ARIS SUMMARY SHEET

District Geologist, Nelson Off Confidential: 94.12.06

ASSESSMENT REPORT 23315 MINING DIVISION: Fort Steele

PROPERTY: Horn
LOCATION: LAT 49 36 00 LONG 116 13 00
UTM 11 5494234 556605
NTS 082F09E

CAMP: 001 Purcell Belt (Sullivan)

CLAIM(S): Horn 24
OPERATOR(S): Metall Mining
AUTHOR(S): Burge, C.M.
REPORT YEAR: 1994, 60 Pages
COMMODITIES SEARCHED FOR: Lead,Zinc
KEYWORDS: Helikian,Aldridge Fromation,Quartzites,Gabbro sills,Fragmentals
WORK DONE: Drilling,Geochemical
DIAD 1438.3 m 2 hole(s);NQ
Map(s) - 1; Scale(s) - 1:10 000
SAMP 50 sample(s) ;ME
RELATED REPORTS: 07676,10311,16971,22461,23002
MINFILE: 082FNE062

Metall Mining Corporation

Diamond Drilling Assessment Report

Horn Property

Fort Steele Mining Division

NTS 82F/9

Lat. 49° 36' Long. 116° 04'

Owner: Consolidated Ramrod Gold Corp.

Operator: Metall Mining Corp.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

23,315

Colin Burge
Metall Mining Corp.

Vancouver, B.C.
March 4, 1994

Table of Contents

page

INTRODUCTION 1

Location and Access 1

Physiography 1

Property and Ownership 3

History 3

1993 WORK PROGRAM 5

GEOLOGY 5

Regional Geology 5

Property Geology 5

DIAMOND DRILLING 6

RESULTS 6

Lithogeochemistry 7

CONCLUSIONS AND RECOMMENDATIONS 7

List of Appendices

Appendix I Itemized Cost Statement

Appendix II Statement of Qualifications

Appendix III Claim Status

Appendix IV Drill Logs: H-93-07, H-93-08

Appendix V Geochemical Analytical Procedures

Appendix VI Geochemical Results

List of Figures

Figure 1 Horn Property Location Map 2

Figure 2 Claim Configuration 4

Figure 3 Drill Hole Location Map in pocket

INTRODUCTION

The Clair North and Clair South claim groups form the western portion of the Horn property located about 25 km north of Cranbrook, B.C.

The Horn property is underlain by Proterozoic-age Aldridge formation sediments and sills which host the giant Sullivan Pb-Zn massive sulphide deposit. The drill holes reported herein explore stratigraphy hosting the Clair Showing, a mineralized fragmental occurrence similar to fragmentals associated with the Sullivan deposit.

