164		0.2	27	10	89	1300
Duplicate		0.2	24	9	86	1300
305184		0.3	41	11	101	1600
Duplicate		0.3	41	11	103	1600
323201		0.4	34	13	111	1900
Duplicate		0.4	30	11	111	1900
523005		0.2	30	12	107	1600
Duplicate		0.2	31	13	105	1620
523022		0.2	32	12	95	1500
Duplicate		0.2	34	13	99	1500

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TOTAL ENERGOLD CORPORATION
#21 - 1114 1ST AVE.
WHITEHORSE, Y.T.
Y1A 1A3

312110 - 312141 PLOTTED
411066 - 411087 PLOTTED
412040 - 412065 PLOTTED
617001 - 617023 PLOTTED

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Geochemical Lab Report

REPORT: V91-01337.0 (COMPLETE)

REFERENCE INFO: CLEAR LAKE CAMP

CLIENT: TOTAL ENERGOLD CORPORATION
PROJECT: 21223

SUBMITTED BY: W. R.
DATE PRINTED: 23-SEP-91

ORDER		ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Ag	Silver	103	0.1 PPM	HNO3-HCl Hot Extr.	Atomic Absorption
2	Cu	Copper	103	1 PPM	HNO3-HCl Hot Extr.	Atomic Absorption
3	Pb	Lead	103	2 PPM	HNO3-HCl Hot Extr.	Atomic Absorption
4	Zn	Zinc	103	1 PPM	HNO3-HCl Hot Extr.	Atomic Absorption
5	Ba	Barium	103	20 PPM		X Ray Fluorescence

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
S SOILS	103	1 -80	103	DRY, SIEVE -80	103

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INVOICE TO: #21 - 1114 1ST AVE.

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 312110		0.2	30	34	277	1300
S1 312111		<0.1	10	17	108	1200
S1 312112		<0.1	20	14	105	1200
S1 312113		<0.1	17	18	98	1100
S1 312114		<0.1	30	16	124	1300
S1 312115		0.2	39	18	120	1500
S1 312116		0.2	37	14	165	1400
S1 312117		0.3	24	17	163	1400
S1 312118		0.2	43	19	139	1200
S1 312119		<0.1	25	12	102	1300
S1 312120		0.3	16	17	289	1700
S1 312121		0.3	30	22	167	1300
S1 312122		<0.1	23	3	65	870
S1 312123		<0.1	12	11	114	1100
S1 312124		0.2	48	20	147	1400
S1 312125		<0.1	28	12	106	1500
S1 312126		<0.1	30	20	126	1300
S1 312127		<0.1	30	16	135	1300
S1 312128		<0.1	36	16	154	1600
S1 312129		0.2	30	15	118	1700
S1 312130		<0.1	20	<2	66	540
S1 312131		0.2	50	15	132	1500
S1 312132		<0.1	48	15	141	1500
S1 312133		<0.1	17	9	81	1000
S1 312134		0.4	45	15	309	1900
S1 312135		0.2	42	23	111	1600
S1 312136		0.1	26	10	83	1400
S1 312137		0.2	32	14	96	1500
S1 312138		<0.1	21	20	126	1400
S1 312139		0.2	30	43	333	1500
S1 312140		<0.1	30	15	167	1700
S1 312141		<0.1	19	56	127	1400
S1 411066		0.2	33	13	122	1500
S1 411067		0.3	38	18	139	1400
S1 411068		<0.1	51	13	102	1100
S1 411069		0.2	35	15	90	1400
S1 411070		0.2	45	12	123	1300
S1 411071		0.3	48	15	115	1200
S1 411072		0.2	49	22	122	1600
S1 411073		0.4	37	14	90	1200

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 411074		0.2	51	15	128	1200
S1 411075		0.5	42	8	120	2300
S1 411076		0.2	42	14	109	1200
S1 411077		<0.1	7	<2	68	580
S1 411078		0.2	17	<2	69	1100
S1 411079		0.1	35	16	143	1400
S1 411080		0.2	28	5	1035	810
S1 411081		0.2	40	9	121	1300
S1 411082		0.2	33	9	102	1500
S1 411083		0.2	52	13	133	1400
S1 411084		<0.1	45	9	128	1200
S1 411085		0.3	53	<2	126	1200
S1 411086		<0.1	46	19	137	1600
S1 411087		0.3	15	8	95	960
S1 412040		0.4	33	15	130	1900
S1 412041		<0.1	23	10	72	1200
S1 412042		0.2	25	8	75	1300
S1 412043		0.2	31	16	125	1700
S1 412044		0.1	45	14	132	1500
S1 412045		<0.1	50	15	129	1300
S1 412046		<0.1	33	16	95	1300
S1 412047		<0.1	18	16	62	1100
S1 412048		0.2	60	21	175	2000
S1 412049		0.2	60	18	173	2000
S1 412050		<0.1	16	<2	69	670
S1 412051		0.6	90	11	283	1100
S1 412052		0.1	30	<2	1050	710
S1 412053		0.2	29	11	5748	1800
S1 412054		<0.1	24	5	143	1100
S1 412055		0.2	17	19	990	1200
S1 412056		<0.1	10	8	275	1100
S1 412057		<0.1	11	13	242	1200
S1 412058		0.3	48	15	172	1600
S1 412059		<0.1	54	26	195	1700
S1 412060		<0.1	30	21	132	1400
S1 412061		0.3	42	24	170	1600
S1 412062		0.2	13	<2	233	400
S1 412063		<0.1	19	16	149	1200
S1 412064		<0.1	21	13	266	1200
S1 412065		0.3	46	13	144	1500

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 617001		0.2	26	10	113	1700
S1 617002		0.2	36	13	158	1600
S1 617003		0.4	40	17	188	1700
S1 617004		0.2	22	4	114	1400
S1 617005		0.2	31	14	179	1600
S1 617006		<0.1	23	12	145	1500
S1 617007		0.2	26	13	142	1500
S1 617008		<0.1	20	3	48	760
S1 617009		<0.1	21	10	82	1100
S1 617010		<0.1	112	<2	50	710
S1 617011		<0.1	30	12	99	1300
S1 617012		0.2	25	10	71	780
S1 617013		<0.1	16	6	120	600
S1 617014		<0.1	11	<2	50	740
S1 617015		<0.1	6	5	44	270
S1 617016		<0.1	20	9	100	910
S1 617017		<0.1	30	<2	68	660
S1 617018		<0.1	13	<2	96	410
S1 617019		0.2	30	13	149	1300
S1 617020		0.6	72	21	178	1700
S1 617021		0.3	29	12	92	1600
S1 617022		<0.1	14	5	44	550
S1 617023		<0.1	21	<2	29	830

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STANDARD NAME	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
GEO TRACE STD-2 1989		4.3	762	222	549	610
Number of Analyses		1	1	1	1	1
Mean Value		4.26	761.6	221.6	548.7	610.0
Standard Deviation		-	-	-	-	-
Accepted Value		5.0	820	250	500	600
GEO TRACE STD1 1989		30.5	189	14	65	490
Number of Analyses		1	1	1	1	1
Mean Value		30.47	189.4	14.1	64.7	490.0
Standard Deviation		-	-	-	-	-
Accepted Value		36.0	190	15	62	480
ANALYTICAL BLANK		<0.1	<1	<2	<1	-
ANALYTICAL BLANK		<0.1	<1	<2	1	-
ANALYTICAL BLANK		<0.1	<1	<2	<1	-
Number of Analyses		3	3	3	3	-
Mean Value		0.05	0.5	1.0	0.7	-
Standard Deviation		0.0000	0.000	0.000	0.29	-
Accepted Value		0.1	1	1	1	-
MISC STD		-	-	-	-	640
MISC STD		-	-	-	-	640
MISC STD		-	-	-	-	640
Number of Analyses		-	-	-	-	3
Mean Value			-	-	-	640.0
Standard Deviation		-	-	-	-	0.00
Accepted Value		-	-	-	-	-
GEO TRACE STD 3 1989		0.5	305	31	265	-
Number of Analyses		1	1	1	1	-
Mean Value		0.49	304.9	31.5	264.6	-
Standard Deviation		-	-	-	-	-
Accepted Value		0.5	290	33	255	420
GEOCHEM STD-1, 1988		-	-	-	-	1010
Number of Analyses		-	-	-	-	1
Mean Value		-	-	-	-	1010.0
Standard Deviation		-	-	-	-	-
Accepted Value		6.5	4000	325	443	1010

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
312117		0.3	24	17	163	1400
Duplicate		0.3	23	15	153	1410
312134		0.4	45	15	309	1900
Duplicate		0.4	40	11	282	1970
411078		0.2	17	<2	69	1100
Duplicate		<0.1	18	<2	79	1060
412047		<0.1	18	16	62	1100
Duplicate		<0.1	17	15	63	1080
617002		0.2	36	13	158	1600
Duplicate		0.2	36	<2	164	1640
617019		0.2	30	13	149	1300
Duplicate		0.2	31	<2	138	1340

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TOTAL ENERGOLD CORPORATION
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WHITEHORSE, Y.T.
Y1A 1A3

1106007 - 1106016 PLOTTED
111120 - 111132 PLOTTED
313077 - 313109 PLOTTED
411001 - 411011 PLOTTED
413012 - 413039 PLOTTED

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 1106007		0.2	27	14	77	1200
S1 1106008		<0.1	57	18	91	950
S1 1106009		<0.1	36	15	66	1100
S1 1106010		<0.1	29	13	75	1100
S1 1106011		<0.1	47	18	129	1500
S1 1106012		0.3	45	15	130	1600
S1 1106013		0.2	45	16	135	1500
S1 1106014		0.3	44	15	123	1400
S1 1106015		0.2	48	16	124	1500
S1 1106016		0.1	14	5	642	820
S1 111120		0.2	54	20	130	1300
S1 111121		<0.1	17	7	809	750
S1 111122		<0.1	7	7	40	80
S1 111123		<0.1	21	9	184	710
S1 111124		<0.1	12	9	386	1100
S1 111125		<0.1	11	8	210	800
S1 111126		0.2	41	14	133	1400
S1 111127		0.2	42	14	121	1400
S1 111128		0.2	48	24	134	1400
S1 111129		0.2	52	16	126	1400
S1 111130		<0.1	48	14	84	1000
S1 111131		0.2	49	17	89	1000
S1 111132		<0.1	44	15	102	1200
S1 313077		<0.1	17	11	56	1200
S1 313078		0.2	31	14	90	1500
S1 313079		<0.1	18	15	159	1300
S1 313080		0.3	47	23	148	1600
S1 313081		0.2	15	8	44	1000
S1 313082		0.2	49	17	123	1500
S1 313083		0.3	35	20	98	1600
S1 313084		0.2	41	22	131	1500
S1 313085		0.2	18	6	130	1100
S1 313086		0.3	31	15	100	1800
S1 313087		0.3	44	21	116	1500
S1 313088		0.2	44	19	113	1500
S1 313089		0.3	43	21	95	1500
S1 313090		0.3	27	18	112	1800
S1 313091		0.2	25	14	65	1300
S1 313092		0.2	65	56	115	1500
S1 313093		0.3	42	21	132	1800

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 313094		0.2	23	20	72	1100
S1 313095		0.2	44	20	121	1600
S1 313096		0.3	41	18	136	1600
S1 313097		<0.1	15	9	163	810
S1 313098		<0.1	30	44	116	1800
S1 313099		0.2	38	38	484	4500
S1 313100		<0.1	16	19	161	1100
S1 313101		0.3	27	10	473	1300
S1 313102		0.3	46	93	1945	2400
S1 313103		<0.1	48	17	122	1300
S1 313104		0.3	18	35	158	1700
S1 313105		<0.1	15	<2	56	690
S1 313106		0.3	24	23	151	1100
S1 313107		0.3	64	12	161	1500
S1 313108		0.4	29	14	97	1600
S1 313109		0.2	43	16	137	1700
S1 411001		0.2	33	14	94	1500
S1 411002		<0.1	22	<2	37	1200
S1 411003		<0.1	22	23	159	1300
S1 411004		0.3	40	19	141	2100
S1 411005		<0.1	22	<2	70	1100
S1 411006		<0.1	22	<2	994	1200
S1 411007		<0.1	16	<2	64	500
S1 411008		<0.1	6	<2	14	900
S1 411009		<0.1	10	<2	53	520
S1 411010		<0.1	12	<2	33	590
S1 411011		<0.1	13	3	71	500
S1 413012		<0.1	2	<2	11	910
S1 413013		<0.1	28	13	131	1300
S1 413014		0.2	33	22	103	1300
S1 413015		0.2	39	13	93	1400
S1 413016		0.2	48	20	125	1400
S1 413017		0.2	39	18	118	1500
S1 413018		<0.1	45	13	84	1300
S1 413019		0.2	80	17	123	1500
S1 413020		0.2	30	15	90	1300
S1 413021		<0.1	24	<2	120	380
S1 413022		<0.1	13	<2	50	200
S1 413023		0.2	42	13	121	1500
S1 413024		0.2	43	16	139	1900

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 413025		0.2	37	15	98	1400
S1 413026		0.2	24	9	81	1300
S1 413027		<0.1	23	9	83	1400
S1 413028		<0.1	18	3	62	830
S1 413029		<0.1	22	<2	55	770
S1 413030		0.2	47	13	81	1300
S1 413031		0.2	30	11	71	1400
S1 413032		0.3	35	12	69	1500
S1 413033		<0.1	20	8	119	1600
S1 413034		0.1	23	<2	37	810
S1 413035		<0.1	15	<2	52	680
S1 413036		<0.1	9	<2	51	470
S1 413037		<0.1	17	<2	43	960
S1 413038		0.2	23	9	87	1400
S1 413039		<0.1	13	5	282	1100

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STANDARD NAME	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
GEO TRACE STD 3 1989		11.4	270	34	248	-
Number of Analyses		1	1	1	1	-
Mean Value		11.36	269.6	34.0	248.1	-
Standard Deviation		-	-	-	-	-
Accepted Value		11.5	290	33	255	420
GEOCHEM STD-1, 1988		-	-	-	-	1030
Number of Analyses		-	-	-	-	1
Mean Value		-	-	-	-	1030.0
Standard Deviation		-	-	-	-	-
Accepted Value		6.5	400	325	443	1010
ANALYTICAL BLANK		<11.1	<1	<2	<1	-
ANALYTICAL BLANK		<11.1	<1	<2	1	-
ANALYTICAL BLANK		<11.1	<1	<2	1	-
Number of Analyses		3	3	3	3	-
Mean Value		11.115	11.5	11.0	11.8	-
Standard Deviation		11.1000	11.000	11.000	11.29	-
Accepted Value		11.1	1	1	1	-
MISC STD		-	-	-	-	650
MISC STD		-	-	-	-	650
MISC STD		-	-	-	-	650
Number of Analyses		-	-	-	-	3
Mean Value		-	-	-	-	650.0
Standard Deviation		-	-	-	-	0.00
Accepted Value		-	-	-	-	-
GEO TRACE STD-2 1989		4.3	832	245	508	610
Number of Analyses		1	1	1	1	1
Mean Value		4.30	832.0	245.0	508.0	610.0
Standard Deviation		-	-	-	-	-
Accepted Value		5.0	820	250	500	600
GEO TRACE STD1 1989		32.8	174	16	55	500
Number of Analyses		1	1	1	1	1
Mean Value		32.80	174.0	16.0	55.0	500.0
Standard Deviation		-	-	-	-	-
Accepted Value		36.0	190	15	62	480

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
1106013		0.2	45	16	135	1500
Duplicate		0.3	43	15	127	1500
313077		<0.1	17	11	56	1200
Duplicate		<0.1	16	10	54	1130
313097		<0.1	15	9	163	810
Duplicate		<0.1	15	7	158	850
411005		<0.1	22	<2	70	1100
Duplicate		<0.1	24	<2	72	1030
413025		0.2	37	15	98	1400
Duplicate		0.2	36	14	90	1400

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Y1A 1A3

102041-102062 PLOTTED
105018-105040 PLOTTED
106001-106017 PLOTTED
110063-110081 PLOTTED (110079-81 plotted)
206001-206050 PLOTTED

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 105036		0.2	47	15	76	1300
S1 105037		0.3	36	13	70	1400
S1 105038		0.3	30	11	80	1500
S1 105039		0.2	45	13	93	1300
S1 105040		<0.1	37	13	84	1400
S1 106001		0.2	18	25	138	1300
S1 106002		0.3	41	15	86	1200
S1 106003		0.2	31	14	80	1400
S1 106004		0.2	19	13	86	1400
S1 106005		<0.1	44	15	75	1200
S1 106006		0.2	25	13	75	1100
S1 106007		<0.1	17	13	64	1100
S1 106008		0.3	41	15	117	1400
S1 106009		0.4	61	15	131	1400
S1 106010		<0.1	55	21	107	1400
S1 106011		0.3	23	15	102	1300
S1 106012		0.3	35	15	79	1300
S1 106013		0.2	36	13	88	1300
S1 106014		0.2	26	9	62	1100
S1 106015		0.2	27	14	63	1200
S1 106016		0.2	37	15	85	1300
S1 106017		<0.1	19	10	53	1100
S1 110063		<0.1	9	4	89	160
S1 110064		0.2	40	3	60	730
S1 110065		1.3	6	4	64	70
S1 110066		0.6	46	16	107	1400
S1 110067		<0.1	20	3	216	470
S1 110068		0.4	41	18	134	1600
S1 110069		<0.1	23	6	102	660
S1 110070		<0.1	30	4	67	480
S1 110071		0.2	26	9	77	1100
S1 110072		0.3	32	16	99	1400
S1 110073		0.2	18	11	87	930
S1 110074		<0.1	14	5	58	770
S1 110075		0.2	30	13	98	1700
S1 110076		0.3	29	11	58	980
S1 110077		<0.1	25	13	55	1400
S1 110078		<0.1	4	4	188	60
S1 110079		0.3	47	16	135	1900 ✓
S1 110080		0.3	41	15	102	1800 ✓

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 110081		0.4	47	18	161	2100
S1 206001		0.5	57	17	154	1300
S1 206002		<0.1	35	14	78	1300
S1 206003		<0.1	13	11	71	1200
S1 206004		<0.1	9	12	85	1200
S1 206005		<0.1	30	13	69	1200
S1 206006		<0.1	36	12	90	1300
S1 206007		<0.1	21	13	83	1300
S1 206008		<0.1	42	12	72	1500
S1 206009		<0.1	42	14	93	1300
S1 206010		<0.1	14	9	79	1100
S1 206011		0.4	46	19	365	1500
S1 206012		<0.1	24	15	90	1300
S1 206013		<0.1	41	14	83	1300
S1 206014		<0.1	25	11	86	1200
S1 206015		<0.1	25	11	92	1200
S1 206016		0.2	15	9	70	1100
S1 206017		0.2	23	8	114	1100
S1 206018		<0.1	16	11	90	1200
S1 206019		0.2	21	11	79	1200
S1 206020		<0.1	24	11	124	1100
S1 206021		<0.1	19	15	199	1100
S1 206022		<0.1	17	8	83	1200
S1 206023		<0.1	42	13	81	1200
S1 206024		0.2	18	11	103	1200
S1 206025		0.3	45	13	103	1400
S1 206026		0.7	77	15	159	1600
S1 206027		0.2	47	12	125	1500
S1 206028		0.2	18	5	27	900
S1 206029		<0.1	10	11	70	1100
S1 206030		<0.1	15	11	66	1100
S1 206031		<0.1	17	9	64	1000
S1 206032		<0.1	33	16	88	1200
S1 206033		0.4	47	16	121	1300
S1 206034		0.4	65	19	154	1400
S1 206035		<0.1	21	8	78	1200
S1 206036		0.3	55	14	121	1400
S1 206037		0.4	62	14	133	1400
S1 206038		0.4	70	15	122	1300
S1 206039		0.2	38	10	86	1200

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 206040		0.3	45	13	126	1300
S1 206041		<0.1	26	5	55	1000
S1 206042		0.2	44	9	95	1100
S1 206043		0.2	48	9	115	1100
S1 206044		0.3	56	13	128	1300
S1 206045		0.4	59	14	143	1400
S1 206046		0.3	51	13	122	1400
S1 206047		0.5	59	15	137	1400
S1 206048		0.2	26	14	98	1200
S1 206049		0.2	29	15	95	1300
S1 206050		0.5	61	15	162	1300

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STANDARD NAME	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
GEO TRACE STD 3 1989		0.5	336	37	253	-
GEO TRACE STD 3 1989		0.4	295	35	258	-
Number of Analyses		2	2	2	2	-
Mean Value		0.45	315.3	36.0	255.5	-
Standard Deviation		0.130	29.07	1.01	2.98	-
Accepted Value		0.5	290	33	255	420
GEOCHEM STD-1, 1988		-	-	-	-	990
GEOCHEM STD-1, 1988		-	-	-	-	990
Number of Analyses		-	-	-	-	2
Mean Value		-	-	-	-	990.0
Standard Deviation		-	-	-	-	0.00
Accepted Value		6.5	400	325	443	1010
ANALYTICAL BLANK		0.1	<1	<2	<1	-
ANALYTICAL BLANK		0.1	<1	<2	<1	-
ANALYTICAL BLANK		<0.1	<1	<2	<1	-
ANALYTICAL BLANK		<0.1	<1	<2	<1	-
Number of Analyses		4	4	4	4	-
Mean Value		0.10	0.5	1.0	0.5	-
Standard Deviation		0.029	0.00	0.00	0.00	-
Accepted Value		0.1	1	1	1	-
MISC STD		-	-	-	-	650
MISC STD		-	-	-	-	650
MISC STD		-	-	-	-	650
MISC STD		-	-	-	-	650
Number of Analyses		-	-	-	-	4
Mean Value		-	-	-	-	650.0
Standard Deviation		-	-	-	-	0.00
Accepted Value		-	-	-	-	-

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STANDARD NAME	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
GEO TRACE STD-2 1989		7.0	798	242	499	620
Number of Analyses		1	1	1	1	1
Mean Value		6.97	797.6	241.8	498.5	620.0
Standard Deviation		-	-	-	-	-
Accepted Value		5.0	820	250	500	600
GEO TRACE STD1 1989		39.8	192	16	64	490
Number of Analyses		1	1	1	1	1
Mean Value		39.84	192.2	15.9	63.8	490.0
Standard Deviation		-	-	-	-	-
Accepted Value		36.0	190	15	62	480

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
102044		0.2	57	20	78	1500
Duplicate		0.2	62	19	87	1460
102061		0.2	51	24	111	1200
Duplicate		0.2	52	25	115	1180
105036		0.2	47	15	76	1300
Duplicate		0.3	45	13	72	1260
106013		0.2	36	13	88	1300
Duplicate		0.3	33	12	88	1380
110078		<0.1	4	4	138	60
Duplicate		<0.1	5	3	160	70
206014		<0.1	25	11	86	1200
Duplicate		<0.1	25	12	85	1170
206034		0.4	65	19	154	1400
Duplicate		0.3	63	18	147	1360

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WHITEHORSE, Y.T.
Y1A 1A3

1106001-1106006 PLOTTED
1106017-1106029 PLOTTED
111082- 111115 PLOTTED
114116- 114119 PLOTTED

311030- 311076 PLOTTED.

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 1106001		0.2	43	13	116	1500
S1 1106002		<0.1	23	3	34	850
S1 1106003		0.2	42	14	117	1400
S1 1106004		0.2	45	14	126	1800
S1 1106005		<0.1	21	17	74	1100
S1 1106006		<0.1	19	14	63	980
S1 1106017		<0.1	6	6	314	290*
S1 1106018		<0.1	14	<2	598	460
S1 1106019		<0.1	29	6	310	660
S1 1106020		<0.1	39	6	76	810
S1 1106021		0.2	26	13	110	1300
S1 1106022		0.2	37	12	99	1100
S1 1106023		0.2	43	14	128	1300
S1 1106024		0.2	38	12	105	1300
S1 1106025		<0.1	20	10	68	1200
S1 1106026		<0.1	26	15	78	1300
S1 1106027		<0.1	52	15	94	1200
S1 1106028		<0.1	39	17	82	1300
S1 1106029		<0.1	100	21	150	1300
S1 111082		<0.1	16	<2	43	420
S1 111083		<0.1	56	17	130	1100
S1 111084		0.2	28	13	93	1700
S1 111085		<0.1	44	15	95	1100
S1 111086		<0.1	44	13	108	1200
S1 111087		<0.1	46	18	116	1300
S1 111088		<0.1	56	24	156	1400
S1 111089		0.2	47	15	83	1600
S1 111090		<0.1	26	14	100	1600
S1 111091		0.2	47	17	160	1800
S1 111092		0.2	41	16	140	1600
S1 111093		<0.1	32	15	103	1600
S1 111094		<0.1	46	14	115	1400
S1 111095		<0.1	42	19	99	1300
S1 111096		0.2	36	20	152	1300
S1 111097		<0.1	45	17	117	1100
S1 111098		<0.1	6	6	57	220*
S1 111099		<0.1	9	5	694	320*
S1 111100		0.3	71	38	140	1300
S1 111101		<0.1	30	12	100	1500
S1 111102		0.2	29	16	94	1500

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 111103		<0.1	73	15	98	9560
S1 111104		<0.1	61	14	140	1200
S1 111105		<0.1	50	13	104	1000
S1 111106		<0.1	46	15	115	1400
S1 111107		<0.1	51	16	102	1100
S1 111108		<0.1	45	14	114	1200
S1 111109		<0.1	45	14	96	1600
S1 111110		<0.1	40	14	114	1400
S1 111111		0.2	32	12	102	1700
S1 111112		<0.1	40	13	105	1500
S1 111113		<0.1	27	10	98	1300
S1 111114		<0.1	10	6	201	620*
S1 111115		<0.1	43	12	126	1500
S1 114116		<0.1	29	14	59	950
S1 114117		<0.1	29	3	109	290
S1 114118		<0.1	27	<2	50	630
S1 114119		<0.1	30	<2	27	840
S1 311030		<0.1	41	12	110	1300
S1 311031		<0.1	41	12	124	1400
S1 311032		0.2	40	12	108	1300
S1 311033		<0.1	30	10	90	1200
S1 311034		0.2	32	10	95	1200
S1 311035		<0.1	12	4	600	190*
S1 311036		<0.1	10	<2	315	640
S1 311037		0.2	41	14	121	1400
S1 311038		0.2	17	11	67	1200
S1 311039		<0.1	24	9	58	1100
S1 311040		0.2	26	12	81	1100
S1 311041		<0.1	8	<2	23	860
S1 311042		0.3	30	10	110	1200
S1 311043		0.2	39	12	106	1200
S1 311044		0.2	42	12	120	1300
S1 311045		0.2	40	12	131	1200
S1 311046		<0.1	28	6	83	990
S1 311047		0.3	72	18	139	1400
S1 311048		0.3	19	11	81	1200
S1 311049		0.3	41	16	107	1300
S1 311050		0.2	46	15	113	1400
S1 311051		<0.1	12	11	70	1100
S1 311052		0.4	37	13	73	1200

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 311053		0.2	40	13	98	1300
S1 311054		0.2	39	12	100	1100
S1 311055		0.2	47	18	115	1200
S1 311056		0.2	48	14	111	1100
S1 311057		0.2	34	13	94	1400
S1 311058		0.2	35	13	103	1400
S1 311059		<0.1	32	6	1275	870
S1 311060		0.1	39	13	128	1300
S1 311061		<0.1	38	15	98	1300
S1 311062		0.2	40	13	105	1300
S1 311063		0.2	69	21	124	1600
S1 311064		<0.1	10	11	77	1200
S1 311065		0.4	38	12	106	1200
S1 311066		0.4	45	19	108	1300
S1 311067		0.5	30	12	74	1300
S1 311068		0.4	35	20	125	1200
S1 311069		0.5	30	11	74	1300
S1 311070		0.4	39	12	111	1400
S1 311071		0.2	12	5	2177	510*
S1 311072		0.4	46	41	114	1200
S1 311073		0.3	17	3	56	730
S1 311074		0.5	30	20	121	1500
S1 311075		0.4	31	12	75	1400
S1 311076		0.5	41	15	114	1300

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Geochemical Lab Report

REPORT: V91-01069.0 (COMPLETE)

DATE PRINTED: 16-AUG-91

PROJECT: 21223 PAGE 4

STANDARD NAME / ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
GEO TRACE STD 3 1989	0.4	279	32	249	-
Number of Analyses	1	1	1	1	-
Mean Value	0.45	278.5	32.2	249.0	-
Standard Deviation	-	-	-	-	-
Accepted Value	0.5	290	33	255	420
Number of Analyses	-	-	-	-	-
Mean Value	-	-	-	-	-
Standard Deviation	-	-	-	-	-
Accepted Value	6.5	400	325	443	1010
ANALYTICAL BLANK	<0.1	<1	<2	1	-
ANALYTICAL BLANK	0.1	<1	<2	1	-
ANALYTICAL BLANK	0.2	<1	<2	1	-
Number of Analyses	3	3	3	3	-
Mean Value	0.12	0.5	1.0	1.0	-
Standard Deviation	0.076	0.00	0.00	0.00	-
Accepted Value	0.1	1	1	1	-
Number of Analyses	-	-	-	-	-
Mean Value	-	-	-	-	-
Standard Deviation	-	-	-	-	-
Accepted Value	-	-	-	-	-
GEO TRACE STD-2 1989	6.8	791	236	482	-
Number of Analyses	1	1	1	1	-
Mean Value	6.76	791.4	236.2	481.9	-
Standard Deviation	-	-	-	-	-
Accepted Value	5.0	820	250	500	600
GEO TRACE STD1 1989	35.0	186	17	62	-
Number of Analyses	1	1	1	1	-
Mean Value	34.95	185.7	17.1	61.9	-
Standard Deviation	-	-	-	-	-
Accepted Value	36.0	190	15	62	480

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REPORT: V91-01069.0 (COMPLETE)

DATE PRINTED: 16-AUG-91

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
1106020		<0.1	39	6	76	810
Duplicate		<0.1	38	4	72	830
111089		0.2	47	15	83	1600
Duplicate		0.2	48	14	83	1600
111109		<0.1	45	14	96	1600
Duplicate		<0.1	45	16	99	1600
311036		<0.1	10	<2	315	640
Duplicate		<0.1	11	<2	323	650
311056		0.2	48	14	111	1100
Duplicate		0.4	47	14	112	1200
311073		0.3	17	3	56	730
Duplicate		0.3	18	3	61	720

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TOTAL ENERGOLD CORPORATION
MR. PATRICK JAMET
#1500-700 WEST PENDER ST.
VANCOUVER, B.C.
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1106001 - 1106036 PLOTTED
1106017 - 1106029 PLOTTED
111082 - 111115 PLOTTED
~~114~~ 114116 - 114119 PLOTTED
311030 - 311076 PLOTTED

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DATE PRINTED: 16-AUG-91

REPORT: V91-01069.0 (COMPLETE)

PROJECT: 21223 PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 1106001		0.2	43	13	116	1500
S1 1106002		<0.1	23	3	34	850
S1 1106003		0.2	42	14	117	1400
S1 1106004		0.2	45	14	126	1800
S1 1106005		<0.1	21	17	74	1100
S1 1106006		<0.1	19	14	63	980
S1 1106017		<0.1	6	6	314	290*
S1 1106018		<0.1	14	<2	598	460
S1 1106019		<0.1	29	6	310	660
S1 1106020		<0.1	39	6	76	810
S1 1106021		0.2	26	13	110	1300
S1 1106022		0.2	37	12	99	1100
S1 1106023		0.2	43	14	128	1300
S1 1106024		0.2	38	12	105	1300
S1 1106025		<0.1	20	10	68	1200
S1 1106026		<0.1	26	15	78	1300
S1 1106027		<0.1	52	15	94	1200
S1 1106028		<0.1	39	17	82	1300
S1 1106029		<0.1	100	21	150	1300
S1 111082		<0.1	16	<2	43	420
S1 111083		<0.1	56	17	130	1100
S1 111084		0.2	28	13	93	1700
S1 111085		<0.1	44	15	95	1100
S1 111086		<0.1	44	13	108	1200
S1 111087		<0.1	46	18	116	1300
S1 111088		<0.1	56	24	156	1400
S1 111089		0.2	47	15	83	1600
S1 111090		<0.1	26	14	100	1600
S1 111091		0.2	47	17	160	1800
S1 111092		0.2	41	16	140	1600
S1 111093		<0.1	32	15	103	1600
S1 111094		<0.1	46	14	115	1400
S1 111095		<0.1	42	19	99	1300
S1 111096		0.2	36	20	152	1300
S1 111097		<0.1	45	17	117	1100
S1 111098		<0.1	6	6	57	220*
S1 111099		<0.1	9	5	694	320*
S1 111100		0.3	71	38	140	1300
S1 111101		<0.1	30	12	100	1500
S1 111102		0.2	29	16	94	1500

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DATE PRINTED: 16-AUG-91

PROJECT: 21223

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 111103		<0.1	73	15	98	9560
S1 111104		<0.1	61	14	140	1200
S1 111105		<0.1	50	13	104	1000
S1 111106		<0.1	46	15	115	1400
S1 111107		<0.1	51	16	102	1100
S1 111108		<0.1	45	14	114	1200
S1 111109		<0.1	45	14	96	1600
S1 111110		<0.1	40	14	114	1400
S1 111111		0.2	32	12	102	1700
S1 111112		<0.1	40	13	105	1500
S1 111113		<0.1	27	10	98	1300
S1 111114		<0.1	10	6	201	620*
S1 111115		<0.1	43	12	126	1500
S1 114116		<0.1	29	14	59	950
S1 114117		<0.1	29	3	109	290
S1 114118		<0.1	27	<2	50	630
S1 114119		<0.1	30	<2	27	840
S1 311030		<0.1	41	12	110	1300
S1 311031		<0.1	41	12	124	1400
S1 311032		0.2	40	12	108	1300
S1 311033		<0.1	30	10	90	1200
S1 311034		0.2	32	10	95	1200
S1 311035		<0.1	12	4	600	190*
S1 311036		<0.1	10	<2	315	640
S1 311037		0.2	41	14	121	1400
S1 311038		0.2	17	11	67	1200
S1 311039		<0.1	24	9	58	1100
S1 311040		0.2	26	12	81	1100
S1 311041		<0.1	8	<2	23	860
S1 311042		0.3	30	10	110	1200
S1 311043		0.2	39	12	106	1200
S1 311044		0.2	42	12	120	1300
S1 311045		0.2	40	12	131	1200
S1 311046		<0.1	28	6	83	990
S1 311047		0.3	72	18	139	1400
S1 311048		0.3	19	11	81	1200
S1 311049		0.3	41	16	107	1300
S1 311050		0.2	46	15	113	1400
S1 311051		<0.1	12	11	70	1100
S1 311052		0.4	37	13	73	1200

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DATE PRINTED: 16-AUG-91

REPORT: V91-01069.0 (COMPLETE)

PROJECT: 21223 PAGE 3

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 311053		0.2	40	13	98	1300
S1 311054		0.2	39	12	100	1100
S1 311055		0.2	47	18	115	1200
S1 311056		0.2	48	14	111	1100
S1 311057		0.2	34	13	94	1400
S1 311058		0.2	35	13	103	1400
S1 311059		<0.1	32	6	1275	870
S1 311060		0.1	39	13	128	1300
S1 311061		<0.1	38	15	98	1300
S1 311062		0.2	40	13	105	1300
S1 311063		0.2	69	21	124	1600
S1 311064		<0.1	10	11	77	1200
S1 311065		0.4	38	12	106	1200
S1 311066		0.4	45	19	108	1300
S1 311067		0.5	30	12	74	1300
S1 311068		0.4	35	20	125	1200
S1 311069		0.5	30	11	74	1300
S1 311070		0.4	39	12	111	1400
S1 311071		0.2	12	5	2177	510*
S1 311072		0.4	46	41	114	1200
S1 311073		0.3	17	3	56	730
S1 311074		0.5	30	20	121	1500
S1 311075		0.4	31	12	75	1400
S1 311076		0.5	41	15	114	1300

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PROJECT: 21223 PAGE 4

STANDARD NAME / ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
GEO TRACE STD 3 1989	0.4	279	32	249	-
Number of Analyses	1	1	1	1	-
Mean Value	0.45	278.5	32.2	249.0	-
Standard Deviation	-	-	-	-	-
Accepted Value	0.5	290	33	255	420
Number of Analyses	-	-	-	-	-
Mean Value	-	-	-	-	-
Standard Deviation	-	-	-	-	-
Accepted Value	6.5	400	325	443	1010
ANALYTICAL BLANK	<0.1	<1	<2	1	-
ANALYTICAL BLANK	0.1	<1	<2	1	-
ANALYTICAL BLANK	0.2	<1	<2	1	-
Number of Analyses	3	3	3	3	-
Mean Value	0.12	0.5	1.0	1.0	-
Standard Deviation	0.076	0.00	0.00	0.00	-
Accepted Value	0.1	1	1	1	-
Number of Analyses	-	-	-	-	-
Mean Value	-	-	-	-	-
Standard Deviation	-	-	-	-	-
Accepted Value	-	-	-	-	-
GEO TRACE STD-2 1989	6.8	791	236	482	-
Number of Analyses	1	1	1	1	-
Mean Value	6.76	791.4	236.2	481.9	-
Standard Deviation	-	-	-	-	-
Accepted Value	5.0	820	250	500	600
GEO TRACE STD1 1989	35.0	186	17	62	-
Number of Analyses	1	1	1	1	-
Mean Value	34.95	185.7	17.1	61.9	-
Standard Deviation	-	-	-	-	-
Accepted Value	36.0	190	15	62	480

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REPORT: V91-01069.0 (COMPLETE)

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
1106020		<0.1	39	6	76	810
Duplicate		<0.1	38	4	72	830
111089		0.2	47	15	83	1600
Duplicate		0.2	48	14	83	1600
111109		<0.1	45	14	96	1600
Duplicate		<0.1	45	16	99	1600
311036		<0.1	10	<2	315	640
Duplicate		<0.1	11	<2	323	650
311056		0.2	48	14	111	1100
Duplicate		0.4	47	14	112	1200
311073		0.3	17	3	56	730
Duplicate		0.3	18	3	61	720

→ K - HMRD

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TOTAL ENERGOLD CORPORATION
MR. PATRICK JAMET
#1500-700 WEST PENDER ST.
VANCOUVER, B.C.
V6C 1G8

102041 - 102062 PLOTTED
105018 - 105040 PLOTTED
106001 - 106017 PLOTTED
110063 - 110083 PLOTTED (110019 - 81 PLOTTED)
206001 - 206050 PLOTTED

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TOTAL ENERGOLD CORPORATION
MR. RICHARD BASSANET
#21-1114 1ST AVE.
WHITEHORSE, Y.T.
Y1A 1A3

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North Vancouver, B.C.
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A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

REPORT: V91-00882.0 (COMPLETE)

REFERENCE INFO:

CLIENT: TOTAL ENERGOLD CORPORATION
PROJECT: NONE GIVEN

SUBMITTED BY: R. BASSANET
DATE PRINTED: 19-JUL-91

ORDER	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Ag	Silver	28	0.1 PPM	HNO3-HCl Hot Extr.	Atomic Absorption

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
X OTHER	28	2 -150	28	PULVERIZING	28

REMARKS: ASSAY OF HIGH Ag TO FOLLOW ON V91-00882.6

REPORT COPIES TO: MR. RICHARD BASSANET

INVOICE TO: MR. RICHARD BASSANET

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(604) 985-0681 Telex 04-352667

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A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Certificate of Analysis

TOTAL ENERGOLD CORPORATION
MR. RICHARD BASSANET
#21-1114 1ST AVE.
WHITEHORSE, Y.T.
Y1A 1A3

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North Vancouver, B.C.
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Certificate of Analysis

REPORT: V91-00882.6 (COMPLETE)

REFERENCE INFO:

CLIENT: TOTAL ENERGOLD CORPORATION
PROJECT: NONE GIVEN

SUBMITTED BY: R. BASSANET
DATE PRINTED: 26-JUL-91

ORDER	ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Ag Silver (Gravimetric)	1	0.02 OPT		Fire Assay

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
X OTHER	1	2 -150	1	SAMPLES FROM STORAGE	1

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DATE PRINTED: 8-AUG-91

REPORT: V91-01003.0 (COMPLETE)

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 102041		0.3	51	22	108	1400
S1 102042		0.5	43	13	81	1400
S1 102043		0.3	36	14	79	1300
S1 102044		0.2	57	20	78	1500
S1 102045		0.2	43	16	90	1300
S1 102046		0.2	45	15	98	1300
S1 102047		0.4	42	17	666	1500
S1 102048		0.2	25	15	90	1300
S1 102049		0.3	47	20	76	1200
S1 102050		0.2	34	14	77	1400
S1 102051		0.2	37	15	57	1400
S1 102052		0.4	58	21	63	1300
S1 102053		0.2	18	13	84	1200
S1 102054		0.6	70	18	105	1800
S1 102055		0.4	67	18	81	1500
S1 102056		<0.1	14	14	82	1200
S1 102057		0.3	39	15	87	1400
S1 102058		0.2	37	14	77	1400
S1 102059		0.4	51	19	86	1500
S1 102060		0.3	31	13	68	970
S1 102061		0.2	51	24	111	1200
S1 102062		0.4	39	17	120	1800
S1 105018		0.4	60	15	118	1300
S1 105019		0.5	53	13	124	1300
S1 105020		0.3	39	16	98	1200
S1 105021		<0.1	73	21	102	1400
S1 105022		<0.1	41	18	134	1400
S1 105023		0.2	28	13	87	1400
S1 105024		<0.1	37	13	76	1200
S1 105025		0.3	35	17	83	1400
S1 105026		<0.1	18	13	69	1200
S1 105027		0.2	29	12	77	1400
S1 105028		<0.1	36	15	74	1200
S1 105029		<0.1	7	11	71	940
S1 105030		0.2	44	13	85	1200
S1 105031		<0.1	32	14	158	1200
S1 105032		0.3	37	15	86	1500
S1 105033		0.2	43	14	76	1300
S1 105034		0.2	33	15	76	1300
S1 105035		0.2	21	13	64	1100

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Geochemical Lab Report

DATE PRINTED: 8-AUG-91

REPORT: V91 01003.0 (COMPLETE)

PROJECT: 21223 PAGE 2

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 105036		0.2	47	15	76	1300
S1 105037		0.3	36	13	70	1400
S1 105038		0.3	30	11	80	1500
S1 105039		0.2	45	13	93	1300
S1 105040		<0.1	37	13	84	1400
S1 106001		0.2	18	25	138	1300
S1 106002		0.3	41	15	86	1200
S1 106003		0.2	31	14	80	1400
S1 106004		0.2	19	13	86	1400
S1 106005		<0.1	44	15	75	1200
S1 106006		0.2	25	13	75	1100
S1 106007		<0.1	17	13	64	1100
S1 106008		0.3	41	15	117	1400
S1 106009		0.4	61	15	131	1400
S1 106010		<0.1	55	21	107	1400
S1 106011		0.3	23	15	102	1300
S1 106012		0.3	35	15	79	1300
S1 106013		0.2	36	13	88	1300
S1 106014		0.2	26	9	62	1100
S1 106015		0.2	27	14	63	1200
S1 106016		0.3	37	15	85	1300
S1 106017		<0.1	19	10	53	1100
S1 110063		<0.1	9	4	89	160
S1 110064		0.2	40	3	60	730
S1 110065		1.3	6	4	64	70
S1 110066		0.6	46	16	107	1400
S1 110067		<0.1	20	3	216	470
S1 110068		0.4	41	18	134	1600
S1 110069		<0.1	23	6	102	660
S1 110070		<0.1	30	4	67	480
S1 110071		0.2	26	9	77	1100
S1 110072		0.3	32	16	99	1400
S1 110073		0.2	18	11	87	930
S1 110074		<0.1	14	5	58	770
S1 110075		0.2	30	13	98	1700
S1 110076		0.3	29	11	58	980
S1 110077		<0.1	25	13	55	1400
S1 110078		<0.1	4	4	188	60
S1 110079		0.3	47	16	135	1900
S1 110080		0.3	41	15	102	1800

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 110081		0.4	47	18	161	2100
S1 206001		0.5	57	17	154	1300
S1 206002		<0.1	35	14	78	1300
S1 206003		<0.1	13	11	71	1200
S1 206004		<0.1	9	12	85	1200
S1 206005		<0.1	30	13	69	1200
S1 206006		<0.1	36	12	90	1300
S1 206007		<0.1	21	13	83	1300
S1 206008		<0.1	42	12	72	1500
S1 206009		<0.1	42	14	93	1300
S1 206010		<0.1	14	9	79	1100
S1 206011		0.4	46	19	365	1500
S1 206012		<0.1	24	15	90	1300
S1 206013		<0.1	41	14	83	1300
S1 206014		<0.1	25	11	86	1200
S1 206015		<0.1	25	11	92	1200
S1 206016		0.2	15	9	70	1100
S1 206017		0.2	23	8	114	1100
S1 206018		<0.1	16	11	90	1200
S1 206019		0.2	21	11	79	1200
S1 206020		<0.1	24	11	124	1100
S1 206021		<0.1	19	15	199	1100
S1 206022		<0.1	17	8	83	1200
S1 206023		<0.1	42	13	81	1200
S1 206024		0.2	18	11	103	1200
S1 206025		0.3	45	13	103	1400
S1 206026		0.7	77	15	159	1600
S1 206027		0.2	47	12	125	1500
S1 206028		0.2	18	5	27	900
S1 206029		<0.1	10	11	70	1100
S1 206030		<0.1	15	11	66	1100
S1 206031		<0.1	17	9	64	1000
S1 206032		<0.1	33	16	88	1200
S1 206033		0.4	47	16	121	1300
S1 206034		0.4	65	19	154	1400
S1 206035		<0.1	21	8	78	1200
S1 206036		0.3	55	14	121	1400
S1 206037		0.4	62	14	133	1400
S1 206038		0.4	70	15	122	1300
S1 206039		0.2	38	10	86	1200

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 206040		0.3	45	13	126	1300
S1 206041		<0.1	26	5	55	1000
S1 206042		0.2	44	9	95	1100
S1 206043		0.2	48	9	115	1100
S1 206044		0.3	56	13	128	1300
S1 206045		0.4	59	14	143	1400
S1 206046		0.3	51	13	122	1400
S1 206047		0.5	59	15	137	1400
S1 206048		0.2	26	14	98	1200
S1 206049		0.2	29	15	95	1300
S1 206050		0.5	61	15	162	1300

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STANDARD NAME	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
GEO TRACE STD 3 1989		0.5	336	37	253	-
GEO TRACE STD 3 1989		0.4	295	35	258	-
Number of Analyses		2	2	2	2	-
Mean Value		0.45	315.5	36.0	255.5	-
Standard Deviation		0.130	29.07	1.01	2.98	-
Accepted Value		0.5	290	33	255	420
GEOCHEM STD-1, 1988		-	-	-	-	990
GEOCHEM STD-1, 1988		-	-	-	-	990
Number of Analyses		-	-	-	-	2
Mean Value		-	-	-	-	990.0
Standard Deviation		-	-	-	-	0.00
Accepted Value		6.5	400	325	443	1010
ANALYTICAL BLANK		0.1	<1	<2	<1	-
ANALYTICAL BLANK		0.1	<1	<2	<1	-
ANALYTICAL BLANK		<0.1	<1	<2	<1	-
ANALYTICAL BLANK		<0.1	<1	<2	<1	-
Number of Analyses		4	4	4	4	-
Mean Value		0.08	0.5	1.0	0.5	-
Standard Deviation		0.029	0.00	0.00	0.00	-
Accepted Value		0.1	1	1	1	-
MISC STD		-	-	-	-	650
MISC STD		-	-	-	-	650
MISC STD		-	-	-	-	650
MISC STD		-	-	-	-	650
Number of Analyses		-	-	-	-	4
Mean Value		-	-	-	-	650.0
Standard Deviation		-	-	-	-	0.00
Accepted Value		-	-	-	-	-

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STANDARD NAME	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
GEO TRACE STD-2 1989		7.11	798	242	499	620
Number of Analyses		1	1	1	1	1
Mean Value		6.97	797.6	241.8	498.5	620.0
Standard Deviation		-	-	-	-	-
Accepted Value		5.0	820	250	500	600
GEO TRACE STD1 1989		39.8	192	16	64	490
Number of Analyses		1	1	1	1	1
Mean Value		39.84	192.2	15.9	63.8	490.0
Standard Deviation		-	-	-	-	-
Accepted Value		36.0	190	15	62	480

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
102044		0.2	57	20	78	1500
Duplicate		0.2	62	19	87	1460
102061		0.2	51	24	111	1200
Duplicate		0.2	52	25	115	1180
105036		0.2	47	15	76	1300
Duplicate		0.3	45	13	72	1260
106013		0.2	36	13	88	1300
Duplicate		0.3	32	12	88	1380
110078		<0.1	4	4	188	60
Duplicate		<0.1	5	3	160	70
206014		<0.1	25	11	86	1200
Duplicate		<0.1	25	12	85	1170
206034		0.4	65	19	154	1400
Duplicate		0.3	63	18	147	1360

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TOTAL ENERGOLD CORPORATION
#21 - 1114 1ST AVE.
WHITEHORSE, Y.T.
Y1A 1A3

1106001 - 1106006 PLOTTED
1106017 - 1106029 PLOTTED
111082 - 111115 PLOTTED
114116 - 114119 PLOTTED
311030 - 311076 PLOTTED

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Geochemical Lab Report

REPORT: V91-01069.0 (COMPLETE)

REFERENCE INFO: CLEAR LAKE CAMP

CLIENT: TOTAL ENERGOLD CORPORATION
PROJECT: 21223

SUBMITTED BY: W. VANRANDEN
DATE PRINTED: 22-AUG-91

ORDER		ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Ag	Silver	104	0.1 PPM	HNO3-HCl Hot Extr.	Atomic Absorption
2	Cu	Copper	104	1 PPM	HNO3-HCl Hot Extr.	Atomic Absorption
3	Pb	Lead	104	2 PPM	HNO3-HCl Hot Extr.	Atomic Absorption
4	Zn	Zinc	104	1 PPM	HNO3 HCl Hot Extr.	Atomic Absorption
5	Ba	Barium	104	20 PPM		X-Ray Fluorescence

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
S SOILS	104	1 -80	104	DRY, SIEVE -80	104

NOTES: * indicates INTERFERENCE NOTED

REMARKS: Assay of Ba > 20000 ppm to follow on V91-01069.6
(special client request)

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#21 - 1114 1ST AVE.

INVOICE TO: #21 - 1114 1ST AVE.

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 1106001		0.2	43	13	116	1500
S1 1106002		<0.1	23	3	34	850
S1 1106003		0.2	42	14	117	1400
S1 1106004		0.2	45	14	126	1800
S1 1106005		<0.1	21	17	74	1100
S1 1106006		<0.1	19	14	63	980
S1 1106017		<0.1	6	6	314	290*
S1 1106018		<0.1	14	<2	598	460
S1 1106019		<0.1	29	6	310	660
S1 1106020		<0.1	39	6	76	810
S1 1106021		0.2	26	13	110	1300
S1 1106022		0.2	37	12	99	1100
S1 1106023		0.2	43	14	128	1300
S1 1106024		0.2	38	12	105	1300
S1 1106025		<0.1	20	10	68	1200
S1 1106026		<0.1	26	15	78	1300
S1 1106027		<0.1	52	15	94	1200
S1 1106028		<0.1	39	17	82	1300
S1 1106029		<0.1	100	21	150	1300
S1 111082		<0.1	16	<2	43	420
S1 111083		<0.1	56	17	130	1100
S1 111084		0.2	28	13	93	1700
S1 111085		<0.1	44	15	95	1100
S1 111086		<0.1	44	13	108	1200
S1 111087		<0.1	46	18	116	1300
S1 111088		<0.1	56	24	156	1400
S1 111089		0.2	47	15	83	1600
S1 111090		<0.1	26	14	100	1600
S1 111091		0.2	47	17	160	1800
S1 111092		0.2	41	16	140	1600
S1 111093		<0.1	32	15	103	1600
S1 111094		<0.1	46	14	115	1400
S1 111095		<0.1	42	19	99	1300
S1 111096		0.2	36	20	152	1300
S1 111097		<0.1	45	17	117	1100
S1 111098		<0.1	6	6	57	2210*
S1 111099		<0.1	9	5	694	320*
S1 111100		0.3	71	38	140	1300
S1 111101		<0.1	30	12	100	1500
S1 111102		0.2	29	16	94	1500

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 111103		<0.1	73	15	98	9560
S1 111104		<0.1	61	14	140	1200
S1 111105		<0.1	50	13	104	1000
S1 111106		<0.1	46	15	115	1400
S1 111107		<0.1	51	16	102	1100
S1 111108		<0.1	45	14	114	1200
S1 111109		<0.1	45	14	96	1600
S1 111110		<0.1	40	14	114	1400
S1 111111		0.2	32	12	102	1700
S1 111112		<0.1	40	13	105	1500
S1 111113		<0.1	27	10	98	1300
S1 111114		<0.1	10	6	201	620*
S1 111115		<0.1	43	12	126	1500
S1 114116		<0.1	29	14	59	950
S1 114117		<0.1	29	3	109	290
S1 114118		<0.1	27	<2	50	630
S1 114119		<0.1	30	<2	27	840
S1 311030		<0.1	41	12	110	1300
S1 311031		<0.1	41	12	124	1400
S1 311032		0.2	40	12	108	1300
S1 311033		<0.1	30	10	90	1200
S1 311034		0.2	32	10	95	1200
S1 311035		<0.1	12	4	6100	190*
S1 311036		<0.1	10	<2	315	640
S1 311037		0.2	41	14	121	1400
S1 311038		0.2	17	11	67	1200
S1 311039		<0.1	24	9	58	1100
S1 311040		0.2	26	12	81	1100
S1 311041		<0.1	8	<2	23	860
S1 311042		0.3	30	10	110	1200
S1 311043		0.2	39	12	106	1200
S1 311044		0.2	42	12	120	1300
S1 311045		0.2	40	12	131	1200
S1 311046		<0.1	28	6	83	990
S1 311047		0.3	72	18	139	1400
S1 311048		0.3	19	11	81	1200
S1 311049		0.3	41	16	107	1300
S1 311050		0.2	46	15	113	1400
S1 311051		<0.1	12	11	70	1100
S1 311052		0.4	37	13	73	1200

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 311053		0.2	40	13	98	1300
S1 311054		0.2	39	12	100	1100
S1 311055		0.2	47	18	115	1200
S1 311056		0.2	48	14	111	1100
S1 311057		0.2	34	13	94	1400
S1 311058		0.2	35	13	103	1400
S1 311059		<0.1	32	6	1275	870
S1 311060		0.1	39	13	128	1300
S1 311061		<0.1	38	15	98	1300
S1 311062		0.2	40	13	105	1300
S1 311063		0.2	69	21	124	1600
S1 311064		<0.1	10	11	77	1200
S1 311065		0.4	38	12	106	1200
S1 311066		0.4	45	19	108	1300
S1 311067		0.5	30	12	74	1300
S1 311068		0.4	35	20	125	1200
S1 311069		0.5	30	11	74	1300
S1 311070		0.4	39	12	111	1400
S1 311071		0.2	12	5	2177	510*
S1 311072		0.4	46	41	114	1200
S1 311073		0.3	17	3	56	730
S1 311074		0.5	30	20	121	1500
S1 311075		0.4	31	12	75	1400
S1 311076		0.5	41	15	114	1300

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STANDARD NAME	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
GEO TRACE STD 3 1989		0.4	279	32	249	-
Number of Analyses		1	1	1	1	-
Mean Value		0.45	278.5	32.2	249.0	-
Standard Deviation		-	-	-	-	-
Accepted Value		0.5	290	33	255	420
Number of Analyses		-	-	-	-	-
Mean Value		-	-	-	-	-
Standard Deviation		-	-	-	-	-
Accepted Value		6.5	400	325	443	1010
ANALYTICAL BLANK		<0.1	<1	<2	1	-
ANALYTICAL BLANK		0.1	<1	<2	1	-
ANALYTICAL BLANK		0.2	<1	<2	1	-
Number of Analyses		3	3	3	3	-
Mean Value		0.12	0.5	1.0	1.0	-
Standard Deviation		0.076	0.000	0.000	0.000	-
Accepted Value		0.1	1	1	1	-
Number of Analyses		-	-	-	-	-
Mean Value		-	-	-	-	-
Standard Deviation		-	-	-	-	-
Accepted Value		-	-	-	-	-
GEO TRACE STD-2 1989		6.8	791	236	482	-
Number of Analyses		1	1	1	1	-
Mean Value		6.76	791.4	236.2	481.9	-
Standard Deviation		-	-	-	-	-
Accepted Value		5.0	820	250	500	600
GEO TRACE STD1 1989		35.0	186	17	62	-
Number of Analyses		1	1	1	1	-
Mean Value		34.95	185.7	17.1	61.9	-
Standard Deviation		-	-	-	-	-
Accepted Value		36.0	190	15	62	480

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
1106020		<0.1	39	6	76	810
Duplicate		<0.1	38	4	72	830
111089		0.2	47	15	83	1600
Duplicate		0.2	48	14	83	1600
111109		<0.1	45	14	96	1600
Duplicate		<0.1	45	16	99	1600
311036		<0.1	10	<2	315	640
Duplicate		<0.1	11	<2	323	650
311056		0.2	48	14	111	1100
Duplicate		0.4	47	14	112	1200
311073		0.3	17	3	56	730
Duplicate		0.3	18	3	61	720

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WHITEHORSE, Y.T.
Y1A 1A3

102041 - 102062 PLOTTED
105018 - 105040 PLOTTED
106001 - 106017 PLOTTED
110063 - 110081 PLOTTED
206001 - 206050 PLOTTED

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 102041		0.3	51	22	108	1400
S1 102042		0.5	43	13	81	1400
S1 102043		0.3	36	14	79	1300
S1 102044		0.2	57	20	78	1500
S1 102045		0.2	43	16	90	1300
S1 102046		0.2	45	15	98	1300
S1 102047		0.4	42	17	666	1500
S1 102048		0.2	25	15	90	1300
S1 102049		0.3	47	20	76	1200
S1 102050		0.2	34	14	77	1400
S1 102051		0.2	37	15	57	1400
S1 102052		0.4	58	21	63	1300
S1 102053		0.2	18	13	84	1200
S1 102054		0.6	70	18	105	1800
S1 102055		0.4	67	18	81	1500
S1 102056		<0.1	14	14	82	1200
S1 102057		0.3	39	15	87	1400
S1 102058		0.2	37	14	77	1400
S1 102059		0.4	51	19	86	1500
S1 102060		0.3	31	13	68	970
S1 102061		0.2	51	24	111	1200
S1 102062		0.4	39	17	120	1800
S1 105018		0.4	60	15	118	1300
S1 105019		0.5	53	13	124	1300
S1 105020		0.3	39	16	98	1200
S1 105021		<0.1	73	21	102	1400
S1 105022		<0.1	41	18	134	1400
S1 105023		0.2	28	13	87	1400
S1 105024		<0.1	37	13	76	1200
S1 105025		0.3	35	17	83	1400
S1 105026		<0.1	18	13	69	1200
S1 105027		0.2	29	12	77	1400
S1 105028		<0.1	36	15	74	1200
S1 105029		<0.1	7	11	71	940
S1 105030		0.2	44	13	85	1200
S1 105031		<0.1	32	14	158	1200
S1 105032		0.3	37	15	86	1500
S1 105033		0.2	43	14	76	1300
S1 105034		0.2	33	15	76	1300
S1 105035		0.2	21	13	64	1100

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Geochemical Lab Report

DATE PRINTED: 22-AUG-91

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PROJECT: 21223 PAGE 2

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 105036		0.2	47	15	76	1300
S1 105037		0.3	36	13	70	1400
S1 105038		0.3	30	11	80	1500
S1 105039		0.2	45	13	93	1300
S1 105040		<0.1	37	13	84	1400
S1 106001		0.2	18	25	138	1300
S1 106002		0.3	41	15	86	1200
S1 106003		0.2	31	14	80	1400
S1 106004		0.2	19	13	86	1400
S1 106005		<0.1	44	15	75	1200
S1 106006		0.2	25	13	75	1100
S1 106007		<0.1	17	13	64	1100
S1 106008		0.3	41	15	117	1400
S1 106009		0.4	61	15	131	1400
S1 106010		<0.1	55	21	107	1400
S1 106011		0.3	23	15	102	1300
S1 106012		0.3	35	15	79	1300
S1 106013		0.2	36	13	88	1300
S1 106014		0.2	26	9	62	1100
S1 106015		0.2	27	14	63	1200
S1 106016		0.2	37	15	85	1300
S1 106017		<0.1	19	10	53	1100
S1 110063		<0.1	9	4	89	160
S1 110064		0.2	40	3	60	730
S1 110065		1.3	6	4	64	70
S1 110066		0.6	46	16	107	1400
S1 110067		<0.1	20	3	216	470
S1 110068		0.4	41	18	134	1600
S1 110069		<0.1	23	6	102	660
S1 110070		<0.1	30	4	67	480
S1 110071		0.2	26	9	77	1100
S1 110072		0.3	32	16	99	1400
S1 110073		0.2	18	11	87	930
S1 110074		<0.1	14	5	58	770
S1 110075		0.2	30	13	98	1700
S1 110076		0.3	29	11	58	980
S1 110077		<0.1	25	13	55	1400
S1 110078		<0.1	4	4	188	60
S1 110079		0.3	47	16	135	1900
S1 110080		0.3	41	15	102	1800

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Geochemical Lab Report

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REPORT: V91-01003.0 (COMPLETE)

PROJECT: 21223 PAGE 3

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 110081		0.4	47	18	161	2100
S1 206001		0.5	57	17	154	1300
S1 206002		<0.1	35	14	78	1300
S1 206003		<0.1	13	11	71	1200
S1 206004		<0.1	9	12	85	1200
S1 206005		<0.1	30	13	69	1200
S1 206006		<0.1	36	12	90	1300
S1 206007		<0.1	21	13	83	1300
S1 206008		<0.1	42	12	72	1500
S1 206009		<0.1	42	14	93	1300
S1 206010		<0.1	14	9	79	1100
S1 206011		0.4	46	19	365	1500
S1 206012		<0.1	24	15	90	1300
S1 206013		<0.1	41	14	83	1300
S1 206014		<0.1	25	11	86	1200
S1 206015		<0.1	25	11	92	1200
S1 206016		0.2	15	9	70	1100
S1 206017		0.2	23	8	114	1100
S1 206018		<0.1	16	11	90	1200
S1 206019		0.2	21	11	79	1200
S1 206020		<0.1	24	11	124	1100
S1 206021		<0.1	19	15	199	1100
S1 206022		<0.1	17	8	83	1200
S1 206023		<0.1	42	13	81	1200
S1 206024		0.2	18	11	103	1200
S1 206025		0.3	45	13	103	1400
S1 206026		0.7	77	15	159	1600
S1 206027		0.2	47	12	125	1500
S1 206028		0.2	18	5	27	900
S1 206029		<0.1	10	11	70	1100
S1 206030		<0.1	15	11	66	1100
S1 206031		<0.1	17	9	64	1000
S1 206032		<0.1	33	16	88	1200
S1 206033		0.4	47	16	121	1300
S1 206034		0.4	65	19	154	1400
S1 206035		<0.1	21	8	78	1200
S1 206036		0.3	55	14	121	1400
S1 206037		0.4	62	14	133	1400
S1 206038		0.4	70	15	122	1300
S1 206039		0.2	38	10	86	1200

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Geochemical Lab Report

DATE PRINTED: 22-AUG-91

REPORT: V91-01003.0 (COMPLETE)

PROJECT: 21223 PAGE 4

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
S1 206040		0.3	45	13	126	1300
S1 206041		<0.1	26	5	55	1000
S1 206042		0.2	44	9	95	1100
S1 206043		0.2	48	9	115	1100
S1 206044		0.3	56	13	128	1300
S1 206045		0.4	59	14	143	1400
S1 206046		0.3	51	13	122	1400
S1 206047		0.5	59	15	137	1400
S1 206048		0.2	26	14	98	1200
S1 206049		0.2	29	15	95	1300
S1 206050		0.5	61	15	162	1300

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STANDARD NAME	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
GEO TRACE STD 3 1989		0.5	336	37	253	-
GEO TRACE STD 3 1989		0.4	295	35	258	-
Number of Analyses		2	2	2	2	-
Mean Value		0.45	315.3	36.0	255.5	-
Standard Deviation		0.130	29.07	1.01	2.98	-
Accepted Value		0.5	290	33	255	420
GEOCHEM STD-1, 1988		-	-	-	-	990
GEOCHEM STD-1, 1988		-	-	-	-	990
Number of Analyses		-	-	-	-	2
Mean Value		-	-	-	-	990.0
Standard Deviation		-	-	-	-	0.00
Accepted Value		6.5	400	325	443	1010
ANALYTICAL BLANK		0.1	<1	<2	<1	-
ANALYTICAL BLANK		0.1	<1	<2	<1	-
ANALYTICAL BLANK		<0.1	<1	<2	<1	-
ANALYTICAL BLANK		<0.1	<1	<2	<1	-
Number of Analyses		4	4	4	4	-
Mean Value		0.08	0.5	1.0	0.5	-
Standard Deviation		0.029	0.00	0.00	0.00	-
Accepted Value		0.1	1	1	1	-
MISC STD		-	-	-	-	650
MISC STD		-	-	-	-	650
MISC STD		-	-	-	-	650
MISC STD		-	-	-	-	650
Number of Analyses		-	-	-	-	4
Mean Value		-	-	-	-	650.0
Standard Deviation		-	-	-	-	0.00
Accepted Value		-	-	-	-	-

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REPORT: V91-01003.0 (COMPLETE)

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STANDARD NAME	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
GEO TRACE STD-2 1989		7.0	798	242	499	620
Number of Analyses		1	1	1	1	1
Mean Value		6.97	797.6	241.8	498.5	620.0
Standard Deviation		-	-	-	-	-
Accepted Value		5.0	820	250	500	600
GEO TRACE STD1 1989		39.8	192	16	64	490
Number of Analyses		1	1	1	1	1
Mean Value		39.84	192.2	15.9	63.8	490.0
Standard Deviation		-	-	-	-	-
Accepted Value		36.0	190	15	62	480

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Ba PPM
102044		0.2	57	20	78	1500
Duplicate		0.2	62	19	87	1460
102061		0.2	51	24	111	1200
Duplicate		0.2	52	25	115	1180
105036		0.2	47	15	76	1300
Duplicate		0.3	45	13	72	1260
106013		0.2	36	13	88	1300
Duplicate		0.3	33	12	88	1380
110078		<0.1	4	4	188	60
Duplicate		<0.1	5	3	160	70
206014		<0.1	25	11	86	1200
Duplicate		<0.1	25	12	85	1170
206034		0.4	65	19	154	1400
Duplicate		0.3	63	18	147	1360

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Y1A 1A3

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North Vancouver, B.C.
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REPORT: V91-01069.6 (COMPLETE)

REFERENCE INFO: CLEAR LAKE CAMP

CLIENT: TOTAL ENERGOLD CORPORATION
PROJECT: 21223

SUBMITTED BY: W. VANRANDEN
DATE PRINTED: 27-AUG-91

ORDER	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Ba	Barium	1	0.01 PCT		Atomic Absorption

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
S SOILS	1	1 -80	1	SAMPLES FROM STORAGE	1

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DATE PRINTED: 27-AUG-91

REPORT: V91-01069.6 (COMPLETE)

PROJECT: 21223

SAMPLE NUMBER	ELEMENT UNITS	Ba PCT
S1 111103		0.10

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DATE PRINTED: 27-AUG-91

REPORT: V91-01169.6 (COMPLETE)

PROJECT: 21723

STANDARD NAME	ELEMENT UNITS	Ba PCT
USDI STD		0.07
Number of Analyses		1
Mean Value		0.070
Standard Deviation		-
Accepted Value		-

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[illegible] Vancouver, B.C.
[illegible]
[illegible] Tel: [illegible]

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REPORT: V91-01169.6 (COMPLETE)

DATE PRINTED: 27-AUG-91
PROJECT: 21223

SAMPLE NUMBER	ELEMENT UNITS	Ba PCT
111103		0.10
Duplicate		0.10

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WHITEHORSE, Y.T.
Y1A 1A3

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[illegible]
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REPORT: V91-01003.6 (COMPLETE)

REFERENCE INFO: CLEAR LAKE CAMP

CLIENT: TOTAL ENERGOLD CORPORATION
PROJECT: 21223

SUBMITTED BY: R. ZURAN
DATE PRINTED: 27-AUG-91

ORDER	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Ba	Barium	1	0.01 PCT		Atomic Absorption

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
S SOILS	1	1 -80	1	SAMPLES FROM STORAGE	1

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REPORT: V91-01003.6 (COMPLETE)

PROJECT: 21223

SAMPLE NUMBER	ELEMENT UNITS	Ba PCT
S1 110081		0.21

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[illegible]
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REPORT: V91-01103.6 (COMPLETE)

DATE PRINTED: 27 AUG 91
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STANDARD NAME	ELEMENT UNITS	Ba PCT
Number of Analyses		-
Mean Value		-
Standard Deviation		-
Accepted Value		-

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REPORT: V91-01003.6 (COMPLETE)

PROJECT: 21223

SAMPLE NUMBER	ELEMENT UNITS	Ba PCT
110081		0.21
Duplicate		0.21

→ RICHARD

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[illegible] Assumption Ave.
[illegible] Vancouver, B.C.
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#1500-700 WEST PENDER ST.
VANCOUVER, B.C.
V6C 1G8

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[illegible] Pemberton Ave
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REPORT: V91-01069.6 (COMPLETE)

REFERENCE INFO: CLEAR LAKE CAMP

CLIENT: TOTAL ENERGOLD CORPORATION
PROJECT: 21223

SUBMITTED BY: W. VANRANDEN
DATE PRINTED: 27-AUG-91

ORDER	ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Ba Barium	1	0.001 PCT		Atomic Absorption

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
S SOILS	1	1 -80	1	SAMPLES FROM STORAGE	1

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SAMPLE NUMBER	ELEMENT UNITS	Ba PCT
S1 111103		0.10

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DATE PRINTED: 25-JUN-91

REPORT: V91-01169.6 (COMPLETE)

PROJECT: 21223 PAGE 2

STANDARD NAME	ELEMENT UNITS	Ba PCT
USDI STD		0.07
Number of Analyses		1
Mean Value		0.070
Standard Deviation		-
Accepted Value		-

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REPORT: V91-III069.6 (COMPLETE)

DATE PRINTED: 27 AUG 91
PROJECT: 21223 PAGE 3

SAMPLE NUMBER	ELEMENT UNITS	Ba PCT
111103		0.10
Duplicate		0.10

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Geochemical Lab Report

REPORT: V91-00882.0 (COMPLETE)

DATE PRINTED: 19-JUL-91

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM
X2 E6009		19.1
X2 E6010		14.0
X2 E6011		38.6
X2 E6012		16.5
X2 E6065		34.9
X2 E6066		7.6
X2 E6067		34.1
X2 E6068		3.8
X2 E6098		5.3
X2 E6099		5.6
X2 E6100		6.1
X2 E6101		6.1
X2 E6102		17.4
X2 E6103		18.3
X2 E6104		18.4
X2 E6105		7.5
X2 E6106		5.8
X2 E6107		9.3
X2 E6108		6.5
X2 E6109		5.2
X2 E6110		5.8
X2 E6111		12.4
X2 E6112		8.1
X2 E6113		6.2
X2 E6114		42.2
X2 E6115		47.8
X2 E6116		44.7
X2 E6117		>50.0

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Certificate of Analysis

REPORT: V91-00882.6 (COMPLETE)

DATE PRINTED: 26-JUL-91

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Ag OPT
X2 E6117		2.08

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REPORT: V91-00882.4 (COMPLETE)

DATE PRINTED: 22-JUL-91

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Pb PCT	Zn PCT	Zn PCT	Zn PCT
X2 E6009		0.59	>10.00	18.30	18.76
X2 E6010		2.20	3.92		
X2 E6011		1.78	>10.00	28.40	29.39
X2 E6012		0.42	>10.00	17.60	17.42
X2 E6065		0.53	>10.00	15.60	15.74
X2 E6066		0.13	0.82		
X2 E6067		1.29	>10.00	12.55	12.66
X2 E6068		0.12	0.68		
X2 E6098		0.24	1.17		
X2 E6099		0.34	0.66		
X2 E6100		0.52	1.37		
X2 E6101		0.52	2.50		
X2 E6102		2.43	7.40		
X2 E6103		2.05	7.42		
X2 E6104		1.84	7.32		
X2 E6105		0.32	1.28		
X2 E6106		0.21	2.87		
X2 E6107		0.58	6.13		
X2 E6108		0.37	1.19		
X2 E6109		0.50	0.75		
X2 E6110		0.31	0.84		
X2 E6111		1.68	4.98		
X2 E6112		0.69	4.08		
X2 E6113		0.41	1.50		
X2 E6114		1.93	9.96	10.00	9.88
X2 E6115		1.93	9.75		9.71
X2 E6116		1.94	7.25		
X2 E6117		2.90	>10.00	11.10	11.12

Registered Assayer, Province of British Columbia

Bondar-Clegg & Company Ltd.
130 Pemberton Ave.
North Vancouver, B.C.
V7P 2R5
(604) 985-0681 Telex 04-35266

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Certificate of Analysis

MINING & INDUSTRIAL INSPECTION & TESTING SERVICES

TOTAL ENERGOLD CORPORATION
MR. RICHARD BASSANET
#21-1114 1ST AVE.
WHITEHORSE, Y.T.
Y1A 1A3

Bondar-Clegg & Company Ltd.
130 Pemberton Ave.
North Vancouver, B.C.
V7P 2R5
(604) 985-0681 Telex 04-352667

BONDAR-CLEGG

A DIVISION OF INCHCAPE INSPECTION [illegible]

Certificate of Analysis

REPORT: V91-00882.4 (COMPLETE)

REFERENCE INFO:

CLIENT: TOTAL ENERGOLD CORPORATION
PROJECT: NONE GIVEN

SUBMITTED BY: R. BASSANET
DATE PRINTED: 22-JUL-91

ORDER	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Pb	Lead	28	0.01 PCT	HCL-HNO3-HF	At Absorp -low level
2	Zn	Zinc	28	0.01 PCT	HCL-HNO3-HF	At Absorp -low level
3	Zn	Zinc	7	0.01 PCT	HCL-HNO3-HF	Atomic Absorption
4	Zn	Zinc	8	0.01 PCT		Titrimetric

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
X OTHER	28	2 -150	28	PULVERIZING	28

REPORT COPIES TO: MR. RICHARD BASSANET

INVOICE TO: MR. RICHARD BASSANET

APPENDIX E

PROPOSED 1992 EXPLORATION WORK AND TARGETS

APPENDIX E: PROPOSED 1992 EXPLORATION WORK AND TARGETS

1. AREA 1

Line Cutting: 18 km cut by D6 extending lines to the south on POW Grid covering the unconformity between Askin and Earn Gp rocks. This includes an access line out from L400S on the SNAFU Grid to Area 12.

Geology: 3 km2 mapping at 1:2,000 scale along these new lines.

Geochem: 300 soil samples at 50m stations.

Geophysics: 18 km of IP over the new lines and 5 km of gravity. 6 km PLMT with an optional 12 km depending on the results.

Drilling:

Firm: 1360 m (6 holes)

250 W - 160 - 180 N
same sulphide target to hit at 120 m deep.

hole inclination 600 - drill past the barite at least 30 m (collar approximately at 55 N)

length: 220 m

350 W - 180 - 250 N
same target to hit 120 m deep - hole inclination 600

collar at 130 N

length: 220 m

450 W - 137 N
hole inclin. 500, target at 100 m depth

collar at 16 N (to pass vertical of 160 N)

length: 260 m

1050 W - 262 N

good conductor (113 ohm-meters)

good IP (26) on hanging wall of max IP (48) but 75 m at south

probable dip to south, close to vertical

collar at 185 N, inclin 500 to the N, drill to vertical of 325 N

length: 220 m

1750 W - 362 to 412 N

moderate resistivity in the range of 200 - 300 m with a little more conductive feature (on n=2 and n=3) at 362 N then strong contact at 400 N to get into highly conductive unit. This contact shows the max IP (46 ms)

geochem - 1400 ppm Ba

length: 220 m

1950 W - 425 to 475 N

same target as 1750 W- 487 N but with a resistive unit in between and a possible dip to N (of the resistive unit (chert?)

length: 220 m

Optional 840 m

350 W - 187 N

collar approximately 90 N, inclination 60,0

length: 220 m

450 W - 187 or 337 N

to decide after additional results are available

length: 200 m

950 W - 262 N

same target as 1050 W - 262 N

collar at 185 N, inclin 500 to the N, drill to vertical of 325 N

length: 220 m

1750 W - 487 N

very strong conductor (16 ohm-meters) with lower IP (22 ms) between 2 shoulders (25/30 to 35/40) expected to dip south

length: 200

AREA 11 WEST

Line Cutting: A new grid with 16.5 km of lines occupying the Askin -Earn Group contact to give control for geological, geophysical and geochemical work. A 1.0 km long access road will be plowed to the area. (Work could be done by ATV-fly camp set up or by commuting from Clear Lake Base Camp).

Geology: 3 km2 of mapping at 1:5,000 scale to locate Earn - Gp. rocks, the unconformity with Askin Gp. rocks, and to identify rocks associated with the arcuate conductor.

Geochem: 150 soil samples (50m sample stations).

3. AREA 17

Line Cutting: 6.0 km at same orientation as SNAFU Grid. 3 km of access roads with an additional optional 1 km.

Geophysics: Gravity along the 6.0 km cut in Snafu grid direction. This orientation should reduce topographic effects encountered with gravity surveys done in the past.

Drilling:

Firm 570 m (3 holes)

750 E 337 S

main orebody

length: 220 m

1550 E 537 S

very good conductor

max IP (40 ms) of the line

collar at 460 S, dip 500 S, drilled up to 556 S

length: 150 m

1250E - 580 S
drilled after confirmation with new gravity lines

strong gravity from Getty's survey

IP / R short of this target but at 525 S, R starts to decrease and IP is picking up.

length: 200 m

Optional 560 m

POW 450 E - 375 S
following up sphalerite intercept in hole 91-63

to hit at 120 m deep, hole inclin. 500 S, collar at 275 S

length: 200 m

550 E - 380 S
other hole above 91-63 to hit same target at 60 m deep

collar at 330 S

length: 120 m

1550 E - 437 S
very good conductor (41 ohm-metres)

local high IP (29 ms) - gravity anomaly from Getty's survey

collar 385 S, dip 500 S, drill to reach vertical at 462 S

length: 120 m

4. AREA 1

Line Cutting: (Optional) 9 km hand cut to the east, west and south of the existing grid.

Geology: (Optional) 5 km2 mapping at 1:2,000 scale.

Geochem: (Optional) 80 soil samples, (50m sample stations).

Geophysics: (Optional) 9 km IP to the east, west and south of existing grid. 6 km of PLMT test lines.

Drilling:

Firm 780 m (4 holes)

8200 W - 5137 N to 5160 N - Super Conductor (2 ohm-meters)

NE anomaly on Area 1 grid

very strong chargeability (72 ms)

weak gravity anomaly (0.2 mGal)

south dip

collar at 5050N, inclin. 500, target at 100 m depth
hole ends at a vertical of 5190 N

length: 220m

8500 W - 4640 N - Super Conductor (6 ohm-meters)

IP low (9 ms) at centre of conductor, but very high on shoulders (up to 147 ms)

gravity anomaly (0.4 mGal)

dip close to vertical?

collar at 4560N, incl. 500, target at 100 m depth
hole ends at a vertical of 4700N

length: 220m

8700 W - 4775 to 4900 N (4860 N)

Super Conductor (2 ohm-meters (125 m across)

no gravity data, Zn mineralization and gravity slightly N. at 100 m S.

very high IP (48 to 62 ms on shoulders)
vertical or south possible dip

2 holes

collar at 4720 N, inclin. 500 N, length 170 m drilled to the vertical of 4829 N (hit south contact at 65 m deep)

length: 170 m

collar at 4800 N, inclin. 500 N, length 170 m drilled to the vertical of 4909 N

length: 170 m

Optional 600 m depending on success

5. AREA 3

Geochem: (Firm) 100 soil samples on old lines to follow up Zn-Pb anomalies in the north part of the grid and to cover the 3 "1.0" mgal anomalies in the south.

Geophysics: (Optional) 1.5 km of PLMT along old lines L870W, L880W and L890W.

6. AREA 13

Line Cutting: lines 4200 W and 4400 W should be cut from 100 N to 1000 S (1.1 km each)

Geophysics: 2.2 km of IP and gravity on the new lines

Geochem: 40 samples on the new lines @ 50 m spacing

Drilling:

Optional 240 m

4000 W - 690 to 750 S

excellent conductor (33 ohm-metres) at least 25 m thick in the middle of relatively resistive ground (200 to 600 ohm-metres)

matching high IP (39 ms) in a broad high IP background.

geochem: average values - no particular anomalies, not necessarily significant.

most probable dip to the north

length: 240 m

7. AREA 23

Access Roads: 7.0 km extension of road from area 13 road

Geology: 13.5 km2 of mapping at 1:5,000 scale focused on locating Earn Gp. rocks and the unconformity with Askin Gp. rocks.

Geochem: 100 soil samples taken on a flagged chained grid (50m sample stations).

Geophysics: 5 km of PMLT

8. AREA 16

Line cutting: 9.8 km (by hand); same orientation as exsisting grid. It is suggested that line cutting be done hand instead of bulldozer for enviromental reasons as the area is close to the Pelly River. Access for Clear Lake Base Camp may be done by zodiac.

Geochem: none planned, overburden 25m.

Geophysics: 9 km IP and gravity on new grid

Drilling:

Optional 400m

9. AREA 12

Line Cutting: 1.6 km in extension of lines 1450 W and 1650W

Trenching:

650 W - 980 to 950 S
nice contrasted conductor 186 ohm-meters on background 450 to 680, but narrow with coinciding peak of IP 39 / background 28 - 30.

3 geochem anomalies very close by:
Zn 149 to 316 ppm, Pb 112 ppm (Getty)
no Ag, Cu,Pb,Ba(1200 ppm)
possibility of transported geochem from main orebody

mag low

possible gravity anomaly,).25 mGal?

probable dip of bed 30 to 500 NE

850 W - 1150 to 1200 S
contact between high resistivity (400 - 500 ohm-metres) and moderate resistivity (300 - 350 ohm-metres)

max IP (39 ms)

high Zn anomalies: 1050 ppm (probably transported) and 5748 ppm

no gravity anomaly

expected dip approximately vertical or North,

if 650 W - 970 S positive, target would be the weak conductor (but high IP) at 1112 S

Geophysics:
1.6 km of IP on the new lines 1450 W and 1650 W

1.6 km of gravity on lines 1050 W and 1250 W

Geochem: 40 samples on new lines and fill-in

Drilling:

Optional 660 m (after trenching results)

1250 W - 1625 to 1675 S
very conductive (30 to 50 ohm-metres) wide structure

highly chargeable IP 48 to 59

one low IP between high shoulders at 1680 - 1700 S should be drilled also.

mag low

no gravity, no geochem available

possible dip vertical or to N

length: 220 m

650 W - 980 to 950 S
described under trenching

length: 220 m

850 W - 1150 to 1200 S
described under trenching
collar at 1075 S dip 500 S

length: 220 m

10. MUSHROOM LAKE

Access Roads: 2.5 km of access road.

Geophysics: 2.5 km of PMLT along the new access road.

APPENDIX F

1991 DIAMOND DRILL HOLE LOCATIONS

APPENDIX F: 1991 DIAMOND DRILL HOLE LOCATIONS
Clear Lake Project

HOLE #	UTM COORDINATES Northing	Easting	GRID LOCATION Grid Coordinates	AZIMUTH	DIP
91-49A	61628.03	92046.61	PIN 148N,270E	263.60	-59.5
91-49B	61628.28	92046.73	PIN 148N,270E	269.43	-60.6
91-50	61510.72	91976.57	PIN 033N,199E	268.79	-60.3
91-51	61389.96	91954.88	between grids: SNAFU 141S,133E PIN 090S,177E POW 001S,194E	269.11	-59.9
91-52	61329.91	92020.19	SNAFU 221S,177E	270.53	-59.7
91-53	61390.19	92159.38	POW 093N,376E	270.30	-60.7
91-54	61390.30	92029.98	between grids: SNAFU 166S,206E POW 032N,261E PIN 089S,253E	* 270	* -60
91-55	61210.11	91848.67	SNAFU 275S,025W	* 270	* -60
91-56	61205.03	91891.29	SNAFU 294S,012E	206.29	-59.0
91-57	61155.96	91985.27	on both grids: SNAFU 362S,085E POW 194S,329E	207.25	-60.9
91-58	61269.65	91898.14	SNAFU 236S,042E	268.75	-60.4
91-59	61270.65	91986.96	SNAFU 265S,125E	269.35	-60.5
91-60	61510.90	92054.00	PIN 033N,279E	270.00	-60.3
91-61	61504.73	91945.74	PIN 026N,169E	274.57	-49.6
91-62	61569.43	92101.36	PIN 083N,324E	271.59	-58.5
91-63	61007.92	92160.03	on both grids: SNAFU 570S,200E POW 245S,555E	208.00	-50.9
91-64	61751.87	91646.05	on both grids: POW 181N,247W PIN 273N,139W	026.72	-50.1
91-65	61721.60	91629.17	on both grids: POW 148N,249W PIN 246N,153W	025.82	-70.7
91-66	62382.01	91070.12	POW 484N,1047W	209.35	-51.2

* Collar location survey only, no surveyed azimuth or d

APPENDIX G

1991 DIAMOND DRILL HOLE INTERSECTIONS

APPENDIX G: 1991 DIAMOND DRILL HOLE INTERSECTIONS
Clear Lake Project

HOLE #	VERTICAL X-SEC. BL	Section	LONG.	INTERSECTION Unit	Interval (m)	Width (m)	EOH (m)
91-49A	2000E	630N		no intersection			86.0
91-49B	2000E	630N	B	no intersection			392.0
91-50	2000E	510N	B	DM5	83.7-86.8	3.1	239.9
				DMA	133.3-211.1	77.8	
				DMA	215.4-215.7	0.3	
91-51	2000E	390N	B	DMA	96.7-210.6	113.9	233.8
91-52	2000E	330N	B	DMA	214.4-288.4	73.0	297.8
91-53	2000E	390N	B	DMA	179.7-180.8	1.2	419.7
				DMB	266.6-406.0	139.4	
91-54	2000E	390N	B	DM5	149.0-149.1	0.1	267.3
				DMA	204.3-205.0	0.7	
				DMA	209.3-209.6	0.3	
				DMA	212.2-212.6	0.4	
				DMA	215.9-254.8	38.9	
91-55	2000E	210N	B	DM5	44.9-48.7	3.8	124.1
				DMA	50.4-54.6	4.3	
				DMA	67.9-69.0	1.1	
				DMA	74.4-99.6	25.2	
91-56	200N	90E	A	DMA	35.6-36.0	0.4	170.7
				DMA	37.0-37.9	0.9	
				DMA	58.1-60.4	2.3	
				DMA	83.2-97.3	14.1	
				DMA	97.7-98.3	0.6	
				DMA	100.2-102.0	1.8	
				DMA	102.9-103.7	0.8	
				DMA	108.8-127.0	18.2	
				DMA	133.8-149.8	16.0	
				DMA	153.2-157.8	4.7	
91-57	200N	180E	A	DM5	107.1-113.5	6.4	163.4
				DMA	112.9-134.8	21.9	
91-58	2000E	270N	B	DMA	72.1-79.9	7.8	195.7
				DMA	92.9-95.0	2.1	
				DMA	99.4-102.0	2.6	
				DM5	122.3-124.9	2.6	
				DM5	132.0-132.2	0.2	
				DMA	141.6-170.8	29.2	
				DMA	175.2-177.5	2.3	
				DMA	187.1-191.2	4.1	
91-59	2000E	270N	B	DMA	120.1-121.5	1.4	261.2
				DMA	128.4-128.6	0.2	
				DMA	133.9-140.0	6.1	
				DMA	144.9-161.0	16.1	
				DMA	168.4-169.0	0.6	
				DMA	224.3-225.6	1.3	
				DMA	227.6-229.2	1.6	
				DMA	230.1-241.3	11.2	

91-60	2000E	510N	B	DM5	165.4-165.7	0.3	266.7
				DMA	202.6-257.0	54.4	
				DMA	261.1-261.6	0.5	
91-61	2000E	510N	B	DM5	42.7-48.8	6.2	188.1
				DMA	106.4-180.0	73.7	
				DMA	180.9-184.0	3.1	
91-62	2000E	570N	B	no intersection			333.8
91-63	200N	360E	A	DMA	58.6-68.2	9.6	226.8
				DMA	69.0-69.8	0.8	
				DMA	70.7-72.2	1.5	
91-64	700N	360W	C	DMB	43.5-69.4	25.9	268.2
91-65	700N	360W	C	DMA	23.5-32.6	9.1	182.0
				DMA	35.7-53.0	17.3	
				DMA	53.7-57.0	3.3	
				DMB	88.3-103.0	14.7	
				DMB	110.3-111.0	0.7	
91-66	700N	1170W		C2a	(v. graphitic)		271.0

* Intersection:
  A: massive sulphide
  B: Barite
  C2a: massive, carbonaceous argillite

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APPENDIX H

DIAMOND DRILL LOGS

093013

To Accompany:

CLEAR LAKE PROPERTY
1991 ASSESSMENT REPORT
By Basnett & Zuran

TOTAL ENERGOLD CORPORATION
DRILL LOG

PROJECT: CLEAR LAKE	GROUND ELEV.: 705.29m
HOLE No.: 91-49A	BEARING: 263.60°
LOCATION: 6,961,628.03 N 492,046.61	DIP: -59.50°
	TOTAL LENGTH: 282' / 85.95m
LOGGED BY: RICK ZURAN	HORIZONTAL PROJECT: 43.6229
DATE: 12/6/91	VERTICAL PROJECT: -74.05701
CONTRACTOR: KLUANE DRILLING	ALTERATION SCALE: absent, slight, moderate, intense
CORE SIZE: NQ	
DATE STARTED: 9:00 PM JUNE 4th 91	
DATE COMPLETED: 3:00 PM JUNE 7th 91	TOTAL SULPHIDE SCALE: < 1%, 1%—5%, 5%—25%, 25%—50%, < 50%
DIP TESTS: NONE	

DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE : to intersect UNIT A @ expected 195-240m

REASON FOR SHUT DOWN : Az was 6.4° off planned 250° Az due to drill shifting in mud. Continued drilling would put intersection 25-30m off target & to within known tonnage calculated area on longitudinal. No info on ore body.