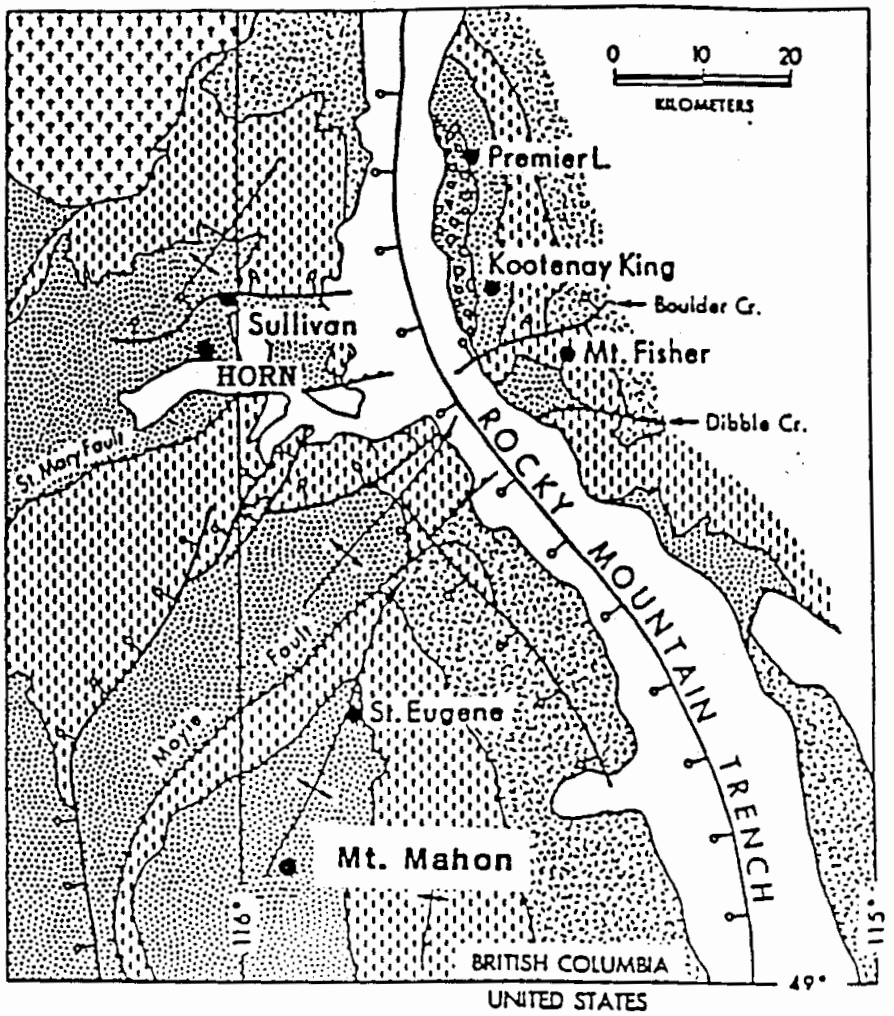
Location and Access

The Horn property covers the north facing slopes on the south side of St. Mary Lake and stretches east to cover an area locally known as "the Pudding Burn" just west of the Pitt Creek drainage. The Clair claim groups form the western portion of the property and are easily accessed via 15 kms of paved road leaving Marysville along the north side of the St. Mary River valley. At this point turn south and cross the St. Mary River and proceed south again on the Hellroaring Creek road. The Clair Showing area can be reached by travelling west on the St. Mary's-Meachen road along the south side of St. Mary Lake.

Physiography

The Horn property is situated in the Purcell Mountains at elevations ranging from 1000 meters in the St. Mary valley to 2150 meter peaks of mountains south of St. Mary Lake.

The forest cover consists of immature stands of fir and spruce as well as alder. On the eastern portion of the property there is a large area of blown down fir trees



PHANEROZOIC

Undifferentiated

White Creek batholith

HELIKIAN-PURCELL SUPERGROUP

Van Creek, Nicol Creek and younger

Creston and Kitchener

Aldridge / Fort Steele

Thrust fault .....

Normal fault .....

Anticlinal fold .....

from Hoy 1989 *Washington State Information Circular 86*

FIGURE 1 HORN LOCATION MAP

which have been subsequently burned. The climate is cool and dry without snow in the upper reaches between June and October.

Property and Ownership

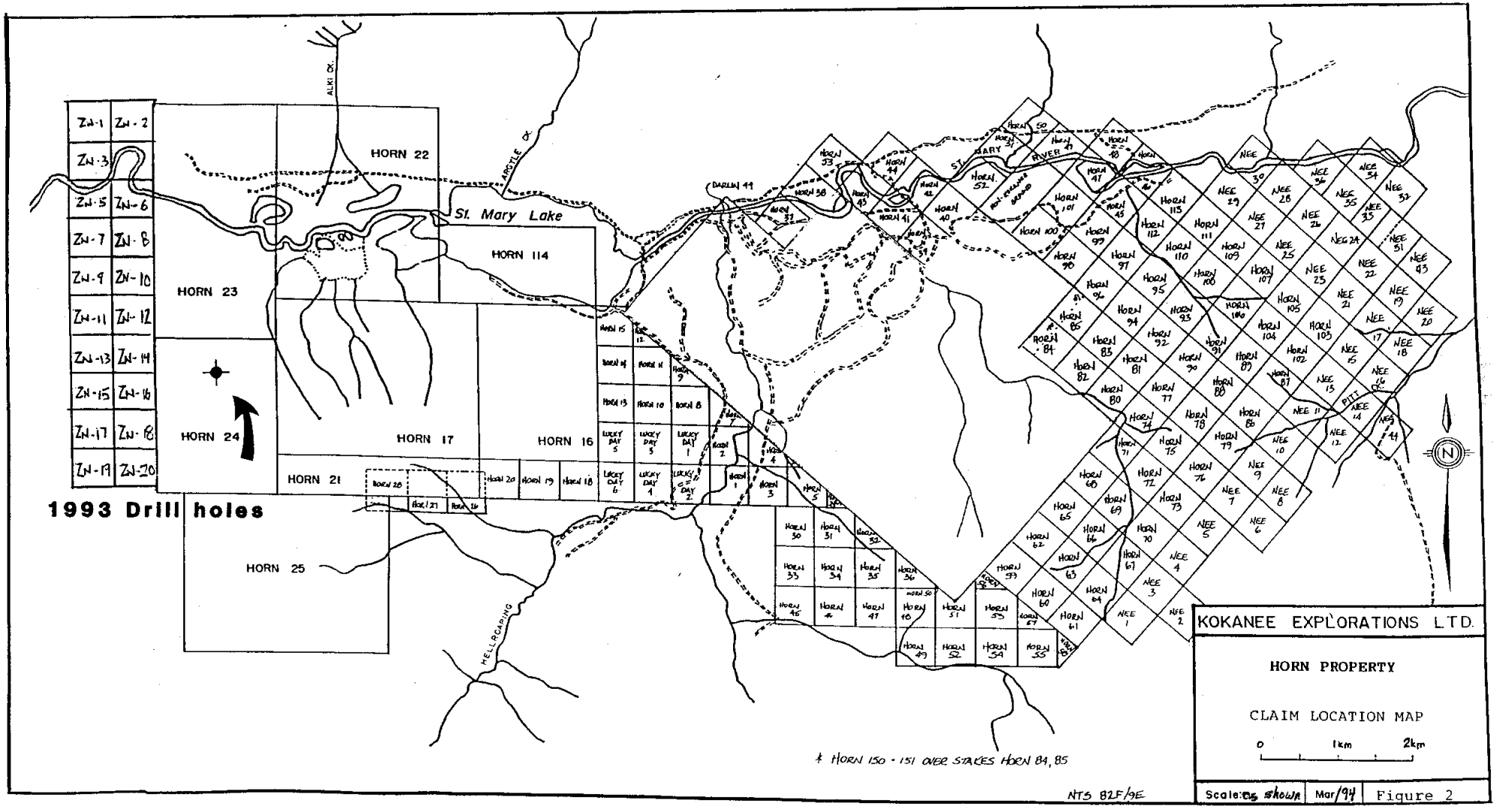
The Horn property consists of 224 individual claims for a total of 296 units. **Metall Mining Corp.** (**MMC**, formerly Minnova Inc.) entered a joint venture agreement to explore the claims with Consolidated Ramrod Gold Corp. (formerly Kokanee Explorations Ltd.) in the fall of 1991. The current status of the claims is listed in Appendix III.