GEOLOGY :

0 - 30.58m	OVERBURDEN	
30.58 - 35.20m	C1b SANDSTONE	
35.20 - 36.60m	C6a TUFF	
36.60 - 38.62m	C6b TUFF	
38.62 - 55.86m	C4 CHERT	
55.86 - 61.27m	C6a TUFF	
61.27 - 63.09m	C2b ARGILLITE	
63.09 - 76.05m	C2a ARGILLITE	
76.05 - 77.44m	C5 ? LAPILLI TUFF	
77.44m - 85.95	C2a ARGILLITE	
	E.O.H	

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EASTING....    92046.610
ELEVATION..   705.29
BASELINE...  2000E
TOTAL HORZ    43.6229
TOTAL VERT   -74.05701
```

LENGTH	AZIMUTH	DIP	HORZ	ELEV	DIST FROM BL	SECTION	SEC OFFSET	DESCRIPTION
0.00	266.00	-59.50	0.00	705.29	46.61 E	2000 99.0 S	1.97 S	COLLAR
85.95	0.00	0.00	43.62	631.23	3.23 E	99.0 S	6.53 S	END OF HOLE

PAGE 1 OF 12 | PROJECT CLEAR LAKE | HOLE No. 91-49A

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
0				0 - 30.58m OVERBURDEN													
1																	
2																	
2.5																	
3																	
4																	
5																	
6																	
7																	

PAGE 2 OF 12 | PROJECT CLEAR LAKE | HOLE No. 91-49A

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
10				OVERBURDEN (Cont'd)													
8																	
9																	
10																	
11																	
12																	
125																	
13																	
14																	
15																	

PAGE 3 OF 12 | PROJECT CLEAR LAKE | HOLE No. 91-49A

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
15				OVERBURDEN (Cont'd)													
16																	
17																	
17.5																	
18																	
19																	
20																	
21																	
22																	
22.5																	

PAGE 4 OF 12 | PROJECT CLEAR LAKE | HOLE No. 91-49A

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
22.5				OVERBURDEN (Contd)													
23																	
24																	
25																	
26	16																
27																	
27.5																	
28																	
29																	
30	45																

PAGE 5 OF 12 | PROJECT CLEAR LAKE | HOLE No. 91-49A

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	B	C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
30	45		40	OVERBURDEN (Cont'd)													
			40	30.58-31.90 C1b SANDSTONE													
31		C1b		*1 30.58-31.04 FAULT: Black carbonaceous zone with discontinuous irregular milky qtz. stgrs. (width 0.05-1.5cm; avg. 0.2cm) 5stgrs/cm. C∡F$_{NW+FW}$ = 40°													
	94																
32		LOST															
	94			31.09-31.90 Dk. grey, v. fine grain (silt.), massive locally crackled sst. with chaotic, milky white to pale yellow-brown qtz. stgrs.; avg. 0.1cm wide. Stgrs. have tooled margins. 3 stgrs/cm.													
32.5																	
33																	
		C1b	30	31.90-32.08 LOST CORE													
34	98		50	32.08-35.20 C1b SANDSTONE					32.08-34.32 Trace fine (<1/4mm) sub-euhedral disseminations of py along secondary fractures.								
			35	32.08-34.32 As above + milky white to pale yellow brown qtz stgrs occurring as secondary fracture fillings, avg. 0.1cm wide.													
35				*2													
		C6a	65	34.32-35.20 FAULT ZONE: Black carbonaceous zone with milky white discontinuous boudin blobs (avg. 0.5x1cm) and qtz stgrs (0.1cm wide) Chaotic & convoluted cleavage/shears. Prominent C∡F = 50°													
36	80		44														
37		C6b		35.20-36.60 C6a TUFF													
37.5				35.20-36.05 Pale grey green siliceous "cherty"													

PAGE 6 OF 12 | PROJECT CLEAR LAKE | HOLE No. 91-49A

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	B	C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
37.5				C6a TUFF (cont'd)													
	80	C6b	35	tuff with uniform/regular milky qtz stgrs.													
38				avg. 0.2cm wide (C∡ Stgr = 50°). 1 per 5cm.													
		LOST		Locally brecciated with healed with milky													
				qtz. Pale yellow-brown stgrs. (avg. 0.1cm wide)													
			55	are cross cut by milky stgrs. and are more chaotic													
39																	
				36.05-36.60 Dk. grey breccia-stgr zone with													
			70	carbonaceous fracture fillings with poorly devel.													
	100	C4	80	stylolites & shear planes.													
40																	
				36.60-38.03 C6b TUFF					36.60-37.32 Trace medium grain euhedral								
				Pale grey green "cherty" tuff with v. fine					clusters of py along laminae								
				wispy laminations. Pale yellow-brown to milky qtz													
41				stgrs. (Avg. 0.2cm) every 2cm. Locally brecciated,													
	96			sheared & silicified.													
				38.03-38.62 LOST CORE													
42																	
		LOST		38.62-41.76 C4 CHERT													
42.5				38.62-39.00 Pale grey-pale yellow brown to off													
				white crackled, moderately pitted chert													
43				*3													
	64	C4		39.00-39.14 FAULT: grey green gouge (39.13m)													
				and black bx zone with off white to pale yellow brown													
				qtz frag. (avg. size: 2x2cm). C∡ F_{uw} ≈ 55°													
44				*4													
				39.81-39.90 FAULT: grey green gouge													
				C∡ F_{uw} & F_{w} ≈ 80°													
	88			39.90-41.76 Chert													
45				41.76-42.65 LOST CORE													

PAGE 7 OF 12 | PROJECT CLEAR LAKE | HOLE No. 91-49A

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	B	C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
45				42.65-46.90 C4 CHERT													
				42.65-45.94 Green-grey intensely crackled - chert with local ash-tuff horizons <1cm wide (trace over interval). Qtz stgrs. chaotic, discontinuous and intense													
46	88	C4	80 65 5														
				45.94-46.13 Grey green tuffaceous" chert C∡B ≈ 80°													
47		LOST		*5													
47.5	97			46.13-46.90 FAULT ZONE - Rusty brown to grey green containing avg. frag., local bx and convoluted. 10% off white qtz stgrs (avg. 3mm wide.) C∡F$_{hw}$ = 65° - significant													
48																	
	100			46.90-47.24 LOST CORE													
49		C4		47.24-54.70 C4 CHERT													
				47.24-50.00 Dk grey with local ash tuff horizons avg. 1/2cm wide; 1% of interval; Intensely crackled chert. Fabric, (bedding, qtz stgrs & fractures), predominantly 60° to C.A. Core broken @ end of interval.													
50																	
51	100		85 60	50.00-51.85 Dk grey to black mod - intensely crackled chert with ash-tuff horizons, avg. 1cm wide, 10% of interval. Local wk. limonite staining @ tuff horizon 51.58m. C∡B$_{tuff\ 1cm}$ = 85° Gypsum seam @ 51.14, coarse X-tallite 1cm wide.													
52				*6													
52.5				51.85-51.88 FAULT dk green - bk. carb. gouge													

PAGE 9 OF 12 | PROJECT CLEAR LAKE | HOLE No. 91-49A

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
60				Clast supported: 90% sub angular milky qtz frag.													
		C6g		Matrix: black carb. material. CA F_{min} ~ 20°													
61				59.26-61.27 Grey-green "chorty" tuff grading													
	97		A A	to black argillaceous material at end of interval.													
				Local stgr. zones with up to 40% pale yellow-													
				brown qtz stgrs. End of interval brecciated													
62		C2b		(sub-angular) with carb. matrix.													
62.5			90	61.27-63.09 C2b ARGILLITE													
				61.27-62.10 Dk grey argillite with knife sharp bx					61.27-62.10 1% euhedral py cubes (2mm								
63				frag. along cleavage. 2% milky qtz stgrs.					square) disseminated along cleavage								
				parallel to cleavage.					planes.								
	98			62.10-63.09 Dk grey with paler local silty					62.10-63.09 3% fine grain irregular								
64				laminations (10% of interval.) CA B_{min} = 90°					blobs 1x2cm locally elongated along								
				@ 62.50m. Locally brecciated but relatively					silty laminae.								
		C2a		competent core.													
65				63.09-73.70 C2a ARGILLITE					63.09-73.70 Trace fine grain blebs								
				Dk grey to black strongly carb. argillite					(avg. 1/2cm elongated along cleavage)								
				Bx towards beginning of interval. Mod-intense					of py.								
66				qtz (predominantly)/carb. stgr. zones													
				throughout interval (40%). Local bx throug-													
				out interval (10%). Intense silica flooding													
	100			(69.82-70.15m). Local convoluted cleavage													
67				(70.15-70.35m) F.A. @ 85° to C.A. Local													
				stylolites (rare) @ 69.82 to 70.15.													
67.5																	

PAGE 10 OF 12 | PROJECT CLEAR LAKE | HOLE No. 91-49A

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
67.5				2a ARGILLITE (cont'd)													
68																	
	100																
69																	
70																	
	97	2a															
71																	
72																	
72.5																	
73	97																
		LOST		73.70-73.90 LOST CORE													
74																	
	97			73.90-76.05 2a ARGILLITE					73.90-76.02 10% fine grain blebs of								
				Dk grey to black, strongly carb. argillite					py. (avg. 1cm in dia.)								
75				with moderate to intense qtz/carb. stgrs													

PROJECT CLEAR LAKE

HOLE No. 91-49A

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION si A	B	C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
75	93	C2a		C2a ARGILLITE (cont'd.) throughout interval. 1% stylolites. Contact with unit @ end of interval 70° to C.A.													
76			70	76.05-77.44 C5? ash TUFF					76.05-77.44 7% v. fine grain irregular blobs (avg. 1cm x 1½cm) & bands ¾cm wide along bedding of pg.								
77	99	C5 ?	10	Pale green v. fine grain ash with trace dk. green frag. (elongated along bedding.) and off white carbonate altered clasts 1-2mm C∡ TUFF FW. = 10°													
77.5				77.44-85.95 C2a ARGILLITE													
78				Black to dk. grey strongly carbonaceous argillite locally brecciated particularly close to HW contact. More competent towards end of interval. Local qtz stgrs.: 20% of interval (widest @ 84.41-84.49m). Cleavage @ end of hole: 25° to C.A.													
79	97	C2a															
80																	
81																	
82	97																
82.5																	

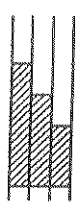
PAGE 12 OF 12 | PROJECT CLEAR LAKE | HOLE No. 91-494

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si	A	B	C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
825				C2a ARGILLITE (Contd)														
85	97	C2a								82.50-83.00 15-20% V. fine grain irregular blebs (10×3cm) of anhedral py								
89																		
85	92																	
86				END OF HOLE @ 85.95														

TOTAL ENERGOLD CORPORATION
DRILL LOG

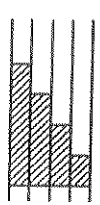
PROJECT CLEAR LAKE	GROUND ELEV. 705.50
HOLE No. 91-49B	BEARING 269.43
LOCATION 61628.28 N 92,046.75 E	DIP -60.6
	TOTAL LENGTH 1286', 391.97m
LOGGED BY RICK ZURAN / ATUSHI GOMI REWRITTEN BY R. ZURAN	HORIZONTAL PROJECT 204.9234
DATE JULY 4th, 1991	VERTICAL PROJECT -333.8676
CONTRACTOR KLUANE DRILLING	
CORE SIZE NQ reduced to BQ after 311.51m	
DATE STARTED 8:00 pm June 7th	
DATE COMPLETED June 17th	
DIP TESTS 207', 63.09m 57° 407', 124.05m 57° 607', 185.01m 56° 800', 243.84m 58° 1000', 304.8m 60.5° 1190', 362.71m 61.5°	

ALTERATION SCALE



absent
slight
moderate
intense

TOTAL SULPHIDE SCALE



< 1%
1%—5%
5%—25%
25%—50%
< 50%

DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE to intersect unit A @ 195m, did not succeed

REASON FOR SHUT DOWN: crossed several faults, concluded it would be ~500m to intersection, too far, too costly plus difficult drilling

PERTINENT GEOLOGY:

0-28.55m OVERBURDEN
28.55-31.60m C1a SANDSTONE (massive)
31.60-31.95 C2b ARGILLITE (minor seed bands)
31.95-38.57 C1a SANDSTONE (massive)
38.57-63.00 C4 CHERT
63.00-78.85 C2a ARGILLITE (graphitic)
78.85-82.25 C5 ASH TUFF
82.25-86.45 C2a ARGILLITE (graphitic)
86.45-86.74 KTf FELSITE
86.74-115.55 2a/2b/2c ARGILLITE
115.08-115.55 A MASSIVE SULPHIDE
115.55-131.90 C2a ARGILLITE (graphitic, massive)
131.9-132.20 C1a SANDSTONE (massive)
132.20-149.18 C6 TUFFACEOUS ARGILLITE.
149.18-159.43 C2a ARGILLITE (massive)
159.43-179.23 C1b SANDSTONE (bedded)
179.23-304.90 C2a, b, & e ARGILLITE
304.90-306.93 C1b SANDSTONE (bedded)
306.93-333.60 C2a, b ARGILLITE
333.60-337.75 C1b SANDSTONE (bedded
337.75-391.97 C2a, b with minor C1b and C6

	PLAN PLOT			SECTION PLOT				
LENGTH	AZIMUTH	DIP	HORZ	ELEV	DIST FROM BL	SECTION	SEC OFFSET	DESCRIPTION
0.00	269.73	-60.60	0.00	705.50	46.73 E	630N ~~99.0~~ N	1.72 S	COLLAR
31.55	269.73	-57.00	15.49	678.02	31.24 E	~~99.0~~ N	1.79 S	DIP CHANGE
93.57	269.73	-57.00	49.27	626.00	2.54 W	~~99.0~~ N	1.95 S	DIP CHANGE
154.53	269.73	-56.00	82.47	574.87	35.74 W	~~99.0~~ N	2.11 S	DIP CHANGE
214.43	269.73	-58.00	115.96	525.22	69.23 W	~~99.0~~ N	2.27 S	DIP CHANGE
274.32	269.73	-60.50	147.70	474.42	100.97 W	~~99.0~~ N	2.42 S	DIP CHANGE
333.76	269.73	-61.30	176.97	422.70	130.24 W	~~99.0~~ N	2.56 S	DIP CHANGE
391.97	0.00	0.00	204.92	371.63	158.19 W	~~99.0~~ N	2.69 S	END OF HOLE

PAGE 1 OF 27 | PROJECT CLEAR LAKE | HOLE No. 9149B

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
0				0-28.35m OVERBURDEN													
5																	
10																	
15																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (Si)	ALTERATION B (Ca)	ALTERATION C (Mg)	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
15				OVERBURDEN (Cont'd)													
20																	
25																	
				28.35-31.60 Cla SANDSTONE Grey fine grain qtz ss. with a dirty argillaceous matrix. Milky qtz stgrs predominantly 50° rea.													
		Cla															
30		LOST															

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
30																	
		LOST		(31.09 - 31.26) Grey fine grain massive dirty qtz sst.													
31		C1a	30°	with 30% milky white - pale yellow brown qtz stgrs													
		C2b	10 1	predominantly 50° rca.													
32			1	* 1					31.60 - 31.67 25% oxidized v. fine grain py								
		C1a		(31.26 - 31.60) FAULT Bx ZONE: clast supported:					in blebs 1x5cm along fractures								
				80% C1a, 20% C2b. Ang. size 5x10cm. Carbonaceous					31.67 - 32.95 Trace v. fine grain diss. py								
				(black) matrix.													
		LOST															
		C1a	31.60 - 31.95	C2b ARGILLITE													
35				Dk grey argillite with trace v. fine (<0.1cm wide)													
		LOST		wispy silt laminae @ 60° rca. 1% qtz/feldspar stgrs													
36			50	30% rca.													
			2														
37		C1a	31.95 - 38.57	C1a SANDSTONE													
				Med. grey, dirty more 'turbiditic' with med.-int qtz -													
38			20	carbonate stgrs - chaotic.													
				* 2													
39			2	(36.42 - 38.57) FAULT Bx ZONE (major): matrix sup-													
				ported; black argillaceous to v. fine sand. Clasts are													
40			85 3	angular - subangular, 1mm to 4cm long, and predom													
				inately a green chert (tuffaceous ?).													
		C4	38.57 - 65.00	C4 CHERT													
				(38.57 - 44.51) FAULT Bx ZONE: off white to pale green					42.42 - 42.62 3% fine grain py in blebs								
			85 4	to dk green crackled & brecciated locally healed by milky qtz					1x 1/2 cm in matrix of fault.								
				Zone is 90% clast supported except where fault planes &													
				gouge are noted. Clasts are 95% chert range from													
				1mm - 8cm, avg. 2cm long & are sub angular.													
45				more FAULT PLANES noted @: * 3													
				(39.65 - 39.77) Grey-green clay-some gouge													

PAGE 4 OF 27 | PROJECT CLEAR LAKE | HOLE No. 91-49B

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
45				C4 CHERT (cont'd)													
				with 20% matrix supported material near HW. Predominantly chert clasts near FW. Clasts are angular avg. size 2-3cm.													
			5	#4													
			5	(42.42-42.62) - same as 3.													
			5	#5													
				(46.90-47.05) Several faulted shear planes from 5-60° RA; 0.5 to 1.0 cm wide with grey gouge & arg. frag. & sand particles. Clast supported with 60% subrounded - subangular dk green chert & 40% milky qtz frag.					48.80-48.90 trace diss. v. fine grain py along shear plane								
50																	
		C4	50°	(48.80-48.90) Shear plane; silica flooded, Milky qtz frag contorted along shear direction.													
				(49.32-51.82) Interbedded ll green & dk green chert, crackled (weak) with qtz-carb. (white-pale yellow brown) stgrs predominantly @ 60° RCA - 1 per 5cm avg. 2mm wide.					50.92 1x4cm blob w/ v. fine grain euhedral cubes of py along a fracture plane @ 90° to C.A.								
55				#6													
				(51.32-51.37) FAULT BX ZONE: Clast supported 50% milky qtz & 50% dk. grey argillaceous matrix with pale yellow brown qtz-carbonate alteration.													
				(51.37-51.48) Dk grey green mod. crackled chert. Predominant fractures @ 50° RCA.													
				(51.48-57.68) FAULT ZONE with dk grey green broken chert in between several faults and shears.													
60																	

PAGE 5 OF 27 | PROJECT CLEAR LAKE | HOLE No. 91-498

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
60				C4 CHERT (Cont'd)													
		CA	90°	(57.68-61.65) Dk grey green, weakly crackled chert with trace pale yellow brown qtz-carbonate stgrs. Predominant fractures 60-90° rca.													
61																	
62				(61.65-61.75) Hydraulic Br with angular clasts of dk grey green chert avg. size 1½ cm with 30% milky qtz-carb. matrix.					62.80-65.00 lenticular beds & lamina (1-4mm) fine grain py. 5%.								
63																	
		C2a		(61.75-63.00) Dk grey green weakly crackled chert with increasing qtz-carb. stgrs (avg. 1mm wide) 10% towards end of interval					63.00-67.13 lenticular beds & lam. (1-4mm) fine grain py - trace								
65																	
66																	
				63.00-78.85 C2a ARGILLITE													
67				Dk grey to black carbonaceous arg. with fossil shear planes 70° rca. 5-10% small tension fractures (<3/4 cm long) with calcite fillings. Numerous qtz lenses infolded in cleavage planes or beddings and qtz stringers. Local weak silicification.													
68																	
69																	
70																	
		C2a							72.06-72.10 Angular clast 2½ x 2cm fine grain py in white calcite								
76																	

PAGE 6 OF 27 | PROJECT CLEAR LAKE | HOLE No. 91-49B

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
75				C2a ARGILLITE (Cont'd)													
76		C2a	50														
77																	
78			40	78.85-82.25 C5 ASH TUFF													
				78.85 Sharp HW contact with C2a. Pale greenish													
79			60	gray, v. fine grained, compact, weakly bedded &					79.60-82.25 very fine grain diss. py.								
				laminated with dk gray fine grained thin band &													
80			25	film of argillic material and pale green elongated													
		C5		0.5-3mm pumice-like materials.													
81																	
			35	82.25-86.45 C2a ARGILLITE													
82				Sheared unclear contact to C5. Dk grey to bk					(2~10mm dia. framboydal or colo formal py layer)								
				82.25 massive to weakly bedded and laminated. 0.2-3mm					(5mm thick fine grain py bed)								
83			25	wide calcite stgrs & scattered networks.													
									(1-8mm thick fine grain py lenses)								
84		C2a															
			60	(85.00m) minor slump folding.													
85																	
				86.45-86.74 KTf FELSITE													
86			13	Sharp contact to wall rocks. Pale creamy tan, fine													
		KTf		86.45 grained, massive with plagioclase phenocryst. Strong													
87		C2b		argillic alteration.													
		LOST		87.20													
				87.47													
88		C2b	10	86.74-88.40 C2b ARGILLITE													
				88.40 Dk grey finely banded with fine-grained py. Transitional													
89		C2c		89.00 FW contact													
		C2a	30														
90				C2c ARGILLITE													

PAGE 7 OF 27 | PROJECT CLEAR LAKE | HOLE No. 91-49B

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
90				C2a ARGILLITE (Cont'd)													
		↑	↓10	Dk grey, finely banded with fine grain eq. 0.1-3mm													
				col-qtz-py stgrs and scattered networks.													
			↓5	C2a ARGILLITE													
		C2a		Transitional HW & FW contacts, black, fine grained													
			↓35	massive to slightly banded with v. fine grained py													
			↓10	0.1-5mm thick layers imbedded 0.1-5mm wide													
				col-qtz stringers and scattered networks.													
				94.00 (94.00m) - 2cm wide shear with black clay and sub-													
95				angular qtz and argillite fragments and cemented													
			↓12	by col. qtz stgrs.													
96																	
				96.70-98.60 C2b ARGILLITE													
97				96.70 Transitional contacts on HW & FW. black to dk													
		C2b	↓15	grey fine grain. banded with v. fine grain eq													
98				0.2mm thick - interbedded.													
99				98.60-101.60 C2a ARGILLITE													
				Transitional contacts. Black, fine grained, massive to													
100		C2a		slightly banded. 0.1-5mm wide col. qtz stgrs. &													
				scattered networks.													
				101.60-105.60 C2b ARGILLITE													
102			↓15	Transitional contacts (HW & FW) Black to dk grey													
				fine grain banded with v. fine grain py lam.													
		C2b															
				(101.95-102.80) Brecciated zone - angular argillite													
				frag. compacted - qtz cement.													
105																	

PROJECT CLEAR LAKE

HOLE No. 91-498

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
105				C2b ARGILLITE (Cont'd)													
		C2b		105.50-115.08 C2a ARGILLITE													
106				Black fine grain, banded with numerous qtz-cal lenses injected in cleavage planes or beddings. Local shear planes & breccia with graphite or bituminous clay and fragments. V. graphitic along shear planes													
109				109.10 (109.10-109.80) Breccia zone. 1-20mm angular to sub-angular qtz & argillite frag with argillite-graphite matrix. 109.80													
110		C2a		110.60 110.65 (110.60-110.65) Py layer: 50mm wide.													
				(110.65-115.08) Argillite becoming silicified. Large portion of qtz lenses and networks injected into cleavages, planes or bedding.													
115				115.08-115.55 A MASSIVE SULPHIDE													
		A		(pyrite-quartz)													
		C2a		115.55-131.90 C2a ARGILLITE													
				Black, fine grain, slightly banded graphitic argillite. Local strong shearing and breccia to graphitic or bituminous clay & fragments.													
120																	

PAGE 9 OF 27 | PROJECT CLEAR LAKE | HOLE No. 91-49B

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION SI A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
120				C2a ARGILLITE (Cont'd)													
			/35 /35 /25	Black to dk grey, fine grain, massive to slightly bedded or laminated with 0.1-3mm wide qtz-/cal-qtz stringers and networks.													
124.14				Slightly sheared, with minor cal-qtz- and networks													
125			/30 /40														
		C2a															
129.35			/20	silicified argillite with large amounts of qtz and minor calcite lenses, stringers and networks													
130																	
				131.9-132.2 C1a SANDSTONE													
		C1a		(131.90-132.20) Pyritic sandstone interbed grey, medium grain, massive with numerous irregular													
		C2a		132.2-149.18 C2a ARGILLITE													
135																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
135				(135.89-140.10) C2a ARGILLITE silicified black, fine grain, massive to slightly bedded argillite with large amounts of qtz veins, lenses, and networks. Partly sheared with graphitic or bituminous clay & fragments.													
				(140.10-144.90) Black to dk grey fine-grain, massive to slightly bedded and laminated with minor 0.1-3mm qtz. veins and networks along cleavages. Partly sheared with graphitic clay													
140		C2a	10														
				(144.90-145.50) Black fine grain massive to slightly bedded and laminated with large amounts of qtz injection as lenses, veins and networks													
			5														
			20	(138.85) average 3mm thick fine grain pg. layer													
			25														
145																	
			10														
				(147.78) microfolding (slumping, fold?)													
				149.18-149.55 C6 TUFFACEOUS ARGILLITE Dk grey, fine grain, slightly laminated with lithic fragments, argillite and pyrite													
150		C6 C2a															

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
150				149.55-154.43 C2a ARGILLITE (silicified) Transitional contact on footwall with sandstone													
		C2a	70°														
				154.43-179.23 C1b SANDSTONE Grey to dark grey, fine-grain, finely and bedded with minor 0.5-5mm wide, irregular qtz stringers and networks cut and injected along bedding planes													
155			X°														
		C1b															
160																	
165																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION qtz C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
165				C1b SANDSTONE (Contd)													
			/45														
			/60														
			/30														
170			/17														
		C2a	/15	(179.) milky white, fine compact 0.8-2cm qtz-chlorite chrysile stringers injected along C1b bedding plane													
175			/40	(176.5') milky white, fine compact 1-5cm qtz veinlet cutting C1b bedding planes													
				179.23-KAS 39 C2a ARGILLITE													
180		C2a		Transitional contact; black, massive to slightly bedded													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
180				C2a ARGILLITE (Cont'd)													
			/10	arg laminated; 0.1-30mm wide qtz lenses, stringers,													
				wisps, networks injected along beddings and													
				cleavages. Locally sheared and brecciated to graphitic													
				and bituminous clay & fragments													
				dark grey, fine to med. grain, regularly banded,													
				C2b interbed.													
185			/5														
		C2a	/15														
			/10	(183) Very graphitic, fine grain sheared & crushed													
				with 2-30mm qtz lenses & networks along bedding													
				planes locally sheared to graphitic and bituminous													
				clay & fragments													
190			/30	(190-20) 10cm wide qtz vein injected along cleavage													
				(194.2-196.13) Bleak, fine grain, strongly sheared with													
				black graphitic clay and 1-15mm angular to subangular													
195			/10	argillite qtz and pyrite fragments. Quartz lenses,													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION si A	ALTERATION ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
195		C2a		C2a ARGILLITE (cont'd)													
			15	and veinlets injected along cleavages													
			15	MPS 39-232.00 C2b ARGILLITE													
				Black, fine grain, slightly bedded with minor qtz													
				lenses and networks along cleavages and beddings.													
				Strongly sheared to graphitic clay & fragments.													
			15	Interbeds of C2a noted.													
			15														
				(198) minor amounts of fine grain py. diss.													
200				interbedded and diss. in C2b													
			25														
		C2b															
				(202) Strongly sheared to black graphitic clay and													
				1-5mm subangular graphitic and qtz fragments.													
				0.5-10mm qtz lenses and networks injected.													
			15														
205																	
				(205.00-206.80) sheared to bituminous fragments.													
				(208) 7cm thick qtz lens.													
210			20														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
210				C2b argillite (cont'd)													
			/30														
			/25														
				(211) C2b siliciferous argillite													
				(213) C2b highly graphitic													
215				(215) 5cm qtz veinlet intruded along cleavage plane													
			/5														
		C2b	/30														
			/25														
220																	
				(221.6) C2b (siliciferous)													
			/5														
225																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION cg B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
225				C2b ARGILLITE (Cont'd)													
			/35	(226.5) moderately sheared, brecciated to sub angular argillite and qtz fragments.													
		C2b	/25														
				(229.5m) microfolding; (slumping fold?)													
230			/30														
			/5	C2a ARGILLITE													
				Transitional HW contact													
235			/5														
		C2a	/35	(236) 1cm wide shear with black argillite frags													
			/15	(239) reverse grading													
240																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
240				C2a ARGILLITE (Contd)													
			/15	Transitional contact with C2b black fine grain massive to slightly bedded and laminated with minor 0.2-5mm wide qtz stringers.													
245			/5														
		C2b	/15														
			/10														
			/25														
250																	
			/12														
				253.10 - 265.50 C2b ARGILLITE													
			/35	transitional contact													
		C2b	/50														
255																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
265				C2b ARGILLITE (Contd)													
			45														
			125														
			125														
			130														
260																	
		C2b	140	(260.60) microfolding (slumping fold)													
			118														
265																	
		C2e	125	265.50-267.27 C2e ARGILLITE													
			130	Transitional contact, black argillite and white													
				milky qtz and calcite are finely interbedded —													
				0.5-5mm lam. Qtz & calcite layers are elongated.													
				Minor 0.2-2mm wide qtz & calcite networks cut													
				bands irregularly.													
		C2b	123	267.27-269.10 C2b ARGILLITE													
270				Transitional contact. Black fine grain, massive to slightly													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
270				C2b ARGILLITE (Cont'd)													
			40	(271.88) interfinger texture													
			70														
		C2b															
275			15														
			20														
				279.40-304.70 C2a ARGILLITE													
				Black, fine grain, massive to very slightly bedded or laminated; local microfolding.													
280			15														
		C2a	30	(283.20) minor shear.													
285																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (Si)	ALTERATION B (Ca)	ALTERATION C (arg)	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
285				C2a ARGILLITE (Cont'd)													
				(286.6) 0.5 ~ 2cm wide calcite qtz stringers and lenses intruded along bedding and cleavages. Locally brecciated													
			+10														
				(288.65) slightly sheared													
290																	
			+40														
		C2a	+25														
295																	
			+20														
				(297.79) black, v. fine grain, massive argillite													
			+15														
			+20														
300																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
300				C2a ARGILLITE (Contd)													
			50														
		C1b		(302.25) 4cm wide q/z stringer; steeply brecciated.													
				304.70-306.93 C1b SANDSTONE													
305				Dark grey to grey, fine to medium grained, finely bedded sandstone and clay alteration with minor													
			20	0.2-1cm thick elongated q/z lenses introduced along													
			10	306.93-321.10 C2a ARGILLITE													
				Transitional contact with sandstone. Cleavages													
			0	are sub-parallel to core axis.													
		C2a															
310																	
			30														
			30														
315																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Ser C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
315				C2a ARGILLITE (Cont'd)													
		C2a	10														
320			10														
			15	321.10 - 325.03 C2b ARGILLITE													
				Local cross lamina.													
			30														
325		C2a		325.03 - 353.60 C2a ARGILLITE													
			35	Black to dark grey													
			20														
330																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
330				C2a ARGILLITE (Contd)													
		C2a	25														
				333.60 - 337.75 C1b SANDSTONE													
				Transitional contact, grey to dk grey, med. grain, slightly bedded, possibly tuffaceous. Transitional contact on FW, crushed.													
335			10														
		C1b															
			15														
				337.75 - 339.58 C2a ARGILLITE													
				Black to dark grey, v. fine grain.													
		C2a															
				339.58 - 339.98 C1b SANDSTONE													
		C1b		Transitional contact, crushed													
340																	
				339.98 - 344.50 C2b ARGILLITE													
			45														
		C2b															
			120														
			130	344.50 - 346.56 C2a ARGILLITE													
345		C2a															

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C2a ARGILLITE (Cont'd)

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
345		C2a	25														
				346.56-356.51 C2b ARGILLITE Transitional contact, dark grey, fine to medium grain, finely banded with 0.5-5mm scattered qtz stringers and networks. Locally interbedded with C2a.													
350			15														
		C2b	20														
			10														
355			20														
				356.51-373.3 C2a ARGILLITE Transitional contact, black, fine grain, massive to slightly banded, few qtz stringers, 2cm wide qtz stringer													
		C2a	18														
360																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
360				C2a ARGILLITE (cont'd)													
			10														
			45														
365																	
		C2a	20														
			45														
			35														
370																	
				373.30-373.80 C1b SANDSTONE													
		C1b	30	Grey, med grain, weakly bedded. 0.5-3mm													
				wide qtz-calcite, stringer networks.													
		C2a															
375				373.80-385.90 C2a ARGILLITE													

PROJECT CLEAR LAKE

HOLE No. 91-49B

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Carg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
375				C2a ARGILLITE (Contd)													
			45														
				(278.) slightly sheared													
380																	
		C2a															
385				(385) Slight sheared to graphitic and bituminous fragments													
		C6	15	385.90 - 387.00 C6 ASH TUFF													
				Light grey, v. fine grain, finely bedded white to pale grey tuff and black argillite													
		C2b	3	387.00 - 390.50 C2b ARGILLITE													
				Tuffaceous lamina / bands interbedded with dk grey, fine grain, finely bedded by dominant Black argillite and minor tuff and sandstone patches													
390																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION ag C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
390				C2b ARGILLITE													
		C2b	10														
		C2a	15	390.50-391.97 E.O.H. C2a ARGILLITE transitional contact; core crushed													
		E.O.H.															
				E.O.H. @ 391.97m.													
395																	

TOTAL ENERGOLD CORPORATION
DRILL LOG

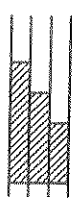
PROJECT: CLEAR LAKE	GROUND ELEV.: 711.35m
HOLE No.: 91-50	BEARING: 268.79°
LOCATION: 6,961,510.720 N 491,976.570 E	DIP: -60.30°
	TOTAL LENGTH: 239.88
LOGGED BY: R ZURAN	HORIZONTAL PROJECT: 118.8506
DATE: JUNE 26th 1991	VERTICAL PROJECT: 208.3673
CONTRACTOR: KLUANE DRILLING	
CORE SIZE: NQ	
DATE STARTED: JUNE 18th 1991	
DATE COMPLETED: JUNE 21st 5:30pm 1991	

DIP TESTS Single shot SS

60.05m	286°	-61.5°
121.01m	289°	-61.2°
181.97m	279°	-61.7
239.88m	286°	-61.5°

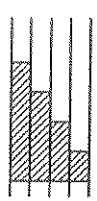
problem with SS, invalid data!

ALTERATION SCALE



absent
slight
moderate
intense

TOTAL SULPHIDE SCALE



< 1%
1%—5%
5%—25%
25%—50%
< 50%

DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE: to intersect Massive Sulphide unit A and extend upper margin of ore block between holes 78-15 & 82-34.

REASON FOR SHUTTING DOWN: intersection successful, no significant mineralization observed 24m past last Massive Sulphide unit A.

PERTINENT GEOLOGY:

0-25.10m Overburden.
25.10-34.00 C2e/C1b Argillite/Sandstone
34.00-51.00 C1b Sandstone
51.00-51.60 C2e Argillite
51.60-56.00 C1b Sandstone
56.00-59.64 C1a Sandstone
59.64-60.52 C2e Argillite
60.52-66.09 C2a/C2e Argillite
66.09-102.34 C5 Lapilli Tuff (83.70-86.70 sph & gn)
102.34-133.27 C2a Argillite
133.27-211.05 A Massive Sulphide
- 159.30-168.75 14.25% sph 1.7% gn.
- 178.60-186.00 6.3% sph 0.4% gn
- 195.00-199.00 8.0% sph 2.1% gn.

211.05-215.44 C2a Argillite
215.44-215.74 A Massive Sulphide
215.74-239.88 C2d Argillite (siliceous.)

LENGTH	AZIMUTH	DIP	HORZ	ELEV	DIST FROM BL	SECTION	SEC OFFSET	DESCRIPTION
	PLAN PLOT			LONGITUDINAL PLOT	SECTION PLOT			
0.00	269.79	-60.30	0.00	711.35	23.43 W	~~97.0~~ 510 W	0.72 N	COLLAR
119.94	269.79	-61.50	59.43	607.17	82.85 W	~~97.0~~ N	0.50 N	DIP CHANGE
239.88	0.00	0.00	116.66	501.76	140.08 W	~~97.0~~ N	0.29 N	END OF HOLE

PAGE 1 OF 16 | PROJECT CLEAR LAKE | HOLE No. 91-50

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
				0-25.10m OVERBURDEN													
5																	
10																	
15																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Org C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
				OVERBURDEN (Cont'd)													
15																	
20																	
				25.10-34.00 C2e/C1b ARGILLITE/SANDSTONE (interbedded)													
25			1cm	Grey, v. fine grain, 1cm local bx and sheared. Local													
			20	25.40m limonite in fine (<1mm) dewatering fractures 90° to C.A.													
	100			@ 28.26-28.50m Locally convoluted. Limy cement.													
				*1													
			conv. bx	27.00m (30.16-31.70) SHEAR ZONE: chaotic milky qtz stgs (30%)													
		C2e/C1b		in center of interval with black org. gouge on FW													
	100			28.30m (31.70-34.00) gradition contact with C1b, limonite													
			shear chev.	28.60m in fine (1mm) dewatering fractures 65° to C.A.													
			60 chev.														
30	100																

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
30			45° 30.16														
31	100	C1c/C1b	FR 45° 31.20														
32									32.54m py blebs 4mm in diameter - trace.								
33	100		lam 62° 34.00	34.00-51.00 C1b SANDSTONE													
34			lam 85° 35.00	Grey, v. fine grain, uniformly laminated, locally brecciated with small clast rotation. Laminae/seams consistent.													
35			lam 85° 36.00	Local low ∠ folds; soft sed. def. Weakly graphitic along some lam. planes. Calcareous matrix; sandy limestone?													
36			lam 79° 37.00														
37	100		lam 77° 38.00														
38		C1b															
39																	
40																	
41.00	100		lam 52° 42.00														
42.00			lam 55° 43.00														
43.00			conv. folded														
44.00																	
45																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Org C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
45																	
46	100	C1b	lam 51	46.00													
47			conv.	47.60													
48			lam 67	49.00													
	100		lam 0	50.00	Sharp footwall contact with argillite on graphitic shear.												
50			shear 15 lam	51.00-51.60	C2e ARGILLITE												
51		C2e	50 XB.		Dk grey wavy lam. X-bedded, with sandy interlayers												
52			chev.	57.00	Gradational footwall contact												
53	100	C1b	lam 42	51.60-56.00	C1b SANDSTONE												
54			sand dk 10	54.24	Grey, v. fine grain, planar lam, locally folded & convoluted sst. Laminations locally broken, crackled Milky qtz strgs 10%-across lam. 52.00-53.00m. Chaotic & ⊥ to fine dewatering fractures (⊥ to bedding)				54.00-54.80 1% blebs (1mm-2mm) of fine grain py - Trace sph ?? in sand dyke								
55	100				SAND DYKE: 54.00-54.30m 2½ cm wide, med grain with 5% subrounded coarse grain (up to 6mm dia.) material. Sub ⊥ to lam, siliceous white selvages (5mm). Coarse X-bline gypsum @ 54.28m. Sharp FW contact. Long cement.												
56																	
57																	
	100	C1a		56.00-59.64	C1a SANDSTONE, limy cement sandy (limestone?)												
					Grey, fine grain massive sst., locally bx'd & crackled												
					(56.00-57.00) qtz str. zone, 10%: 3/4 cm wide												
			NW 35	59.49	*2 also 1m before fault												
60		C2e		2	(59.49-59.64) FAULT GOUGE: homogeneous dk grey (org.)												

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
60	100	C2e	HW 70	ARGILLITE (Cont'd)													
				59.64-60.52 C2e ARGILLITE													
61				3 Gray, v fine, lam with local folding & bx. Fault													
				contact on FW.													
	100	C2a/C2e		3													
62				62.10													
			XB	60.52-64.09 C2a/C2e ARGILLITE													
63				(60.52-61.30) *3 FAULT ZONE · Matrix supported + gouge bl. arg.													
				63.09 @ HW, locally si. & bx. Arg. makes up all material													
			~90	64.09 graphitic, with local sandy lam, XB, wavy & planar													
	100			4 *4													
65			lam 88	(64.06-64.09) FAULT - lt. grey fault gouge					65.00-69.19 fine grain subeuhedral py								
		C2a/C5	lam 90	64.09-68.08 C2a/C5 ARGILLITE/ASH-LAP. TUFF					occuring as fine stars locally concordant with								
66				66.00 Dk grey green and grey interbedded wispy lam of ash tuff					lam (1mm-3mm), lenses (avg. 1x5cm), bands								
67			lam 90	& arg. Local lapilli flattened clasts (avg. 2x5mm) 5%. HW					(1/2cm wide), and irregular masses with (<5%)								
	100			67.00 is a lapilli tuff with white calcite inbetween clasts. Unit					q/z assoc. with it. Local (67.00m) textures are								
68			lam 85	grades into C5 @ FW. Local moderate clay alt.					irregular broken clasts (4mm). 7-10% of interval								
				68.08							68.00-70.00	2.00	6001	0.4	0.01	<0.01	
69				68.08-101.67 C5 LAPILLI TUFF													
				(68.08-75.24) V. pale light grey green precision nearly													
70			lam 90	ash tuff with local flattened lapilli (some comp.). Wispy							70.00-72.00	2.00	6002	2.0	0.13	0.13	
71	100	C5	conv	lam locally convoluted. Local intense clay alt. No. lapilli													
				increasing toward end of interval.													
72				(75.24-77.55) Mottled pale grey green & grey green							72.00-74.00	2.00	6003	0.6	0.02	0.03	
			lam 55	lapilli strongly flattened, weak + strong clay alteration													
	100			73.00													
			lap 58	74.00							74.00-76.00	2.00	6004	<0.1	<0.01	<0.01	
75																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% ppm Ag	% Pb	% (classical assay) Zn	COMPOSITE ASSAYS (widths)
75	100		60	C5 LAPILLI TUFF (Cont'd)													
76			lap 75	75.24							76.00-78.00	2.00	6005	0.1	<0.01	0.24	
77	100		HW 75	76.50													
78			lap 65	77.55							78.00-80.00	2.00	6006	2.2	<0.01	<0.01	
79			lap 70	79.00													
80	100	C5		80.00					78.00-78.75 20% fine grain diss py along bedding throughout interval		80.00-82.00	2.00	6007	1.2	<0.01	<0.01	
81																	
82	100		lap 60	81.52 81.62					78.75-83.70 2% diss anhedral fine grain py. often as rinds around lapilli, trace lt brown sph towards end of interval		82.00-83.70	1.70	6008	3.2	<0.01	1.66	
84		83.70	lap 65	84.00					83.70-84.69 16% sph (up to 35% across 10cm), 2% gn (up to 7% across 10cm), and trace py. Sph is honey to lt. brown occurs as irregular masses avg 2x1cm or small (2mm dia.) diss.		83.70-84.69	0.99	6009	16.3	0.58	19.50 (19.71)	83.70 ~86.83 (3.13m)
85			lap 65	85.00							84.69-85.23	0.54	6010	11.9	2.21	3.64	Ag 18.6 Pb 0.92
86	100	sph, gn	lap 63	86.00					Gn is coarse X-talline in local patches 4mm avg. Py is fine grain and diss.		85.23-85.83	0.60	6011	34.3	1.26	29.80 (28.75)	Zn 17.36
87		86.76	lap 60	87.00					84.69-85.23 8% diss fine grain anhedral py, 3% diss (1mm) honey sph, trace coarse X-talline gn		85.83-86.83	1.00	6012	15.0	0.36	16.40 (16.83)	
88			lap 70	88.00							86.83-88.00	1.17	6013	1.3	0.03	0.29	
90			lap 48	89.00					85.23-86.76 15% sph (up to 50% across 10cm) as diss (2mm dia) locally within lapilli, 2% v. fine grain diss anhedral py locally as rinds around lapilli, 1% gn coarse crystalline irregular blebs (avg 2mm) (sph is lt. honey - lt. brown)		88.00-90.00	2.00	6014	1.4	<0.01	0.03	
											90.00-91.00	1.00	6015	7.1	0.70	3.93	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
90				C5 LAPILLI TUFF (Cont'd)													
91	100	C5	80	92.00					86.76-101.67 - 4% v. fine grain diss. py also as irregular masses (3mm long avg.) along lapilli margins.								
	100		90	93.00													
93				93.43 / 93.53 / 93.60 / 94.08													
94				(94.80-95.00) Rusty brown pitted zone with 30% limonite as blotches 1x2cm													
95	100			95.00 / 95.30													
96				96.10 / 96.20													
97				97.03 / 97.10													
	100		68	98.00													
99				99.75 / 99.95													
100				100.13 / 100.18													
101	100			100.79 / 101.00 / 101.20													
102		C2a/C5	59	101.67-103.00 C2a/C5 ARGILLITE/ASH-LAP TUFF					101.67-103.00 7% v fine grain pyrite as fine diss along bands (upto 4cm wide), and lam. Also as contorted, swirled bands & blobs concordant with lam.								
			lam 54	102.00 / 103.00													
103	100	C2a	59	103.00-133.27 C2a ARGILLITE													
				109.00													
105				Dk grey to black carbonaceous argillite with local silty lam and py lam. Local wavy lam and					103.00-107.30 5% (avg.) v. fine grain py. occurs as lam, lam bands, and nodular								

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	Ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
105				C2a ARGILLITE (Cont'd)													
	100		pg lam 55	and soft sediment deformation - 110.00m. Local silicification intensifying towards FW contact with UNIT A increasing qtz stringers (avg 2mm wide) 2-3 meters before HW of fault #7. Some qtz strgs. are v. fine (<1mm) and fill tension gashes and en-echelon structures discordant with stratigraphy - 120.26m. Local v fine siderite? stringers (<<1mm) throughout interval					swirled and contorted bands & blobs (1/2cm wide) Pyrite is up to 30% vol. locally (105.33-105.60m)								
106				106.00													
	100		lam 57														
108				108.00													
109																	
110			55	110.00					110.40 - 111.00 15-20% v fine grain diss. py. occurring as lam. and bands 10cm wide								
	100	C2a		(110.17-110.80) Gypsum stringers avg 2mm wide, 1 every 3 cm. Shear @ 110.50m.													
111																	
			pg lam 38						111.00-116.00 5% (avg.) v. fine grain diss. along lam and med. grain from bandel to sub-euhedral pyrite also along bedding plane. Local py as secondary fracture fillings subcordant to bedding.								
112				112.00													
113	100		pg lam 33														
114				114.00													
115																	
			pg lam 54						116.00-118.00 5% (avg.) v. fine grain to med. grain py as (1/2cm) heads and flatted blobs (4x2cm) with more distinct boundaries locally filling fracture planes parallel to cleavage.								
116	100			116.00													
117																	
			pg lam 65	#6 (118.00-120.08) Qtz-stringer bx and fault zone Fault-bx zone @ 119.39-119.62m; Clasts are all silicified C2a, angular and elongated (1/2x 2cm avg.). Healed with milky qtz					118.50-127.50 3-7% (inc towards end of interval) py occurring as contorted, irregular masses and finally concordant & discordant stockwork and stringers towards end of interval.								
118				118.00													
119	100		shear 119.39														
			119.62 6														
120																	

towards end of interval

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
120				C2a ARGILLITE (Cont'd)													
121	100																
122	100																
123																	
124																	
125			Py lam 75	125.00													
		C2a	Shear 60	126.40	126.40 SHEAR PLANE - gypsum, broken												
	100		HW 55	127.50 7	*7 (127.50-132.40) FAULT ZONE (major) 127.50-129.00m is a fox zone healed by 60% milky qtz Clasts avg 3cm long, angular. 129.00m-132.38m composed of broken argillite; subangular clasts avg. ½cm, and milky quartz; sub angular avg. 2cm. Matrix is black crushed argillite. Chaotic milky qtz, py siderite (?) stringers (avg. 2mm wide) represent 10% of interval.					127.50-129.00. 10% fine grain pyrite replacing angular clasts within fault. 129.00-133.27 10-15% fine grain pyrite as irregular masses (3×7cm) locally crackled, blobs, irregular stringers and mamalian and botryoidal masses towards end of interval.								
130				129.00													
131	100																
132				132.42 7													
133											133.25 -135.00	1.75	6118	9.4	0.51	2.48	
	100	A		133.27-211.05 A MASSIVE SULPHIDE (133.27-139.65) massive medium to coarse grain py with 1% fine (1mm) irregular fractures containing local gypsum filling. Local (<2%) irregular lem					133.27-134.50 98% massive pyrite								
135											135.00 -135.70	0.70	6119	7.5	0.63	2.15	

134.5 - gy ... 2mm

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	Ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% ppm Au	% [illegible]	% [illegible]	COMPOSITE ASSAYS
135				A MASSIVE SULPHIDE (Cont'd)													
	100			patches of silicified argillite. Grains of py locally					134.50-139.65 Trace med. grain gn @		135.70 - 137.00	1.3	6151	[illegible]	0.43	0.33	
136				1mm size crowded framboidal texture (<1%).					134.90 Increasing to 1% gn & 3% sph								
				Local vugs (1cm dia) filled with selenite, anhydrite					towards end of interval. Sph is honey in interstitial								
137			free py	, or clay altered material (trace)					areas and dk brown when in massive py. Gn								
	100		in int. area						locally found lining interstitial areas		137.00 - 138.00	1.00	6120	13.3	[illegible]	[illegible]	137.00 - 138.60m (1.60m)
138									massive py, honey sph, gn, interstitial area - silica, anhydrite, gyp.		138.00 - 138.60	0.60	6121	[illegible]	[illegible]	[illegible]	Ag 12.8
											138.60 - 139.00	0.40	6152	7.0	0.23	2.11	Pb 1.70
139				(139.65-141.00)					139.00 Trace marmolite within interstitial								Zn 7.19
				Bedded, boudin, and brecciated pyrite. Beds					areas 1mm sub-euhedral.		139.00 - 141.00	2.00	6122	[illegible]	[illegible]	[illegible]	
140			bed 45	avg. ½ cm wide and show boudin, lbx texture -													
			140.70	140.10m. Open spaces filled with dk grey siliceous					139.65-141. 1% honey sph, 96% py. Sph occurs								
141	100	A		material and acicular to tabular x-tals of off-white calcite					as small (1mm or less) euhedral x-tals in or		141.00 - 143.00	2.00	6123	[illegible]	[illegible]	[illegible]	
				(up to 1x5mm)					along interstitial zones.								
142				 siliceous interstitial area, calcite													
				Local silica stringer 140.75m, ½ cm along bedding													
143											143.00 - 145.00	2.00	6124	5.7	[illegible]	[illegible]	
	100			(141.00-148.80)					141.00-148.00 95% py (avg.) with trace honey								
				V. fine grain massive py. with local med to coarse					sph. as <<1m euhedral x-tals on the interstitial								
			bed 60	grain textures @ 146.00-146.50m, local incompetent					areas.								
			144.50	beds ½ cm wide @ 144.50m and 146.75-148.													
145				Siliceous interstitial areas 5% of interval with local							145.00 - 147.00	2.00	6125	6.7	[illegible]	[illegible]	
146				calcite x-tals <5mm long. Minor calcite also in interstitial													
				areas.													
147	100		146.75	*8							147.00 - 149.00	2.00	6126	6.3	0.23	1.34	
				(148.80-154.00) FAULT ZONE. Locally crackled					148.80-154.00 Trace fine grain euhedral honey								
148				and brecciated with sub-angular clasts of pyrite					sph & med grain x-talline gn in interstitial areas								
				avg. 1cm in a py matrix. Silica healed zone 152.80					90-95% fine grain massive py.								
149	100		crackled	- 153.75 with 50% subrounded clasts of dk grey							149.00 - 151.00	2.00	6127	6.7	0.27	1.38	
				silicified argillite ranging ½ cm to 7cm and avg													
150																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION S A	ALTERATION ca B	ALTERATION chl C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% Ag (oz/t)	% Pb	% Zn (classic assay)	COMPOSITE ASSAYS (width)
150				A MASSIVE SULPHIDE (cont'd)													
	100			avg 2cm long, 150% cracked irregular masses and													
151				subrounded clasts of py. This zone is matrix supported							151.00 - 153.00	2.00	6128	6.0	C.23	1.26	
				with dk grey silica.													
152																	
				154.00-155.00) Massive py with 5% interstitial areas					154.00-155.00 1% fine grain euhedral honey sph								
153	100			of silicified argillite					and trace med grain gn in interstitial areas 95%		153.00 - 155.00	2.00	6129	6.4	0.34	1.51	
									fine grain massive py								
154																	
				*9													
155				(155.00 - 155.75) FAULT ZONE - with breccia: 80%					155.00-155.75 same as above		155.00 - 155.75	0.75	6130	12.8	0.44	2.70	
				9 subrounded (local botryoidal textures) clasts 5mm							155.75 - 156.00	1.25	6153	10.3	0.60	4.03	
156	100			avg py, 20% subangular silicified chert 3mm													187.00 - 166.00 (9.00m)
		A		avg.													
157											157.00 - 158.20	1.20	6131	14.8	0.86	4.24	Ag 24.7
				155.75 - 159.10 Massive fine grain py with three hairline													Pb 1.07
158				fractures					155.75 - 159.10 Trace blackjack sph increasing								Zn 9.04
									to 1% @ end of interval, occurs as irregular								
	100			159.10 - 159.30 Broken fine grain massive py healed with					masses (1/2 cm long) in interstitial areas 97% py		158.20 - 159.30	1.10	6154	12.0	0.73	4.37	Holstein test
				milky white quartz					159.10 - 159.30 1% diss. subeuhedral sph, fr gn.								
				159.10							159.30 - 159.80	0.50	6152	21.7	1.19	13.10 (13.4)	
160											159.80 - 160.30	0.50	6153	34.4	1.15	14.80 (14.75)	
				159.30 - 192.46 Massive fine grain py with local irregular													159.30 - 184.00 (4.70m)
163				interstitial areas of calcite - 1x4cm avg. size					159.30 - 168.75 High grade section		160.30 - 161.30	1.00	6134	33.6	0.77	14.10 (13.80)	
									of 5-25% (Avg. 14.4%) fine grain		161.30 - 162.30	1.00	6135	32.3	0.48	11.30 (11.98)	
167	100								blackjack sph. in irregular masses with fr -								Ag 34.6
									5% gn (Avg. 1.7%) coarse crystalline		162.30 - 165.00	0.70	6136	59.2	1.91	16.80 (17.35)	Pb 1.13
									2mm, and massive fine grain py locally								Zn 13.04
									med grain averaging 85%. Local fr		165.00 - 169.00	1.00	6137	26.9	1.57	10.30 (10.08)	
									amounts of subhedral honey sph noted along								187.00 - 166.00 (6.70m)
169	100								margins of py		169.00 - 165.00	1.00	6138	11.4	1.54	4.11	Ag 28.6
																	Pb 1.17
165											165.00 - 166.00	1.00	6139	17.8	0.95	6.03	Zn 10.66

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A MASSIVE SULPHIDE (Cont'd)

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% ppm Au	% Pb	% Zn	COMPOSITE ASSAYS
165																	
166	100										166.00 - 167.00	1.00	6140	13.0	0.76	2.80	
167											167.00 - 168.00	1.00	6141	9.2	0.61	2.28	
168	100								168.75 ~ 173.50 Lower grade section		168.00 - 169.00	1.00	6142	9.2	1.06	3.27	
169									of tr - 5% (avg. 1.6%) fine grain euhedral		169.00 - 171.00	2.00	6143	7.8	0.55	1.95	
170									black jack and trace honey sph with fine g.								
									trace - 2% (avg. tr.) gn often along edges								
									of pyrite in calcite interstitial areas.								
171	100								Massive fine grain py avg. 90%		171.00 - 173.00	2.00	6144	7.5	0.45	3.07	
172		A															
173									173.50 ~ 175.50 80 - 100% v. fine grain		173.00 - 173.51	0.51	6145	7.1	0.33	2.06	
									massive py. No sph/gn		173.51 - 173.76	0.25	6146	10.9	0.99	4.79	
	100										173.76 - 175.61	1.85	6147	6.1	0.32	0.27	
175											175.61 - 176.26	0.65	6148	10.3	0.27	3.81	
176									175.50 ~ 178.60 Lower grade section		176.26 - 176.70	0.44	6149	6.9	0.17	1.30	
									of tr - 4% (avg. 1.4%) fine grain		176.70 - 177.55	0.85	6150	12.7	0.68	3.38	
177									black jack sph with as much as 1% of								
	100								this honey sph in interstitial areas along								
178									botryoidal py surfaces @ interstitial areas.		177.55 - 178.55	1.00	6201	14.2	0.37	3.55	
									Trace galena (up to 1%). Local								
179									pyrite ahedran x-tals 2mm @ 176.14m.		178.55 - 179.60	1.05	6202	13.6	0.64	6.49	
	100								Py avg. 90%.		179.60 - 180.05	0.45	6203	9.8	0.42	3.79	
180																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% Ag oz/T	% Pb	% Zn	COMPOSITE ASSAYS
				A MASSIVE SULPHIDE (Cont'd)													
180									178.60 ~ 186.00 Sporadic high grade		180.05 - 181.21	1.16	6204		0.48	2.91	
181	100								interval of 1r - 25% (6.3% avg.) fine								
182									grain irregular masses of blackjack sph		181.21 - 181.61	0.40	6205		1.43	3.21	181.21 ~ 194.15m (12.94m)
									and med. crystalline disseminations of								
									0-3% (2½% avg.) gn. occurring locally		181.61 - 182.61	1.00	6206	11.0	0.82	5.47	Ag 12.4
									as interstitial interspaces. 90% fine								pb 1.04
	100								grain to locally framboidal py.		182.61 - 182.95	0.34	6207	10.8	0.56	4.12	Zn 7.21
185											182.95 - 184.15	1.20	6208	14.0	1.22	8.50	
186									186.00 ~ 191.00 1½% fine grain masses		184.15 - 185.01	0.86	6209	11.1	0.55	4.96	181.21 ~ 185.01m (3.80m)
									of blackjack sph and diss euhedral fine								Ag 12.1
	100	A							grain k-lats of honey sph with 0-1r		185.01 - 186.00	0.99	6210	7.3	0.45	2.41	Pb 0.93
									diss. med-fine grain k-talline gn.		186.00 - 186.64	0.64	6211	7.5	0.33	3.18	Zn 6.90
188									90% fine grain to local med grain py.		186.64 - 187.57	0.93	6212	5.2	0.43	2.10	
									with local botryoidal and crackled textures		187.57 - 188.10	0.53	6213	7.0	0.54	3.02	
189											188.10 - 188.85	0.75	6214	7.6	0.23	2.53	
	100										188.85 - 190.63	1.78	6215	8.6	0.50	2.57	
190																	
											190.63 - 191.70	1.07	6216	10.7	0.32	3.26	
									191.00 - 191.75 Lower grade interval								
191				192.46 - 192.60 Silica healed br zone of 75% soft shale &					of 2-7% (4.7% avg.) fine grain black		191.70 - 192.70	1.00	6217	9.6	0.46	3.55	
				frag silica with 25% clasts of framboidal - botryoidal					jack sph. 95% massive fine grain py.		192.70 - 193.80	1.10	6218	5.1	0.65	2.20	
192	100		192.46	fine grain py over printing subangular clasts of silicified													
				argillite. Py clasts avg 1cm long, arg clasts avg 3cm					191.75 ~ 193.00 0-3% (1½% avg.)		193.80 - 194.80	1.00	6219				
193				long					fine grain blackjack sph 1r go. as fine								
									grain diss 95% fine grain py		194.80 - 195.05	0.25	6220	10.6	4.49	8.63	
194				192.60 - 199.68 Fine grain massive py with botryoidal													
	100			- acicular (197m) textures about silicified argillite					193.00 ~ 199.00 High grade int. of		195.05 - 196.05	1.00	6221	2.6	1.26	4.57	
195				interstitial areas which represent 10% of interval.					7.7% sph (black jack - fine) & 1r gn.								

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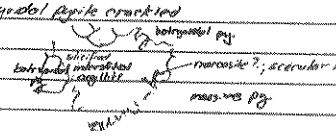
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS (width)
195				A MASSIVE SULPHIDE (Cont'd)													
196	100			Botryoidal pyrite crackled					90% (avg.) fine grain py.		196.05 - 196.77	0.72	6222	11.8	1.71	14.80	194.80 - 198.61m
											196.77 - 197.55	0.78	6223	14.7	1.63	15.90	(3.81m)
197									194.00 ~ 195.00 1.4% fine grain black								Ag 9.5
									jack sph with 1.5% fine grain diss.		197.55 - 198.12	0.57	6224	8.4	1.52	3.63	Pb 1.75
198	100								gn occurring along py / silicified arg.								Zn 10.05
									interfaces. 90% avg. fine grain py.		198.12 - 198.61	0.49	6225	12.3	1.86	13.10	↓
199				199.68-199.95 75% silicified argillite interstitial zone					195.00 - 199.00 High grade interval of								194.80 - 202.08m (7.28m)
				with 10% acicular radiating calcite crystals 1cm long.					1-30% (avg. 8%) fine grain irregular		198.61 - 199.00	0.39	6226	0.5	1.30	3.68	Ag 7.1
			199.68						masses of blackjack sph with 1-5% (avg.								Pb 1.51
200											199.00 - 199.95	0.95	6227	<0.1	0.59	3.94	Zn 7.60
				199.95 - 209.00 Fine grain massive py with botryoidal					2.1%) diss fine to medium grain x-talling		199.95 - 200.57	0.62	6228	3.9	1.52	7.82	199.95 - 202.08m
201	100	A		py. about interstitial areas of silicified arg. These areas					gn. 90% fine grain py.		200.57 - 201.57	1.00	6229	8.4	1.50	4.76	(2.13m)
				are 7% of interval. Local radiating x-tals of calcite							201.57 - 202.08	0.51	6230	9.2	1.55	4.49	Ag 7.3
202				1cm long.					199.00 ~ 204.50 1.2% fine grain blackjack		202.08 - 202.59	0.51	6231	<0.1	0.40	0.55	Pb 1.52
									sph with tr. gn - fine diss 90% fine		202.59 - 203.26	0.67	6232	<0.1	1.50	1.24	Zn 5.59
203									grain pyrite with local botryoidal and rim		203.26 - 204.34	1.08	6233	2.8	0.67	2.41	
									textures								
	100																
									204.50 ~ 204.70 High grade interval		204.34 - 204.84	0.50	6234	8.3	1.58	9.97	
205									of 20% fine grain irregular masses of		204.84 - 205.84	1.00	6235	2.2	0.28	1.13	
206									blackjack sph and 6.5% fine-med. grain		205.84 - 207.84	2.00	6236	2.2	0.23	0.55	
									x-talline galena. 90% fine grain py.								
207									204.70 - 211.05 95-100% crackled		207.84 - 208.12	0.28	6237	1.2	0.29	2.70	
	100								fine grain py.								
208											208.12 - 209.09	0.97	6238	2.8	0.26	1.79	
209			209.00	209.00 - 211.05 Fine grain pyrite - crackled							209.09 - 210.09	1.00	6239	2.6	0.31	0.43	
				with 5-10% interstitial calcite.													
210	100																

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	Ca B	Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	~~%~~ ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
210				A MASSIVE SULPHIDE (Contd)													
211	100	A	py bed 46	211.05-215.44 C2a ARGILLITE					211.05-215.44 2-5% py laminations, stringers, and swirled lam. Py is fine grain.		210.09 - 211.20	1.11	6240	2.1	0.13	0.07	
212				V. fine grain, black carbonaceous argillite; core moderately broken. Minor (<1%) hairline stringers of milky quartz.													
213	100	C2a		* 10													
				215.24-215.44 FAULT ZONE - black carbonaceous gouge with subangular clasts of qtz and silicified argillite. Clasts avg 3/4 cm. Matrix supported.													
215			HW 50														
		A	contact 50	215.24 10													
216	100			215.44-215.74 A MASSIVE SULPHIDE					215.44-215.74 95% fine grain. framboidal py. Local framboidal masses crackled.								
217				Massive fine grain to framboidal py with 5% interstitial areas of silicified argillite. Moderate carbonate alteration. Footwall: sharp contact with argillite					interstitial silicified arg.								
218																	
219	100	C2d		215.74-239.88 C2d ARGILLITE													
				Milky grey to dk grey locally intensely silicified, locally crackled and brecciated, and with local silica stringer zones													
220																	
221				215.74 ~ 220.00 Intensely silicified, broken, crackled and breccia healed with silica flooding. Possible healed fault. Clasts are subangular - angular avg. 1cm and are 95% silicified argillite					215.74 ~ 220.00 5% irregular blobs within fractures of fine grain locally crackled py. Avg. 1cm long.								
222	100								crackled C2d. py in frac.								
223			HW 50	220.00-223.90 Silica stringers 30% locally 10-30° TCA.													
224			223.90 11	* 11					220.00 - 239.88 5-10% fine grain py as lam, beds, irregular masses, contorted blobs.								
225				223.90 - 225 FAULT: healed by silica, angular clasts													

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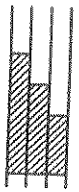
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	Ca B	Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
225																	
				225.53 average 3mm long are 100% @ HW. Silica stringers throughout interval with milky silica heated bx @ FW. swell.					(225.35m.) Boudin py bed 1cm wide, fine grain py.								
226	100		boudin py bed.														
227																	
228			Shear 45	228.43 Shear plane 45° rsa, crushed arg. & milky white quartz frag.													
	100		Py lam 55	230.00													
230																	
231																	
		C2d		231.80 Silica heated breccia, v. small. - 1cm wide.													
	100		Py lam 60														
233																	
234																	
235																	
	100			235.88 pyrite lam show soft sed. deformation.													
236																	
237			Py lam 29	238.00													
	100																
				E.O.H. @ 239.88m.													
240		EOH		239.88													

TOTAL ENERGOLD CORPORATION
DRILL LOG

PROJECT	CLEAR LAKE
HOLE No.	91-51
LOCATION	6,961,389.96N 491,954.88E
LOGGED BY	MINORU MACHIDA
DATE	25/6/91
CONTRACTOR	KLUANE DRILLING
CORE SIZE	NQ
DATE STARTED	11:00pm 21/June
DATE COMPLETED	4:30pm 24/June
DIP TESTS	207'/63.09m 60.0° 407'/124.05m 60.5° 607'/185.01m 60.5°

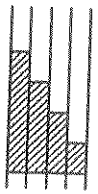
GROUND ELEV.	711.24 m
BEARING	269.11°
DIP	-59.90°
TOTAL LENGTH	767'/233.78m
HORIZONTAL PROJECT	115.8851
VERTICAL PROJECT	-203.0562

ALTERATION SCALE



absent
slight
moderate
intense

TOTAL SULPHIDE SCALE



< 1%
1%—5%
5%—25%
25%—50%
< 50%

DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE to interesect Massive Sulphide unit A and extend margin of ore block between DDH 83-46 and 82-38

REASON FOR SHUTTING DOWN intersection successful, no significant mineralization observed 23m past last Massive Sulphide unit A.

PERTINENT GEOLOGY

0 — 15.86 m OVERBURDEN
15.86 — 23.15 m C2b ARGILLITE
23.15 — 30.90 m C2a ARGILLITE
30.90 — 43.50 m C1b SANDSTONE
43.50 — 48.00 m C2b ARGILLITE
48.00 — 52.80 m C1b SANDSTONE
52.80 — 55.60 m C2a ARGILLITE
55.60 — 68.20 m C2b ARGILLITE
68.20 — 77.85 m C5 LAPILLY TUFF
77.85 — 80.20 m C2b ARGILLITE
80.20 — 96.70 m C2d ARGILLITE
96.70 — 207.30 m A* MASSIVE SULPHIDE
207.30 — 210.60 m Abx MASSIVE SULPHIDE BRECCIA
210.60 — 233.78 m C2d ARGILLITE

* 166.00 — 169.25 m 8% sphalerite + galena
169.25 — 170.85 m 2% sphalerite + galena
170.85 — 171.90 m 12% sphalerite + galena
207.30 — 210.60 m 13% sphalerite + galena

LENGTH	AZIMUTH	DIP	HORZ	ELEV	DIST FROM BL	SECTION	SEC OFFSET	DESCRIPTION
0.00	269.11	-59.90	0.00	711.24	45.12 W	590 95.0 W	0.04 S	COLLAR
31.55	269.11	-60.00	15.82	683.95	60.94 W	95.0 W	0.29 S	DIP CHANGE
93.57	269.11	-60.50	46.83	630.23	91.95 W	95.0 W	0.77 S	DIP CHANGE
154.53	269.11	-60.50	76.85	577.18	121.96 W	95.0 W	1.23 S	DIP CHANGE
233.80	0.00	0.00	115.89	508.18	160.99 W	95.0 W	1.84 S	END OF HOLE

PLAN PLOT — LONGITUDINAL PLOT — SECTION PLOT

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	Ca. B	Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
0				0 – 15.86 m OVERBURDEN													
5.0																	
10.0																	
15.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
15.0		O.B.		OVERBURDEN (Cont'd)													
	96	C2b		15.86 - 23.15 m C2b ARGILLITE													
				Black to dark grey fine grain argillite													
				with trace v. fine (>0.1 ~ 7 mm) wispy													
				sand laminae @ 50° to C.A.													
	98		50°	Sid - Qtz stgrs (width 0.1 ~ 1.3 cm) predomi-													
				nantly @ 20° ~ 50° to C.A.													
				Partially reacts with HCl weakly.													
20.0		C2b															
	99		50°	21.50 - 22.90 disking predominates													
				(avg. width 1cm)													
	100		80°														
				23.15 - 30.90 m C2a ARGILLITE													
				Black fine grain massive argillite.													
	99			Partially interbed fine grain sandstone thin													
25.0				layers.													
			50°														
		C2a		25.40 - 25.90 sheared weakly with black													
	100			gouge @ 50° to C.A.													
				27.60 - 29.80 Sid - Qtz. (width 1 ~ 5 mm) veining													
				prevalently. @ 10° - 50° to C.A.													
30.0																	

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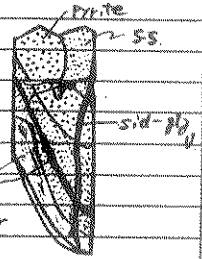
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
30.0	99	C2a		30.90-43.50m C1b SANDSTONE Dark gray to gray, fine to medium grain sandstone interbed fine grain black argillite (width 0.1~1cm) with graphitic partings, partly with micro folding													
	100	C1b	70°	31.60-32.20 sheared 31.00-34.30 sid-qtz veining prevalently.													
35.0	99	C1b	70° 60° 60°	39.80-40.20 Pyrite (1.5cm in thickness) cutting the bedding of sandstone or argillite and sid-qtz vein cutting pyrite.													
40.0	100	C1b	85°	38.50-40.10 sid-qtz veining prevalently													
	100	C1b	50°	41.40-41.60 sheared weakly													
		C2b		43.50-48.00 C2b ARGILLITE Block to dark gray argillite with trace fine sand laminae.													
45.0	100	C2b	20	43.50-49.40 Fault zone - brecciated with													





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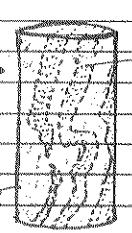
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Mg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
45.0				sid-gtz stringers in a graphitic matrix, @ 0°~20° to C.A.													
	100	C2b	80°														
			50°	48.00-52.80m C1b SANDSTONE													
			10°	Dark gray fine grain sandstone interbed black argillite thin layers													
	100	C1b	60°														
50.0				50.00-50.50 sid-gtz veining prevalently													
				50.60-51.00 sheared weakly.													
	100			52.80-55.60m C2a ARGILLITE													
		C2a		Black fine grain massive argillite with minor sid-gtz stringers													
55.0																	
	100		40°	55.60-68.20m C2b ARGILLITE													
		C2b		Dark gray to gray fine grain argillite inter-bed fine to medium grain sandstone layers (0.5~5cm in thickness) with micro folding													
	100		40°	57.0-60.70 sheared zone predominantly parallel to bedding plane.													
60.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
60.0	99	C2b															
	100																
-65.0		C2b															
	100		50	67.40-68.20 Brecciated Zone Clasts are angular - subangular 0.5 to 2cm sandstone and argillite. Matrix are black gouge.													
			70	68.20-77.85 C5 LAPILLY TUFF Gray to pale greenish gray lappilli tuff with sections of coarse grained fragments which consist of argillite, tuff, qtz and pumice													
-70.0	100	C5	60	Local argillaceous matrix													
	100		80	73.50-73.60 sheared weakly													
75.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
75.0																	
		C6	70°	68.20 – 72.20 Section contains an abundance (>50%) coarse grained fragments													
	100			72.70 – 77.85 Section contains an abundance (80%) fine to medium fragments													
		C2b		77.85 – 80.20m C2b ARGILLITE Black fine grain argillite with trace very fine wispy sand laminae (0.5mm in thickness) Local tuffaceous layer (7cm in thickness) interbedded.													
80.0	99																
		C2d		80.20 – 96.70 C2d ARGILLITE Dark grey to black very siliceous argillite with bands and irregular veins of pyrite.													
	100			Local with minor sphalerite													
				82.15 – 82.65 Section contains pyrite and sphalerite (3% Zn grade estimated)													
85.0																	
	100	C2d		87.70 – 88.70 sheared zone Clasts are chert and pyrite brecciated													
	100																
90.0																	

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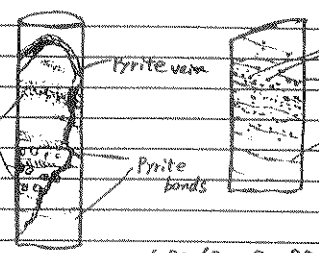
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
90.0				90.60 – 92.95 Gray siliceous argillite with py sphalerite, galena bands which are cut by later pyrite vein. 2% Zn, 1% Pb grade estimated.					 (90.60 – 92.95)		90.00 – 91.00	1.00	6069	10.4	0.79	1.36	
	100										91.00 – 92.00	1.00	6070	2.4	4.51	4.35	
		Czd									92.00 – 93.00	1.00	6071	8.3	0.37	1.56	
95.0	100										93.00 – 94.00	1.00	6072	12.4	0.61	0.53	
				96.70 – 207.30 A MASSIVE SULPHIDE Predominately fine grained, boltryoidal pyrite. Massive pyrite contains variable amounts of sphalerite, galena.					96.70 – 106.80 Section contains < 2~3% sphalerite + galena		96.70 – 97.70	1.00	6073	5.7	0.47	3.56	
	100	A									97.70 – 98.70	1.00	6074	1.5	0.38	1.28	
											98.70 – 99.70	1.00	6075	7.5	0.58	2.92	
100.0											99.70 – 100.70	1.00	6076	5.0	0.44	2.86	
	100										100.70 – 101.70	1.00	6077	2.6	0.17	2.09	
		A									101.70 – 102.70	1.00	6078	2.0	0.23	1.33	
											102.70 – 103.70	1.00	6079	3.7	0.17	1.67	
	100										103.70 – 104.70	1.00	6080	3.1	0.19	1.43	
105.0											104.70 – 105.70	1.00	6081	1.1	0.31	2.05	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
105.0				A MASSIVE SULPHIDE (CONT'D)													
	100	A		pyrite carbonate					106.60 – 107.10 sphalerite disseminated. contains 2~3% sphalerite		105.70 ~ 106.70	1.00	6082	3.2	0.45	2.48	
											106.70 ~ 108.30	1.60	6083	8.8	0.32	2.66	
											108.30 ~ 110.30	2.00	6084	1.0	0.05	0.63	
110.0																	
	100	A		106.20 – 109.0 – 109.20 Carbonate vug filling ~20%					107.10 – 166.00 Section contains < 2% sphalerite + galena		110.30 ~ 112.30	2.00	6085	2.5	0.02	1.14	
	100										112.30 ~ 114.30	2.00	6086	7.5	0.13	1.46	
118.0											114.30 ~ 116.30	2.00	6087	4.4	0.10	1.35	
	100	A									116.30 ~ 118.60	2.30	6088	7.2	0.47	2.15	
	100																
120.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION si A	ALTERATION ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
120.0				A MASSIVE SULPHIDE (CONT'D)													
	100	A															
125.0																	
	100	A							107.10–166.00 Section contains < 2% sphalerite + galena								
130.0																	
	100	A															
135.0																	

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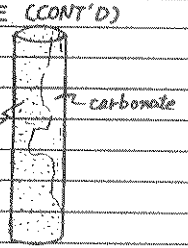
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
135.0				A MASSIVE SULPHIDE (CONT'D)													
	100	A									136.50 ~ 138.50	2.00	6089	2.1	0.03	1.14	
											138.50 ~ 139.50	1.00	6090	4.3	0.06	1.16	
140.0				136.00 – 136.50 Carbonate vug filling ~ 40%					107.10 – 166.00 Section contains < 2% sphalerite + galena								
	100	A															
	100																
145.0											144.30 ~ 146.30	2.00	6091	10.3	1.29	4.63	
	100	A		147.50 – 147.70 Carbonate vug filling							146.30 ~ 148.30	2.00	6092	9.0	0.57	3.01	
											148.30 ~ 150.30	2.00	6093	7.1	0.94	2.60	
150.0	100																

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Carb C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
150.0				A MASSIVE SULPHIDE (CONT'D)													
											150.30 ~ 152.30	2.00	6094	6.1	0.27	1.57	
				151.80 – 152.20 Carbonate vug filling													
	100	A									152.30 ~ 154.30	2.00	6095	5.8	0.36	1.66	
155.0											154.30 ~ 156.30	2.00	6096	10.6	0.50	2.60	
	100								107.10 – 166.00 Section contains < 2% sphalerite + galena								
				156.10 – 160.10 Carbonate vug filling							156.30 ~ 158.30	2.00	6097	7.6	0.20	1.33	
	100	A									158.30 ~ 160.30	2.00	6098	7.1	0.26	1.20	
160.0																	
											160.30 ~ 162.30	2.00	6099	5.8	0.37	0.56	
	100	A															
											162.30 ~ 164.30	2.00	6100	6.7	0.61	1.53	
	99																
165.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY
165.0				A MASSIVE SULPHIDE (CONT'D)				
		A		165.60 – 170.80 Carbonate vug filling				
	100			Zn, Pb Grade estimated				
				166.00 – 169.25m (width 3.20m) Zn 5%, Pb 2%				
				169.25 – 170.85m (width 1.60m) Zn 1%, Pb 1%				
				170.85 – 171.90 (width 1.05m) Zn 7%, Pb 1%				
170.0								
	100	A		173.00 Carbonate vug filling				
175.0								
	100	A						
180.0	100							

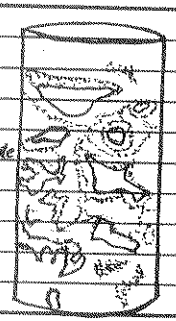
MINERALIZATION DESCRIPTION

- Sphalerite, galena
- Carbonate
- Pyrite

Massive pyrite with carbonate, sphalerite and galena as a co-precipitate

(170.85 – 171.90m)

Massive pyrite with sphalerite + galena stock work



TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
	164.30 ~166.00	1.70	6101	6.5	0.78	2.62	
	166.00 ~167.00	1.00	6102	14.1	4.26	8.46	166.00 ~169.30 (3.30m)
	167.00 ~168.00	1.00	6103	16.9	2.62	7.60	Ag 15.4
							Pb 2.32
	168.00 ~169.30	1.30	6104	15.3	0.66	7.53	Zn 7.83
							169.30 ~170.90 (1.60m)
	169.30 ~170.30	1.00	6105	7.1	0.31	1.49	
							Ag 6.1
	170.30 ~170.90	0.60	6106	4.4	1.38	2.61	Pb 0.71
							Zn 1.91
	170.90 ~171.90	1.00	6107	7.2	0.53	6.13	
	171.90 ~173.90	2.00	6108	6.4	1.41	1.36	
	173.90 ~175.90	2.00	6109	3.3	0.62	0.87	
	175.90 ~177.00	1.10	6110	4.3	0.37	0.91	
	177.00 ~178.00	1.00	6111	9.0	1.93	5.28	
	178.00 ~179.00	1.00	6112	4.5	0.83	4.15	
	179.00 ~180.00	1.00	6113	4.4	0.53	1.58	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION si A	ALTERATION CA B	ALTERATION aeq C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
180.0				A MASSIVE SULPHIDE (CONT'D)													
				180.00 – 181.30 Carbonate vug filling													
	100	A															
185.0																	
	100	A															
190.0																	
				190.25 – 191.30 Carbonate vug filling													
	100	A															
195.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION si A	ALTERATION ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
195.0	100	A		A MASSIVE SULPHIDE (CONT'D)													
	100																
200.0																	
	100	A		203.60 – 208.00 Carbonate vug filling													
208.0	100																
		A							sphalerite, Galena pyrite Argillite, chert Fragments: sphalerite+galena argillite, chert Matrix: Pyrite.								
	100	Abx		207.30–210.60m Abx MASSIVE SULPHIDE BRECCIA Dark grey to grey silicified massive sulphide breccia with sphalerite rich sections 207.30 – 210.60 (width 3.30m) estimated Grade Zn 8%, Pb 1%							207.30 ~ 208.30	1.00	6114	32.2	2.22	9.10	207.30 ~ 210.60m (3.30m) Ag 39.2 Pb 2.25 Zn 8.83
											208.30 ~ 209.30	1.00	6115	39.0	1.97	9.93	
											209.30 ~ 210.30	1.00	6116	37.9	2.17	6.91	
210.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Carb C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
210.0	100	Abx		210.60-233.78 C2d ARGILLITE Gray to light gray silicified argillite with pyrite stockwork							210.30 ~ 210.80	0.50	6117	55.9	3.00	9.90	
		C2d		210.90-211.10 Section with black massive argillite													
	100			211.10-233.78 gray-light gray chert with pyrite rich sections.													
215.0																	
	100	C2d															
220.0	100			220.40-221.50 with pyrite rich sections													
		C2d															
	100																
225.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (si)	ALTERATION B (ca)	ALTERATION C (arg)	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
225.0				C2d ARGILLITE (CONT'D)													
	100			226.10 – 226.40 Black argillite													
		C2d															
	100																
230.0																	
				230.30 – 230.73 Black argillite													
	100	C2d															
233.78																	
			E.O.H														

TOTAL ENERGOLD CORPORATION
DRILL LOG

PROJECT: CLEAR LAKE	GROUND ELEV.: 706.95m
HOLE No.: 91-52	BEARING: 270.53°
LOCATION: 61,329.91 N, 492020.19 E	DIP: -59.72°
	TOTAL LENGTH: 297.79m
LOGGED BY: RICK ZURAN	HORIZONTAL PROJECT: 143.1806
DATE: JULY 1st 1991	VERTICAL PROJECT: -260.9885
CONTRACTOR: KLUANE DRILLING	ALTERATION SCALE: absent, slight, moderate, intense
CORE SIZE: NQ	
DATE STARTED: 1991 JUNE 25th ~100m	
DATE COMPLETED: JUNE 28th	TOTAL SULPHIDE SCALE: < 1%, 1%—5%, 5%—25%, 25%—50%, < 50%
DIP TESTS: 207', 68.09m ~ 58.7°; 407', 124.05m ~ 62.0°; 607', 185.01m ~ 62.2°; 807', 245.97m ~ 62.5°	

DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE: fill in drilling; to intersect unit A between holes 79-19 & 79-20 for tighter grade control on ore block

REASON FOR SHUT DOWN: successful hole, intersected target; no further significant mineralization 9m past target (Massive Sulphide unit A.)

PERTINENT GEOLOGY:

0-7.27m Overburden
7.27-16.30 C2c Argillite (major sand bands)
16.30-175.87 C2b Argillite/(minor sand bands)
175.87-195.42 C2c Argillite
195.42-197.93 KTf Feldsite Dyke
197.95-201.50 C2a Argillite (massive)
201.50-202.31 C5 Lapilli Tuff
202.31-214.37 C2a Argillite (py stwk, silicified)
214.37-288.40 A Massive Sulphide
- 217.20-219.26 5% sph, 2% gn
- 240.00-242.75 7% sph (sporadic high)
- 261.00-272.00 6.6% sph
- 278.00-280.50 8.1% sph, trace gn
- 284.00-285.00 21.2% sph, trace gn
- 285.90-287.25 17.9% sph, trace gn

288.40-297.79 C2b Argillite (minor sand bands)

	PLAN PLOT			LONGITUDINAL PLOT	SECTION PLOT			
LENGTH	AZIMUTH	DIP	HORZ	ELEV	DIST FROM BL		SECTION	SEC OFFSET		DESCRIPTION
0.00	270.53	-59.72	0.00	706.95	20.19	E	630 N ~~91.0 N~~	0.09	S	COLLAR
19.30	270.53	-59.72	9.73	690.29	10.46	E	~~91.0 N~~	0.00	N	CL-SECTION
31.55	270.53	-58.70	15.91	679.71	4.28	E	~~91.0 N~~	0.06	N	DIP CHANGE
93.57	270.53	-62.00	48.13	626.71	27.94	W	~~91.0 N~~	0.36	N	DIP CHANGE
154.53	270.53	-62.20	76.75	572.89	56.55	W	~~91.0 N~~	0.62	N	DIP CHANGE
215.49	270.53	-62.50	105.18	518.96	84.98	W	~~91.0 N~~	0.88	N	DIP CHANGE
297.79	0.00	0.00	143.18	445.96	122.98	W	~~91.0 N~~	1.23	N	END OF HOLE

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ca B	arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
				0-7.27m OVERBURDEN													
5																	
		LOST	lam	7.27-16.30 C2c ARGILLITE													
			30	7.60 Dk grey to grey, v. fine to fine grain silt/sand banded													
				argillite. Upper part of interval locally silicified, brecciated,													
				8.23 iron stained (limonite) and exhibits contorted laminae.													
	92		59	1 AP cleavage ~90° to laminations.													
				*1													
10				(8.23-11.00) Silicified - bx zone with local shear planes													
		C2c	contorted.	and weak limonite stain and tension gashes ~⊥ to shearing													
			lam	11.00 FAULT ↑													
			5	12.00													
	99		lam														
			10	13.50													
		LOST	85	*2													
15	90		5	14.75 2 (14.75-16.30) FAULT ZONE													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
15				C2c ARGILLITE (cont'd)													
	90	C2c	45	Broken, brecciated angular sand banded argillite with sub angular - subrounded milky to yellow brown qtz. Avg clast size: 4mm long.													
			16.30														
			16.30-175.87	C2b ARGILLITE													
	100			Grey to dk grey, silt, sand banded argillite with local shearing, faulting, breccia, silicification, and qtz stringer veinlets. Local convoluted laminations. Lithology becomes increasingly sand banded towards central interval. Graphitized FW contact.													
			19.00														
20																	
	98	C2b	3 mm														
			21.00														
				core moderately broken													
			24.00														
	100																
25																	
			0 mm														
			26.00														
	100																
			5 mm														
			31.00														
	100																
30																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
30				C2b ARGILLITE (Contd)													
31	100																
32	100		lam 5	32.75													
			10														
35	100			35.30													
36				36.30													
37																	
38																	
	100																
40																	
			lam 10	42.00													
	100																
45																	

35.30 - 36.30 SHEAR ZONE Core intensely broken, weak clay alt., minor qtz frag <10%.

36.30 - 42.00 Relatively massive argillite few (<5%) silt or sand bands. Competent core

42.00 - 44.50

42.00 - 44.50 Core broken - poor recovery

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
45				C2b ARGILLITE (Cont'd)													
46	100		lam 0	46.00													
47																	
48	100			48.75	Wavy laminae												
50					(49.00-53.50) Competent core, massive, few												
51	100		lam 10		silt, sand bands or lam.												
52		C2b			Cleavage to bedding ~ 5°												
53	100		40	53.50	(53.50-56.00) Broken sheared core @ 40° TCA												
54			SHEAR ZONE		SHEAR ZONE 20% milky white qtz stgs along cleavage												
55					- shear planes												
	100			56.00	(56.00-58.25) increasing sand bands 20% of interval,												
			sand band 15		minor <5% milky qtz injected along cleavages & across.												
	100			58.00	(58.25-59.00) massive argillite, few sand, silt bands,												
			lam 10		or lam.												
60				59.50	(59.00-63.90) silt / sand bands 20% with feather												
					fractures - ⊥ to bedding (AP?) injected with milky white												

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
60				C2b ARGILLITE													
			5	quartz as well as cleavage which is subparallel to bedding.  silty bands. Feather fractures													
			1mm 5														
	100		SHEAR ZONE 10	63.90 (63.90 - 64.50) SHEAR ZONE - graphitic shear plane with 20-40% milky qtz injection primarily along shear plane.													
				64.50													
65			5	(64.50 - 66.25) Massive competent core, few silt bands, silica stgrs (<<1%, <1mm width)													
		C2b		66.25													
				*3													
			5	(66.25 - 67.80) FAULT ZONE, 10%-20% black clay gouge, <5% milky silica stgrs ∥ to shearing. Clasts are all arg and elongated to fault plane (5° res.)													
			30	67.80 68.00													
			60	69.00													
			35	(67.80 - 85.00) Relatively competent core with <5% qtz stgrs and sand-silt bands, 1cm.													
70	100																
			5	74.00													
	100																
75																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
75	100		0	75.00 C2b ARGILLITE (Cont'd)													
	100		2														
				78.00 silica stringer @ 10' to cleavage (2mm wide)													
80	100																
	100	C2b															
85	100		lam. 45	(85.00 - 92.22) Silica stringer zone 20-40%, avg ½ cm wide													
				87.00 sand bands & lam @ 50° to planar qtz stgrs (AA?)													
	100			qtz stringer across cleavage; qtz stringer along cleavage plane; en echelon fractures filled with milky qtz													
90																	



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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Qtz C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
90				C2b ARGILLITE (cont'd)													
	103																
91																	
92	100		0-30°	*4													
				4 (99.22-96.00) FAULT ZONE - graphitic shear planes, black clay gouge - local <10% and local breccia with 20-40% milky wht silica stringers avg. 1/2cm wide and follow cleavage & shear planes. Planes are from 0-30° TCA.												
95																	
	100			(96.00-104.00') Broken core with some clay gouge. Lam. bedding rare.													
100																	
	100																
				*6													
	100			5 (104.00-104.75) FAULT ZONE - black clay gouge, minor (<5%) silica injection													
105																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
105				C2b ARGILLITE (Cont'd)													
	100			10975-177.00 As described @ HW contact;													
				Local silica stringer, shear, silt-sandy beds common													
			20	0-20° TCA. Also wavy and weakly contorted lam.													
	100		107.00	or beds.													
				(107.00) milky qtz veinlet 15cm along cleavage.													
			1 x8 km	108.00													
			10														
110	100		bed 5	111.00													
		C2b	silty bed 5														
				113.00													