History

The western part of the Horn property has seen several episodes of exploration focusing on the Clair Showing. A DEEPEM survey was performed by **MMC** in 1992. This work is described in Assessment Report # 22,461. The Clair stratigraphy was explored by Cominco in 1979 and 1981 with two drill holes (A.R. # 10,311 and # 7676).

1993 WORK PROGRAM

Two holes were drilled on the Clair claim groups for a total of 1438 meters. The holes were part of the 1993 summer program which involved a DEEPEM survey as well as rock and soil sampling in other areas of the Horn property. The core is stored at Consolidated Ramrod Gold Corp.'s Vine field facility near Moyie Lake, B.C.


1993 Drill holes
St. Mary Lake
HORN 22
HORN 23
HORN 24
HORN 25
HORN 17
HORN 16
HORN 21
HORN 114
ALKI CK.
ARGYLE CK.
HELLROARING
ST. MARY RIVER
PITT CK.
DARLIN 49
ZN-1
ZN-2
ZN-3
ZN-5
ZN-6
ZN-7
ZN-8
ZN-9
ZN-10
ZN-11
ZN-12
ZN-13
ZN-14
ZN-15
ZN-16
ZN-17
ZN-18
ZN-19
ZN-20
* HORN 150 - 151 OVER STAKES HORN 84, 85
NTS 82F/9E
KOKANEE EXPLORATIONS LTD.
HORN PROPERTY
CLAIM LOCATION MAP
0
1km
2km
Scale: as shown
Mar/94
Figure 2

GEOLOGY

Regional Geology

The Proterozoic-age Aldridge Formation covers a large part of south-eastern B.C. and the southwest corner of Alberta. The Aldridge consists of upper greenschist facies sediments and semi-conformable gabbroic sills known as the Moyie Intrusions. The Aldridge package forms three main structural blocks divided by the northeast trending Cranbrook and Moyie Faults. Each block forms a broad, open, northeast plunging anticline and it is near the anticlinal axis of the northern most structural block that the Sullivan deposit occurs. The Sullivan is a 160 million ton > 12% Pb-Zn, 70 gpt Ag conformable, massive sulphide sheet currently being mined by Cominco Metals Ltd. The deposit is underlain by a tourmaline bearing stockwork system developed in Lower Aldridge thin bedded argillites and quartzites and is overlain by a blanket of albitized Middle Aldridge quartzites.

The Horn property covers the southern extent of the structural block that hosts the Sullivan. The major portion this block comprises the Sullivan Mine property. The Clair prospect is situated at the contact between the Lower and Middle Aldridge approximately 20 kilometers southwest of the mine.

Property Geology

The Horn property is underlain by Lower and Middle Aldridge formation sediments and Moyie dikes and sills. In the Clair area the package forms a steep west dipping panel of medium to thick bedded quartzites overlying thinly bedded argillites, siltstones, and quartzites. The fragmentals occur at the contact between these two units. The intrusive rocks range from diorite to gabbro in composition and are medium to coarse grained. Please refer to Assessment Report # 16971 for a detailed discussion of geology of the Clair area.