	100		bed x8 2														
				114.20													
			bed 2	115.00													
115	100		bed 8 = 8	117.00													
	100		bed 5														
120																	

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C26 ARGILLITE (Cont'd)

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	Ca B	Carb C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
120																	
	100																
				129.70 Tension gashes, feather-fractures (v. fine <1mm in width injected with milky white silica													
125																	
	100		km 0	126.00													
		C26							127.57 py blob 1x2cm; 2 of them, v. fine grain.								
	100			wavy silty lam. & beds with discontinuous silica stks													
130				130.20													
	100		km 30	132.30 (132.75) tangential rising ripples, with stylolites along bedding.													
				132.75													
	100																
135																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
135				C2b ARGILLITE (Cont'd)													
	100		sand band 20	136.00 (136.00-148.00) Chaotic silica stringer zone, breccia, shear zone (fault?), 30% stgrs avg. size 3mm, often as irregular masses.													
	100			139.00													
140	100	C2b	10	141.00													
				141.75													
	100		bed 40	144.00 (143.00-143.50) Silica stringer zone, generally follow cleavages.													
				144.25 (144.25) wavy lam & silica stringers - injected between cleavages lam													
145	100		lam 5	146.40													
				147.25 (147.25) wavy lam.													
	100		bed 10	148.20													
150																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
150				C2b ARGILLITE (Cont'd)													
			shear 5	150.90 (150.90) shear plane													
				*6													
			3	152.00 (152.00-152.50) FAULT angular argillite frag. avg.													
	100			152.50 6mm long with 10% milky silica injection. En-echelon and feather fractures noted 60-90° rea. injected with silica.													
			25	154.00													
155				*7													
	100	C2b	10	156.00 (156.00-175.87) FAULT ZONE (major) consisting of graphitic shear planes, local breccia, silica stringers with feather & en-echelon fracture fillings. Core crushed and broken with black carbonaceous fault gouge from 170m-173.82 and from 175.60 to 175.82. Clasts are all argillite. Matrix locally sandy.													
	100								159.90m py blob 3/4 cm dia, v. fine grain								
160			10														
	100																
	100																
165																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
165				C2b ARGILLITE (Cont'd)													
	100																
	97																
170				170.00													
	100	C2b	crushed graphitic arg gouge	7													
	77																
		LDST		172.39													
				172.82													
				173.57													
	75	C2b															
175			crushed graphitic arg gouge	175.60 7	Angle of fault contact undetermined, probably 5-30° rca.												
			bm 70	175.87-195.42	C2c ARGILLITE												
	100	C2c	bed 15		Grey to dk grey, v. fine argillite interbedded with planar-bedded silty-sandy lighter beds & lam with local tangential cross bedding (lam.). Beds and lam. are locally wavy. Wispy lam. of ash-tuff noted near bottom (rw) contact. Local silica injected zones & bx.					178.85 v. fine grain py as 2 large blobs each 2½ cm in diameter								
				179.00					179.00 v. fine grain py a 1 large blob 3.5 cm in diameter								
180	100																

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
180				C2c ARGILLITE (Contd)													
	109		bed 40	181.00													
			bedding 30 B.														
				183.50 (183.50) Silica injected brx. Angular arg. frags.													
	100		50 B	184.00 * 8					184.24 pyrite blob 3×2 cm of v. fine grain py								
				(184.00-186.00) FAULT ZONE; local intense silica injection (white chaotic stringers) with breccia consisting of													
185				sub angular elongated to shear direction argillite / white qtz													
				186.00 clasts. Graphitic shear planes @ 50° to/ fault.													
	100	C2c		* 9													
			40	187.05 (187.05-187.95) FAULT ZONE silica injected brx in													
				upper half: broken qtz (white) with sub angular frags. of fine													
				grain arg. Fine grain pyrite/graphitic arg / gouge towards FW.													
				187.95													
	97		bed 40	189.00 (planar bdg.)													
			bed 40	190.00													
190																	
		C2c	bed 40	191.00					191.52m 2 pyrite blobs, v. fine grain, 1.5cm in diameter								
	100		bed 50	191.80 (191.80) Small brx zone with silica injection. Fragments are broken qtz injection and crushed argillite (= planar uniformly bedded)					circular - elliptical py blobs								
			bed 50	192.00													
			bed 60	194.00 194.16					194.16-195.42 5% fine grain py as elliptical bands up to 3½ cm wide, parallel to bdg.								
195																	

Silty to sandy beds, bdg / tangential cross bedded sections!

Feather fractures (cap?) across bedding B ∧ F ≈ 90°

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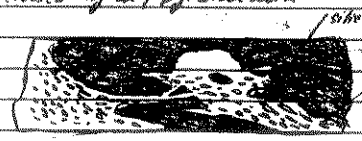
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
195		C2c		C2c ARGILLITE (Cont'd)													
				195.42													
196	100	Ktf		195.42-197.93 KTf FELSITE													
197				Pale mottled green-yellow with sharp HW & FW contacts. HW is irregular may be 5-10° TOA. FW contact is along fault plane 5° TOA Obliterated Allotriomorphic texture. Feldspar phenos 2mm, diffuse margins													
198				10													
195	100	C2a		197.93-201.50 C2a ARGILLITE * 10 FAULT ZONE					197.93-201.50 1-3% v. fine py as irregular blobs and masses								
				Graphitic shear planes, local breccia, white silica injection (<15%) with local black gouge, crush argillite matrix.													
-200				Breccia zones are subangular white qtz with fine crushed argillite													
				10													
	100	C5		201.50-202.31 C5 LAPILLI TUFF					201.50-202.31 Tr py, within lapilli as fine disseminations.								
				Pale grey green ash-lapilli (35-40%). Lapilli are flattened and local gypsum veinlets @ 70% TOA (5%) Some lapilli partially replaced by fine grain py (1%) FW contact consists of fault gouge & grey													
				204.10													
	100			202.31-214.37 C2d ARGILLITE (py stockwork)					202.31-214.37 Up to 50% py stockwork with silicified argillite (angular) bx. Local sph (brown) and gn (coarse crystalline); 207.00-208.35m 10% brown sph & 3% coarse diss gn (4mm); 209.75-210.25 15-20% brown sph, 1% gn (<1mm diss)		204.85-205.60	0.75	6016	3.4	0.09	1.82	
-205		C2d		Milky grey to dk grey locally lat. silicified massive, cracked and brecciated with up to 50% pyrite stockwork with 5% hairline to 3mm wide silica fracture fillings. Milky white silica stringers are crosscut by bx & py. stockwork							207.70-208.10	0.40	6017	9.6	0.17	4.61	
	100			206.00							209.40-210.40	1.00	6018	10.8	0.41	4.03	
210	100																



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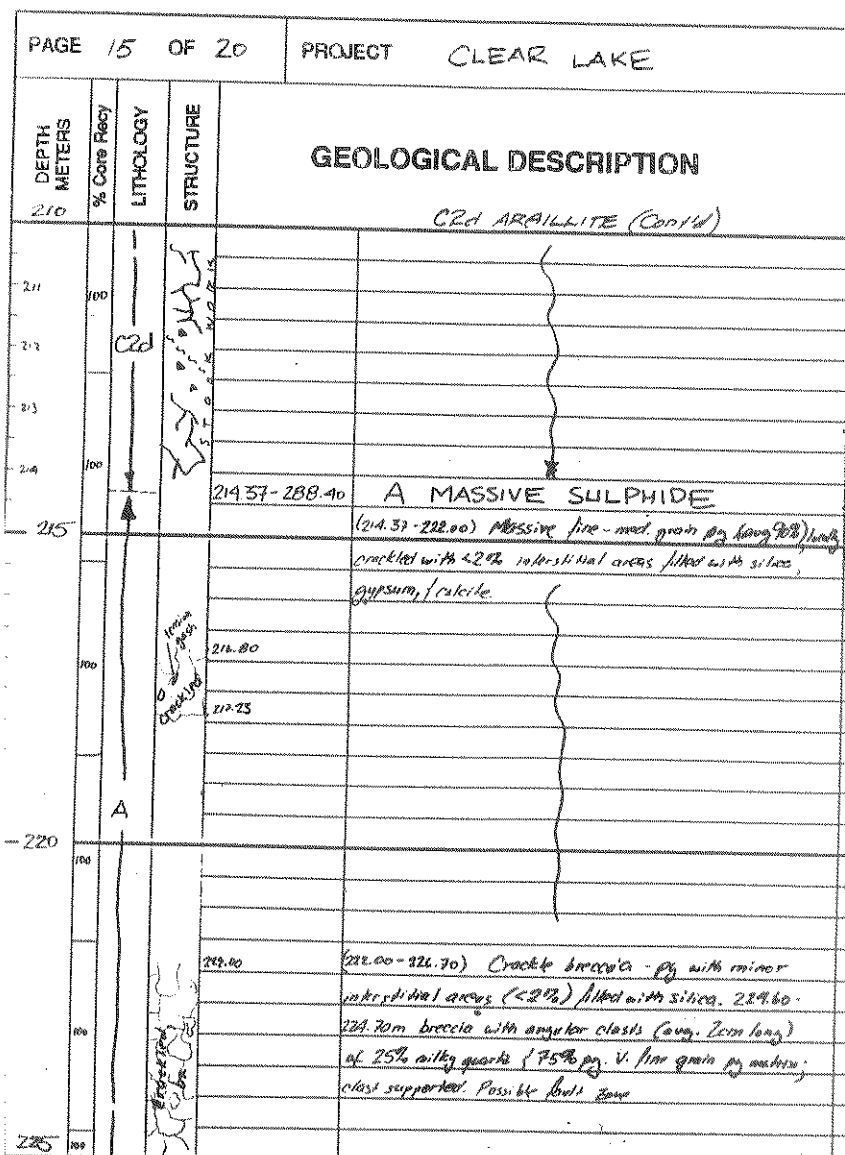

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	Ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% PPm Ag	% Pb	% (classical assay) Zn	COMPOSITE ASSAYS
210				C2d ARGILLITE (Cont'd)													
211	100	C2d									210.40-211.40	1.00	6019	4.4	0.16	2.01	
212											211.40-212.50	1.10	6020	5.3	0.31	1.16	
213																	
214	100			214.37-288.40 A MASSIVE SULPHIDE					214.37-215.00 97% fine-med. grain py.; massive.		214.37-215.50	1.13	6021	12.3	0.51	3.42	
215				(214.37-222.00) Massive fine-med. grain py (avg 90%) locally crackled with <2% interstitial areas filled with silica, gypsum, / calcite.					215.00-217.20 5% sph fine grain irregular masses, 6% med grain x-talline gn. Gn noted along fracture planes. Sph more patchy.		215.50-216.30	0.80	6022	31.2	2.71	9.64	215.50-217.40m (1.90m) Ag 32.0
	100			216.80							216.30-217.40	1.10	6023	32.5	2.64	10.50 (9.73)	Pb 2.67 Zn 10.14
				217.23					217.20-219.26 5% sph fine grain irregular patches (3-4mm long) 2% gn, med grain x-talline		217.40-219.40	2.00	6024	22.9	1.24	5.69	215.50-219.40m (3.90m) Ag 27.3 Pb 1.94 Zn 7.86
220	100	A							219.26-222.00 3% sph, 1% gn (avg.) Same occurrence as above.		219.40-221.40	2.00	6025	11.6	0.68	2.60	
				222.00 (222.00-226.70) Crackle breccia - py with minor interstitial areas (<2%) filled with silica. 224.60-224.70m breccia with angular clasts (avg. 2cm long) of 25% milky quartz (75% py. V. fine grain py matrix; clast supported. Possible fault zone					222.60-224.63 1% sph, v. fine grain with tr. fine grain gn along crackled surface, 224.63-		221.40-223.40	2.00	6026	22.7	1.30	4.86	
	100										223.40-225.40	2.00	6027	8.5	0.42	0.98	
225	100																

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
225				A MASSIVE SULPHIDE (Contd)													
	100								225.80 - 229.20 1% (avg.) v. fine grain sph. Euhedral along interstitial interfaces @ 229.20 m.		225.40-227.40	2.00	6028	11.7	0.52	2.87	
				226.70 (226.70 - 287.10) fine to med grain with local patches of coarse grain pyrrhotite py (avg. 90%) with local interstitial silica (milky) and coarse argillaceous calcite also. Carbonate alteration increases towards end of interval. Varied local silica alteration.							227.40-229.40	2.00	6029	11.3	0.38	1.41	
	100								230.00 - 231.43 2% fine grain sph occurring along interstitial interfaces, as selvages on silica veinlets, and irregular masses (1cm long). Heavy sph - diss near end of interval.		229.40-231.40	2.00	6030	14.0	0.69	2.00	
230																	
			Veinlet 27	231.43 - 231.50 Milky quartz veinlet 3-4 cm wide					231.43 - 231.50 Qtz veinlet with fine grain med. blackjack sph along <1mm selvage. 3%		231.40-233.40	2.00	6031	23.2	1.41	4.94	
	100	A		231.40					231.80 - 237.50 1% med. grain blackjack sph, diss, locally fine along or within interstitial areas. Also found along silica veinlets as selvages.		233.40-235.00	1.60	6032	15.7	0.71	2.46	
235											235-237	2.00	6033	14.5	0.65	2.31	
	100										237-239	2.00	6034	8.6	0.36	1.54	
	100								238.00 - 239.75 2% v. fine sph (blackjack in mottled masses, locally in silica veinlets & calcite veinlets.		239-241	2.00	6035	9.6	0.43	1.21	
240																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION si A	ALTERATION ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
240				A MASSIVE SULPHIDE (cont'd)													
									240.00 - 242.75 Sporadic highs of up to 7% (241.60) of fine grain masses of blackjack & honey sph locally disseminated and along interstitial interfaces as well as replacing pg.		241 - 243	2.00	6036	9.1	0.55	2.02	
																	243.98 - 247.75 (4.00m)
											243-243.70	0.70	6037	10.3	0.81	2.84	Ag 12.5
									243.75 - 248.00 Low grade zone of 3.9% sph (up to 7% @ ~249.20m) occurring as coarse grain diss. within and along interstitial		243.70-244.70	1.00	6038	15.4	1.57	4.74	Pb 1.24
																	Zn 6.83
											244.70-245.70	1.00	6039	20.5	0.72	6.87	244.70 - 247.70 (3.00m)
245				(245.00 - 254.00)					curves & fractures locally fine grain blackjack								
				up to 30% interstitial areas of silicified							245.70-246.70	1.00	6040	19.2	1.14	6.70	Ag 19.6
				argillite													Pb 1.12
		A									246.70-247.70	1.00	6041	19.0	1.51	7.80	Zn 7.12
											247.70-248.20	0.50	6042	10.6	0.68	3.06	
									248.00 - 253.00 Sporadic sph values averaging 1% (up to 5% @ ~ 252.50m) occurring as blackjack medium grain diss.		248.20-250.00	1.80	6043	6.7	0.43	1.59	
250											250 - 252	2.00	6044	8.0	0.41	1.60	
											252 - 254	2.00	6045	7.7	0.65	2.28	
									253.00 - 255.20 3% avg. v. fine diss. of blackjack sph along interstitial interfaces & fine grain irregular masses.								
											254 - 255	1.00	6046	7.9	0.61	2.63	
255																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	~~%~~ ppm Ag	% Pb	% (classical assay) Zn	COMPOSITE ASSAYS
255	100			A MASSIVE SULPHIDE (Cont'd)							255-257	2.00	6047	3.5	0.06	0.43	
	100										257-259	2.00	6048	<0.1	0.07	0.27	
	100										259-261	2.00	6049	1.9	0.03	0.23	
260		A							261.00-272.00 Low grade zone of 6.6% (avg) sph. with local highs of 25% (267.00-262.60m) occurring as: lt. brown fine grain overprinting (replacement) irregular masses; diss. blackjack and honey sph diss. along fracture surfaces.		261-263	2.00	6050	2.7	0.11	0.44	
	100										263-265	2.00	6051	6.1	0.22	1.89	
265											265-266.85	1.85	6052	6.5	0.23	2.82	
	100										266.85-268.05	1.20	6053	40.6	0.26	12.10 (12.01)	
	100										268.05-270.00	1.95	6054	8.6	0.38	2.53	
270																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	oz/T Ag ppm	% Pb	% Zn	COMPOSITE ASSAYS
270				A MASSIVE SULPHIDE (Cont'd)													
	100								272.00 – 273 1.5% fine grain lt brown sph.								
									273.00 – 280.50 Low grade interval of 8.1%								
	100								avg. sph with local trace gn. Local highs of								
									10–15% sph: 275.20 – 274.20, 275.25 – 276.20,								
									278.00 – 279.00. Occurs as local med-coarse								
									grain lt brown overprinting (replacement texture)								
									masses.								
275	100										274.50-276.00	1.50	6058	12.5	0.32	4.54	
				(275.00 – 281.28)					coarse grain brown sph replacing; overprinting py								
		A		intersitial areas filled with calcite (10-20%)					(274.10m) fine grain py fine grain py fine grain pale brown sph replacing; overprinting py		276-279.90	1.90	6059	8.6	0.27	3.13	
	100										279.90-279.05	1.15	6060	16.9	0.53	7.36	
											279.05-281	1.95	6061	19.2	0.36	2.45	
280																	
	100			281.28 (281.28 – 281.93) Coarse x-talline calcite vein with					280.50 – 284.00 trace med. grain lt. brown								
				281.93 trace euhedral py cubes					overprinted sph (replacement texture)		281-281.30	0.30	6062	3.2	0.85	4.08	
											281.30-281.90	0.60	6063	0.8	0.02	0.07	
											281.90-284	2.10	6064	7.3	0.09	1.04	
	100																
									284.00 – 285.00 High grade interval of		284-285	1.00	6065	38.0	0.53	14.60 (10.96)	284.00-287.10 (3.10m) A
285									21.2% fine grain irregular masses of pale lt. brown sph overprinting py; minor blackjack sph		285-285.68	0.68	6066	9.1	0.13	0.93	Ag 31.8 Pb 0.72

frgm.

Zn 9.22

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Mg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn % (check assay)	COMPOSITE ASSAYS
285				A MASSIVE SULPHIDE (Cont'd)													
	100	A							285.00 - 285.90 fr sph. - lt. brown, v. fine.								
286																	
									285.90 - 287.25 High Grade interval of								
287				(287.10 - 288.40) Quartz - carbonate stockwork (35%)					17.9% v. fine grain pale brown sph irregular		287.10-288.33	1.23	6068	2.3	0.11	0.70	
	100		Stockwork 287.10	with massive sulphide.					massive overprinting (replacing) py. minor								
288			Contact 75						blackjack sph., trace ga.								
				288.40 - 297.79 (E.O.H.) C2b ARGILLITE					288.40 - 292 v. fine grain, lam. bands (1-2cm)								
				Black v. fine grain silty layers locally contributing					and beds (5cm) of py. Up to 30% of								
290				fragmental cross bedded lam. 5-10% bed/ mottling py.					interval.								
				silica stringers, veinlets, crosscut lam. (ADP).														
	100																
									292 - 297.79 10-15% v. fine grain py as								
		C2b	fragmental x-b.						stringers, stockwork & bands (1-2cm wide)								
	100																
			lam 60	294.20													
295																	
	100																
297			Shear 70	297.28													
				Silica injected shear 5cm wide													
		E.O.H.		297.79													
				E.O.H. @ 297.79 m													
300																	

TOTAL ENERGOLD CORPORATION
DRILL LOG

PROJECT Macmillan / Clear Lake	**GROUND ELEV.** 688.61 m
HOLE No. 91-53	**BEARING** 270.30°
LOCATION 61390.19 N 92159.38 E	**DIP** -60.7°
	TOTAL LENGTH 419.71 m
LOGGED BY Atsushi Gomi	**HORIZONTAL PROJECT**
DATE July 7, 1991	**VERTICAL PROJECT**
CONTRACTOR Kluane Drilling	**ALTERATION SCALE**
CORE SIZE NQ	absent slight moderate intense
DATE STARTED 28 June 2nd Shift	
DATE COMPLETED 3 July 1st Shift	**TOTAL SULPHIDE SCALE**
DIP TESTS	< 1% 1%—5% 5%—25% 25%—50% < 50%

Acid		Sperry-Sun	
69.09 m	-62.5°	① 419.71 m	281° -64.6°
121.92	-63.0°	② "	280° -64.5°
185.01	-63.5°		
245.97	-63.6°		
365.76	-64.5°		

DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE

To intersect the strong zinc mineralization expected 60 m below DDH 83-46. Due to unexpected large barite occurrance, unsucceeded.

REASON FOR SHUTTING DOWN

Bedding planes in barite ranging 0° to 10° degrees indicate the hole is almost concordant to the structure and hole dip tends to steep angle which comes to parallell to the structure. A siliceous argillite bed which is footwall of barite bed occurs with no mineralization.

PRESENT GEOLOGY

0 - 13.30	Overburden	
13.30 - 78.98	C2a	Argillite
78.98 - 88.80	C1b	Sandstone
88.80 - 90.10	C2a	Argillite black, massive
90.10 - 95.10	C2a	Argillite sheared
95.10 - 113.02	C1b	Sandstone
113.02 - 118.98	C1a	Sandstone
118.98 - 134.97	C2a	Argillite
134.97 - 136.58	C1a	Sandstone
136.58 - 151.02	C2a	Argillite
151.02 - 168.65	C1a	Sandstone
168.65 - 179.65	C2b	Sandstone
179.65 - 180.82	A	Massive sulphide
180.82 - 181.70	C2d	Siliceous argillite
181.70 - 184.40	C2b	Argillite
184.40 - 188.30	C2c	Argillite
188.30 - 189.80	C1b	Sandstone
189.80 - 208.33	C2c	Argillite
208.33 - 212.80	C2b	Argillite
212.80 - 218.10	C1b	Sandstone
218.10 - 236.40	C2a	Argillite
236.40 - 237.74	C1a	Sandstone
237.74 - 266.55	C2a	Argillite
266.55 - 406.00	B	Barite
406.00 - 412.60	C2d	Siliceous argillite
412.60 - 414.25	C5	Ash tuff
414.25 - 419.71	C2d	Siliceous argillite

419.71 m End of Hole.

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
0				0 - 13.30 OVERBURDEN													
				(13.30) pale grayish green chlorite-sericite schist, dark gray													
				fine-grained argillite, white milky massive quartz pebbles													
5		OVERBURDEN															
10																	
(13.30)				13.30 - 78.98 ARGILLITE C2a													
(13.72)		C2a	30	dark gray to black, fine-grained, massive, crushed, sheared.													
15			18	bright luster graphite films along sheared planes.													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
15																	
(15.24)				dark grey to black, fine-grained, massive to slightly				N									
			(16.05)	bedded with 0.5 – 15mm width calcite networks.													
				Partly intensively sheared and crushed to graphitic clay													
				and bright luster carbonic fragments.													
(17.37)		C2a	(17.37)	16.05 – 17.37 intensively sheared and crushed to													
				graphitic fragments													
			5														
20																	
(20.12)			(20.50)	20.50 – 22.30 intensively sheared and crushed													
(22.25)			(22.30)														
			35														
				23.45 width 4cm calcite lens in sheared zone													
(23.77)			(23.45)														
			(25.95)														
25																	
(26.52)																	
		C2a	(27.75)														
			10	27.25 – 28.15 crushed													
(28.09)			(28.15)														
			(28.30)														
			(29.80)	28.90 width 13cm calcite-qtz. vein and lens along													
			30	argillite cleavage.													
30				29.10 – 30.05 sheared zone, crushed to graphitic clay													

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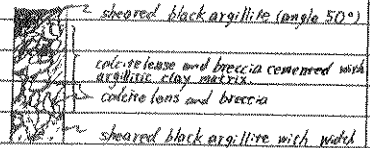
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
30																	
(30.48)		C2a	(31.00)	31.00 – 31.90 sheared and crushed to graphitic clay and fragments, width ca. 5cm calcite veins and lenses intrude along sheared planes.													
(31.58)		C2a	(31.90) 50 32.3	32.3 slightly sheared and crushed													
		C2a	20 (33.8)	33.8 minor slumping fold on argillite. 0.5 – 5mm calcite veins intrude along bedding and cleavage planes.													
35			10	rather massive, less fractured argillite													
(36.66)		C2a	3 50														
40			60														
		C2a	(40.15)	40.15 – 41.00 sheared and crushed to graphitic clay and fragments, width 0.5 – 15cm calcite-qtz. veins, lenses and networks intrude along sheared planes.													
(41.15)		C2a	(41.00)														
(42.28)		C2a	(42.0) 50														
(44.80)		C2a	20														
45																	

MINERALIZATION DESCRIPTION



- sheared black argillite (angle 50°)
- calcite-release and breccia cemented with argillitic clay matrix.
- calcite lens and breccia
- sheared black argillite with widel 0.1 – 0.5 mm calcite veinlets and networks.

31.90 m enlargement

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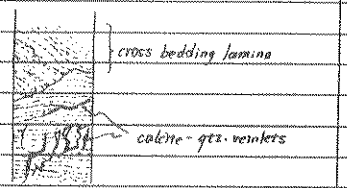
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
45		C2a	45.05	C2a ARGILLITE (continued)													
			46.02	45.05 - 46.02 milky white calcite-qtz veins, veinlets, lenses and networks intrude along beddings and cleavages.													
			35														
(47.24)		C2a															
			40														
(49.07)																	
50																	
			40														
(50.90)		C2a	40 (52.4)	52.4 - 53.95 milky white calcite-qtz veins, veinlets, lenses and networks intrude along beddings and cleavages.													
(53.95)			54.10	53.95 width 8 cm calcite-qtz vein along cleavage													
			40	54.10 width 20 cm calcite-qtz vein along cleavage													
55																	
			40														
			30	argillite is black and massive with no sandstone interbeds.													
(57.00)		C2a	(57.8)	57.8 - 59.3 white numerous calcite-qtz veins and networks along cleavages and cut beddings.													
			60														
			85 (59.3)														
60																	



58.78m enlargement

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
60 (60.05)		C2a	90 70 30	C2a ARGILLITE (Continued) black, fine-grained, massive to slightly bedded, with 0.1-10 mm calcite-qtz. veins, lenses, networks along bedding planes.													
(63.09)		C2a	15 (63.80)	63.80 - 65.60 slightly sheared and brecciated and intruded numerous calcite-qtz. veinlets and networks.													
65		C2a	5 (65.60)														
(66.14)		C2a	5 30 60 30														
(69.19)		C2a															
70																	
(72.24)		C2a	40 (71.50)	71.50 - 73.35 intensive sheared and crushed to blocks shinny graphitic fragments and clay. most intensive sheared zones are; 72.24 - 72.70 73.50 - 74.40													
75																	

PROJECT Clear Lake

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
75					C2a ARGILLITE (continued)													
(75.29)		C2a	55															
(78.33)			20															
				(78.98)	78.98 – 88.80 C1b SANDSTONE with minor argillite bands													
		C1b	40		gray to pale gray, medium-grained, finely banded (1–6 mm													
80			25		unit, mainly 2 mm unit banding), slightly calcareous with													
			0		minor widely 0.5–3 mm calcite veinlets and networks,													
(81.38)			75		reverse grading in a unit. minor C2a units embedded.													
					78.98 – 80.00 calcite-grz. fons and veins cut along													
		C1b			bedding or cleavage planes.													
			80															
			50															
(84.48)			35															
85																		
		C1b	50															
(87.5%)			75															
		C1a	70	(88.45)	88.45 – 88.80 C1a SANDSTONE													
				(88.80)	pale gray, medium to coarse-grained, brecciated, cemented by grz													
					88.80 – 90.10 C2a ARGILLITE													
90		C2a			black, fine-grained, massive with minor fracture													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
90			(90.10)														
(90.53)	60	C2a	(90.51) 35	90.10 – 95.10 C2a ARGILLITE black, sheared with 10-30cm sandstone bed													
				90.51 – 95.10 intensively sheared and crushed to graphitic fragments with luster shinny planes. most intensive slickensides to graphitic clay and 0.1 – 3cm subangular graphitic fragments are ; 90.53 – 91.20													
(92.64)		C2a		92.98 – 94.00													
(93.57)																	
95																	
(95.10)			(95.10)	95.10 – 113.02 C1b SANDSTONE with minor argillite bands													
			60	grey to pale grey, medium-grained, finely banded (1-2mm banding, mainly 1.5mm unit banding), with minor													
		C1b	85	width 0.5 – 5mm calcite veins and networks, slightly calcalious.													
			85														
			85														
(99.67)		C1a	(99.81)	99.81 – 100.10 C1a SANDSTONE interbed													
100			(100.10)	grey, medium-grained, massive.													
		C1b	70														
			40														
(102.72)		C1b															
105			75														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
105			75	C1b SANDSTONE (Continued)													
(105.77)			85	finely well-banded, slightly calcareous and minor calcite													
			60	0.5 – 15mm veins and networks scatter.													
		C1b	85	105.97 width 5cm brecciated and intruded by calcite vein													
			90														
			(107.9)	107.9 width 15cm brecciated to 0.2 – 2cm subangular													
			75	sandstone cemented by calcite matrix.													
			75														
(108.81)			85	109.3 width 6cm rather irregular shaped calcite vein.													
110			80														
(110.64)																	
		C1b	80														
(111.86)																	
			(112.15)	112.15 minor slumping fold texture													
	(113.02)		50	113.02 – 118.98 C1a SANDSTONE													
		C1a		gray to pale gray, medium to coarse-grained, massive to													
(114.91)				slightly banded with minor argillite inter layers. very minor													
115				width 0.5 – 2mm calcite veining and 1 – 15mm qtz. veining,													
				slightly calcareous.													
		C1a	50														
(117.96)																	
			(119.0)	119.0 – 120.0 intensively sheared and crushed.													
(119.48)	(118.98)			118.98 – 134.97 C2a ARGILLITE													
120		C2a	(120.0)	black, fine-grained, graphitic, normally sheared, with qtz. veining.													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	B	C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
120		C2a	20	120.50 fine-grained pyrite forming normal grading.													
			30														
			70 (121.5)	121.50 - 124.05 intensively sheared and crushed to graphitic clay and fragments. width 0.5 - 5cm white milky masive qtz. veins and lenses intrude along sheared planes and irregular shapes. 0.5 - 9mm fine calcite veinlets and networks intrude in clay zones.													
(124.05)			(124.05)	most intensive clay zone is 122.6 - 123.0.													
125		C2a	5														
(127.10)			30	dominant calcite veins, networks. width 0.5 - 4mm.													
				black, fine-grained argillite with 1 - 3cm thickness medium-graind sandstone lenses. dominant calcite veins and networks. width 0.5 - 20mm.													
130																	
(130.15)			60														
		C1a	65 132.20	132.20 - 132.60 C1a SANDSTONE interlayer, gray													
			132.60	132.60 - 134.97 C2a ARGILLITE													
(133.20)		C2a		black, fine-grained, sheared graphitic, with small lenses of medium-grained sandstone lenses.													
				134.97 - 136.58 C1a SANDSTONE interlayer													
135			134.97	pale gray, medium-grained, massive.													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
135				C1a SANDSTONE (continued)													
(135.33)		C1a															
			(136.58) 70 20	136.58 – 137.40 breccia zone													
		C2a	(137.40) 5	0.2 – 2 cm subangular to angular sandstone, pyrite breccia													
				cemented by black, massive, fine-grained argillite matrix.													
(138.36)				136.58 – 151.02 C2a ARGILLITE													
				black, fine-grained, finely banded to massive with slight													
140				shinny graphitic interlayers.													
(141.43)																	
			(142.3)	142.3 – 142.8 sheared zone with black graphitic clay													
			(142.8) 10	and sandstone subangular 0.1 – 2cm breccias.													
			60														
145				C2a ARGILLITE													
			50	black, fine-grained, massive to finely banded, very minor													
(145.39)				calcite networks.													
			10														
(148.44)																	
			25														
150			40														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
150			151.02	151.02 – 168.65 C1b SANDSTONE with minor argillite bands gray to pale gray, medium-grained, finely bedded (1–3mm thickness unit, mainly 2mm thickness unit), with minor calcite–qtz. networks.													
			50														
(151.44)		C1b	55														
			45														
			32														
(154.53)			65														
155			35														
			45														
		C1b	(157.1)	157.1 minor slumping fold texture.													
(157.58)			70														
			(159.2)	159.2 minor slumping fold texture.													
			85														
160																	
(160.63)																	
		C1b	0														
			25														
(163.68)			10														
165			60	164.9 slumping fold texture.													
			(164.9)														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
165			70 85 8	C1b SANDSTONE (Continued) slightly brecciated, filled by calcite networks					 166.02 m enlargement								
(166.72)		C1b	168.2	168.2 minor shearing fold texture.													
			168.65	168.65 – 179.65 C2b ARGILLITE slightly siliceous.													
(169.77)		C2b															
170				170.2 – 173.7 numerous qtz. veins and lenses cut through argillite planes, slightly sheared and crushed.													
		C2b															
(172.82)			70 80 80	173.7 – 179.65 2 – 30mm irregular-shaped vein and networks of pyrite cut through argillite.					173.7 – 179.65 2 – 30 mm irregular-shaped vein and networks of pyrite cut through argillite. no galena and sphalerite observed.								
175		A	(175.31) (175.42) 80	175.31 – 175.42 A MASSIVE SULPHIDE dark grayish yellow medium to fine-grained pyrite mass embedded in argillite. sharp contact to argillite.													
(175.97)		C2b															
		A	60	176.90 – 176.95 A MASSIVE SULPHIDE sharp contact to argillite.													
		C2b															
(178.92)																	
180		A	(179.65)	179.65 – 180.82 A MASSIVE SULPHIDE					pyrite breccias and nodules disseminate in argillite								

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY
180		A		A MASSIVE SULPHIDE (continues)				
			(180.82)					
		C2d	70	180.82 – 181.70 C2d SILICEOUS ARGILLITE				
			(181.70)	181.70 – 184.40 C2b ARGILLITE with minor sandstone bands				
			15	181.70 – 182.10 extensive sheared zone				
(181.99)			(182.10)	argillite is extensively sheared to 0.3 – 2cm subangular				
		C2b		graphitic fragments and clay and qtz. and siliceous sandstone				
				breccias. wall angle is about 15 degrees at hanging wall				
			15	and 25 degrees at footwall.				
				184.40 – 188.30 C2c ARGILLITE with major sandstone bands				
(184.40)			(184.40)					
185				grey to pale grey, fine-grained, finely banded, calcarious				
				with numerous width 0.5 – 3mm calcite networks.				
		C2c	30					
			5					
(187.45)								
			(188.30)	188.30 – 189.80 C1b SANDSTONE with minor argillite bands				
		C1b		calcarious and conformable contacts to argillite units.				
			45					
190			(189.80)	189.80 – 208.33 C2c ARGILLITE with major sandstone bands, calcarious				
				pale grey, fine to medium-grained, well finely banded, calcarious,				
(190.58)			30	with numerous width 0.5 – 3mm calcite veinlets and networks.				
		C2c	10					
			(193.2)					
			60	193.2 minor slumping fold texture				
(193.55)			30					
195			40					

MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
195			40	C2c ARGILLITE with major sandstone band and calcarious													
			12														
(196.60)		C2c	16														
				198-199 minor slumping fold textures observed.													
			70														
(199.95) 200			3														
		C2c	30														
(203.00)			65														
205			50	reverse grading observed.													
			30														
(206.04)		C2c	70														
			(208.33)	208.33-212.80 C2b ARGILLITE with minor sandstone band													
				black to dark gray, medium-grained, finely banded up to													
(209.05)		C2b	80	1mm with fine-grained sandstone. calcarious. numerous													
210				width 0.5 - 3mm calcite networks.													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
210		C2b	85	C2b ARGILLITE with minor sandstone band (continues)													
			~														
			55														
(212.14)			(212.80)	212.80 – 218.10 C1b SANDSTONE with minor argillite bands													
			50	pale gray, fine-grained, well finely banded, calcareous,													
		C1b	60	with 0.1–2mm irregular numerous networks.													
215																	
(215.19)		C1b	15														
			60	cross bedding and minor folding texture observed.													
			(218.10)														
(218.24)		C2a		218.10 – 236.40 C2a ARGILLITE													
				black, fine-grained, massive to slightly banded with sandstone													
				and pyrite, cut through 1–15mm, occasionally 12cm qtz. veins													
220				and networks. minor pyrite pennings.													
			25														
			75														
(221.78)			(222.03)														
		C2a	60	222.03 – 223.10 brecciated and sheared zone													
			30	argillite and sandstone alternation is sheared to sandstone													
			(223.10)														
			35	lenses and fragments cemented by argillite matrix. sheared													
				planes are graphitic and paltered to beddings.													
(224.33)																	
225			50														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
225		C2a	(225.1)	225.1 – 226.7 intensive sheared zone. pyrite veined argillite is sheared extensively to 0.5 – 5cm irregular angular fragments and graphitic, pyritic clay.					widely 0.5 – 5mm pyrite irregular; oriented stockworks cut through argillite.								
(226.47)		C2a	(226.7) 40														
(227.69)		C2a	60														
230																	
(230.73)		C2a	75 75														
		A	(231.63) (231.80)	231.63 – 231.80 A MASSIVE SULPHIDE													
		A	40 232.37 (232.62)	232.37 – 232.62 A MASSIVE SULPHIDE fine-grained pyrite embedded in argillite. Widths 0.5 – 5mm													
		C2a	15 ≈≈	qtz. veins and qash veins cut irregularly.													
(233.48)			60	argillite is weakly siliceous cut by numerous qtz. networks and veinlets.													
235		C2a	3 (236.4)														
(236.52)		C1a		236.40 – 237.74 C1a SANDSTONE pale gray, medium-grained, massive sandstone with widely 0.5 – 5mm qtz. veinlets and qash veins cut 70 – 85 degrees.													
(237.74)		C2a	(237.74) 10 (239.0)	237.74 – 246.55 C2a ARGILLITE black, fine-grained, massive to slightly banded with sand stone. normal grading observed at 241.5 m. width 0.5 – 3													
(239.83)			5 15	mm qtz. veins and qash veins cut at 45 – 60 degrees and 80 degrees.													
240				239.0 weakly sheared. width 1cm													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
240		C2a	10	C2a ARGILLITE (continues)													
			~~	slightly sheared and crushed													
(242.62)				width 1-8mm qtz. veinlets and gash veins cut at 45-50 degrees and 70-85 degrees to core.													
			40														
245																	
(245.67)		C2a	15	width 1-5mm qtz. gash veins cut at 70-85 degrees to core.													
(248.11)			40														
250																	
			15	width 0.5-3mm qtz. gash veins cut at 45 degrees to core.													
(250.85)		C2a	20														
			8														
				width 0.5-5mm qtz. veinlets and gash veins cut at 45-60 degrees to core.													
			15														
(253.90)																	
255			15														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
255				C2a ARGILLITE (continues)													
(255.12)			10														
		C2a		numerous 0.5 – 8 mm qtz. veinings and qtz veins cut at 30 – 45 degrees and 80 degrees to core.													
(258.17)			15														
			10														
260																	
(261.23)																	
		C2a	10														
			(262.7)	262.7 – 265.9 weak brecciated zone													
			35	black argillite is slightly brecciated and sheared and intensively intruded numerous qtz. veins and networks cut													
(264.26)				along cleavage planes and sheared planes. breccias are													
				argillite angular fragment and qtz. veining argillite with													
265				graphitic clay.													
		C2a		265.9 – 266.5 Sheared zone													
			(265.9)	black argillite is sheared to graphitic fragments and intruded by qtz.													
			(266.55)	266.55 – 406.00 B BARITE													
			35	white to dark gray, fine to medium-grained, finely banded													
(269.31)				with fine-grained pyrite lenses and interlayers of argillitic													
		B	5	thin interlayers, irregular lens, mass, layer and nodule													
				of fine-grained pyrite often embedded along banding.													
			10	occasionaly small scale cross-bedding and slumping fold													
270			10	texture observed.													

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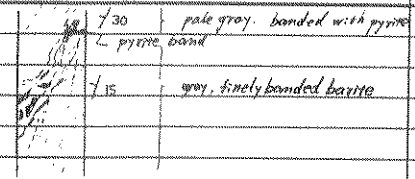
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
270			3	B BARITE (continues)													
(270.36)				white to pale gray, medium-grained, massive to slightly													
				banded with fine-grained pyrite lenses and nodules.													
		B															
			25														
(273.41)			0						273.1m enlargement								
				finely banded with argillitic gray interlayers.					cross bedding								
			6														
275																	
				dark yellowish gray, fine-grained pyrite irregular lenses													
				and layers.													
(276.45)		B															
			15														
				dark yellowish gray fine-grained pyrite irregular lenses													
				and layers showing slumping structure.													
(279.50)			10														
280																	
		B															
(282.55)			15	dark yellowish gray, fine-grained irregular lenses and													
				layers.													
285																	



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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
285				B BARITE (continues)													
(285.60)				pale gray, medium-grained, massive to slightly banded.													
		B	0	287.5 width 1-2mm drusy qtz. veins cut at 20 degrees to core.													
(288.65)																	
290																	
			3														
(291.69)		B															
			3														
			293.4	293.4 - 294.5 dark yellowish gray fine-grained pyritic barite													
(294.74)			294.5														
295																	
				295.9 width 0.5-3mm qtz. gash veins cut at 45 degrees to core.													
		B															
(297.79)			0														
			5														
300																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
300		B		B BARITE (continues)													
(300.84)		B	5														
		B	0														
		B	△ A	slightly brecciated and cemented by baritic matrix.													
(303.89)		B	10														
305		B	0														
		B	5														
(306.93)		B	(307.12)	307.12 sharp fracture at 50 degrees to core, filled by 0.3 - 1.5cm thick pyrite vein													
		B	(308.4) (308.6)	308.4 - 308.6 black, fine-grained, finely banded argillite (C2a) interlayer in barite.													
		B	10														
(309.98)		B	18														
310		B	10														
(313.03)		B	10	dark gray to gray, medium-grained, banded with argillite barite and argillite. width 0.5 - 5 mm grz. gash veinlets cut at 40 - 50 degrees to core.													
315																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
315				B BARITE (continues)													
(315.47)			7	White to pale gray, medium-grained, massive to slightly													
				banded.													
		B															
			10														
(318.52)			7														
320																	
			0														
(322.17)		B															
			3														
325																	
(325.22)			10														
		B															
			3														
(328.27)																	
			0														
330																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
330			5	B BARITE (continues)													
				gray, medium to fine-grained, banded.													
(331.32)			0														
		B	5														
				pale gray, fine-grained, massive to slightly banded.													
(334.37)																	
335			10														
		B															
(337.41)			2	white to pale gray, fine-grained, massive to slightly				//									
				banded.				//									
340																	
(340.46)																	
			Δ Δ														
		B		slightly brecciated													
(343.51)			5														
345																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
345				B BARITE (continues) pale gray to gray, fine to medium-grained, massive to slightly banded.													
			5														
(346.96)		B															
(349.61)				3-5mm thick fine-grained pyrite layers in barite													
350			10														
			10														
		B															
(352.65)																	
355																	
			3														
(355.70)			10	356.7 - 359.5 pyritic barite dark gray, medium-grained, banded with large amount of fine-grained pyrite.													
		B	30														
(358.75)			30														
360																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
360				B BARITE (continues)													
				pale gray to gray, medium to fine-grained massive to													
			3	slightly banded. minor pyrite dissemination													
(361.80)		B															
			0														
			5														
(364.85)																	
365				white fine-grained massive barite													
			25														
				dark gray medium-grained barite					dark gray medium-grained barite with hair veins of qtz. ~ width 2-6 mm qtz. vein								
		B	15														
			(367.5)	267.5 contact between white - pale gray barite and					pale gray fine-grained barite with interlayers and patches of fine-grained pyrite								
			20	dark gray (argillitic ?) barite.													
(367.89)									267.5m enlargement								
			20														
370																	
(370.34)			10	gray to pale gray, medium-grained banded barite													
			15														
		B															
			10														
			15														
(373.99)																	
375																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
375			△ △	B BARITE (continues) slightly brecciated													
(377.04)		B	~~~														
			15														
380			10	379.8 pale gray, medium-grained, finely banded with fine-grained pyrite layers up to 2mm thickness.													
(380.09)				width 0.5 – 7mm drusy qtz veins and gash veins cut at 45 degrees and 80 degrees to core.													
		B		width 0.1 – 5mm qtz. veinlets, gash veins and hair veins cut at 30 – 45 degrees and 70 – 85 degrees to core.					banded pale gray barite banded gray argillitic barite segregated (?) barite cut structure 382.7m enlargement inter-finger like texture between argillitic barite and pale gray barite								
(383.13)			0														
385			15														
				386.0 pale gray, medium-grained, finely banded with fine-grained pyrite layers up to 3mm thickness													
(386.18)			12														
		B	20	387.0 gray, medium-grained, finely banded with argillitic and pyritic layers up to 5 mm thickness.													
			5														
			△ △	388.5 slightly brecciated													
(389.23)			~~~	389.3 core crushed													
390			20														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
390			20 / 0	B BARITE (continues)													
				390.5 with 0.5-3mm qtz. gash veins and hair veins cut at 80-90 degrees to core.													
(392.28)		B	392.7	392.7 small slumping fold structure.													
395			20														
(395.33)			15														
		B	20														
(398.39)			15	finely banded with fine-grained pyrite interlayers and lenses up to 2mm thick.													
400																	
			30														
(401.42)			18														
		B	20	finely banded with argillitic grey layers.													
			15														
			403.8	403.8 slightly brecciated and cemented by qtz. veinlets.													
(404.40)			10														
405				normal grading observed at 404.95 m.													

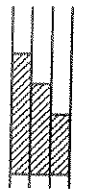
PROJECT Clear Lake

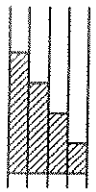
HOLE No. 91-53

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
405		B	20	B BARITE (continues)													
				(sharp conformable contact to barite)													
			(406.00) 15	406.00 – 412.60 C2d SILICEOUS ARGILLITE (C4?)													
				pale gray, fine to medium-grained, finely banded with 0.5–													
			10	3mm thick fine-grained pyrite bands, interlayers and lenses													
(407.52)			0	width 0.5 – 8mm qtz. veinlets and gash veins cut 5–15 degrees													
				and 70 – 85 degrees to core.													
		C2d	(409.1)														
				409.1 – 409.8 brecciated zone													
			(409.8)	Siliceous argillite brecciated to 0.5 – 5cm very angular													
410				breccias and cemented by white massive qtz. matrix.													
(410.57)			5														
				width 0.5 – 3mm qtz. veins and gash veins cut 80 – 90													
				degrees to core.													
			(412.60) 20	412.60 – 414.25 C5 ASH TUFF (conformable contact to C2d)													
		C5		greenish pale gray, very fine-grained, finely banded.													
(413.61)			20														
			(414.25)	414.25 – 414.95 pure milky white massive quartz vein 4cm													
			30	angular pale gray to pale greenish gray ash tuff breccia near													
415			(414.95)	hanging wall contact.													
				414.25 – 419.71 C2d SILICEOUS ARGILLITE													
			20	pale gray to gray, fine to medium-grained, finely bandeed													
(416.64)				with interlayers of fine-grained thin beds and lenses up to 3mm.													
		C2d	15	widch 1 – 8mm qtz. veinlets cut 5 – 10 degrees and 80 degrees													
				to core.													
			(418.2)	normal grading observed at 418.2.													
			0	width 0.5 – 15mm qtz veinlets cut 5 – 10 degrees, 45 degrees													
			25	and 70 – 90 degrees to core.													
(419.71)				419.71 m End of hole 91-53													

TOTAL ENERGOLD CORPORATION
DRILL LOG

PROJECT: CLEAR LAKE	GROUND ELEV.: 703.05m.
HOLE No.: 91-54	BEARING: 270 (not surveyed with theodolite; - Surveyor not present.)
LOCATION: 61390.30 N, 92029.98 E	DIP: -60 (" ")
	TOTAL LENGTH: 267.30m (877')
LOGGED BY: R. ZURAN	HORIZONTAL PROJECT: 131.6886
DATE: JULY 16th, 1991	VERTICAL PROJECT: -232.5891
CONTRACTOR: KLUANE DRILLING	ALTERATION SCALE
CORE SIZE: NQ	
DATE STARTED: JULY 3rd 9:00 PM	
DATE COMPLETED: JULY 6th 6:00PM	TOTAL SULPHIDE SCALE
DIP TESTS (ACID.) 209', 68.09m -60.5° 407', 124.05m -61.0° 607', 185.01m -59.5° 807', 245.97m -61.3°	





DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE: to intersect target: MASSIVE SULPHIDE UNIT "A" and confirm ore between holes 91-51, 82-34 and 91-52

REASON FOR SHUTTING DOWN: intersection successful (212.20 - 254.80m); no significant mineralization noted 12.5m past MASSIVE SULPHIDE UNIT A

PERTINENT GEOLOGY:

0 - 21.34 m	Overburden
21.34 - 51.70	C2c Argillite (many sand bands)
51.70 - 64.00	C2b Argillite (minor sand bands)
64.00 - 143.10	C2c Argillite (many sand bands)
143.10 - 144.10	C5 Lapilli Tuff
144.10 - 147.80	C2b Argillite
147.80 - 162.12	C5 Lapilli Tuff
162.12 - 176.00	C2a Argillite (massive, carbonaceous)
176.00 - 183.44	C5 Lapilli Tuff
183.44 - 186.52	C2a Argillite (massive, carbonaceous)
186.52 - 204.30	C2d Argillite (silicified)
204.30 - 204.95	A Massive Sulphide
204.95 - 209.30	C2d Argillite (silicified)
209.30 - 209.60	A Massive Sulphide
209.60 - 212.20	C2d Argillite (silicified)
212.20 - 212.60	A Massive Sulphide
212.60 - 215.94	C2d Argillite (weakly silicified)
215.94 - 254.80	A Massive Sulphide
254.80 - 262.50	C2d Argillite (silicified)
262.50 - 267.31	C2b Argillite (minor sand bands)
E.O.H. @ 267.31	

LENGTH	AZIMUTH	DIP	HORZ	ELEV	DIST FROM BL	SECTION	SEC OFFSET	DESCRIPTION
0.00	270.00	-60.00	0.00	703.05	29.98 E	~~95.0~~ N	0.30 N	COLLAR
31.55	270.00	-60.50	15.77	675.73	14.21 E	~~95.0~~ N	0.30 N	DIP CHANGE
93.57	270.00	-61.00	46.31	621.75	16.33 W	~~95.0~~ N	0.30 N	DIP CHANGE
154.53	270.00	-59.50	75.87	568.43	45.89 W	~~95.0~~ N	0.30 N	DIP CHANGE
215.49	270.00	-61.30	106.81	515.91	76.83 W	~~95.0~~ N	0.30 N	DIP CHANGE
267.30	0.00	0.00	131.69	470.46	101.71 W	~~95.0~~ N	0.30 N	END OF HOLE

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAY
0				0 - 21.34m OVERBURDEN													
5																	
10																	
15																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
15				OVERBURDEN (Cont'd)													
20																	
21				21.34 - 51.70 C2c ARGILLITE													
22	66	C2c	lam 85	22.75 Fine grain, dk grey to black and off white where silica injected, sand banded argillite. Sand bands avg 2-3 mm wide, planar bedded with local wavy & tangential cross-bedding. Local faulting, and silica injected zones.													
	84																
25				*													
		LOST	wavy lam 30	25.75 25.75-27.80 FAULT ZONE silica injected on FW & HW. Graphitic matrix w sheared, bd argillite and white qtz frag. avg 4mm in size													
	91	C2c	FW 35 bed	27.80 - unit becoming more sandy after fault, less argillaceous material; bordering sst in facies													
30	93																

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
30					*2 C2c ARGILLITE (Cont'd)													
	93	C2c	30	30.15	30.15-30.54 FAULT ; sharp contacts, argillaceous													
				30.54	matrix supported fault, competent with elongated clasts													
				31.45	Gvg. 3 x 1/2 mm.													
	100		1cm 10															
35																		
		LOST	1cm 10	36.00														
	93	C2c	1cm 5	37.00														
			1cm 5	38.00														
		LOST	1cm 39	39.00														
			1cm 10															
40	96	C2c	1cm 45	41.00	41.00-44.81 Local Convoluted sand bands													
				41.76														
	95				*3													
		LOST			44.81-51.70 FAULT ZONE ; sheared, brecciated													
		C2c			argillite with local silica injection along shear planes													
					and laminae. Local black fault gouge and boudin													
45				44.81	structure.													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
45				C2c ARGILLITE (Cont'd)													
	95	C2c		(Fissures @ 5, cont'd)													
		LOST															
	92		50														
50		C2c															
				51.70													
	94			3 51.70-64.00 C2b ARGILLITE													
				Dk grey with local sections containing sand bands (avg 3mm wide) and laminae with local feather fractures with secondary silica (eff white) fillings.													
		C2b	lam 15	Feather fractures (dewatering) ⊥ to laminae.													
55																	
	100		lam 25														
				57.30													
				Minute (3 x 4 to mm) silica filled dewatering fractures ⊥ to laminae.													
	100																
			lam 80														
60				64.75													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
60				C2b ARGILLITE (Cont'd)													
			tangential veins	61.30													
	95	C2b															
				63.09-64.00 interbed of massive carbonaceous argillite													
				64.00-195.10 C2c ARGILLITE													
			1cm	Dark grey, locally faulted, brecciated, sheared and silica													
	100		5	64.20 injected sand banded argillite. Transitional HW contact													
65				65.15													
				65.15-66.64 massive sandy interbed.													
				66.64													
	100		1cm														
			Eo	68.00													
		C2c		#4													
				69.60													
70				69.60-78.33 FAULT ZONE with local bx, silica impregn.													
				dk grey dense + brown clasts aphanitic arg + white qtz													
	94			70.90 70.90 Convoluted - wavy laminae. Local fracture													
				filled by silica.													
	94																
			50	74.00													
				(sheared)													
75																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
75	99			C2c ARGILLITE (Contd)													
	100																
				78.33													
			lam 35	78.33 - 78.60 Chaotic silica stringers 35%													
				79.00													
	100			79.40 - 79.60 Chaotic silica stringers 70%													
80				80.00 wavy laminae													
			lam 25	82.00													
	100	C2c															
				*5													
			40 5	84.43 - 84.70 FAULT - sheared graphitic arg + 20% silica ipj.													
85				84.80 - 85.00 Folded laminations													
	100		lam 0	86.00													
			lam 0	87.00													
			lam 5	88.00													
	100		lam 2	89.00													
			lam 0														
90				90.00													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
90				C2c ARGILLITE													
90	100		5 km														
92.0	100		5 km														
93.0			30 km	*6													
93.00				93.00-94.00 FAULT/SHEAR ZONE													
6				Graphitic shear planes with elongated fragments of argillite													
94.0		45	15 km	94.00 (crushed), local black gouge & milky qtz frag.													
95	100		VB														
96																	
97		C2c															
98	100		10 km	98.00-98.30 Milky white injection zone; stockwork (10%)													
99			5 km	breccia.													
100	100																
	100																
			targeted VB	104.00 103.90 - Milky white qtz veinlet 3cm wide													
105																	

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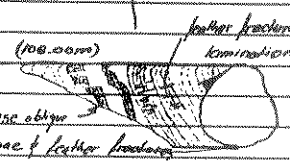
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
105				C2c ARGILLITE													
	100		10	106.00													
	100		25	107.00													
			53	108.00													
			wavy laminae	110.00													
110	100	C2c	8														
	100		65														
			wavy lam.														
115			35														
	100		XB	117.50													
	91		46	118.85													
120																	



(110.00) wavy laminae

(115.00) wavy sand bands

117.50 rising ripples cross lamination, well developed

118.85 - 121.00 #7 FAULT ZONE with black graphitic shear zones & local breccia and silica injection.

PROJECT CLEAR LAKE

HOLE No. 91-54

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
120				C2c ARGILLITE (Cont'd)													
	100			121.00					121.00 Small (1/2 cm wide) py bed, folded and boudin texture. V. fine grain py.								
			lam 66 80	123.00													
	100			(123.50) local arg. bn with milky wite quartz injection (123.00-124.75) silica injection zone with 25% milky white network of feather fractures, stringers, predominantly across lam.													
125	100																
		C2c	lam 45	127.00 8													
	100		convoluted lam	129.00													
130	100		lam 65														
			lam 70	134.5													
	100		50														
135																	

8

* FAULT ZONE

127.00-143.10 Sand banded argillite with numerous local graphitic shear planes, faults and breccia with predominately subrounded argillite fragments Avg. 1cm in size Local convoluted lam, and silica injection - stringers, silica filled feather fractures. Also local black graphitic fault gouge.* Fault gouge with local argillite subrounded clasts is a grey colour containing ash 141.25-143.10.

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
135				C2c ARGILLITE (Cont'd)													
	100	C2c		138.85 Tangential cross laminations													
140	97																
	95	C5	143.10	143.10-144.10 C5 LAPILLI TUFF Pale - moderated grey green strongly convoluted predominantly ash with strongly flatted lapilli clasts. HW. contains dk argillaceous laminae interbedded w. grey green ash.					V. fine grain band (1cm wide) of py along contact between C2c & C5								
145		C2b	bed 80	144.10-147.80 C2b ARGILLITE Fine grain dk grey to dk grey green with local silica injection stringers parallel to cleavage (<10%) + local areas containing angular clasts (3/4 cm) along laminae. Unit contains more ash towards end of interval. Transitional contacts.					147.25-147.75 35% irregular elongated masses, blocks of fine grain py.								
	100	C5	lap 70														
	93			147.80-162.12 C5 LAPILLI TUFF					149.04-149.09 V. light brown diss. & pholerite - med. grain ino band 5cm wide 15%		149.00-149.11	0.11	6279	1.9	0.13	7.51	
150																	

PROJECT CLEAR LAKE

HOLE No. 91-54

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
150				C5 LAPILLI TUFF (Cont'd)													
151	100		lap. 85	Pale grey-green ash-lapilli tuff - transitional HW contact with argillite. Ash locally wispy particularly near HW. Lapilli strongly flattened and locally contorted. Total intense carbonate & argillic alteration.													
152			lap. 70														
153	100		lap. 86	(153.50 - 157.58) 10% black argillite clasts in tuff. Avg size 4mm x 3mm, subangular elongated along bedding.					153.40-153.71 25% v. fine grain py along bedding of tuff as disseminations, bands and crackled reniform textures								
154			lap. 85														
155																	
156	100	C5	lap. 85														
157			lap. 85								157.00 - 158.00	1.00	6280	7.5	0.25	1.58	
158									153.90 fine grain blob 6cm in dia. py.		158.00 - 158.40	0.40	6281	52.1	0.80	13.80	
159	98		lap. 85	(159.00-159.20) wispy laminae					155.00-155.40 fine grain py as blobs / blobs / bands up to 3cm wide.								
160			cont.	(160.40-160.63) contorted, convoluted laminae					157.00 band of py. 3cm wide along bedding								
161									157.75-158.00 Large blobs (2½×3½cm avg) of coarse grain crackled lt brown sphalerite, 15%								
162	98			162.12-176.00 C2a ARGILLITE					158.20-158.40 20% lt brown coarse grain, crackled sphalerite occurring as large blobs 2×3cm avg. with accessory fine grain euhedral py (2%)		161.96 - 162.20	0.24	6282	10.4	0.45	8.39	
163		C2a	STOCKWORK	Fine grain, dk grey, graphitic argillite with up to 40% sulphide stockwork/bx. and stringers. Gradational contacts.					158.40-159.25 5-10% fine grain diss. or in lam. & bands of py.								
164									161.95-162.15 15% blobs (3×3cm) of coarse grain lt brown sphalerite								
165									164.30-164.75 7% lt brown med-coarse grain sphalerite in py stockwork & stringers.		164.28 - 164.78	0.50	6283	3.0	0.08	4.31	



PROJECT CLEAR LAKE

HOLE No. 91-54

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% PPM Ag	% Pb	% Zn	COMPOSITE ASSAYS
165				C2a ARGILLITE (Cont'd)													
	100		STRINGER ZONE	(165.00-172.00) Sulphide stringer zone - silica stringers are a minor component. Stringers are sub-parallel to cleavage; ~80° TCA Local stockwork 15%.					166.70-168.00 5% medium grain lt. brown sphalerite associated with pyrite and milky white (minor <3%) qtz stringers predominantly 50-80° TCA.		166.69 -167.92	1.23	6284	5.6	0.11	6.28	
	100								168.95 Small 1x1cm irregular patch of lt brown med. grain sphalerite.								
170																	
171	98	C2a	STRINGER ZONE	#9					171.15-172.00 3% lt brown fine to med. grain sphalerite + trace med grain galena associated with stringers.								
172				172.00 FAULT - high ∡ TCA; Black clay gouge							171.15 -171.85	0.70	6285	6.5	0.39	0.62	
				9 172.00 172.00-176.00 Stringer zone intensifies to stockwork + breccia up to 40% sulphides. Clasts are all low rotated or crackled argillite, injection material is sulphides. Predominantly pyrite					173.75-174.17 8% lt brown fine to med. grain sphalerite + 2% med grain galena associated with stringer stockwork network.								
173											173.76 -174.17	0.41	6286	10.4	2.32	3.49	
174	98		STOCKWORK BRECCIA														
175																	
				176.00-183.44 C5 LAPILLI TUFF					176.00 - 1-10% disseminated fine grain py along beds & laminations								
				lap. 41 176.50 Grey green ash-lapilli tuff with flattened lapilli and <3% 1mm-1cm wide white calcite stringers parallel to foliation cleavage													
	110	C5		lap. 38 177.60													
				lap. 80 179.80													
180																	

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C5 LAPILLI TUFF (Cont'd)

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Cb B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
180																	
				180.75-183.49 Predominantly a very pale grey-green gsh tuff with moderate carbonate and argillic alteration.													
181	100	C5	log. 40														
182																	
				183.50													
183				183.16-183.20 White calcite veinlet 3½ cm wide													
	100		contact 70° TCA	* 10													
184				183.49-183.66 Fault with crushed milky white qtz, gypsum smear planes (3-4mm wide). Weak limonite staining along qtz													
		C2a	50														
185																	
				183.66-186.52 C2a ARGILLITE					183.66-186.52 Trace - 1% fl brown fine to med. grain sphalerite associated with small (1mm - 3mm) wide pyrite stringers								
186	100			Dk grey fine grain argillite exhibiting a uniform cleavage 50° TCA. Minor feather fractures cutting across cleavage and filled with white silica (< 1mm wide, avg.)													
187																	
188																	
189				186.52-209.30 C2d ARGILLITE (silicified)													
	100			Grey - dk grey v fine grain silicified argillite with local sulphide and/or silica/calcite stringer zones ⊙					186.52-186.80 3% fl brown disseminated fine to medium grain sphalerite associated with py								
190																	
		C2d		Sulphides occur locally as fine (1-8mm) chaotic stringers, patches of accumulations, and grain selvages associated with calcite injections, infilling feather fractures. Stringers are 5-35% (avg 10%) volume of rock					stringers (3mm wide)								
191																	
192									187.00-187.15 5% pale fl brown fine grain class sphalerite predominantly in argillite with minor amounts within feather fractures < 1mm x 5mm								
193	100																
194									191.32 Large blob (1x2cm) of med grain fl. brown sphalerite								
195	98																

SILICIFIED ZONE

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
195				C2d ARGILLITE (Contd)													
196	98	C2d	STRINGER ZONE	# 11 (major)													
197				196.50 - 200.85 FAULT ZONE													
198				Large fault with graphitic shear planes and crushed argillite and milky qtz fragments (196.50 - 198.00); crushed and brecciated calcite fragments 60% (avg. size 3x5cm) and crushed argillite-dirty qtz matrix 20% (198.00 - 198.50);													
199	98			crushed black argillite and minor qtz fault gouge (198.5 - 199.00); Calcite injected fault breccia - stockwork with 40% white coarse crystalline calcite and angular clasts of silicified													
200				argillite avg 1cm long with a 1/2 cm wide sideritic salvage					200.15 - 200.60 30% 11 brown fine grain sphalerite		200.14 - 200.74	0.60	6387	12.9	2.94	5.06	
201	84			on HW of this portion of fault (199 - 200.85). Up to 40%					+ 8% med. grain galena along and within								
202				sulphides in the last interval					argillite clast surface of stockwork.								
203	86	C2d	STRINGER ZONE	200.85 - 209.80 Stringer Zone composed of 10-30% fine 1mm (avg) stringers and filled in fracture fractures of sulphide & silica. Sulphides (avg) also as blobs (avg. 1cm) irregular bands and disseminations in 2x1cm (avg) patches.													
204	98	A									209.15 - 226.96	0.91	6388	5.3	0.59	2.93	
205				209.30 - 209.95 A MASSIVE SULPHIDE					209.30 - 209.95 15% 11 brown - brown fine		205.30 - 207.00	1.70	6287	3.3	0.20	0.80	
206				Massive sulphide varied 4cm wide running down core with multistage salvages - coarse crystalline					grain sphalerite + 2% med. grain galena along outer salvages as shown in diagram to the left								
207				calcite being the last stage of injection - minor py.							207.00 - 209.00	2.00	6288	4.4	0.23	1.61	
208	100	C2d	STRINGER STOCKWORK BRECCIA ZONE						209.95 - 209.30 5-20% 11 brown v. fine sph to med grain sphalerite associated with salvages and injection Stringers (avg. 5cm) Avg. 1% med grain galena.		209.00 - 209.60	0.60	6292	3.8	0.23	1.24	
209											209.60 - 210.39	0.69	6289	9.2	0.76	4.48	
210	100	A		209.95 - 209.30 C2d ARGILLITE (silicified) Stringer (avg. 1cm wide) network of sulphide averaging 20%					209.55 1 irregular patch 1cm long of 11 brown sph								

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
210				C2d ARGILLITE (Cont'd)													
211	100	C2d	STRINGER STOCKWORK BY ZONE	py becoming oriented in masses ~ 70-90 rca as blobs (3x1cm), disseminations in patches and bands 1/2 cm wide, and framboidal disseminations concordant with wispy (ash laminae) between 206.00-206.50.					209.70-212.65 Fine grain lt. brown sph. and med. grain galena (3%) associated with stringer network and as fine (1mm) disseminations. Near end of interval sphalerite is wispy in bands 3-4mm wide @ 50-70° rca.		210.39 - 211.06	0.67	6290	9.0	0.47	3.34	
212		A		206.50-209.30. → Complex array of stringer networks, stockwork / breccia of sulphides (primarily py.), silica and calcite which is the latest injection.							211.80 - 212.60	0.80	6291	15.6	0.69	6.25	
213																	
214	100	C2d	70						214.90 - 215.20 Finely diss. sph + gn (5% avg.) along bedding planes ~ 90° rca.		214.35 - 215.25	0.90	6389	3.5	0.28	1.72	
			90 bed	209.30-209.60 A MASSIVE SULPHIDE													
215				Massive pyrite medium to coarse crystalline with minor colloform texture.													
216			contact 60						216.00-218.00 8.2% lt. brown v. fine grain sphalerite as blotches and irregular masses.		216.00 - 217.00	1.00	6293	10.5	0.49	3.28	
				209.60-212.20 C2d ARGILLITE (silicified)													
217	100			Dark grey fine grain silicified argillite with 30-40% irregular masses of sulphide connected to sulphide stringer networks.							217.00 - 218.00	1.00	6294	11.3	0.38	3.91	
218				Sulphides (pyrite) also occur as selvages along calcite injection, disseminations and framboids (1-2mm dia.). 5% calcite stringers					218.00-218.54 3% lt. brown v. fine grain sphalerite as irregular masses.		218.00 - 219.00	1.00	6295	9.6	0.85	3.29	
219		A							218.54 - 223.80 5% fine grain sphalerite 4% galena - medium grain.		219.00 - 220.00	1.00	6296	8.7	0.64	2.45	
220	100			212.20-212.60 A MASSIVE SULPHIDE							220.00 - 221.00	1.00	6297	9.5	0.78	3.49	
				Fine grain to coarse grain massive sulphide becoming a stringer network 70° rca on FW.													
221											221.00 - 222.00	1.00	6298	8.5	0.27	2.56	
222				212.60-215.94 C2d ARGILLITE (weakly silicified)							222.00 - 223.00	1.00	6299	8.7	0.26	1.93	
				Dk grey fine grain argillite with 15-20% sulphides. (py) occurring as 1cm blobs, patches of disseminations and framboids.							223.00 - 223.38	0.38	6351	4.5	0.07	0.41	
223	95								223.80-225.80 - High Grade section ~ 20% fine grain sphalerite		223.38 - 224.36	0.98	6352	27.5	1.30	5.63	
224				215.94-254.80 A MASSIVE SULPHIDE							224.36 - 225.40	1.04	6353	27.9	0.62	7.55	
225	100																

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A MASSIVE SULPHIDE (Cont'd)

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Carb C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS (width)
225																	
				Fine grain massive sulphide averaging 95% pyrite, locally		II					225.40 - 226.00	0.60	6354	37.6	2.78	9.26	
226	100			medium and coarse grain; local crackled and colloform							226.00 - 227.00	1.00	6355	53.8	2.22	12.40	223.38 - 230.25 (6.87m)
				textures present. Interstitial zones include white		II											
227				silica and/or calcite inclusions and/or silicified							227.00 - 228.00	1.00	6356	48.7	2.06	17.30	Ag 41.9
				argillite and make up 5-10% volume of rock and		II			223.00 - 230.25 High Grade section of								Pb 1.85
228				occur as irregular patches and occasional stringers					20% fine grain sphalerite, 1% medium		228.00 - 229.00	1.00	6357	43.6	2.43	14.30	Zn 12.50
						II			grain galena.								Flotation Test
229											229.00 - 230.00	1.00	6358	51.1	1.95	19.20	
	100					II											
230																	
						II			230.80 - 233.17 ~ 15% fine grain		230.00 - 230.25	0.25	6359	48.8	1.96	15.10	
231		A				//			sphalerite, 1% med. grain galena.		230.25 - 230.72	0.47	6360	4.7	0.10	0.39	
						II					230.72 - 231.57	0.85	6361	28.2	0.96	5.08	
232											231.57 - 232.55	0.78	6362	28.9	0.74	5.97	
						II					232.55 - 233.30	0.95	6363	27.3	0.73	5.69	
233											233.30 - 234.00	0.70	6364	25.6	0.72	7.45	233.30 - 239.25 (5.95m)
	100					II					234.00 - 234.80	0.80	6365	34.9	1.28	9.34	Ag 30.6
234																	Pb 1.02
											234.80 - 235.80	1.00	6366	19.2	0.89	5.38	Zn 9.46
235																	
									235.65 - 240.25 <5% fine grain sphalerite,								
	100								<1% galena.		235.80 - 236.30	0.60	6367	10.5	0.70	2.52	223.38 - 235.90 (12.52m)
236				236.20							236.30 - 236.50	0.20	6702	6.1	0.29	0.66	
				232.60 Colliform textured pyrite							236.50 - 237.00	0.50	6368	12.8	0.73	3.14	Ag 38.9
237											237.00 - 238.00	1.00	6369	8.9	0.62	2.55	Pb 1.36
																	Zn 9.54
238	100																
											238.00 - 239.00	1.00	6370	6.9	0.54	1.73	
239											239.00 - 239.73	0.73	6703	3.5	0.32	0.53	
											239.23 - 240.18	0.95	6371	21.3	0.46	6.48	
240											240.18 - 240.46	0.28	6704	7.6	0.22	1.90	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
240				A MASSIVE SULPHIDE (Cont'd)													
241	100								240.25 - 241.35 High Grade: ~30% fine grain sphalerite, <1% galena; irregular masses.		240.46 - 241.55	1.09	6372	26.5	0.91	9.72	239.23 - 243.0 (3.77m)
242									241.35 - 243.40 15-20% fine grain sphalerite; irregular masses.		241.86 - 242.35	0.80	6373	20.6	0.89	7.77	Ag 23.0 Pb 0.66
243											242.85 - 243.80	0.65	6374	32.6	0.54	6.95	Zn 7.29
244	100								243.40 - 245.40 <5% fine grain sphalerite in irregular patches.		243.00 - 243.50	0.50	6375	21.6	0.78	5.64	239.23 - 246.0 (4.77m)
											243.50 - 244.00	0.50	6376	7.8	0.66	2.56	Ag 28.1
245			bdd. 90	245.40							244.00 - 245.00	1.00	6377	19.7	0.80	4.81	Pb 0.75
				245.45 - 245.60 Wispy laminae of sulphides					245.00 - 245.70 Wispy layers (3mm wide) of 20-30% v fine grain sphalerite								Zn 8.02
246											245.00 - 246.00	1.00	6378	76.0	1.07	19.90	
											246.00 - 247.05	1.05	6379	14.2	0.39	2.57	
247	100	A							246.70 - 249.00 30% fine grain sphalerite		247.05 - 247.29	0.24	6705	3.2	0.27	0.42	
				* 12.							247.29 - 248.00	0.71	6380	16.9	0.76	4.15	
248			CRACKLED	248.00 - 248.30 FAULT; Broken sub-angular clasts of pyrite averaging 3/4 cm in a crushed garnite matrix. 5% silicified argillite clasts also subangular. 2% gypsum in intersitial areas							248.00 - 249.00	1.00	6381	25.7	0.53	3.91	
249																	248.00 - 250.37 (2.37m)
									249.12 - 250.55 10-15% fine grain # brown sphalerite								Ag 20.2
250				248.30 - 252.00 Cracked massive sulphide							249.00 - 250.00	1.00	6382	14.7	0.56	3.77	Pb 0.39
	96										250.00 - 250.37	0.37	6383	19.9	0.50	6.81	Zn 5.15
251									250.35 - 254.80 <3% fine grain sphalerite, occ. py.		250.37 - 251.00	0.65	6384	10.7	0.31	2.51	
				252.50 - 254.80 Stronger zone of qtz-carbonate (veining) injection, several phases with diffuse boundaries. Sulphides are streaked 70-80° TOA; banding?							251.00 - 253.00	2.00	6385	9.6	0.26	2.12	
252																	
253																	
											253.00 - 254.75	1.75	6386	1.8	0.02	0.03	
254	100		BAY STRINGER ZONE														
255				254.80 - 262.50 C2d ARGILLITE (silicified)													
				254.80 13													
				* 254.80 - 255.60 FAULT													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
255				C2d ARGILLITE (Cont'd)													
			STRINGER INJECTION ZONES - reheated faults	13 / 255.60													
256	98			256.15 / 14													
257																	
258		C2d		258.30													
259	100																
260																	
261																	
262	39	LOST		262.50-267.31 E.O.H.													
263																	
264	93	C2b		264.70													
265		LOST		265.20													
266	91	C2b		266.00													
267				267.20													
268				267.31 EOH													

Intensely crushed, sheared and gouged silicified fine grain argillite with minor (10%) quartz and calcite material

256.14 - 261.00 Intensel stringer zone of quartz (white) and calcite (white) healing breccia and fault zones of silicified argillite. 20% Avg. sulphides present as irregular fine grain masses.

261.00 - 262.50 Crushed, sheared core - argillite ± sulphides and quartz.

262.50 - 267.31 E.O.H. C2b ARGILLITE

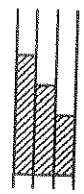
Dk grey, fine grain argillite with local occassional sand. silt bands (< 5%) particularly towards end of interval.

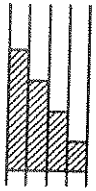
262.50 - 265.00 Crushed, broken core; fault gouge noted at approx. 264.90.

End of Hole @ 267.31m.

TOTAL ENERGOLD CORPORATION
DRILL LOG

PROJECT: Mac Millan / Clear Lake	GROUND ELEV.: 716.11 m
HOLE No.: 91-55	BEARING: 270° no surveyed
LOCATION: 61210.11 N, 91848.67 E	DIP: − 60° no surveyed
	TOTAL LENGTH: 124.05 m
LOGGED BY: Atsushi Gomi	HORIZONTAL PROJECT
DATE: July 12, 1991	VERTICAL PROJECT
CONTRACTOR: Kluane Drilling	ALTERATION SCALE
CORE SIZE: NQ	
DATE STARTED: July 7 1st shift 6:00 am	
DATE COMPLETED: July 8 1st shift 6:00 am	TOTAL SULPHIDE SCALE
DIP TESTS Acid / Sperry-Sun 60.96m − 58.3° 63.09m 281° − 60.7° 124.05 283° − 60.9°	





DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE To test zinc mineralization and stratigraphy between the main block and south block.

REASON FOR SHUTTING DOWN Massive sulphide with minor zinc mineralization was intersected. 24.43 m passed downward from footwall of Massive sulphide orebody and no significant mineralization encountered in the footwall argillite.

PRESENT GEOLOGY

0 − 9.14m	Overburden	
9.14 − 17.05	C5	Ash tuff
17.05 − 21.32	C2a	Argillite
21.32 − 32.61	C5	Ash tuff
32.61 − 37.70	C2a	Argillite
37.70 − 48.70	C5	Ash tuff (pyritic)
48.70 − 48.80	Kef(?)	Felsite sill? very altered
48.80 − 50.35	C2a	Argillite
50.35 − 54.60	A	Massive sulphide
54.60 − 67.85	C2d	Siliceous argillite (Pyritic)
67.85 − 69.03	A	Massive sulphide
69.03 − 74.38	C2d	Siliceous argillite (pyritic)
74.38 − 99.62	A	Massive sulphide
99.62 − 124.05	C2b	Argillite

124.05 m End of hole.

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
0				0 – 9.14 OVERBURDEN quartz, chlorite schist, argillite boulders and gravels.													
5																	
	0																
(9.14)		C5	55	9.14 – 17.05 C5 ASH TUFF pale greenish gray, medium to fine-grained, finely banded,													
10	35			thin interlayers up to 3mm thickness of argillite imbedded													
(11.28)		C5	55	strongly to moderately altered to sericite, poorly stained by limonite.													
	8	LOST															
(14.32)	96	C5	14.37	14.37 – 16.96 tuff moderately stained by limonite caused by weathering.													
15			16.96														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
15				C5 ASH TUFF (continues)													
	%	C5	85														
		C2a	(17.05)	17.05 – 21.32 C2a ARGILLITE (conformable contact to ash tuff)													
(17.37)		C2a	80 (17.25)	black, fine-grained, sheared, irregularly banded with ash tuff inlayers.													
	11	LOST		17.05 – 17.55 argillite with less ash tuff inlayers.													
20																	
(20.42)		C2a															
		C5	(21.32)	21.32 – 32.61 C5 ASH TUFF													
	39	LOST		pale greenish gray, fine-grained, finely banded, extensively sheared and crushed.													
(23.47)		C5															
25	6																
(26.52)																	
	0	LOST															
(29.57)																	
30	0																

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
30	0																
(32.61)	1		C2a	32.61 – 37.70 C2a ARGILLITE dark gray, fine-grained, extensively sheared.													
35																	
(35.66)	0																
(37.49)	11	C4A C5	(37.70)	37.70 – 48.70 C5 ASH TUFF (pyritic) pale greenish gray, fine-grained, finely banded, occasionally bedded with thin layer of argillite up to 30mm. intensively pyritic.					37.70 – 48.70 intensively pyritic. about 80% coarse-grained, massive to conformal pyrite embedded or irregularly mixed with ash tuff. 44.7 – 48.7 almost massive. 37.70 – 41.15 reddish brown, coarse-grained up to 5mm sphalerite 5% in volume disseminate with pyrite in ash tuff. estimated grade is Zn 3%.		37.70–41.15	3.45	6306	5.6	0.17	0.82	
40																	
(41.15)	28	C5															
(43.28)	91	C5							44.90 – 48.70 reddish brown, coarse-grained up to 8mm sphalerite and minor galena 8% in volume scatter with pyrite.		44.90–48.70	3.80	6307	7.2	0.49	3.07	
(44.03) 45	100	C5	40														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
45	100	C5		C5 ASH TUFF (pyritic) (continues) sheared and crushed.					estimated grade Zn 4%, Pb 0.2%.								
(46.93)	49																
(47.85)	96	C5 / Kf / C2a		48.70 – 48.80 Kf (?) FELSITE SILL (?) creamy white, fine-grained, felspar-quartz assemblage, cut along bedding of black argillite. Felspar may be altered to sericite.													
50																	
(50.29)	82	A	(50.35)	48.80 – 50.35 C2a ARGILLITE (pyritic) dark gray, fine-grained, slightly banded with very minor tuffaceous bands up to 3 mm.													
(50.90)	71	A															
(51.82)	47	A		50.35 – 54.60 A MASSIVE SULPHIDE yellowish dark gray, coarse-grained, massive pyrite with minor argillitic irregular interlayers.					52.05 – 54.60 reddish brown, coarse-grained sphalerite up to 5mm and very minor galena disseminated in pyrite matrix, average 10% in volume, maximum 40%, estimated grade Zn 6%, Pb 0.5%.		52.05-53.95	1.90	6308	21.2	1.22	19.10	52.05-60.60 (8.55 m) Ag 9.6 Pb 0.77 Zn 7.75
(53.95)	74	A / C2d	(54.60)								53.95-54.60	0.65	6309	8.4	0.66	3.65	
55				54.60 – 67.85 C2d SILICEOUS ARGILLITE (pyritic) black, fine-grained, massive, siliceous, numerous irregular nodule, patch and stockworks of pyrite matter, sheared and crushed.					54.60 – 60.60 reddish brown, coarse-grained sphalerite disseminated with pyrite as veins and stockworks in siliceous argillite matrix. occurrence of sphalerite is very irregular and erratic, and average 8% in volume, maximum 60%, estimated grade Zn 4%, Pb 0.1%.		54.60-58.90	2.30	6310	5.7	0.89	1.87	
(55.47)	57	C2d									56.90-58.72	1.82	6311	9.5	0.55	5.27	56.90-60.60 (3.70 m) Ag 6.3 Pb 0.45 Zn 6.30
(56.39)	82	C2d															
(56.90)	68	C2d									58.72-60.60	2.39	6312	5.7	0.39	6.87	
(57.61)	49	C2d															
(58.72)	100	C2d															
(59.13) 60	100																

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
60				C2d SILICEOUS ARGILLITE (pyritic)					numerous pyrite networks up to 2cm width cut through.								
	100	C2d							61.90 – 63.67								
									reddish brown, coarse-grained sphalerite average 3% ,								
(62.18)	10								maximum 10% in volume, disseminated with pyrite								
(62.48)	74	C2d							networks in siliceous argillite. estimated grade is								
									Zn 2%, Pb 0.1%.								
(63.40)	100	C2d															
65																	
		C2d							65.05 – 67.20								
		A	(66.11)						reddish brown, medium to coarse-grained sphalerite								
			(66.39)	66.11 – 66.39 A MASSIVE SULPHIDE lens					average 3%, maximum 10% in volume, disseminated								
	100	C2d							with pyrite networks and patches in siliceous argillite.								
		A	(69.23)	67.23 – 67.48 A MASSIVE SULPHIDE lens					estimated grade is Zn 2%, Pb –.								
			(67.48)														
		C2d	65														
			(67.85)	67.85 – 69.03 A MASSIVE SULPHIDE													
		A	10														
			(69.03)														
(69.79)				69.03 – 74.38 C2d SILICEOUS ARGILLITE (pyritic)													
70				black to dark gray, fine-grained, massive to laminated													
		C2d		with fine-grained pyrite lenses and interlayers up to 5mm													
	86			thickness. siliceous. numerous pyrite networks and													
				irregular-shaped patches scatter through argillite.													
(71.63)		C2d															
	40																
			(73.46)	73.46 – 73.65 sheared to slugee.													
(73.46)		C2d	(73.65)						74.38 – 75.01 pyrite networks filled siliceous argillite		74.38 – 75.01	0.63	6313	5.0	0.21	1.18	
	100		60						and pyrite disseminate in argillite. sphalerite disseminated								
			(74.38)						ca. 3% in volume, estimated grade Zn 2%.								
75		A	56	74.38 – 99.62 A MASSIVE SULPHIDE													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY
75	100			A MASSIVE SULPHIDE (continues)				
(75.79)				greenish yellow gray, submetalic to metalic luster, medium to				
				coarse-grained pyrite, mixed with minor calcite and qtz.				
	100	A						
				calcite filled druses in pyrite.				
(78.33)								
	100			78.97 – 79.10 calcite vein cut 60 degrees to core.				
			60					
80								
(81.38)								
		A						
	100							
				calcite segregation vein, irregular shape.				
(84.43)								
85								
			45					
	100							
		A		yellowish gray, metalic luster, coarse-grained, crystalline				
				massive pyrite with framboydal structure.				
(84.48)								
	100							
90								

MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE
75.52 – 77.52		75.01-76.01	1.00	6314	10.6	0.77	3.51	
minor tan colour and reddish brown fine-grained								
sphalerite and very minor galena disseminated		76.01-76.52	0.51	6315	7.0	0.33	1.17	
in pyrite matrix. estimated grade Zn 2%.								
77.52 – 84.52		76.52-77.52	1.00	6316	11.9	0.86	4.23	
minor tan colour and dark gray sphalerite disseminated								
very finely in pyrite matrix. estimated grade Zn 1%.		77.52-78.52	1.00	6317	3.5	0.11	0.58	
86.52 – 87.52		78.52-79.52	1.00	6318	5.3	0.28	1.24	
minor gray sphalerite disseminated very finely in								
pyrite matrix. estimated grade Zn 2%.		79.52-80.52	1.00	6319	5.6	0.58	1.90	
		80.52-81.52	1.00	6320	4.9	0.24	1.67	
		81.52-82.52	1.00	6321	9.0	0.50	2.76	
		82.52-83.52	1.00	6322	6.7	0.38	1.92	
		83.52-84.52	1.00	6323	6.9	0.51	1.61	
87.52 – 88.97								
minor gray galena and minor reddish brown and black		84.52-86.52	2.00	6324	6.4	0.26	1.44	
sphalerite disseminated. estimated grade Zn 6%,								
Pb 1%.		86.52-87.52	1.00	6325	10.2	0.98	1.92	
88.97 – 92.20		87.52-88.07	0.55	6326	13.3	2.53	2.32	
minor gray fine-grained sphalerite disseminated.								
estimated grade Zn 1%.		88.07-88.97	0.90	6327	5.4	0.36	1.19	
		88.97-89.97	1.00	6328	3.7	0.12	0.24	
		89.97-90.97	1.00	6329	5.7	0.16	0.79	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE
90	100			A MASSIVE SULPHIDE (continues)													
(90.53)											90.97–92.20	1.23	6330	5.0	0.21	0.53	
	100	A									92.20–93.20	1.00	6331	5.9	0.45	0.70	
									92.20 – 94.35		93.20–94.35	1.15	6332	7.3	0.32	1.79	
									minor gray fine-grained sphalerite disseminated.								
									estimated grade Zn 2%								
(93.57)																	
									94.35 – 95.11		94.35–95.11	0.76	6333	31.8	0.86	8.14	
									tan-coloured, fine-grained sphalerite and reddish								
95									brown coarse-grained sphalerite and very minor								
	100								galena disseminated with pyrite in siliceous matrix.		95.11–96.11	1.00	6334	7.2	0.16	0.99	
									sphalerite is 8% and estimated grade is Zn 4%								
									96.80 – 98.04		96.11–96.80	0.69	6335	4.6	0.07	0.59	
(96.62)		A							tan-coloured, fine-grained sphalerite and reddish		96.80–98.04	1.24	6336	36.4	0.63	7.58	96.80 – 99.33 (2.53m)
				96.80 – 99.62 MASIVE SULPHIDE with siliceous matrix					brown coarse-grained sphalerite disseminated with								
	100			medium-grained pyrite irregularly mixed with pale gray to					pyrite in siliceous matrix. sphalerite is 8% and		98.04–98.74	0.70	6337	9.6	0.38	2.96	Ag 24.0
				gray fine-grained cherty siliceous matrix. pyrite is about					estimated grade is Zn 4%								Pb 0.61
				60 to 70% in volume.							98.74–99.62	0.89	6338	18.1	0.76	7.77	Zn 6.5%
(99.67)			(99.62) 60														
100				99.62 – 124.05 C2b ARGILLITE with minor sandstone band													
			60	black, fine-grained, banded. minor 0.5–10mm thickness qtz.													
	99	C2b		and pyrite veining.													
				99.62 – 100.95 brecciated texture													
			30	argillite brecciated to 2 – 50 mm very angular breccia and													
				cemented by sandy matrix.													
(102.71)			45														
	100	C2b	35														
105																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
105	100			C2b ARGILLITE (continues)													
(105.77)			60														
	100																
(108.81)																	
110				qtz. stockwork up to 2mm wided cut irregularly through argillite.													
	100																
(111.86)																	
	100		40	pyrite stringers width 5 - 10mm intruded along bedding.													
(114.91)																	
115			35														
				width 0.5 - 7mm qtz. carb veins and networks cut at 30 - 45 degrees to core.													
				117.0 slightly sheared.													
				pyrite stringers width 3 - 5mm intruded along bedding.													
			(119.18) 16	119.18 - 119.23 A MASSIVE SULPHIDE													
				0.05 m thick thin pyrite interlayer concordant to argillite													
120				bedding.													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
120	100			C2b ARGILLITE (continues)													
(121.01)			15														
(124.05)				E.O.H. 124.05 m													
125																	

TOTAL ENERGOLD CORPORATION
DRILL LOG

PROJECT	Mac Millan / Clear Lake
HOLE No.	91-56
LOCATION	61205.03 N 91891.29 E
LOGGED BY	Atsushi Gomi
DATE	July 14, 1991
CONTRACTOR	Kluane Drilling
CORE SIZE	NQ
DATE STARTED	July 9 2nd shift 2:30 am
DATE COMPLETED	July 11 1st shift 9:30 am

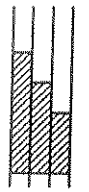
DIP TESTS

Sperry - Sun

60.96m	217°	-58.5°
121.92	212°	-56.6°
170.69	217°	-56.0°

GROUND ELEV.	715.73 m
BEARING	206.29°
DIP	-58.98°
TOTAL LENGTH	170.69 m
HORIZONTAL PROJECT	
VERTICAL PROJECT	

ALTERATION SCALE



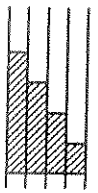
absent

slight

moderate

intense

TOTAL SULPHIDE SCALE



< 1%

1%—5%

5%—25%

25%—50%

< 50%

(acid)

207'/63.09m -57.0°

407'/124.05m -56.5°

547'/166.73m -55.5°

DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE To test zinc mineralization expected below DDH 83-44.

REASON FOR SHUTTING DOWN Massive sulphide and breccia with zinc mineralization was intersected. 12.89m passed downward from footwall of Massive sulphide and no significant mineralization was encountered in argillite.

PRESENT GEOLOGY

0 -	18.29 m		Overburden
18.29 -	29.60	C2a	Argillite
29.60 -	32.50	C5	Lappili tuff
32.50 -	34.40	C2a	Argillite
34.40 -	35.60	C5	Lappili tuff
35.60 -	36.00	A	Massive sulphide
36.00 -	37.02	C5	Lappili tuff
37.02 -	37.90	A	Massive sulphide
37.90 -	41.82	C2c	Argillite
41.82 -	43.70	C1a	Sandstone
43.70 -	45.70	C2b	Argillite
45.70 -	52.50	C2a	Argillite
52.50 -	58.10	C2d	Siliceous argillite
58.10 -	60.35	A	Massive sulphide
60.35 -	66.00	C2d	Siliceous argillite
66.00 -	72.11	C2a	Argillite
72.11 -	83.20	C5	Lappili tuff
83.20 -	97.32	A	Massive sulphide
97.32 -	97.68	C2d	Siliceous argillite
97.68 -	98.26	A	Massive sulphide
98.26 -	99.85	C2d	Siliceous argillite
99.85 -	100.20	C5	Lappili tuff
100.20 -	102.00	A	Massive sulphide
102.00 -	102.86	C5	Lappili tuff
102.86 -	103.68	A	Massive sulphide
103.68 -	108.81	C5	Lappili tuff
108.81 -	110.20	A	Massive sulphide with tuff breccias
110.20 -	127.00	A	Massive sulphide with argillite breccias
127.00 -	133.75	C5	Lappili tuff
133.75 -	149.80	A	Massive sulphide
149.80 -	153.15	C2d	Siliceous argillite
153.15 -	157.80	A	Massive sulphide
157.80 -	170.69	C2a	Argillite

170.69 m End of hole.

Significant intersection

95.15 - 110.04 m 15.89 m Zn 9.38% Pb 0.55% Ag 12.5 g/t

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
0				0 - 18.29 OVERBURDEN chert, diorite boulders, pebbles and gravels.													
5																	
10																	
15																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
15				OVERBURDEN (continues)													
	0																
(18.29)		C2a		18.29 – 29.60 C 2a ARGILLITE													
	9	LOST		black, fine-grained, slightly banded, extensively crushed.													
20				minor calcite networks along cleavage.													
(20.42)		C2a															
	4	LOST															
25																	
(26.52)		C2a															
	11	LOST															
(29.51)				29.60 – 32.50 C 5 LAPPILI TUFF													
30	12		29.60	pale bluish greenish gray, fine-grained matrix with 0.5–10mm													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
30	12				angular to subangular black argillite breccias, partly very pyritic.													
(30.78)	98	C5								30.90 – 31.65 coarse-grained pyrite extensively								
(31.70)	76	C5								disseminate in lappili tuff.								
		C2a	32.50	32.50 – 34.40	C2a ARGILLITE					32.50 – 34.40 numerous 0.5 – 10mm width pyrite								
					black, fine-grained, siliceous, massive.					network cut irregularly, minor reddish brown, coarse-								
(33.22)		C2a								grained sphalerite disseminated with pyrite at 34.40.								
	100		34.40	34.40 – 35.60	C5 LAPPILI TUFF (irregular contact to argillite)					34.40 – 35.60 medium to fine-grained pyrite								
35		C5			bluish pale gray, fine-grained matrix with 0.5 – 30mm very					extensively disseminated or cut irregularly as network								
(35.05)		C5			angular black argillite breccias.					up to 3mm width, minor reddish brown, medium-								
		A	35.60	35.60 – 36.00	A MASSIVE SULPHIDE coarse-grained, massive.					grained sphalerite disseminated with pyrite.								
	97	C5	36.00	36.00 – 37.02	C5 LAPPILI TUFF					36.00 – 37.02 medium to fine-grained pyrite extensively								
					bluish pale gray, fine-grained matrix with 0.5 – 50mm argillite					disseminated or cut irregularly as network up to 10mm wide.								
(36.88)			37.02		breccias.					minor reddish brown, medium-grained sphalerite disseminated								
	100	A		37.02 – 37.90	A MASSIVE SULPHIDE coarse to medium-grained.					through core. a large aggregate of sphalerite at 36.70.								
			37.90	37.90 – 41.82	C2c ARGILLITE with major sandstone bands													
(38.71)		C2c			dark gray to gray, fine-grained, well banded. minor													
			70		qtz. veining and networks.													
			70															
40																		
	100	C2c			40.3 minor slump folding texture													
			40															
(41.76)			41.82	41.82 – 43.70	C1a SANDSTONE													
		C1a			gray, very-coarse to coarse grained, massive. normal													
					grading observed.													
	100		43.70															
			15	43.70 – 45.70	C2b ARGILLITE with minor sandstone bands													
		C2b			dark gray to gray, fine-grained, banded.													
45			40															
(44.81)																		

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
45		C2b		45.70 – 52.50 C2a ARGILLITE													
			(45.70)	black to dark gray, fine-grained, massive to slightly banded.													
	100																
		C2a	40														
(47.85)																	
			40														
	100																
50																	
(50.90)		C2a															
			35														
	100			52.50 – 58.10 C2d SILICEOUS ARGILLITE					52.60 – 57.40 fine-grained pyrite disseminate, cut as irregular veins and networks. minor reddish brown medium-grained sphalerite disseminated at 55.4.								
			25	dark gray, fine-grained, extensively brecciated to 0.5 – 100mm													
				very angular fragments and cemented by fine-grained													
(53.95)		C2d		pyrite veinings and networks. minor qtz. gash veins cut													
				at 30 degrees to core.													
55																	
	100	C2d															
(57.00)			50														
			(58.10)														
	100	A	60	58.10 – 60.35 A MASSIVE SULPHIDE													
				yellowish pale gray, metalic luster, med.grn to coarse-grained,													
				massive. calcite filled dvase at 59.7.													
60																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
60		A	(60.35)	A MASSIVE SULPHIDE (continues) some brecciated texture.					60.35 – 61.10								
(60.05)				60.35 – 66.00 C2d SILICEOUS ARGILLITE					extensive brecciation with pyrite filling and networks.								
	100			black, fine-grained, massive to slightly banded, siliceous.					61.10 – 65.00								
				very minor qtz. veining and networks.					minor pyrite networks and veinings.								
		C2d		60.35 – 61.10 extensively brecciated to 5–100 mm very													
				angular fragments and cemented by fine-grained pyrite													
(63.09)				matrix, networks and veins.													
	100			65.00 – 65.90 extensively brecciated to 5–50 mm very					65.00 – 65.90								
65		C2d		angular fragments and cemented by fine-grained pyrite.					extensive brecciation with pyrite filling and networks.								
				66.00 – 72.11 C2a ARGILLITE														
(66.14)			(66.00)	black, fine-grained, massive to slightly banded.													
	100																
		C2a	25														
(69.19)																	
70																	
	100								71.20 minor reddish brown, fine-grained sphalerite with pyrite								
		C2a							71.70 minor reddish brown, medium-grained sphalerite								
									aggregates disseminated with pyrite and coc as veinlets								
			72.11						with pyrite networks.								
(72.23)				72.11 – 83.20 C5 LAPPILI TUFF													
				pale grey, fine-grained, finely banded with black to dark													
	100	C5	55	grey argillite inlapers.													
			50														
75			70														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% ppm Ag	% Pb	% Zn	COMPOSITE
75	100			C5 LAPPILI TUFF (continues)													
(75.29)				pale gray, fine-grained matrix with argillitic bands and													
			50														
	100	C5	45														
(78.33)																	
	100		40														
80																	
			50														
(81.38)		C5															
			40														
	100	C2a	(82.75)	82.75 – 82.98 thin argillite interlayer.													
		C5	(82.96)														
			(83.20)	83.20 – 97.32 A MASSIVE SULPHIDE					83.20 minor reddish brown sphalerite dissemination.		83.20-85.20	2.00	6251	1.7	0.06	0.06	
			45	yellowish gray, metallic luster, massive.													
		A															
(84.43)																	
85											85.20-87.20	2.00	6252	1.5	0.04	0.02	
	100																
				3-15mm dikes filled by calcite.													
				3mm calcite vein cut at 60 degrees to core.							87.20-89.20	2.00	6253	1.7	0.10	0.06	
(87.48)		A															
	100																
											89.20-91.20	2.00	6254	5.7	0.12	1.10	
90																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS (width)
90	100			A MASSIVE SULPHIDE (continues)													
(90.53)		A															
	100			20 – 50 mm drusy filled by calcite							91.20–92.60	1.40	6255	4.2	0.13	0.88	
			(92.60)	92.60 – 93.10 siltstone argillite and lappili tuff 1 – 5cm					92.60 – 93.10 reddish brown, coarse-grained		92.60–93.10	0.50	6256	15.4	0.28	5.56	
			(93.10)	very angular breccias in pyrite. breccia ca. 80%					sphalerite disseminated with pyrite. sphalerite ca. 5%		93.10–94.15	1.05	6257	4.5	0.10	0.76	
(93.57)		A		93.10 – 94.15 coarse-grained massive pyrite.					estimated grade Zn 3%.								
			(94.15)	94.15 –					94.15 – 97.32 reddish brown, coarse-grained		94.15–95.15	1.00	6258	12.5	0.89	9.83	
95				siltstone lappili tuff and argillite 3 – 50mm irregular, very					sphalerite disseminated and minor galena disseminated								
	100			angular breccias in pyrite. breccia ca. 40%					with pyrite. sphalerite ca. 30%, estimated grade Zn		95.15–96.15	1.00	6259	8.8	0.97	9.30	
		A							8%, Pb 2%.								
											96.15–97.32	1.17	6260	17.8	0.83	17.40	
(96.62)									97.32 – 97.68 width 1 – 4mm pyrite networks with								
		C2d	(97.32)	97.32 – 97.68 C2d SILICEOUS ARGILLITE gray, massive, with pyrite networks					minor sphalerite with pyrite grains. sphalerite ca. 5%.		97.32–97.68	0.36	6261	9.6	0.10	5.06	95.15 (10.0%) (15.89%)
		A	(97.68)	97.68 – 98.26 A MASSIVE SULPHIDE minor tuff breccias mixed					estimated grade Zn 3%.								
	100		(98.26)	98.26 – 99.85 C2d SILICEOUS ARGILLITE					97.68 – 98.26 reddish brown, coarse-grained sphalerite		97.68–98.26	0.58	6262	17.9	0.84	17.30	Ag 12.5
		C2d		gray, massive, with width 1 – 20mm pyrite networks.					disseminated with pyrite. sphalerite ca. 20%, estimated		98.26–99.26	1.00	6263	8.3	0.19	4.85	Pb 0.55
									grade Zn 18%, Pb 1%.		99.26–99.85	0.59	6264	2.9	0.05	0.68	Zn 9.30
(99.87)			(99.85)	99.85 – 100.20 C5 LAPPILI TUFF					98.26 – 99.85 minor sphalerite disseminated with		99.85–100.20	0.35	6265	20.9	2.05	24.70	
100		C5		pale gray, massive with pyrite dissemination.					pyrite networks. sphalerite < 3%.		100.20–101.20	1.00	6266	7.1	0.49	5.19	(Metallic test)
			(100.20)	100.20 – 102.00 A MASSIVE SULPHIDE					99.85 – 100.20 reddish brown 1–3mm grain size								
	100	A		yellowish gray, metalic lustor, massive with minor carbaceous					sphalerite disseminated with minor galena in pyrite rich		101.20–102.00	0.80	6267	9.6	0.60	11.50	
				breccias.					sphalerite ca 15%. estimated grade Zn 10%. Pb 2%.								
		C5	(102.00)	102.00 – 102.86 C5 LAPPILI TUFF					102.00 – 102.86 reddish brown coarse-grained sphalerite		102.00–102.86	0.86	6268	11.5	0.92	9.21	
(102.72)			(102.86)	pale blewish gray, massive to brecciated to 5 – 100 mm					disseminated with pyrite. sphalerite 8%, estimated grade								
				subangular breccias and intruded by pyrite irregular					Zn 5%.		102.86–103.68	0.82	6269	3.7	0.14	0.77	
	100	A		networks.					102.86 – 103.68 very minor sphalerite in pyrite		103.68–104.68	1.00	6270	16.9	0.93	16.80	
				102.86 – 103.68 A MASSIVE SULPHIDE					103.68 – 105.85 reddish brown coarse-grained sphalerite		104.68–105.85	1.17	6271	15.6	0.45	13.90	
105				103.68 – 108.81 C5 LAPPILI TUFF (very pyritic)					disseminated with pyrite. sphalerite 20%, estimated grade Zn 12%								

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE
105	100	C5		C5 LAPPILI TUFF (continues)					105.85 – 106.70 minor sphalerite disseminated with pyrite in matl. sphalerite < 2%.	
(105.77)		C5	(105.85)						106.70 – 110.04 reddish brown, coarse-grained sphalerite disseminate with pyrite in matl. sphalerite 15%, estimated grade Zn 8%.	
	100		(106.70) 40							
		C5								
(108.81)		A	(108.81)	108.81 – 110.20 A MASSIVE SULPHIDE with tuff breccias 3 – 30mm subangular, irregular pale gray tuff breccias in massive pyrite. pyrite 85%, tuff breccia 15%.						
110			(110.04)							
	100	A	(110.20) 55	110.20 – 117.50 A MASSIVE SULPHIDE with argillite breccias 3 – 50mm angular argillite breccias in massive pyrite. pyrite 80%, argillite 20%.						
		A	(111.35)	A MASSIVE SULPHIDE with less argillite breccias 3 – 30mm angular argillite breccias in massive pyrite.						
(111.86)		A								
	100		(112.39)							
		A								
(114.91)										
115			40							
	100	A								
			(117.50)	117.50 – 129.00 A MASSIVE SULPHIDE with argillite breccias 3 – 100mm angular black, siliceous argillite breccias in massive pyrite.						
(117.96)	100	A								
120										

INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
105.85 – 106.70	0.85	6272	5.9	0.12	1.80	
106.70 – 107.70	1.00	6273	11.9	0.41	4.94	
107.70 – 108.70	1.00	6274	26.1	1.37	11.60	
108.70 – 109.70	1.00	6275	18.1	0.70	7.26	
109.70 – 110.04	0.34	6276	12.1	0.44	7.31	
110.04 – 112.04	2.00	6277	2.8	0.07	0.90	
112.04 – 114.04	2.00	6278	2.9	0.08	0.78	
114.04 – 116.04	2.00	6301	2.6	0.06	0.44	
116.04 – 118.04	2.00	6302	2.8	0.07	0.78	
118.04 – 120.04	2.00	6303	3.0	0.08	0.29	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Au ppm	Pb %	Zn %	COMPOSITE ASSAYS
120	100			A MASSIVE SULPHIDE with minor argillite breccias							120.04–122.04	2.00	6304	4.1	0.09	0.69	
(121.61)	100	A									122.04–124.04	2.00	6305	3.1	0.10	0.43	
(124.05)				massive sulphide with minor argillite and tuff breccias.							124.05–125.96	1.91	6390	3.9	0.08	0.70	
125	100	A							125.10 small patch of reddish brown, coarse-grained sphalerite aggregates disseminated in tuff breccias surrounded by massive pyrite.		125.96–126.96	1.00	6350	3.6	0.08	0.19	
											126.96–127.96	1.00	6401	2.4	0.10	0.17	
(127.10)	100	C5	127.68	127.00 – 133.75 C5 LAPPILI TUFF with large amount of sulphides pale gray, fine-grained matrix with subangular to subrounded 2–5mm black argillite breccias, slightly banded. large amount of pyrite and very minor sphalerite disseminated.					127.00 – 131.60 pyrite disseminated and pyrite irregular networks cut through. minor sphalerite disseminated with pyrite. sphalerite <2%, estimated grade Zn 1%.		127.96–128.96	1.00	6402	3.0	0.08	0.33	
											128.96–129.96	1.00	6403	3.1	0.13	0.56	
130											129.96–130.96	1.00	6404	2.8	0.12	0.62	
(130.15)	100	C5	30								130.96–131.95	0.99	6405	2.0	0.07	0.86	
									131.60 – 132.50 reddish brown, coarse-grained sphalerite specs scattered. sphalerite 5%, estimated grade Zn 3%		131.95–132.82	0.87	6391	2.8	0.10	1.34	
											132.82–133.80	0.98	6392	2.1	0.12	0.14	
(133.20)	100	A	133.75 42	133.75 – 149.80 A MASSIVE SULPHIDE yellowish gray, metallic luster, coarse-grained, massive with minor tuffaceous irregular breccias up to 5cm.							133.80–134.40	0.60	6393	10.8	0.32	2.79	
135											134.40–135.13	0.73	6394	26.0	0.80	8.90	134.40–136.40

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
135	100	A		A MASSIVE SULPHIDE (continues)							135.13–136.00	0.87	6395	17.6	0.70	7.13	
(136.25)			50								136.00–138.00	2.00	6396	3.5	0.18	0.89	
	100			5–30mm druse filled by calcite.													
		A									138.00–140.00	2.00	6397	3.8	0.22	1.31	
(139.29)																	
140	100	A									140.00–142.00	2.00	6398	7.9	0.31	3.35	
(142.34)											142.00–144.00	2.00	6399	5.0	0.32	1.45	
	100										144.00–146.00	2.00	6400	8.5	0.81	2.82	
145																	
(145.39)	100	A									146.00–148.00	2.00	6339	5.4	0.33	1.61	
(146.30)	63																
		LOST		slightly sheared													
(148.44)	100	A									148.00–149.80	1.80	6340	14.0	0.58	4.49	
150			(149.80)	149.80 – 153.15 C2d SILICEOUS ARGILLITE with major pyrite													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	ppm	%	%	COMPOSITE ASSAYS
150				C2d SILICEOUS ARGILLITE with major pyrite (continues)					ca. 30% pyrite networks and irregular dissemination		149.80–150.80	1.00	6341	12.7	0.88	5.20	149.80–153.25
	100			pale gray, fine-grained, massive, siliceous argillite with					with very minor reddish brown sphalerite in siliceous								Cu 0.23
		C2d		large amounts of pyrite networks and irregular dissemination					argillite. sphalerite <2%, estimated grade Zn 1%.		150.80–151.80	1.00	6342	13.2	0.67	4.64	Ag 16.6
(151.49)				probably previously referred as C4.													Pb 0.79
											151.80–152.60	0.80	6343	13.4	0.69	4.62	Zn 5.36
	100		(153.15)	153.15 – 157.80 A MASSIVE SULPHIDE													
											152.60–153.85	1.25	6344	28.1	1.15	7.53	
		A	(154.47)	154.47 – 154.54 minor interlayer of C5.													
(154.53)			(154.54)								153.85–154.85	1.00	6345	3.6	0.08	0.64	
155																	
			(155.60)								154.85–155.60	0.75	6346	2.5	0.07	0.89	
		C1a		155.60 – 156.35 minor interlayer of C1a SANDSTONE													
	100	A	(156.35) 30	pale gray, medium-grained, massive with minor qtz. ver-							155.60–156.35	0.75	6347	4.1	0.13	1.30	
				nlets.													
		A									156.35–157.70	1.35	6348	6.0	0.09	0.72	
(157.58)			(157.80) 50														
				157.80 – 170.69 C2a ARGILLITE with minor sandstone band							157.70–159.61	1.91	6349	4.1	0.07	2.99	
				black to dark gray, fine-grained, massive to slightly bedded													
	100	C2a	50	with minor qtz. networks. minor pyrite networks.													
				158.80 – 159.60 very pyritic. pyrite networks and													
				pyrite filled argillite breccias.													
160																	
(160.63)																	
	100	C2a	30														
			(163.45)	163.45 – 164.05 sheared zone filled by qtz. veinlets.													
(163.68)			(164.05)	minor pyrite veins co-exist with qtz. a thick qtz. vein cut bet-													
	100		45	ween 163.45 – 163.68.													
165																	

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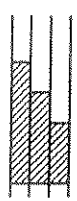
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
165	100	C2a	25	C2a ARGILLITE with minor sandstone bands. (continues)													
(166.73)			40 45														
	100		40														
(169.16)			~~	167.85 – 168.05 sheared zone, dark grey gauge with 3–1cm subangular argillite fragments.													
170	100		15 50														
(170.69)				170.69 E.O.H. DDH 91-56													

TOTAL ENERGOLD CORPORATION
DRILL LOG

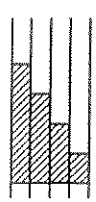
PROJECT: CLEAR LAKE	GROUND ELEV.: 711.53 m
HOLE No.: 91-57	BEARING: 207.25°
LOCATION: 6961155.96 N, 491985.27 E	DIP: -60.9°
	TOTAL LENGTH: 163.37 m
LOGGED BY: Minoru Machida	HORIZONTAL PROJECT: 84.5347
DATE: 15/7 / 1991	VERTICAL PROJECT: -139.7539
CONTRACTOR: KLUANE DRILLING	
CORE SIZE: NQ	
DATE STARTED:	
DATE COMPLETED:	
DIP TESTS (ACID): 207/63.09m : 59° ; 506/154.22m : 57.4°	

ALTERATION SCALE



absent
slight
moderate
intense

TOTAL SULPHIDE SCALE



< 1%
1%—5%
5%—25%
25%—50%
< 50%

DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE: to intersect Massive Sulphide unit A and extend margin of ore block between DDH 83-45 and 83-47.

REASON FOR SHUTTING DOWN: intersection successful, no significant mineralization observed 28m past last Massive Sulphide unit A

PERTINENT GEOLOGY

0 – 9.14 m	OVERBURDEN
9.14 – 9.40 m	C1b SANDSTONE
9.40 – 15.20 m	C2b ARGILLITE
15.20 – 20.80 m	C1b SANDSTONE
20.80 – 25.30 m	C2a ARGILLITE
25.30 – 37.19 m	C2b ARGILLITE
37.19 – 46.50 m	C2b ARGILLITE (TUFFACEOUS)
46.50 – 81.80 m	C2b ARGILLITE
81.80 – 93.15 m	C2a ARGILLITE
93.15 – 106.27 m	C2b ARGILLITE
106.27 – 112.88 m	C5 LAPILLI TUFF
112.88 – 134.75 m	A MASSIVE SULPHIDE
134.75 – 163.37 m	C2b ARGILLITE
	(E.O.H)

	PLAN PLOT			LONGITUDINAL PLOT / SECTION PLOT				
LENGTH	AZIMUTH	DIP	HORZ	ELEV	DIST FROM BL	SECTION	SEC OFFSET	DESCRIPTION
0.00	207.25	-60.90	0.00	711.53	35.36 W	1.0 E	2.11 E	COLLAR
31.55	207.25	-59.00	15.34	683.97	20.02 N	1.0 E	1.91 E	DIP CHANGE
108.66	207.25	-57.40	55.06	617.87	19.70 E	1.0 E	1.39 E	DIP CHANGE
163.37	0.00	0.00	84.53	571.78	49.17 E	1.0 E	1.00 E	END OF HOLE

PAGE 1 OF 11 | PROJECT CLEAR LAKE | HOLE No. 91-57

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION
0				0 – 9.14 m OVERBURDEN
5.0				
		C1b	/45	9.14 – 9.40 m C1b SANDSTONE Gray to light gray, fine to medium grain sand stone laminated @ 45° to CA
10.0				9.40 – 15.20 m C2b ARGILLITE
	84	C2b	/45	Gray to dark gray, fine grain argillite containing sand bands (0.5mm – 2.0mm wide)
				11.50 – 12.20 m Crushed Zone
	100	C2b	/50	crushed argillite with qtz injection (max 1cm wide)
15.0				

ALTERATION: Si. A | Ca. B | Arg. C | FRACT INTENSITY

MINERALIZATION DESCRIPTION | TOTAL SULPHIDE | INTERVAL | WIDTH | ASSAY NUMBER | % | % | % | COMPOSITE ASSAYS

PAGE 2 OF 11 | PROJECT CLEAR LAKE | HOLE No. 91-57

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
15.0				15.20 – 20.80m C1b SANDSTONE Gray – light gray, fine to medium grain, sandstone containing thin argillite bands (0.5mm to 5.0mm wide)													
	85	C1b		15.60 – 16.30m chaotic qtz veins (max 6cm wide) predominantly.													
				17.00 – 23.87 crushed zone crushed argillite (avg. 2cm x 3cm crushed) with sid – qtz stringers													
20.0		C1b C2a															
	30			20.80 – 25.30m C2a ARGILLITE Dark gray to black, fine grain argillite with calcite stringers (0.5mm to 1mm wide)													
	160	C2a															
25.0																	
	100			25.30 – 37.19m C2b ARGILLITE Dark gray – black, fine grain argillite with thin sand bands (0.5mm to 2.0mm wide), locally interbeds sandstone band (20cm wide).													
	100	C2b		26.20 – 27.10m } sheared weakly with 28.30 – 29.40m } sid – qtz stringer													
30.0			60														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
30.0				30.40 – 30.70 m sid – qtz vein (max 2cm wide) @ 20° to 30° to C.A.													
	82	C2b		31.00 – 37.19 m Sheared Zone sheared, brecciated argillite with black gouge, sid – qtz stockwork predominantly.													
	82	C2b															
35.0																	
	98	C2b															
		C2b	50														
				37.19 – 46.50 m C2b ARGILLITE (TUFFACEOUS) Black to greenish dark gray, fine grain argillite containing tuffaceous bands (2mm to 3cm wide)													
	100																
40.0			25														
		C2b		40.00 – 41.00 m Sheared Zone sheared argillite with sid – qtz injection													
			10														
				43.00 – 46.00 m Sheared Zone sheared with sid – qtz injection													
	100		55														
45.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	Ca. B	Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
45.0		C2b	45						46.00 – 46.50 m tuffaceous sections contain disseminated pyrite								
				46.50 – 81.90 m C2b Argillite Black to dark gray, fine grain argillite containing sand bands (max 1cm wide) and laminae													
		C2b	50														
			45	47.50 – 49.07 m Sheared Zone sheared argillite with local black gouge with sid – qtz stockwork.													
50.0																	
	100	C2b	45														
				52.20 – 52.30 m sid-qtz vein													
			50														
55.0																	
			50														
		C2b	45	57.00 – 59.00 m sid-qtz fine stockwork													
60.0			50														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca. B	ALTERATION Anh. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
60.0				C2b ARGILLITE (cont'd)													
			50														
		C2b															
			50														
			45	63.80 – 73.50 m chaotic qtz + calcite													
65.0				stringers predominantly with sid – py													
				stock work.													
			10 to 20														
	100	C2b		66.14 – 69.00 m Sheared Zone													
70.0																	
		C2b															
75.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Co. B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
75.0																	
		C2b															
80.0																	
	100	C2a		81.80 – 93.15 m C2a ARGILLITE Black, fine grain, massive argillite with weak argillaceous 81.80 – 82.00 82.85 – 83.10 } strong argillaceous @ 45° 86.20 – 86.40 } to 50° to C.A. 81.00 – 89.60 sid-qtz stockwork (2mm – 7mm wide)					Predominantly / 82.05 – 106.27 m Pyrite stockwork and fine grain sphalerite + galena bonds 82.05 – 90.00 m section contains 20 to 30% Pyrite. 85.45 – 96.90 m section contains 1 to 3% sphalerite with local section (85.45 – 85.65 m) containing 10% sphalerite. Pyrite stockworks cut fine grain sphalerite + galena bonds →							
85.0											85.45–86.45	1.00	6155	9.4	0.33	0.73	
		C2a									86.45–87.45	1.00	6156	0.5	0.02	1.03	
											87.45–88.45	1.00	6157	0.2	0.02	0.05	
											88.45–87.45	1.00	6158	0.4	0.02	1.46	
90.0											89.45–90.45	1.00	6159	0.9	0.03	0.35	



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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (Si)	ALTERATION B (Ca)	ALTERATION C (Arg)	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Au ppm	Pb %	Zn %	COMPOSITE ASSAYS
90.0		C2a							90.00 – 93.15m section contains 50% Pyrite		90.45-91.45	1.00	6160	2.8	0.06	0.07	
									■ : Argillite □ : Pyrite		91.45-92.45	1.00	6161	2.9	0.75	0.89	
											92.45-93.45	1.00	6162	0.6	0.08	0.84	
		C2b		93.15 – 106.27m C2b ARGILLITE Black to gray, fine argillite with local fine sand laminaes							93.45-94.45	1.00	6163	<0.1	0.03	0.20	
											94.45-95.45	1.00	6164	<0.1	0.02	0.14	
95.0																	
				93.15 – 93.25m sid – qtz vein @ 50° to C.A.							95.45 – 96.90	1.45	6165	<0.1	0.02	0.17	
	100	C2b		93.15 – 106.27 predominantly chaotic qtz stringers					brecciated zone fragments : argillite matrix : pyrite, sphalerite galena, qtz								
100.0			50														
		C2b							100.40 – 100.80m section contains 10% sphalerite as sphalerite vein								
			30														
105.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
105.0		C2b							105.95 – 106.05m section contains 12% sphalerite								
				106.27-112.88m C5 LAPILLI TUFF													
			/50	Light gray to pale green lapilli tuff with local ash tuff.					107.08 – 107.00m section contains 5% sphalerite + galena		107.08-108.08	1.00	6166	25.4	2.91	0.17	
				fragment : tuff, argillite, pumice													
				matrix : ash tuff													
		C5	/60	containing locally sphalerite, galena							108.08-107.00	0.92	6167	22.3	1.74	6.79	
110.0																	
									110.85 – 110.90m section contains 30% sphalerite		109.00-111.00	2.00	6168	2.4	0.06	0.67	
			/45								111.00-112.88	1.88	6169	13.5	2.54	0.44	
	100								112.88 – 113.48m sections contains 5% sphalerite								
			/40°								112.88-113.48	0.60	6170	6.5	0.09	5.49	
				112.88-134.75m A MASSIVE SULPHIDE													
				Predominantly fine grain, botryoidal pyrite							113.48-115.48	2.00	6171	0.4	0.04	0.17	
115.0				112.88 – 117.10m section contains fragments of argillite (looks like Abx)							115.48-117.48	2.00	6172	1.3	0.07	0.57	
		A															
				117.10 – 121.30m section contains locally calcite vug filling							117.48-119.48	2.00	6173	2.6	0.07	0.22	
120.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
120.0									117.10 – 134.75 m fine grain to medium grain pyrite with local botryoidal pyrite section contains <1% sphalerite + galena								
		A		122.20 m qtz vein (3cm wide) 80° to C.A													
				122.70 m qtz vein (7mm wide) 60° to C.A													
				123.50 m qtz vein (1cm wide) 50° to C.A													
125.0																	
	100	A															
				129.70 – 130.45 m section contains fragments of argillite and sandstone													
130.0																	
		A		131.40 m qtz + calcite vein (5cm wide) 60° to C.A.													
				133.10 – 133.30 m section contains siliceous argillite													
				134.37 m qtz vein (1cm wide) 80° to C.A.													
				134.50 m qtz vein (0.5cm wide) 80° to C.A													
				134.50 – 134.75 m section contains siliceous argillite													
135.0		C2b	85°	134.75 – 163.37 C2b ARGILLITE													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
135.0		C2b	45 / 45	Black, fine grain argillite containing sandstone bands (1mm - 1.5cm wide) and laminaes 134.75 - 142.00 m chaotic qtz stringers 50° to 70° to C.A.													
140.0	100	C2b	45 / 20														
145.0		C2b	50 / 50	146.10 - 146.65 m Sheared Zone sheared argillite with irregular qtz vein and local black gouge													
150.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
150.0				C2b ARGILLITE (cont'd)													
		C2b	40														
			30														
155.0																	
	100	C2b	20														
			10														
			60	157.10 – 163.37 m predominantly qtz stockwork 10° to 60° to C.A.													
			45														
160.0				160.00 – 160.42 m Sheared Zone with black gouge													
		C2b	45														
				162.35 – 163.37 m Sheared Zone sheared argillite with black gouge and irregular qtz veins													
163.37																	
E.O.H																	

TOTAL ENERGOLD CORPORATION
DRILL LOG

PROJECT: CLEAR LAKE	GROUND ELEV.: 715.75 m
HOLE No.: 91-58	BEARING: 268.75°
LOCATION: 6961269.65 N, 491898.14 E	DIP: -60.41°
	TOTAL LENGTH: 195.68 m
LOGGED BY: MINORU MACHIDA	HORIZONTAL PROJECT: 98.04989
DATE: 18/7/1991	VERTICAL PROJECT: -169.2988
CONTRACTOR: KLUANE DRILLING	ALTERATION SCALE: absent / slight / moderate / intense
CORE SIZE: 14.32 – 52.12 m : NQ; 52.12 – 195.68 m : BQ	
DATE STARTED	
DATE COMPLETED	TOTAL SULPHIDE SCALE: < 1% / 1%—5% / 5%—25% / 25%—50% / < 50%
DIP TESTS (ACID): 200'/60.96m : 61.4°; 400'/121.92m : 59.0°; 592'/180.97m : 58.8°	

DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE: to intersect Massive Sulphide unit A and extend margin of ore block between DDH 91-58 and 83-47.

REASON FOR SHUTTING DOWN: intersection successful. no significant mineralization observed 12.7 m past last Massive Sulphide unit A.

PERTINENT GEOLOGY

0.00 – 14.32 m	OVERBURDEN	61.60 – 72.14 m	C2d ARGILLITE	102.82 – 104.00 m	C2a ARGILLITE
14.32 – 14.92 m	C2b ARGILLITE	72.14 – 79.93 m	A MASSIVE SULPHIDE	104.00 – 105.80 m	KTf FELSITE
14.92 – 16.20 m	C5 ASH TUFF	79.93 – 88.43 m	C2b ARGILLITE	105.80 – 116.85 m	C2a ARGILLITE
16.20 – 19.54 m	C2b ARGILLITE	88.43 – 89.25 m	C2a ARGILLITE	116.85 – 125.62 m	C5 ASH TUFF-LAPI
19.54 – 21.92 m	C5 ASH TUFF	89.25 – 92.90 m	C2b ARGILLITE	125.62 – 127.20 m	C2a ARGILLITE
21.92 – 33.83 m	C2b ARGILLITE	92.90 – 95.00 m	A MASSIVE SULPHIDE	127.20 – 130.45 m	KTf FELSITE
33.83 – 39.21 m	C5 LAPILLI TUFF	95.00 – 96.62 m	C2a ARGILLITE	130.45 – 131.50 m	C2a ARGILLITE
39.21 – 41.76 m	C2a ARGILLITE	96.62 – 97.65 m	C1b SANDSTONE	131.50 – 132.00 m	KTf FELSITE
41.76 – 56.70 m	C2d ARGILLITE	97.65 – 99.44 m	C2b ARGILLITE	132.00 – 134.55 m	C5 LAPILLI TUFF
56.70 – 61.60 m	C1b SANDSTONE	99.44 – 102.02 m	A MASSIVE SULPHIDE	134.55 – 138.23 m	C2a BRECCIATED ARG
				138.23 – 141.60 m	C2b ARGILLITE
				141.60 – 170.97 m	A MASSIVE SULPHIDE
				170.97 – 175.17 m	KTf FELSITE
				175.17 – 177.50 m	A MASSIVE SULPHIDE
				177.50 – 182.94 m	C2d SILICIFIED ARG
				182.94 – 187.10 m	C2a ARGILLITE
				187.10 – 191.21 m	A MASSIVE SULPHIDE
				191.21 – 195.60 m	C2d ARGILLITE
				195.60 – 195.68 m	C2a ARGILLITE

LONGITUDINAL PLOT: PLAN PLOT | SECTION PLOT

LENGTH	AZIMUTH	DIP	HORZ	ELEV	DIST FROM BL	SECTION	SEC OFFSET	DESCRIPTION
0.00	268.75	-60.41	0.00	715.75	181.86 W	270N ~~93.0 W~~	0.35 S	COLLAR
30.48	268.75	-61.40	15.05	689.25	116.91 W	~~93.0 W~~	0.68 S	DIP CHANGE
91.44	268.75	-59.00	44.23	635.72	146.08 W	~~93.0 W~~	1.31 S	DIP CHANGE
151.95	268.75	-58.80	75.39	583.86	177.24 W	~~93.0 W~~	1.99 S	DIP CHANGE
195.68	0.00	0.00	98.05	546.65	199.89 W	~~93.0 W~~	2.49 S	END OF HOLE

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	Ca. B	Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
0				0.00 – 14.32m OVERBURDEN													
5.0																	
10.0																	
15.0	80	C2b		14.32–14.92m C2b ARGILLITE Black, fine grain argillite containing silt or tuffaceous laminae, with limonite stockwork.													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
15.0																	
	66	C5	80-90	14.92-16.20m C5 ASH TUFF Light gray to pale green, predominantly fine grain ash tuff containing silt or argillite bands, laminae, with local gypsum vein (1mm to 2mm wide)													
		C2b															
	100	C2b	80	16.20-19.54m C2b ARGILLITE Black, fine grain argillite containing silt or tuff bands (2mm to 1cm wide), laminae with sid-qtz stockwork.													
20.0			90														
		C5	85	19.54-21.92m C5 ASH TUFF Light gray to pale green, predominantly fine grain ash tuff containing argillite thin layers, with local sid-qtz veins and gypsum veins. Locally observed micro-folding structure.					: tuff : Argillite : qtz+sid : gypsum sid-qtz veins cut micro-folding structure, after that gypsum veins cut sid-qtz veins and micro-folding structure								
	59	C2b															
		C2b															
	3			21.92-33.83m C2b ARGILLITE Dark gray to black, fine argillite containing silt to tuff laminae, with local gypsum vein. weakly argillaceous													
25.0																	
		C2b															
	7																
30.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Co. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
30.0	0	C5b															
	5																
				33.83–39.21m C5 LAPILLI TUFF Gray to pale green with local pinkish, predominantly ash tuff and argillite, with local fragment of argillite Strongly argillaceous 34.40 – 35.40m section contains gypsum veins (2–3 mm wide) @ 60° to 80° to C.A., and a few argillite fragments containing sphalerite.												
35.0		C5	60°														
	62																
		C5															
		C2a		39.21 – 41.76m C2a ARGILLITE Black, fine grain carbonaceous argillite sheared strongly.													
40.0	38																
		C2d		41.76–56.70m C2d ARGILLITE Black, siliceous fine grain argillite													
	14																
45.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
45.0																	
	0																
				46.00 - 46.20 m section contains qtz vein (? wide) and sheared													
	3																
50.0	0																
	0																
				52.72 - 52.98 m section contains calcite vein (15cm wide) @ 70° to C.A.													
	82	C2d															
55.0		C2d							56.70 - 61.60 m section contains laminae like pyrite bands and stock-work pyrite (15 - 20%)								
				56.70 - 61.60 m C1b SANDSTONE													
	100			Dark gray to gray, medium to fine grain sandstone with slightly silt to argillite													
		C1b		laminae													
				59.00 - 59.90 m Section contains sil-qtz veins (3 to 7mm wide) @ 0° to C.A.													
60.0									60.10 - 60.15 m brown sphalerite								

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca. B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE
60.0		C1b	60						61.60 – 72.14m Section contains 15 to 30% py lamination like pyrite, pyrite stockwork								
		C2d	50	61.60 – 72.14m C2d ARGILLITE (SILICIFIED) Black to dary gray, hard, fine grain silicified argillite with fine grain laminae and convolute lamination					62.93 – 64.00 section contains 1% sphalerite (lamination like, patch like)		61.60 – 62.93	1.33	6406	1.7	0.04	0.02	
									64.00 – 66.35 section contains 1% sphalerite		62.93 – 64.00	1.07	6407	2.8	0.09	0.49	
									66.35 – 68.30 section contains 8% sphalerite (5%Zn)								
									68.30 – 68.80 section contains 1% sphalerite								
				63.00 – 63.40m section contains qtz veins (5–10mm wide) @ 40° to C.A.					68.80 – 69.19 section contains 10% sphalerite (6%Zn)		64.00 – 65.00	1.00	6408	1.8	0.02	0.76	
68.0																	
				64.40 – 64.70m section contains qtz vein (15cm wide) @ 45° to C.A. with argillite fragments							64.00 – 66.35	1.35	6409	1.5	0.01	0.35	
	100	C2d	50						▭ : Silicified Argillite ▭ : fng Sphalerite ▭ : Pyrite		66.35 – 67.35	1.00	6410	1.9	0.03	1.67	
											67.35 – 68.30	0.95	6411	3.3	0.01	>.68	
									Arrangement of fine grain sphalerite concordant with the convolute lamination, stockwork pyrite cut them		68.30 – 68.80	0.50	6412	3.2	0.01	1.97	
											68.80 – 69.19	0.39	6413	1.6	0.02	1.61	
70.0											69.19 – 71.19	2.00	6414	0.7	0.04	0.08	
		C2d	45														
				72.14 – 79.93m A MASSIVE SULPHIDE fine to medium grain massive pyrite containing siliceous argillite fragments as relict, with calcite veg filling					73.24 – 73.36m contains 5% sphalerite		71.19 – 73.24	2.05	6415	1.3	0.13	0.32	
		A									73.24 – 74.24	1.00	6416	2.4	0.21	1.10	
									77.74 – 78.90m contains 5% sphalerite		74.24 – 75.24	1.00	6417	5.2	0.36	2.38	
75.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE
75.0											75.24-76.24	1.00	6418	11.5	0.14	1.71	
											76.24-77.74	1.50	6419	4.3	0.16	1.75	
		A									77.74-78.90	1.16	6420	3.9	0.39	2.11	
											78.90-79.93	1.03	6421	2.5	0.14	0.30	
80.0																	
				79.93-88.43 m C2b ARGILLITE					79.93-88.43 m predominantly stockwork								
				Black, fine grain argillite containing					pyrite								
			10	silt or fine grain sand laminae													
			5-10°	79.93-82.00 m contains sid-qtz vein					86.60-87.23 m contains 3-4% sphalerite								
	100			(2mm to 1cm wide) @ 10° to 70° to C.A.													
		C2b	10														
				85.55-86.80 m contains sid-qtz irregular													
				Veins													
85.0																	
			80														
				C2a ARGILLITE (BRECCIATED)					88.43-89.25 m section contains 40%								
				Gray to black, brecciated argillite silicified					pyrite as matrix with 10% sphalerite								
		C2a	88.43-89.25 m	fragment: massive argillite, fng. sandstone					(6% Zn)								
				matrix: pyrite, qtz, sphalerite													
90.0		C2b	10														

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DEPTH METERS	% Core Recy.	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Au ppm	Pb %	Zn %	COMPOSITE
90.0			20 / 90	89.25 – 92.90m C2b ARGILLITE													
		C2b		Black, fine grain argillite containing silt or fine grain sand laminae with micr folding structure.													
				91.70 – 91.90m sid-qtz stockwork													
				92.90 – 95.00m A MASSIVE SULPHIDE													
		A		Fine grain massive pyrite 98%					93.87 – 94.68m section contains 2% sphalerite								
95.0				locally qtz vug filling													
		C2a		95.00 – 96.62m C2a ARGILLITE													
				Black to dark gray argillite containing													
				5% pyrite, with sid-qtz irregular veins													
				Strongly crushed													
	100	C1b		96.62 – 97.65m C1b SANDSTONE													
			60	Dark gray to dark green, medium grain,													
		C2b		wacke sandstone with sid-qtz stockwork.													
				97.65 – 99.44m C2b ARGILLITE													
100.0				Black, fine grain argillite with sid-qtz stockwork					99.44 – 102.02m section contains 1-2% sphalerite		99.44 – 100.07	0.63	6422	18.8	1.31	6.89	2.58
				99.44 – 102.02m A MASSIVE SULPHIDE					(99.44 – 100.07m contains 12% sphalerite)								Ag 2
		A		Fine grain massive pyrite (97%) containing							100.07 – 101.07	1.00	6423	5.4	0.50	2.67	Pb 0
				sphalerite and galena													Zn 4
				100.60m qtz vug filling							101.07 – 102.02	0.95	6424	4.4	0.92	4.37	
				102.02 – 104.00m C2a ARGILLITE					102.02 – 104.00m contains 15% pyrite		102.02 – 103.00	0.98	6425	<0.1	0.06	1.25	
		C2a		Black to gray, brecciated, fine grain					patch and pyrite stockwork with 7%								
				argillite with qtz stockwork as matrix					sphalerite		103.00 – 104.00	1.00	6426	<0.1	0.07	0.46	
				104.00 – 105.80m KTf FELSITE													
105.0		KTf		Pale green to white, fine to medium grain													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE
105.0		KTf		felsite with argillization and chloritization with a little sphene and pyrite film. hard to find feldspar phenos					105.80 – 114.75 m laminae like pyrite – pyrite stockwork 1-5%								
		C2a		105.80 – 116.85 m C2a ARGILLITE Black, fine grain massive argillite containing few sand and silt laminae 105.80 – 108.81 Sheared Zone argillite crushed into 1cm to 5cm fragments with black gouge													
110.0		C2a		110.0 – 116.85 m predominantly fine grained stockwork 113.00 – 113.40 m Sheared Zone													
115.0		C2a							114.75 – 116.85 m 30% pyrite stockwork		114.75-115.75	1.00	6427	<0.1	0.04	0.38	
									115.00 – 115.10 m 10% sphalerite								
									116.15 – 116.45 m 5% sphalerite		115.75-116.75	1.00	6428	<0.1	0.07	0.57	
		C5		116.85 – 125.65 m C5 ASH TUFF – LAPILLI TUFF Dark green, pale green to light gray, medium to coarse grain tuff fragment: argillite, pumic, tuff (ϕ 1mm to 30mm)													
120.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Amp C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE
120.0	100	C5	80	C5 ASH TUFF - LAPILLI TUFF (cont'd)													
									122.30 - 125.35m 10% pyrite stockwork or disseminated pyrite		122.30-123.30	1.00	6429	4.7	0.35	0.09	
	90		85	118.00 - 121.00m moderately argillization and chloritization					123.30 - 124.48m 15% sphalerite		123.30-124.48	1.18	6430	3.3	0.11	0.32	
		C5							124.48 - 124.89m 9% sphalerite		124.48-124.89	0.41	6431	11.9	0.65	3.74	
125.0																	
		C2a	80	128.65-127.20m C2a ARGILLITE Black fine grain massive argillite with slight silicification							124.89-125.35	0.46	6432	4.8	0.33	0.18	
	100	KTf	85	127.20 - 130.48m KTf FELSITE pale green to white, fine to medium grain felsite with pf3 stockwork with weak argillization and chloritization hard to find feldspar phenocryst													
130.0																	
		C2a		130.48 - 131.50m C2a ARGILLITE Black fine grain massive argillite with slight silicification													
		KTf															
		C5	70	131.50 - 132.00m KTf FELSITE 132.00 - 134.55m C5 LAPILLI TUFF Gray to pale green, medium to coarse lapilli tuff, fragment: argillite, pumice 133.90 - 134.45m interstitial areas filled with calcite					132.00 - 134.55m <1% disseminated fine pyrite 132.00 - 132.15m 15% sphalerite 133.67 - 133.69m sphalerite band (1cm wide)								
135.0		C2a		134.55-138.23m C2a BRECCIATED ARGILLITE							134.55-136.55	2.00	6433	0.8	0.01	0.11	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	Ca. B	Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	~~%~~ ppm	%	%	COMPOSITE
135.0		C2a		Gray to light gray, brecciated massive argillite with strong silicification fragment: massive argillite, pyrite (φ 2mm to 5cm)					134.55 – 138.23 m fragments of argillite and pyrite contain sphalerite. Section contains 15% pyrite, 1% sphalerite		136.55-138.23	1.68	6434	1.7	0.05	0.37	
		C2b		138.23 – 141.60 m C2b ARGILLITE. Dark gray to black, fine grain argillite with silt or fine grain sand laminae, containing laminae like pyrite and pyrite stockwork. Slightly silicified					138.23 – 141.60 m 20% laminae like pyrite or pyrite stockwork, no sphalerite								
140.0	100	A	>50	141.60 – 170.77 m A MASSIVE SULPHIDE. Fine grain massive pyrite 95% > containing fragments of argillite. Locally interstitial areas filled with calcite					141.60 – 142.87 m Sp+Ga = 6~7% (Zn+Pb = 4%)		141.60-142.87	1.27	6435	4.9	0.18	1.05	
									142.87 – 143.55 m Sp+Ga = 25% (Zn+Pb = 15%)		142.87-143.55	0.68	6436	9.4	0.71	7.89	
									143.55 – 143.87 m Sp+Ga = 4~5% (Zn+Pb = 3%)		143.55-143.87	0.32	6437	4.4	0.27	1.12	142.87 – 14[illegible] (4.70[illegible]
145.0		A							143.87 – 145.62 m Sp+Ga = 12% (Zn+Pb = 7%)		143.87-145.62	1.75	6438	11.6	0.99	5.87	Ag 13[illegible]
									145.62 – 146.80 m Sp+Ga = 9% (Zn+Pb = 5%)		145.62-146.80	1.18	6439	16.1	1.70	6.34	Pb 1.2[illegible] Zn 6.1[illegible]
									146.80 – 147.57 m Sp+Ga = 12% (Zn+Pb = 7%)		146.80-147.57	0.77	6440	18.8	1.76	6.89	
									147.57 – 149.38 m Sp+Ga = 4~5% (Zn+Pb = 3%)		147.57-148.57	1.00	6441	7.1	0.61	2.26	
											148.57-149.38	0.81	6442	6.4	0.75	2.68	
150.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
150.0				A MASSIVE SULPHIDE (cont'd)					149.38 - 151.91m Sp+Ga=2% (Zn+Pb=1%)		149.38-150.38	1.00	6443	12.4	0.84	2.94	
	100	A									150.38-151.91	1.53	6444	9.4	0.55	1.88	
									151.91 - 152.40m Sp+Ga=8-9% (Zn+Pb=5%)		151.91-152.40	0.49	6445	20.2	1.73	4.88	
	67																
											152.40-154.40	2.00	6446	9.9	0.59	1.60	
	100	A															
											154.40-156.40	2.00	6447	6.6	0.45	1.92	
	89																
155.0																	
	100								152.40 - 156.90m Sp+Ga=1% (Zn+Pb<1%)		156.90-156.90	0.50	6448	7.1	0.32	2.59	
		A															
	90										156.90-158.30	1.40	6449	6.0	0.65	3.14	
									156.90 - 158.30m Sp+Ga=2% (Zn+Pb=1%)								
									158.30 - 159.32m Sp+Ga=8-9% (Zn+Pb=5%)		158.30-159.32	1.02	6450	9.6	0.83	4.91	
160.0																	
	100	A							159.32 - 161.16m Sp+Ga=5% (Zn+Pb=3%)		159.32-160.32	1.00	6174	6.9	0.56	4.28	
											160.32-161.16	0.84	6175	5.1	0.71	3.53	
									161.16 - 163.26m Sp+Ga=12% (Zn+Pb=10%)		161.16-162.16	1.00	6176	8.4	0.57	5.09	
											162.16-163.26	1.10	6179	13.4	0.93	5.86	161.16 - 164.90 (5.57m)
									163.26 - 164.90m Sp+Ga=8-9% (Zn+Pb=5%)		163.26-164.26	1.00	6178	11.7	0.73	4.33	Ag 8.8
											164.26-164.90	0.64	6179	9.3	1.05	5.18	Pb 0.93
165.0																	Zn 4.90

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
165.0				A MASSIVE SULPHIDE (cont'd)					164.90-165.52m Sp+Ga=2% (Zn+Pb=1%)		164.90-165.52	0.62	6180	2.3	0.56	2.00	
	100	A							165.52-166.73m Sp+Ga=8-9% (Zn+Pb=5%)		165.52-166.73	1.21	6181	6.9	1.17	5.66	
									166.73-167.03m Sp+Ga=1% (Zn+Pb<1%)		166.73-167.03	0.30	6182	1.0	0.41	1.80	
											167.03-168.53	1.50	6183	7.3	0.32	2.09	
											168.53-170.20	1.67	6184	6.6	0.81	5.05	
170.0									167.03-170.20m Sp+Ga=3-4% (Zn+Pb=2%)								
	91	KTf	45°	170.77-178.17m KTf FELSITE							170.20-170.77	0.57	6185	<0.1	0.06	0.45	
				white to light gray, medium felsite													
		KTf		with argilloceous feldspar phenocryst													
				Section contains fine grain disseminated													
				pyrite													
				felsite cut massive sulphide with 45°													
				to C.A													
175.0																	
	100	A		175.17-177.50m A MASSIVE SULPHIDE					175.17-177.50m no sphalerite, galena								
				Fine grain massive pyrite 95%													
				177.50-182.94m Cad SILICIFIED ARGILLITE					177.50-182.94 30 to 40% pyrite stockwork								
		Cad		Gray to dark gray, fine silicified argillite													
				very hard.													
				Section contains carbonaceous laminae													
				interstitial areas filled with calcite													
180.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
180.0		C2d															
				182.94 - 187.10m C2a ARGILLITE Black, fine grain, massive argillite containing laminae like pyrite and pyrite stockwork					183.60 - 183.70m Pyrite band (80%)								
185.0		C2a							184.50 - 186.80m 70% pyrite stockwork								
	100		50	184.50 - 186.80m Brecciated Argillite matrix: stockwork pyrite + qtz, calcite 186.80 - 187.10m section very strongly silicified													
		A		187.10 - 191.21m A MASSIVE SULPHIDE Fine grain, massive pyrite containing fragments of black, massive argillite													
190.0																	
		C2d		191.21 - 195.00m C2d ARGILLITE (SILICIFIED) Gray to dark gray, fine grain, silicified argillite predominantly qtz stockwork					191.21 - 195.00m section contains 20% pyrite band (3mm to 1cm wide)								
195.0																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Co. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
195.0	100	C2a		195.00 – 195.68 C2a ARGILLITE					195.00 – 198.68 m contains 10% pyrite								
198.68		E.O.H		Black fine grain massive argillite with qtz vein and pyrite band ~ pyrite patch													

TOTAL ENERGOLD CORPORATION
DRILL LOG

PROJECT: CLEAR LAKE	GROUND ELEV.: 712.06 m
HOLE No.: 91-59	BEARING (collar): 269.35°
LOCATION: 61270.65 N, 91986.96 E	DIP: -60.5°
	TOTAL LENGTH: 261.21 m.
LOGGED BY: R. ZURAN	HORIZONTAL PROJECT: 135.7972
DATE: 23/7/91	VERTICAL PROJECT: -223.0593
CONTRACTOR: KLUANE DRILLING	ALTERATION SCALE: absent, slight, moderate, intense
CORE SIZE: NQ	
DATE STARTED: 4:00am, July 17th, 1991	
DATE COMPLETED: 6:40 pm, July 20th, 1991	TOTAL SULPHIDE SCALE: < 1%, 1%—5%, 5%—25%, 25%—50%, < 50%
DIP TESTS (ACID): 200'; 60.96m -60.0°; 400'; 121.92m -58.8°; 607'; 185.01m -57.7°; 807'; 245.97m -56.8°	

DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE: to intersect target: MASSIVE SULPHIDE UNIT "A" and extend ore block towards the south between holes 81-31 (to the south), 91-52 (to the north), 79-19 (above) and 83-47 (below) the piercing point.

REASON FOR SHUTTING DOWN: intersection successful; no significant mineralization noted 20m past footwall of pyrite horizon (unit "A").

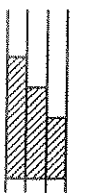
PERTINENT GEOLOGY:

0-9.75m Overburden
9.75-60.00 C2c Argillite (many sand bands)
60.00-65.50 C2b Argillite (minor sand bands)
65.50-68.37 C3 Breccia, Conglomerate
68.37-75.50 C2b Argillite (minor sand bands)
75.50-94.00 C2c Argillite (many sand bands)
94.00-96.54 C2a Argillite (massive, carbonaceous)
96.54-97.60 C1b Sandstone (laminated)
97.60-102.16 C2b Argillite (minor sand bands)
102.16-116.00 C2a Argillite (massive, carbonaceous)
116.00-120.10 C5 Lapilli Tuff
120.10-121.53 A Massive Sulphide
121.53-128.39 C2d Argillite (silicified argillite or chert)
128.39-128.60 A Massive Sulphide
128.60-130.30 C2d Argillite (silicified argillite or chert)
130.30-133.92 C2b Argillite + ash
133.92-140.00 A Massive Sulphide
140.00-144.90 C2d Argillite (chert?)
144.90m-160.97 A Massive Sulphide
160.97-168.40 C2d Argillite
168.40-169.00 A Massive Sulphide
169.00-175.40 C2d Argillite (chert?)
175.40-193.00 C2c Argillite (many sand bands)
193.00-202.14 C2a Argillite (massive, carbonaceous)
CONTINUED ON NEXT PAGE

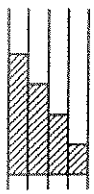
LENGTH	AZIMUTH (PLAN PLOT)	DIP (PLAN PLOT)	HORZ	ELEV (LONGITUDINAL PLOT)	DIST FROM BL (LONGITUDINAL PLOT)	SECTION (SECTION PLOT)	SEC OFFSET (SECTION PLOT)	DESCRIPTION
0.00	269.35	-60.50	0.00	712.06	13.04 W	~~93.0~~ N	0.65 N	COLLAR
30.48	269.35	-60.00	15.01	685.53	28.05 W	~~93.0~~ N	0.48 N	DIP CHANGE
91.44	269.35	-58.80	45.49	632.74	58.53 W	~~93.0~~ N	0.13 N	DIP CHANGE
114.26	269.35	-58.80	57.31	613.22	70.35 W	~~93.0~~ N	0.00 N	CL-SECTION
193.87	269.35	-57.70	77.62	579.68	90.65 W	93.0 N	0.23 S	DIP CHANGE
215.49	269.35	-56.80	110.76	527.26	123.80 W	93.0 N	0.61 S	DIP CHANGE
261.21	0.00	0.00	135.80	489.00	148.83 W	93.0 N	0.89 S	END OF HOLE

TOTAL ENERGOLD CORPORATION
DRILL LOG

PROJECT	GROUND ELEV.	DRILL CALCULATIONS/HOLE SUMMARY
HOLE No. 91-59	BEARING	
LOCATION	DIP	
	TOTAL LENGTH	
LOGGED BY	HORIZONTAL PROJECT	
DATE	VERTICAL PROJECT	
CONTRACTOR	ALTERATION SCALE	
CORE SIZE		
DATE STARTED		
DATE COMPLETED	TOTAL SULPHIDE SCALE	
DIP TESTS		



absent
slight
moderate
intense



< 1%
1%—5%
5%—25%
25%—50%
< 50%

PAGE 2 : PERTINENT GEOLOGY (Cont'd)

202.14 - 203.40 KTf Felsite
203.40 - 209.10 C2a Argillite (massive, carbonaceous)
209.10 - 209.78 KTf Felsite
209.78 - 214.20 C2b Argillite (minor sand bands)
214.20 - 222.31 C5 Lapilli Tuff
222.31 - 223.30 C2b Argillite (minor sand bands)
223.30 - 224.25 C5 Ash Tuff
224.25 - 225.55 A Massive Sulphide
225.55 - 227.60 KTf Felsite
227.60 - 229.20 A Massive Sulphide
229.20 - 230.13 C2a Argillite or Chert
230.13 - 241.34 A Massive Sulphide
241.34 - 250.50 C2a Argillite or Chert
250.50 - 261.21 C2a Argillite (massive, carbonaceous)

E.O.H. @ 261.21

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
0				0-9.75m OVERBURDEN													
1				Leucocratic intrusive milled rock gravels.													
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9				9.75-60.00 C2c ARGILLITE													
10		C2c	bdl 40	Dk grey to moderate grey (where Bouma sequences appear) fine-medium grain argillite with 60-													
11	39	LOST		80% silt-sand bands and laminae. Local wispy and tangential cross bedding noted. Local inter-													
12	56	C2c	bdm 75	bedded sandstone/turbidite Bouma sequences noted.													
13				9.75-28.35 Broken core.													
14	42	LOST															
15																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION ca B	ALTERATION ad C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
15				C2c ARGILLITE (Contd)													
		LOST		(broken core - 28.55)													
16	42	C2c	16m 30 16.00														
17																	
18		LOST															
19	26																
20		C2c															
21																	
22																	
23		LOST															
24	46		1m 45 24.00														
25			1m 45 25.00														
26		C2c															
27		LOST															
28	82	C2c															
29		LOST															
30	87	C2c	29m	29.00-30m Wisps to wavy silt bands and laminae													

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C2c ARGILLITE (Cont'd)

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
30																	
31	87	C2c	1cm 20	31.00													
32		LOST															
				32.00-33.95 Poorly developed Bouma sequence. Med grain sand with argillite laminae.													
33	77	C2c	1mm 30														
34				34.00													
		LOST	1cm 30														
35				35.00													
				35.50-36.00 Poorly developed Bouma sequence as above. Horizontal X-laminae.													
36																	
37	88	C2c	1cm 25	37.00													
38			1cm 20														
		LOST	1cm 85°	38.40 38.80-38.70 Medium grain sandy interbed, Bouma?													
39	81	C2c															
40																	
41				39.90-41.10 Sandy interbed													
42		LOST	1cm 38°	42.00													
43	56																
44		C2c															
45																	

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C2c ARGILLITE (Cont'd)

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
45																	
			45.50	45.00-46.00 Silica injected shear zone	//												
46	93	C2c			//												
				47.00-48.80 Classic Bourna sequence, fining towards top with medium to coarse grain "Grit" to fine and silty													
47	92		Coarse														
		LOST	fine	X-laminae towards end of interval													
48																	
49	85		Bourna														
50																	
	82																
51		C2c															
	92																
52																	
	96																
53																	
	93		Bourna	53.80-54.00 Uniform sandy laminae interbed													
54		LOST	58														
	85																
55				55.00-55.95 Med grain sandy interval, Bourna sequence. Laminated and finer fraction giving tops					55.30 Fine grain syenite blob 2x2½ cm - roundish.								
			Bourna														
56	92	C2c		56.30-56.60 Sandy interbed, laminated													
			58														
57																	
58	100			58.50-58.80 Sandy interbed													
59																	
			Bourna	59.50-60.00 Sandy interbed; small Bourna sequence													
60		LOST															

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Carb C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
60																	
61	80	C2b	40	60.00–65.50 C2b ARGILLITE Dk grey to black, locally graphitic along cleavage planes; argillite with local silt, sand bands and laminae (<10%). Transitional contact @ 61.00 C2c													
62	72	LOST C2b	70														
63		LOST	80	65.50													
64	78	C2b	80	Sharp fine contact; core broken.													
65									Conglomerate/Breccia								
66	98	C3	80	65.50–68.37 C3 CONGLOMERATE / BRECCIA Grey, clast supported conglomerate/breccia with 90-95% clasts and 5-10% matrix. Matrix is dk grey argillite/sand. Clasts are elongated to flattening plane; average 1×½ cm in size, range from 1mm to 9.5cm in length, are subrounded to subangular and consist of 50% C2d, 30% C2c with med. grain sand (Bouma), and 20% C2a. Clasts size is larger towards end of interval Contacts are sharp.					66.60m argillaceous to sandy matrix; Clasts have a preferred elongated/imbricated direction; Sandstone clasts from Bouma sequence in C2c; Stratified Argillite C2d; Carbonaceous argillite clast C2a								
67		LOST	80	67.00													
68	82	C3	60														
69		C2b	60	69.00													
70		LOST	75	70.00													
71	69	C2b	75	68.37–75.50 C2b ARGILLITE Dk grey uniformly cleaved silt banded (10-20%) argillite with carbonaceous material on cleavage planes													
72			70	71.00													
73	95		75	72.00													
74			75	73.00													
75	85	LOST C2b															

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
75				C2b ARGILLITE (Cont'd)													
		C2b		75.50m Gradational FW contact													
76	85		lam 68 / 68	76.00													
				75.50-99.00 C2c ARGILLITE													
77				Grey - dk grey fine grain silt to sand banded (10-70%)													
				argillite with local wispy laminae, wavy laminae, and													
78			lam 70	78.00 minor (<1%) calcite injection along cleavage planes													
				as fine <1mm stringers. Locally well cleaved													
79	95		x8 longitudinal	79.00													
80																	
81				81.50-81.70 Shear zone with black crushed argillite													
			shear 90	81.50 within cleavages. Carbonaceous material on cleavage													
82	99	C2c		surfaces.													
83			lam 68 / 68	83.00													
84			lam 84 / 84														
85	100																
				85.30 3cm veinlet @ 70° TCA.													
86			54	86.00													
87	100			*1													
			60	87.48 87.48-87.90 FAULT ; breccia, silica healed													
88				fault with 20% silica stringers, discontinuous													
				and chaotic. Obscured contacts.													
89	100		45	89.00													
90																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
90	100			C2c ARGILLITE (Cont'd)													
91			boudin	91.00													
92	95	C2c		92.50-93.00 qtz calcite stringer zone; chaotic with breccia													
				92.50													
93																	
94				94.00-96.54 C2a ARGILLITE													
	100			Dk grey, v. fine grain argillite, well cleaved with <<1% silty laminae.													
95				95.00													
96		C1b	contorted sand lens	95.90-96.10 Silica stringers (10%) chaotic with contorted sand laminae.													
97			bed. 70	97.00													
	100		contact 75	96.54-97.60 C1b SANDSTONE													
98				98.60 Lt. grey fine grain sandstone, weakly laminated; sand lens within argillite													
99			folded laminae	97.60-102.16 C2b ARGILLITE													
100		C2b		Dk grey to grey silt banded argillite with local cross bedding and folded laminae													
	97		75	2 100.80 * 2													
101				100.80-102.16 FAULT containing contorted, crushed silica injected laminae, minor breccia and a graphitic FW.													
102			75	2 102.16					102.60-102.80 Small brecciated pocket containing 4% honeysphalerite; fine grain. 2-3% fine grain py as stringer 2mm wide.								
103				102.60													
	97	C2a		102.16-116.00 C2a ARGILLITE													
104				Dk grey to black carbonaceous argillite with local ash int or bedded laminae, and minor (<1%) silica stringer injection													
105	99																

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	~~%~~ ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
105				C2a ARGILLITE (Cont'd)													
106	94	C2a	25	106.80-106.90 Milky qtz injection zone; stringers (30%) exhibit boudin texture @ 60° TCA.					105.80 Fine grain crackled py rite blob 2cm long.								
107			wispy ash inter-laminate	107.00													
108				107.00-107.90 Interlaminated with fine ash (grey-green). Ash is wispy to mottled and argillically altered.					107.00-107.90 2% fine grain py as blobs 1cm long elongated along flattening plane; trace honey sphalerite noted.								
109	92	LOST	40	109.00					107.90-116.00 Tr-2% fine grain py becoming more abundant towards end of interval as contorted stringers 2-4mm wide								
110																	
111	100	C2a	30	111.00													
112																	
113	100			113.20 Milky qtz veinlet 7cm wide @ 70° TCA													
114																	
115			shear 85	Sharp contact; graphitic shear plane													
116	100	C5	100 25	116.00-120.10 C5 LAPILLI TUFF					116.00-120.10 Trace-5% diss. fine grain py along bedding planes.								
117			100	117.00 Grey green lapilli tuff moderately to strongly welded, with weak-moderate carbonate and argillic alteration.							117.83-117.60	0.27	6187	5.6	0.21	1.64	
118			80	118.00													
119	100		contorted														
120				119.60							120.18-121.06	0.88	6188	3.9	0.08	0.31	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	~~%~~ ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
120				C5 LAPILLI TUFF (Contd)													
	100	A	contact 80	120.10 - 121.53 A MASSIVE SULPHIDE					90-95% fine to medium grain massive py								
121			contact 75	Fine to medium grain dull brassy coloured py 90-95% with 5-10% chaotic white calcite stringers. Massive texture							121.06 - 121.37	0.31	6189	17.4	1.09	5.14	
122	95	C2d		121.53-128.39 C2d ARGILLITE (silicified or CA-CHERT)					121.53-128.39 20% medium grain py as diss. and irregular patches averaging 3cm wide.								
123				Grey severely silicified argillite with networks of predominantly fine silica stringers 30-40%, and minor calcite stringers. Avg. 1-3mm in width. Intensely fractured, locally brecciated and healed by silica flooding to give competent core.													
124																	
125	98		shear 65	126.30 125.30 Graphitic shear plane - finely crushed.													
126			90	3 *3 126.02 126.02-126.20 FAULT (small) C2a crushed breccia + graphitic - bituminous gouge													
127			45	4 127.00 *4 127.60 127.00-127.60 FAULT C2a crushed breccia + black graphitic to bituminous gouge													
128	95	A	contact 80	128.39					95-98% fine to med. grain massive py.								
129		C2d		128.39-128.60 A MASSIVE SULPHIDE													
130			bed 10	95-98% fine to medium grain massive py. 2-5% silicified argillite making up other component.													
131	100	C2b + ash		128.60-130.30 C2d ARGILLITE (silicified or CA chert)					128.60-130.30 30% fine grain pyrite in irregular masses								
132				Grey, severely silicified, moderate carbonate alt., and intensely fractured argillite. Gradational Fol contact.													
133											133.10 - 133.57	0.47	6186	3.5	0.53	0.23	
				130.30 - 133.92 C2b ARGILLITE + ash.					130.30-133.92 5% fine grain pyrite as irregular blobs 1cm long. Tr. honey sphalerite and diss blackjack noted @ 133.30m.		133.90 - 135.28	1.38	6190	5.3	0.09	0.31	
134	100	A		Dk grey to grey-green argillite with up to 80% wispy and brecciated ash interbeds. Intense argillic alt.													
135											135.28 - 135.77	0.49	6191	6.0	0.28	2.04	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION si A	ALTERATION ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
135				133.92-140.00 A MASSIVE SULPHIDE					133.92-140.00 90-100% fine to med grain gn.		136.73 - 137.00	1.23	6192	0.9	0.03	0.13	
136	96	A	crackled texture	133.92-138.87 95-100% massive sulphide - bronze colour with local crackled textures. Weak carbonate injection as calcite stringers, irregular patches.					gn.		137.00 - 139.00	2.00	6193	0.2	0.02	0.15	
137				136.70-136.80 white calcite veinlet													
138	98			138.15 white calcite veinlet 4½ cm wide @ 70° TCA.													
139				138.95 Graphitic shear plane/fracture @ 5° TCA.					139.43-139.47 15% med grain brown diss. sph within								
140				138.87-140.00 30% wispy grey green ash interbeds some crushed lapilli noted. Argillic alteration.					lapilli tuff interbed within massive sulphide		139.00 - 139.43	0.43	6194	4.8	0.30	1.00	
											139.43 - 139.64	0.21	6195	3.0	0.05	0.29	
				140.00-144.90 C2d ARGILLITE (variable silicification) possible chert int.							139.64 - 140.01	0.37	6196	2.2	0.04	0.57	
141	100	C2d	STRINGER ZONE	Dk grey to grey, silicified argillite, with up to 40% massive sulphides, predominantly pyrite. Interval becoming less silicified towards end of interval.					140.00-140.45 15% fine grain - med grain gn as wispy laminar 1mm - 4mm wide, cracked irregular masses 1-3cm wide.		141.10 - 142.12	1.02	6197	1.6	0.01	0.11	
142				140.00-140.65 severely silicified diffuse contacts													
143				all stringers - chaotic 70%							143.17 - 145.20	2.03	6198	3.2	0.06	1.31	
144	97			140.65-140.95 graphitic shear planes.													
		C2c		140.95-140.90 stringer zone, 20% stringers: preferentially follow cleavage. Flattened C2c clasts					140.95-140.90 15-20% fine to med grain gn as								
145				2x1cm bound along bedding/cleavage planes.					irregular bands predominantly parallel to cleavage. / bedding. From 143.16-144.90 5% fl. brown		145.20 - 145.80	0.60	6199	7.6	0.10	2.17	
146		A	crackled contact 75° contact 60°	144.90-147.09 A MASSIVE SULPHIDE					med grain sphalerite as irregular stringers,								
147	100	C2d		Fine grain to locally crackled, fractured massive gn.					and irregular network.		145.80 - 146.15	0.35	6200	5.8	0.33	0.92	
				147.09 5% discontinuous silica stringers and banding					144.70 m C2d-argillite; dk grey		146.15 - 147.67	1.52	6241	4.8	0.07	2.11	
148				147.09-147.65 C2d ARGILLITE (weak silicification)							147.67 - 149.00	1.83	6242	4.8	0.14	1.47	
149	100	A		Dk grey, fine grain argillite with 25% sulphides.					fl. brown med. grain sph gn med grain aranitoid gn in irregular stringer		149.00 - 150.00	1.00	6243	4.1	0.13	0.96	
									146.65-146.27 8% med grain brown sph in irregular								
150				147.55-160.30 A MASSIVE SULPHIDE					pebbles; 2x½ cm avg size.		150.00 - 150.45	0.45	6244	5.2	0.27	1.95	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	~~%~~ ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
150				A MASSIVE SULPHIDE (contd)													
	100			Fine-medium grain py, locally crackled with <<1%					147.09-147.55 5% med grain honey sph. as stringers		150.45-151.29	0.89	6245	7.0	0.27	3.11	
151				calcite and or silica patches or stringers					1mm wide. 15-20% py stringers avg. 2mm wide		151.29-152.00	0.71	6246	4.7	0.14	0.45	
									parallel to bedding.								
152			crackled								152.00-153.00	1.00	6247	3.6	0.13	0.44	
									148.68-151.73 Local areas of 5% predominantly								
153	100		20						med. grain patches (1cm long) sph, less abundant		153.00-154.00	1.00	6248	3.2	0.06	0.59	
				6 *6	//				blackjack sph within pyrite and honey sph. along								
154		A	crackled	153.70 153.70 FAULT; dk brown argillite-clay shear	//				injection interfaces		154.00-155.00	1.00	6249	2.9	0.09	0.29	
				plane with crackled FW/HW.													
155									153.00-153.40 Irregular patches of 7% lt.		155.00-157.00	2.00	6250	2.9	0.11	0.16	
									brown sph within/overgrowths? py.								
156	100																
157				157.00 Pyrite gouge - crushed.							157.00-157.65	0.65	6451	2.9	0.06	0.33	
				*7							157.65-158.35	0.70	6452	2.8	0.27	1.06	
158				158.32-159.79 Crushed, broken core; FAULT							158.35-160.25	1.90	6453	1.1	0.15	0.26	
			70	158.32 black-dk brown gouge @ foot wall and hanging wall. Minor													
159	75	LOST	20	7 breccia (20%). Clasts are subrounded py + py and qtz													
				159.79													
160		A		159.79-160.30 Massive pyrite with local diss. foraboidal	//												
	98	C2d	Ex	pyrite and irregular patches of milky white silica	//												
161																	
				160.30-160.74 C2d ARGILLITE (silica flooded)	//				160.30-160.74 20% py as irregular masses,								
162	98			Grey, v.fine grain severely silicified argillite or clarkwith					and disseminated foraboids								
				20% qtz carbonate stringer and patchy injection. Bx rev.													
163		C2d															
				160.74-160.97 A MASSIVE SULPHIDE													
164	98		silica flooded	Small lens/vein of massive pyrite with a milky white													
				qtz stringer 3mm wide and minor calcite.													
165																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
165				C2d ARGILLITE (Cont'd)													
166	98	C2d		160.97-167.00 Lt - moderate grey severely silicified / silica flooded v. fine grain argillite (chert?) with healed breccia and crushed zones. Local silica - carbonate stringers, have diffuse contacts, fracture intensity moderate to high. This interval possibly is a large silica flooded fault zone *					160.97-162.00 20% elongated medium grain masses of Pb cut by silica flooding / stringers in argillite.		160.97 -169.09	0.67	6454	<0.1	0.03	0.01	
167		A															
168	100	C2d															
169		A		167.00-167.30 A MASSIVE SULPHIDE Small vein of massive py, cracked mass.													
170																	
171	98	C2d	STRUCTURE ZONE	167.30-168.40 C2d ARGILLITE (silica flooded) Severely silicified - silica flooded, cracked & brecciated v. fine grain lt. grey argillite					167.30-168.40 15% med to fine grain irregular masses of py								
172																	
173		C2d		168.40-169.00 A MASSIVE SULPHIDE 80% fine grain with local medium grain py, 20% silica flooded argillite (C2d.). Local calcite blob 7x3cm @ 168.90m.					168.40-169.00 80% fine - med. grain massive py.								
174	100																
175				169.00-175.40 C2d ARGILLITE (silica flooded)					169.00-175.40 5-50% fine grain py as irregular masses - no significant sph noted								
176		C2c	cracked 80 B 176.80 fine 60 176.50	Severely silicified / silica flooded lt-med grey v. fine grain argillite (chert?) with irregular patches of py 5 to 20% fine grain py. Local brecciated zone perhaps fault zone. Local intense fracture intensity 171.00-174.80 Qtz (calcite) stringer zone - 20% over 4mm wide.													
177	100		176.50 fine 60														
178			178.00 fine 40														
179				174.80 *B "clean" fault - mod silica flooded, 2 cm wide qtz veinlet on Fw. 60° to a													
180	100			175.40-182.00 C2C ARGILLITE (sand bedded, lam.)													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
180				C2c ARGILLITE (Contd)													
			1cm	Grey to dk grey fine grain argillite with up to 70%													
181	100		40	181.00 silty or sandy bands/laminae throughout interval													
			28	181.45 Local areas of silica injection and, folding, brecciation													
182			tangential	and faulting typical to this unit.													
			1cm														
183			0	183.00													
	100																
184			gentle fold														
				184.75													
185			1cm														
			12	186.00													
186	100	C2c															
187				187.00 187.00-187.50 Local milky white silica injection bx													
				187.50 & disrupted laminae. Faulted													
188				188.00 188.00-189.00 as above - silica-bx zone. Faulted													
189				189.00													
	100		contorted laminae														
190				190.00 Contorted laminae.													
			Shear														
191			70	191.00 191.00 small shear plane													
				Gradational contact within fault zone													
192			40	9 *9													
				192.20 192.20-195.40 FAULT ZONE crush and brecciated	"												
193	98			C2c & C2b with graphitic shear planes, intermittent													
				weak silica injection.	"												
194																	
		C2a		193.00-202.14 C2a ARGILLITE	"												
195	100																

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
195				C2a ARGILLITE (Cont'd)													
				195.40 Dk grey fine to silty, locally massive and local													
196	100			silty bands and laminae (<5% over interval)													
				Moderately carbonaceous. Chaotic silica stringers (10%)													
197				avg. 2mm wide within massive section of interval													
				197.90 - 199.00.													
198		C2a															
	100																
199																	
				201.40 - 202.10 Brecciated carbonaceous unit by silicified													
200				Argillite on HW of dyke/sill. Possibly faulted													
201																	
202	100		BX	202.10 - 205.40 KTf FELSITE													
				Cream white leucocratic, porphyritic altered felsite													
203		KTf		Texture obscured, diffuse feldspar phenocrysts													
				10%, 2mm in diameter													
204			Boudin filled fracture														
	100			203.40 - 209.10 C2a ARGILLITE													
205				Dk grey massive with local (5%) silty laminae or													
				bands. Local sections of silica injected feather													
206				fractures. Unit shows boudin texture and dips (?)													
				faulted layers with weak silica injection. (205.40 - 209.													
207		C2a		75m)													
	100		1cm														
208			50	209.10 - 209.78 KTf FELSITE													
				208.00 Pale cream-white leucocratic felsite with diffuse													
209				porphyritic texture. Feldspar phenocrysts 20%, 1/2													
		KTf	faulted	mm in size. HW contact composed of crushed grit &													
210	100	C2b	35	209.78 Argillite, graphitic. FW contact sharp & concordant with													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Au %	Zn %	COMPOSITE ASSAYS
210				silty laminae.	//												
211	100			209.78 - 214.20 C2b ARGILLITE	//												
				Dk grey fine grain argillite with 5% silty bands													
212	93	C2b		and laminae interbedded with grey-green ash tuff	//				212.44 - 213.60 Sulphide stringer zone; 15%		212.44 - 213.70	1.26	6455	2.6	0.08	1.56	
				near end of interval (213.00 - 214.20m). Gradational	//				stringers predominantly along cleavage/bedding								
213				contact with Lapilli Tuff. Local weak silica injection					planes. Irregular forms also as brecciated								
				as fine feather fractures, stringers and blebs			//		bands. 4% honey brown sphalerite, 10% py								
214	100			along bedding and cleavage planes			//		massive argillite; py injection								
									213.00								
215				214.20 - 227.31 C5 LAPILLI TUFF					py stringers & blebs; brecciated band with argillite fragments and honey sph matrix.								
				Grey-green, locally speckled with white, lapilli													
216				216.00 tuff with argillic alteration and weak to intense							216.90 - 217.60	0.70	6456	1.0	0.20	0.42	
				carbonate alteration. Local white calcite spotted													
217	100			217.00 through core and present as wanders and stringers		//											
				218.60 calcite veinlet 10cm wide, 75° TCA		//											
218		C5															
				219.70 qtz-calcite veinlet, 2cm wide, 10° TCA													
219				219.00													
220																	
	100								221.18 - 221.90 10-15% fine grain diss. py along								
221				221.00 222.00 - 222.31 tuff bands showing sharp contact between					bedding planes								
				short-lived episodes of various layers of fine ash falls													
222				222.00 222.31 - 223.30 C2b ARGILLITE					222.31 - 223.30 5% fine grain py as irregular								
		C2b		Dk grey fine grain argillite with numerous fine silty					stringer networks								
223	100			laminae interbedded with ash bands towards end							223.46 - 223.98	0.52	6457	1.7	0.05	3.12	
		C5		of interval. 10% feather + cm-scale fractures filled					223.30 - 224.25 5% med. grain lt. brown sph								
224				with silica intercept interval					as irregular patches (up to 2x4cm) and stringers		224.35 - 225.52	1.17	6458	2.2	0.05	0.07	
225	100	A							1% galena as anastomosing lenses 3mm x 1cm. 5% py								

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	~~%~~ ppm Ag	% Pb	% (-) classical assay Zn	COMPOSITE ASSAYS
225		A		223.30 - 224.25 C5 : ASH TUFF													
226	100	KTf	Contact 50	Grey green ash tuff, bands interfingered patchy and irregular beds.													
227				224.25 - 225.55 A MASSIVE SULPHIDE					224.25 - 225.55 90% fine coarse grain massive		227.60 - 228.50	0.90	6459	2.2	0.12	0.25	
228	100	A	Contact 25	90% bronze coloured fine to coarse grain with 10% calcite and silicified argillite in interstitial areas.					Py.		228.50 - 228.95	0.45	6460	4.3	0.21	1.46	230.35 - 239 (8.56 m)
229		C2d		225.55 - 227.60 KTf FELSITE					225.55 - 227.60 3% fine to medium grain Py throughout felsite		230.35 - 230.83	0.48	6461	11.9	1.08	4.36	Ag 31.1 Pb 0.99
230	88			Pale cream coloured porphyritic felsite with diffuse phenocrysts of qtz? and feldspar							230.83 - 231.12	0.29	6462	6.9	0.34	0.94	Zn 12.17 (9.21)
231											231.12 - 231.38	0.26	6463	19.8	1.39	6.28	
232	100			227.60 - 229.20 A MASSIVE SULPHIDE					227.60 - 229.20 95% fine to med grain py. 3% lt. brown med. grain sph as blotches, tr diss galena within pyrite.		231.38 - 231.71	0.33	6464	6.3	0.33	1.12	
				Bronze coloured fine to medium grain massive sulphide,							231.71 - 232.71	1.00	6465	14.2	1.39	20.80? (7.79)	
											232.71 - 233.50	0.79	6466	20.8	1.07	20.50? (8.00)	231.12 - 239 (7.79 m)
233				229.20 - 230.13 C2d ARGILLITE (silicified) - CA?					229.20 - 230.13 Py stringer network - 10%		233.50 - 234.42	0.92	6467	14.8	0.63	7.33	
				Grey to dk grey silicified v. fine grain argillite with 15% stringer network; chaotic + breccia							234.42 - 235.15	0.73	6468	10.1	0.19	1.40	Ag 33.2 Pb 1.01
234	100	A		230.13 - 241.34 A MASSIVE SULPHIDE					230.13 - 230.75 25% v. lt. brown sph as small irregular patches <5mm long, 2-3% galena as med grain disseminations.		235.15 - 235.50	0.35	6469	36.3	1.07	15.80 (14.05)	Zn 13.07 (9.81)
235				Bronze to mottled bronze-brown massive sulphides locally crackled and locally injected with calcite as veinlets, and irregular patches. Local areas of interstitial silicified argillite.							235.50 - 236.00	0.50	6470	52.1	3.31	21.10 (19.23)	
236											236.00 - 237.00	1.00	6471	40.9	0.89	13.40 (13.30)	
237	100			238.90 - sharp contact between High grade zinc - fine grain dk grey-brown sph and crackled patches and wispy - bedded pyrite.					230.75 - 231.15 5% v. lt. brown sph as small irregular patches <5mm long.		237.00 - 238.00	1.00	6472	53.4	0.74	15.20 (14.50)	
238									231.15 - 231.37 35% med. grain sph, 1% galena.		238.00 - 238.91	0.91	6473	73.0	0.85	11.40 (11.23)	
239	100		Contact 60 crackled bedded py	238.90					232.00 - 238.90 30% sph - predominantly as v. fine grain irregular masses brown - blackjack with some med-coarse grain remob sph. 3% galena.		238.91 - 240.00	1.09	6474	10.7	0.07	0.53	
240	99										240.00 - 241.34	1.34	6475	2.0	0.04	0.35	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
240				A MASSIVE SULPHIDE (Cont'd)													
241		A															
242	99			241.84-250.80 C2d or C4* CHERT					241.84-250.50 25% avg. fine grain pyrite as								
				Moderate grey to greenish grey, chert or severely silica					irregular masses generally elongated with stylolite								
			pg bed	242.50 flooded argillite with local chaotic silica stringer					fractures. Locally as bands, beds.								
243			80	networks throughout, less abundant calcite as spots													
			silica healed bx	and veinlets (<1cm wide). Stylolite fractures common.													
244	99			243.75 Local silica healed breccias.													
				245.00 stylolite fractures													
245																	
246		C4	80														
			silica healed														
247				246.75 246.75 Silica healed fault breccia													
248	99																
249																	
			wavy beds	250.10-250.30 Wavy chert beds ~ 10-20° TCA													
250			contact	250.50													
251	100		70	250.50-261.21 C2a ARGILLITE + py stringer zone					250.50-251.55 30-40% fine grain diss. py								
				E.O.H					forming beds 3-4cm wide and laminae 1-								
				251.35 10 Dk grey with bronze v. fine grain argillite with 20-30%					3mm wide - well cleaved between these points.								
				251.70 fine grain massive sulphide stringer zone													
252				252.50 *10													
		C2a	lam 70	251.35-251.70 FAULT ZONE/BX. Breccia bound by 2					251.35-251.70 80-90% py breccia, fault.		253.83 -255.50	1.67	6476	1.4	0.05	1.90	
253	100			253.35 (FW/HW) shear planes Bx is clast supported, clasts are													
254				90% sub-angular fine grain py (avg 1cm in size), 10% are					251.70-253.35 15-25% fine grain py as laminae								
				grey chert clasts.					small beds (1cm wide)								
255																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Carb C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
255				C2a ARGILLITE													
256	100	C2a	STRINGER ZONE	256.00 Calcite veinlets, stringers with py & sph stringers.		B			255.85 - 253.80 Pyrite stringer network 20% - fine to medium grain + irregular masses		256.40 - 257.30	0.90	6477	1.1	0.02	2.32	
257						II			255.80 - 255.60 3% medium grain R brown sph as irregular stringers 1mm to 1cm wide & fine 15% discontinuous irregular py crackled masses & stringers.		258.43 - 259.00	0.57	6478	<0.1	0.02	0.97	
258																	
259	100								258.90 Lt brown fine grain sph associated with a calcite injection/fx 5cm wide.		259.81 - 260.08	0.27	6479	7.5	0.24	0.39	
260				260.11 Brecciated pyrite stringers crosscutting laminated py.													
261				261.21 260.50 1cm x 3mm gypsum crystals on fracture plane													
262				E.O.H. @ 261.21m													

TOTAL ENERGOLD CORPORATION
DRILL LOG

PROJECT: CLEAR LAKE	GROUND ELEV.: 703.67
HOLE No.: 91-60	BEARING: 270.00°
LOCATION: 6961510.90 N, 492054.0 E	DIP: -60.3°
	TOTAL LENGTH: 266.70m
LOGGED BY: MINORU MACHIDA	HORIZONTAL PROJECT: 136.403
DATE: 25/7/1991	VERTICAL PROJECT: -229.1275
CONTRACTOR: KLUANE DRILLING	ALTERATION SCALE: absent, slight, moderate, intense
CORE SIZE: NQ	
DATE STARTED: 23/7/1991	
DATE COMPLETED: 25/7/1991	TOTAL SULPHIDE SCALE: < 1%, 1%—5%, 5%—25%, 25%—50%, < 50%
DIP TESTS (ACID): 200'/60.96m -60.0°; 401'/122.05m -59.8°; 607'/185.01m -59.0°; 800'/243.84m -57.3°	

DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE: to intersect Massive Sulphide unit A and extend margin of ore block between DDH 91-50 and 83-40.

REASON FOR SHUTTING DOWN: intersection successful, no significant mineralization observed 10m past last Massive Sulphide unit A

0.00 – 14.33m	OVERBURDEN
14.33 – 20.42m	C1b SANDSTONE
20.42 – 24.99m	C2a ARGILLITE
24.99 – 25.35m	C1b SANDSTONE
25.35 – 30.76m	C2a ARGILLITE
30.74 – 37.30m	KTf FELSITE
37.30 – 58.80m	C2b ARGILLITE
58.80 – 58.75m	C2a ARGILLITE
58.75 – 61.57m	C2b ARGILLITE
61.57 – 64.10m	C2a–2b ARGILLITE
64.10 – 65.05m	KTf FELSITE
65.05 – 71.15m	C2a ARGILLITE
71.15 – 98.80m	C1b SANDSTONE
98.80 – 105.00m	C1a ARGILLITE
105.00 – 119.70m	C1b SANDSTONE
119.70 – 120.55m	C2b ARGILLITE
120.55 – 125.47m	C1b SANDSTONE
125.47 – 138.40m	C2b ARGILLITE
138.40 – 146.15m	C5 TUFF
146.15 – 153.70m	C2b ARGILLITE
153.70 – 158.00m	C1a SANDSTONE
158.00 – 175.33m	C5 LAPILLI TUFF
175.33 – 185.88m	C2b ARGILLITE
185.88 – 188.90m	C2a ARGILLITE
188.90 – 191.30m	C1b SANDSTONE
191.30 – 202.55m	C2d SILICEOUS ARGILLITE
202.55 – 246.95m	A MASSIVE SULPHIDE
246.95 – 261.05m	C2d SILICEOUS ARGILLITE
261.05 – 261.55m	A MASSIVE SULPHIDE
261.55 – 263.65m	C2d SILICEOUS ARGILLITE
263.65 – 266.70m	C2b ARGILLITE

	PLAN PLOT		LONGITUDINAL PLOT				
LENGTH	AZIMUTH	DIP	HORZ	ELEV	DIST FROM BL	SECTION	SEC OFFSET	DESCRIPTION
0.00	270.00	-60.30	0.00	703.67	54.00 E	97.0 N	0.90 N	COLLAR
30.48	270.00	-60.00	15.10	677.19	38.90 E	97.0 N	0.90 N	DIP CHANGE
92.51	270.00	-59.80	46.11	623.68	7.89 E	97.0 N	0.90 N	DIP CHANGE
154.53	270.00	-59.00	77.31	569.87	23.31 W	97.0 N	0.90 N	DIP CHANGE
216.43	270.00	-57.30	108.16	518.53	54.16 W	97.0 N	0.90 N	DIP CHANGE
266.70	0.00	0.00	136.40	474.54	82.40 W	97.0 N	0.90 N	END OF HOLE

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Co. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
15.00				containing argillite bands and laminae													
	12			with calcite network predominantly													
				17.75 – 18.50m strongly sheared with black gouge													
		C1b															
	70																
20.00																	
20.42																	
				20.42 – 24.99m C2a ARGILLITE													
				Black, fine grain, massive argillite with													
		C2a		calcite stockwork, with weak argillization													
				21.30 – 21.80m strongly sheared with black gouge													
				with calcite vein													
	100																
				23.50 – 24.99m strongly sheared with black gouge													
24.99																	
25.00				24.99 – 25.35m C1b SANDSTONE													
25.35		C1b		Gray, fine grain sandstone with argillite													
				firm to laminae													
		C2a		25.35 – 34.74m C2a ARGILLITE													
				Black to dark gray, fine grain, massive													
	60			argillite													
				25.35 – 26.82m calcite – qtz vein (max 1cm wide)													
				predominantly													
	100																
30.00																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Avg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
30.00		C2a		30.00 – 32.31m containing calcite – qtz stockwork													
				33.45 – 33.85m section silicified with qtz – calcite stockwork													
34.74				34.74 – 37.30m KTf FELSITE													
35.00		KTf		White to light gray, fine to medium grain felsite (@ 45° to C.A) with chaotic calcite stockwork, felsite contains feldspar phenocryst with weak argillization													
	100		45	35.90 – 36.27m : argillite (c2b)													
37.30				35.20 – 35.60m : strongly sheared with gouge													
				37.30 – 54.80m C2b ARGILLITE Black to gray, fine grain argillite with silt or fine sand laminae with carbonaceous material.													
40.00		C2b	45	Section contain cal – qtz stockwork and local cal – qtz band (2 – 4mm wide) concordant with bedding or laminae													
				43.40 – 44.70m predominantly qtz – cal vein													
45.00			50														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
45.00																	
		C2b		46.94 – 54.80m section brecciated with predominant chaotic qtz – cal vein – stockwork as matrix													
50.00	100																
		C2b															
54.80	87			54.80 – 58.75m C2a ARGILLITE													
55.00		C2a		Black, fine grain, massive argillite with qtz – cal stockwork													
	89	C2a		58.22 – 58.78m strongly sheared													
58.78				58.78 – 61.57m C2b ARGILLITE													
	100	C2b		Black, fine grain argillite containing silt laminae, with qtz – cal stockwork.					59.30 – 59.40m contain 5% pyrite								
60.00																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
60.00																	
	64	C2b		59.70 - 61.57m Sheared													
61.57				61.57 - 64.10m C2a~2b ARGILLITE					61.57m								
	96	C2a ~2b		Brecciated zone with predominant chaotic					= Brecciated zone								
				milky qtz vein													
				fragment : argillite , qtz vein													
64.10				matrix : argillite, black gouge													
	100	KTf		64.10 - 65.05m KTf FELSITE					64.10m								
65.00				White to gray massive felsite with													
65.05			70	strongly argillization.					65.05m								
				(can't find feldspar phenocryist in felsite)													
				65.05 - 71.15m C2a ARGILLITE													
	95	C2a		Black, fine grain, massive argillite brecciated					=Brecciated zone								
				with black gouge,													
				Section contains qtz stockwork predomina-													
				ntly.													
		C2a															
	48																
70.00																	
		C2a															
71.15				71.15 - 98.80m C1b SANDSTONE													
				Gray to dark gray fine sandstone contain-													
				ing silt or argillite fine laminae													
	100	C1b															
			70						73.30m								
98.00																	



□ : qtz vein
▨ : argillite or sandstone
▩ : black gouge

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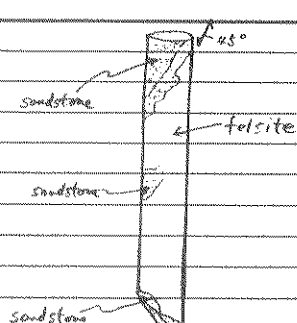
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Co. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAY
78.00				74.25 - 86.20m contains fine calcite - qtz stringer to stockwork													
			50														
			80														
		Clb															
			30														
			50														
80.00																	
			60														
		Kff		81.60 - 81.85m felsite (Kff) white to light gray fine grain felsite with boundary @ 45° to C.A between sandstone felsite cut bedding in sandstone													
	100																
			20														
85.00		Clb															
			85														
			20														
			80														
				87.70 - 87.80m microfolding													
			60														
90.00			60														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	Ca. B	Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
90.00																	
			90														
			70														
		C1b															
			50														
				94.80 - 96.32 m brecciated sandstone or slumped sandstone													
95.00																	
				96.32 - 98.80 m Section with strong to moderate silicification and carbonatization with small amount of sphalerite					97.75 - 99.80 m Section contains 3% pyrite and 5% sphalerite with stg stockwork								
		C1b															
	100																
98.80																	
				98.80 - 105.00 m C1a ARGILLITE Black, fine grain massive argillite													
100.00																	
				100.00 - 104.00 m predominantly calcite vein (5 mm - 3 cm) @ 45° to C.A.													
		C1a															
105.00																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (Si.)	ALTERATION B (Ca.)	ALTERATION C (Arg.)	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
105.00				105.00 – 119.70m C1b SANDSTONE													
				Dark gray to gray, fine grain sandstone													
				with mud laminae with local massive													
				fine grain sandstone													
		C1b	50														
				105.00 – 107.80m brecciated sandstone with													
				predominant chaotic qtz vein													
110.00																	
			60														
	100	C1b	50														
				113.10m qtz vein @ 45° to c.A (1cm wide)													
115.00																	
				114.95 – 119.70m qtz vein stock work													
		C1b	90														
				118.00 – 119.40m section with strong													
				silicification													
120.00		C2b	20	119.70 – 120.55m C2b ARGILLITE													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Co. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
120.00		C2b	70	Black, fine grain argillite with thin sandstone or layer													
120.55				120.55 - 125.47 m C1b SANDSTONE													
			60	Black to dark gray, fine grain laminated													
		C1b		sandstone with argillite layer (1cm to 1cm wide)													
				123.14 - 123.54 m sheared zone with qtz vein													
				or stockwork													
125.00			50														
			60	125.47 - 130.40 m C2b ARGILLITE													
			20	Black to dark gray fine grain argillite													
	100	C2b		with fine grain sandstone layer (2mm to 2-3cm													
				wide)													
			80														
130.00																	
				131.00 - 131.07 m chaotic qtz vein													
			80														
		C2b															
			70														
				134.10 - 134.13 m: qtz vein (2cm wide) @ 70°													
				to C.A.													
135.00																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
135.60		C2b	X50														
			X50	136.70 - 138.40m section contains tuffaceous layer and pyrite bond, pyrite stockwork (18% PY)													
138.40			X50	138.40 - 146.15m C5 TUFF					138.40 - 146.15m : 1-5% disseminated pyrite to pyrite patch								
				Gray, fine grain ash tuff with local lapilli tuff, weak argillization													
140.00		C5	X50						141.70 - 141.80m : sphalerite patch 20% (Zn 12%)								
	100			143.20 - 146.15m lapilli tuff													
145.00																	
146.15		C2b		146.15 - 153.70m C2b ARGILLITE													
				Black to dark gray argillite with fine grain sandstone layer (1mm to 1cm wide)													
				Section brecciated with chaotic pyrrhotite and black gouge as matrix													
150.00																	

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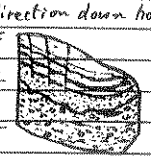
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
150.00		C2b															
153.70				153.70 – 158.00m C1a SANDSTONE Gray to light gray, fine grain massive sandstone with local pyrite laminae													
155.00		C1a		154.50 – 155.10m : with qtz vein or stockwork as matrix in breccia 157.00 – 158.00 m : qtz vein @45° to C.A (70cm wide)													
158.00	100		/45 /50	158.00 – 175.33m C5 LAPILLI TUFF Gray to light gray – pale green lapilli tuff with local ash tuff fragment : argillite, qtz, pumic (ϕ average 2–3mm, max 2cm)					158.00 – 159.60m 5% pyrite less than 1% sphalerite 159.60 – 175.33m 5% pyrite								
160.00		C5		158.00 – 160.40m fine grain ash tuff													
165.00																	

PROJECT CLEAR LAKE

HOLE No. 91-60

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	Co. B	Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	~~%~~ ppm Ag	% Pb	% (increased assay) Zn	COMPOSITE ASSAYS
165.00		C5	70	164.80 - 165.64 m fine grain ash tuff					165.04 - 165.06 m : sphalerite patch (2cm wide)								
				166.00 - 169.18 m fine grain ash tuff					165.43 - 165.73 m : 30% sphalerite patch (φ1mm - 3mm)		165.43-165.73	0.30	6480	8.2	0.09	10.90 (10.48)	
			60														
170.00		C5	70	170.10 - 172.25 m fine grain ash tuff													
	100			175.30 - 175.40 m sedimentary structure indicates younging direction down hole													
																	
175.00																	
175.33		C2b	60	175.33 - 185.88 m C2b ARGILLITE													
			60	Black, fine grain argillite containing fine sand laminae (0.5mm - 7mm wide)					176.80 - 178.00 m contains pyrite bands ~ pyrite patch (5% pyrite)								
180.00			50														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
180.00																	
			70						grading in fine grain sandstone →								
				181.10 – 181.20m: grading in fine grain sandstone and sedimentary structure of argillite fragments indicates younging direction down hole					 181.10m up hole; sedimentary structure of argillite fragments; down hole 181.20m								
		C2b	80														
			80														
			80														
185.00																	
185.88				185.88 – 188.80m: C2a ARGILLITE Black, fine grain massive argillite													
	100	C2a															
188.80				188.80 – 191.30m: C1b SANDSTONE Gray to dark gray, fine grain sandstone with fine argillite laminae													
190.80		C1b	76°														
191.30				191.30 – 202.55m: C2d SILICEOUS ARGILLITE Black, fine grain, siliceous or silicified argillite containing pyrite bond or pyrite stockwork, very hard.					191.30 – 202.55m: 35% pyrite bond to stockwork; 191.50 – 191.65m: 7% sphalerite (2–4%); 193.20 – 193.55m: 4% sphalerite (2–2%)								
		C2d															
198.00																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
195.00																	
		Cpd															
200.00																	
202.55	100		X50	202.55–286.96m A MASSIVE SULPHIDE Fine grain massive pyrite >95%					202.55 – 203.05m (0.50m wide) Sp. 7% (Zn 4%)		202.55 ~ 203.05	0.50	6481	5.7	0.66	4.68	
											203.05 ~ 205.05	2.00	6482	2.8	0.21	0.90	
205.00											205.05 ~ 206.28	1.23	6483	1.5	0.21	0.37	
		A							206.28 – 207.18m (0.90m wide) Sp. 4% (Zn 2%)		206.28 ~ 207.18	0.90	6484	5.8	0.72	3.21	
											207.18 ~ 209.18	2.00	6485	4.5	0.18	1.09	
210.00											209.18 ~ 211.18	2.00	6486	4.9	0.27	1.44	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Ag C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE & GRAPHS
210.00				A MASSIVE SULPHIDE (cont'd)													
									212.45 – 214.30m (1.85m wide) 16% fng brown sphalerite 1% Galena (10% Zn 0.5% Pb)		211.18–212.45	1.27	6487	3.4	0.19	0.73	
											212.45–213.45	1.00	6488	19.4	1.35	8.36	
		A									213.45–214.30	0.85	6489	18.0	1.30	7.68	
				213.60 – 213.80m : } calcite vein @ 30° to c.a													
			CAL	214.10 – 214.55m : } to C.A													
			CAL								214.30–215.79	1.49	6490	6.1	0.33	1.80	
215.00																	
									215.79 – 216.66m (0.87m wide) 10% fng brown ~ black sphalerite (6% Zn)		215.79–216.66	0.87	6491	6.0	0.47	4.68	
											216.66–217.66	1.00	6492	4.2	0.33	2.33	
	100	A															
				218.00 – 219.00m locally interstitial areas filled with calcite							217.66–219.17	1.51	6493	4.3	0.44	1.75	
									219.17 – 219.36m (0.19m wide) 5% brown – yellow sphalerite		219.17–219.75	0.58	6494	6.4	0.98	2.82	
220.00																	
									219.75 – 221.67m (1.92m wide) 5~6% SP (4% Zn)		219.75–220.75	1.00	6495	5.9	1.26	4.05	
									221.67 – 222.13m (0.46m wide) 8% SP (5% Zn)		220.75–221.67	0.92	6496	3.3	0.59	1.89	
											221.67–222.13	0.46	6497	8.3	3.28	5.04	
		A							222.13 – 222.84m (0.71m wide) 2% SP (1% Zn)		222.13–222.84	0.71	6498	1.6	0.37	1.65	
									222.84 – 223.70m (0.86m wide) 7% SP (4% Zn)								
				224.60 – 225.00m interstitial areas filled with calcite							222.84–223.70	0.86	6499	4.9	0.63	6.05	
									223.70 – 224.15m (0.45m wide) 3% SP. (2% Zn)		223.70–224.15	0.45	6500	2.9	0.61	2.70	
225.00									224.15 – 225.00m (0.85m wide) 8% SP. (5% Zn)		224.15–225.00	0.85	6501	5.8	0.53	4.63	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Co. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
225.00				A MASSIVE SULPHIDE (cont'd)					225.00 – 225.72m (0.72m wide) 5% sp. (3% Zn)		225.00 – 225.72	0.72	6502	6.2	0.61	4.27	
									225.72 – 226.90m (0.18m wide) 20% SP (12% Zn)		225.72 – 226.92	1.00	6503	18.1	1.84	4.90	
											226.92 – 227.20	0.48	6504	11.4	1.97	5.73	
		A							226.90 – 227.20m (1.30m wide) 7% sp. (4% Zn)								
											227.20 – 228.20	1.00	6505	8.3	1.27	4.72	
				229.65 – 229.90m cal. vein							228.20 – 229.15	0.95	6506	5.1	0.25	1.22	
230.00			cal								229.15 – 230.15	1.00	6507	6.8	0.89	4.17	
									229.15 – 230.18m (1.65m wide) 5% sp. (3% Zn)		230.15 – 230.80	0.65	6508	6.3	0.70	4.33	
									230.80 – 231.55m (0.75m wide) 1-2% sp. (1% Zn)		230.80 – 231.55	0.75	6509	5.2	0.45	2.09	
									231.55 – 231.75m (0.20m wide) 12% sp. (7% Zn)		231.55 – 232.50	0.95	6510	11.9	0.79	5.65	
									231.75 – 232.50m (0.75m wide) 1-2% sp. (1% Zn)		232.50 – 233.26	0.76	6511	12.1	1.16	8.31	
	100	A							232.50 – 233.26m (0.76m wide) 13% SP (8% Zn)								
									233.26 – 234.23m (0.97m wide) 1-2% sp. (1% Zn)		233.26 – 234.23	0.97	6512	5.3	0.59	3.60	
											234.23 – 234.80	0.57	6513	3.8	0.53	5.74	
																6065m	
235.00											234.80 – 235.80	1.00	6514	4.3	0.48	3.79	
			cal 45 50	235.88 – 236.30m cal. vein													
									236.23 – 236.80m (0.57m wide) 7% sp. (4% Zn)		235.80 – 237.05	1.25	6515	3.4	0.33	2.30	
		A									237.05 – 237.95	0.90	6516	10.6	0.57	3.27	
									237.05 – 237.95m (0.90m wide) 4% sp. (2% Zn)								
											237.95 – 238.90	0.95	6517	12.9	0.39	4.30	
									237.95 – 238.90m (0.95m wide) 2% SP (1% Zn)								
240.00											238.90 – 239.88	0.98	6518	17.9	0.52	5.88	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
240.00				A MASSIVE SULPHIDE					238.90 – 239.88m (0.98m wide) 8% SP. (3% Zn)		239.88 – 241.15	1.27	6519	12.7	0.83	4.25	238.90 – 243.45 (4.55m)
									239.88 – 241.15m (1.27m wide) 2% SP. (1% Zn)		241.15 – 242.38	1.23	6520	20.0	0.59	7.82	Ag 16.5
																	Pb 0.64
									241.15 – 242.38m (1.23m wide) 8% SP. (4% Zn)		242.38 – 243.45	1.07	6521	16.3	0.80	6.02	Zn 5.95
		A							242.38 – 243.45m (1.07m wide) 4% SP. (2% Zn)		243.45 – 245.45	2.00	6522	9.7	0.59	2.08	
											245.45 – 247.45	2.00	6523	10.9	0.52	2.99	
245.00																	
											247.45 – 248.97	1.32	6524	2.9	0.35	2.55	
	100	A							248.97 – 249.32m (0.45m wide) 2% SP. 7% Pb (1% Zn, 1% Pb)		248.97 – 249.32	0.55	6525	7.8	2.29	4.99	
											249.32 – 250.33	1.01	6526	2.9	0.33	1.62	
250.00																	249.97 – 253.3
									250.33 – 250.90m (0.57m wide) 7% SP. (4% Zn)		250.33 – 250.90	0.57	6527	9.4	1.12	6.32	(4.45m
																	Ag 9.5
									250.90 – 253.22m (2.32m wide) 3% SP. (2% Zn)		250.90 – 251.90	1.00	6528	9.3	0.64	5.46	Pb 0.84
																	Zn 5.30
		A									251.90 – 253.22	1.32	6529	15.4	0.86	7.68	
											253.22 – 254.72	1.50	6530	5.1	0.50	2.17	
255.00																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE
255.00				255.47 – 255.87m siliceous argillite (C2d)							255.77 – 256.20	1.48	6531	8.4	0.63	0.73	
		A		with 30% pyrite													
									256.20 – 256.90m (0.70m wide) 7% SP. (4% Zn)		256.20 – 256.90	0.70	6532	10.8	0.77	4.33	
256.98				256.98 – 261.05m C2d SILICEOUS ARGILLITE					256.98 – 261.05m 30% Pyrite band and								
	100			Grey to dark grey, fine siliceous or silicified					stockwork								
		C2d		argillite, very hard.													
260.00																	
261.05																	
		A		261.05 – 261.55m A MASSIVE SULPHIDE					261.55 – 263.65m : 30% pyrite band and								
261.55				261.55 – 263.65m C2d SILICEOUS ARGILLITE					stockwork								
	93			262.25 – 263.65m : predominantly qtz vein													
		C2d		in sheared zone													
263.65				263.65 – 266.70m C2b ARGILLITE					263.65 – 266.70m : 5% pyrite								
				Black, fine grain argillite with fine													
265.00	89			grain sand thin layer with carbonaceous													
		C2b		material													
				section contains irregular qtz vein.													
266.70				E.O.H													

TOTAL ENERGOLD CORPORATION
DRILL LOG

PROJECT: CLEAR LAKE	GROUND ELEV. (@ collar): 714.04
HOLE No.: 91-61	BEARING: 274.57°
LOCATION: 61504.73 N, 91945.74 E	DIP (@ collar): -49.6°
	TOTAL LENGTH: 188.06 m
LOGGED BY: R ZURAN	HORIZONTAL PROJECT: 122.81151
DATE: JULY 28th, 1991	VERTICAL PROJECT: -142.3688
CONTRACTOR: KLUANE DRILLING	ALTERATION SCALE: absent, slight, moderate, intense
CORE SIZE: NQ	
DATE STARTED: 2:00am, JULY 25th, 1991	
DATE COMPLETED: 9:00am, JULY 27th, 1991	TOTAL SULPHIDE SCALE: < 1%, 1%—5%, 5%—25%, 25%—50%, < 50%
DIP TESTS: 200', 60.96m -50.5°; 397', 121.01m -48.9°; 597', 181.97m -47.3°	

DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE: to intersect Massive Sulphide "unit A" and lead-zinc in the Lapilli Tuff "unit C5" beliveen 78-15 to the north, 79-18 to the south and above 91-50.

REASON FOR SHUT DOWN: both intersections were successful and no significant mineralization was encountered 4m beyond Massive Sulphide unit A.

PERTINENT GEOLOGY:

0 - 16.00m	Overburden
16.00 - 39.35	C2b Argillite (minor sand bands)
39.35 - 41.76	C2a Argillite (massive)
41.76 - 42.62	C5 Lapilli Tuff
42.62 - 44.15	C6 'Cherty' Tuff
44.15 - 68.20	C5 Lapilli Tuff
68.20 - 78.75	C2b Argillite (minor silt laminae)
78.75 - 106.35	C2d Argillite (silicified = chert?)
106.35 - 180.00	A Massive Sulphide
180.00 - 180.90	C2d Argillite (silicified)
180.90 - 183.95	A Massive Sulphide.
183.95 - 188.06	C2d or C4 Argillite or black chert (with stockwork - breccia)

LENGTH	AZIMUTH	DIP	NORTHING	ELEV	DIST FROM BL	SECTION	SEC OFFSET	DESCRIPTION
0.00	274.57	-49.60	0.00	714.04	54.26 W	97.0 N	5.27 S	COLLAR
30.48	274.57	-50.50	19.75	690.83	73.95 W	97.0 N	3.70 S	DIP CHANGE
90.99	274.57	-48.90	58.24	644.14	112.32 W	97.0 N	0.63 S	DIP CHANGE
103.01	274.57	-48.90	66.14	635.08	120.19 W	97.0 N	0.00 N	CS-SECTION
151.49	274.57	-47.30	98.01	598.55	151.96 W	97.0 N	2.54 N	DIP CHANGE
188.06	0.00	0.00	122.82	571.67	176.68 W	97.0 N	4.52 N	END OF HOLE

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
0				0-16.00m OVERBURDEN													
				Milled gravels of L leucocratic intrusives, and banded sandstone.													



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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
15				OVERBURDEN (Cont'd)													
15.24																	
16	21	LOST		16.00 - 39.35 C2b ARGILLITE (minor sand bands)													
17			1cm 0	Dk grey, v fine grain with local medium grain where bouma sequence present. Local breccia, faults, chaotic stringer zones. 10% sand bands.													
17.37				17.30													
18	78	C2b LOST		16.00 - 22.86 Intense clay altered argillite with local limonite with gouge (black) @ 22.10 & 22.40 m.													
19 18.90	94																
20																	
20.42		C2b	1cm 70	20.30													
21																	
22	86		gouge	22.10													
		LOST	(clay all) + lim.	22.40													
22.86																	
23			1cm 80	23.00					23.30m. Irregular oxidized fine grain py patch 3cm wide.								
24	96	C2b	1cm 20														
25																	
25.30				* 1													
26	87	LOST		26.00 - 34.20 FAULT ZONE													
26.51			60	Local breccia - subrounded C2b clasts, qtz & qtz carbonate clasts, contorted laminae, boudin texture and silica, and sideritic discontinuous stringer networks (up to 30%)													
27																	
28	98	C2b															
29																	
29.57																	
30			60	29.80													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	~~%~~ ppm Ag	% Pb	% Zn	COMPOSITE
30				C2b ARGILLITE (Cont'd)													
31	100																
32																	
32.61																	
33																	
34	100	C2b	lam 80	34.20													
				34.5													
35				34.20 - 37.00 10-15% sand-silt banded and laminated argillite. Laminae, bands become shallow TCA towards end of interval. Locally folded laminae (35.80 m).													
35.66			folded laminae														
36			lam 25	35.80													
				36.50													
37	100		HW 85	37.00													
				37.00 - 39.35 FAULT ZONE. Brecciated and boudin silica injection and sand banded argillite. Clast supported <= 5% matrix; black argillaceous gouge. Strongly brecciated towards end of interval. Clasts are subrounded.					38.05 Large 3.5cm blob of fine grain pyrite								
38																	
38.71																	
39			FW 70	39.35													
				39.35 - 41.76 C2a ARGILLITE (massive + py)					39.35 - 41.76 20% fine grain py as bands (1-8cm wide) - remobilized with trace amounts of lt. brown sphalerite								
40			gouge?	40.30													
41	100	C2a		Dk grey to black v. fine grain argillite, locally with gouge - argillic alteration. Interlaminated with grey-green ash towards end of interval. Gradational FW contact.													
42		C5	lap 85								42.40 - 42.90	0.46	6535	5.7	1.27	5.47	42.47 - 44.50 (2.03 m) Ag 3.6
				41.76 - 42.62 C5 LAPILLI TUFF					41.78 - 42.30 15% lt. brown sphalerite as large blobs 4cm x 1cm elongated to flattening direction. 3% galena as medium grain crystalline masses 3-4mm long		42.90 - 43.90	1.00	6536	1.7	0.11	2.45	Pb 0.43
43		C6		Grey-green lapilli tuff with intense argillic alteration. 1% local gypsum veinlet.							43.90 - 44.50	0.60	6537	5.3	0.35	9.04	Zn 5.04
44											44.50 - 45.35	0.85	6538	1.3	0.13	2.17	
44.81		C5		42.62 - 44.15 C6 LAPILLI "CHERTY" TUFF													
45																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	~~%~~ ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
45				C6 CHERTY LAPILLI TUFF													
				Grey green v. fine grain "cherty" lapilli tuff with					42.62 - 44.16 5% lt brown med. grain sphalerite		45.35 - 46.47	1.12	6539				
46			lap 75	46.00 non to weakly welded black argillite clasts (avg 1cm)					as irregular patches, trace galena and 5%								
	100			10% interbedded C5. Chert locally crackled.					fine grain py as irregular block								
47			lap 85	47.00 43.90 · Discontinuous 2 x 15mm siderite stringers.					44.15 - 68.20 Intermittent v. fine grain diss. py throughout		47.00 - 48.26	0.26	6533	1.8	0.20	1.50	
									tuff - up to 5%								
48 47.85				44.15 - 68.20 C5 LAPILLI TUFF					44.15 - 48.90 5% lt brown fine to med grain		48.26 - 48.84	0.58	6534	10.0	1.17	13.60	
				Grey-green, argillically and carbonate altered					remobilized sphalerite as large 2-5cm circular							(13.90)	
49	100		stringers	lapilli tuff - moderately to strongly welded, local areas					-ish blotches sporadic throughout interval.								
				of lapilli with interstitial remobilized calcite (white)					5% diss. locally framboidal py.								
50				49.10 - 49.60 Calcite stringers (10%) 90% rea						"							
				1-3mm wide with 1% gypsum stringers as well													
51 50.90			lap 90	Siderite stringers ? - trace.						"							
52	100	C5	lap 85							"							
53										"							
54 53.96			lap 65	54.50						"							
55	100																
56										"							
57 51.00			lap 90	57.34					57.34 fine diss py in a band 3cm wide	"							
58	96									"							
									58.00 - 62.00 v fine grain disseminated py. throughout								
59			lap 90	59.00					interval 3%								
60																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
60				C5 LAPILLI TUFF (Cont'd)													
60.55																	
61	100		lap 85	61.00													
62			lap 90	62.50													
63 63.09																	
64	95	C5	lap. 90	64.00													
65																	
66 66.14		LOST	lap 90	66.00													
67	100	C5	lap 85	67.00					67.00-68.00 increased diss fine grain py (5%) overprinting lapilli and forming occassional rind.								
68				68.20 -78.75 C2b ARGILLITE (minor silt laminae)													
69 69.19			75	69.00 Dk grey, v fine grain argillite with v. fine c½ mm silt laminae throughout interval. HW forms a transitional contact with C5. Upper					68.00-68.70 10% v. fine grain disseminated py ash tuff / argillite bedding planes								
70				part of interval - as far as - 70.70 m; interbedded with grey-green ash. Well cleavaged primarily parallel to laminae. Local convoluted and wavy laminae.					69.70-71.50 Trace - 5% pyrite as disseminations forming bands, blobs (2-3cm long) and irregular masses.								
71	100	C2b	lam 85	72.00													
72 72.25			convoluted														
73	100			73.40 73.60 73.40-74.00 Convoluted to wavy silty laminae.													
74			wavy														
75			lam 68														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
75				C2b ARGILLITE (Cont'd)													
75.29	100																
76				75.60													
				76.10													
77	100	C2b															
			70 wavy lam.														
78				77.77													
78.33																	
79			65	78.75													
	100																
80																	
81				78.75-106.35													
81.38			Bx	81.30													
82		C2d															
	98																
83																	
84																	
84.43			60	84.23													
		LOST															
85																	
86	96	C2d		85.86													
87																	
87.48		LOST															
88																	
	97	C2d	85	3													
89																	
90																	

C2b ARGILLITE (Cont'd)

75.60-75.10 Calcite stringer zone (20%), white calcite stringers 2-3mm wide predominantly 80-90° TCA parallel with local cleavage.

76.60-77.05 V. fine <½mm wide siderite stringers (5%) parallel to cleavage:

*3

77.77-78.75 FAULT Brecciated qtz network, clast supported with <5% black argillaceous matrix.

C2d ARGILLITE (silicified → chert? CA)

Dk grey to black severely silicified argillite and/or chert. Local feather stringers of calcite, silica and siderite. Also as irregular patches (1-5cm)

81.30-81.50 Crackled and brecciated chert/arg. with off white silica injection.

85.86-86.00 Milky white veinlet with breccia, 70° TCA.

87.70 Small (1cm wide) irregular patch of siderite

*3

88.25-88.50 Breccia zone - Small FAULT with well developed breccia; clast supported with 90% C2d - 10% C2d with qtz feather fractures. Clasts are subangular avg 7mm in size.

78.75-106.35 Commonly 5-10% fine grain pyrite up to 25-30% from 104.50 to 106.35 - end of interval. Occurs as irregular stringers 2-4mm wide, fine disseminations, fine disseminations in blob masses - also diss framboids (2mm in diameter) and in blob masses, blobs 1-3cm in diameter, contorted blobs (with "tails") irregular crackled masses from several mm to several cm long.

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
90				C2d ARGILLITE (cont'd)													
90.53	97			90.53 – 92.00 Calcite - milky qtz - siderite (?) injection													
C4				GS overlap @ 0-5° TCA. Feather fractures coming													
				off main injection of white calcite and siderite as													
C2				a selvage. Patches of injection up to 9x8cm.													
	100																
C3			70	92.00 Yellow-brown siderite selvage													
93.57		C2d		91.40m. off white calcite													
C4				Silicified argillite													
	100			Breccia with jarosite-limonite stained qtz													
95				+ siderite matrix					Barite crystal								
C6									Black silicified argillite								
96.62		LOST							pyrite replaced barite crystal								
97																	
C8	95								Partially replaced barite crystal by pyrite 1cm								
C9																	
99.67									100.05 Pyrite replacing barite? Per possibly								
100									qtz crystals in black silicified argillite. Local								
									texture.								
101	98	C2d															
102																	
102.72																	
103																	
				104.00 – 106.35 Silicified argillite so siliceous it													
104	100		60	104.00 resembles chert. (C9)													
105																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Carb C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
105				C2d ARGILLITE (Cont'd)													
105.97	100	C2d	70	105.60													
106				106.35-180.00							105.19 - 106.35	1.21	6540	1.4	0.03	0.31	
				A MASSIVE SULPHIDE							106.35 - 107.00	0.65	6541	2.4	0.23	1.01	
107				Bronze coloured fine grain locally medium grain							107.00 - 108.00	1.00	6542	2.5	0.14	0.65	
	100			massive sulphides (80-100% pyrite) with a sphalerite													
108			calcite	local textures: crackled, banded, brecciated,							108.00 - 108.81	0.81	6543	1.6	0.15	0.65	
108.81				colloform. Local carbonate alteration, veining,							108.81 - 109.78	0.97	6544	3.2	0.25	1.29	
109				and silica alteration, veining. Carbonate - calcite							109.78 - 110.02	0.24	6545	0.6	0.31	0.77	
				up to 20% as irregular patches - interstitial													
110				areas in core. Local small (< 1cm) intervals							110.02 - 110.97	0.95	6546	1.2	0.07	0.81	
	100			of silicified argillite noted within interval							110.97 - 111.50	0.53	6547	2.0	0.08	1.09	
111											111.50 - 112.00	0.50	6548	7.1	0.05	0.96	
111.86				109.75 - 110.50 Calcite veinlets 1 - 12cm wide							112.00 - 112.50	0.50	6549	7.5	0.17	1.96	
112		A		20% of interval - white.							112.50 - 113.00	0.50	6550	5.7	0.10	1.09	
											113.00 - 114.00	1.00	6551	9.3	0.33	1.88	
113	100			113.20-113.40 Large (20cm long) irregular white					113.40 - 113.60 First significant sphalerite								
				patch of calcite					20% as fine grey brown masses / discs.								
114			80						along internal bands.		114.00 - 115.00	1.00	6552	7.0	0.16	0.84	
114.91				113.80 - 114.60 Bedded pyrite, interstitial areas					/ chert								
115				is silicified argillite. Beds are cracked, show					114.75 - 118.60 10% fine grain 11 brown		115.00 - 116.00	1.00	6553	10.3	0.27	2.28	
				some boudin textures and avg. 3mm wide					grey brown to honey sphalerite along interstitial								
116	100								sulphides as disseminations - sub euhedral.		116.00 - 117.00	1.00	6554	11.7	0.63	2.95	
117											117.00 - 118.00	1.00	6555	14.1	0.97	3.62	
117.05																	
118									119.63 Elongated masses of 11 grey - brown		118.00 - 118.50	0.50	6556	8.4	0.43	2.97	
				119.56-119.80 Boudin textured beds of pyrite (60%) in					v fine grain sph between py. beds in silicified								
119	100		60	silicified argillite. 3mm wide					argillite.		118.50 - 119.80	1.30	6557	5.3	0.11	0.50	
			70	119.92													
120																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
120.0				A MASSIVE SULPHIDE (Contd)													
	100		qz crst.	120.50 120.50-120.95 30% silicified argillite between broken and cracked bands of pyrite 3mm wide.					120.65-120.95 2% fine grain to med grain black/dark sphalerite occurs enclosed in silicified argillite along py band surfaces.		119.80 -120.59	0.79	6558	6.8	0.30	1.71	
121 (121.01)											120.59 -121.00	0.41	6559	8.6	0.50	2.87	
											121.00 -121.53	0.53	6560	5.3	0.59	2.96	
	100										121.53 -122.25	0.72	6561	>0.8	1.37	9.61	
122				122.90 - 123.05 60% silicified argillite.					121.50-123.15 V fine grain grey brown sph along fracture surfaces and interstitial laces - 5%		122.25 -123.00	0.75	6562	14.8	1.26	5.10	121.53 -126
											123.00 -124.00	1.00	6563	14.7	1.18	5.92	Ag 1
123			calcite														Pb 1
124.05				123.25 - 126.00 Large irregular patches of calcite													Zn 6
124				(1-2cm long) occupying 20% of course					123.15-123.70 10% fine grain sub-euhedral lt brown grey brown and black/dark sph		124.00 -125.00	1.00	6564	11.0	0.73	5.32	
125																	
									6550 spotted w. 8% abundant irregular contorted		125.00 -126.00	1.00	6565	8.9	0.94	4.90	
126	100								patches of calcite. Trace galena.								
											126.00 -127.00	1.00	6566	2.5	0.39	1.51	
127		A	calcite	127.00 - 133.00 10-15% interstitial areas are now silicified argillite.													
127.10			C2d								127.00 -128.00	1.00	6567	0.6	0.36	0.88	
128																	
											128.00 -129.00	1.00	6568	<0.1	0.27	0.56	
129	100																
			C2d						129.00 - 129.95 5% fine grain diss. sph		129.00 -130.15	1.15	6569	<0.1	0.28	0.44	
									locally along interstitial interfaces		130.15 -130.90	0.75	6570	0.7	0.21	0.56	
130																	
130.15				130.00 - 130.40 Calc-fabric lenticular pyrite about interstitial							130.90 -131.33	0.43	6571	0.5	0.22	0.84	
131			calciform Py	ial silicified argillite.													
			C2d								131.33 -132.63	1.30	6572	2.4	0.14	0.35	
132	100																
											132.63 -132.94	0.31	6573	<0.1	0.11	1.30	
133				133.00 Acicular calcite crystals within C2d interstitial							132.94 -135.00	2.06	6574	<0.1	0.20	0.94	
133.20				patch													
134				133.50 large patch 4x2cm of calcite													
	100																
135											135.00 -137.00	2.00	6575	0.7	0.39	0.91	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Carb C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE
135				A MASSIVE SULPHIDE (Cont'd)													
136	100																
136.25									136.90 - 139.30 1-3% fine disseminated H								
137			calcite						brown sphalerite throughout intervals; spotty		137.00 - 137.29	0.29	6576	1.1	0.36	3.94	
138									dispersion.		137.29 - 139.00	1.71	6577	0.2	0.23	1.38	
139																	
139.29											139.00 - 140.00	1.00	6578	0.1	0.26	1.42	
140																	
141	100	A									140.00 - 142.00	2.00	6579	<0.1	0.21	0.83	
142																	
142.34									142.30 - 143.00 1% fine grain sub-euhedral		142.00 - 142.30	0.30	6580	0.6	0.24	1.10	
143									H brown to honey sphalerite spotty dispersion		142.30 - 143.20	0.90	6581	2.3	0.39	3.27	
144	100								along fractures and interfaces of calcite		143.20 - 143.83	0.63	6582	2.4	0.59	3.96	
145									injection patches		143.83 - 145.00	1.17	6583	1.4	0.31	0.68	
145.39				145.30					148.00 1497.00 - 2-3% fine grain subeuhedral H		145.00 - 145.30	0.30	6584	1.3	0.16	0.72	
146	98			144.90 - 145.18 crackled and brecciated pyrite with 30-40% calcite interstitial material					brown to honey sph along fracture surfaces and interfaces of calcite injection patches		145.30 - 145.70	0.40	6585	2.3	0.59	3.79	
147				145.18 - 145.30 Small (12cm) interbed ?? of C2a - massive argillite with gouge at FW							145.70 - 146.70	1.00	6586	1.0	0.24	0.99	
148				#4					148.00 - 148.40 50% fine grain H. brown - honey sphalerite between clasts within matrix of breccia		146.70 - 147.10	0.40	6587	1.3	0.72	4.69	
148.44				145.30 FAULT PLANE with minor (20%) crushed graphitic argillite and black gouge							147.10 - 147.90	0.80	6588	1.2	0.50	3.01	
149	100										147.90 - 149.00	1.10	6589	0.8	0.31	1.73	
150				148.00 - 148.40 Calcite injected breccia					149.09 - 149.40 8% fine grain H. brown sph as irregular masses / networks		149.00 - 149.30	0.30	6590	1.3	0.93	3.88	
											149.30 - 149.88	0.58	6591	<0.1	0.12	2.18	

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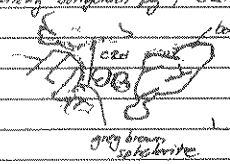
GEOLOGICAL DESCRIPTION

A MASSIVE SULPHIDE (Cont'd)

149.20 - 150.25 5-20% CZd interstitial silicified argillite. Pyrite exhibits poorly developed bedding and laminated textures.

150.00 - 157.30 3-5% grey brown, fine grain. sphalerite along hornblende py & CZd interfaces.



157.30 - 159.00 Same occurrence of sph as above, 1-2%

159.00 - 160.00 Some occurrence of sph, 8%

160.00 - 161.50 1-2% sph, same occurrence as above

161.50 - 162.30 5% grey brown sph - as above

162.30 - 167.03 3-5% sph - as above

LOST

LOST

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	ALTERATION A (Si)	ALTERATION B (Ca)	ALTERATION C (arg Δ)	FRACT INTENSITY	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Au ppm	Pb %	Zn %	COMPOSITE
150															
151.44	100		CZd						149.86 - 152.00	2.12	6592	<0.1	0.08	0.13	
152									152.00 - 154.00	2.00	6593	<0.1	0.10	0.22	
153	99		calcite												
154									154.00 - 154.50	0.50	6594	<0.1	0.28	1.97	
154.55			CZd						154.50 - 155.00	0.50	6595	<0.1	0.70	4.20	
155									155.00 - 155.65	0.65	6596	<0.1	0.81	2.86	
156	100	A							155.65 - 156.03	0.38	6597	<0.1	0.47	0.80	
157									156.03 - 157.00	0.97	6598	<0.1	0.61	3.22	
157.50									157.00 - 158.00	1.00	6599	<0.1	0.49	1.76	
158									158.00 - 158.74	0.74	6600	<0.1	0.46	1.42	
159	100								158.70 - 159.35	0.56	6601	<0.1	0.27	2.88	
160									159.35 - 160.18	0.83	6602	0.9	0.32	3.19	
160.65			LOST						160.18 - 161.26	1.08	6603	0.4	0.25	1.31	
161									161.26 - 161.87	0.61	6609	2.9	0.58	4.85	
162	93	A							161.87 - 163.00	1.13	6605	2.3	0.38	2.38	
163									163.00 - 164.54	1.54	6606	1.5	0.37	0.98	
165.68			LOST						164.54 - 166.10	1.56	6607	2.6	0.66	3.77	
164	92		A												
165															

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% ppm Ag	% Pb	% Zn	COMPOSITE ASSAYS
165				A MASSIVE SULPHIDE (Cont'd)													
				165.20 165.20 - 166.25 Breccia zone, injected with calcite													
166	92		Bx	Clasts angular, avg. 1½ cm. 70% py, 30% C2d							166.10 - 167.18	1.08	6608	0.8	0.22	1.23	
				166.25													
166.73																	
167				167.07 - 168.10 Off white to pale light grey coarse													
			60 calcite vein	167.07 crystalline calcite vein					167.07 - 180.00 Trace amounts of grey-brown								
168	100								sphalerite along interstitial interfaces between								
									C2d and massive pyrite.		168.20 - 169.00	0.80	6609	0.2	0.15	0.28	
169			C2d														
169.47											169.00 - 171.05	1.05	6610	0.4	0.16	0.18	
170				170.09 Off white calcite vein 4cm wide @ 85° TCA							171.05 - 171.50	0.45	6611	<0.1	0.05	0.70	
171	100										171.50 - 172.86	1.36	6612	<0.1	0.09	0.23	
172		A									172.86 - 173.37	0.51	6613	<0.1	0.06	1.38	
172.52																	
173											173.37 - 175.00	1.63	6614	<0.1	0.02	0.07	
174	100																
											175.00 - 177.00	2.00	6615	<0.1	0.08	<0.01	
175																	
175.56				175.56 - 180.40 Crackled pyrite													
176			CRACKLED														
											177.00 - 179.00	2.00	6616	<0.1	0.10	0.05	
177	100																
178																	
178.61											179.00 - 180.00	1.00	6617	1.2	0.19	0.25	
179																	
180																	

PAGE 13 OF 13 | PROJECT CLEAR LAKE | HOLE No. 91-61

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	Ag ppm	Pb %	Zn %	COMPOSITE ASSAYS
180																	
		C2d		180.00-180.90 C2d ARGILLITE (sheared)	a	w					180.00-180.99	0.99	6618	0.7	0.13	0.22	
181	100			180.65 A Dk grey v fine grain silicified argillite with		b		3½			180.99-183.95	3.05	6619	<0.1	0.10	0.02	
				30% fine grain irregular masses of pyrite	b	a											
181.97				* 4		b											
182		A		180.65-180.90 FAULT, black crushed sheared	b	a											
				bituminous-graphitic argillite loose material		b											
183	100				b	b											
184				180.90-183.95 A MASSIVE SULPHIDE		b											
				184.17 5 Bronze coloured fine grain (locally martitic) massive													
185				pyrite with local small (1cm) irregular patches													
185.01				of interstitial calcite and/or silicified argillite (C2d)													
186		C2d or CA		183.95-188.06 E.O.H C2d or CA = ARGILLITE or black CHERT					184.17-188.06 (E.O.H.) 5% of irregular masses,								
	100			* 5					and blebs, stringers within stockwork.								
187				183.96-184.17 FAULT; Black, crushed, broken													
				bituminous-graphitic fault. Loose material;													
188				identical in description to Fault # 3. Sharp HW													
188.06				& FW contacts.													
190				184.17-188.06 (E.O.H.) Dk grey, severely silicified													
				carbonate injected, stockwork-brecciated argillite													
				or possibly black chert. Clasts are sub-angular to													
				angular and average 7mm long. Interval is 70%													
				stockwork breccia. Stringers, stringer-network													
				more abundant at top of interval													
				E.O.H @ 188.06m													

TOTAL ENERGOLD CORPORATION
DRILL LOG

PROJECT: Clear Lake	GROUND ELEV.: 703.84 m
HOLE No.: 91-62	BEARING: 271.59°
LOCATION: 6961569.43 N, 492101.36 E	DIP: -58.5°
	TOTAL LENGTH: 333.76 m
LOGGED BY: Atsushi Gomi	HORIZONTAL PROJECT: 185.1685
DATE: August 4, 1991	VERTICAL PROJECT: -277.6454
CONTRACTOR: Kulane Drilling Ltd.	
CORE SIZE: NQ till 191.11m, BQ 191.11-333.76m	
DATE STARTED: July 27, 1991	
DATE COMPLETED: August 2, 1991	

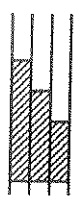
DIP TESTS — Sperry-Sun

Acid test

60.96m	-56.3°
124.05	-55.8
185.01	-56.0
243.84	-55.6
304.80	-56.7

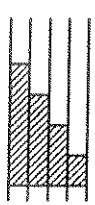
Instrument stucked at depth of about 150m. No test was conducted.

ALTERATION SCALE



absent
slight
moderate
intense

TOTAL SULPHIDE SCALE



< 1%
1%—5%
5%—25%
25%—50%
< 50%

DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE: To intersect down extension of massive sulphide and ore which was intersected by previous hole DDH 82-27.

REASON FOR SHUTTING DOWN

No sulphide was intersected at expected posision. (23.76 m was extended after reaching schedule depth 310m.)

PERTINENT GEOLOGY

0 — 35.72		OVERBURDEN
35.72 — 55.10	C2a	ARGILLITE
55.10 — 55.60	C1a	SANDSTONE
55.60 — 57.61	C2a	ARGILLITE
57.61 — 60.30	C1a	SANDSTONE
60.30 — 63.30	C5	ASH TUFF
63.30 — 65.95	C2d	SILICEOUS ARGILLITE
65.95 — 84.30	C4	CHERT
84.30 — 86.60	C2a	ARGILLITE
86.60 — 95.60	C2b	ARGILLITE
95.60 — 98.30	C2a	ARGILLITE
98.30 — 120.00	C2b	ARGILLITE
120.00 — 121.48	C3	BRECCIA CONGROMERATE
121.48 — 124.30	C2b	ARGILLITE
124.30 — 156.62	C2a	ARGILLITE
156.62 — 157.10	C2c	ARGILLITE
157.10 — 163.24	C2a	ARGILLITE
163.24 — 164.22	C2c	ARGILLITE
164.22 — 175.00	C2a	ARGILLITE
175.00 — 184.10	C2b	ARGILLITE
184.10 — 192.35	C2a	ARGILLITE
192.35 — 223.50	C2c	ARGILLITE
223.50 — 285.90	C2b	ARGILLITE
285.90 — 286.25	C5	LAPILLI TUFF
286.25 — 289.50	C2b	ARGILLITE
289.50 — 292.15	C2c	ARGILLITE
292.15 — 293.24	C5	LAPILLI TUFF
293.24 — 301.24	C2b	ARGILLITE
301.24 — 301.75	C5	LAPILLI TUFF
301.75 — 304.03	C2a	ARGILLITE
304.03 — 305.07	C4	CHERT
305.07 — 308.02	C2a	ARGILLITE
308.02 — 315.60	C2b	ARGILLITE
315.60 — 324.40	C2a	ARGILLITE
324.40 — 328.27	C5	ASH TUFF
328.27 — 333.76	C2b	ARGILLITE

PLAN PLOT — SECTION PLOT — LONGITUDINAL PLOT

LENGTH	AZIMUTH	DIP	HORZ	ELEV	DIST FROM DL	SECTION	SEC OFFSET	DESCRIPTION
0.00	271.59	-58.50	0.00	703.84	101.36 E	5% ~~98.0~~ N	0.57 S	COLLAR
30.48	271.59	-56.30	15.93	677.85	85.44 E	~~98.0~~ N	0.13 S	DIP CHANGE
38.81	271.59	-56.30	20.55	670.92	80.82 E	~~98.0~~ N	0.00 N	CL-SECTION
92.51	271.59	-55.80	50.34	626.25	51.04 E	~~98.0~~ N	0.83 N	DIP CHANGE
154.53	271.59	-56.00	85.20	574.95	16.19 E	~~98.0~~ N	1.79 N	DIP CHANGE
214.43	271.59	-55.60	118.70	525.30	17.29 W	~~98.0~~ N	2.72 N	DIP CHANGE
274.32	271.59	-56.70	152.53	475.87	51.12 W	~~98.0~~ N	3.66 N	DIP CHANGE

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
0				0 – 35.72 OVERBURDEN greenish gray sericite-chlorite-qtz. schist, dolerite, white massive qtz. pebbles and cobbles.													
5																	
10																	
15																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
45	100	C2a		C2a ARGILLITE (continues)													
				45.5 – 45.9 extensively sheared to shinny graphitic fragments and clay. brecciated subrounded qtz and pyrite fragment 1 – 20 mm in black graphitic clay matrix.													
(47.24)	87																
(47.85)		C2a	45	massive black argillite					48.0 width 0.5 – 2 mm pyrite gash vein cts cut along argillite cleavages.								
50	94	C2a	45	white, massive qtz. vein intruded along argillite cleavages													
				slightly sheared.													
(53.95)		C2a															
55	100	C1a	(55.10) (55.60)	55.10 – 55.60 C1a SANDSTONE gray, medium-grained, massive.													
(56.39)	100	C2a		55.60 – 57.61 C2a ARGILLITE black, fine-grained, sheared argillite with 30cm thick sandstone interlayers.													
(57.61)	82	C1a	(57.61) 40	57.61 – 60.30 C1a SANDSTONE gray, medium-grained, massive, siliceous, with 30 – 45cm thick black, sheared argillite interlayers.													
(58.83) 60	100	C1a	55														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
60		C1a	(60.30)	60.30 – 63.30 C5 ASH TUFF (siliceous, cherty)													
	100	C5	50 30	pale greenish light gray, very fine-grained, massive to													
				finely bedded, siliceous with numerous 0.5 – 3 mm-													
(61.87)			20	widish gash qtz. veins.													
	100	C5		60.30 – 60.75 very cherty with qtz. fragments.													
(63.09)			(63.30)	63.30 – 65.95 C2d SILICEOUS ARGILLITE (conformable contact to C5)													
		C2d	50	gray, fine-grained, finely banded with numerous 0.1 –													
	100			5 mm qtz. networks and gash veinlets.													
65			40														
			(65.95)	65.95 – 84.30 C4 CHERT (transitional contact to C2d)													
(66.14)				pale gray, very fine-grained, banded with black argillite													
			50	thin layers, occasionally thin ash tuff layers. numerous													
	100	C4		0.1 – 3 mm qtz. networks and gash veinlets irregularly													
				cut, partly brecciated and cemented by qtz. veins.													
(69.19)			△ △	69.2 – 69.4 brecciated and cemented by qtz.													
70			△														
	92	C4															
(71.63)																	
			50	72.30 0.5 – 1.5 cm thick ash tuff inlayer.													
	100	C4	55	72.95 0.5 cm thick ash tuff inlayer.													
				73.70 0.7 cm thick ash tuff inlayer.													
			40 50	73.95 0.3 cm thick ash tuff inlayer.													
(74.22)																	
75			35														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
75	93			75.28 0.5cm thick ash tuff inlayer.													
(75.29)	100	C4	50	76.10 two 0.3cm thick ash tuff inlayers.													
				76.67 1cm thick ash tuff inlayer.													
(76.50)			40	76.82 three 0.5 – 1cm thick ash tuff inlayers.													
	100		25	77.00 0.8cm thick ash tuff inlayer.													
				77.08 0.5cm thick ash tuff inlayer.													
(78.39)		C4															
				C4 CHERT (continued)													
	100		60	79.90 0.5cm thick ash tuff inlayer.													
80				very siliceous													
(81.08)																	
		C4	35	82.07 0.3 – 1.5cm thick ash tuff inlayer.													
	100			83.20 0.9cm thick ash tuff inlayer.													
			40	83.42 0.3cm thick ash tuff inlayer.													
(83.52)			65														
			(84.30)	84.30 – 86.60 C2a ARGILLITE													
		C2a	60	black to dark gray, fine-grained, massive to finely banded													
85	100			occasional intrusion of qtz. lens, veinlets and networks.													
			40	84.50 – 84.57 thin layer of chert.													
(86.56)			(86.60)														
			20	86.60 – 95.60 C2b ARGILLITE with minor sandstone bands													
			10	dark gray, medium-grained, finely-bedded, occasional													
	100	C2b	35	intrusion of qtz. veinlets and networks.													
			50														
(89.61)																	
90	100		75														

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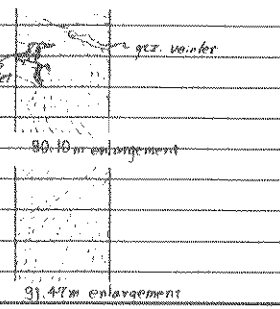
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
90			40	C2b ARGILLITE (continues)													
	100	C2b	40	cross lamina at 90.10.													
				numerous qtz. quartz veins 0.1 - 2mm width cut 40 degrees to core.					qtz. veinlet; qtz. veinlet; 90.10 m enlargement								
				cross lamina at 91.47 suggests normal accumulation.					91.47m enlargement								
(92.96)																	
	100		30														
95				94.7 - 96.6 shightly brecciated and cut numerous drusy													
			(95.60)	qtz. veins and veinlets.													
(96.01)				95.60 - 98.30 C2a ARGILLITE													
		C2a		black to dark gray, fine-grained, massive to finely-banded													
			15														
(98.45)			(98.30)	98.30 - 120.00 C2b ARGILLITE													
		C2b	0	dark gray, medium-grained, finely banded.													
(99.67)																	
100			0	100.92 - 101.28 sheared zone													
			(100.92)	sheared and brecciated to argillite fragments and cut by qtz.													
			30 (101.28)	101.65 - 101.95 qtz. veining cut at 30 degrees to core													
			3														
		C2b	20														
(102.72)			0														
				numerous microfolding structures													
105			3														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
105	100	C2b	8	C2b ARGILLITE (continues)													
(105.77)				106.3 width 0.5 - 5mm drusy open tension crack cut at 35 degrees to core.													
	100		45														
(108.81)																	
110																	
	100		13														
(111.86)		C2b	5														
			17														
	100		△△	113.2 – 113.7 slightly brecciated and intruded by numerous calcite-qtz. veinlets and networks.													
(114.91)			10														
115																	
	100	C2b	35														
(117.96)																	
	100		35														
120																	

(120.00)

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
120	100	C3	30	120.00 – 121.48 C3 BRECCIA CONGLOMERATE dark gray, banded conglomerate. 1–10mm subangular,													
(121.01)			(121.48)	elongated breccia of pyrite, chert, tuff(?) in black, fine-													
				121.48 – 124.30 grained amphitic matrix. grading suggests reverse accumulation C2b ARGILLITE													
	100	C2b	50	dark gray, medium-grained, finely banded with numerous													
				qtz. veinlets and networks.													
(124.65)			(124.30)	124.30 – 156.62 C2a ARGILLITE													
		C2a		black to dark gray, massive to slightly banded, with irregular													
125	100		10	qtz. leas intrusion along beddings and cleavages, partly													
				extensively sheared to bright graphitic fragments and clay.													
(126.19)	100																
(127.10)			≈50	sheared to graphitic fragments.													
		C2a		127.10 – 127.40 qtz. intruded irregularly along beddings.													
	100		50	128.92 – 131.05 qtz. intruded irregularly along beddings.													
130																	
(130.15)																	
	100			slightly sheared to graphitic fragments.													
		C2a	40	132.20 – 133.95 numerous qtz. intrusion.													
(133.20)																	
	100		20														
135																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
135	100	C2a		C2a ARGILLITE (continues)													
(135.64)	100			Sheared and intruded qtz.-calcite veinlets, lenses,													
(136.25)	100			and networks along cleavages and beddings.													
(137.71)	100		25														
(139.29)				138.90 – 141.15 intensively sheared to black													
140	90			graphitic fragments and clay.													
(140.51)	74																
(141.12)	100	C2a	58	141.50 – 143.75 intensive intrusion of irregular													
(142.34)	100		50	qtz.-calcite leases and networks in slightly sheared													
(143.56)	82			argillite.													
(144.78)			55														
145	100		28														
(146.00)	100	C2a	28	147.05 – 149.15 irregular intrusion of qtz. leases and													
(148.00)				networks in slightly sheared argillite.													
(148.44)	100	C2b	40														
(149.66)			60	149.18 – 150.80 intensively sheared, and crushed.													
150				149.66 – 150.57 intensive intrusion of qtz. veins.													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
150					C2a ARGILLITE (Continues)													
(150.57)	100		60		intensive qtz. intrusions along argillite beddings and cleavages													
(151.49)	100	C2a	55															
			52		153.3 – 153.9 intensively sheared to graphitic fragments													
					and clay and white milky massive qtz. intruded along													
(153.92)					shears.													
155	100																	
		C2a																
(155.75)	100		(156.42)															
		C2c	(157.10)	156.62 – 157.10	C2c ARGILLITE with many sandstone bands													
			30	157.10 – 163.24	C2a ARGILLITE													
(157.58)					black, fine-grained, massive to finely banded,													
					extensive qtz. veinings and networks cut along beddings													
	100	C2a			and cleavages.													
160																		
					160.30 – 160.63 sheared to graphitic fragments.													
(160.63)																		
	100	C2a	40															
			30															
			(163.24)	163.24 – 164.22	C2c ARGILLITE with many sandstone bands													
(163.39)		C2c	60		164.22 – 165.00 intensively sheared to graphitic													
	100		(164.22)	164.22 – 175.00	fragments and clay.													
165		C2a			C2a ARGILLITE													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
165				C2a ARGILLITE (Continues)													
	100			166.3 – 166.8 extensively sheared to 2–7 mm subrounded black argillite and qtz. fragments and graphitic clay matrix.													
(166.73)		C2a															
	100		25														
(169.77)																	
170			45	170.55 – 171.90 qtz. vein cut at 45 degrees to core.													
	100																
		C2a	15														
(172.82)																	
	100		17														
175			(175.00)														
				175.00 – 184.10 C2b ARGILLITE														
(175.87)			15	pale gray to gray, fine-grained, finely banded with silt.													
			0														
	100	C2b	18														
(178.92)																	
180	100		55														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
180			25	C2b ARGILLITE (continues)													
	100			numerous qtz. networks and gash veins in argillite.													
			40														
(181.97)		C2b															
	100																
			(184.10)														
		C2a	75	184.10 – 192.35 C2a ARGILLITE													
185				black to dark grey, fine-grained, slightly banded with silt.													
(185.01)				partly sheared to graphitic fragments.													
			50														
	100	C2a															
(188.06)																	
	100			189.55 – 189.75 white milky massive qtz. vein cut at													
190				50 degrees to core.													
				189.8 – 192.35 extensively sheared to 0 – 5 mm sub-													
(191.11) reduced to 190 core		C2a		rounded argillite and qtz. fragments and cut by white													
	100			milky qtz. veinings.													
			(192.35)														
			65	192.35 – 223.50 C2c ARGILLITE													
(192.94)																	
	100	C2c		193.7 – 194.0 Sheared to 1 – 7 mm sub-rounded to													
				sub-angular argillite and qtz. fragments in black clay matrix.													
(194.77)																	
195	100																

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
195				C2c ARGILLITE (continues)													
	100	C2c	70	gray to dark gray, fine-grained, finely banded with silt.													
(197.21)			55														
(197.82)			70														
	100	C2c															
200				199.90 – 204.95 intensive qtz. veinings and networks													
(200.25)			65														
		C2c		202.2 – 204.2 intensively sheared to graphitic fragments													
(202.39)				and intruded by white milky qtz. veinings and networks.													
				204.40–204.85 highly silicified and brecciated sandstone													
				cut by numerous qtz. networks. dmcy tension cracks width													
				1 – 4mm cut 30 degrees to core.													
(204.22)																	
205				205.3 – 205.8 slightly sheared													
			30														
(206.35)			30														
		C2c	80														
				208.5 – 209.7 intensively sheared to graphitic fragments.													
(209.40)																	
210			60														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
210			70	C2c ARGILLITE (Continues)													
(211.84)		C2c	60	212.9 – 219.0 white milky qtz. veins, lenses and networks intensively intruded along beddings and cleavages.													
(214.88)			55	213.95 width 4 cm vuggy calcite vein cut at 40 degrees to core.													
215			15														
(216.71)		C2c															
(218.54)			40														
220			45														
(221.59)		C2c	35	222.2 – 222.9 intensively sheared w graphitic fragments													
(223.50)				223.50 – 285.90 C2b ARGILLITE with minor sandstone bands, dark gray to black, fine-grained, finely laminated with sand, silt,													
(224.64)		C2b	33	224.8 – 225.0 sheared and crushed.													
225			10														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
225		C2b	28	C2b ARGILLITE (continues)													
				slightly sheared and crushed.													
(227.69)			13														
			15	229.2 – 235.8 width 0.2 – 5cm qtz. networks and argillite beddings and invaded along beddings irregularly.													
230				rather massive argillite (close to C2a).													
(230.13)		C2b		229.2 – 231.1 sheared to argillite fragments.													
			5														
(233.17)				slightly sheared and crushed.													
235				sheared and crushed.													
			15														
(235.92)																	
(236.88)		C2b	20	rather massive argillite (close to C2a).													
			30														
(239.58)																	
240			20														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
240		C2b	60	C2b ARGILLITE with minor sand/silt bands (continues)													
				240.6 – 241.1 white milky qtz. intruded along cleavages													
				241.1 4cm fault gauge. black clay and argillite sub-angular fragments.													
(247.93)			20														
			40														
245																	
(245.91)			20														
		C2b		minor core crushing.													
(248.56)			35														
250																	
(251.6)									silt band / qtz. veinlet / black argillite								
			50	251.45 cross laming in argillite suggest reverse accumulation (over turned) stratigraphy.					251.45m enlargement (cross lamina)								
		C2b	60	minor qtz. veining on argillite.													
(253.90)																	
255			15														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
255				C2b ARGILLITE (Continues)													
			60	255.88 – 257.00 intensively sheared to graphitic													
(256.03)			40	fragments, elongated qtz lenses intruded along shears.													
		C2b		footwall contact at 55 degrees to core.													
			27														
(257.84)				slightly crushed and sheared.													
			35														
260																	
				260.30m slumping micro-fold texture.													
			5														
		C2b															
(262.74)				slightly crushed.					260.30m enlargement								
(263.35)																	
	81		40														
265																	
				crushed to argillite fragment along beddings.													
(265.48)	100			bright shiny graphite along bedding and crushed planes.													
(266.40)	100	C2b															
(267.31)			35														
	97		40	core crushed along bedding planes.													
(269.95)				micro-folding textures.													
270	97		50														

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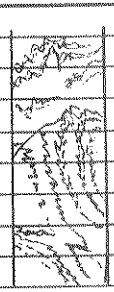
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
270			5	C2b ARGILLITE (Continues)													
	97			core extensively crushed to pieces along cleavages.													
(272.18)		C2b	50														
	92																
275			15	sheared, core lost 0.30 m													
			70	275.50 sheared 5cm to graphitic fragment and clay. minor qtz. intrusion.													
(275.84)			35														
	100	C2b	45														
			85														
(278.59)			45														
	99		45	minor slumping microfolding texture in core.													
280			50	280.6 – 281.9 fine-grained, finely banded tuff(?) thin interlayers in argillite forming 1 – 2mm bands. numerous slumping microfolding textures in core.													
(281.23)			50														
	89	C2b	282.40 25	282.40 9cm siliceous sandstone interlayer.													
				283.2 – 283.7 sheared & graphitic fragments and intruded minor qtz. veinings.													
(283.47)	83		40														
285																	



enlargement 281.13 m
ultra-microfolding texture of tuff(?) thin layers in black argillite.

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
285				C2b ARGILLITE (continues)													
		C5	(285.90)	285.88 2-3mm thin pyrite lens in argillite													
	100		(286.25)	285.90 – 286.25 C5 LAPILLI TUFF 1-3mm argillite breccias in calcalious tuff													
				286.25 – 288.50 C2b ARGILLITE													
				black, fine-grained, finely banded,													
(287.73)		C2b	30	crushed along cleavages. slightly tuffaceous (?)													
	100			288.8 – 289.5													
			(288.39)	intensitely sheared to argillite fragments													
(289.86)			35	289.50 – 292.15 C2c ARGILLITE													
290		C2c	30	dark gray to gray, fine-grained, finely-banded with													
	100			tuffaceous (?) bands. It is possible the same layer of													
			40	lapilli tuff and ash tuff.													
			35	292.15 – 293.24 C5 LAPILLI TUFF 1-3mm subangular argillite in calcalious													
			(292.85)	tuffaceous pale gray matrix. less calcalious toward bottom													
(292.30)		C5		of hole.													
			(293.24)	293.24 – 301.24 C2b ARGILLITE													
	100		23	dark gray, fine-grained, finely-banded with													
(294.74)		C2b		tuffaceous (?) bands.													
295																	
			50														
	99		35	minor slumping folding textures.													
		C2b	70														
(297.79)			32														
	100																
300			30														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
300	100	C2b		C2b ARGILLITE (continues)													
(300.84)		C5	(301.24)	301.24 - 301.75 C5 LAPILLI TUFF													
	86		(301.75)	1~3mm subangular argillite, sandstone and minor pyrite													
		C2a	25	breccias in tuffaceous calcalious pale gray matrix.													
				301.75 - 304.03 C2a ARGILLITE													
				black. fine-grained, massive to bandded with pale gray													
(303.58)		C2a		fine-grained silt (tuffaceous).													
		C4	(304.03)	304.03 - 305.07 C4 CHERT													
305				pale gray, very fine-grained, massive, compact.													
	100		(305.07)	305.07 - 308.02 C2a ARGILLITE													
			55														
		C2a	(305.92)	black, fine-grained argillite with thin chert lens and layers													
			(306.50)	305.92 - 306.50 white milky qtz. vein.													
(306.63)			50														
	100		(308.02)	308.02 - 315.60 C2b ARGILLITE													
		C2b		black to dark gray, fine-grained, finely banded.													
(309.58)																	
310																	
	97	C2b	50	reverse grading observed in silt layer.													
(312.12)	100																
(313.63)		C2b		313.5 - 314.0 white milky qtz. lenses and veinings													
	100			cut along argillite cleavages.													
315			40														

PROJECT Clear Lake

HOLE No. 91-62

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
315	100	C2b	(315.60) 65	C2b ARGILLITE (continues)													
				315.60 – 324.40 C2a ARGILLITE													
(316.08)				black, fine-grained, very sheared along cleavages and													
	100	C2a		intruded by numerous qtz. lenses, veins, networks along													
				shear planes irregularly. numerous slumping textures.													
(319.13)																	
320																	
	99	C2a	46														
			(324.40) 45														
(322.17)		C4		324.40 – 328.27 C5 ASH TUFF													
	25			pale greenish gray, very fine-grained, slightly banded.													
		(051)		intruded extensively by white massive qtz veins.													
325																	
(325.72)																	
	84	C4															
			(328.27)														
(328.27)				328.27 – 333.76 C2b ARGILLITE													
				black, fine grained, finely banded and silt and sand.													
	100	C2b		numerous qtz veins and lenses, networks cut through.													
330			65														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
330		C2b	45	C2b ARGILLITE (continues)													
(333.76)				333.76m End of hole. DDH 91-62.													

TOTAL ENERGOLD CORPORATION
DRILL LOG

PROJECT	MacMillan/Clear Lake
HOLE No.	91-63
LOCATION	6961007.92N 492160.03E
LOGGED BY	Atsushi Gomi
DATE	August 10 1991
CONTRACTOR	Kulane Drilling Ltd.
CORE SIZE	NQ
DATE STARTED	2 August 1991
DATE COMPLETED	6 August 1991

DIP TESTS

Acid test		Sperry-Sun		
61.0m	47.9°	21.9m	213°	-50.1°
120.7	45.8°	59.7	212	-50.0
184.7	46.8°	120.7	203.5	-47.5
		181.7	200.5	-47.2
		224.3	200.5	-47.0

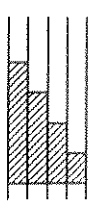
GROUND ELEV.	711.32
BEARING	208.00
DIP	-50.9
TOTAL LENGTH	226.77 m
HORIZONTAL PROJECT	153.5198 m
VERTICAL PROJECT	-166.7832 m

ALTERATION SCALE



absent
slight
moderate
intense

TOTAL SULPHIDE SCALE



< 1%
1%—5%
5%—25%
25%—50%
< 50%

DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE

① To test shallow part of known massive pyrite orebody.
② To test IP anomaly detected footwall of known massive pyrite orebody

REASON FOR SHUTTING DOWN

① The hole intersected known massive pyrite orebody with minor mineralization
② The hole intersected graphitic shear zones and sphalerite-calcite-quartz network veins in footwall of the known massive pyrite orebody.

PERTENTIVE GEOLOGY

0 - 9.92		OVERBURDEN
9.92 - 21.50	C2a	ARGILLITE
21.50 - 58.45	C2b	ARGILLITE
58.45 - 58.60	C5	TUFF
58.60 - 68.15	A	MASSIVE SULPHIDE
68.15 - 69.00	C2a	ARGILLITE
69.00 - 69.80	A	MASSIVE SULPHIDE
69.80 - 69.85	C5	ASH TUFF
69.85 - 70.67	C2a	ARGILLITE
70.67 - 72.23	A	MASSIVE SULPHIDE
72.23 - 77.94	C2b	ARGILLITE (Pyritic)
77.94 - 104.50	C2b	ARGILLITE
104.50 - 108.25	C2a	ARGILLITE
108.25 - 124.25	C2b	ARGILLITE
124.25 - 134.96	C2a	ARGILLITE
134.96 - 135.35	C1a	SANDSTONE
135.35 - 207.70	C2a	ARGILLITE
207.70 - 215.50	C2b	ARGILLITE
215.50 - 226.77	C2a	ARGILLITE

LENGTH	AZIMUTH	DIP	HORZ	ELEV	DIST FROM BL	SECTION	SEC OFFSET	DESCRIPTION
	PLAN PLOT			LONGITUDINAL PLOT	SECTION PLOT			
0.00	208.00	-50.90	0.00	711.32	13.31 W S	360 ~~271.0~~ W	41.69 W E	COLLAR
30.50	208.00	-47.90	19.24	687.65	32.55 W	~~271.0~~ W	41.69 W	DIP CHANGE
90.85	208.00	-45.80	59.70	642.87	73.01 W	~~271.0~~ W	41.69 W	DIP CHANGE
152.70	208.00	-46.80	102.82	598.53	116.13 W	~~271.0~~ W	41.69 W	DIP CHANGE

PAGE 1 OF | PROJECT [illegible] | HOLE No. [illegible]

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION		ALTERATION A	B	C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
0				0 - 9.92	OVERBURDEN													
					white massive qtz. felsic rock argillite pebble, boulder													
5																		
(9.75) 10			(9.92)	9.92 - 21.50	C2a ARGILLITE													
			30		black, very fine-grained, massive to slightly banded.													
	100	C2a			core crushed and weathered.													
			20															
(12.80)			40															
	100	C2a	60															
			30															
15																		

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
15	100	C2a	12 20 70	C2a ARGILLITE (continues) black, fine-grained, massive - slightly bedded. Core slightly crushed													
(15.85)	100																
(16.52)	99																
20																	
(20.12)	98	C2b	80 30 90 80 40	21.50 – 58.45 C2b ARGILLITE dark grey, fine to medium-grained, bonded with silt and sand layers. minor siderite veinlets up to 4 mm in width scatters. cross lamina suggests overturned stratigraphy.					23.82m enlargement cross lamina								
(22.56)	100																
25			50														
(25.60)	100	C2b	30 55 75 60														
(28.65)	99		45														
30			35														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
30				C2b ARGILLITE (continued)													
	93	C2b	30	30.70 – 31.70 calcite-qtz-siderite veinlets along beddings.													
			40	31.45 – 33.70 numerous 1 – 7mm w. dark calcite-qtz.-siderite veins													
(31.70)			50	31.70 – 32.12 sheared and crushed to argillite fragments.													
	97		65														
(34.22)			40														
35				35.75 – 36.30 slightly tuffaceous massive dark green													
(35.36)			30	argillite interlayer.													
	100	C2b															
			40	scattered calcite-siderite-qtz. veinlets.													
(38.49)			50														
40																	
			40														
				41.02 – 41.12 slightly tuffaceous massive dark green													
			40	argillite interlayer.													
(41.45)				41.70 – 41.93 slightly tuffaceous massive dark green													
		C2b	50	argillite interlayer.													
			50														
			40	43.97 – 44.12 slightly tuffaceous massive dark green													
(44.50)				argillite interlayer.													
45			45														
			50														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% Zn	% Pb	% Ag oz	COMPOSITE ASSAYS
45		C2b	40	C2b ARGILLITE (continues)													
			50														
(47.55)			52	47.65 – 47.75 slightly ~~[illegible]~~ massive dark green argillite interlayer.													
			52														
50		C2b	42	well-banded argillite. occasional cross lamina structure suggests overturned stratigraphy.													
(50.59)			40						50.35m enlargement cross lamina suggesting overturned stratigraphy								
(53.64)			45														
55			40														
(56.69)		C2b	47	56.75 – 57.97 numerous qtz.-siderite veinlets.													
				57.97 – 58.45 sheared along beddings.													
			48	57.90 – 57.97 qtz.-siderite vein cut along bedding.													
		C5	(58.45)	58.45 – 58.60 C5 TUFF brecciated and disseminated by sulphide 40%.													
		A	(58.60) 60	58.60 – 68.15 A MASSIVE SULPHIDE (very sharp contact to C5 above) yellowish pale gray, metalic luster, medium-grained, massive. occasionally contains calcalious fusulina fossil beds.					59.47 – 59.57 half core was submitted to Geological Survey of Canada for fossil identification on August 5, 1991.		58.60 – 60.60	2.00	6656	0.10	0.10	1.0	
60 (59.74)			45														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% Zn	% Pb	% Ag g/t	COMPOSITE ASSAYS
60				A MASSIVE SULPHIDE (continues)													
				(F) 60.0 – 61.5 concentration of limy *fusulina fossil beds.							60.60–62.60	2.00	6657	0.04	0.06	1.3	
				*-more likely trace fossils: worm burrows - bioturbated material around fumarole ? should not contain? date this ?													
		A		62.8 minor concentration of limy *fusulina fossil bed.													
(62.79)			45								62.60–64.60	2.00	6658	0.13	0.08	1.5	
(64.31)																	
65											64.60–66.60	2.00	6659	0.04	0.06	1.0	
			30	64.7 – 65.9 pale gray, medium-grained. limy lenses embedded.													
			(F)	65.9 – 66.3 concentration of limy *fusulina fossil beds.													
			30														
		A									66.60–68.15	1.55	6660	0.04	0.09	1.8	
(67.34)																	
			(68.15) 45	68.15 – 69.00 C2a ARGILLITE													
		C2a		black, fine-grained, banded with pyrite lenses.							68.15–69.80	1.65	6661	0.33	0.10	2.1	
(68.88)			(69.00)	69.00 – 69.80 A MASSIVE SULPHIDE													
		A	30 (69.80)	69.80 – 69.85 C5 ASH TUFF boundaries are intruded by 15cm gtz. v.				▨									
70		C2a	65 (70.69)	69.85 – 70.67 C2a ARGILLITE (very pyritic, brecciated)							69.80–71.80	2.00	6662	0.31	0.07	1.0	
		A		70.67 – 72.73 A MASSIVE SULPHIDE													
		A	45 (72.73)	yellowish gray, metallic lustre, medium-grained, slightly banded					73.67–74.35 pyrite dissemination almost along argillite								
(71.93)			60	with limy skin lenses.					beddings, pale brown sphalerite irregular-shaped		71.80–73.67	1.87	6663	0.10	0.02	<0.1	
				72.23 – 77.94 C2b ARGILLITE (pyritic)					cut with pyrite veins. sphalerite 10% in volume and								
		C2b		black, fine-grained, slightly banded with 1~3mm thick					estimated grade Zn 6%.		73.67–74.35	0.68	6651	9.31	0.07	3.3	
				coarse-grained pyrite bands.							74.35–75.35	1.00	6652	0.15	0.08	8.6	
75																	
(74.98)																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% Zn	% Pb	% Ag g/t	COMPOSITE ASSAYS
75		C2b	20	C2b ARGILLITE (Pyritic) (Continues)					76.42-76.70 pale brown sphalerite irregular		75.95-76.42	1.07	6653	0.61	0.04	<0.1	
		C2b	30						dissemination. sphalerite 30+ in volume and								
									estimated grade Zn 15+.		76.42-76.70	0.28	6654	13.10	0.08	6.4	
			30 (77.94)	77.94 - 104.50 C2b ARGILLITE							76.70-77.30	1.40	6655	0.58	0.07	0.6	
(78.03)		C2b	45	black to dark gray, fine-grained, banded, occasionally													
				qtz.-siderite veinlets, networks and gash veins cut													
80			40	through core.													
(81.98)		C2b	~~~	81.4 - 81.6 sheared intensively													
			40														
(84.12)			45														
85			45	qtz.-siderite veins and networks.													
			30														
(87.17)		C2b	25														
90			45														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
90																	
(90.22)			50	C2b ARGILLITE (continues)													
		C2b	40	91.47 1cm thick pyrite lens													
			45														
			55														
(93.27)			40														
95				94.92 0.5 - 1cm thick pyrite lenses in argillite.													
			60														
(96.32)																	
		C2b		97.12 1cm thick pyrite lens													
			47														
			55														
			40														
(99.36)			90														
100				99.5 - 99.8 sheared and crushed													
				100.1 - 100.8 sheared and crushed													
(100.89)																	
			35														
(102.41)		C2b	30	103.3 - 103.6 1 - 3 mm qtz - siderite gash veins.													
				104.50 - 106.25 C2a ARGILLITE													
(104.50)			30	black, fine-grained, massive to slightly banded.													
105																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
105				C2a ARGILLITE (Continues)													
(105.16)			30														
		C2a	36														
(108.20)			(108.25)	108.25 - 124.25 C2b ARGILLITE													
		C2b		108.9 – 109.1 sheared													
				109.5 – 111.8 numerous qtz. - siderite veinwaks													
110																	
(111.25)			35														
		C2b															
			40														
(114.30)																	
115			50														
		C2b	50														
(117.65)				117.5 – 119.6 3 - 10mm thick medium-grained sandstone													
			50	lenses in black argillite matrix. slightly sheared.													
120																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
120				C2b ARGILLITE (continues)													
(120.70)		C2b	45														
(123.75)			(124-25)	124.25 – 134.96 C2a ARGILLITE													
125			45	black, fine-grained, massive to slightly banded with													
			45	gray silt and sand thin layers.													
		C2a	50														
(126.80)																	
(129.84)				minor slumping fold texture													
130			60														
			73														
		C2a	35														
(132.89)																	
			55	134.3 – 134.9 slightly sheared along argillite cleavages.													
135			65														
(134.96)																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
135		C1a	(135.35)	134.96 – 135.35 C1a SANDSTONE													
			55	135.35 – 207.70 C2a ARGILLITE													
(135.94)			60	black to dark gray, fine-grained, massive to slightly													
				banded with gray silt and sand thin layers.													
		C2a	50														
			50														
(138.99)			50	139.30 – 139.55 gray, medium-grained sandstone interlayer.													
140																	
			40														
(142.04)		C2a	43														
			45														
			40	144.3 – 144.8 slightly sheared													
145																	
(145.08)			60														
		C2a															
(148.13)			50	148.05 – 148.30 sheared and invaded by qtz. veinlet													
150			50														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
150			40	C2a ARGILLITE (continues)													
(151.18)		C2a	~vert	151.65 – 151.80 pale gray, medium-grained sandstone interlayer.													
				151.9 5cm sheared to black clay.													
			55	152.05 – 152.30 sheared													
(153.01)			50														
(154.23)			54														
155																	
			55														
(156.05)		C2a															
(157.89)			50	black, massive argillite. few silt bands.													
(158.12)																	
160			90														
(162.15)		C2a	70														
				164.7 slightly sheared													
165			55														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
165				C2a ARGILLITE (continues)													
(169.20)				black, fine-grained, massive.													
			60														
		C2a															
(168.86)			60														
170																	
			55														
				172.3 – 173.1 numerous qtz-calcite mineworks													
(171.91)		C2a	45														
			35														
(174.96)																	
175			40														
			50														
		C2a	66														
(178.30)			45														
180																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
180		C2a	40	C2a ARGILLITE (continues)													
(181.36)				181.10 – 183.25 intensively sheared to flaky black argillite fragments.													
(184.10)			80														
185			5														
(186.23)		C2a	40	188.0 – 189.0 intensively sheared to flaky black argillite fragments and clay.													
(188.98)																	
190			80														
(191.11)		C2a	50	191.4 – 191.9 sheared to flaky black argillite fragments and clay.													
(193.85)			60														
195			40	05-2 cm fine-grained pyrite lens.													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% Zn	% Pb	% g/t Ag	COMPOSITE ASSAYS
195				C2a ARGILLITE (continues)													
			60														
			55						196.88 – 198.02 brown coarse-grained sphalerite – calcite – qtz. network veins. vein angle is irregular but generally 70 degrees to core. sphalerite 50% in volume and estimated grade Zn 25%:		196.88–198.02	1.14	6664	37.50	0.01	2.1	↑ 3.46 m Zn 16.17% Pb 0.01% Ag 0.9 g/t
(196.90)		C2a															
			65								198.02–199.02	1.00	6665	2.37	<0.01	<0.1	
									198.02 – 200.34 scattered sphalerite – calcite – qtz. network veins.								
(199.64)				199.60 – 199.64 sheared and intruded by 1cm							199.02–200.34	1.32	6666	8.21	0.03	0.5	↓
200			65	sphalerite – qtz. vein. angle is about 50 degrees.													
			45														
(201.47)			40	201 – 202 several 1–3 mm widek pyrite – qtz. veinlets. vein angle is about 60 degrees to core.													
		C2a															
(203.00)			40														
205																	
			60														
(206.04)									206.18 – 206.28 10cm widek sphalerite – calcite – qtz. vein. vein angle is about 70 degrees to core.								
		C2a															
			(207.70) 40	207.70 – 215.50 C2b ARGILLITE					206.94 – 207.03 9 cm widek sphalerite – calcite – qtz. vein. vein angle is about 45 degrees to core.								
				dark gray to black, fine-grained, finely banded with gray silt and sand bands.													
(208.79)		C2b															
210			36														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% Zn	% Pb	% g/t Ag	COMPOSITE ASSAYS
210				C2b ARGILLITE (continues)													
			80						211.3 – 211.5 0.5 – 2mm width sphalerite – calcite – qtz. networks.								
(211.84)			70						212.3 – 212.8 0.5 – 10mm width sphalerite – calcite – qtz. veinlets scattered.		212.90–213.07	0.17	6667	13.60	0.03	1.3	
		C2b	40						212.90 – 213.07 disseminated by brown coarse-grained sphalerite and minor calcite. sphalerite 10% in volume and estimated grade Zn 6%.								
			40						214.25 – 215.25 scattered network of sphalerite – calcite – qtz. irregular vein angles. sphalerite 2% in volume and estimated grade Zn 1%.								
215		C2b															
			(215.50)	215.50 – 226.77 C2a ARGILLITE													
(216.10)				black, fine-grained, massive to slightly banded with thin silt layers.					216.70 – 216.85 sphalerite-calcite – pyrite vein cut at 45 degrees to core.								
		C2a	50														
			~~	217.7 – 218.5 sheared and intruded by qtz.-calcite veins.													
(217.93)																	
			15														
220																	
			~~														
(220.68)			35	221.6 – 2218 white milky qtz. vein													
		C2a		2218 – 223.5 numerous qtz. networks scattered.													
			35														
(223.92)																	
225			45														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
225		C2a	~~~	226.30 – 226.50 sheared to graphitic fragments and intruded by qtz. veins.													
(226.77)				226.77m End of hole													

TOTAL ENERGOLD CORPORATION
DRILL LOG

PROJECT: CLEAR LAKE	GROUND ELEV.: 714.24 m
HOLE No.: 91-64	BEARING: 26.72°
LOCATION: 6,961,751.87N 491,646.05E	DIP: -50.1°
	TOTAL LENGTH: 268.22 m
LOGGED BY: MINORU MACHIDA	HORIZONTAL PROJECT: 158.6324 m
DATE: 16 / 8 / 91	VERTICAL PROJECT: -216.016 m
CONTRACTOR: KLUANE DRILLING	ALTERATION SCALE
CORE SIZE: NQ	absent / slight / moderate / intense
DATE STARTED	
DATE COMPLETED	TOTAL SULPHIDE SCALE
DIP TESTS ACID TEST 60.96 m -51.2° 121.92 m -55.5° 184.71 m -54.2° 245.67 m -56.0°	< 1% / 1%—5% / 5%—25% / 25%—50% / < 50%

DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE : To test Gravity and IP anormaly detected in the north west part of known depos

REASON FOR SHUTTING DOWN : The hole intersected barite bed and silicified argillitic zo

PERTENTIVE GEOLOGY

0.00 – 12.80 m	OVER BURDEN	
12.80 – 33.50 m	C2b/s	ARGILLITE/TUFF
33.50 – 43.50 m	C 2d	SILICIFIED ARGILLITE
43.50 – 69.35 m	B	BARITE
69.35 – 71.35 m	C2b/2b	ARGILLITE
71.35 – 86.47 m	C 2b	ARGILLITE
86.47 – 111.70 m	C 2c	ARGILLITE
111.70 – 147.20 m	C 2b	ARGILLITE
147.20 – 174.85 m	C 2c	ARGILLITE
174.85 – 176.55 m	C 2b	ARGILLITE
176.55 – 176.90 m	KTf	FELSITE
176.90 – 179.75 m	C 2b	ARGILLITE
179.75 – 181.13 m	KTf	FELSITE
181.13 – 184.90 m	C 1b	SANDSTONE
184.90 – 189.70 m	C 2b	ARGILLITE
189.70 – 193.10 m	C 1b	SANDSTONE
193.10 – 208.99 m	C 2a	ARGILLITE
208.99 – 210.00 m	C 1b	SANDSTONE (SILICIFIED)
210.00 – 212.30 m	C 2a	ARGILLITE
212.30 – 227.70 m	C 1b	SANDSTONE (SILICIFIED)
227.70 – 247.00 m	C 2d	SILICIFIED ARGILLITE
247.00 – 248.85 m	C 2b	ARGILLITE
248.85 – 259.10 m	KTf	FELSITE
259.10 – 268.22 m	C 2b	ARGILLITE

LONGITUDINAL PLOT / PLAN PLOT / SECTION PLOT

LENGTH	AZIMUTH	DIP	HORZ	ELEV	DIST FROM BL		SECTION		SEC OFFSET		DESCRIPTION
0.00	26.72	-50.10	0.00	714.24	97.78	S	4.0	N	41.36	N	COLLAR
30.48	26.72	-51.20	19.55	690.86	78.23	S	4.0	N	41.80	N	DIP CHANGE
91.44	26.72	-55.50	57.75	643.35	40.04	S	4.0	N	42.65	N	DIP CHANGE
153.33	26.72	-54.20	92.80	592.34	5.00	S	4.0	N	43.44	N	DIP CHANGE
215.21	26.72	-56.00	129.00	542.16	31.19	N	4.0	N	44.24	N	DIP CHANGE
268.20	0.00	0.00	158.63	498.22	60.82	N	4.0	N	44.91	N	END OF HOLE

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
0				0.00 – 12.80m OVER BURDEN													
5																	
10																	
12.80				12.80 – 33.50m C 20/5 ARGILLITE / TUFF Light gray ; creamy white to yellow, fine grain , altered argillite containing tuffaceous layer. Section silicified and look like gossan													
	C 20/5																
27																	
15																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
15				12.80 – 24.50m intensely core broken													
17.07	100	C2M/S															
20	94	C2M/S															
		C2M/S															
	46																
		C2M/S															
25	86			25.60 – 26.30m is injected by milky plg predominantly													
		C2M/S															
	52																
30		C2M/S															

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca. B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
30			1/50														
	93	C2d/S															
		C2d/S															
33.50	92	C2d		33.50–43.50m C2d SILICIFIED ARGILLITE Dark gray, light gray to pale green, fine grain siliceous argillite with tuffaceous layer or laminae with local disseminated pyrite													
35				Section contain chaotic sid-qtz vein													
	100	C2d		40.00–43.50m with predominant chaotic qtz vein													
40			1/45														
43.50	59	B		43.50–69.35m B BARITE Gray to light gray, fine grain banded barite with argillitic laminae.													
45																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	Ca. B	Ag? C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
45				B BARITE (cont'd)													
	55	B		Locally small scale cross-bedding and slumping fold texture observed.													
	100	B															
	76																
	100	B		43.50 - 64.00m is a crushed zone. Clasts avg. 1~5cm long subangular													
	55																
50																	
	100	B															
	70		75														
	76	B															
55																	
	77	B															
				pale gray, fine grain, massive to slightly banded.													
	100	B															
			80														
60																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca. B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
60				B BARITE (cont'd)													
	75	B															
		B															
65																	
				67.50 - 69.35 m dark gray to gray, fine grain to medium grain banded with argillitic barite or argillite (barite : argillite = 50 : 50)												
	100		85/1														
69.35				69.35 - 71.35 m C 2a/2b ARGILLITE Black, fine grain argillite with a little													
70		C2a/2b		silt laminae. Section contain pyrite													
			70/1	bands and pyrite laminae (20% py.)													
71.35				71.35 - 86.47 m C 2b ARGILLITE Black to dark gray, fine grain argillite													
		C2b		with sand layer and laminae, containing irregular sid - qtz stockwork (10-15% pt)													
				71.93 - 72.90 m composed of brecciated graphitic													
75				argillite and black gouge healed by milky qtz													

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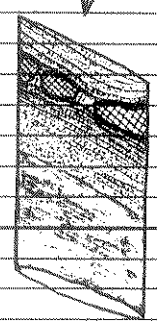
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
75		C2b	45	76.00 - 76.70 m contain sid - qtz vein					76.17 m Boudin pyrite bed 2cm wide								
				78.00 - 78.50 m composed of brecciated graphitic argillite and black gouge healed by milky qtz.													
80	100	C2b	75						: boudin pyrite bed : Argillite band : Sandy layer								
			25														
85		C2b	10														
86.47				86.47 - 111.70 m C 2c ARGILLITE Black to dark gray, fine grain argillite interbedded with planar bedded silty - sandy lighter beds and laminae Beds and laminae are locally wavy. 86.67 - 86.87 m crushed intensely with graphitic material													
		C2c	65														
90																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (Si)	ALTERATION B (Ca)	ALTERATION C (Arg)	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
90				C2c ARGILLITE (cont'd)													
	100	C2c	55														
95		C2c	70	96.50 – 99.06m section crushed intensely with graphitic material and sid-qtz vein													
	38																
100				100.90 – 101.30m section crushed with graphitic material and sid-qtz vein													
	100	C2c	55	101.80 – 102.30m section crushed with graphitic material and sid-qtz vein													
105																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
105		C2c		C2c ARGILLITE (cont'd)													
110			60°														
111.70	100	C2b		111.70 - 147.20m C2b ARGILLITE Dark gray - gray, silt, sand banded argillite with local graphitic part, shearing, breccia, 111.30 - 117.50m core moderately to intensely broken. Section composed of brecciated graphitic argillite and black gouge healed by milky Qtz with siderite.													
115		C2b	60°														
120																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
120		C2b		121.00 - 121.85m Broken, brecciated with gouge and subangular - subrounded milky qtz.													
				122.10 - 122.40m qtz vein (wide 20cm) @ 40° to C.A.													
125			60														
	100	C2b		126.25 - 126.69m Broken, brecciated with black gouge and graphitic material													
130				130.75 - 138.69m section intensely broken and composed of brecciated graphitic argillite, black gouge and subangular - subrounded milky qtz.													
		C2b															
	87																
	100	C2b															
135																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
135																	
		C2b															
	100																
140																	
		C2b		142.75–143.50m broken with graphitic material and subangular qtz.													
145																	
	98	C2b															
		C2b	30														
147.20				147.20–174.85m C2c ARGILLITE Gray to light gray, fine grain bonded argillite interbedded with silty – sandy beds and laminae. Section contain chaotic qtz vein predominantly.													
	100	C2c															
150																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
150				C2c ARGILLITE (cont'd)													
	50		X	151.90 - 157.00 m moderately broken and brecciated with gouge and subangular - subrounded qtz.													
	100	C2c															
	51																
155																	
	95	C2c															
		C2c															
160				160.22 - 162.70 m crushed and brecciated with graphitic material and qtz injection													
	100	C2c		163.00 - 167.00 m section contain predominant qtz stringer network. (50% qtz)													
165																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A Si.	B Ca.	C Arg.	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
165			40	C2c ARGILLITE (cont'd)													
		C2c		167.00 – 174.85m section intensely broken, composed of brecciated graphitic argillite healed by milky qtz													
170																	
	100	C2c															
174.85				174.85 – 176.55m C2b ARGILLITE													
175		C2b		Black, fine grain argillite with graphitic material and chaotic qtz vein					178.26 – 176.55m intensely crushed Section composed of brecciated graphitic argillite and subangular – subrounded qtz.								
176.55		KTf	35	176.55 – 176.90m KTf FELSITE					176.90 – 177.50m crushed with graphitic material and qtz injection.								
176.90			40														
		C2b		176.90m – 179.75m C2b ARGILLITE Black, fine grain argillite with graphitic material and chaotic qtz vein					178.00 – 179.75m intensely broken, composed of brecciated argillite, black gouge and subangular – subrounded qtz.								
179.75																	
180		KTf	60	179.75 – 181.13m KTf FELSITE													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Co. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
180		KTf		Light gray to white, fine grain leucocratic felsite. upper contact @ 60° to C.A, lower contact @ 70° to C.A													
181.13			1/90°														
		C1b		181.13 – 184.90m C1b SANDSTONE Dark gray to gray, fine to medium grain sandstone with local silty laminae													
184.90																	
185				184.90 – 189.90m C2b ARGILLITE													
	100	C2b	35	Black to dark gray, fine grain argillite with small amount of sandy laminae.													
				185.10 – 185.80m crushed with graphitic material and qtz injection.													
				188.00 – 189.00m crushed with graphitic material and qtz injection													
189.70																	
190		C1b		189.70 – 193.10m C1b SANDSTONE Dark gray to gray fine grain sandstone weakly laminated													
193.10																	
	89	C2a		193.10 – 208.79m C2a ARGILLITE Black, fine grain, massive argillite with numerous graphitic material													
195																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	Ca B	Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
195		C2a															
		C2a	45	199.64 - 208.79m contain 2-5% laminated pyrite and pyrite band.					197.00 - 200.60 m crushed with numerous graphitic material and qtz injection								
200	100	C2a							: boudin pyrite bed with qtz : Pyrite laminae or fine pyrite vein								
205		C2a							209.86 - 208.79 m crushed with graphitic material.								
208.79		C1b		208.79 - 210.00 m C1b SANDSTONE (SILICIFIED) Dark gray to gray, fine grain to medium grain with qtz stringer network.													
210																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Mg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
210		C2a		210.00 – 212.30m C2a ARGILLITE Black, fine grain, massive, argillite with 1~2% Pyrite													
212.30		C1b		212.30 – 227.70m C1b SANDSTONE (SILICIFIED) Dark gray to gray, fine to medium grain sandstone with small amount of argillite firm Section is silicified with predominant chaotic qtz stockwork.													
215		C1b	35														
220	100	C1b		220.00 – 221.80m weakly crushed with grophitic materia and qtz injection.													
225		C1b		224.00 – 224.30m weakly crushed.													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
225																	
		C1b		227.00 – 227.70m weakly crushed with graphitic material and qtz injection													
227.70				227.70-247.00m C2d SILICIFIED ARGILLITE Dark gray, moderately silicified argillite with fine grain sandy band and laminae													
		C2d		Section contain numerous stockworks of fine qtz stringer.													
230			45														
	100	C2d															
235																	
		C2d															
240																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si. A	ALTERATION Ca. B	ALTERATION Arg. C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
240		C2d															
				244.70 - 245.25 m severely silicified													
245																	
				246.00 - 246.40 m severely silicified													
247.00	100																
		C2b		247.00 - 248.85 m C2b ARGILLITE													
				Black, fine grain argillite with small amount of sandy laminae.													
248.85			80	248.85 - 259.10 m KTf FELSITE													
				white to pale green, fine grain felsite with qtz stockwork													
250		KTf		Section is weakly altered with small amount of pyrite													
				upper contact @ 80° to C.A													
				lower contact @ 80° to C.A													
255																	

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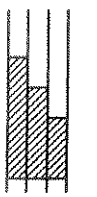
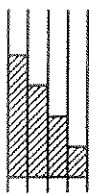
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION Arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
255		KTf															
259.10			80	259.10–268.22m C2b ARGILLITE Black, fine grain argillite interbedded with sandy bands and laminae													
260	100	C2b		Section composed of brecciated argillite, black gouge and subangular qtz					260m contain local pyrite patch								
				262.70–263.60m massive argillite													
				259.10–262.40m weakly crushed													
265			45														
			90														
268.22				E.O.H													

TOTAL ENERGOLD CORPORATION
DRILL LOG

PROJECT CLEAR LAKE	**GROUND ELEV.** 714.86 m
HOLE No. 91-65	**BEARING** 025.82°
LOCATION 61,721.60 N 91,629.17 E Pow	**DIP** -70.7°
	TOTAL LENGTH 181.97 m
LOGGED BY R ZURAN	**HORIZONTAL PROJECT** 69.309B
DATE August 18th, 1991	**VERTICAL PROJECT** -168.1847
CONTRACTOR KLUANE DRILLING	**ALTERATION SCALE**
CORE SIZE NQ	
DATE STARTED 12:00 noon. August 11, 1991	
DATE COMPLETED 12:00 noon August 13, 1991	**TOTAL SULPHIDE SCALE**
DIP TESTS (Acid) 60.96m -67.5 121.92m -67.1 181.97m -65.7	





DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE: to test the gravity and IP anomaly detected northwest of the deposit and locate an extension or new lens of massive sulphides.

REASON FOR SHUTTING DOWN: massive sulphide unit A intersected high in hole, no significant sulphides intersected after 63m. No significant sulphides noted in barite intersection and graphitic argillite near collar eliminated any further possibilities of another massive sulphide conductor.

PERTINENT GEOLOGY:

0-9.27m	Overburden	
9.27-10.95	C4 Chert	
10.95-11.28	C5 Ash-lapilli tuff	
11.28-23.47	C2b Argillite (minor sand bands)	*
23.47-32.61	A Massive Sulphide.	*
32.61-33.10	C2b Argillite (minor sand bands)	*
33.10-35.66	C5 Ash Tuff	*
35.66-53.00	A Massive Sulphide.	*
53.00-53.65	C2b Argillite (pyrite stringers)	
53.65-57.00	A Massive Sulphide.	
57.00-69.19	C2b Argillite (pyrite stringer-stwk-bx zone)	
69.19-83.00	C2c Argillite (interbedded with C2b)	
83.00-88.30	C2b Argillite (minor sand bands)	
88.30-103.00	B Barite	
103.00-104.00	C6 Cherty Ash Tuff	
104.00-110.30	C2a Argillite (massive, carbonaceous)	
110.30-111.00	B Barite	
111.00-113.50	C2a Argillite (carbonaceous)	
113.50-128.70	C2b Argillite (interbedded with C2a)	
128.70-132.70	C2a Argillite (carbonaceous)	
132.70-180.40	C2b Argillite (interbedded with C2a)	
180.40-181.97	C2a Argillite (carbonaceous)	

* Very poor recovery from 9.27-52.43m averaging 26%. Most of sulphides within this interval are oxidized and leached; much was washed away during drilling.

LENGTH	AZIMUTH	DIP	BORZ	ELEV	DIST FROM BL	SECTION	SEC OFFSET	DESCRIPTION
	PLAN PLOT			LONGITUDINAL PLOT	SECTION PLOT			
0.00	25.82	-70.70	0.00	714.86	132.43 S	4.0 W	42.06 W	COLLAR
30.35	25.82	-67.50	10.03	686.22	122.41 S	4.0 W	42.44 W	DIP CHANGE
91.31	25.82	-67.10	33.36	629.90	99.10 S	4.0 W	43.32 W	DIP CHANGE
151.95	25.82	-65.70	56.95	574.04	75.52 S	4.0 W	44.22 W	DIP CHANGE
181.97	0.00	0.00	69.31	546.68	63.17 S	4.0 W	44.69 W	END OF HOLE

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
0				0-9.27m OVERBURDEN													
1				9.14-9.27 cored biotite-granodiorite erratic													
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
9.14		LOST		9.27 - 10.95 C4 CHERT													
10				Pale grey-green microcrystalline chert. Entire interval													
	65	C4		is broken core. Diffuse qtz stringers avg 2-3mm wide.													
11		C5?	45	This unit could also be an intensely silicified ash tuff.													
11.28		LOST		10.95 - 11.28 C5 (?) ASH-LAPILLI TUFF													
12	9			Lt pale grey-green ash to lapilli (?) tuff? Core													
		C2b	55	is broken. Fine (1mm) ash laminae noted. Faint													
13				13.00													
13.41				yellowish stain on fracture surfaces - jarosite.													
14	88	C2b	0	14.00													
14.52				11.28 - 23.47 C2b ARGILLITE													
15	25	LOST		Dk grey to moderate grey, v fine grain argillite													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (Si)	ALTERATION B (ca)	ALTERATION C (arg)	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% Zn	% Pb	% Ag g/t	COMPOSITE ASSAYS
15				C2b ARGILLITE													
	25	LOST	45°	with 15% silt laminae becoming more abundant													
16		C2b		towards end of interval. Limonite - jarosite stain													
			16.50	found locally 3%; also filling feather fractures													
16.76				parallel with cleavage. Core is milled & broken													
17				throughout entire interval, recovery poor.													
18	8	LOST		Argillite has moderate argillic alteration													
19																	
20																	
		C2b															
20.42																	
21																	
	8	LOST															
22																	
23		C2b		23.47 - 32.61 A MASSIVE SULPHIDE													
23.47				Bronze coloured, fine grain massive sulphide (90+%													
24	8	LOST		py avg.) with local colloform texture. Up to													
				10% irregular patches of silica, kaolinite. Core													
25				is broken and severely milled, pieces average													
26.30		A		2.5cm in size. Poor recovery.													
	12	LOST									25.47 - 25.30	1.83	6668	<0.01	0.02	1.6	
26		A									25.30 - 26.82	1.22	6669	<0.01	0.09	38	
26.52	60	LOST									26.82 - 26.82	0.30	6670	<0.01	0.25	6.4	
27 26.82		A									26.82 - 28.04	1.22	6671	<0.01	0.07	3.0	
	16	LOST															
28		A															
28.04											28.04 - 29.57	1.53	6672	<0.01	0.09	2.9	
	23	LOST									29.67 - 30.18	0.61	6673	0.18	0.04	2.7	
29																	
29.88	25	A															
30																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION si A	ALTERATION ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% Zn	% Pb	% Ag g/t	COMPOSITE ASSAYS
30				A MASSIVE SULPHIDE (Contd)													
30.18	50	LOST									30.18 - 30.48	0.30	6674	0.04	0.02	1.8	
30.48											30.48 - 32.61	2.13	6675	<0.01	0.02	0.9	
31	9	LOST															
32				32.61 - 33.10 C2b ARGILLITE													
32.61		A LOST	Contact 36°	Grey, v. fine grain argillite with 15% silica													
33	33			stringers parrallel to cleavage. Core broken,													
33.33		C5		recovery poor. Transitional FW. contact.													
34	15	LOST															
35				33.10 - 35.66 C5 ASH TUFF					33.10-35.66 3% fine grain py as elliptical								
		C5	Top 45°	35.50 (42.50) Pale grey-green fine grain ash-tuff with local					patches.								
35.66				silica stringers 1-5mm wide. Core is broken, poor													
36				recovery. Lapilli - angular fragments 1x2cm of													
37	0	LOST		argillite noted near FW.													
				?													
38				35.66 - 55.00 A MASSIVE SULPHIDE													
				(42.50)													
39	39.71			Extreme poor recovery - not certain of HW													
				contact. Core becomes somewhat competent after													
				52.43m and is broken and milled partly coated													
40				with fine pyrite cuttings. Core is also porous, decomposed.													
				Brownish coloured fine grain massive													
	D	LOST		pyrite (90%) with local pods of white barite													
41				(46.80m). FW is crackled.													
41.76											41.76 - 43.28	1.52	6676	<0.01	0.05	2.1	
42		LOST															
	47																
43		A									43.28 - 45.11	1.83	6677	<0.01	0.06	2.9	
43.28																	
44	17	LOST															
45																	

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A MASSIVE SUPHIDE (Cont'd)

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% Zn	% Pb	% Ag oz/t	COMPOSITE ASSAYS
45																	
45.11		LOST									45.11 - 46.63	1.52	6678	<0.01	0.07	3.8	
46	38	A															
46.63																	
47		LOST															
48	76																
49		A															
49.58											49.38 - 46.63	2.75	6679	<0.01	0.04	2.5	
50																	
51	0	LOST															
52																	
52.43		A	cracked	1 53.00-53.65 C2b ARGILLITE + pyrite stringers							52.43 - 53.10	0.67	6680	0.39	0.01	0.9	
53	92	C2b	py stringers	#1							53.10 - 53.95	0.85	6681	<0.01	0.02	0.9	
53.95		LOST		53.00-53.10 FAULT with breccia. Matrix (30%)					Subangular clay altered recessively weathered dk grey argillite		53.95 - 55.00	1.05	6682	0.19	0.01	0.7	
54				supported. Matrix is a fine grain dull bronze					Porous, decomposed resistently weathered dull bronze fine grain pyrite leached								
55				weathered pyrite with angular clasts of argillite													
55.10m				averaging 1cm long													
56	89	A									55.00 - 56.00	1.00	6683	0.02	0.03	0.8	
56				53.10-53.65 Grey argillite with 40% pores,							56.00 - 57.00	1.00	6684	0.01	0.02	0.6	
57				decomposed fine grain pyrite stringers; chaotic													
57.00		LOST		1-1cm wide.							57.00 - 58.00	1.00	6685	0.16	0.02	0.5	
58																	
58	96	C2b	PYRITE STRINGER, STOCKWORK ZONE	53.65-57.00 A MASSIVE SULPHIDE							58.00 - 59.00	1.00	6686	0.10	0.02	0.5	
59				Dull bronze coloured fine grain pyrite 60-90%,													
60				decomposed, porous and partly oxidized. Occurs							59.00 - 60.00	1.00	6687	0.17	0.01	0.7	
				as massive sections, matrix with sub angular													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	% Zn	% Pb	% Ag oz/t	COMPOSITE
60																	
				argillite clasts averaging 1½ cm length — stockwk.	II						60.00 -61.00	1.00	6688	0.11	0.02	0.9	
61				60.95 breccia throughout most of interval. Local crackled													
	100			milky qtz stringers (2mm wide) — erratic	II						61.00 -62.00	1.00	6689	0.02	<0.01	0.5	
62																	
				57.00-69.19 C2b ARGILLITE - pyrite stgr-stwk-br zone	II						62.00 -63.00	1.00	6690	0.09	0.01	0.4	
63		C2b	PYRITE STRINGER-STWK-BX ZONE	Dk grey fine grain argillite with local sandy lenses.													
63.09				Pyrite (30%) stringer, stockwork - breccia zone	II												
64	96			throughout interval. 5% erratic milky white qtz													
				stringers and irregular patches. Stringers are	II												
65				2mm - 1cm wide, patches 3-5 cm locally													
65.63		LOST		65.40 crackled.	II												
66	70			#2													
66.14				66.14													
67				66.14-68.00 FAULT - Brecciated fragments													
				(1cm avg.) and crackled patches (3-9cm long)													
	98	C2b		of milky white quartz (15%) in locally sheared													
68				68.00 fine grain black argillite. Local feather fractures													
				(2%) filled with limonite.													
69																	
69.19			50	68.00-69.19 Relatively competent, homogeneous argillite													
70				with trace feather fractures filled with limonite.													
				Transitional FW. contact													
71	97																
				69.19-85.00 C2c ARGILLITE interbedded with C2b													
72		C2c	60	Dk grey v. fine grain argillite with local sand and													
72.39				silt laminae, interbedded with C2b - less than													
73	95			5% sand-silt laminae.													
			40														
74				75.00-75.50 silica (milky white - 30%) injected													
74.68				shear zone													
75	94	LOST C2c															

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
75				C2c ARGILLITE (Cont'd)													
75.50																	
76	94	C2c	30														
77																	
78 77.72			65														
79	99		20														
80																	
				* 3													
81 80.77		LOST		81.00 - 83.00 FAULT - SHEAR ZONE Graphitic,													
				gouge and silica healed breccia on FW - clasts													
82	95	C2c		are subangular and average 4mm in size.													
				83.00 - 88.50 C2b ARGILLITE													
83		C2b		Dk grey, v. fine grain argillite locally sheared													
84 83.82		LOST		and faulted with associated silica and limonite													
				filled leather fractures and stringers 5mm avg.													
85				* 4													
	95		60	83.00 - 88.50 FAULT - SHEAR ZONE with													
86				broken sheared fragments of argillite, quartz													
			86.00														
87 86.87		C2b	86.18	and tuff (86.18 - 86.50). Wide range of composition													
			86.50	& size - 2mm - several cm. Gouge from 86.55 -													
				86.80m Silica injection stringer - healed zone													
88			88.00	from 87.90 - 88.30 m. with stylolites. 3% Sphalerite													
	100	B															
			88.30 - 103.00	B BARITE													
89			90.00	Blue-grey to off blue-white v. fine grain													
				diffusely laminated (distal) barite													
90																	

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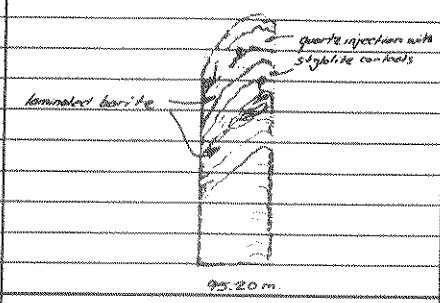
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
90				B - BARITE (Cont'd)													
90.53	100		Crackled	90.00-90.20 Locally folded laminae. Healed													
91			lam 40	by BaSO4 and crackled on FW. 91.00													
92	100			- local water blue Melanterite (hydrated iron													
			lam 50	sulphate) with off-white Siderotil (dehydr-													
93				ated iron sulphate) found along fracture surfaces. 93.00													
93.57			lam 50	Holotrickite is powdery and dissolves in water.													
94		B		2% - throughout barite unit. 94.00													
			lam 45	Melanterite: $Fe^{+2}SO_4 \cdot 7H_2O$ monoclinic													
95	100			Siderotil: $Fe^{+2}SO_4 \cdot 5H_2O$ triclinic (white powder) 95.00													
				95.19-95.26 Irregular elongated patches of milky													
96				quartz with stylolite sutures parallel to laminae													
96.62				in barite.													
97																	
98	100		lam 50	98.00													
99																	
99.67																	
100																	
101			lam 60	101.00													
	99			102.90-103.00 Crackled - brecciated healed barite.													
102																	
102.72			Crackled	103.00-104.00 C6 CHERTY ASH TUFF													
103			Contact	103.00													
	98	C6	80	Greenish tuff with cherty fracture with 10%					104.00-105.00 3% fine grain py as 1cm								
104				silica stringers avg 3mm wide across ash laminae @					blobs, stringers (6mm wide) and angular								
		C2a		65° TCA. Gradational FW contact with argillite.					fragments								
105																	



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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
105	100	C2a	40	104.00-110.30 C2a ARGILLITE					105.37-105.77 4% fine grain py in feather								
106 105.77				Dk. grey to black v. fine grain, carbonaceous					fractures and irregular stringers 1mm wide.								
				argillite with local stringers of milky white qtz,													
107	100		35	107.00 siderite ? and iron stained silica - also occur as													
			lam	feather fractures throughout interval. Local inter-													
108			50	108.00 lamina of ash - 3%. Local shearing along													
				carbonaceous cleavage planes.													
108.81 109			shear 60	109.16 109.16-109.47 Shear zone injected with silica					109.42-110.30 4-5% fine grain py as 1cm patches								
									blobs and irregular stringers 4mm wide.								
110	100	B	contact 90	110.30-111.00 B BARITE													
111			contact 65	Off white to blue grey, crackled, fine grain, mass-				11									
			30	5 111.50 ive barite with weak limonite stain along fracture	11												
111.86 112		C2a		surfaces. Sharp graphitic contacts on +/w & F.W.	11			11									
					11												
113	100		30	111.00-113.50 C2a ARGILLITE	11			11									
				5 113.30 Dk grey fine grain, carbonaceous, massive argillite	11												
114				locally sheared, faulted, & brecciated.													
				*5													
114.91 115				111.50-113.30 FAULT with breccia, gouge													
				shearing along graphitic planes. Brecciated barite													
116			60	111.60-111.83 m. Milky white qtz stringers broken													
	98	C2b		116.80 and boudined. Transition contact on F.W.													
				116.50													
117			convoluted lam.	113.50-128.70 C2b ARGILLITE (interbedded with C2c)					117.75-117.96 elongated blobs of pyrite 1cm x								
117.96 118			lam 65	118.00 Dk grey to moderate grey v. fine grain argillite					1/2 cm along cleavage								
				with 10% silt laminae and bands, locally 30%													
119	98		lam 60	119.00 silt-sandy laminae interbedded sections. (C2c)													
120			lam.														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
120				C2b ARGILLITE (Cont'd)													
121	100																
121.62																	
122			bed														
123	100		50														
124		C2b		124.10-128.70 Shear and silica stringer zone.													
124.05				124.10 Silica stringers 15-20%, discontinuous, chaotic.													
125				Local large patches of silica up to 5cm long.													
			10cm	Shearing and minor breccia along graphitic planes					125.60 1 large blob of fine grain pyrite 5x								
126	98		37	125.45					1½ cm.								
127			35	127.00													
127.10																	
128			65	128.70-132.70 C2a ARGILLITE													
	98			Dk grey to black v. fine grain carbonaceous, massive													
129				locally laminated with silt (<5%) argillite.													
		C2a		129.60													
130				129.60-132.00 Silica stringer, network zone, sheared													
130.15				and locally crushed													
131	92																
132				Transitional FW contact													
		LOST		132.00													
132.28		C2a															
133				132.70-180.90 C2b ARGILLITE (interbedded with C2a)													
	98		wavy lam.	Dk grey to black v fine grain argillite locally													
134		C2b	14m 25	134.00 massive + carbonaceous (interbedded with C2a).													
				Locally sheared, faulted, brecciated and silica injected.													
135				Local sandy lenses													

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C2b ARGILLITE (Contd)

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
135																	
136	98	C2b	folded 10/3	136.00 - 136.75 Folded to wavy laminations.													
				136.00													
				# 6													
137				136.75													
				136.90 - 139.20 FAULT sheared zone with crushed & brecciated argillite and milky with quartz <5%													
138				lt. grey gouge Silica healed breccia: 138.05 - 138.65m													
138.38				138.45													
139	100		45	139.25													
139.89				139.20													
				# 7													
140				140.80 - 146.80 FAULT: includes graphitic shear planes,													
			30	7													
141	100			140.80 black carbonaceous gouge (minor) brecciated and/or crushed argillite and/or milky white qtz stringers;													
				fractured laminae 15-30% silica stringer, feather fractures													
142				and/or silica pockets													
142.04																	
143																	
144	98																
145																	
145.08																	
146			80	146.00													
	100																
147				146.80 146.90 Folded laminae													
148			folded lam.														
148.13																	
149			folded lam.	148.90 148.90 Folded laminae													
150				150.00 S- folded laminae @ 10° TCA. FAULT TCA													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ca B	arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
150				*B C2b ARGILLITE (Cont'd)													
	100		30 Banded lam.	8 150.25 150.60 150.35 - 150.60 FAULT 60% dk grey gouge + crushed argillite & argillite fragments													
151 151.18																	
152		C2b		152.50 Shear + bx													
	92			152.50													
153																	
154																	
154.54 155		LOST															
156	96		lam 25	156.00 156.00 - 162.00 uniform, regular cleavage, <10% silty laminae													
157																	
157.58 158			lam 55 37	158.00 158.85 - 159.00 sandy laminae - Bouma sequence													
159	98	C2b	Bouma	159.00													
160																	
160.63 161			lam 80	161.00													
162	98		Folded lam.	162.10 162.10 Folded laminae													
				162.10 - 163.00 massive, carbonaceous argillite													
163				163.00 163.00 - 165.00 Shear zone, contorted laminae, 10-30% silica stringers & fractures, patches													
163.68 164	97		lam Sand														
165				164.75													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION arg C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
165				C2b ARGILLITE (Contd)													
				165.00 - 169.65 intermittently sheared and silica injected. Local contortion of silica stringers and/or laminae. Local graphitic planes.													
166	97																
166.45																	
167																	
			lam 30/														
168	97		lam 60/	168.00													
				168.50													
169				Folded laminae													
169.37																	
170																	
171	98	C2b	x-b long.	171.25 Tangential cross bedding													
172																	
172.82																	
173				173.00 - 174.80 massive v. carbonaceous <5% laminae													
174	98		lam 80/	174.00 (C2a), well sheared.													
175																	
175.86			lam 60/	176.10													
176																	
177	98																
178			lam 45/	178.00													
178.92																	
179				Unit becoming more like C2a, massive, carbonaceous.													
180	98																

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION Si A	ALTERATION Ca B	ALTERATION org C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
180				C2b ARGILLITE (Cont'd)													
		C2b		180.40-181.97 C2a ARGILLITE													
181	98	C2a		# 9	//	//	//										
				" 180.40-181.87 Fault - 70% silica injected fault	//	//	//										
181.97				with carbonaceous crushed argillite inclusions	//	//	//										
182		E.O.H.															
				E.O.H @ 181.97m													
185																	
189																	
185																	

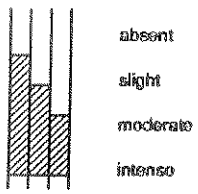
TOTAL ENERGOLD CORPORATION

DRILL LOG

PROJECT	MacMillan / Clear Lake
HOLE No.	91-66
LOCATION	6162382.01 N 491070.12 E POW GRID 484N 1045W
LOGGED BY	Atsushi Gomi
DATE	18 August, 1991
CONTRACTOR	Kluane Drilling Ltd.
CORE SIZE	NQ to 207.57m BQ to 270.97m
DATE STARTED	August
DATE COMPLETED	5:00am 18 August, 1991

GROUND ELEV.	704.80 m
BEARING	209.35 °
DIP	-51.2°
TOTAL LENGTH	270.97m
HORIZONTAL PROJECT	178.9164
VERTICAL PROJECT	-204.4496.

ALTERATION SCALE



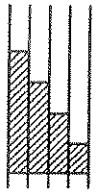
absent

slight

moderate

intense

TOTAL SULPHIDE SCALE



< 1%

1%—5%

5%—25%

25%—50%

< 50%

DIP TESTS (Acid test; Sperry-Sun)

59.74m	① 204.4°	-51.8°	
	② 204.3°	-51.9°	
	③ 215.4°	-51.8°	
60.96m	-49.0°		
120.70m	① 209.6°	-50.0°	
	② 201.2°	-48.9°	
	③ 201.0°	-48.9°	
121.92m	-47.8°		
182.88m	-48.3°		
183.66m	① 205.0°	-49.0°	
	② 203.3°	-48.9°	
	③ 202.8°	-49.2°	
206.04m	216.2°	-48.4°	

DRILL CALCULATIONS/HOLE SUMMARY

PURPOSE

To test low resistivity and high chargeability area detected by IP survey.

REASON FOR SHUTTING DOWN

No significant mineralization has not been intersected in budgeted 250m and extended

PERTINENT GEOLOGY

0 - 48.77	OVERBURDEN	
48.77 - 65.87	C2a	ARGILLITE
65.87 - 72.62	C2c	ARGILLITE
72.62 - 75.35	C2b	ARGILLITE
75.35 - 83.30	C1b	SANDSTONE
83.30 - 85.00	C2b	ARGILLITE
85.00 - 98.50	C1b	SANDSTONE
98.50 - 107.50	C2b	ARGILLITE
107.50 - 127.98	C2a	ARGILLITE
127.98 - 128.32	C1a	SANDSTONE
128.32 - 129.40	C2a	ARGILLITE
129.40 - 134.50	C2b	ARGILLITE
134.50 - 150.47	C2a	ARGILLITE
150.47 - 157.35	C2b	ARGILLITE
157.35 - 173.53	C2a	ARGILLITE
173.53 - 180.10	C2b	ARGILLITE
180.10 - 182.00	C1b	SANDSTONE
182.00 - 188.00	C2a	ARGILLITE
188.00 - 208.80	C2b	ARGILLITE
208.80 - 270.97	C2a	ARGILLITE

	PLAN PLOT		LONGITUDINAL PLOT	SECTION PLOT			
LENGTH	AZIMUTH	DIP	HORZ	ELEV	DIST FROM BL	SECTION	SEC OFFSET	DESCRIPTION
0.00	209.35	-51.20	0.00	704.80	188.22 W	13.0 W	35.71 W	COLLAR
30.48	209.35	-49.00	19.10	681.05	169.13 W	13.0 W	36.16 W	DIP CHANGE
91.44	209.35	-47.80	59.09	635.04	129.14 W	13.0 W	37.10 W	DIP CHANGE
152.40	209.35	-48.30	100.04	589.88	88.21 W	13.0 W	38.07 W	DIP CHANGE
270.97	0.00	0.00	178.92	501.35	9.35 W	13.0 W	39.93 W	END OF HOLE

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
0				0 – 48.77 OVERBURDEN greenish pale gray dolavrite, pale gray porphyry, white milky quart, pale gray chert, dark grey phillite with quartz veins, and green schists cobbles, pebbles and boulders, well-rounded.													
5																	
	0	LOST															
10																	
(12.19)																	
	17	LOST															
(13.72)																	
15	5																

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
15	5			OVERBURDEN (Continues)													
(15.40)	19																
(16.76)	21	LOST															
(18.90)	0																
20																	
(20.12)	3	LOST															
(23.16)	7																
(24.99)																	
25	24																
(25.91)	22																
(27.49)	15	LOST															
(29.26)	3																
30																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
30				OVERBURDEN (continues)													
	3	LOST															
(33.22)																	
35	3																
(36.58)																	
	0	LOST															
40																	
(41.45)																	
	3	LOST															
(44.50)																	
45	17																

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
45				OVERBURDEN (continues)													
	7			black to dark grey, massive to slightly banded argillite pebbles.													
(47.55)	4	C2a															
(48.77)				48.77 ~ 65.87 C2a ARGILLITE													
	8			black, fine-grained, massive to slightly banded argillite occasionally containing fine-grained pyrite thin layers and bands.													
50																	
(50.90)		C2a		sheared black argillite. pyrite disseminated.													
	16																
(53.64)		C2a		decomposed black argillite. (completely decomposed to black clay.)													
55																	
	15																
(56.69)	100		68 (57.65)	black, fine-grained, massive to slightly banded with very thin bands of fine-grained pyrite.					57.65 15 mm thick pyrite lens in argillite. bedding angle is 65 degrees to core.								
(57.91)	100	C2a	15	numerous thin band of fine-grained pyrite in argillite.													
(59.13)	100		68														
60	100																
(59.74)			80														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
60		C2a	70	C2a ARGILLITE (continues)													
(61.57)		C2a	47						62.20 – 62.27 concentration of fine-grained pyrite thin layers up to 1.5mm thick. bed angle is 47 degrees to core axis.								
(62.79)		C2a	50						63.2 2-5mm diameter fine-grained pyrite breccias in argillite matrix.								
(64.01)		C2a	38						63.80 concentration of fine-grained pyrite thin layers up to 0.5 mm thick. bed angle is 38 degrees to core axis.								
(64.62)																	
65		C2a	50														
(65.84)		C2b	45 53	65.87 – 72.62 C2b ARGILLITE (with quartz veining) dark gray, fine-grained, finely banded with silt and sand bands. numerous siderite-quartz veins, networks and irregular-shaped lenses cut through. occasional fine-grained pyrite thin layers embedded in argillite.					67.8 3-10mm thick fine-grained pyrite lenses in argillite. bed angle is about 45 degrees to core axis. 67.8 – 68.6 fine-grained pyrite thin layers and dissemination in argillite.								
(68.58)																	
(69.80)																	
70		C2b		70.21 – 71.35 sheared and crushed to graphitic fragments and black clay.													
(71.02)		C2b															
(72.54)		C2b	50 (72.62) 55 55	72.62 – 75.35 C2b ARGILLITE dark gray, fine-grained, finely banded with silt and sand bands. minor fine-grained pyrite thin layers embedded in argillite.													
75																	
(74.98)																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION		ALTERATION A	B	C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
75		C2b	7-80 (75.35)	75.35 - 83.30	C1b SANDSTONE (calcalions)					75.40 width 20mm pale brown, fine-grained								
			45		dark gray to gray, medium-grained, well-banded with					sphalerite-quartz vein cut argillite at about 80								
					black argillite bands. some siderite-quartz networks.					degrees to core axis.								
		C1b	20		75.7 0.5 - 5mm width drusy calcite networks.													
			30															
(78.03)			25															
80			40															
(81.08)		C1b	28															
			25															
			60		83.75 pale brown, fine-grained sphalerite-quartz network.													
			(83.30)	83.30 - 85.00	C2b ARGILLITE													
		C2b			dark gray to black, fine-grained, well-banded with silt													
(84.12)			25		thin bands. elongated pyrite lenses up to 7mm thick													
			(85.00)		in argillite. small scale slumping fold textures.													
85			20	85.00 - 98.50	C1b SANDSTONE (calcalions)													
					gray to pale gray, medium-grained, well-banded with													
					black argillite.													
			33															
(87.17)		C1b																
			34															
			42															
90			48															
(89.92)																		

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE
90		C1b	35	C1b SANDSTONE (calcalious) (continues)													
(90.83)			40														
			45														
			55														
(93.27)				0.1 - 0.5 mm widd qtz. gash veins cut strata at 45 degrees to core axis.													
			45														
95																	
		C1b	32														
(96.32)																	
			32														
			(98.50)	98.50 - 107.50 C2b ARGILLITE (calcalious)													
		C2b		dark gray, fine to medium-grained, well-banded with silt bands, minor slumping textures, core blaken along beddings.													
(99.36)																	
			48														
100																	
			50														
(102.41)		C2b	55														
			55														
			55														
105			55														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
105				C2b ARGILLITE (continues)													
(115.46)		C2b	55														
			55														
			50														
			(107.50)	107.50 – 127.98 C2a ARGILLITE													
			56	black to dark gray, fine-grained, massive to slightly banded													
(108.51)		C2a	55	occasional thin elongated fine-grained pyrite lenses in													
			42	argillitic matrix. small scale slumping deformations.													
110																	
			55	109.3 – 117.8 black, almost massive argillite.													
			65														
(111.56)		C2a															
			65														
			45														
(114.60)																	
115																	
			65														
			48														
		C2a															
(117.65)																	
			90														
120			65														

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
120																	
(120.70)		C2a	80 / 60	calcite - qtz. gash veins cut at 40 degrees to core.													
(123.75)																	
125			65														
		C2a		126.9 – 127.8 sheared to graphitic argillitic fragments and black clay.													
(126.80)			55	127.95 2-3mm thick fine-grained pyrite layer.													
		C1a	65 (127.98)	127.98 – 128.32 C1a SANDSTONE													
			(128.32)	grey, medium-grained, massive. 0.1 – 2mm calcite - qtz. vert.													
(128.32)		C2a		veins.													
				128.32 – 129.40 C2a ARGILLITE													
(129.84)		C2b	60 (129.40)	black, fine-grained, slightly banded.					129.44 – 129.52 pale brown, fine-grained sphalerite – siderite - quartz vein (true width 4.5cm) cut at								
130																	
				129.40 – 134.50 C2b ARGILLITE					40 degrees to core axis.								
				dark grey, fine-grained, banded with silt and sand bands.													
				numerous quartz lenses and veins cut through from 130.3 –													
				134.5.													
(131.98)		C2b															
				sheared to graphitic flaky fragments.													
				134.50 – 150.47 C2a ARGILLITE													
(134.11)			(134.59)	black to dark grey, fine-grained, massive to slightly banded.													
135		C2a		134.5 – 136.1 extensively sheared to black clay and graphite													

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
135				argillitic fragments. shinny graphite films over sheared													
(135.64)				surface.													
(136.85)		C2a		137.05 – 138.75 sheared to graphitic flaky fragments													
				and blocky argillite fragments. shinny graphite films													
				coat sheared surface.													
(138.68)			58	138.68 – 139.55 slightly coarse-grained, sandy port.													
(139.75)																	
140			56														
(142.04)		C2a															
			25														
				143.00 – 144.82 extensively sheared and crushed to													
				shinny submetalic luster flaky graphitic fragment with													
				quartz fragments and black clay.													
(144.78)																	
145			80														
				black, fine-grained, massive argillite													
		C2a	65														
(147.52)																	
			46														
150																	

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DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
150		C2a	(150.47)	150.3 slightly sheared.													
(150.91)				150.47 – 157.35 C2b ARGILLITE													
				dark gray, fine to medium-grained, well-banded with													
				silt and sand bands.													
				154.3 – 167.0 numerous siderite-quartz veins, networks													
(152.40)		C2b		lenses and gash veins cut through. some siderite-quartz													
				veins are intruded along bedding planes.													
				small slumping fold structures in argillite.													
			55														
155																	
		C2b	73														
				numerous siderite-quartz veins along bedding planes.													
			70 (157.35)														
(157.28)				157.35 – 173.53 C2a ARGILLITE													
		C2a		black, very fine-grained, massive to slightly banded.													
			65														
160																	
(160.32)				160.7 – 160.9 intensively sheared to shinny sub-													
				metalic luster graphitic fragments.													
		C2a															
				162.80 – 163.00 intensively sheared to shinny sub-													
(163.07)				metalic luster graphitic fragments.													
			55	163.0 – 167.0 numerous siderite-quartz veins and													
			70	networks.													
165																	

PAGE 12 OF 19 | PROJECT Clear Lake | HOLE No. 91-66

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
165		C2a		C2a ARGILLITE (continues)													
				165.1 – 166.3 Argillite and quartz are brecciated to 3 – 20mm subangular breccias in black argillitic matrix.													
(166.12)																	
				167.00 – 173.53 strongly sheared and brecciated to shiny submetallic lustre, flaky graphitic fragments and black clay and intruded by white quartz veins. (probably fault zone) footwall contact is 21 degrees to core axis.													
(168.25)																	
(169.16)																	
170																	
(170.08)																	
(170.38)		C2a															
(172.52)		C2a															
				(173.53) 22													
		C2b		173.53 – 180.10 C2b ARGILLITE dark gray, fine-grained, finely banded with silt and sand bands.													
(174.35)																	
175				174.35 – 176.10 brecciated slightly and intruded quartz networks and lenses.													
				40													
(176.48)		C2b		20													
				177.0 – 177.3 Slightly sheared.													
				177.92 – 178.14 a quartz lens intruded.													
				178.6 – 178.9 sheared to soily graphitic fragments and clay.													
(178.92)																	
180																	

PAGE 13 OF 19 | PROJECT Clear Lake | HOLE No. 91-66

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
180		C1b	(180.10) 70 40	180.10 – 182.00 C1b SANDSTONE gray, fine to medium-grained, massive to slightly banded sandstone													
(181.66)		C2a	(182.00) 80	182.00 – 188.00 C2a ARGILLITE gray, fine-grained, massive to banded. 182.00 – 183.80 intensively sheared to black soily graphitic fragments and blocky argillite. 184.35 – 185.35 sheared to black, shinny graphitic flaky fragments.													
(183.79)			40														
185				185.55 – 186.05 numerous quartz networks.													
(185.52)			5	186.05 – 196.80 extensively clushed to slicy fragments separated along bedding planes.													
(187.15)		C2a	10														
(188.06)		C2b	(188.40) 22	188.00 – 208.80 C2b ARGILLITE gray, fine-grained, well-banded with silt and sand thin bands.													
190																	
(190.89)			85 12														
		C2b	45	core clused to slicy fragment separated along bedding planes.													
(192.63)			60														
195			45														

PAGE 14 OF 19 | PROJECT Clear Lake | HOLE No. 91-66

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
195 (195.07)		C2b	45	C2b ARGILLITE (continues)													
(196.90)		C2b	22 75	minor slumping fold textures in argillite.													
(199.95)		C2b	55 55														
200		C2b	60 67	200.55 – 201.45 quartz networks and lenses cut along beddings.													
(203.00)		C2b	40 45	203.0 – 204.2 minor quartz networks.													
205		C2b		205.5 – 207.6 numerous quartz networks and lenses cut along beddings.													
(206.04)		C2b	60														
(207.57) reduced to BQ core size.		C2b	30 40														
(208.79)		C2b	(208.90)	208.80 – 210.97 C2a ARGILLITE													
(209.70)		C2a	35	black to dark gray, fine-grained, massive to slightly banded with silt and sand thin layers.													
210																	

PAGE 15 OF 19 | PROJECT Clear Lake | HOLE No. 91-66

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
210		C2a	55	C2a ARGILLITE (continues) dark grey, fine-grained, massive.													
			35														
(212.14)																	
(213.66)			45														
215																	
(215.19)		C2a	25	215.0 – 217.2 small amount of siderite-quartz veins and networks.													
(218.24)			60														
220																	
(220.98)		C2a	50														
(222.50)			35														
225																	

(724.94)

PAGE 16 OF 19 | PROJECT Clear Lake | HOLE No. 91-66

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
225		C2a	50	C2a ARGILLITE (continues)													
				225.20 a fine-grained pyrite nodule, 13mm diameter,													
			40	226.3 – 228.3 slightly sheared													
(227.38)																	
			60														
(229.82)			33														
230																	
			45														
			35														
(232.26)		C2a															
			37														
(233.98)			40														
235																	
			40														
(235.61)				236.0 – 236.7 slightly sheared													
		C2a	40														
(237.74)																	
			45														
240																	

PAGE 17 OF 19 | PROJECT Clear Lake | HOLE No. 91-66

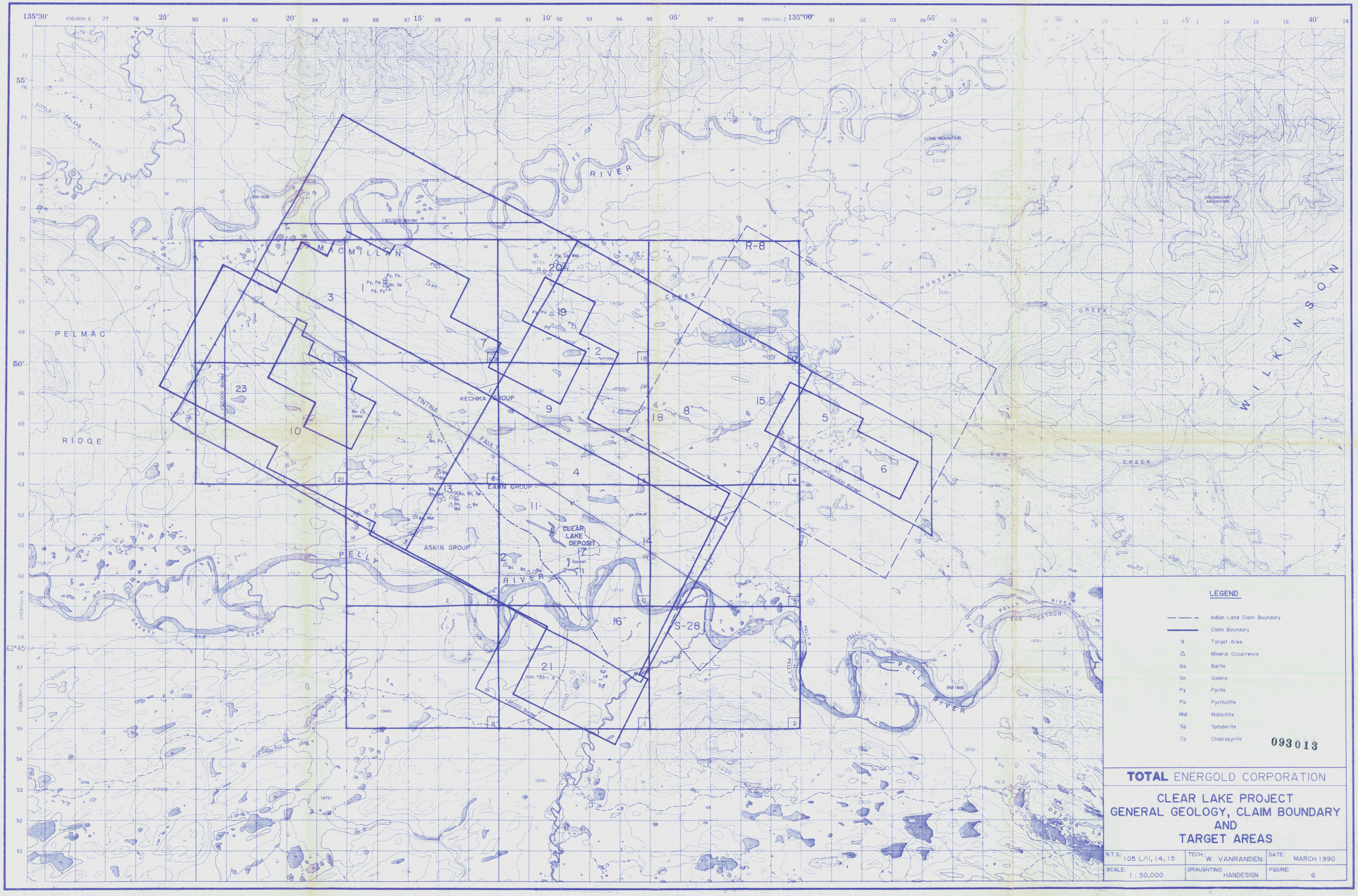
DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
240		C2a	50	C2a ARGILLITE (continues)													
(240.78)				black to dark gray, fine-grained, slightly banded.													
(241.71)			35	reverse grading observed.													
			40														
(244.05)																	
245		C2a	35														
(247.19)			25														
(248.72)			45														
250		C2a	25														
(251.46)			45														
(253.29)			35														
			44														
255																	

PAGE 18 OF 19 | PROJECT Clear Lake | HOLE No. 91-66

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
255		C2a	43	C2a ARGILLITE (continues) dark gray to black, fine-grained, massive to slightly banded.													
(256.08)			40														
(256.85)			50														
(259.88)			30														
260		C2a	40	261.7 – 261.9 white milky quartz veins intruded along beddings.													
(260.91)			60														
(263.35)			45														
265																	
(265.78)		C2a	45														
			42														
(267.00)			30														
(268.83)				268.8 – 269.6 numerous quartz networks cut through.													
270			35														

PAGE 19 OF 19 | PROJECT Clear Lake | HOLE No. 91-66

DEPTH METERS	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	FRACT INTENSITY	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	INTERVAL	WIDTH	ASSAY NUMBER	%	%	%	COMPOSITE ASSAYS
270		C2a	∠42	C2a ARGILLITE (continues)													
			∠42														
(270.97)				91-66 End of Hole 270.97m													
275																	
280																	
285																	



135°30′
135°00′
55′
50′
62°45′
MACMILLAN
RIVER
PELMAC
RIDGE
KECHIKA GROUP
TINTINA
FAULT
EARN GROUP
ASKIN GROUP
CLEAR LAKE DEPOSIT
PELLY
RIVER
SAFETY
PIN
BEND
DUO
CREEK
HORSFALL
CREEK
WILKINSON
LONE MOUNTAIN
DROMEDARY MOUNTAIN
LITTLE KALZAS RIVER
MACMI
R-8
S-28
1:20,000 Border
LEGEND
Indian Land Claim Boundary
Claim Boundary
9 Target Area
Mineral Occurrence
Ba Barite
Gn Galena
Py Pyrite
Po Pyrrhotite
Mal Malachite
Sp Sphalerite
Cp Chalcopyrite
093013
TOTAL ENERGOLD CORPORATION
CLEAR LAKE PROJECT
GENERAL GEOLOGY, CLAIM BOUNDARY
AND
TARGET AREAS
N.T.S.: 105 L/11, 14, 15
TECH.: W. VANRANDEN
DATE: MARCH 1990
SCALE: 1 : 50,000
DRAUGHTING: HANDESIGN
FIGURE: 6

SYMBOLS

- Fault (defined, assumed)
- Geologic contact
- Bedding (inclined, vertical, overturned)
- Foliation (inclined, vertical, S2)
- Vein
- Fold
- Anticline (defined, assumed)
- Synclline (defined, assumed)
- Airphoto linear
- Gossan
- F Fossil locality
- Mineral showing
  - ba barite
  - ga galena
  - sp sphalerite
  - py pyrite
  - po pyrrhotite
  - mal malachite
- 78-1 Drill hole location (year—number)
- Lake sediment sample, sign=ref as:
  102,15,41,0.3,900 Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)
- Zn Geochemical anomaly, anomalous values defined as:
  - Zn ≥ 240 ppm
  - Pb ≥ 80 ppm
  - Cu ≥ 70 ppm
  - Ag ≥ 1.1 ppm
  - Ba ≥ 2700 ppm
- Ground gravity survey, residual gravity high (more than 0 mgal) (more than 0.5 mgal area is shadowed)
- Ground EM possible conductor axis trend (Maxmin II 444Hz, 1777 Hz, EM-17 1600 Hz)
- Airborne EM low resistivity area
- Induced Polarization survey, apparent resistivity low (less than 50 Ω/cm)
- Induced Polarization survey, apparent chargeability high (more than 39 mV/V)
- Airborne or ground magnetic survey, magnetic high

LITHOLOGY LEGEND

INTRUSIVE ROCKS
TERTIARY, MESOZOIC TO LATE MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Dome b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER?

- DM_{CPC} CHERT PEBBLE CONGLOMERATE locally hematitic and thumbprint quartz fragments

EARN GROUP
MISSISSIPPIAN

- DM_B BARITE
- DM_M MASSIVE SULPHIDE
- DM_V MAFIC VOLCANIC FLOW ROCKS
- DM_T TUFF a) pyritic b) ash
- DM_C CHERT dark grey, massive
- DM_P BRECCIA CONGLOMERATE
- DM_S ARGILLITE/SHALE a) massive, laminated, b) with minor siltstone, sandstone, chert, limestone and greywacke, c) siliceous, pyritic mudstone, d) calcareous and ferruginous mudstone, f) with thin light brown dolomitic bands
- DM_S SANDSTONE a) massive, b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT dark grey to brown, banded
- DEVONIAN

UNCONFORMITY (?) / CYR FAULT (?)

ASKIN GROUP
DEVONIAN

- SD_Q QUARTZITE
- SD_D DOLOSTONE locally calcareous, fossiliferous
- SD_S ARGILLITE/SHALE locally dolomitic and limestone
- SD_A AMYGDALOIDAL ANDESITE
- SILURIAN

ROAD RIVER FORMATION
SILURIAN

- S_S SHALE graptolites
- ORDOVICIAN

WARNA FAULT

KECHIKA GROUP MONTE OK FORMATION
ORDOVICIAN

- CO_{MV} MAFIC VOLCANIC TUFF green, chloritic (formerly MV)
- CO_{VS} VOLCANICS green chloritic tuffs interlayered with dm-sized, subangular, fragmental and limestone, formerly MV)
- CO_{SE} SEDIMENTARY ROCKS dark coloured mudstone, siltstone, chert, limestone and greywacke

YANGSOSTA FORMATION

- CO_{PL} PHYLLITE sericitous mudstone with limestone and limestone, locally chloritic (formerly SC)
- CO_{MV} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly SC)
- CO_{PL} PHYLLITE carbonatic, undifferentiated (formerly C)

MT BYE FORMATION

- CO_{PL} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous schistose (formerly PC)
- CO_{PL} PHYLLITE graphitic (formerly SC)
- CO_{PL} PHYLLITE calcareous, graphitic (formerly SC)
- CO_{MV} MAFIC METAVOLCANIC ROCKS chlorite rich (fluxaceous rocks (formerly MV)
- CO_{PL} PHYLLITE undifferentiated
- CAMBRIAN

RABBITKETTLE FORMATION
ORDOVICIAN

- SD_S ARENITE dolomitic, calcareous, with interbedded silty laminated limestone and clay siltstone
- CAMBRIAN

by: A. SOME
R. ZURAN

500 0 500 1000

TOTAL ENERGOLD CORP.

CLEAR LAKE PROJECT
COMPILATION MAP

093 I 13

DATE: DECEMBER 1991 | FIGURE: 7
N.T.S: 105 L/14 | SCALE: 1:25000

LEGEND

GRID LINES

GEOPHYSICS – GRAVITY

GEOPHYSICS – I.P.

GEOCHEMISTRY

CLAIM BOUNDARY STAKED 1991

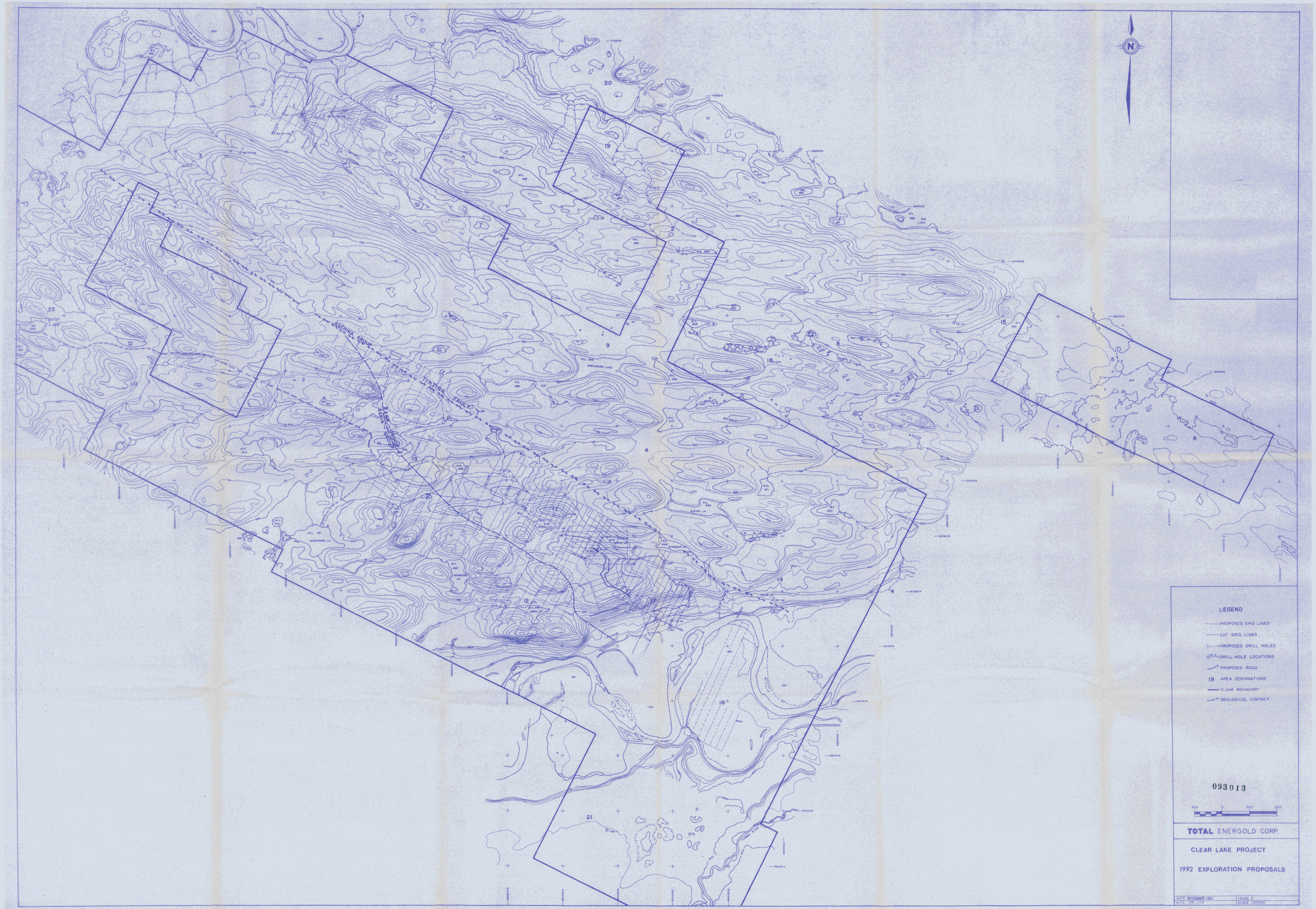
093013

500 0 500 1000

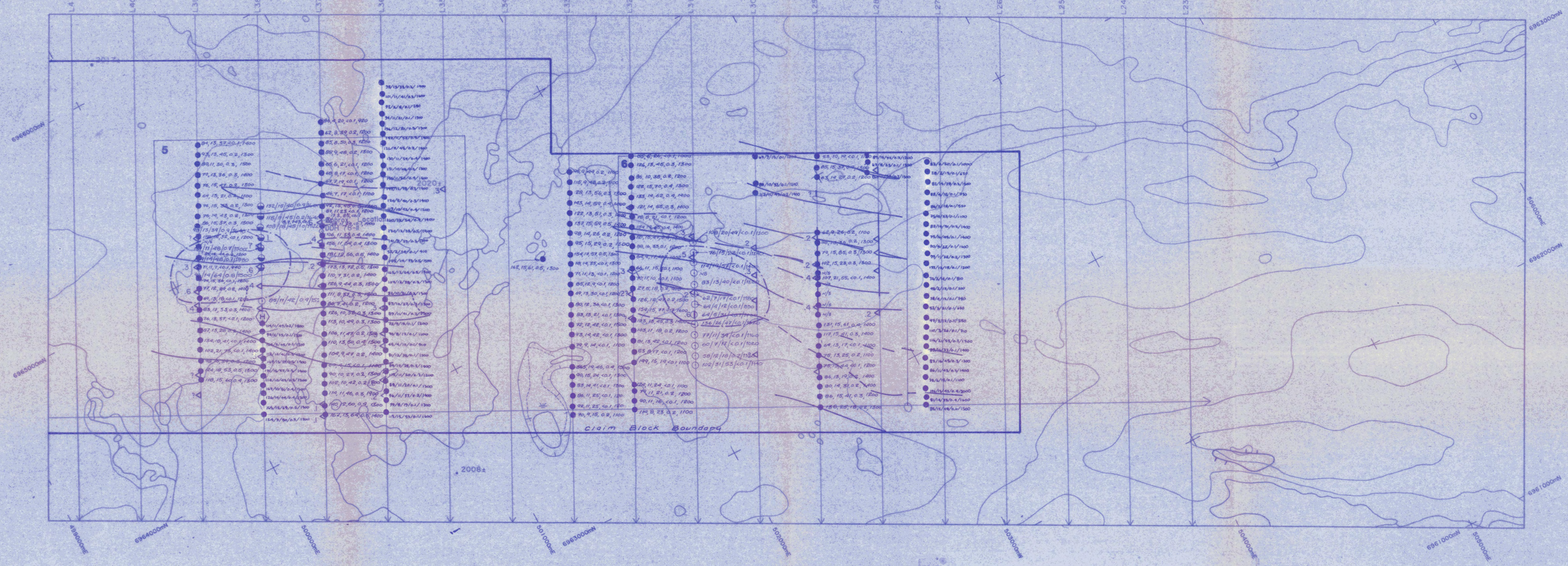
TOTAL ENERGOLD CORP.

CLAIM ASSESSMENT WORK 1991

DATE DECEMBER 1991	FIGURE 6
N.T.S. 105 I/14	SCALE 1:20,000



LEGEND
PROPOSED GRID LINES
CUT GRID LINES
PROPOSED DRILL HOLES
DRILL HOLE LOCATIONS
PROPOSED ROAD
19 AREA DESIGNATIONS
CLAIM BOUNDARY
GEOLOGICAL CONTACT
093013
500 0 500 1000
TOTAL ENERGOLD CORP.
CLEAR LAKE PROJECT
1992 EXPLORATION PROPOSALS
DATE DECEMBER 1991
FIGURE 9
N.T.S. 105 L/14
SCALE 1:20000



SYMBOLS

- Rock chip sample
- Soil sample
- 1990 Soil sample (Pianjar + Holman Sampler)
- Silt sample
- Claim post
- Helicopter pad

Assay results listed as:
Zn (ppm) / Pb (ppm) / Cu (ppm) / Ag (ppm) / Ba (ppm)

- Soil Sample (1991)
- Gravity Peak Anomaly (mgals)
- Gravity Peak Anomaly, Broad Zone with peak value (mgals)
- EM-17, Max-Min Conductor Axis
- Geophysical Anomaly Category

- Bedding (tops unknown, known)
- First Foliation (S_1) (inclined, vertical)
- Second foliation (S_2) (inclined vertical)
- Joint inclined
- Lineation (included plunge unknown)
- Outcrop
- Geological Boundary (defined, approximate, assumed)
- Syncline
- Anticline (Arrow indicates plunge)
- Multiple Fold (arrow indicates plunge)
- Drag Fold (Arrow indicates plunge)
- Shearing and Dip
- Fault Assumed

- Fossil Locality
- Mineral Occurrence — Ba-barite, Gn-galena, Sp-sphalerite, Py-pyrite, Cp-chalcopyrite, Po-Pyrrhotite, Mal-Malachite
- Trench
- Subcrop Trace of Clear Lake Deposit
- Gossan
- Spot Elevations (metres ASL)
- Water Elevation (metres ASL)
- Contour Elevation (metres ASL) / Contour Interval 10 metres
- Cut Grid Line
- Diamond Drill Hole (year, number)
- Road
- Stream
- Swamp

LITHOLOGY LEGEND

INTRUSIVE ROCKS
TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)
- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER
- DMc_{PC} CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP
MISSISSIPPIAN
- DM_B BARITE
- DM_M MASSIVE SULPHIDE
- DM_B MAFIC VOLCANIC FLOW ROCKS
- DM_T TUFF a) Lapilli b) Ash
- DM_C CHERT dark grey, massive
- DM_{Br} BRECCIA, CONGLOMERATE
- DM_{Ar} ARGILLITE/SHALE a) massive, carbonaceous. b) with minor sandstone, siltstone bands. c) with many sandstone siltstone bands. d) siliceous and/or calcified. e) calcareous with thin limestone interbeds. f) with thin light brown dolomitic bands.
- DM_S SANDSTONE a) massive b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown, banded

DEVONIAN
— UNCONFORMITY (ST CYR FAULT?) —

ASKIN GROUP
DEVONIAN
- SD_Q QUARTZITE
- SD_D DOLOSTONE locally recrked by chert
- SD_S ARGILLITE/SHALE locally dolomitic and micaceous
- SD_I AMYGDALOIDAL ANDESITE

SILURIAN

ROAD RIVER FORMATION
SILURIAN
- SS SHALE graptolitic

ORDOVICIAN
TINTINA FAULT (Inferred)

KECHIKA GROUP MIDDLE OR FORMATION
ORDOVICIAN
- CO_{AC} MAFIC VOLCANIC TUFF green, chloritic (formerly GA)
- CO_{AB} VOLCANICS green, chloritic tuffs interbedded with red-coloured siltstone, mudstone and limestone. (formerly GA2)
- CM_{AS} SEDIMENTARY ROCKS red-coloured mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION
- CO_{SC} PHYLLITE calcareous interbedded with limestone and dolostone. Rare chlorite (formerly SC)
- CO_{SB} MAFIC METAVOLCANIC ROCKS fine to medium grain chlorite-siliceous rocks (formerly SC)
- CO_{SA} PHYLLITE calcareous, undifferentiated (formerly S)

MT MYE FORMATION
- CO_{SB} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly SC)
- CO_{SE} PHYLLITE graphitic (formerly SE)
- CO_{SC} PHYLLITE calcareous, graphitic (formerly SE1)
- CO_{SD} MAFIC METAVOLCANIC ROCKS chlorite rich siliceous rocks (formerly SE)
- CO_{SA} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION
ORDOVICIAN
- CO_T ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

DESCRIPTIVE SUBSCRIPTS

ALTERATION: ca calcareous, do dolomitic, si silicified, cy clay altered, ch chloritic, ep epidotic, ms micaceous, gr graphitic, sp spilitic, ch chert replacement

DETRITUS: pe pebbly, sa sandy, si silty

BEDDING: ma massive, pl planar, no nodular, wa wavy, sh + bedded, la laminated

ANGULARITY: ba brecciated, cg conglomeratic

093013

TOTAL ENERGOLD CORPORATION

CLEAR LAKE PROJECT

COMPILATION MAP

N.T.S.: 105 L	TECH.: W. VANRANDEN	DATE: MARCH 1990
SCALE: 1:10,000	DRAUGHTING: Lindsay	FIGURE: 10

LITHOLOGY LEGEND

INTRUSIVE ROCKS

PROTEROZOIC TO ORDOVICIAN(?)

- Kg — MAFIC INTRUSIVE ROCKS: a) Gabbro, Norite b) Diabase
- Kv — FELSITE

MISSISSIPPIAN AND/OR EARLIER

- Dxtpc — CHERT PEBBLE CONGLOMERATE: locally hematitic and hosting pinal fragments

EARN GROUP

MISSISSIPPIAN

- Dag — BARITE
- Dag — MASSIVE SULPHIDE
- Dag — MAFIC VOLCANIC FLOW ROCKS
- Dag — TUFF: d) ash, lit-lith
- Dag — CHERT: dark gray, massive
- Dag — BRECCIA, CONGLOMERATE
- Dag — ARGILLITE/SHALE: a) massive, carbonaceous, b) with minor siltstone, siltstone laminae, c) with minor fine/thinly interbedded siltstone, d) with minor fine/thinly interbedded siltstone and fine-medium interbeds, e) with thin-bedded siltstone laminae

- Dls — SANDSTONE: a) massive, b) laminated
- Dlm,lt — LIMESTONE
- Dlm,ch — CHERT: dark-gray/ black, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP

DEVONIAN

- SDq — QUARTZITE
- SDd — DOLOSTONE: locally laminated to chert
- SDg — ARGILLITE/SHALE: locally laminated with intrusions
- SDv — AMYGDALOIDAL ANDESITE

SILURIAN

ROAD RIVER FORMATION

SILURIAN

- sd — SHALE: graptolitic

TINTINA FAULT

KECHIKA GROUP MIDDLE OF FORMATION

CRETACEOUS

- CGa — MAFIC VOLCANIC TUFF
- CGa — VOLCANICS: green, chloritic tuffs, intermediate ash, ash-cultural, siltstones, mudstones and limestones, distinctly NAD
- CGa — SEDIMENTARY ROCKS: siltstones, mudstones, siltstone, chert, limestone and greywacke

YANGKENG FORMATION

- CGp — PHYLLITE: siltstones, metasiltstone with limestone and siltstone, Mafic Volcanics (formerly B)
- CGp — MAFIC METAVOLCANIC ROCKS: flow or medium grain chloritic tuffaceous rocks (formerly A2)
- CGp — PHYLLITE: siltstones, carbonaceous (formerly B)

MT. NYE FORMATION

- CGp — PHYLLITE: siltstone, argillaceous (formerly B)
- CGp — PHYLLITE: siltstone, greywacke (formerly B2)
- CGp — PHYLLITE: siltstone, greywacke (formerly B1)
- CGp — MAFIC METAVOLCANIC ROCKS: siltstone with tuffaceous beds (formerly B)
- CGp — PHYLLITE: conglomeratic

UNCONFORMITY

RABBITKETTLE FORMATION

CRETACEOUS

- CG — ARENITE: siltstones, greywacke, with minor/local lithic fragment limestone and ash-volcanic

DESCRIPTIVE SUBSCRIPTS

ALTERATION

- ca — calcareous
- si — siliceous
- ep — epidotized
- ch — chloritic
- sc — sericitic
- ab — albitized
- mt — magnetite
- gr — graphitic
- py — pyritic
- (blank) — unaltered

GEOMETRIC

- pa — parallel
- cr — cross
- ch — channel

BEDDING

- ma — massive
- stra — strata
- lam — laminated
- wa — wavy
- lens — lenticular
- bed — bedded
- lam/wav — laminated/wavy

ANGULARITY

- sa — subangular
- ang — angular

AREA INDEX

19	18	17
6	5	4
7	0	3
8	1	2

E 971 000N
E 967 000N
E 963 000N
E 959 000N
E 955 000N
460 000E
464 000E
468 000E
472 000E

SYMBOLS

Fault (defined, assumed)
Geologic boundary
Bedding: horizontal, less unknown; dips known: vertical, overturned
Foliation, (S1): horizontal; inclined; vertical
Foliation, (S2): horizontal; inclined; vertical
Axis: horizontal; inclined; vertical
Lineation: horizontal; inclined; vertical
Non-foliation: horizontal; inclined; vertical
Shearing: horizontal; inclined; vertical
Anticline (arrow indicates plunge)
Syncline (arrow indicates plunge)
Fold axial plane known - concealed
Limestone/rock on photograph
Fossil locality
Lake sediment sample, (defined, approx.), results: Au ppb
Cu ppm, Pb (ppm), Zn (ppm), Ag (ppm) ND - No data
Stream sediment sample, (detailed), anomalies defined as:
Au ppb
Ag 0.4 ppm
Cu 60 ppm
Pb 200 ppm
Zn 300 ppm
Soil geochem anomaly, (detailed), anomalies defined as:
Au ppb
Ag 0.4 ppm
Cu 60 ppm
Pb 200 ppm
Zn 300 ppm
also include open ends of anomaly)
Outcrop
Cut line
Trench
Stream
Swamp
Open direction (inactive)
Terrain corrected Bouguer Gravity
C.I. = 2.5 Mgal, Redford & Reford, (April, 1981)
Compilation Bouguer Gravity
C.I. = 5.0 mgal, Terraplus & Aeroq, (Aug. 1981)
Terrain corrected Bouguer Gravity
C.I. = 2.5 Crone Geophysics (Feb. 1990)
Residual Gravity
C.I. = 2.5 Fleming Exploration Services (May, 1987)
C.I. = 2.5 F. Hoskins, (Jan. 1990)
Resistivity-Inability Possible conductor axis/ trend
IP/R = 1000s Possible conductor axis/ trend
Magnetic = 1 1111s Possible conductor axis/ trend
VLF survey
Apparent Resistivity low (less than 50 - ohm-m) - Axis & Trend
Fraser Filtered & Reduced, (Jun, 1991)
VLF survey
Apparent Conductivity high (more than 50mS/M) - Axis & Trend
Fraser Filtered & Reduced, (Jun, 1991)
Geological boundary
Inferred fault
Subsurface projection of massive sulphides

TOTAL ENERGOLD CORPORATION

CLEAR LAKE PROJECT

COMPILATION MAP

093013

N.T.S. : 105 L/14	TECH. : A. GOMI, R. ZURAN	DATE : DECEMBER 1991
SCALE : 1 : 5000	DRAUGHTING : HANDESIGN	FIGURE : 11 MAP No. : 0-5-6-7

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20	19	18	17
	6	5	4
	7	0	3
	8	1	2

6 971 000N
6 967 000N
6 963 000N
6 959 000N
6 955 000N
489 000E
490 000E
491 000E
492 000E
493 000E

3 2 1	4 2 1	3 2 1	4 2 1	3 2 1	O	3 2 1	N	4 2 1	3 2 1	M	4 2 1
3 2 1	R	4 2 1	3 2 1	E	4 2 1	3 2 1	C	4 2 1	L	4 2 1	4 2 1
3 2 1	S	3 2 1	F	4 2 1	3 2 1	3 2 1	B	4 2 1	A	4 2 1	K
3 2 1	4 2 1	3 2 1	G	4 2 1	3 2 1	3 2 1	4 2 1	4 2 1	J	4 2 1	4 2 1
3 2 1	U	4 2 1	3 2 1	V	4 2 1	3 2 1	W	4 2 1	X	4 2 1	Y

ENLARGEMENT OF AREA

LITHOLOGY LEGEND

INTRUSIVE ROCKS

TERTIARY - MESOZOIC (?) OR LATE MISSISSIPPIAN (?)

- Kp — MAFIC INTRUSIVE ROCKS: a) dykes, Shefle - b) Rattan grey, shorty (formerly Kf1)
- Kf — FELSITE

MISSISSIPPIAN AND/OR EARLIER

- CMcpc — CHERT PEBBLE CONGLOMERATE: locally resembles well-foliated grey migmatite.

EARN GROUP

MISSISSIPPIAN

- CMb — BARITE
- CMs — MASSIVE SULPHIDE
- CMv — MAFIC VOLCANIC FLOW ROCKS
- CMt — TUFF: a) lapilli, b) ash
- CMc — CHERT: dark grey, massive
- CMb — BRECCIA, CONGLOMERATE
- CMg — ARGILLITE/SHALE: a) massive, carbonaceous; b) with minor quartzose, siltstone bands; c) with many sandstone/ siltstone bands; d) with minor limestone; e) with thin limestone interbeds; f) with thin light brown chert bands
- CMs — SANDSTONE: a) massive b) laminated
- CMls,ss — LIMESTONE
- CMch,ss — CHERT: Dark green to brown; banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT)

ASKIN GROUP

SILURIAN

- SDa — QUARTZITE
- SDd — DOLOSTONE: locally replaced by chert
- SDg — ARGILLITE/SHALE: locally dolomitic and micaceous
- SDv — AMYGDALOIDAL ANDESITE

ROAD RIVER FORMATION

SILURIAN

- SS — SHALE: graptolite

UNCONFORMITY

WARNTSTEIN FAULT

KECHIKA GROUP — BEDEKE CK FORMATION

ORDOVICIAN

- OCMv — MAFIC VOLCANIC TUFF
- OCMv — VOLCANICS: green, chloritic tuffs intercalated with red cherty tuff, siltstone, mudstone, and limestone. (formerly Kf2)
- OCMs — SEDIMENTARY ROCKS: red siltstone/ mudstone, siltstone, fine limestone and greywacke

YABLOKOVA FORMATION

- COSp — PHYLLITE: siltstone/ mudstone interbedded with limestone and cherty tuff. (formerly Kf3)
- COSp — MAFIC METAVOLCANIC ROCKS: fine to medium grained chloritic rocks. (formerly Kf4)
- COSp — PHYLLITE: siltstone/ mudstone/ tuff (formerly 3)

MT WYE FORMATION

- COSp — PHYLLITE: chloritic (+ epidote in basin, may contain minor 'x' crystals) (formerly 5C)
- COSp — PHYLLITE: graphitic (formerly 5C)
- COSp — PHYLLITE: siltstone/ mudstone, graphitic (formerly 5C)
- COSp — MAFIC METAVOLCANIC ROCKS: chlorite rich schistose rocks (formerly 5B)
- COSp — PHYLLITE: red/brown/green

CAMBRIAN

RABBITKETTLE FORMATION

ORDOVICIAN

- CO1 — ARENITE: micritic, siltstones, with micaceous clay flecked limestone and rare silicstone

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION: ca calcareous, si silicified, ch chloritized, ser sericitic, ka kaolinized, cb carbonatized, sp sphalerite, py pyritic, (blank) hydrothermal

DETRITUS: p pebbly, s sandy, si silty

BEDDING: mi massive, pl planar, wa wavy, cr cross, l laminated, lc lenticular, fl flaser

ANGULARITY: ba bevelled, ro rounded

SYMBOLS

- Fault (defined, assumed)
- Geologic boundary
- Bedding: horizontal, tops unknown; tops known; vertical; overturned
- Foliation, (S1): horizontal, inclined, vertical
- Foliation, (S2): horizontal, inclined, vertical
- Joint: horizontal, inclined, vertical
- Lineation: horizontal, inclined, vertical
- Vein: Attitude: horizontal, inclined, vertical
- Shearing: horizontal, inclined, vertical
- Antiform (arrow indicates plunge)
- Synform (arrow indicates plunge)
- Fold axial plane traces, unknown
- Unreserved hole: a) photograph
- Fossil locality
- Lake sediment sample: (dotted: approx.) results: Ag 0.5 ppm Zn (ppm) 75 (ppm), Cu (ppm), Ag (ppm) 50 - 65 ppb
- Strong Soil Gaschon anomaly (labelled); anomalies defined as: Zn 240 ppm, Ag 1.1 ppm, Pb 20 ppm, As 2,170 ppm, Cu 70 ppm
- Soil gaschon anomaly (labelled); anomalies defined as: Zn 210 ppm, Ag 0.8 ppm, Pb 27 ppm, As 2,220 ppm, Cu 41 ppm (dots indicate open ends of anomaly)
- Glacier
- Cut line
- Road
- Stream
- Swamp
- Spot elevation (metres)
- Tarcon contacted Bouguer Gravity S.S. = 2 Peter E. Walcott & Assoc. (April, 1991)
- Complete Bouguer Gravity S.S. = 2.5 Agar, Sample & Assoc. (Aug. 1991)
- Tarcon corrected Bouguer Gravity S.S. = 3.7 Crone Geophysics (Feb. 1992)
- Residual Gravity S.S. = 2.8 Kenting Exploration Services (May, 1977) S.S. = 3.67 Terraplex (July, 1992)
- Maxwell 93/95 Possible conductive axis trend
- EM-17 1993/95 Possible conductive axis trend
- Maxwell 11 (1)'79 Possible conductive axis trend
- I.P. survey: Apparent Chargeability high (more than 50 ms) a = 250 - n = 3 or 4 Peter E. Walcott & Assoc. (Jan. 1991)
- I.P. survey: Apparent Chargeability high (more than 30ms/v/v) a = 250 - n = 3 or 4 Peter E. Walcott & Assoc. (Jan. 1991)
- Geological boundary
- Mineral fault
- Subsurface projection of massive sulphides

TOTAL ENERGOLD CORPORATION

CLEAR LAKE PROJECT

COMPILATION MAP

093013

N.T.S. : 105 L/14	TECH. : A. GOMI, R. ZURAN	DATE : DECEMBER 1991
SCALE : 1 : 5000	DRAUGHTING : HANDESIGN	FIGURE : 12 MAP No. : 19

AREA INDEX

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7	0	3
8	1	2

CLEAR LAKE
GEOPHYSICAL INTERPRETATION

- Pole-Dipole Data
- Conductor/Chargeability max at n=4
- Conductor with no Particular IP
- Gravity Anomaly
- Very Low Resistivity (Generally Below 100Ω-m)
- Major Conductor Axis
- Low Resistivity
- Moderate Resistivity
- High Resistivity (Generally Above 500Ω-m)
- Mag Low
- Mag High
- Soil Geochem Samples (Zn>140, In>240, In>500 ppm)
- Other Anomalies
- Strike & Dip of Beds
- Orebody
- Geological Contacts Suggested by Geophysics
- Major Fault
- Recommended Anomalies to Drill

Scale:1:5000

TOTAL ENERGOLD CORPORATION

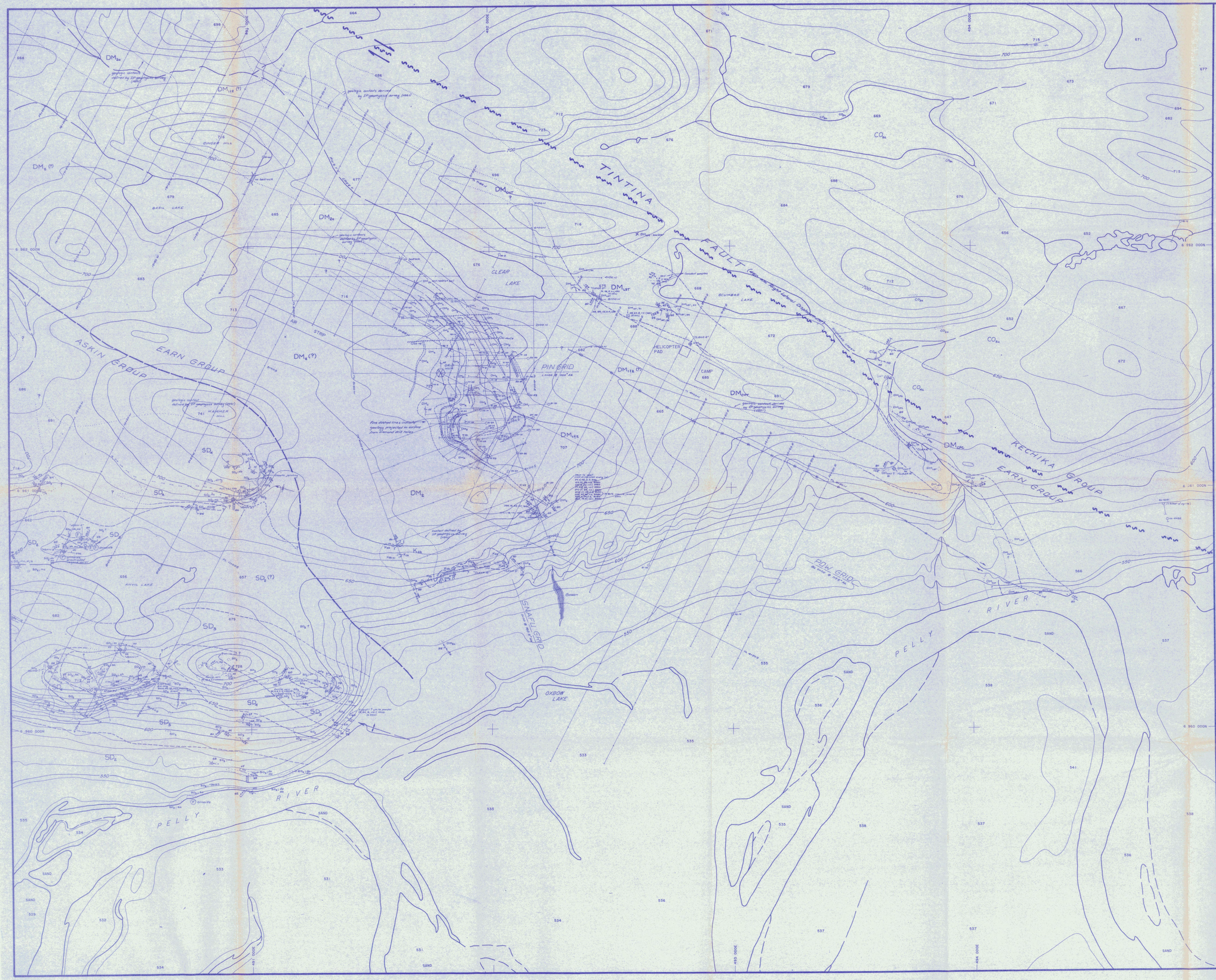
CLEAR LAKE PROJECT

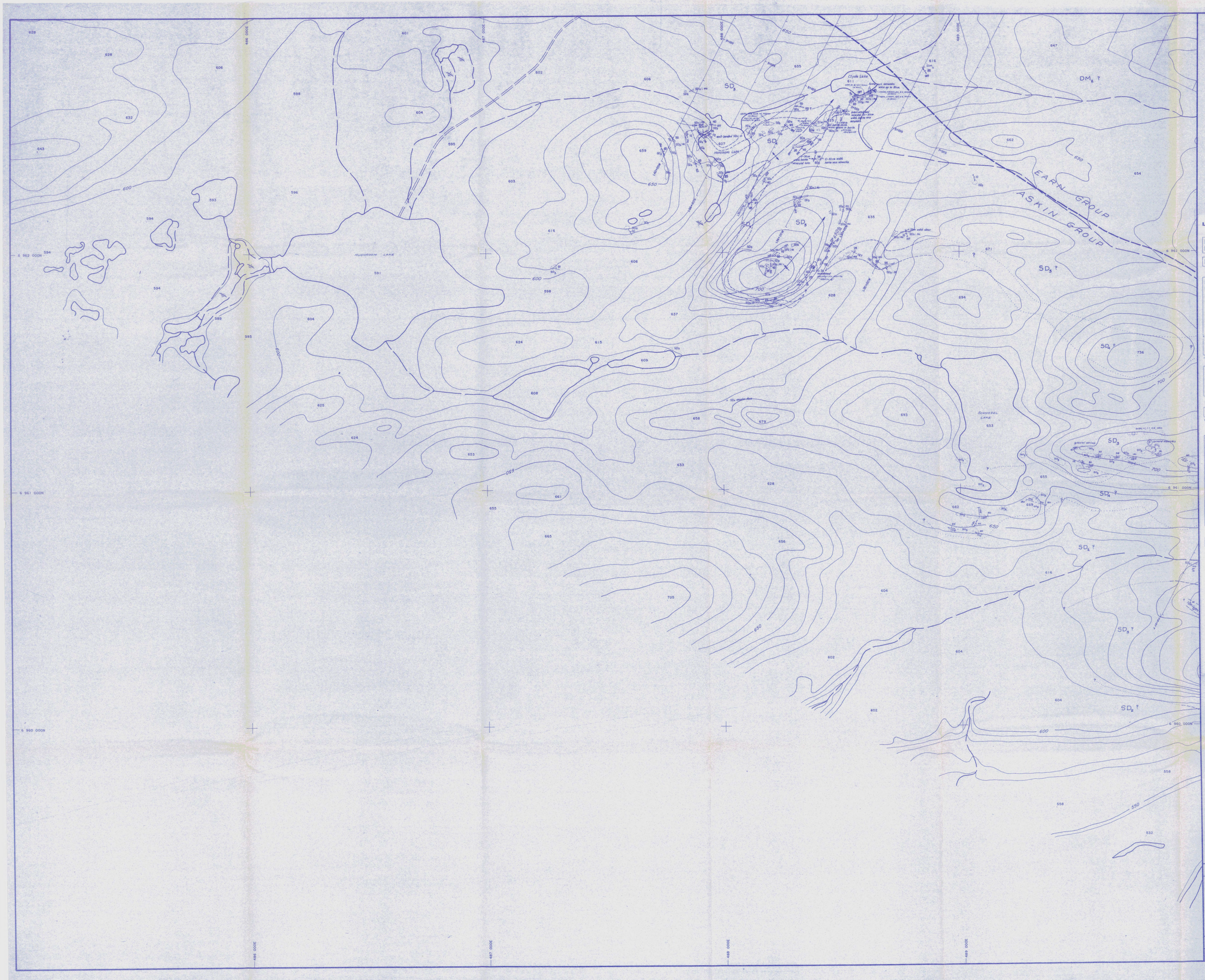
Compilation of Geophysics, Geochem and Geology

-P.J.-

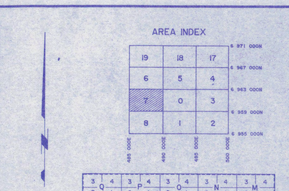
093013

N.T.S. : 105 L/14	TECH. : P.JAMET	DATE : NOV. 1991
SCALE 1 : 5000	DRAUGHTING : HANDESIGN	FIGURE : 13 MAP No. : 0-5-6-7


TINTINA FAULT (Expanded Rogue Lateral Displacement)
ASKIN GROUP
EARN GROUP
RECHIKA GROUP
EARN GROUP
CLEAR LAKE
BASIL LAKE
GINGER HILL
HAMMER HILL
ANVIL LAKE
SCUMBAG LAKE
OXBOW LAKE
PIN GRID
CAMP 685
HELICOPTER PAD
AIR STRIP
SNAFU GRID
POW GRID
PELLY RIVER
PELLY RIVER
DM2a
DM2 (?)
DM2 (?)
DM2
DM1f2 (?)
DM1f2
DM1f1
DM1sc
DM1sc
DM1sc



AREA INDEX



ENLARGEMENT OF AREA

LITHOLOGY LEGEND

INTRUSIVE ROCKS

TERTIARY: MESOZOIC (?) OR MISSISSIPPIAN (?)
- K_2 MAFIC INTRUSIVE ROCKS
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER
- DMc(?) CHERT PEBBLE CONGLOMERATE

EARN GROUP

MISSISSIPPIAN
- DMb BARITE
- DMs MASSIVE SULPHIDE
- DMv MAFIC VOLCANIC FLOW ROCKS
- DMt TUFF
- DMc CHERT
- DMc BRECCIA, CONGLOMERATE
- DMs ARGILLITE/SHALE
- DMs SANDSTONE
- DMs,ls LIMESTONE
- DMc(?) CHERT

DEVONIAN? (?) OR FAULT? (?)

ASKIN GROUP

DEVONIAN
- SDs QUARTZITE
- SDs SILTSTONE
- SDs ARGILLITE/SHALE
- SDv AMYGDALOIDAL ANDESITE

SILURIAN

ROAD RIVER FORMATION

SILURIAN
- SS SHALE

ORDOVICIAN

TINTINA FAULT

KECHIKA GROUP MERGE OR FORMATION

ORDOVICIAN
- OSv MAFIC VOLCANIC TUFF
- OSvs VOLCANICS
- OSs SEDIMENTARY ROCKS

HARGROVE FORMATION
- Ohp PHYLLITE
- Ohv MAFIC METAVOLCANIC ROCKS
- Ohp PHYLLITE

MAY BE NOT PRESENT FROM

CAMBRIAN
- Cp PHYLLITE
- Cp PHYLLITE
- Cp PHYLLITE
- Cv MAFIC METAVOLCANIC ROCKS
- Cp PHYLLITE

RABBITKETTLE FORMATION

ORDOVICIAN
- Or ARENITE

DESCRIPTIVE SUBSCRIPTS

ALTERATION: ca carbonatized; ep epidotized; si silicified; ch chloritized; ser sericitic; ka kaolinized; gr graphitic; ox oxidized

DETRITUS: ar arenitic; ls lithic; f tuffaceous

BEDDING: cmg massive; lm laminated; ls bedded; sh shaly; lens lenticular; ss sandstone

ANGULARITY: sa subrounded; ag angular/subangular

SURFACE GEOLOGY

- Overlay pattern: grid-controlled, approximated
- Geologic boundary: proposed or surface-form drilling
- Bedding: horizontal, tops unknown; tops known, vertical; overturned
- Foliation, (S1): horizontal, inclined, vertical
- Foliation (Sg): horizontal, inclined, ex cua
- Axes: horizontal, inclined, vertical
- Lineation: horizontal, inclined, vertical
- Vein: fold axis: horizontal, inclined, vertical
- Shearing: horizontal, inclined, vertical
- Antiform (arrow indicates plunge)
- Synform (arrow indicates plunge)
- Fold axial plane known, unknown
- Lineament from air photographs
- Fossil locality
- Petrographic sample
- Rock chip sample. Assay results as: Zn(ppm), Pb(ppm), Cu(ppm), Ag(ppm), Au(ppb or metres)
- Rock float sample. Assay results as: Zn(ppm), Pb(ppm), Cu(ppm), Ag(ppm), Au(ppb or metres)
- Stream
- Trench, Parcel Collar
- Diamond Drill Hole (plan, hole number)
- Cut line
- Road
- Stream
- Swamp
- Spot elevation (metres)

093013

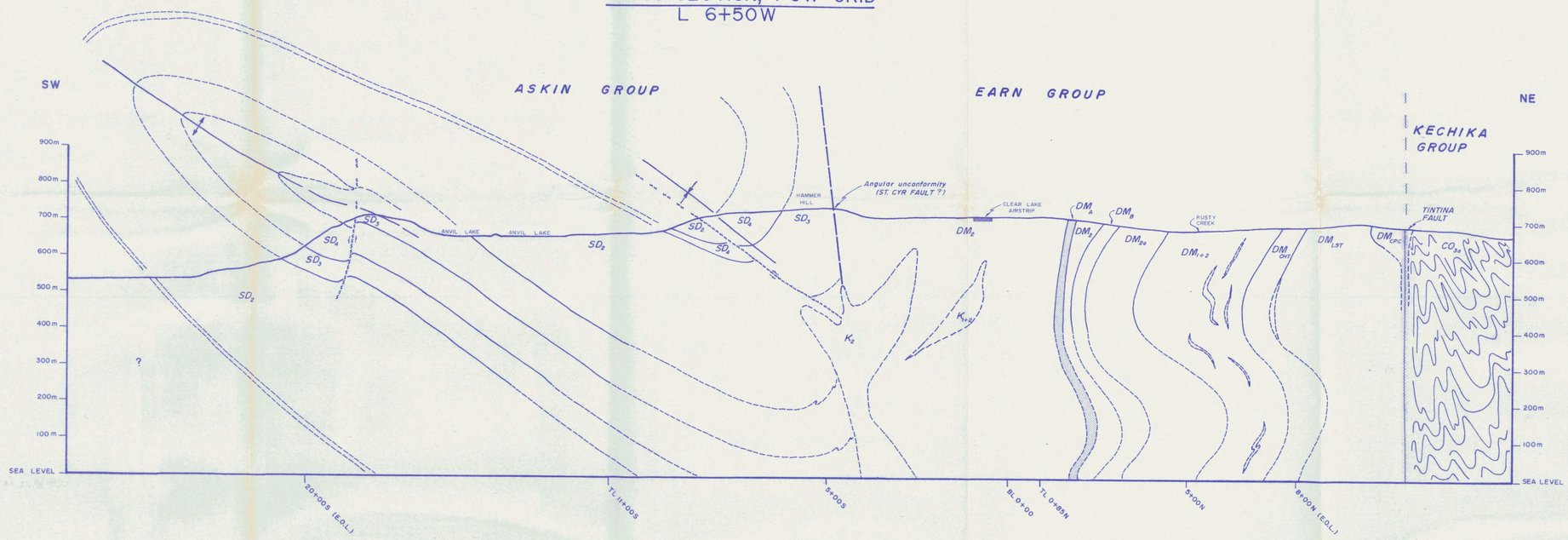
TOTAL ENERGOLD CORPORATION

CLEAR LAKE PROJECT

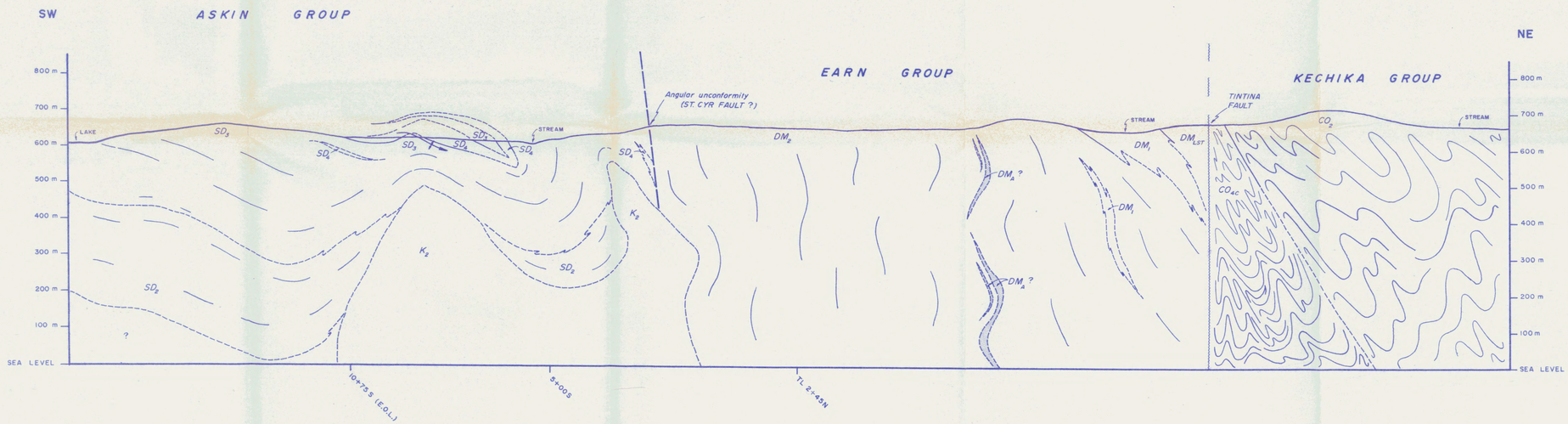
GEOLOGY,
DIAMOND DRILLING,
ROCK GEOCHEMISTRY RESULTS

N.T.S.: 105 L/14	TECH.: R. ZURAN	DATE: DECEMBER 1991
SCALE: 1 : 5000	DRAUGHTING: HANDESIGN	FIGURE: 15 MAP No.: 7

CROSS-SECTION, POW GRID
L 6+50W



CROSS-SECTION, POW GRID
L 36+00W



LITHOLOGY LEGEND

INTRUSIVE ROCKS
TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite; b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DM_{CPC} CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP
MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_5 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli; b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor sandstone, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- ? DM_1 SANDSTONE a) massive; b) laminated
- DM_LST LIMESTONE
- DM_CHT CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP
DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

ROAD RIVER FORMATION
SILURIAN

- SS SHALE grapolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION
ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs interclated with van-coloured siltstone, mudstone and limestone. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS van-coloured mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2f} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3G)
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION
ORDOVICIAN

- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

SYMBOLS

- GEOLOGIC CONTACT (defined, assumed)
- FAULT
- ANTIFORM
- SYNFORM
- BEDDING
- CLEAVAGE

093013

TOTAL ENERGOLD CORPORATION

CLEAR LAKE PROJECT

GEOLOGY
CROSS SECTIONS
L6+50W & L36+00W

N.T.S.: 105 L/14	GEOLOGY: R. ZURAN	DATE: NOV. 1991
SCALE: 1:5000	DRAUGHTING: R. ZURAN	FIGURE: 16

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AREA 14

AREA 12

DUMBO LAKE

HANGBONE LAKE

SCHWOZEL LAKE

ANVIL LAKE

BASIL LAKE

DIAMOND LAKE

CLEAR LAKE

OXBOW LAKE

GRID

HELICOPTER

CAMP

E 961 000N

E 962 000N

E 963 000N

E 964 000N

E 965 000N

E 966 000N

E 967 000N

E 968 000N

E 969 000N

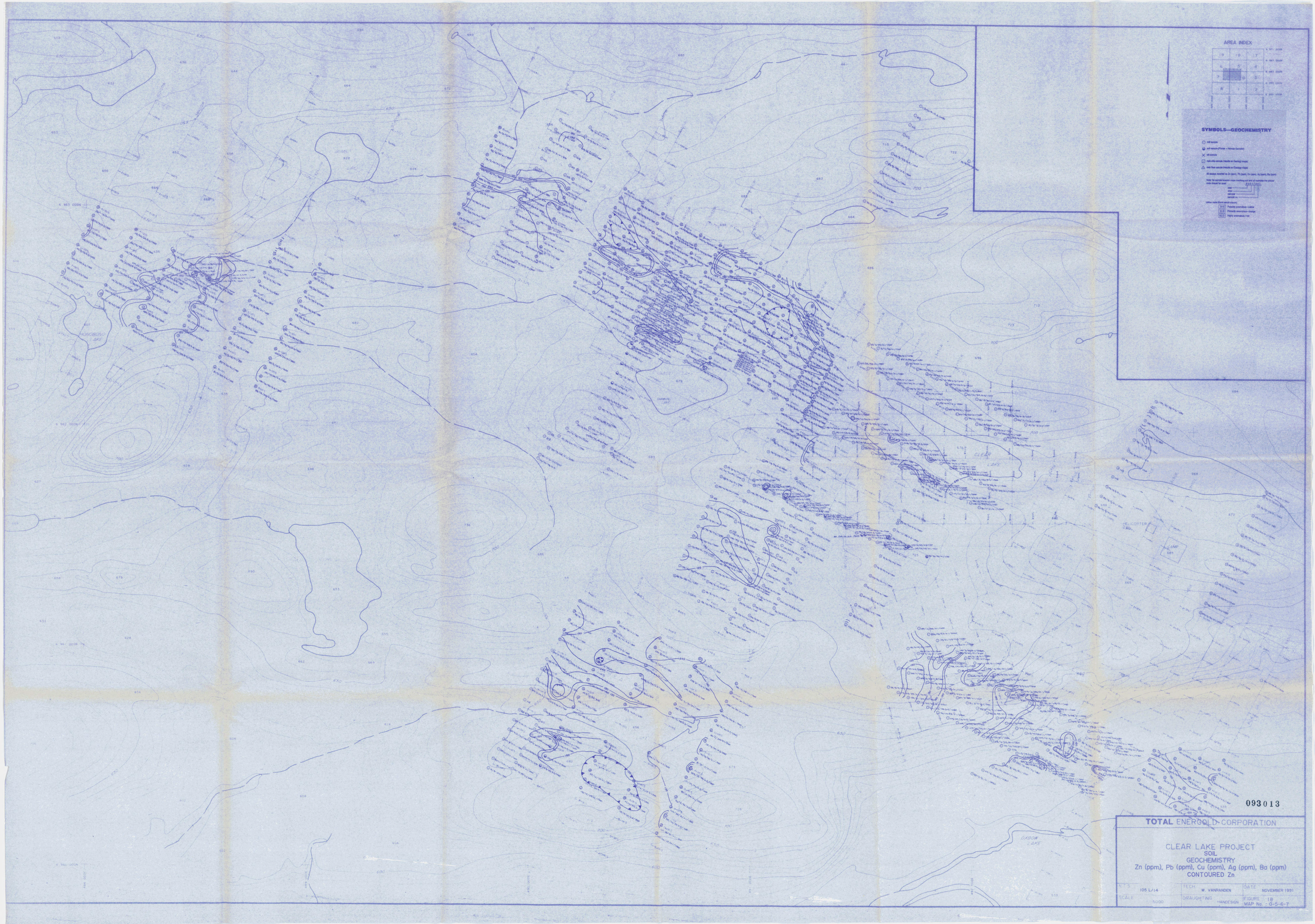
E 970 000N

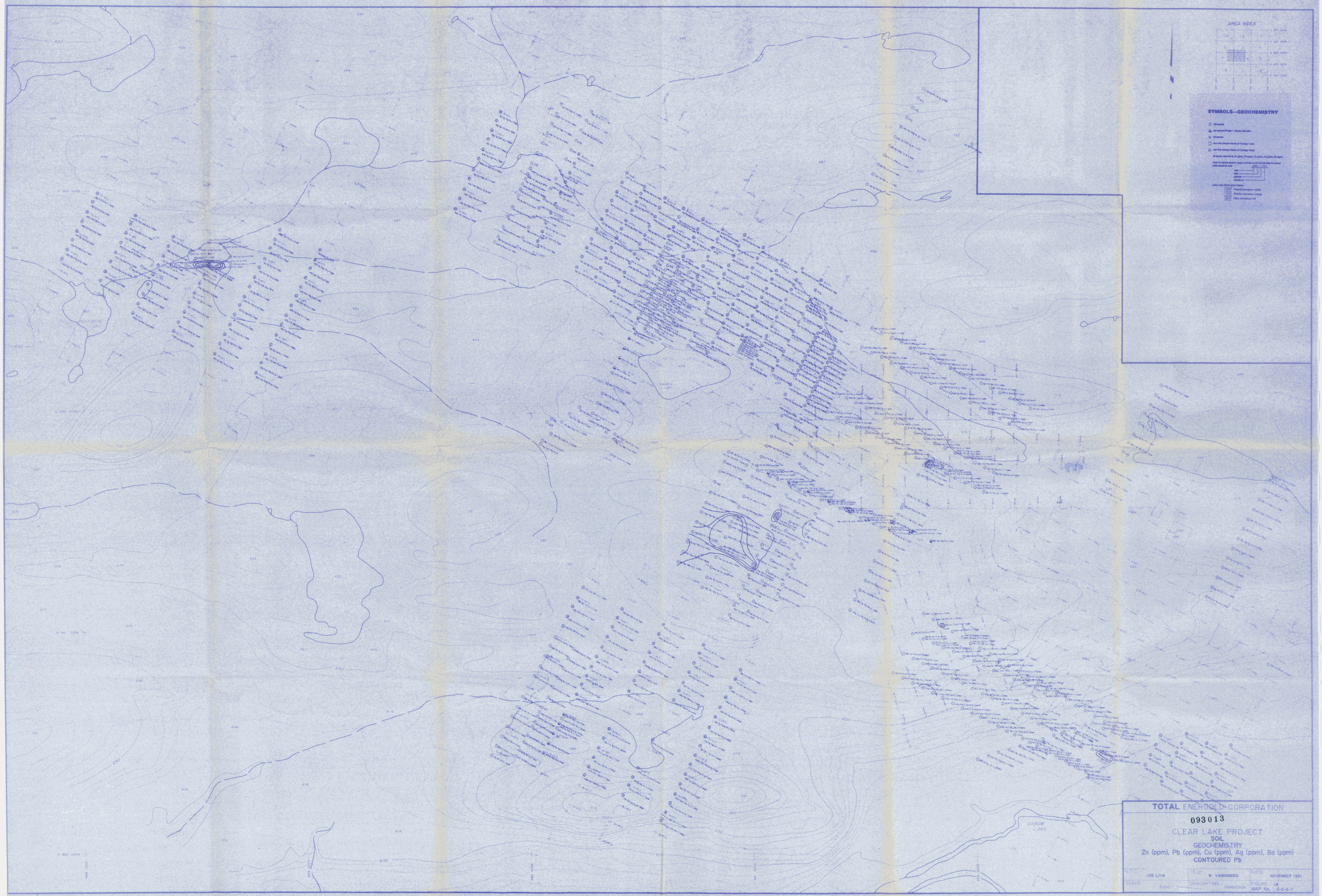
E 971 000N

E 972 000N

E 973 000N

E


AREA INDEX
SYMBOLS—GEOCHEMISTRY
CLEAR LAKE
HELICOPTER PAD
CAMP
OXBOW LAKE
093013
TOTAL ENERGOLD CORPORATION
CLEAR LAKE PROJECT
SOIL
GEOCHEMISTRY
Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)
CONTOURED Zn
N.T.S. 105 L/14
TECH. W. VANRANDEN
DATE NOVEMBER 1991
SCALE 5000
DRAUGHTING HANDESIGN
FIGURE 18
MAP No. : 0-5-6-7


AREA INDEX
SYMBOLS—GEOCHEMISTRY
CLEAR LAKE
OXBOW LAKE
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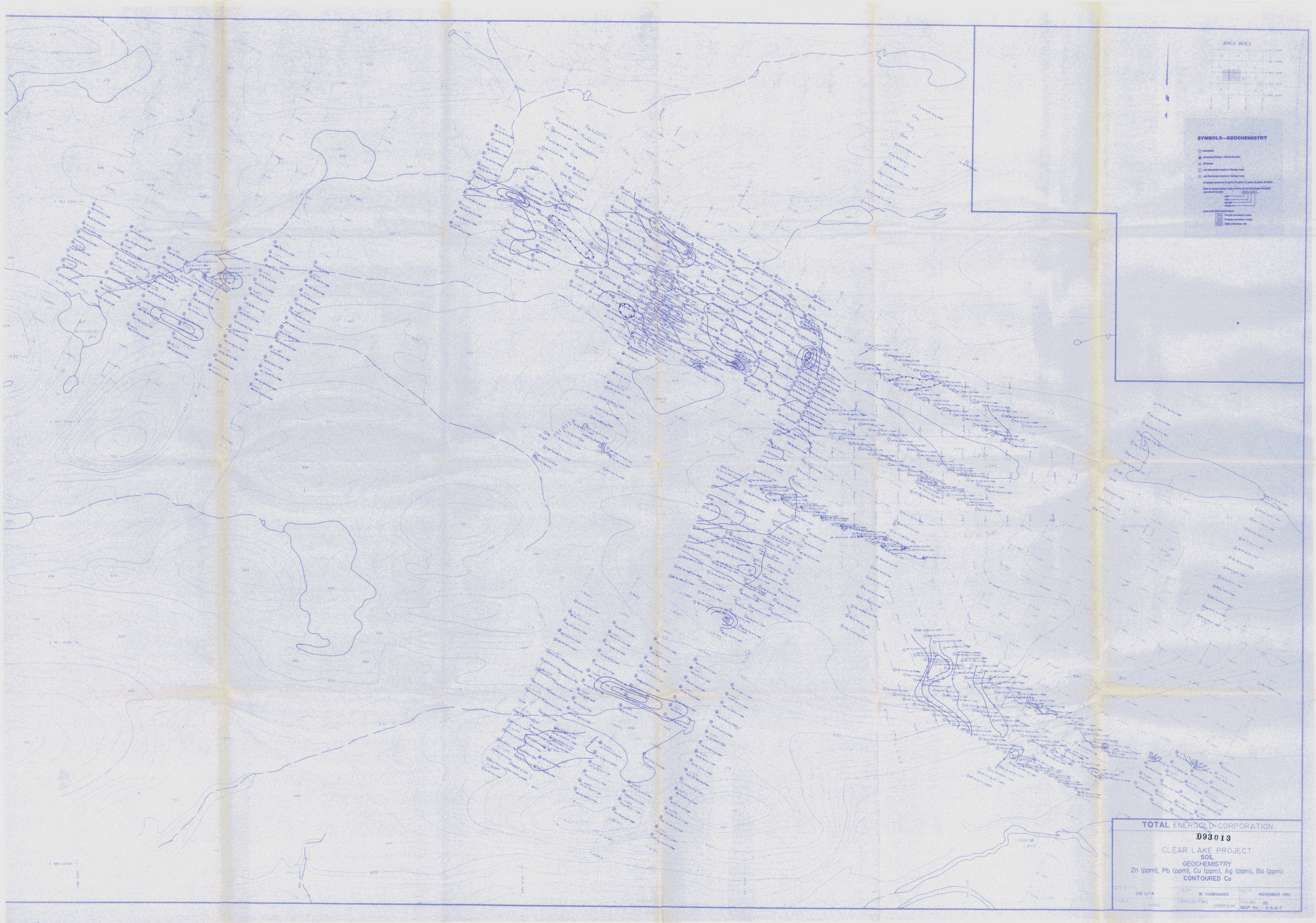
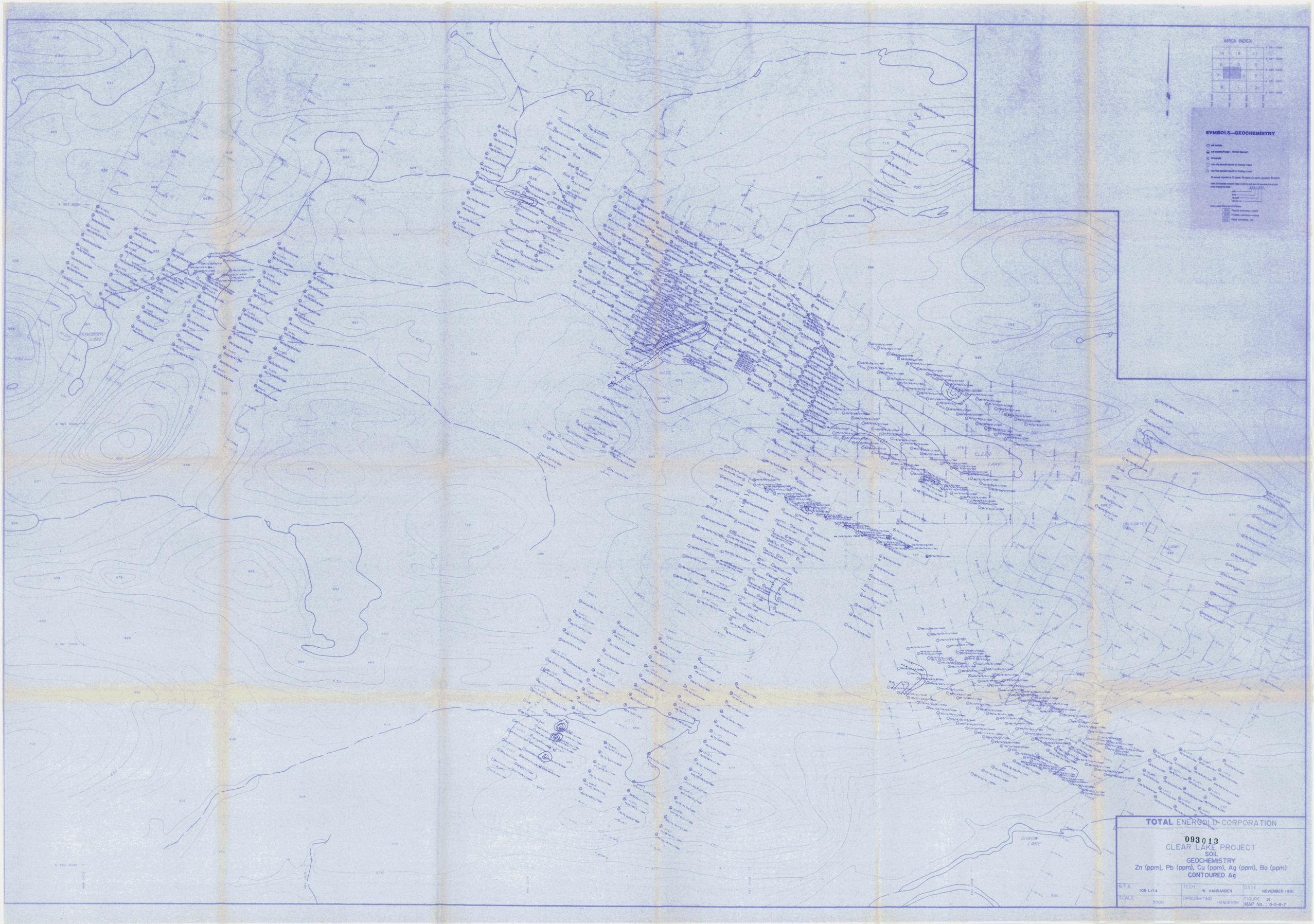
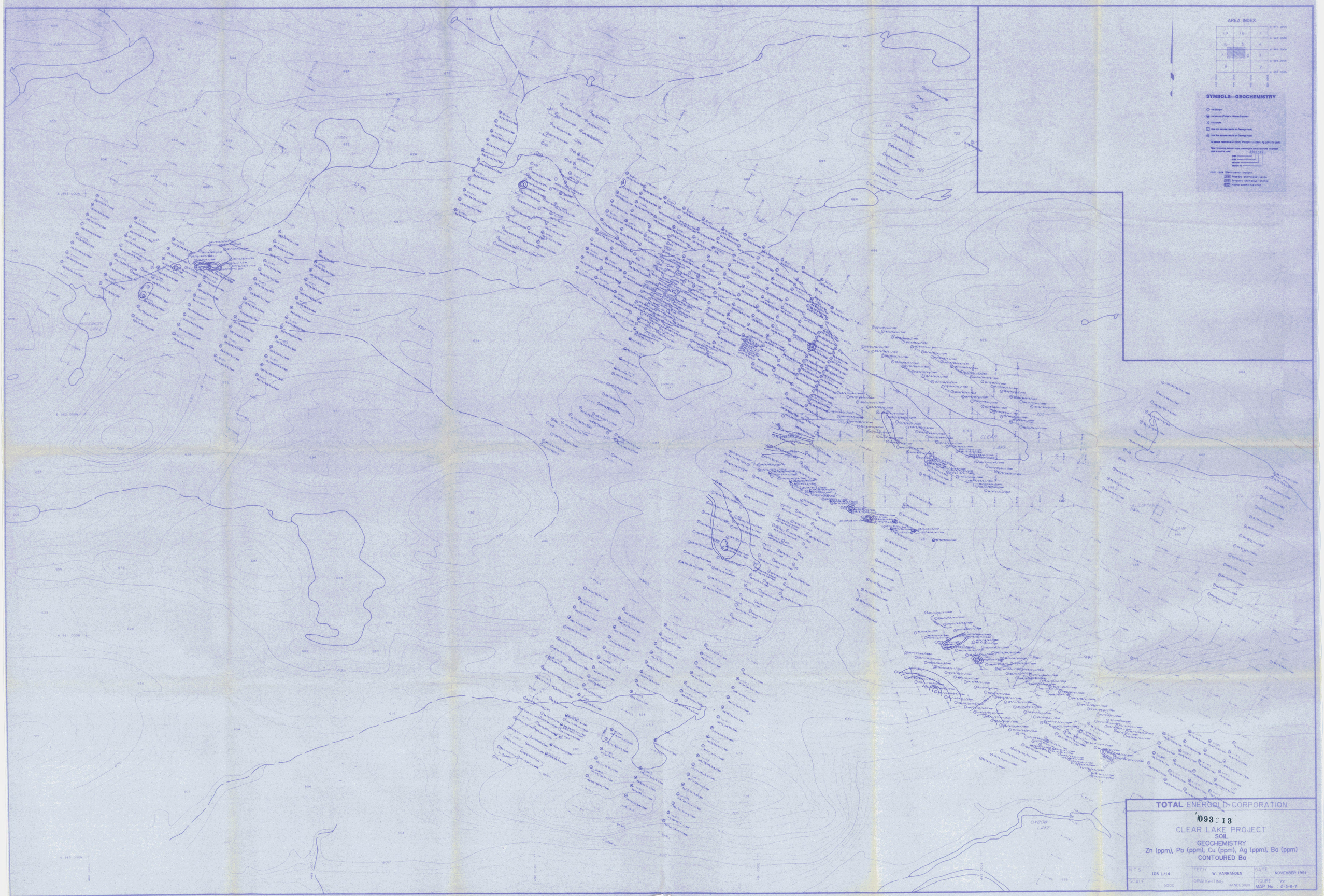
093013
CLEAR LAKE PROJECT
SOIL
GEOCHEMISTRY
Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)
CONTOURED Pb
N.T.S. 105 L/14
TECH W. VANRANDEN
DATE NOVEMBER 1991
SCALE 5000'
DRAUGHTING HANDESIGN
FIGURE 19
MAP No. : 0-5-6-7


AREA INDEX
SYMBOLS—GEOCHEMISTRY
soil sample
soil sample (Pamjar + Hellman Sampler)
silt sample
rock chip sample (results on Geology maps)
rock float sample (results on Geology maps)
All samples reported as Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)
Note: for sample location maps involving soil and silt samples the pulpar code should be used.
9 8 6 1 1 8 5
year
area
sampler
sample no.
colour code (Barra period colours)
914 Precisely anomalous—yellow
915 Precisely anomalous—orange
923 Highly anomalous—red
OXBOW LAKE
CLEAR LAKE
TOTAL ENERGOLD CORPORATION
093013
CLEAR LAKE PROJECT
SOIL
GEOCHEMISTRY
Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)
CONTOURED Cu
N.T.S. 105 L/14
TECH. W. VANRANDEN
DATE NOVEMBER 1991
SCALE 5000
DRAUGHTING HANDESIGN
FIGURE 20
MAP No. : 0-5-6-7


AREA INDEX
SYMBOLS—GEOCHEMISTRY
HONOBONO LAKE
CLEAR LAKE
OXBOW LAKE
HELICOPTER PAD
CAMP
TOTAL ENERGOLD CORPORATION
093013
CLEAR LAKE PROJECT
SOIL
GEOCHEMISTRY
Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)
CONTOURED Ag
N.T.S. 105 L/14
TECH. W. VANRANDEN
DATE NOVEMBER 1991
SCALE 1:5000
DRAUGHTING HANDESIGN
FIGURE 21
MAP No. : 0-5-6-7


AREA INDEX
SYMBOLS—GEOCHEMISTRY
CLEAR LAKE
OXBOW LAKE
TOTAL ENERGOLD CORPORATION
093 13
CLEAR LAKE PROJECT
SOIL
GEOCHEMISTRY
Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)
CONTOURED Ba
N.T.S. 105 L/14
TECH W. VANRANDEN
DATE NOVEMBER 1991
SCALE 1:5000
DRAUGHTING HANDESIGN
FIGURE 22
MAP No. : 0-5-6-7

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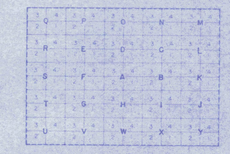


ENLARGEMENT OF AREA

SYMBOLS—GEOCHEMISTRY

- soil sample
- soil sample (Plonjar + Helman Sampler)
- silt sample
- rock chip sample (results on Geology maps)
- rock float sample (results on Geology maps)

All assays reported as Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)

Note: for sample location maps involving soil and silt samples the proper code should be used:

9 2 3 1 1 2 0 1

- year
- area
- sampler
- sample no.

colour code (Berol pencil crayon)

916	Possibly anomalous—yellow
918	Probably anomalous—orange
923	Highly anomalous—red

FOR SAMPLES TAKEN IN THIS AREA SEE COMPOSITE MAP 0,5,6,7

CLEAR LAKE

OXBOW LAKE

PELLY RIVER

HELICOPTER PAD

CAMP

SAND

TOTAL ENERGOLD CORPORATION

CLEAR LAKE PROJECT

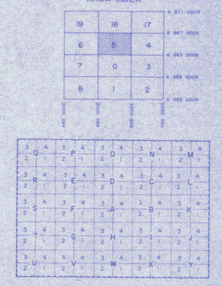
GEOCHEMISTRY
Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)

093013

N.T.S.	105 L/14	DRAWN BY	W. VANRANDEN
SCALE	1:50,000	DRAWING No.	
		DATE	NOVEMBER 1991
		FIGURE No.	23
		MAP No.	0



AREA INDEX



SYMBOLS—GEOCHEMISTRY

- soil sample
- soil sample (Pionjar + Holman Sampler)
- silt sample
- rock chip sample (results on Geology maps)
- rock float sample (results on Geology maps)

All assays reported as Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)

Note: for sample location maps involving soil and silt samples the proper code should be used:

9 0 0 1 1 2 0 1

year
area
sampler
sample no.

colour code (Berol pencil crayon)

916	Possibly anomalous—yellow
918	Probably anomalous—orange
923	Highly anomalous—red

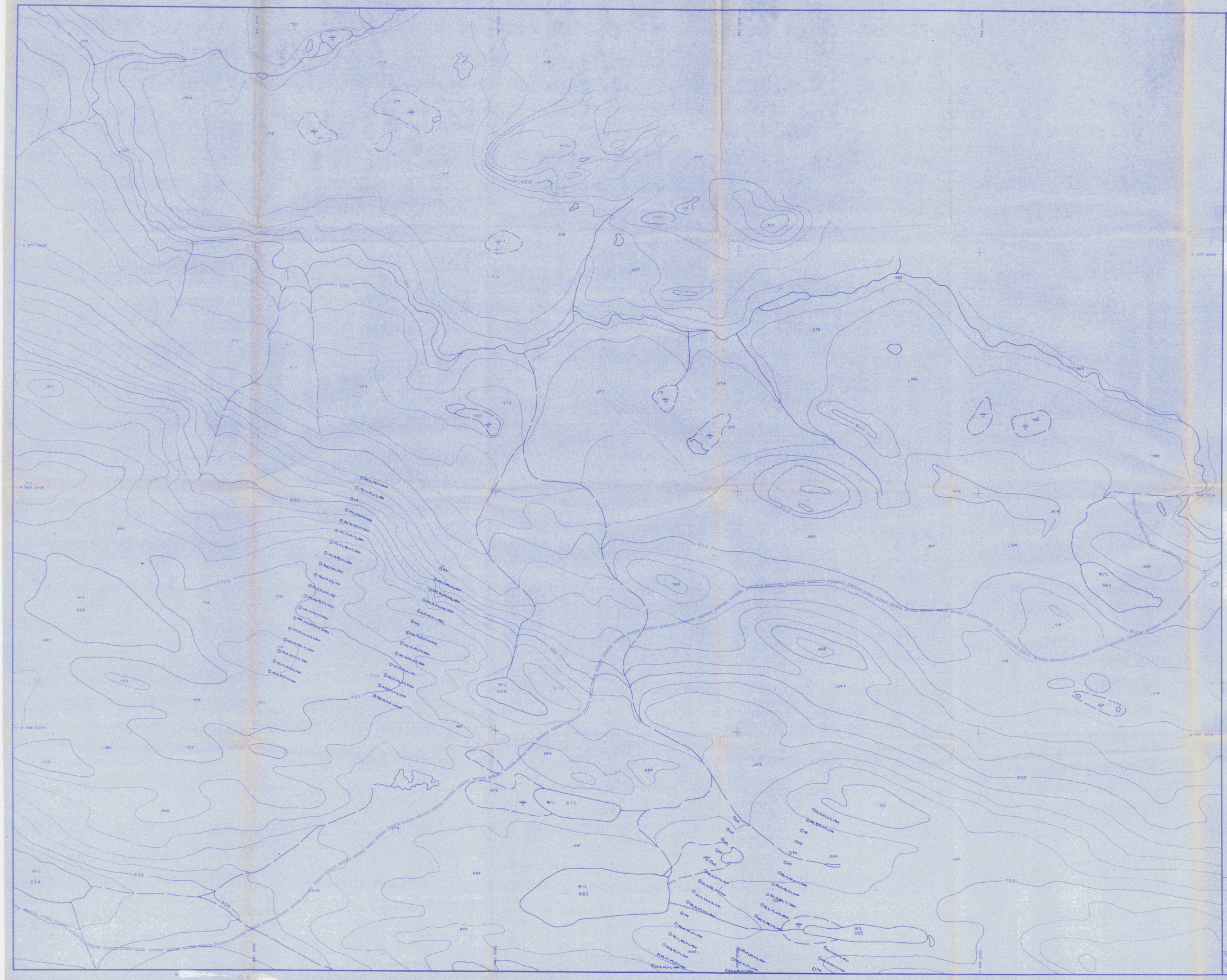
TOTAL ENERGOLD CORPORATION

093013

CLEAR LAKE PROJECT

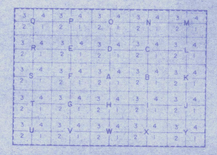
GEOCHEMISTRY
Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)

N.T.S. 105 L/14	TECH W. VANRANDEN	DATE NOVEMBER 1991
SCALE 1 : 5000	DRAUGHTING HANDESIGN	FIGURE 24 MAP No. : 5



AREA INDEX





ENLARGEMENT OF AREA

SYMBOLS—GEOCHEMISTRY

- soil sample
- soil sample (Pionjar + Holman Sampler)
- silt sample
- rock chip sample (results on Geology maps)
- rock float sample (results on Geology maps)

All assays reported as Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)

Note: for sample location maps involving soil and silt samples the proper code should be used:

9001 1001

year
area
sampler
sample no.

colour code (fibrol pencil crayon)

916	Possibly anomalous—yellow
918	Probably anomalous—orange
923	Highly anomalous—red

TOTAL ENERGOLD CORPORATION

093213

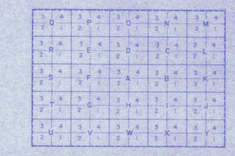
CLEAR LAKE PROJECT

GEOCHEMISTRY
Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)

N.T.S. 105 L/14	TECH. W. VANRANDEN	DATE NOVEMBER 1991
SCALE 1:5000	DRAUGHTING HANDESIGN	FIGURE 25 MAP No. 18

AREA INDEX





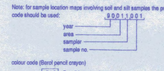
ENLARGEMENT OF AREA

SYMBOLS—GEOCHEMISTRY

- soil sample
- soil sample (Plonjar + Holman Sampler)
- silt sample
- rock chip sample (results on Geology maps)
- rock float sample (results on Geology maps)

All assays reported as Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)

Note: for sample location maps involving soil and silt samples the proper code should be used:



colour code (Bond pencil crayon):

916	Possibly anomalous—yellow
918	Probably anomalous—orange
923	Highly anomalous—red

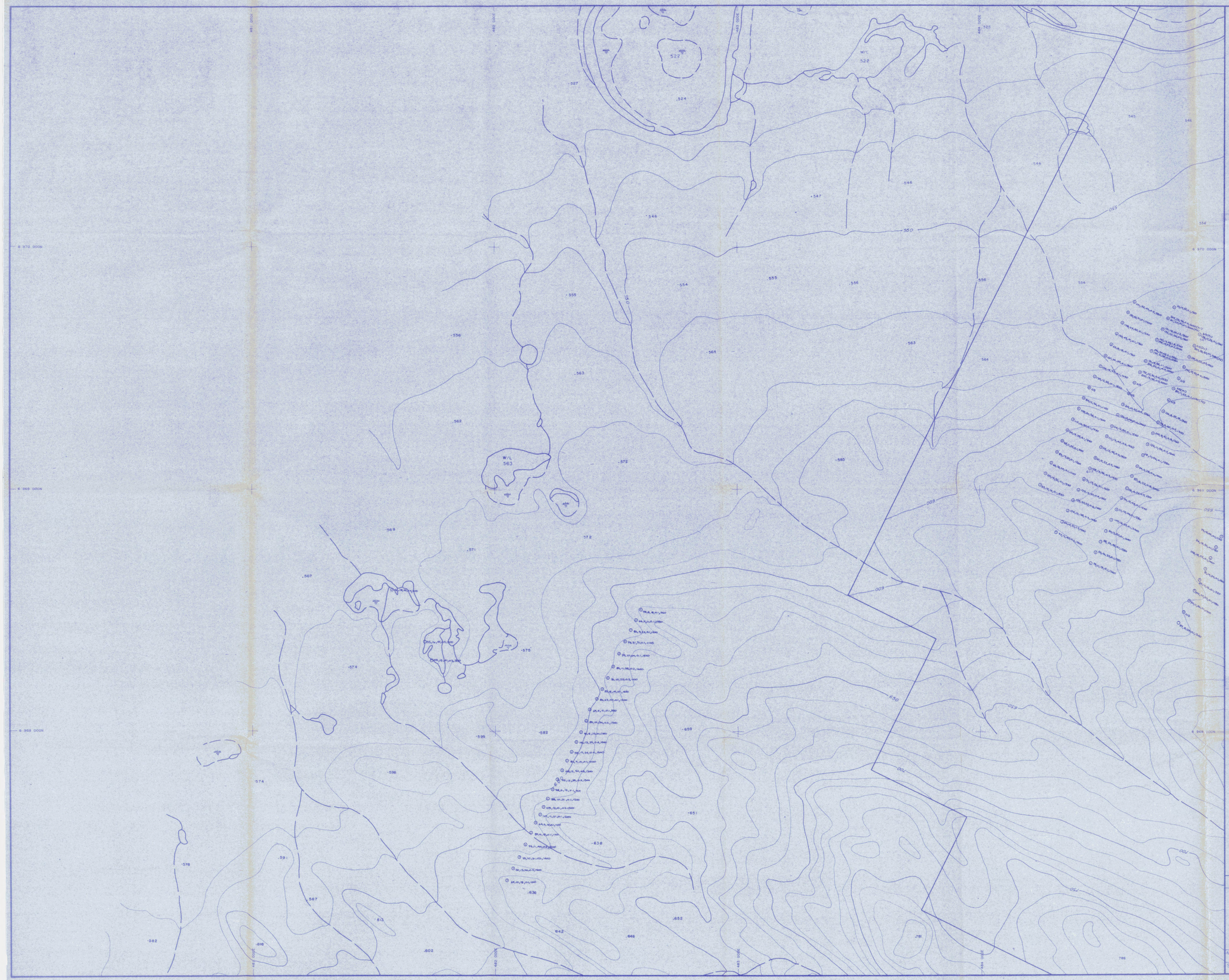
093013

TOTAL ENERGOLD CORPORATION

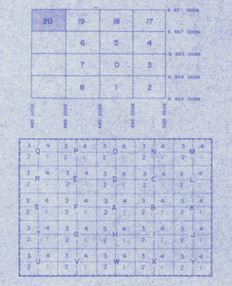
CLEAR LAKE PROJECT

GEOCHEMISTRY
Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)

N.T.S. 109 L/14	TECH. W. VANRANDEN	DATE DECEMBER 1991	
SCALE 1 : 5000	DRAUGHTING HANDESIGN	FIGURE : 26 MAP No. : 19	



AREA INDEX



ENLARGEMENT OF AREA

SYMBOLS—GEOCHEMISTRY

- soil sample
- soil sample (Pionjar + Holman Sampler)
- silt sample
- rock chip sample (results on Geology maps)
- rock float sample (results on Geology maps)

All assays reported as Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)

Note: for sample location maps involving soil and silt samples the proper code should be used:

9 0 0 1 1 5 0 1

year
area
sampler
sample no.

colour code (Berol pencil crayon)

916	Possibly anomalous—yellow
918	Probably anomalous—orange
923	Highly anomalous—red

TOTAL ENERGOLD CORPORATION

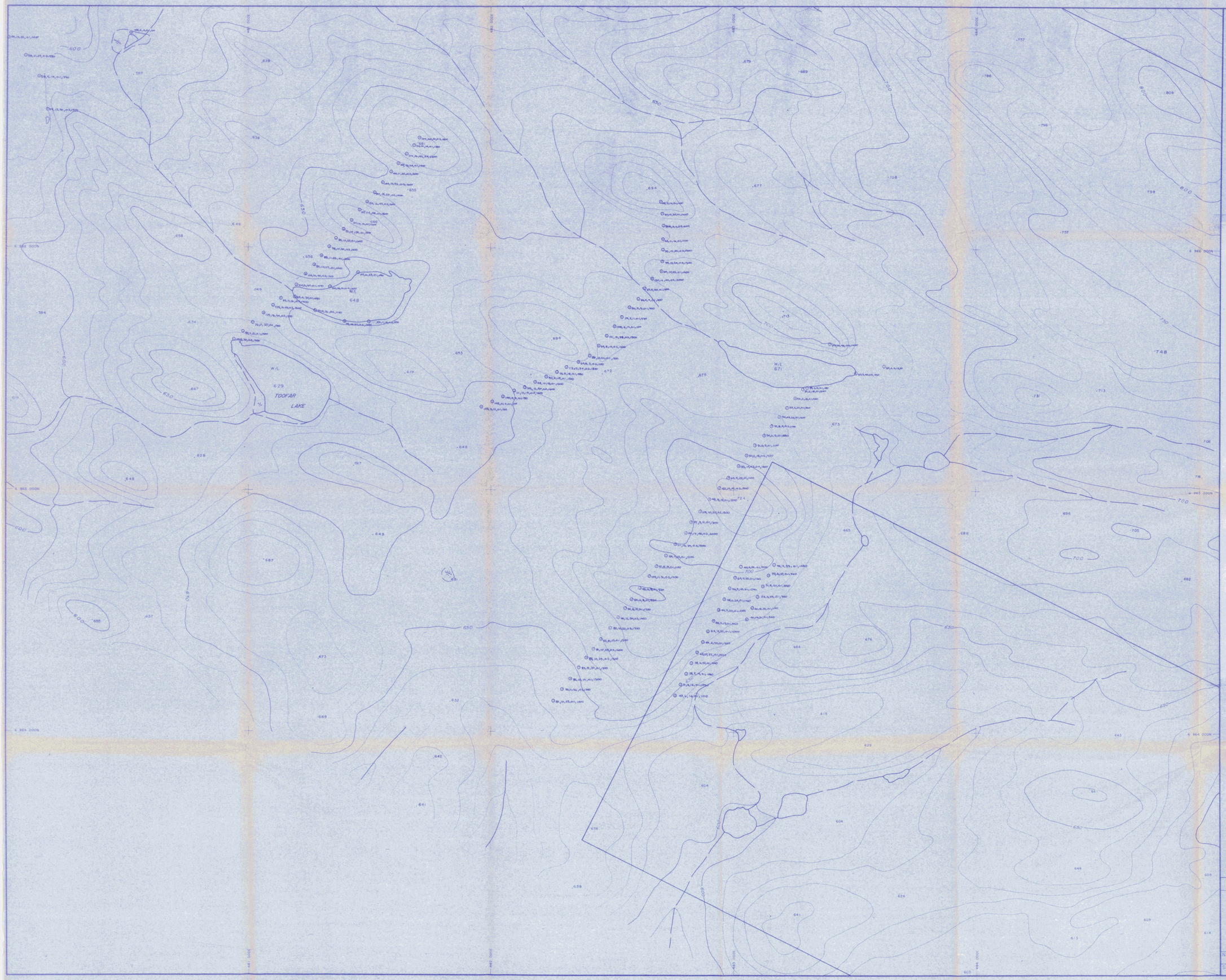
093013

CLEAR LAKE PROJECT

GEOCHEMISTRY

Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)

N.T.S. 105 L/14	TECH. W. VANRANDEN	DATE DECEMBER 1991
SCALE 1 : 5000	DRAUGHTING HANDESIGN	FIGURE 27 MAP No. : 20



AREA INDEX

20	19	18	17	6 971 000N
21	6	5	4	6 967 000N
	7	D	3	6 963 000N
	8	1	2	6 959 000N
492 000E	496 000E	500 000E	504 000E	508 000E

ENLARGEMENT OF AREA

SYMBOLS—GEOCHEMISTRY

- soil sample
- soil sample (Plantjar + Holman Sampler)
- silt sample
- rock chip sample (results on Geology maps)
- rock float sample (results on Geology maps)

All assays reported as Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)

Note: for sample location maps involving soil and silt samples the proper code should be used:

8	9	2	1	2	5

year
area
sample
sample no.

colour code (Sanford pencil crayon)

- 916 Possibly anomalous—yellow
- 918 Probably anomalous—orange
- 923 Highly anomalous—red

093013

TOTAL ENERGOLD CORPORATION

CLEAR LAKE PROJECT

GEOCHEMISTRY
Zn (ppm), Pb (ppm), Cu (ppm), Ag (ppm), Ba (ppm)

N.T.S.	105 L/14	TECH. W. VANRANDEN	DATE NOVEMBER 1991
SCALE	1 : 5000	DRAUGHTING HANDESIGN	FIGURE 28 MAP No. : 21

LITHOLOGY LEGEND

INTRUSIVE ROCKS
(DEVONIAN, MISSISSIPPIAN OR MISSISSIPPIAN (?))

- fg — MAFIC INTRUSIVE ROCKS — as Eppes (hornb. fg Dolson)
- fx — FELSITE

MISSISSIPPIAN, ANDOVERIAN

- CMcgc — CHERT PEBBLE CONGLOMERATE — locally separated with Kechika group fragments

EARN GROUP
MISSISSIPPIAN

- DMb — BARITE
- DMs — MASSIVE SULPHIDE
- DMv — MAFIC VOLCANIC FLOW ROCKS
- DMt — TUFF — as Earth fo Ash
- DMc — CHERT — dark grey, massive
- DMg — BRECCIA, CONGLOMERATE
- DMa — ARGILLITE/SHALE — as massive, carbonaceous, to with minor dendritic siltstone beds; to and, minor sandstone-siltstone beds; to and, minor sandstone with thin massive mudstone; to with thin, light brown weathered bands.
- DMs — SANDSTONE — as massive, to greywacke
- DMls — LIMESTONE
- CMcgc — CHERT — Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP
DEVONIAN

- SDq — QUARTZITE
- SDs — DOLOSTONE — mostly replaced by chert
- SDg — ARGILLITE/SHALE — locally dolomitic and manganiferous
- SDv — AMYGDALOIDAL ANDESITE

SILURIAN

ROAD RIVER FORMATION
SILURIAN

- rr — SHALE — graptolitic

ORDOVICIAN

UNCONFORMITY (TINTINA FAULT)

KECHIKA GROUP — MIDDLE OF FORMATION
ORDOVICIAN

- Okv — MAFIC VOLCANIC TUFF — green, siliceous (formerly Ov)
- Okvs — VOLCANICS — green, chloritic tuffs, mineralized with talc (formerly Ov)and/or, chloritic to brecciated, (formerly Ovc)
- Okss — SEDIMENTARY ROCKS — dark calcareous and siliceous argillite and greywacke.

YARGOOKA FORMATION

- COp — PHYLLITE — serpentine-chlorite-talc with limestone and siliceous. Asv=Ophiu (formerly Ov)
- COb — MAFIC METAVOLCANIC ROCKS — fine to medium grain chlorite-hornblende rocks (formerly Ov)
- COg — PHYLLITE — carbonaceous, crosthemestated (formerly Ov)

MT MYE FORMATION

- COg — PHYLLITE — chlorite-sericite-(+/-quartz) may contain calcareous laminae (formerly Ov)
- COgg — PHYLLITE — graphitic (formerly Ov)
- COg — PHYLLITE — carbonaceous, graphitic (formerly Ov)
- COb — MAFIC METAVOLCANIC ROCKS — chlorite-talc-hornblende rocks (formerly Ov)
- COg — PHYLLITE — crosthemestated

CAMBRIAN

RABBITKETTLE FORMATION
ORDOVICIAN

- COc — ARENITE — dolomitic calcareous, well-indurated, thin bedded limestone and cale arenite

DESCRIPTIVE SUBSCRIPTS

ALTERATION: ch chloritic; ep epidotic; ser sericitic; sil siliceous; ca calcareous; dol dolomitic; py pyritic; gr graphitic; mg manganiferous; ba barite; sulphide bearing

STRUCTURE: gn gneissic; cl cleaved; cg cataclastic

METAMORPHISM: mt metamorphosed; ct contact; rg regional

ANISOTROPY: bn banded; lam laminated; ls laminated

SURFACE GEOLOGY

- Outcrop pattern: grid controlled, approximated
- Geologic boundary projected to surface from drilling
- Bedding: horizontal, tops unknown, tops known, vertical, overturned
- Foliation, (Sn): horizontal, inclined, vertical
- Foliation (Sg): horizontal, inclined, vertical
- Joint: horizontal, inclined, vertical
- Lineation: horizontal, inclined, vertical
- Vein: fold axis: horizontal, inclined, vertical
- Shearing: horizontal, inclined, vertical
- Anticline (arrow indicates plunge)
- Syncline (arrow indicates plunge)
- Fold axial plane known, unknown
- Lineament from air photographs
- Fossil locality
- Petrographic sample
- Rock chip sample. Assay results: Au (troy/ton), Pt(ppm), Cu(ppm), Ag(ppm), Be(ppm) (width in metres).
- Rock float sample. Assay results: Au (troy/ton), Pt(ppm), Cu(ppm), Ag(ppm), Be(ppm) (width in metres).
- Gossan
- Trench, Portal Collar
- 79-30 Diamond Drill Hole (year, hole number)
- 5+005 Cut line
- River
- Stream
- Swamp
- +653 Spot elevation (metres)

SHEET INDEX

6	5	4
7	0	3
8	1	2

0 50 100 150 METRES

TOTAL ENERGOLD CORPORATION

CLEAR LAKE PROJECT

093013

GEOLOGY

DATE: DECEMBER 1991 | FIGURE: 23

MAP SHEET: 7 | SCALE 1:2000

LITHOLOGY LEGEND

INTRUSIVE ROCKS
TERTIARY MEDICINE / TURNBERRYPIAN (?)
- Ag — MAFIC INTRUSIVE ROCKS
- Af — FELSITE

MISSISSIPPIAN AND/OR EARLIER
- CMCPC — CHERT PEBBLE CONGLOMERATE

EARN GROUP
MISSISSIPPIAN
- EMa — BARITE
- EMs — MASSIVE SULPHIDE
- EMg — MAFIC VOLCANIC FLOW ROCKS
- EMt — TUFF
- EMc — CHERT
- EMb — BRECCIA CONGLOMERATE
- EMs — ARGILLITE/SHALE
- EMs — SANDSTONE
- EMs,ls — LIMESTONE
- EMc(cr) — CHERT

DEVONIAN
UNCONFORMITY (CC CHERT FAULT)

ASKIN GROUP
DEVONIAN
- SQa — QUARTZITE
- SQc — DOLOSTONE
- SQv — ARGILLITE/SHALE
- SQ□ — AMYGDALOIDAL ANDESITE

SILURIAN

ROAD RIVER FORMATION
SILURIAN
- SS — SHALE

ORDOVICIAN
CENTRAL FAULT

KECHIKA GROUP MIDDLE OR FORMATION
ORDOVICIAN
- COa — MAFIC VOLCANIC TUFF
- COg — VOLCANICS
- COsa — SEDIMENTARY ROCKS

MACKENZIE FORMATION
- COp — PHYLLITE
- COg — MAFIC METAVOLCANIC ROCKS
- COp — PHYLLITE

BIT MOD FORMATION
- COp — PHYLLITE
- COp — PHYLLITE
- COp — PHYLLITE
- COg — MAFIC METAVOLCANIC ROCKS
- COp — PHYLLITE

RABBITKETTLE FORMATION
CAMBRIAN TO ORDOVICIAN
- COc — ARENITE

DESCRIPTIVE SUBSCRIPTS

ALTERATION
- a — pervasive
- ab — argillic
- ad — advanced
- ag — argillic
- ap — propylitic
- as — silicification
- ab — albitization
- ak — potassic
- ac — carbonate
- ch — chlorite replacement

DETRITUS
- ph — phyllic
- ch — chloritic

BEDDING
- thi — thin bed
- thl — thin lam
- mb — massive
- wb — wispy
- lb — lenticular
- cb — contorted

ANISOTROPY
- fol — foliated
- cleg — cleavage

SURFACE GEOLOGY
- Outcrop pattern: grid controlled, approximated
- Geologic boundary: projected to surface from drilling
- Banding: horizontal, true unknown, trips known, vertical, overturned
- Foliation, (Fc): horizontal, inclined, vertical
- Foliation (Fg): horizontal, inclined, no dip
- Joint: horizontal, inclined, vertical
- Lineation: horizontal, inclined, vertical
- Fold: Attitude: horizontal, inclined, vertical
- Shearing: horizontal, inclined, vertical
- Anticline (arrow indicates plunge)
- Synform (arrow indicates plunge)
- Fold axial plane known, unknown
- Lineament from air photographs
- Fossil location
- Table 87 — Petrographic sample
- 425, 75, 15, 0.1: 1400 (0.5km) — Rock chip sample: Assay results (Au, Ag, ppm), Pb(ppm), Cu(ppm), Ag(ppm), Ba(ppm) (easts in metres)
- 75, 15, 2, 0.1: 925 (0.1km) — Rock float sample: Assay results (Au, Ag, ppm), Pb(ppm), Cu(ppm), Ag(ppm), Ba(ppm) (easts in metres)
- Outcrop
- Trench, Pond Collar
- 78-30 — Diamond Drill Hole (year, hole number)
- 5+00S — Cut line
- Road
- Stream
- 650 — Swamp
- + 653 — Spot elevation (metres)

SHEET INDEX

495,400E	496,000E	496,600E	
6	5	4	6,960,800N
7	0	3	6,960,000N
8	1	2	6,959,200N

0 50 100 150 METRES

TOTAL ENERGOLD CORPORATION

CLEAR LAKE PROJECT

GEOLOGY

093013

DATE: DECEMBER 1991 — FIGURE: 30
MAP SHEET: 8 — SCALE: 1:2000

LANDING STRIP

LEGEND

- ORE BODY (pyrite)
- DRILL HOLE (year, hole number)
- ROAD
- TENT
- 662.8 SPOT ELEVATION
- DRILL BASELINE (with labelled section)

SHEET INDEX

6	5	4
7	0	3
8	1	2

0 50 100 150 METRES

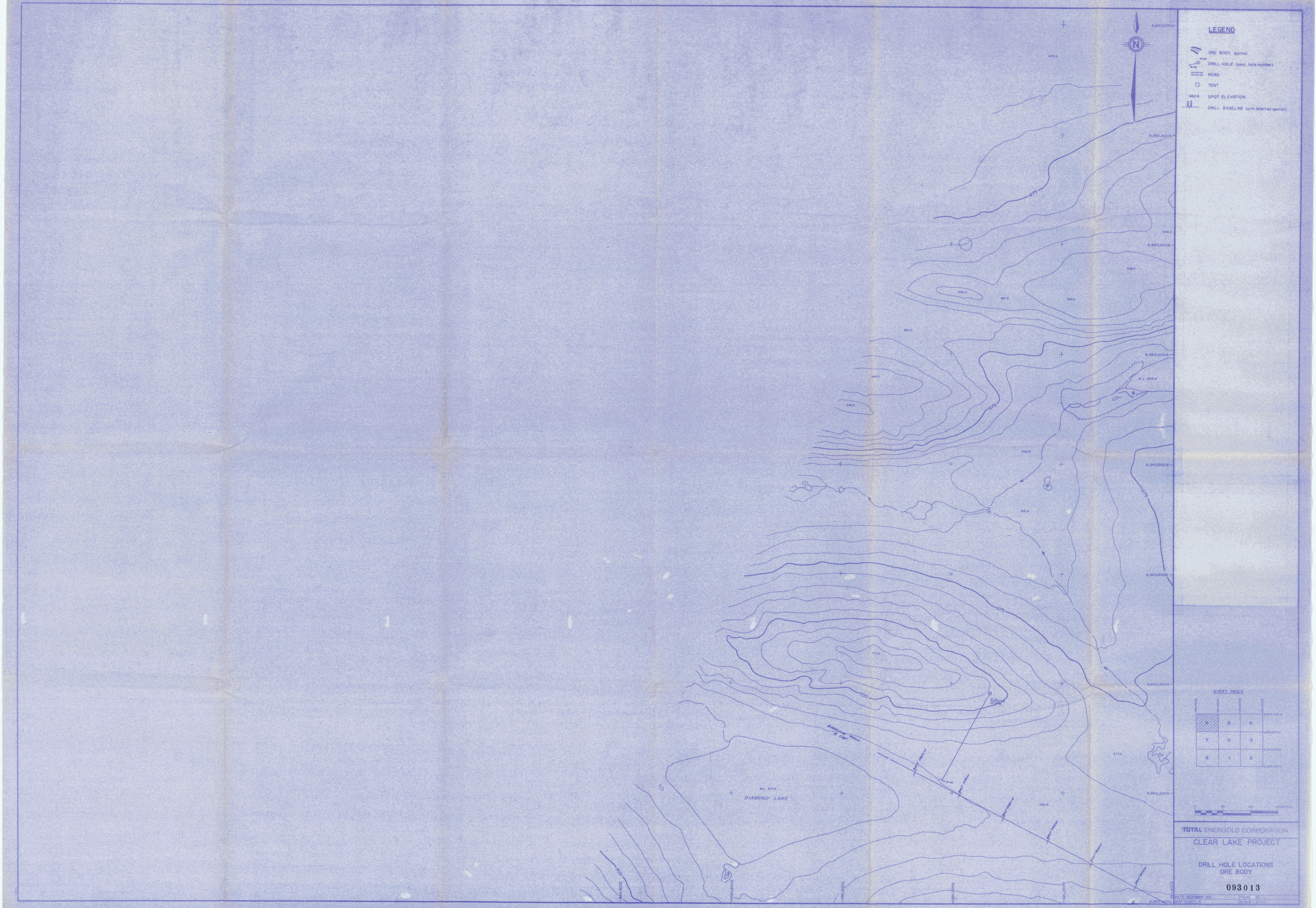
TOTAL ENERGOLD CORPORATION

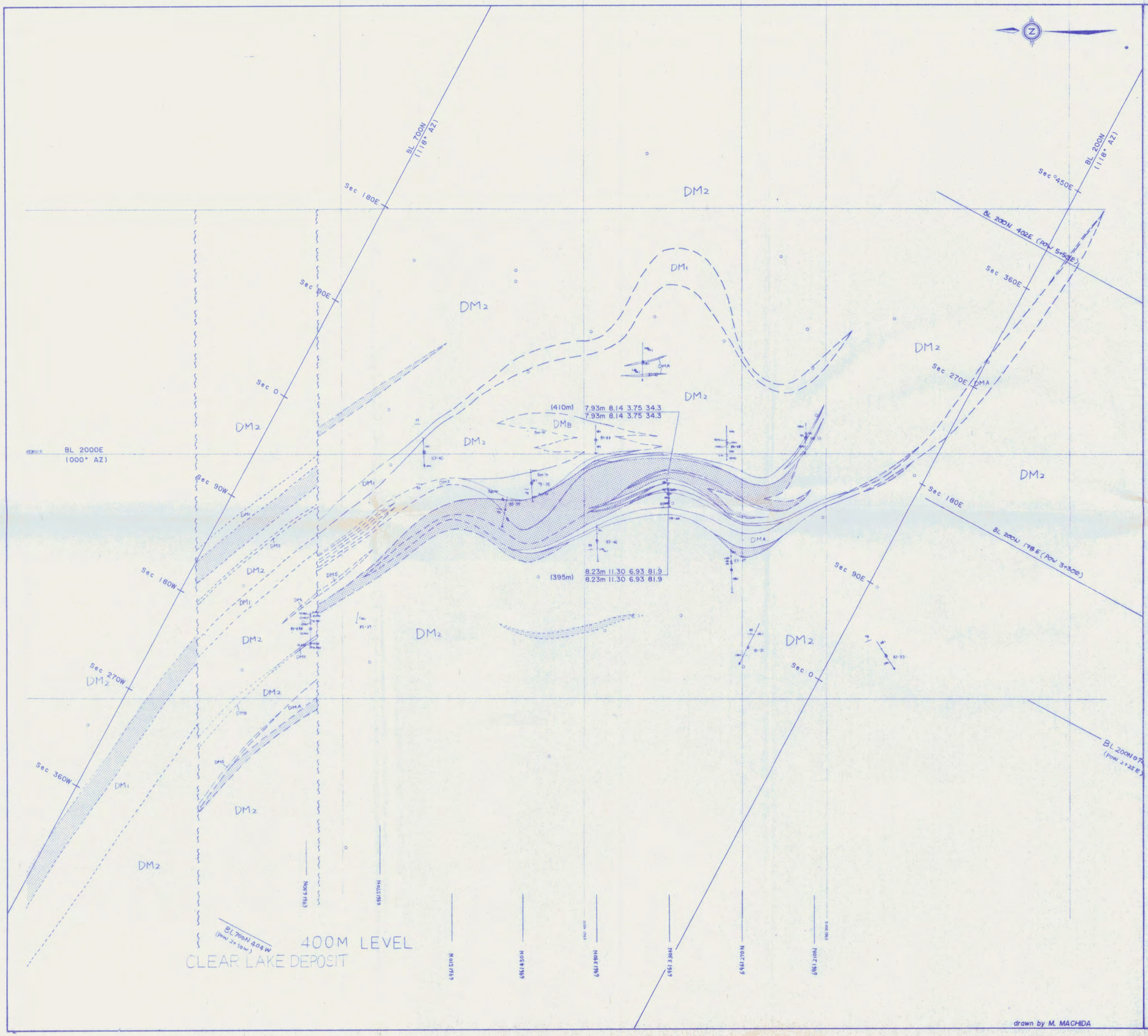
CLEAR LAKE PROJECT

093013

DRILL HOLE LOCATIONS
ORE BODY

DATE: DECEMBER 1951 | FIGURE: 31
MAP SHEET: 0 | SCALE: 1:2000


LEGEND
ORE BODY (pyrite)
DRILL HOLE (year, hole number)
ROAD
TENT
662.8 SPOT ELEVATION
DRILL BASELINE (with labelled section)
SHEET INDEX
6,963,600N
6,963,400N
6,963,200N
6,963,000N
6,962,400N
6,962,200N
675
700
DIAMOND LAKE
TOTAL ENERGOLD CORPORATION
CLEAR LAKE PROJECT
DRILL HOLE LOCATIONS
ORE BODY
093013
DATE DECEMBER 1991
MAP SHEET: 6
FIGURE : 32
SCALE 1:2000



drawn by M. MACHIDA

LITHOLOGY LEGEND

INTRUSIVE ROCKS

TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite; b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DM_{CPC} CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP

MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli; b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor ramiform, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- ? DM_1 SANDSTONE a) massive; b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP

DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

TINTINA FAULT

ROAD RIVER FORMATION

SILURIAN

- OS SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION

ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs intercalated with variI-coloured siltstones, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS variI-coloured mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3D).
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION

ORDOVICIAN

- CO_1 ARENITE dolomitic, calcareous, with micaceous silty bended limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
	do	dolomitic
	si	silicified
	cy	clay altered
	ch	chloritic
	se	sericitic
	mc	micaceous
	gr	graphitic
	ep	epidotic
	ch	chert replacement
DETRITUS:	pe	pebbly
	sa	sandy
	si	silty
BEDDING:	ma	massive
	pl	planer
	no	nodular
	wa	wavy
	sb	s-bedded
	la	laminated
ANGULARITY:	bx	brecciated
	cg	conglomeratic

DRILL CROSS SECTIONS

91-50 (711.3m) 35m S

Diamond drill hole trace: with hole number, elevation ASL, distance from section.

Hole ≥ 30m off plane of section.

Hole ≥ 10m ≤ 30m off plane of section.

Hole within 10m of plane of section.

91-50 3mN

Piercing point on section plane.

30

Bedding plane to core axis.

Graphitic Zone

Sheer Zone

—any unit described as "siliceous" and/or "silicified"

Assay average interval

Zn %

Pb %

Ag g/t

6.7m 10.6, 1.3, 25.6 7% Zn + Pb cut off grade

9.0m 9.0, 1.1, 24.7 5% Zn + Pb cut off grade

SCALE

50 0 50 100

TOTAL ENERGOLD CORP.

CLEAR LAKE PROJECT

400m

GEOLOGY LEVEL PLAN

093013

DATE DECEMBER 1991	FIGURE 33
N.T.S. 105 L/14	SCALE 1:2000

BL 700N (118° AZ)

BL 200N (118° AZ)

BL 2000E (000° AZ)

BL 200N 40°E (PROJ 315°E)

BL 200N 19°E (PROJ 341°E)

BL 700N 40°W (PROJ 320°W)

BL 200N 40°W (PROJ 219°E)

Sec 180E

Sec 90E

Sec 0

Sec 90W

Sec 180W

Sec 270W

Sec 360W

Sec 450E

Sec 360E

Sec 270E

DM1

DM2

DMA

DMB

DMS

7.93m 12.53 0.55 49.0
7.93m 12.53 0.55 49.0
(465m)

33.53m 13.29 2.12 37.4
33.53m 13.29 2.12 37.4
(430m)

3.10m 9.22 0.72 31.8
3.10m 9.22 0.72 31.8
(455m)

1.15m 7.36 0.53 16.9
1.15m 7.36 0.53 16.9
(460m)

12.8m 13.30 4.34 62.4
12.8m 13.30 4.34 62.4
(435m)

3.66m 10.02 0.96 35.8
3.66m 10.02 0.96 35.8 (460m)

N689 1949

N457 1949

N015 1949

N450 1949

N686 1949

N386 1949

N702 1949

N210 1949

450M LEVEL
CLEAR LAKE DEPOSIT

drawn by M. MACHIDA

LITHOLOGY LEGEND

INTRUSIVE ROCKS

TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DM_{CPC} CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP

MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor sandstone, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- ? DM_1 SANDSTONE a) massive; b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP

DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

TINTINA FAULT

ROAD RIVER FORMATION

SILURIAN

- OS SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION

ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs intercalated with 'ash-coloured' siltstones, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS 'ash-coloured' mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolkarbs. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3G).
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION

ORDOVICIAN

- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION: ca calcareous; do dolomitic; si silicified; cy clay altered; ch chloritic; se sericitic; mc micaceous; gr graphitic; ep epidote; ch chert replacement

DETRITUS: pe pebbly; sa sandy; si silty

BEDDING: ms massive; pl planar; no nodular; wa wavy; xb x-bedded; la laminated

ANGULARITY: bx brecciated; cg conglomeratic

DRILL CROSS SECTIONS

91–50 (711.3m) 35m S — Diamond drill hole trace: with hole number, elevation ASL, distance from section.

Hole ≥ 30m off plane of section.

Hole ≥ 10m ≤ 30m off plane of section.

91–50 3mN — Hole within 10m of plane of section.

Piercing point on section plane.

30 — Bedding plane to core axis.

G — Graphitic Zone

Shear Zone

—any unit described as "siliceous" and/or "silicified"

Assay average interval

Zn %
Pb %
Ag g/t

6.7m 10.6, 1.3, 25.6 — 7% Zn + Pb cut off grade
9.0m 9.0, 1.1, 24.7 — 5% Zn + Pb cut off grade

SCALE
50 0 50 100

TOTAL ENERGOLD CORP.

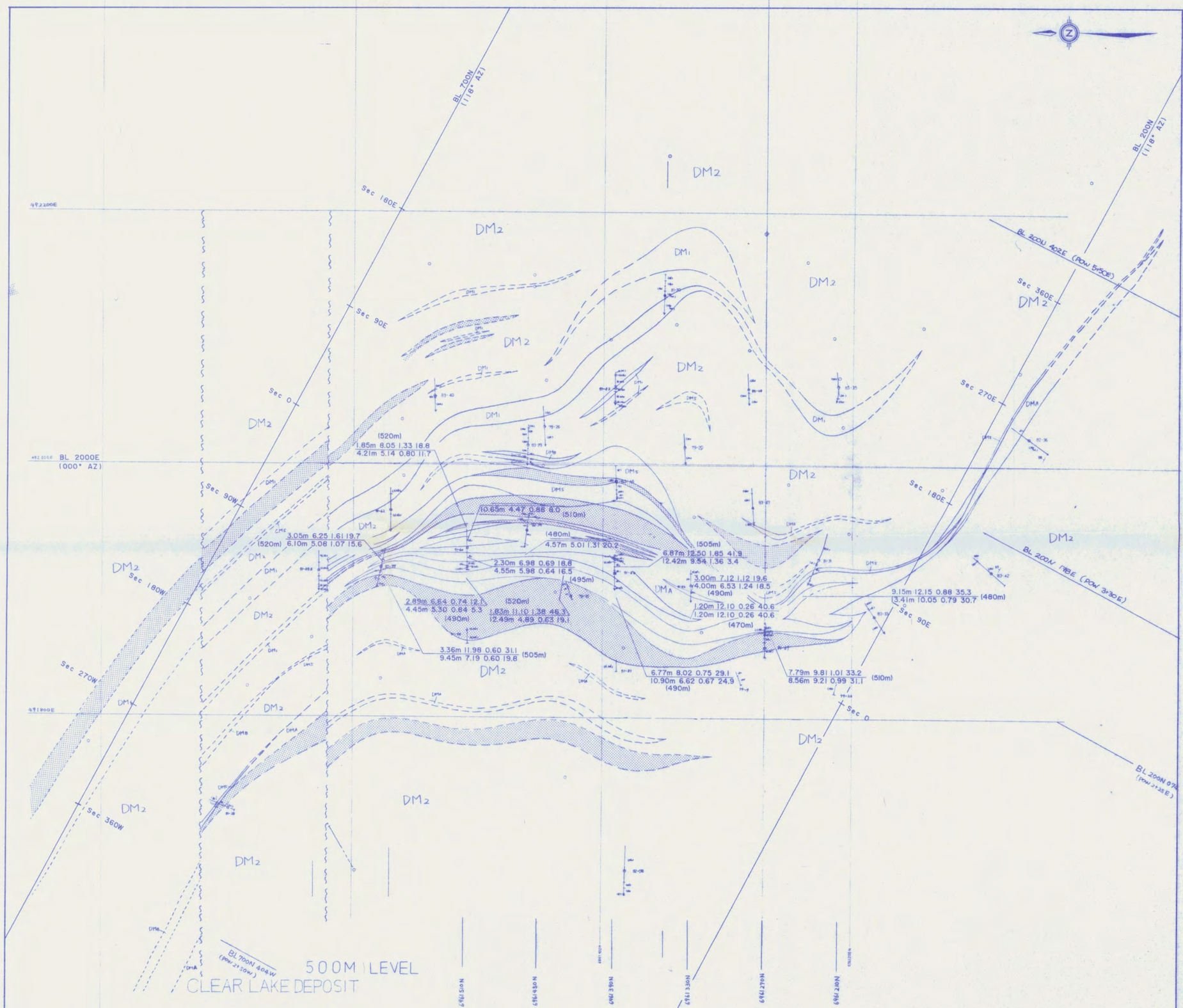
CLEAR LAKE PROJECT

450m

GEOLOGY LEVEL PLAN

093013

DATE DECEMBER 1991	FIGURE 34
N.T.S. 105 L/14	SCALE 1:2000



LITHOLOGY LEGEND

INTRUSIVE ROCKS
TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite; b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DM_{CPC} CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP
MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli; b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor sandstone, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- DM_1 SANDSTONE a) massive; b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP
DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

~~~ TINTINA FAULT ~~~

ROAD RIVER FORMATION
SILURIAN

- S_S SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION
ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs intercalated with vari-coloured siltstones, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS vari-coloured mudstone, siltstone, chert, limestone and greywacke.

YANGORIDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2g} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3G)
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION
ORDOVICIAN

- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
	do	dolomitic
	si	silicified
	cy	clay altered
	ch	chloritic
	se	sericitic
	mc	micaceous
	gr	graphitic
	ep	epidote
	ch	chert replacement
DETRITUS:	pe	pebbly
	sa	sandy
	si	silty
BEDDING	ma	massive
	pl	planar
	no	nodular
	wa	wavy
	xb	x-bedded
	la	laminated
ANGULARITY:	bx	brecciated
	cg	conglomeratic

DRILL CROSS SECTIONS

91–50 (711.3m) 35mS — Diamond drill hole trace with hole number, elevation ASL, distance from section.
Hole ≥ 30m off plane of section.
Hole ≥ 10m ≤ 30m off plane of section.
Hole within 10m of plane of section.
91–50 3mN
Piercing point on section plane.
30 Bedding plane to core axis.
G Graphitic Zone
Sheer Zone
any unit described as "siliceous" and/or "silicified"
Assay average interval
Zn %
Pb %
Ag g/t
6.7m 10.6 1.3 25.6 — 7% Zn + Pb cut off grade
9.0m 9.0 1.1 24.7 — 5% Zn + Pb cut off grade

SCALE
50 0 50 100

drawn by M. MACHIDA

TOTAL ENERGOLD CORP.

CLEAR LAKE PROJECT

500m

GEOLOGY LEVEL PLAN

093013

DATE DECEMBER 1991	FIGURE 35
N.T.S. 105 L/14	SCALE 1:2000
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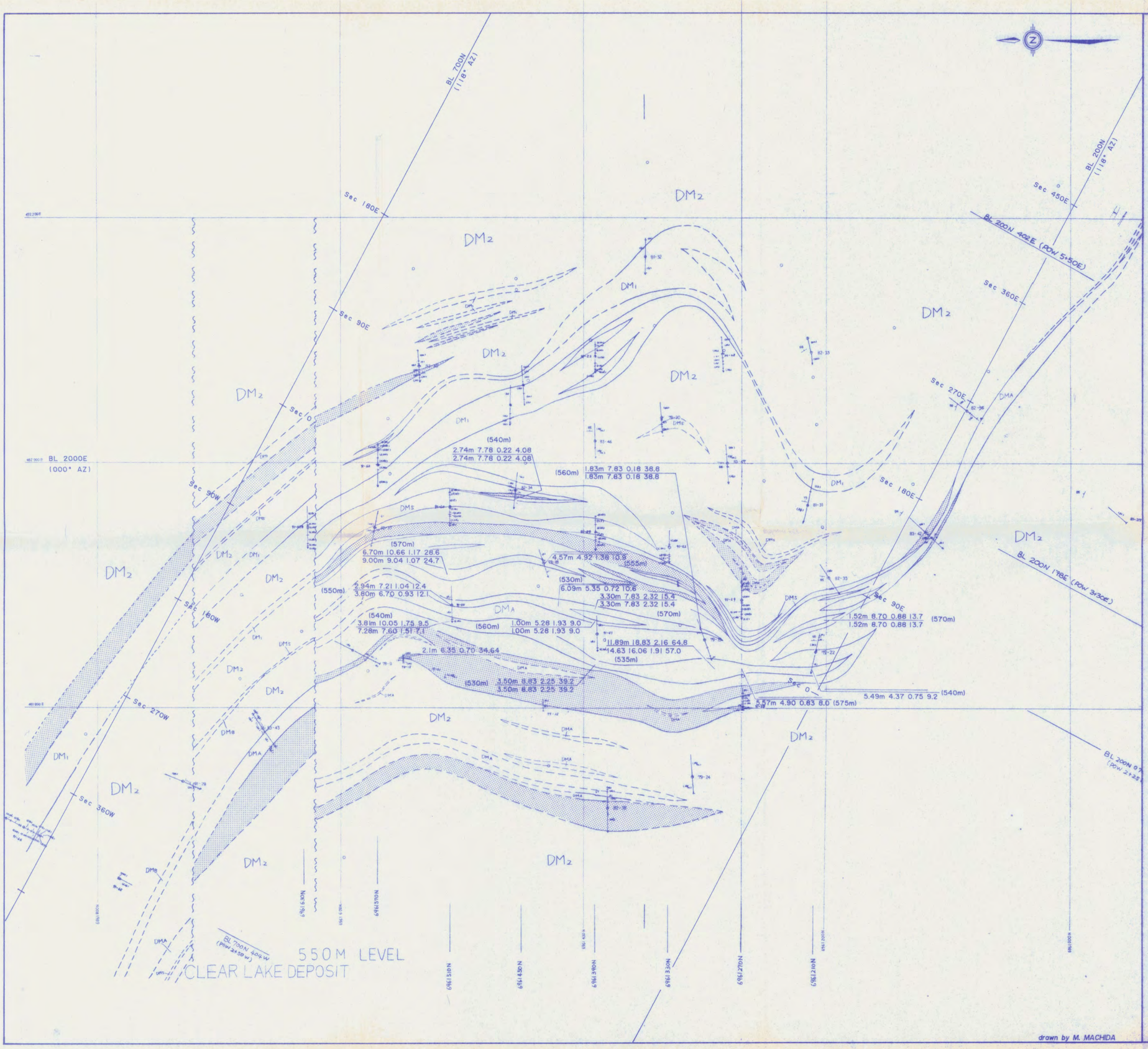


drawn by M. MACHIDA

LITHOLOGY LEGEND

INTRUSIVE ROCKS

TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite; b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DM_{CPC} CHERT PEBBLE CONGLOMERATE locally lahamitic with Kechika group fragments.

EARN GROUP

MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli; b) Ash
- DM_4 CHERT dark gray, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor sandstone, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- ? DM_1 SANDSTONE a) massive; b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP

DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

TINTINA FAULT

ROAD RIVER FORMATION

SILURIAN

- OS SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION

ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs intercalated with van-coloured siltstones, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS van-coloured mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3D).
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION

ORDOVICIAN

- CO_1 ARENITE dolomitic calcareous, with micaceous silty bedded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION: ca calcareous; do dolomitic; si silicified; cg clay altered; cl chloritic; se sericitic; mc micaceous; gr graphitic; ep epidote; ch chert replacement

DETRITUS: pe pebbly; sa sandy; si silty

BEDDING: ma massive; pl planar; no nodular; wa wavy; sb x-bedded; la laminated

ANGULARITY: bx brecciated; cg conglomeratic

DRILL CROSS SECTIONS

91-30 (711.3m) 35mS — Diamond drill hole trace; with hole number, elevation ASL, distance from section.

Hole ≥ 30m off plane of section.

Hole ≥ 10m ≤ 30m off plane of section.

Hole within 10m of plane of section.

91-30 3mN

Piercing point on section plane.

30 — Bedding plane to core axis.

G — Graphitic Zone

Shear Zone

—any unit described as "siliceous" and/or "silicified"

Assay average interval

Zn %

Pb %

Ag g/t

6.7m 10.6 1.3 25.6 — 7% Zn + Pb cut off grade

9.0m 9.0 1.1 24.7 — 5% Zn + Pb cut off grade

SCALE

50 0 50 100

TOTAL ENERGOLD CORP.

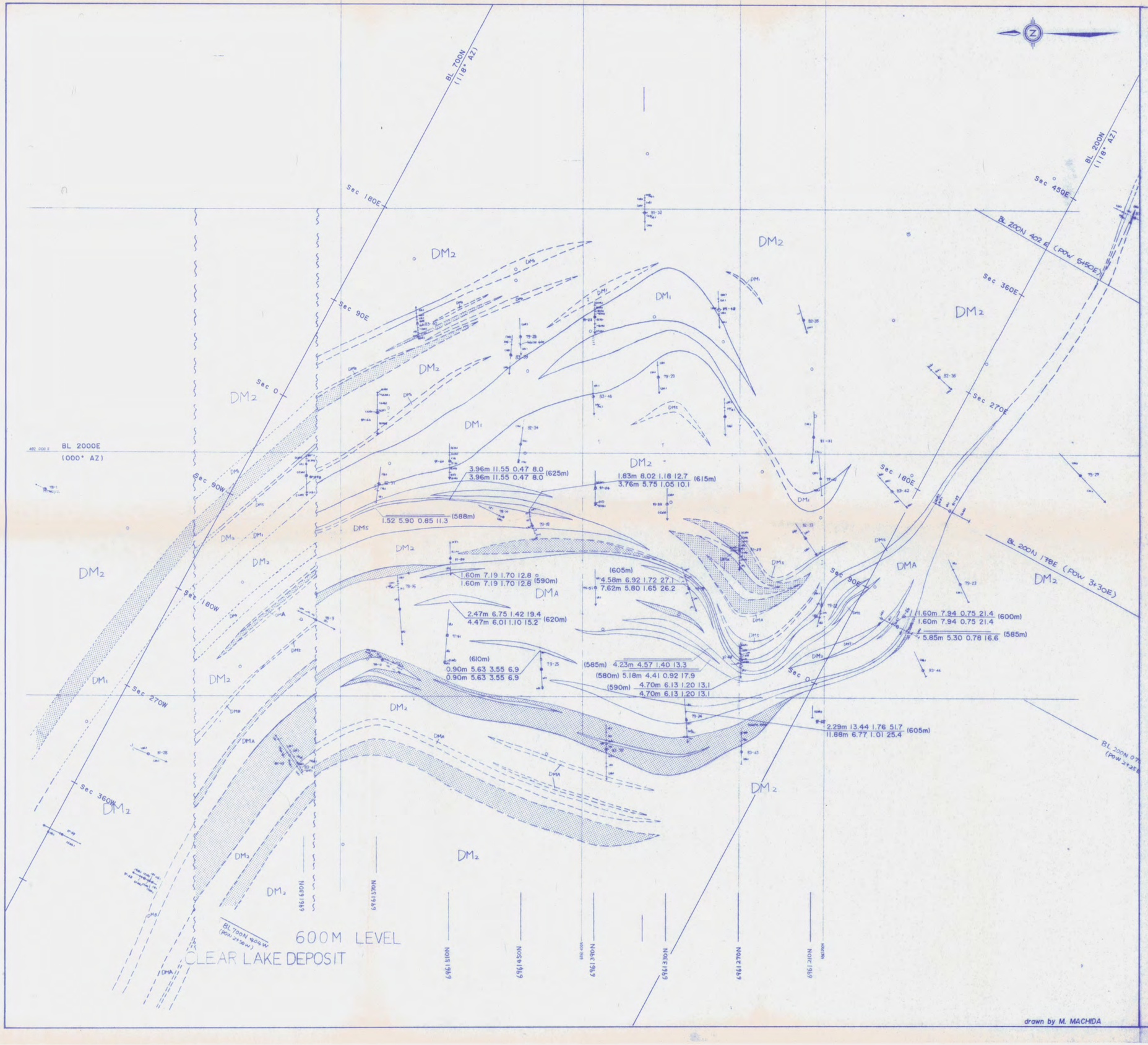
CLEAR LAKE PROJECT

550m

GEOLOGY LEVEL PLAN

093013

DATE DECEMBER 1991	FIGURE 36
N.T.S. 105 L/14	SCALE 1:2000



drawn by M. MACHIDA

LITHOLOGY LEGEND

INTRUSIVE ROCKS

TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite; b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DM_{CPC} CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP

MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli; b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor sandstone, siltstone bands; c) with many sandstone-siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- ? DM_1 SANDSTONE a) massive; b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP

DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

~~~ TINTINA FAULT ~~~

ROAD RIVER FORMATION

SILURIAN

- OS SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION

ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs interlaminated with rust-coloured siltstones, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS rust-coloured mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3D).
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chloritic rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION

ORDOVICIAN

- CO_{1} ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
	do	dolomitic
	si	silicified
	cy	clay altered
	ch	chloritic
	se	sericitic
	mc	micaceous
	gr	graphitic
	ep	epidotic
	ch	chert replacement
DETRITUS:	pe	pebbly
	sa	sandy
	si	silty
BEDDING:	ma	massive
	pl	planar
	no	nodular
	wa	wavy
	xb	x-bedded
	la	laminated
ANGULARITY:	br	brecciated
	cg	conglomeratic

DRILL CROSS SECTIONS

91–50 (711.3m) 35mS — Diamond drill hole trace: with hole number, elevation ASL, distance from section.

Hole ≥ 30m off plane of section.

Hole ≥ 10m ≤ 30m off plane of section.

Hole within 10m of plane of section.

Piercing point on section plane.

30 — Bedding plane to core axis.

G — Graphitic Zone

Shear Zone

—any unit described as "siliceous" and/or "silicified"

Assay average interval

Zn %

Pb %

Ag g/t

6.7m 10.6 1.3 25.6 — 7% Zn + Pb cut off grade

9.0m 9.0 1.1 24.7 — 5% Zn + Pb cut off grade

SCALE

50 0 50 100

TOTAL ENERGOLD CORP.

CLEAR LAKE PROJECT

600m

GEOLOGY LEVEL PLAN

093013

DATE DECEMBER 1991	FIGURE 37
N.T.S. 105 L/14	SCALE 1:2000
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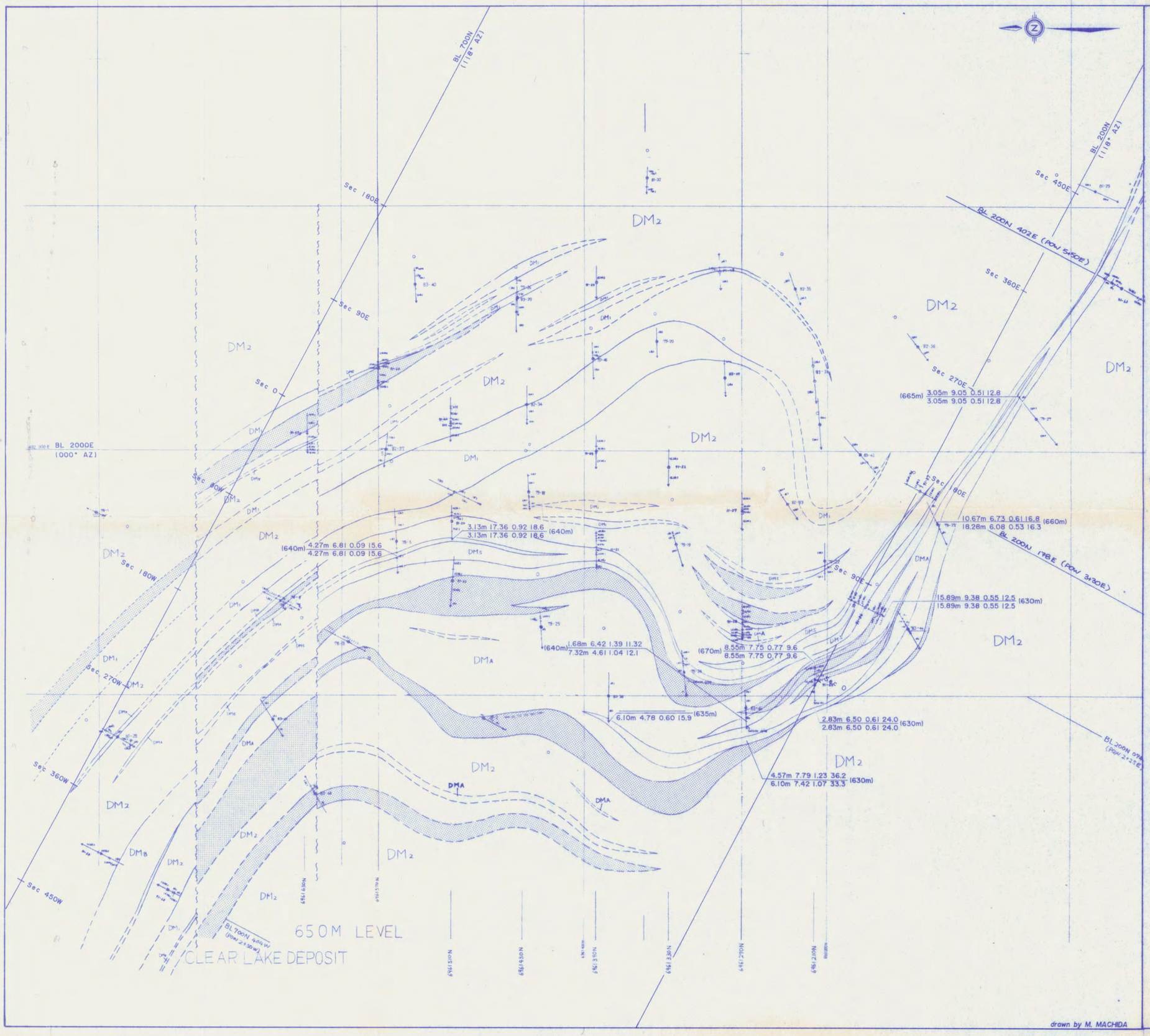


LITHOLOGY LEGEND

INTRUSIVE ROCKS

TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite; b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DMcpc CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP

MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli; b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor sandstone, siltstone bands; c) with many sandstone/siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomite bands.
- ? DM_1 SANDSTONE a) massive; b) laminated
- DM_1ST LIMESTONE
- DMCHT CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP

DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

TINTINA FAULT

ROAD RIVER FORMATION

SILURIAN

- OS SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION

ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs intercalated with red-coloured siltstones, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS red-coloured mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3D)
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3D)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION

ORDOVICIAN

- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION: ca calcareous; do dolomitic; si silicified; cy clay altered; ch chloritic; se sericitic; mc micaceous; gr graphitic; ep epidote; ch chert replacement

DETRITUS: pe pebbly; sa sandy; si silty

BEDDING: ms massive; pl planar; no nodular; wa wavy; xb x-bedded; la laminated

ANGULARITY: bx brecciated; cg conglomeratic

DRILL CROSS SECTIONS

91–50 (711.3m) 55m S — Diamond drill hole trace: with hole number, elevation ASL, distance from section.

Hole ≥ 30m off plane of section.

Hole ≥ 10m ≤ 30m off plane of section.

91–50 3mN — Hole within 10m of plane of section.

Piercing point on section plane.

30 — Bedding plane to core axis.

G — Graphitic Zone

Shear Zone

—any unit described as "siliceous" and/or "silicified"

Assay average interval

Zn %
Pb %
Ag g/t

6.7m 10.6, 1.3, 25.6 7% Zn + Pb cut off grade
9.0m 9.0, 1.1, 24.7 5% Zn + Pb cut off grade

SCALE
50 0 50 100

TOTAL ENERGOLD CORP.

CLEAR LAKE PROJECT

650m

GEOLOGY LEVEL PLAN

093013

DATE DECEMBER 1991	FIGURE 38
N.T.S. 105 L/14	SCALE 1:2000

SURFACE
CLEAR LAKE DEPOSIT
1/2000

LITHOLOGY LEGEND

INTRUSIVE ROCKS
TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DMCPC CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP
MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous, b) with minor sandstone, siltstone bands c) with many sandstone siltstone bands, d) siliceous and/or silicified, e) calcareous with thin limestone interbeds, f) with thin light brown dolomitic bands.
- ? DM_1 SANDSTONE a) massive b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP
DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

TINTINA FAULT

ROAD RIVER FORMATION
SILURIAN

- OS SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION
ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs interbedded with red-coloured siltstones, mudstones and fossiliferous, (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS red-coloured mudstone, siltstone, chert, limestone and greywacke.

YANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2g} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3D).
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION
ORDOVICIAN

- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicates

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
	do	dolomitic
	si	silicified
	cy	clay altered
	ch	chloritic
	se	sericitic
	mg	magnesium
	gr	graphitic
	ep	epidote
	ch	chert replacement
DETRITUS:	pe	pebbly
	sa	sandy
	si	silty
BEDDING:	ma	massive
	pl	plevar
	no	nodular
	wa	wavy
	xb	x-bedded
	la	laminated
ANGULARITY:	bx	brecciated
	cg	conglomeratic

DRILL CROSS SECTIONS

91-50 (711.3m) 35mS — Diamond drill hole trace: with hole number, elevation ASL, distance from section.

91-50 3mN

Hole ≥ 30m off plane of section.

Hole ≥ 10m ≤ 30m off plane of section.

Hole within 10m of plane of section.

Plunging point on section plane

30 — Bedding plane to core axis.

Graphitic Zone

Shear Zone

—any unit described as "siliceous" and/or "silicified"

Assay average interval

Zn %

Pb %

Ag g/t

6.7m 10.6, 1.3, 25.6 — 7% Zn + Pb cut off grade

9.0m 9.0, 1.1, 24.7 — 5% Zn + Pb cut off grade

SCALE

50 0 50 100

TOTAL ENERGOLD CORP.

093013

CLEAR LAKE PROJECT

SURFACE

GEOLOGY & DIAMOND DRILLING PLAN

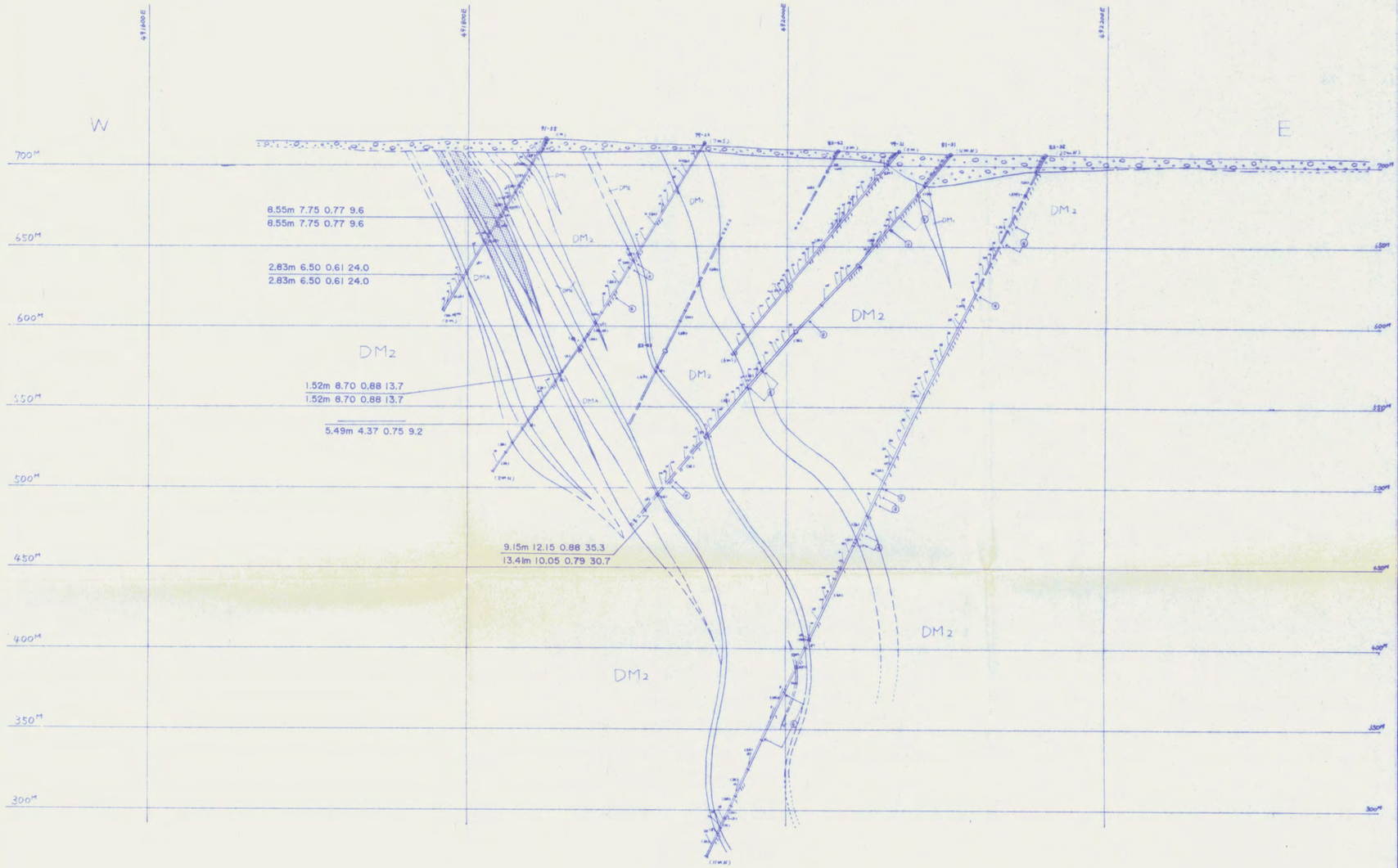
drawn by M. MACHIDA

DATE DECEMBER 1991

N.T.S. 105 L/14

FIGURE 39

SCALE 1:2000



6961210N

drawn by M. MACHIDA

LITHOLOGY LEGEND

INTRUSIVE ROCKS

TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite; b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DMCPC CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP

MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli; b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor siltstone, siltstone bands; c) with many sandstone-siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- ? DM_1 SANDSTONE a) massive; b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP

DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

TINTINA FAULT

ROAD RIVER FORMATION

SILURIAN

- OS SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION

ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs intercalated with red-coloured siltstones, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS red-coloured mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chloritic ± sericite ± biotite, may contain calcareous laminae (formerly 3D).
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION

ORDOVICIAN

- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
	do	dolomitic
	si	silicified
	cy	clay altered
	ch	chloritic
	se	sericitic
	mc	micaceous
	gr	graphitic
	ep	epidote
	ch	chert replacement
DETRITUS:	pe	pebbly
	sa	sandy
	si	silty
BEDDING:	ma	massive
	pl	plaster
	no	nodular
	wa	wavy
	xb	x-bedded
	la	laminated
ANGULARITY:	bx	brecciated
	cg	conglomeratic

DRILL CROSS SECTIONS

91–50 (711.3m) 35mS — Diamond drill hole trace: with hole number, elevation ASL, distance from section.

Hole ≥ 30m off plane of section.

Hole ≥ 10m ≤ 30m off plane of section.

Hole within 10m of plane of section.

91–50 3mN

Piercing point on section plane.

30 — Bedding plane at core axis.

Graphitic Zone

Shear Zone

—any unit described as "siliceous" and/or "silicified"

Assay average interval

Zn %

Pb %

Ag g/t

6.7m 10.6, 1.3, 25.6 — 7% Zn + Pb cut off grade

9.0m 9.0, 1.1, 24.7 — 5% Zn + Pb cut off grade

SCALE

50 0 50 100

TOTAL ENERGOLD CORP.

VERTICAL CROSS-SECTION

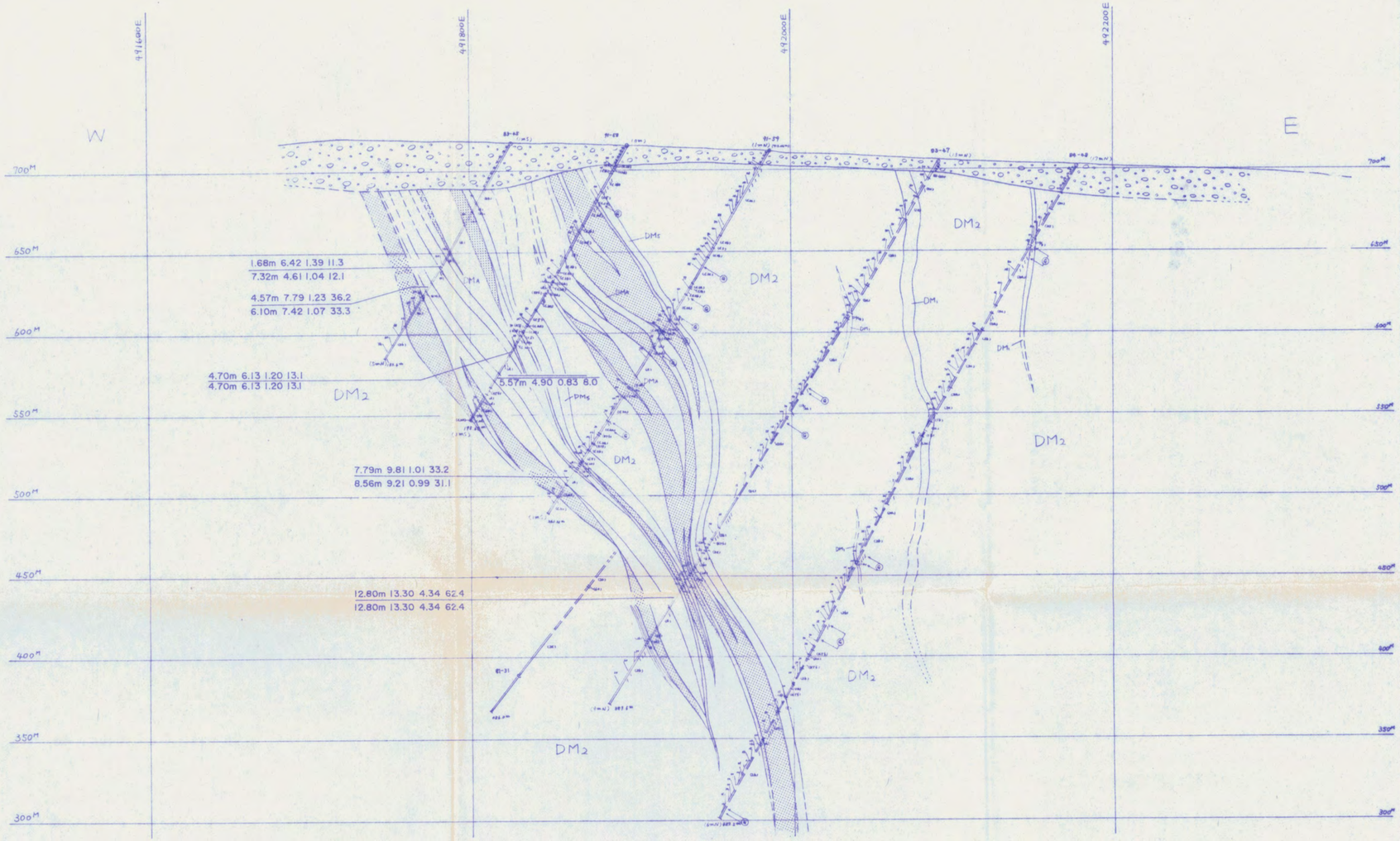
21ON

BL 2000E, 000° AZ

(LOOKING NORTH)

093013

DATE Nov 91	FIGURE 40
N.T.S. 105 L/14	SCALE 1:2000



6961270N

drawn by M. MACHIDA

LITHOLOGY LEGEND

INTRUSIVE ROCKS
TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite; b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DM_{CPC} CHERT PEBBLE CONGLOMERATE locally hematitic with Kechika group fragments.

EARN GROUP
MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli; b) Ash
- DM_4 CHERT dark gray, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor sandstone, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- ? DM_1 SANDSTONE a) massive; b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown, banded

DEVONIAN

——— UNCONFORMITY (ST CYR FAULT?) ———

ASKIN GROUP
DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

~~~ TINTINA FAULT ~~~

ROAD RIVER FORMATION
SILURIAN

- OS SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MIENZIE CK FORMATION
ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs interclated with variicoloured siltstones, mudstones and limestones. (formerly 6A2)
- CO_{Ka} SEDIMENTARY ROCKS variicoloured mudstone, siltstone, chert, limestone and graywacke.

VANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain phyllitic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3G).
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION
ORDOVICIAN

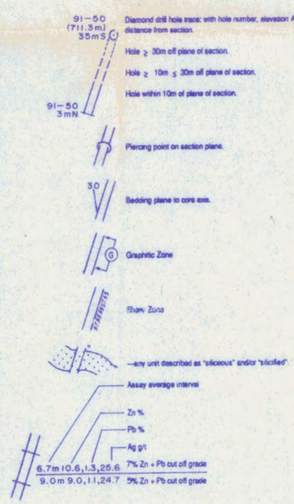
- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
	do	dolomitic
	si	silicified
	cy	clay altered
	ch	chloritic
	se	sericitic
	mc	micaceous
	gr	graphitic
	ep	epidotic
	ch	chert replacement
DETRITUS	pe	pebbly
	sa	sandy
	si	silty
BEDDING	ms	massive
	pl	planar
	no	nodular
	wa	wavy
	xb	x-bedded
	la	laminated
ANGULARITY:	bx	brecciated
	cg	conglomeratic

DRILL CROSS SECTIONS



SCALE
50 0 50 100

TOTAL ENERGOLD CORP.

VERTICAL CROSS-SECTION
270N

BL 2000E 000° AZ

(LOOKING NORTH)

093013

DATE Nov 91	FIGURE 41
N.T.S. 105 L/14	SCALE 1:2000
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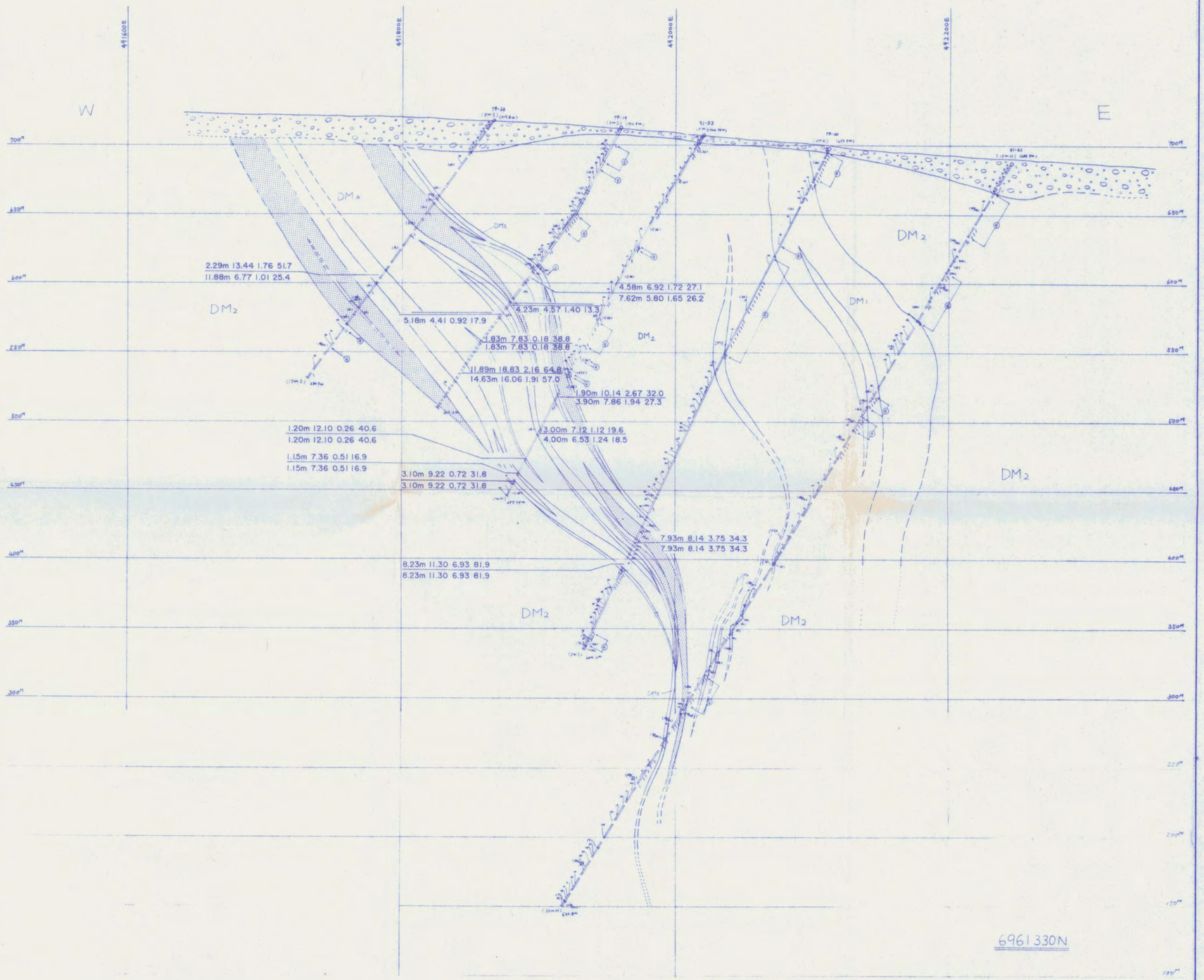


drawn by M. MACHIDA

LITHOLOGY LEGEND

INTRUSIVE ROCKS
TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite; b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DM_{CPC} CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP
MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli; b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor sandstone, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- ? DM_1 SANDSTONE a) massive; b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP
DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

TINTINA FAULT

ROAD RIVER FORMATION
SILURIAN

- OS SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION
ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs intercalated with vari-coloured siltstones, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS vari-coloured mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3D).
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION
ORDOVICIAN

- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
	do	dolomitic
	si	silicified
	cy	clay altered
	cl	chloritic
	se	sericitic
	mc	micaceous
	gr	graphitic
	ep	epidote
	ch	chert replacement
DETRITUS:	pe	pebbly
	sa	sandy
	si	silty
BEDDING:	ma	massive
	pl	planar
	no	nodular
	wa	wavy
	xb	x-bedded
	la	laminated
ANGULARITY:	bx	brecciated
	cg	conglomeratic

DRILL CROSS SECTIONS

91–50 (711.3m) 35mS — Diamond drill hole trace: with hole number, elevation ASL, distance from section.

Hole ≥ 30m off plane of section.

Hole ≥ 10m ≤ 30m off plane of section.

91–50 3mN — Hole within 10m of plane of section.

Piercing point on section plane.

30 — Bedding plane to core axis.

G — Graphitic Zone

Shear Zone

—any unit described as "siliceous" and/or "silicified"

Assay average interval

Zn %
Pb %
Ag g/t
7% Zn + Pb cut off grade

6.7m 10.6, 1.3, 25.6
9.0m 9.0, 1.1, 24.7 — 5% Zn + Pb cut off grade

SCALE
50 0 50 100

TOTAL ENERGOLD CORP.

VERTICAL CROSS-SECTION

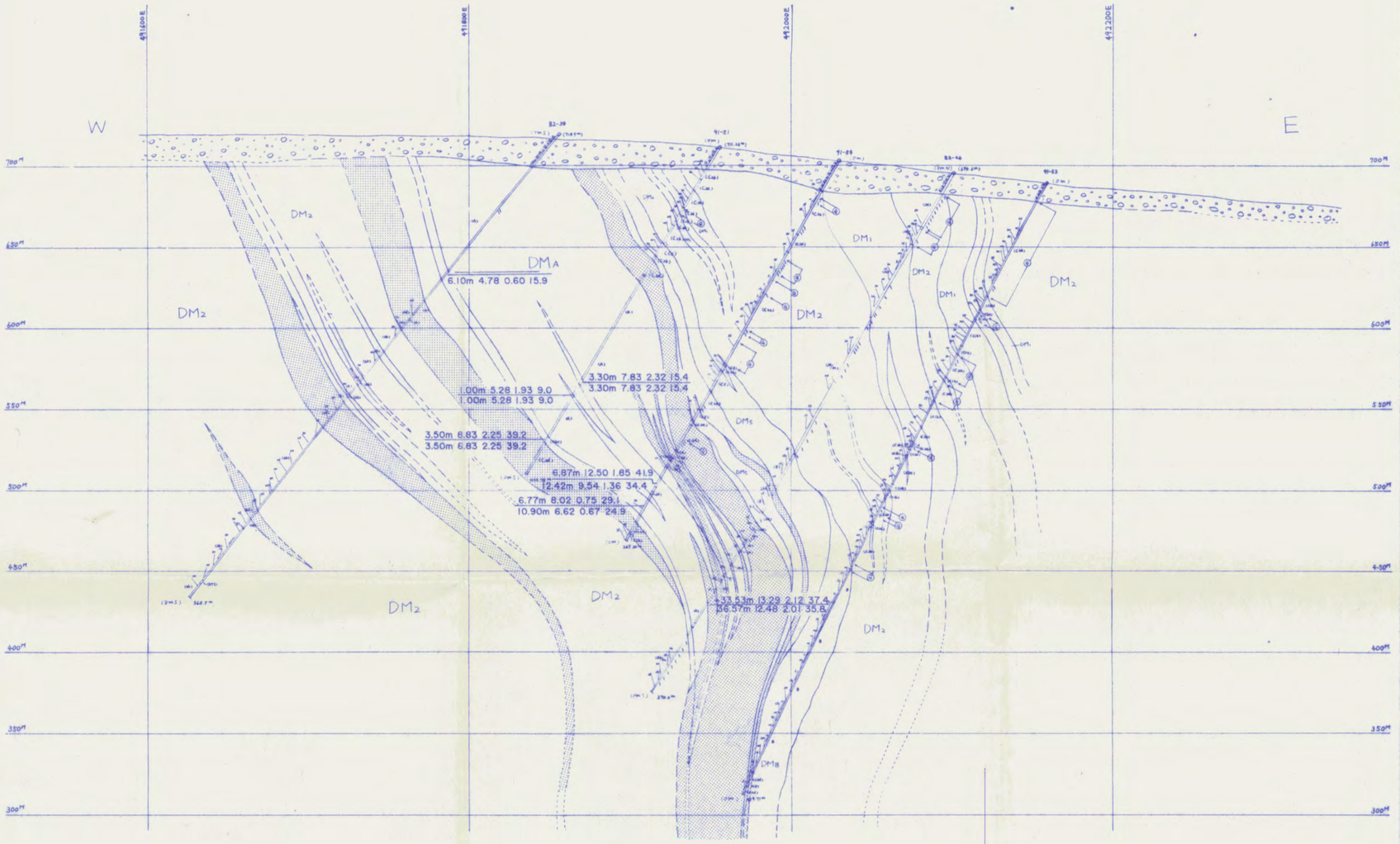
330N

BL 2000E, 000° AZ

(LOOKING NORTH)

093013

DATE NOVEMBER 1991	FIGURE 42
N.T.S. 105 L/14	SCALE 1:2000



6961390N

drawn by M. MACHIDA

LITHOLOGY LEGEND

INTRUSIVE ROCKS
TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite; b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DM_{CPC} CHERT PEBBLE CONGLOMERATE locally hydrothermally altered with Kechika group fragments

EARN GROUP
MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli; b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 ERECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor sandstone, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- DM_1 SANDSTONE a) massive; b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP
DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

~~~ TINTINA FAULT ~~~

ROAD RIVER FORMATION
SILURIAN

- OS SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION
ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs intercalated with van-coloured siltstone, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS van-coloured mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3G).
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chloritic tuffaceous rocks (formerly 3E)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION
ORDOVICIAN

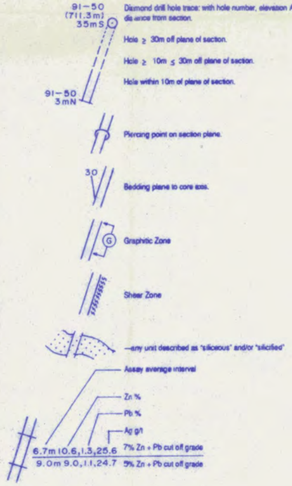
- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
	do	dolomitic
	si	silicified
	cy	clay altered
	ch	chloritic
	se	sericitic
	mc	micaceous
	gr	graphitic
	ep	epidote
	ch	chert replacement
DETRITUS:	pe	pebbly
	sa	sandy
	si	silty
BEDDING:	ma	massive
	pl	planar
	no	nodular
	wa	wavy
	xb	x-bedded
	la	laminated
ANGULARITY:	bx	brecciated
	cg	conglomeratic

DRILL CROSS SECTIONS



093013

SCALE
50 0 50 100

TOTAL ENERGOLD CORP.

VERTICAL CROSS-SECTION
390 N
BL 2000 E, 000° AZ
(LOOKING NORTH)

DATE Nov 91	FIGURE 43
N.T.S. 105 L/14	SCALE 1:2000
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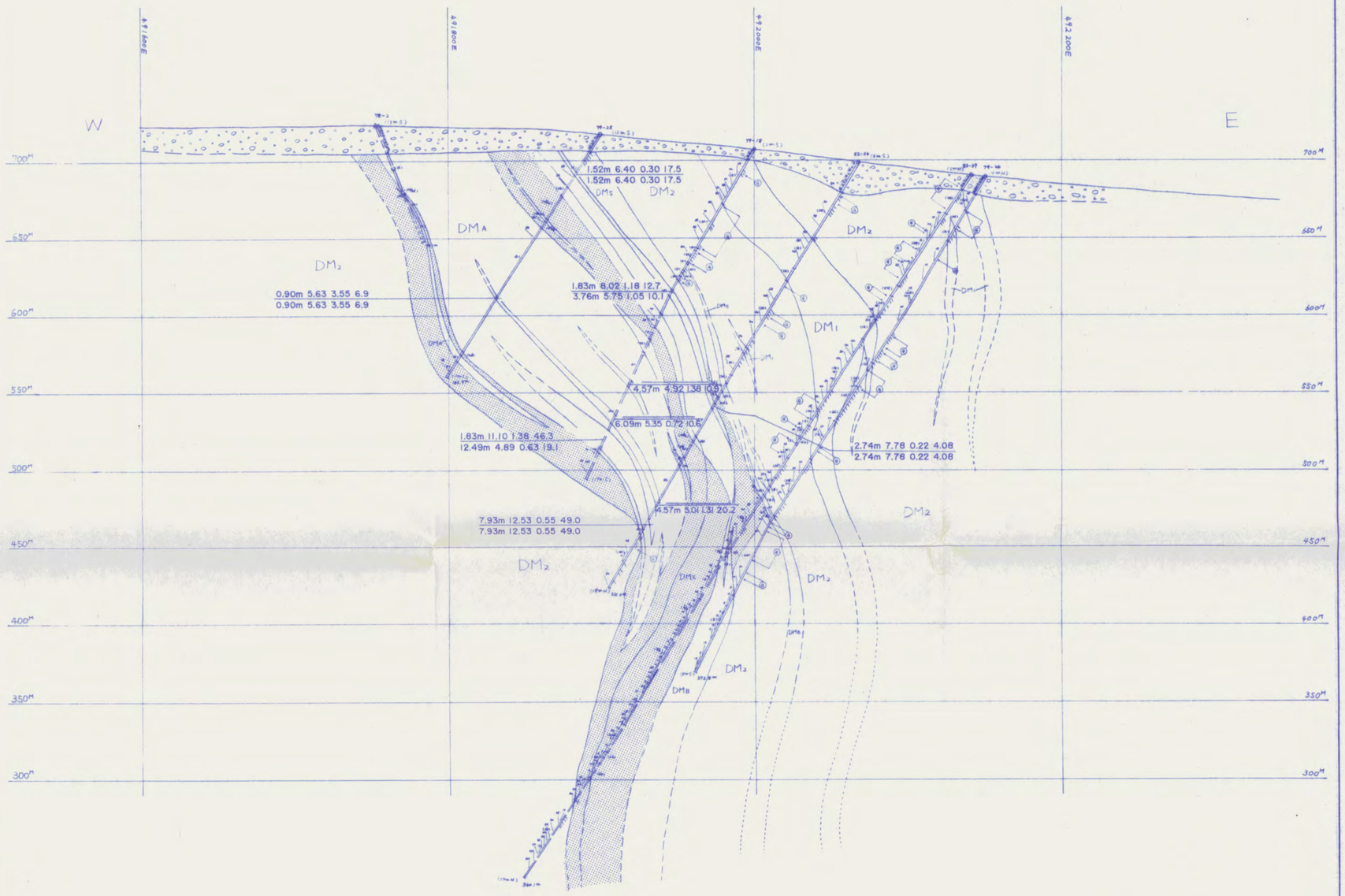

6961450N

drawn by M. MACHIDA

LITHOLOGY LEGEND

INTRUSIVE ROCKS

TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DM_{CPC} CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP

MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli, b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor sandstone, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- ? DM_1 SANDSTONE a) massive; b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown; banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP

DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

~~~ TINTINA FAULT ~~~

ROAD RIVER FORMATION

SILURIAN

- DS SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION

ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs interbedded with red-coloured siltstones, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS red-coloured mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3D).
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION

ORDOVICIAN

- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
	do	dolomitic
	si	silicified
	cy	clay altered
	ch	chloritic
	se	sericitic
	mc	micaceous
	gr	graphitic
	ep	epidote
	ch	chert replacement
DETRITUS:	pe	pebbly
	sa	sandy
	si	silty
BEDDING:	ms	massive
	pl	planar
	no	nodular
	we	wavy
	xb	x-bedded
	la	laminated
ANGULARITY:	bx	brecciated
	cg	conglomeratic

DRILL CROSS SECTIONS

91–50 (711.3m) 35m S — Diamond drill hole trace: with hole number, elevation ASL, distance from section.

Hole ≥ 30m off plane of section.

Hole ≥ 10m ≤ 30m off plane of section.

91–50 35m N — Hole within 10m of plane of section.

Piercing point on section plane.

30 — Bedding plane to core axis.

Graphitic Zone

Shear Zone

—any unit described as "siliceous" and/or "silicified"

Assay average interval

Zn %

Pb %

Ag g/t

6.7m 10.6, 1.3, 25.6 — 7% Zn + Pb cut off grade

9.0m 9.0, 1.1, 24.7 — 5% Zn + Pb cut off grade

SCALE

50 0 50 100

TOTAL ENERGOLD CORP.

VERTICAL CROSS-SECTION

450N

BL 2000E, 000° AZ

(LOOKING NORTH)

093013

DATE Nov 91	FIGURE 44
N.T.S. 105 L/14	SCALE 1:2000
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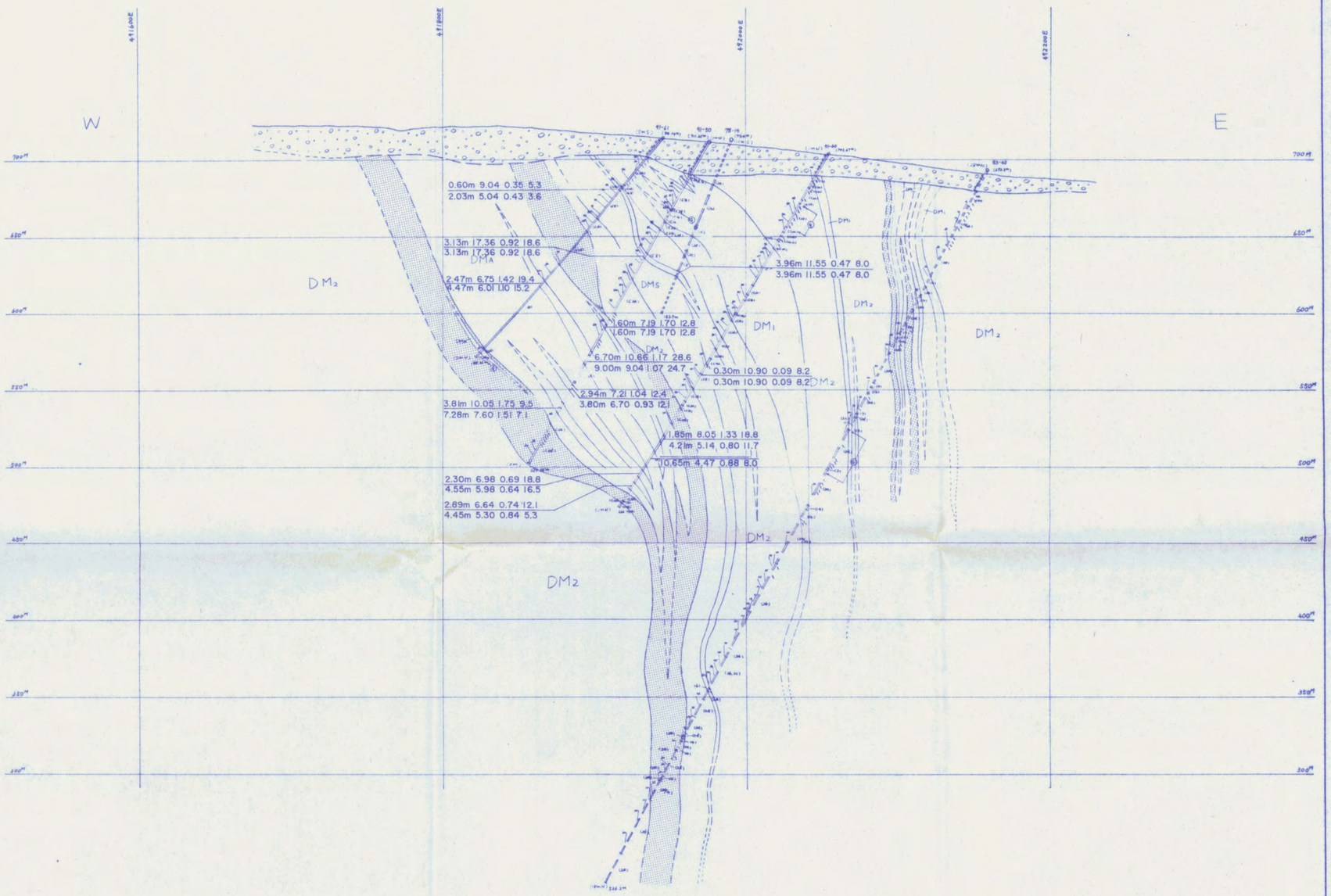


6961510N

drawn by M. MACHIDA

LITHOLOGY LEGEND

INTRUSIVE ROCKS
TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite; b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DM_{CPC} CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP
MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli; b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, calcareous; b) with minor sandstone, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- ? DM_1 SANDSTONE a) massive; b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP
DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

TINTINA FAULT

ROAD RIVER FORMATION
SILURIAN

- OS SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION
ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs intercalated with red-coloured siltstones, mudstones and limestones, (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS red-coloured mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3D)
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION
ORDOVICIAN

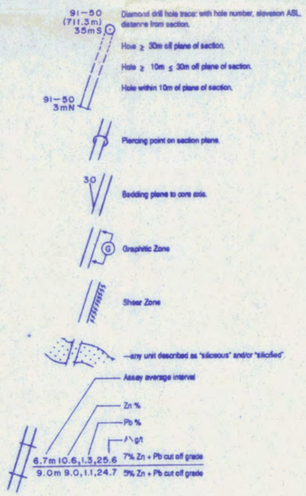
- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
	do	dolomitic
	si	silicified
	cy	clay altered
	cl	chloritic
	se	sericitic
	mc	micaceous
	gr	graphitic
	ep	epidotic
	ch	chert replacement
DETRITUS:	pe	pebbly
	sa	sandy
	si	silty
BEDDING:	ma	massive
	pl	plevar
	no	nodular
	wa	wavy
	zb	z-bedded
	la	laminated
ANGULARITY:	bx	brecciated
	cg	conglomeratic

DRILL CROSS SECTIONS



SCALE
50 0 50 100

TOTAL ENERGOLD CORP.

VERTICAL CROSS-SECTION

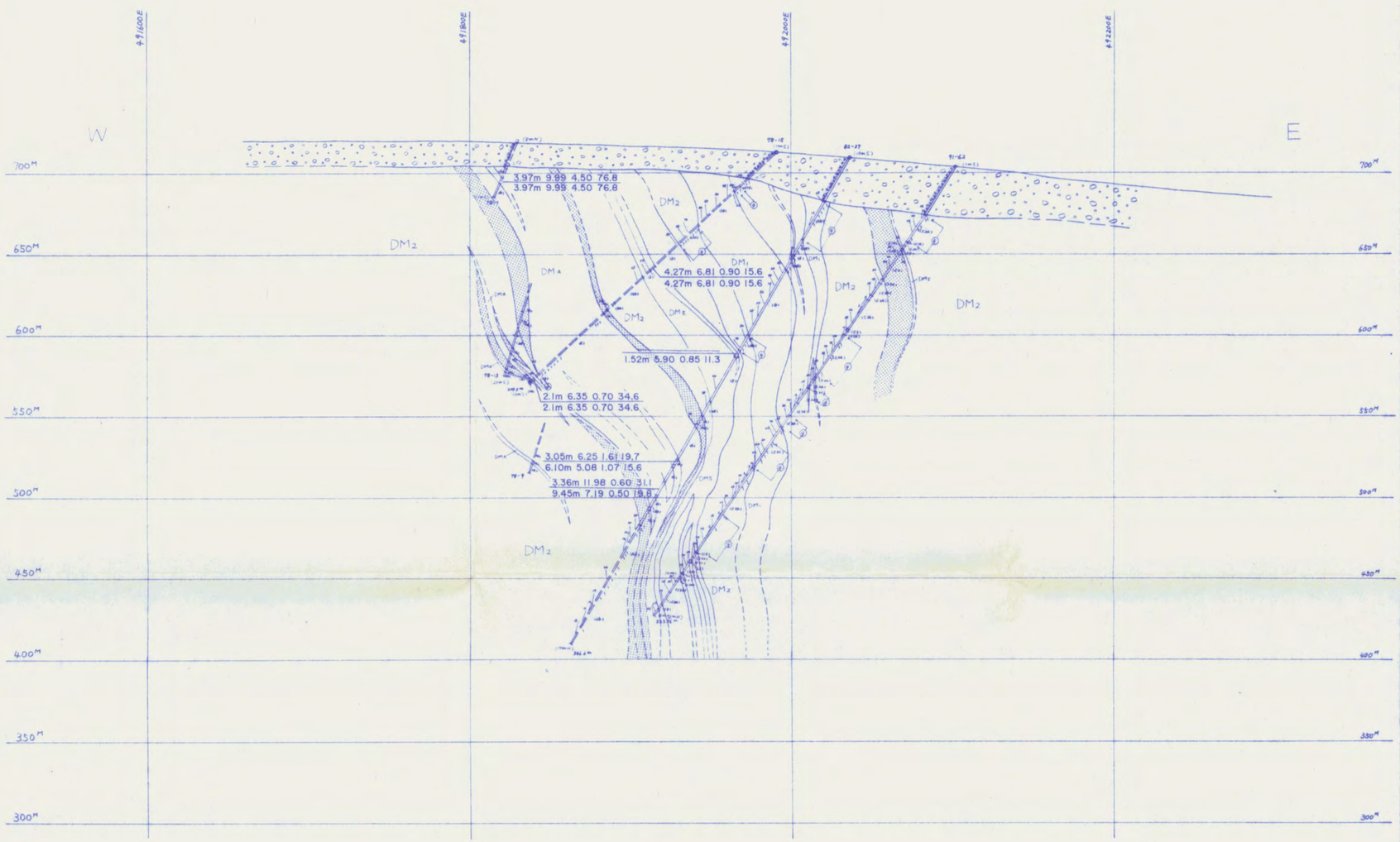
093013

51ON

BL 2000E, 000° AZ

(LOOKING NORTH)

DATE Nov 91	FIGURE 45
N.T.S. 105 L/14	SCALE 1:2000



6961570N

drawn by M. MACHIDA

LITHOLOGY LEGEND

INTRUSIVE ROCKS

TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Dorite; b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DM_{CPC} CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP

MISSISSIPPIAN

- DM_8 BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli; b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor siltstone, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- ? DM_1 SANDSTONE a) massive; b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP

DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

TINTINA FAULT

ROAD RIVER FORMATION

SILURIAN

- DS SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION

ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green; chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs intercalated with red-coloured siltstones, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS red-coloured mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3G)
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION

ORDOVICIAN

- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
	do	dolomitic
	si	silicified
	cy	clay altered
	cl	chloritic
	se	sericitic
	mc	micaceous
	gr	graphitic
	ep	epidote
	ch	chert replacement
DETRITUS:	pe	pebbly
	sa	sandy
	si	silty
BEDDING:	ma	massive
	pl	plaiver
	no	nodular
	wa	wavy
	th	x-bedded
	la	laminated
ANGULARITY:	br	brecciated
	cg	conglomeratic

DRILL CROSS SECTIONS

91-50 (711.3m) 35m S — Diamond drill hole trace: with hole number, elevation ASL, distance from section.

Hole ≥ 30m off plane of section.

Hole ≥ 10m ≤ 30m off plane of section.

Hole within 10m of plane of section.

91-50 5mN

Piercing point on section plane.

30 — Bedding plane to core axis.

Graphitic Zone

Shear Zone

—any unit described as "siliceous" and/or "silicified"

Assay average interval

Zn %

Pb %

Ag g/t

6.7m 10.6 1.3 25.6 7% Zn + Pb cut off grade

9.0m 9.0 1.1 24.7 5% Zn + Pb cut off grade

SCALE

50 0 50 100

TOTAL ENERGOLD CORP.

VERTICAL CROSS-SECTION

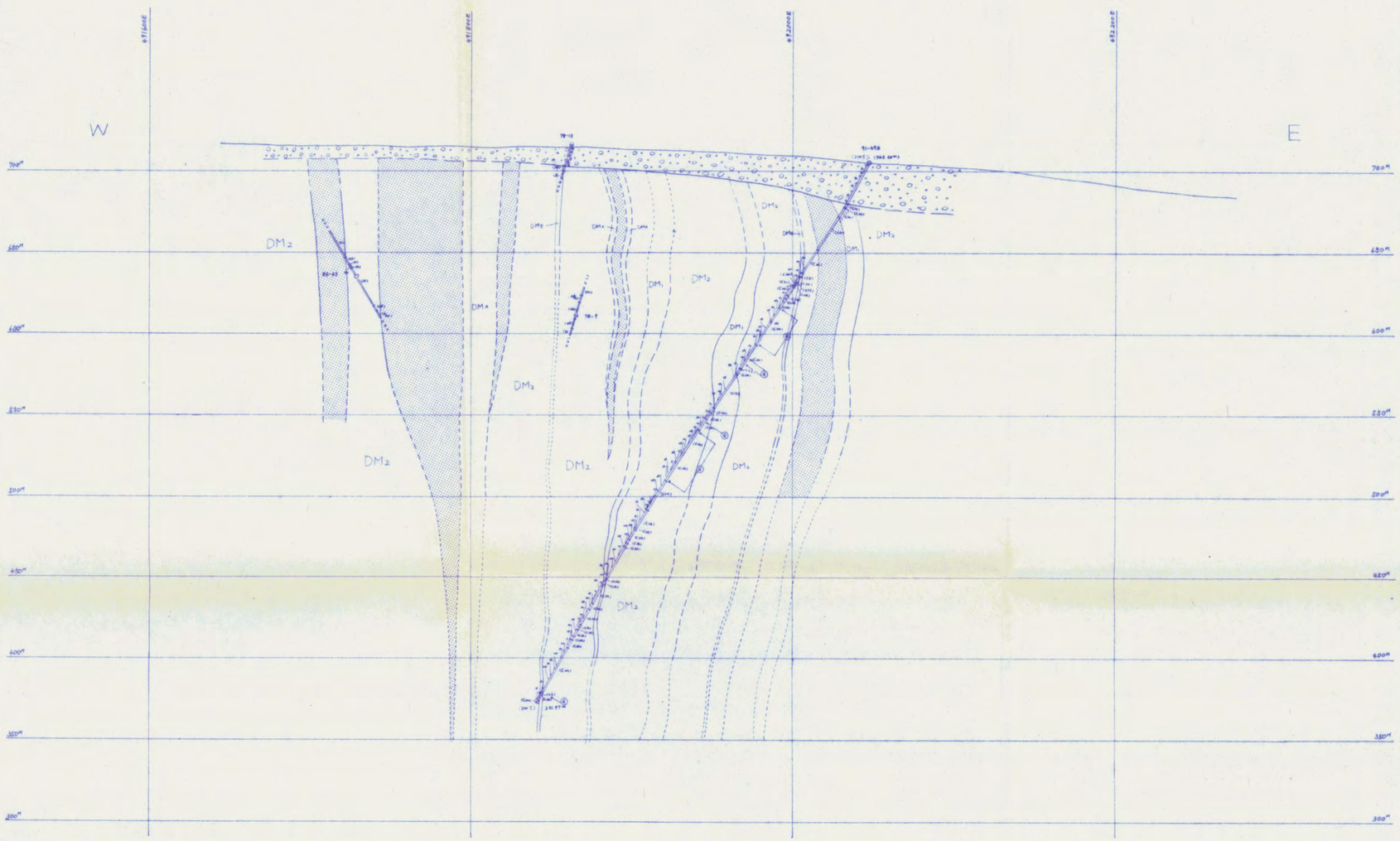
570N

093013

BL 2000E, 00° AZ

(LOOKING NORTH)

DATE Nov 91	FIGURE 46
N.T.S. 105 L/14	SCALE 1:2000



drawn by M. MACHIDA

LITHOLOGY LEGEND

INTRUSIVE ROCKS
TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DMCPC CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP
MISSISSIPPIAN

- DM9 BARITE
- DMA MASSIVE SULPHIDE
- DM6 MAFIC VOLCANIC FLOW ROCKS
- DM5 TUFF a) Lapilli; b) Ash
- DM4 CHERT dark grey, massive
- DM3 BRECCIA, CONGLOMERATE
- DM2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor sandstone, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- ? DM1 SANDSTONE a) massive; b) laminated
- DMLST LIMESTONE
- DMCHT CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP
DEVONIAN

- SD4 QUARTZITE
- SD3 DOLOSTONE locally replaced by chert
- SD2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD1 AMYGDALOIDAL ANDESITE

SILURIAN

TINTINA FAULT

ROAD RIVER FORMATION
SILURIAN

- OS SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION
ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs intercalated with variicoloured siltstones, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS variicoloured mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3D).
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION
ORDOVICIAN

- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
	do	dolomitic
	si	silicified
	cy	clay altered
	ch	chloritic
	se	sericitic
	mc	micaceous
	gr	graphitic
	ep	epidote
	ch	chert replacement
DETRITUS:	pe	pebbly
	sa	sandy
	si	silty
BEDDING:	ma	massive
	pl	planar
	no	nodular
	wa	wavy
	xb	x-bedded
	la	laminated
ANGULARITY:	bx	brecciated
	cg	conglomeratic

DRILL CROSS SECTIONS

91-50 (711.3m) 35mS — Diamond drill hole trace: with hole number, elevation ASL, distance from section.

Hole ≥ 30m off plane of section.

Hole ≥ 10m ≤ 30m off plane of section.

Hole within 10m of plane of section.

91-50 3mN

Piercing point on section plane.

30 — Bedding plane to core axis.

Graphitic Zone

Shear Zone

—any unit described as "siliceous" and/or "silicified".

Assay average interval

Zn %

Pb %

Ag g/t

6.7m 10.6, 1.3, 25.6 7% Zn + Pb cut off grade

9.0m 9.0, 1.1, 24.7 5% Zn + Pb cut off grade

SCALE

50 0 50 100

TOTAL ENERGOLD CORP.

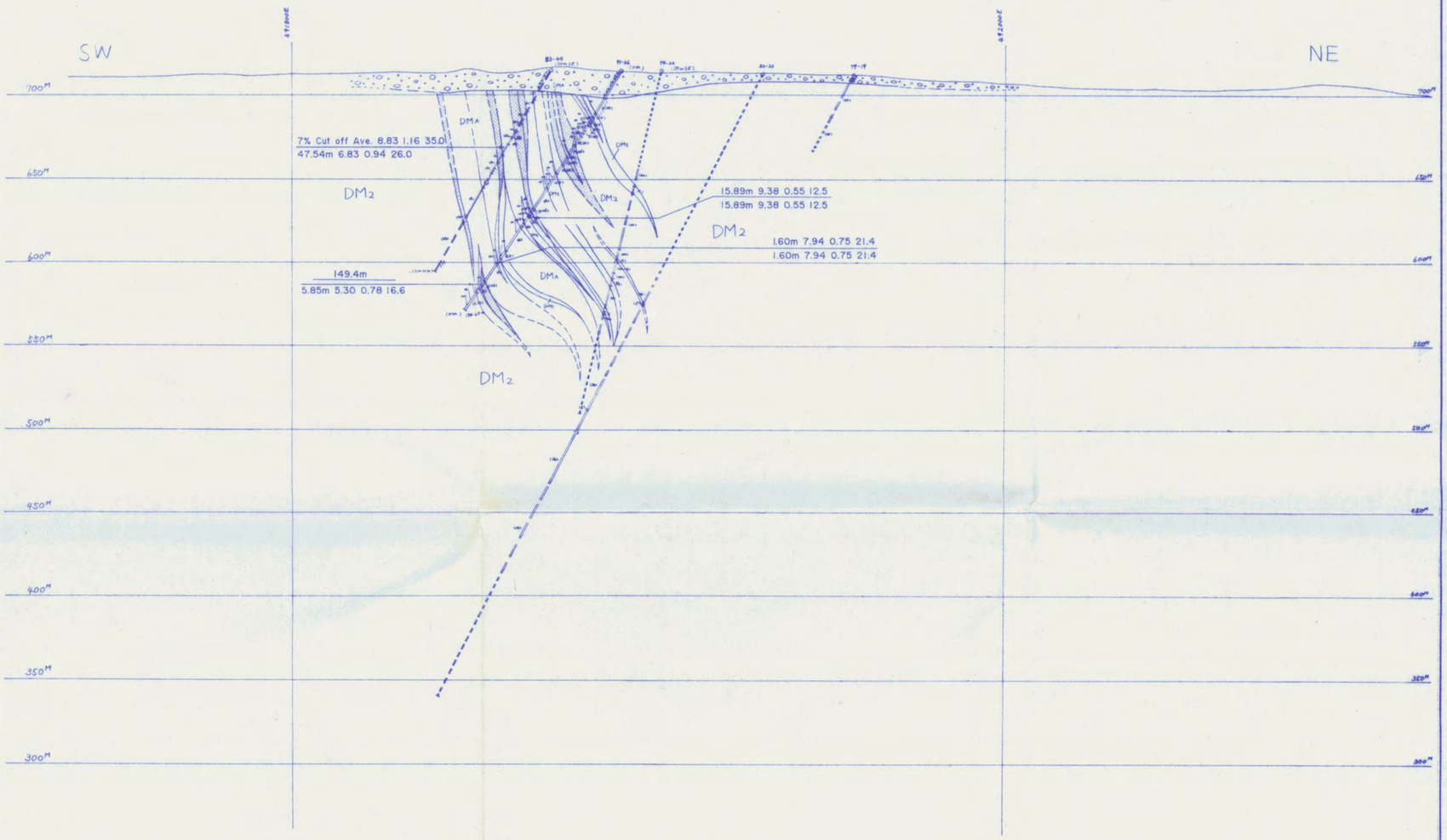
VERTICAL CROSS-SECTION

093013 630N

BL 2000E, 000° AZ

(LOOKING NORTH)

DATE Nov 91	FIGURE 47
N.T.S. 105 L/14	SCALE 1:2000



drawn by M. MACHIDA

LITHOLOGY LEGEND

INTRUSIVE ROCKS
TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DMCPC CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP
MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli; b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor sandstone, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- ? DM_1 SANDSTONE a) massive; b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP
DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

TINTINA FAULT

ROAD RIVER FORMATION
SILURIAN

- 05 SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION
ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs interclated with red-coloured siltstones, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS red-coloured mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chloritic ± sericitic ± biotitic, may contain calcareous lenticles (formerly 3D).
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION
ORDOVICIAN

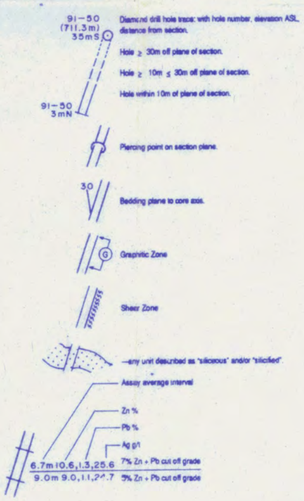
- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

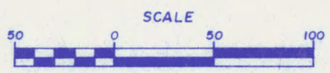
CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
	do	dolomitic
	si	silicified
	cy	clay altered
	ch	chloritic
	se	sericitic
	mc	micaceous
	gr	graphitic
	ep	epidote
	ch	chert replacement
DETRITUS:	pe	pebbly
	sa	sandy
	si	silty
BEDDING:	ma	massive
	pl	plaiver
	no	nodular
	wa	wavy
	mb	± bedded
	la	laminated
ANGULARITY:	bx	brecciated
	cg	conglomeratic

DRILL CROSS SECTIONS





TOTAL ENERGOLD CORP.

VERTICAL CROSS-SECTION

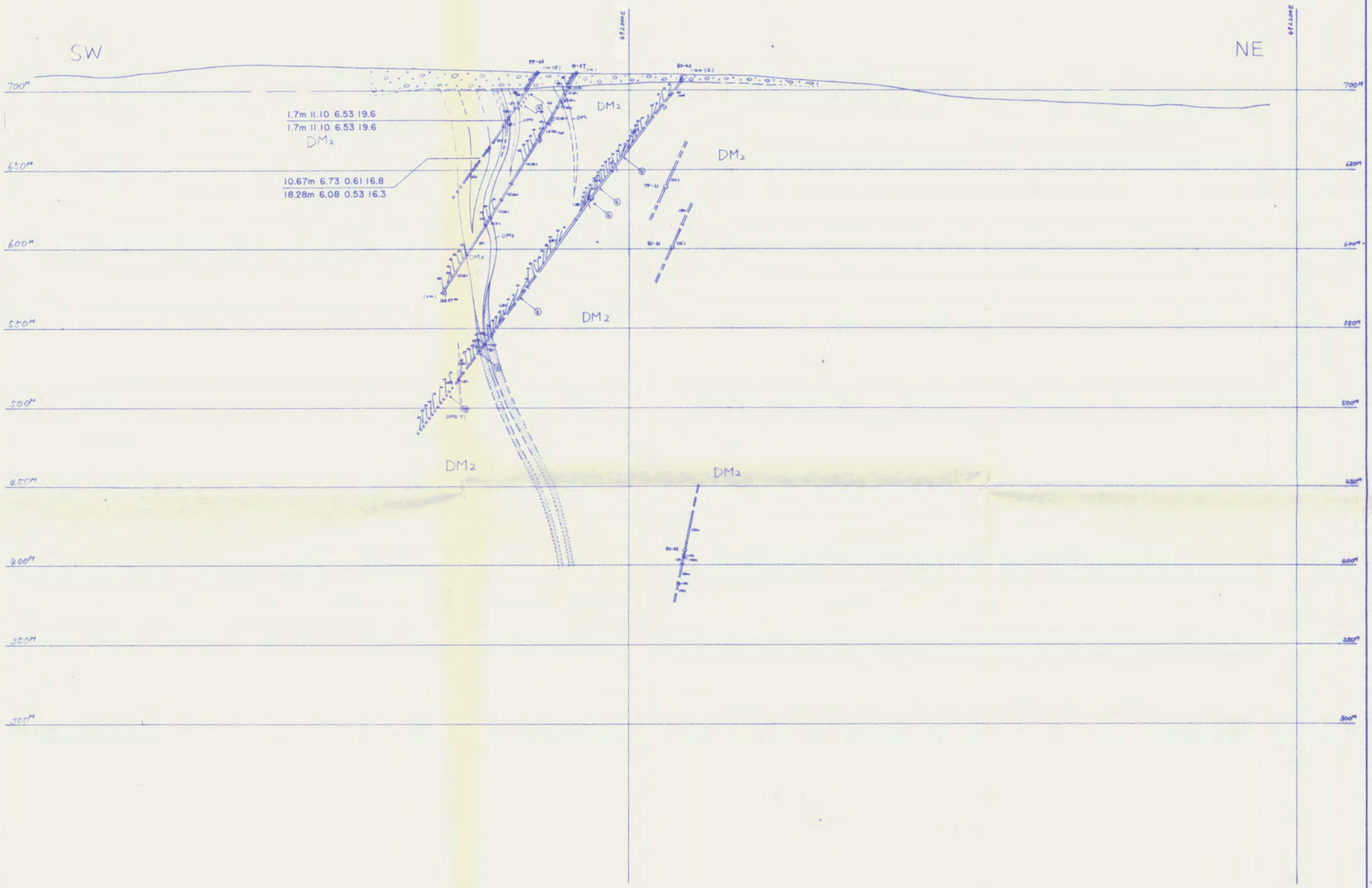
090E

093013

BL 200N, 118° AZ

(LOOKING NORTHWEST)

DATE Nov 91	FIGURE 48
N.T.S. 105 L/14	SCALE 1:2000



drawn by M. MACHIDA

LITHOLOGY LEGEND

INTRUSIVE ROCKS
TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DMCPC CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP
MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli: b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor sandstone, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- DM_1 SANDSTONE a) massive; b) laminated
- DMLST LIMESTONE
- DMCHT CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP
DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

~~~ TINTINA FAULT ~~~

ROAD RIVER FORMATION
SILURIAN

- DS SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION
ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs interstratified with red-coloured: siltstones, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS red-coloured mudstone, siltstone, chert, limestone and greywacke.

YANGDORA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3D)
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION
ORDOVICIAN

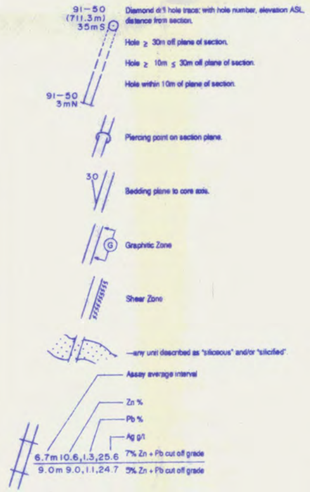
- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
	do	dolomitic
	si	silicified
	cy	clay altered
	cl	chloritic
	se	sericitic
	mc	micaceous
	gr	graphitic
	ep	epidote
	ch	chert replacement
DETRITUS:	pe	pebbly
	sa	sandy
	si	silty
BEDDING:	ma	massive
	pl	plaviar
	no	nodular
	wa	wavy
	xb	x-bedded
	la	laminated
ANGULARITY:	bx	brecciated
	cg	conglomeratic

DRILL CROSS SECTIONS



SCALE
50 0 50 100

TOTAL ENERGOLD CORP.

VERTICAL CROSS-SECTION

093013 180E

BL200N, 118° AZ

(LOOKING NORTHWEST)

DATE Nov 91	FIGURE 49
N.T.S. 105 L/14	SCALE 1:2000
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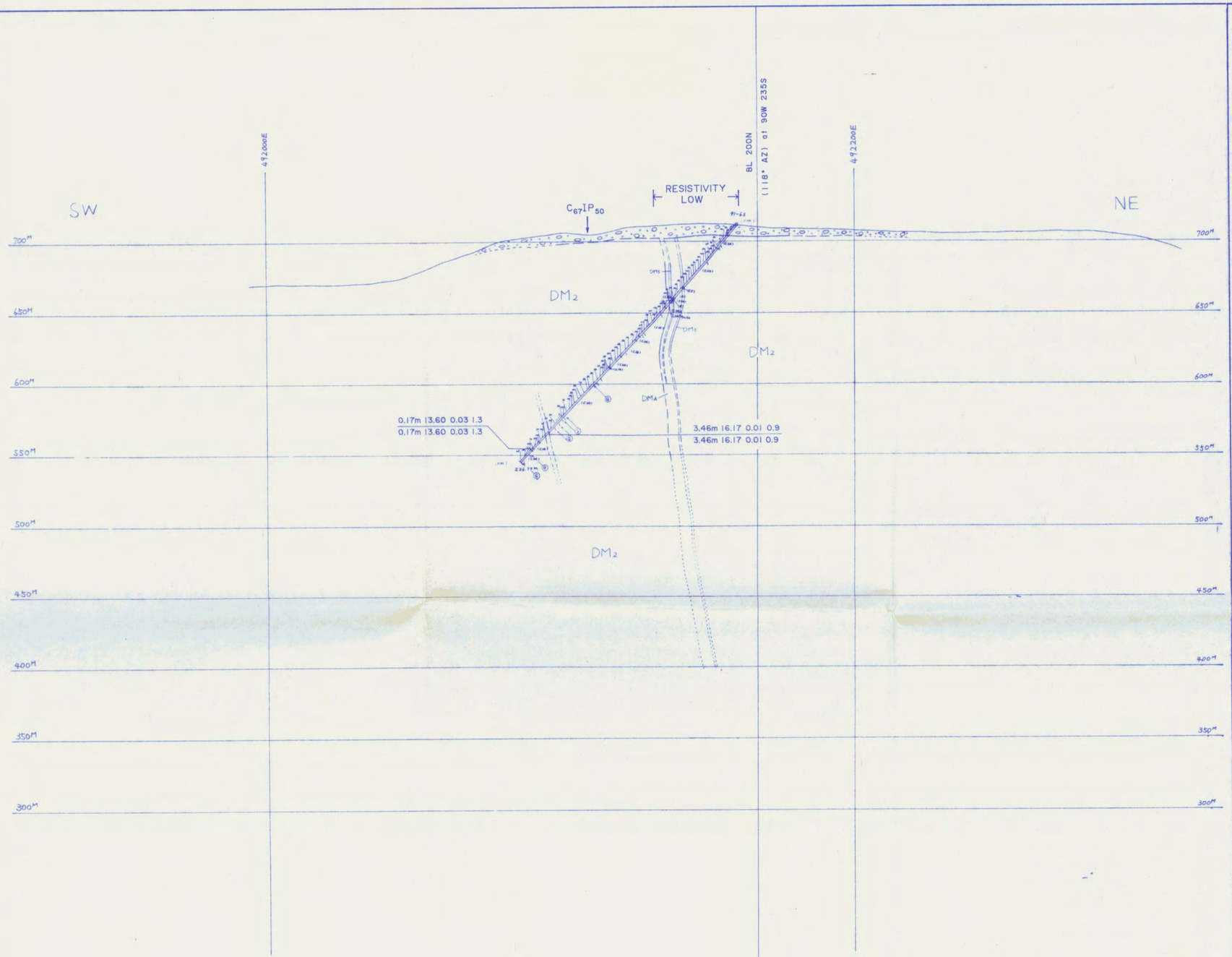

drawn by M. MACHIDA

LITHOLOGY LEGEND

INTRUSIVE ROCKS
TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite; b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DMcPC CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP
MISSISSIPPIAN

- DM_8 BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli; b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor sandstone, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds f) with thin light brown dolomitic bands.
- ? DM_1 SANDSTONE a) massive; b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown, banded

DEVONIAN

——— UNCONFORMITY (ST CYR FAULT?) ———

ASKIN GROUP
DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

~~~ TINTINA FAULT ~~~

ROAD RIVER FORMATION
SILURIAN

- 0S SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION
ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs interclastal with vari-coloured: siltstones, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS vari-coloured mudstone, siltstone, chert, limestone and greywacke.

VANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
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MT MYE FORMATION

- CO_{2e} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3D)
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chloritic rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION
ORDOVICIAN

- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
	do	dolomitic
	si	silicified
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	mc	micaceous
	gr	graphitic
	ep	epidote
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DETRITUS:	pe	pebbly
	sa	sandy
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BEDDING:	ma	massive
	pl	plaear
	no	nodular
	wa	wavy
	xb	x-bedded
	la	laminated
ANGULARITY:	bx	brecciated
	cg	conglomeratic

DRILL CROSS SECTIONS

91–50 (711.3m) 35mS — Diamond drill hole trace: with hole number, elevation ASL, distance fro i section.

Hole ≥ 30m off plane of section.

Hole ≥ 10m ≤ 30m off plane of section.

Hole within 10m of plane of section.

91–50 3mN

Piercing point on section plane.

30 — Bedding plane to core axis.

G — Graphitic Zone

Shear Zone

—any unit described as "siliceous" and/or "silicified"

Assay average interval

Zn %
Pb %
Ag g/t

6.7m 10.6, 1.5, 25.6 — 7% Zn + Pb cut off grade

9.0m 9.0, 1.1, 24.7 — 5% Zn + Pb cut off grade

SCALE
50 0 50 100

TOTAL ENERGOLD CORP.

VERTICAL CROSS-SECTION

093013 360E

BL 200N, 118° AZ

(LOOKING NORTHWEST)

DATE Nov 91	FIGURE 50
N.T.S. 105 L/14	SCALE 1:2000
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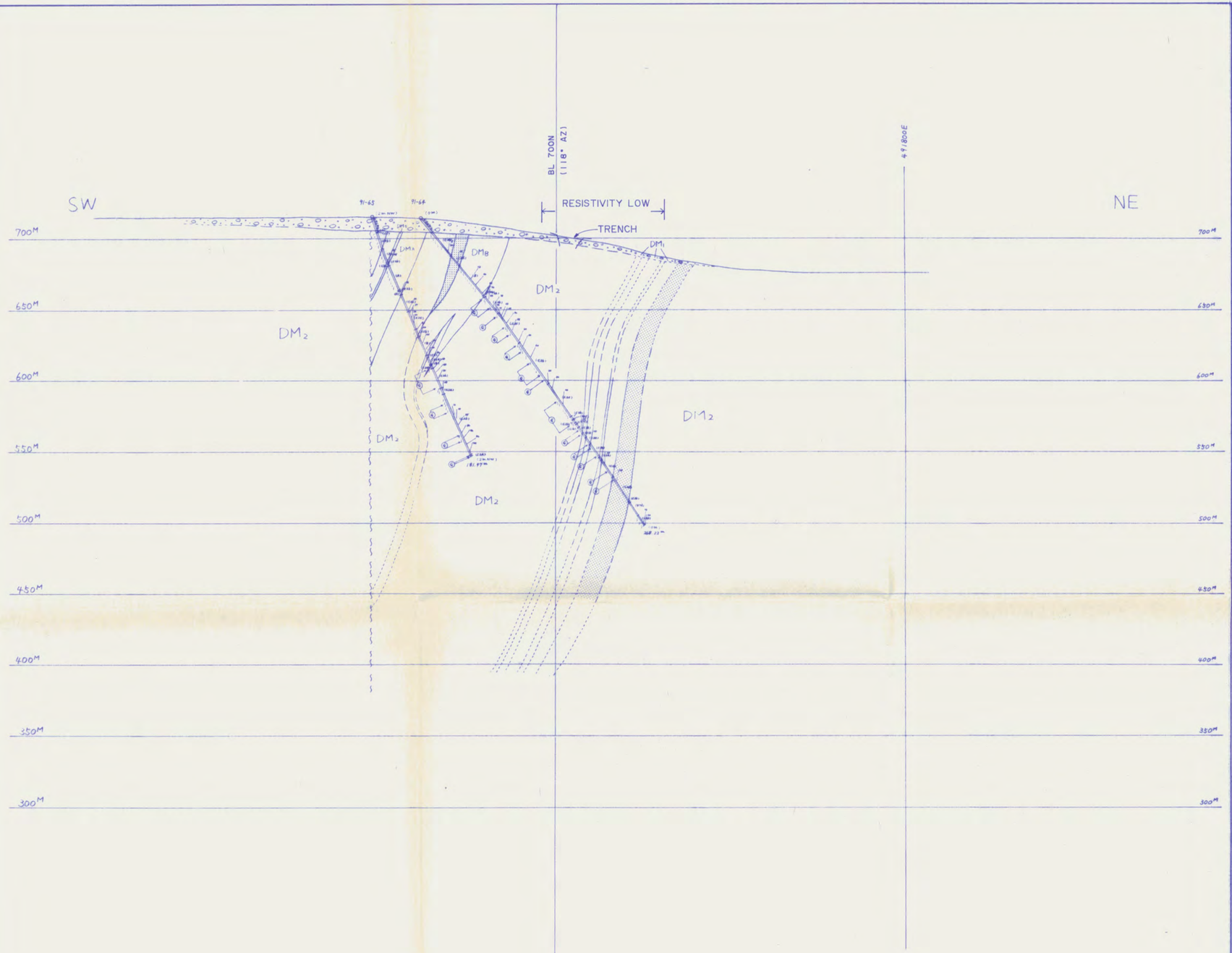


drawn by M. MACHIDA

LITHOLOGY LEGEND

INTRUSIVE ROCKS

TERTIARY, MESOZOIC (?) OR MISSISSIPPIAN (?)

- K_2 MAFIC INTRUSIVE ROCKS a) Gabbro, Diorite; b) Diabase
- K_1 FELSITE

MISSISSIPPIAN AND/OR EARLIER

- DM_{CPC} CHERT PEBBLE CONGLOMERATE locally heterolithic with Kechika group fragments.

EARN GROUP

MISSISSIPPIAN

- DM_B BARITE
- DM_A MASSIVE SULPHIDE
- DM_6 MAFIC VOLCANIC FLOW ROCKS
- DM_5 TUFF a) Lapilli; b) Ash
- DM_4 CHERT dark grey, massive
- DM_3 BRECCIA, CONGLOMERATE
- DM_2 ARGILLITE/SHALE a) massive, carbonaceous; b) with minor sandstone, siltstone bands; c) with many sandstone siltstone bands; d) siliceous and/or silicified; e) calcareous with thin limestone interbeds; f) with thin light brown dolomitic bands.
- ? DM_1 SANDSTONE a) massive; b) laminated
- DM_{LST} LIMESTONE
- DM_{CHT} CHERT Dark green to brown, banded

DEVONIAN

UNCONFORMITY (ST CYR FAULT?)

ASKIN GROUP

DEVONIAN

- SD_4 QUARTZITE
- SD_3 DOLOSTONE locally replaced by chert
- SD_2 ARGILLITE/SHALE locally dolomitic and micaceous
- SD_1 AMYGDALOIDAL ANDESITE

SILURIAN

TINTINA FAULT

ROAD RIVER FORMATION

SILURIAN

- OS SHALE graptolitic

ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION

ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs interbedded with rust-coloured siltstones, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS rust-coloured mudstone, siltstone, chert, limestone and graywacke.

YANGORDA FORMATION

- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3G).
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chloritic rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION

ORDOVICIAN

- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
	do	dolomitic
	si	silicified
	cy	clay altered
	cl	chloritic
	se	sericitic
	mc	micaceous
	gr	graphitic
	sp	spidotic
	ch	chert replacement
DETRITUS:	pe	pebbly
	sa	sandy
	sl	silty
BEDDING:	ma	massive
	pl	planar
	no	nodular
	wa	wavy
	sb	x-bedded
	la	laminated
ANGULARITY:	bx	brecciated
	cg	conglomeratic

DRILL CROSS SECTIONS

91-50 (711.3m) 35mS — Diamond drill hole trace with hole number, elevation ASL, distance from section.

Hole ≥ 30m off plane of section.

Hole ≥ 10m ≤ 30m off plane of section.

91-50 5mN — Hole within 10m of plane of section.

Piercing point on section plane.

30 — Bedding plane to core axis.

Graphitic Zone

Shear Zone

—any unit described as "siliceous" and/or "silicified"

Assay average interval

Zn %

Pb %

Ag g/t

6.7m 10.6, 1.3, 25.6 — 7% Zn + Pb cut off grade

9.0m 9.0, 1.1, 24.7 — 5% Zn + Pb cut off grade

SCALE

50 0 50 100

TOTAL ENERGOLD CORP.

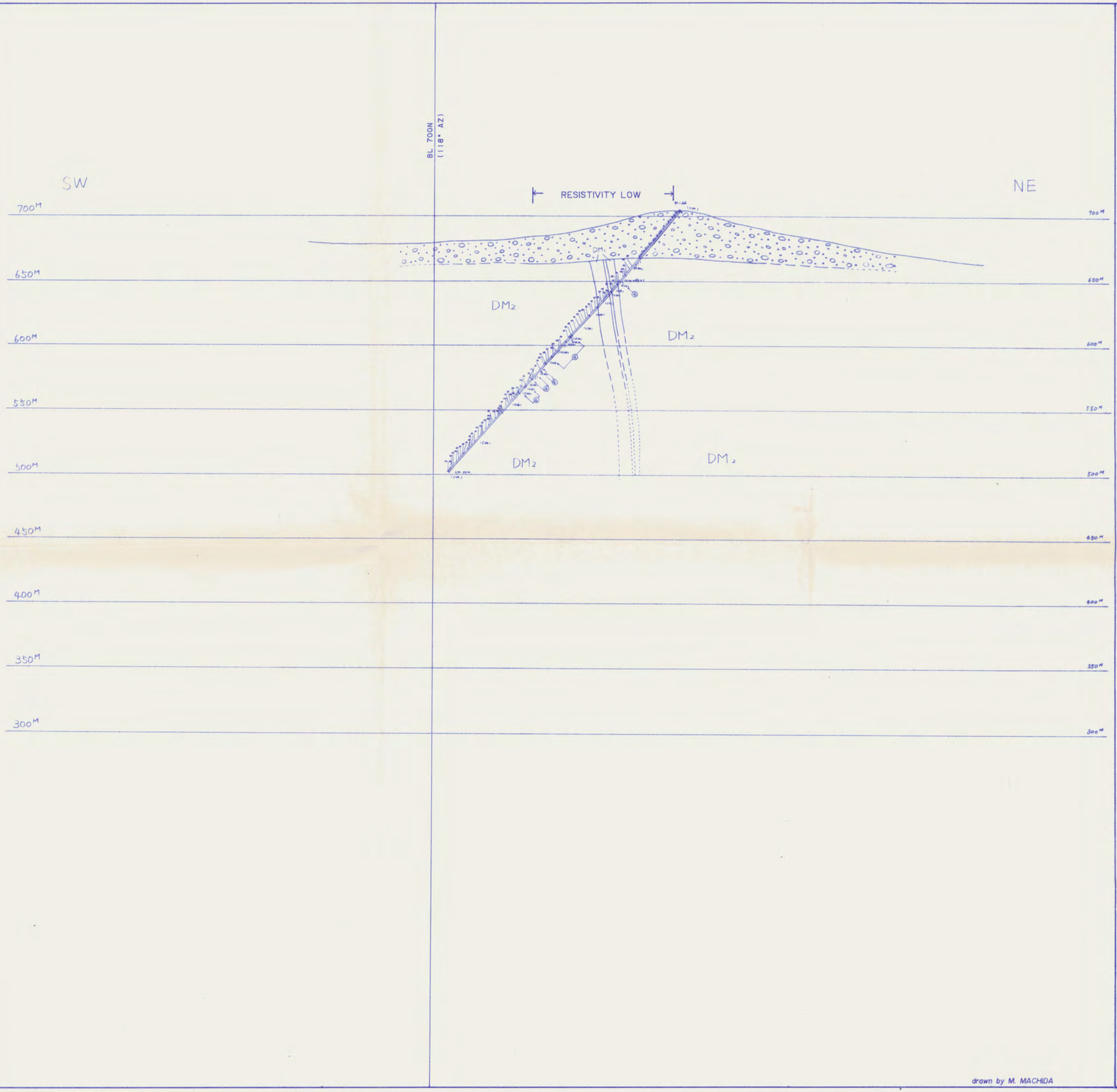
VERTICAL CROSS-SECTION

093013 360W

BL700N, 118° AZ

(LOOKING NORTHWEST)

DATE Nov 91	FIGURE 51
N.T.S. 105 L/14	SCALE 1:2000



drawn by M. MACHIDA

LITHOLOGY LEGEND

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∿∿∿ TINTINA FAULT ∿∿∿

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SILURIAN

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ORDOVICIAN

KECHIKA GROUP MENZIE CK FORMATION
ORDOVICIAN

- CO_{4c} MAFIC VOLCANIC TUFF green, chloritic (formerly 6A1)
- CO_{4b} VOLCANICS green, chloritic tuffs interclassed with red-coloured siltstones, mudstones and limestones. (formerly 6A2)
- CO_{4a} SEDIMENTARY ROCKS red-coloured mudstone, siltstone, chert, limestone and greywacke.

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- CO_{3c} PHYLLITE calcareous interbedded with limestone and dolostone. Also chloritic (formerly 5D)
- CO_{3b} MAFIC METAVOLCANIC ROCKS fine to medium grain chloritic tuffaceous rocks (formerly 5C)
- CO_{3a} PHYLLITE calcareous, undifferentiated (formerly 5)

MT MYE FORMATION

- CO_{2e} PHYLLITE chlorite ± sericite ± biotite, may contain calcareous laminae (formerly 3G).
- CO_{2d} PHYLLITE graphitic (formerly 3E)
- CO_{2c} PHYLLITE calcareous, graphitic (formerly 3E1)
- CO_{2b} MAFIC METAVOLCANIC ROCKS chlorite rich tuffaceous rocks (formerly 3B)
- CO_{2a} PHYLLITE undifferentiated

CAMBRIAN

RABBITKETTLE FORMATION
ORDOVICIAN

- CO_1 ARENITE dolomitic, calcareous, with micaceous silty banded limestone and calc-silicate

CAMBRIAN

DESCRIPTIVE SUBSCRIPTS

ALTERATION:	ca	calcareous
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	si	silicified
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	cl	chloritic
	se	sericitic
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	gr	graphitic
	ep	epidotic
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BEDDING:	ma	massive
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	no	nodular
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	la	laminated
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G — Graphitic Zone

Shear Zone

—any unit described as "siliceous" and/or "silicified"

Assay average interval

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Pb %

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6.7m 10.6, 1.3, 25.6 — 7% Zn + Pb cut off grade

9.0m 9.0, 1.1, 24.7 — 5% Zn + Pb cut off grade

SCALE

50 0 50 100

TOTAL ENERGOLD CORP.

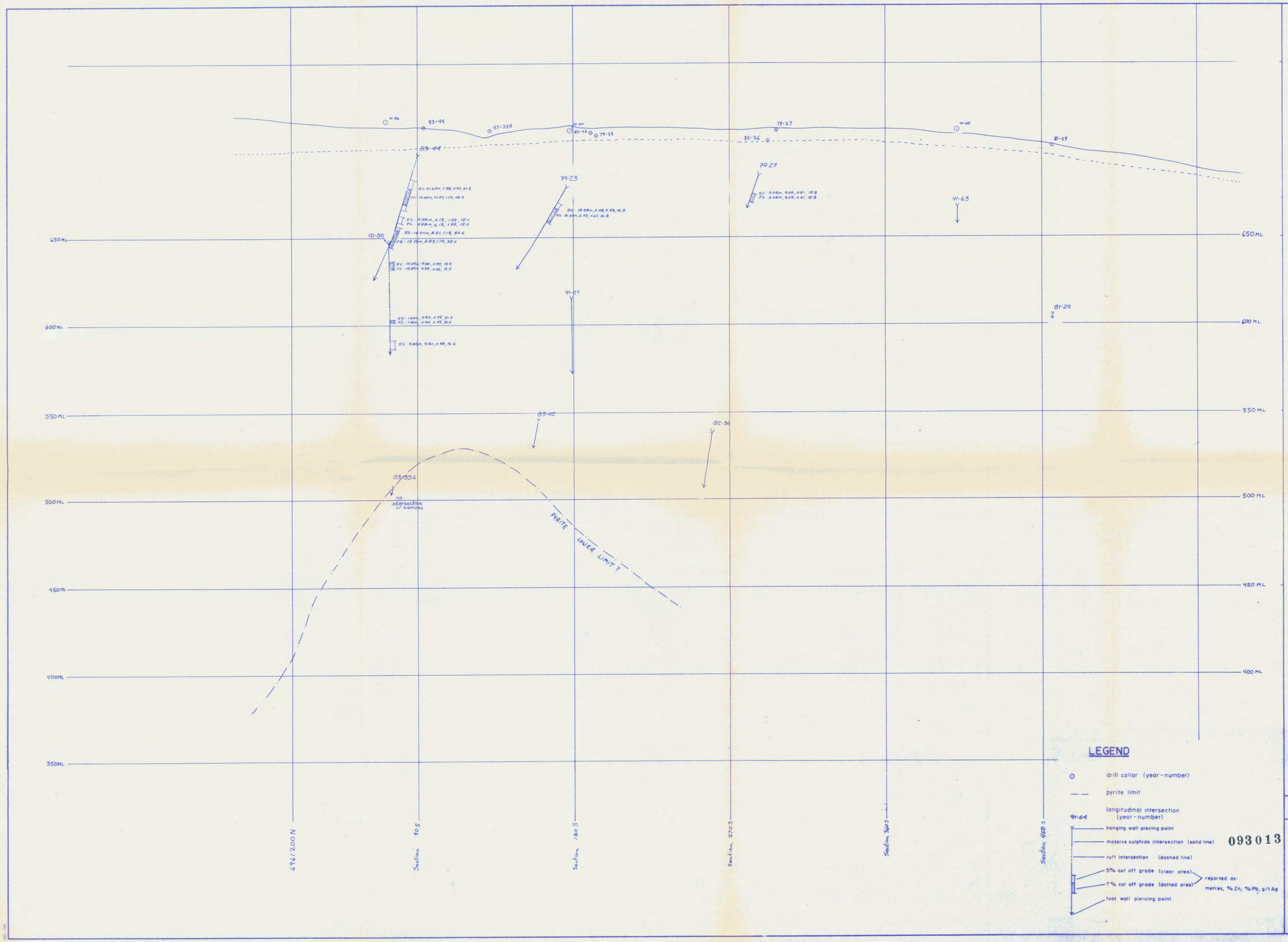
VERTICAL CROSS-SECTION

1170W

093013 BL 700N, 118 °AZ

(LOOKING NORTHWEST)

DATE Nov 91	FIGURE 52
N.T.S. 105 L/14	SCALE 1:2000



093013

LEGEND

MINE:

- DRIFTS AND CROSSCUTS
- SUB LEVELS
- RAISE
- SHAFT OR VERTICAL RAISE
- DUMP OR MILLHOLE
- SURVEY STATION, WITH ELEVATION 2800.215
- DIAMOND DRILL INTERSECTION
- ROCK BOLTING
- TIMBER
- TIMBER BULKHEAD
- SEAL
- SEAL AND MANDOOR
- SEAL AND REGULATOR
- DRIFT DOORS
- DRIFT DOORS AND REGULATOR
- FANS:
  - CENTRIFUGAL
  - VANE-AXIAL
  - REVERSIBLE

SURFACE:

- CONTOUR LINES 2000 BROWN
- CREEK, RIVER OR LAKE BLUE
- INTERMITTANT WATER COURSE BLUE
- MARSH
- MAIN ROAD
- SECONDARY ROAD
- TRAIL
- BRIDGE OR OVERPASS
- CULVERT OR UNDERPASS
- BUILDINGS TO SCALE
- CRIBWORK
- CUT OR FILL CREST
  - TOE
- DIAMOND DRILL HOLE
- FENCE
- POWER LINE RED
- RAILWAY AND RIGHT OF WAY SMALL SCALE
  - LARGE SCALE

SHEET INDEX

E	D					C	
F	A1	A2	A3	A4	A5	b3	b4
	A10	A9	A8	A7	A6	B	
	A11	A12	A	A14	A15		
	A20	A19	A18	A17	A16	b2	b1
	A21	A22	A23	A24	A25		
G	H					I	

SCALE 1:1,000

LONGITUDINAL SECTION A

BL. 200N, 118° AZ

(Looking Northeast)

MAP No. _____ FIGURE 53

DRAWN BY: R. ZURAN

DATE: DECEMBER 1991



LEGEND

- drill collar (year-number)
- pyrite limit
- longitudinal intersection (year-number) — 91-64
- hanging wall piercing point
- massive sulphide intersection (solid line)
- tuff intersection (dashed line)
- 5% cut off grade (clear area)
- 7% cut off grade (dotted area)
- reported as: metres, % Zn, % Pb, g/t Ag
- foot wall piercing point

093013

LEGEND

MINE:

- DRIFTS AND CROSSCUTS
- SUB LEVELS
- RAISE
- SHAFT OR VERTICAL RAISE
- DUMP OR MILLHOLE
- SURVEY STATION, WITH ELEVATION ⊙ 2800.215
- DIAMOND DRILL INTERSECTION
- ROCK BOLTING
- TIMBER
- TIMBER BULKHEAD
- SEAL
- SEAL AND MANDOOR
- SEAL AND REGULATOR
- DRIFT DOORS
- DRIFT DOORS AND REGULATOR
- FANS:
  - CENTRIFUGAL
  - VANE-AXIAL
  - REVERSIBLE

SURFACE:

- CONTOUR LINES 2000 BROWN
- CREEK, RIVER OR LAKE BLUE
- INTERMITTANT WATER COURSE BLUE
- MARSH
- MAIN ROAD
- SECONDARY ROAD
- TRAIL
- BRIDGE OR OVERPASS
- CULVERT OR UNDERPASS
- BUILDINGS TO SCALE
- CRIBWORK
- CUT OR FILL CREST
  - TOE
- DIAMOND DRILL HOLE
- FENCE
- POWER LINE RED
- RAILWAY AND RIGHT OF WAY SMALL SCALE / LARGE SCALE

SHEET INDEX

E		D				C	
F	A1	A2	A3	A4	A5	b3	b4
	A10	A9	A8	A7	A6		
	A11	A12	A	A14	A15	B	
	A20	A19	A18	A17	A16	b2	b1
	A21	A22	A23	A24	A25		
G		H				I	

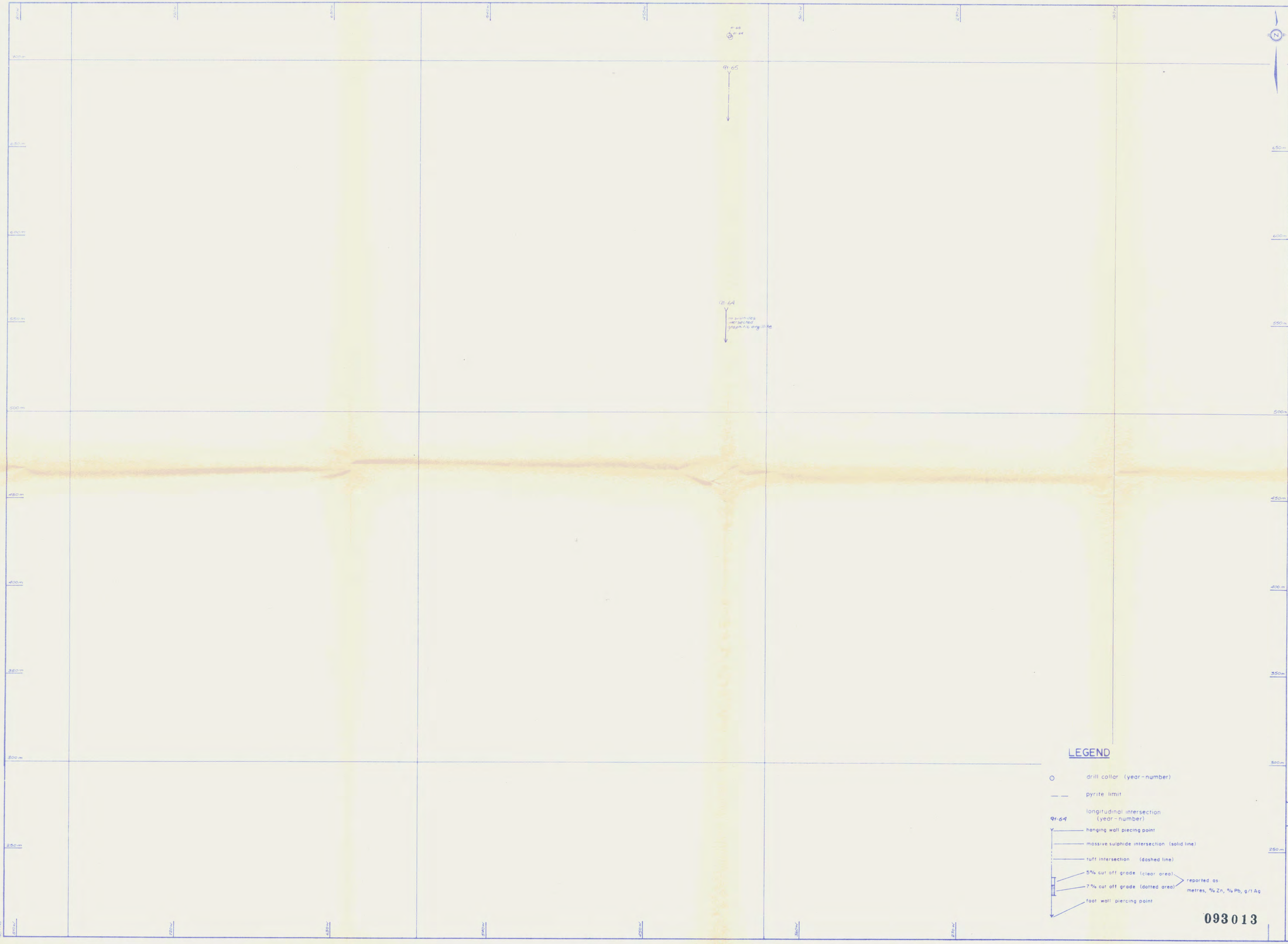
SCALE 1:1,000
0 10 20 40 60
meters

MOUNT SKUKUM GOLD MINING CORP.

LONGITUDINAL SECTION B
BL. 2000E, 000° AZ.

(Looking East)

MAP No. _____ FIGURE 54
DRAWN BY: R. ZURAN
DATE: DECEMBER 1991



LEGEND

- drill collar (year-number)
- pyrite limit
- 91-64 longitudinal intersection (year-number)
- hanging wall piecing point
- massive sulphide intersection (solid line)
- tuff intersection (dashed line)
- 5% cut off grade (clear area) — reported as metres, % Zn, % Pb, g/t Ag
- 7% cut off grade (dotted area)
- foot wall piercing point

093013

LEGEND

MINE:

- DRIFTS AND CROSSCUTS
- SUB LEVELS
- RAISE
- SHAFT OR VERTICAL RAISE
- DUMP OR MILLHOLE
- SURVEY STATION, WITH ELEVATION 2800 215
- DIAMOND DRILL INTERSECTION
- ROCK BOLTING
- TIMBER
- TIMBER BULKHEAD
- SEAL
- SEAL AND MANDOOR
- SEAL AND REGULATOR
- DRIFT DOORS
- DRIFT DOORS AND REGULATOR
- FANS:
  - CENTRIFUGAL
  - VANE-AXIAL
  - REVERSIBLE

SURFACE:

- CONTOUR LINES 2000 BROWN
- CREEK, RIVER OR LAKE BLUE
- INTERMITTANT WATER COURSE BLUE
- MARSH
- MAIN ROAD
- SECONDARY ROAD
- TRAIL
- BRIDGE OR OVERPASS
- CULVERT OR UNDERPASS
- BUILDINGS TO SCALE
- CRIBWORK
- CUT OR FILL CREST
- TOE
- DIAMOND DRILL HOLE
- FENCE
- POWER LINE RED
- RAILWAY AND RIGHT OF WAY SMALL SCALE
- LARGE SCALE

SHEET INDEX

E	D					C	
F	A1	A2	A3	A4	A5	b3	b4
	A10	A9	A8	A7	A6		
	A11	A12	A	A14	A15	B	
	A20	A19	A18	A17	A16	b2	b1
	A21	A22	A23	A24	A25		
G	H					I	

SCALE 1:1,000

0 10 20 40 60

MOUNT SKUKUM GOLD MINING CORP.

LONGITUDINAL SECTION C

BL. 700N, 118° Az

(Looking Northeast)

MAP No. _____ FIGURE 55

DRAWN BY: R. ZURAN

DATE: DECEMBER 1991