DIAMOND DRILLING

H-93-7 was collared 1 kilometer south of the Clair Showing on a rough 4WD switchback road climbing the east side of a creek valley. The hole was drilled steeply east in order to test a deep PEM conductor recorded in the 1992 survey. A downhole PEM survey detected an offhole conductor and a second hole, H-93-08, was drilled on the same section piercing the target stratigraphy about 300 meters updip.

RESULTS

H-93-7 and H-93-8 penetrated a section of very thick bedded quartzites interpreted to represent Middle Aldridge turbidites before intersecting the Clair fragmental unit. The fragmental is 150 meters thick in the updip hole and thins to about 100 meters as it dips steeply west. The fragmental is actually a well sorted, poorly bedded conglomerate consisting of a variety of rounded clasts in a fine grain muscovite-biotite matrix. The clasts are moderately flattened and aligned at about 45 degrees to the holes possibly due to compaction. Most of the clasts generally range in size from less than .5 cm to about 1 X 3 cm in size. At the base of the thicker intersection the unit becomes framework supported and very coarse with clast sizes up to 5 cm (larger than the core diameter). The conglomerate package contains screens of clast rich material that can be 10 to 20 meters thick followed by intervals that appear clast poor possibly due to a weak muscovite alteration making them difficult to distinguish. The holes were terminated in typical Lower Aldridge thinly bedded siltstones and argillites.

Trace amounts of disseminated pyrrhotite commonly occur throughout the sediment package and only rarely exceeds 5% concentrations over narrow widths. The fragmental unit contains numerous (2-3%) pyrrhotite bearing clasts. The clasts can contain up to 60% pyrrhotite. A few solid sulphide clasts were observed. Traces of sphalerite, arsenopysite and chalcopyrite occur locally but no significant conformable beds containing

base metal sulphides were intersected. The best intercept was a narrow 1 cm wide sphalerite-galena vein intersected at 596.3 meters in H-93-7 grading **2.4% Zn over 0.20 meters.**

Lithogeochemistry

Thirty-five lithogeochemical and fifteen geochemical samples were taken from the core. All were analyzed at Min-En Labs of North Vancouver. Litho samples were analyzed for SiO_2, TiO_2, CaO, MgO, Na_2O, K_2O, MnO_2, Fe_2O_3, (total iron), Al_2O_3, Sr, Zn, and Ba by ICP analysis of a crushed and digested bead formed by fusion with lithium borate. Ag, Cu, Pb, Zn, B, Sb and As were analyzed by standard ICP techniques using an aqua-regia digestion. Fluorine and Boron were analyzed by fusion methods with their respective specific ion electrode and ICP finish. Geochem. samples were analyzed for Cu, Pb, Zn, Ag, Au by standard ICP techniques.

The lithogeochemical samples were taken routinely approx. every 30 m down the hole (in sediments only). The lithogeochemistry does not show any marked deviation from fresh Aldridge sediment.

CONCLUSIONS AND RECOMMENDATIONS

Two holes cored a thick sequence of steep, west dipping fragmental rocks approximately 1 km south of the Clair Showing. The Clair Corridor is a north - south trending zone of fragmental rocks at least 5 kilometers in length. No significant mineralization or tourmalinization was observed in the holes.

Further exploration should pursue the fragmental south toward the Clair corridor's eventual intersection with the St. Mary's structure. Any east - west trending structures that are recognized intersecting this trend could be focal points for hydrothermal systems responsible for deposition of sedex deposits.

Appendix I

Itemized Cost Statement

Itemized Cost Statement

Drilling

Leclerc Drilling Ltd., Beaverdell, B.C.	
1438 m @ 62.83/m	90,345.83
Gary Wells 7 days @ $350/day	2,450.00
Colin Burge 20 days @ $350/day	7,000.00
	$99,795.83

Geochemistry

Whole Rock Analyses	
35 @ $33.50	1172.50
Geochems (trace only)	
15 @ $17.25	258.75
	$1431.25

Transportation

Airline	500.00
4WD Truck 27 days@ $50/day	1350.00
Fuel	500.00
	$2350.00

Room and Board

Hotels and Meals 3 X $350/week	1050.00
Meals, Field Supplies	1350.00
	$2400.00

Report Preparation

C. Burge 4 days @ $350/day	1400.00
Drafting, Typing, Computer time	350.00
	$1750.00

Total	**$107,727.08**

Appendix II

Statement of Qualifications

Statement of Qualifications

I, **Colin Michael Burge** hereby certify that:

1. I have worked as an exploration geologist since graduation from the University of Waterloo, Waterloo, Ontario with a BSc. in Earth Sciences (1981).

2. I am currently employed as a Senior Project Geologist for **Metall Mining Corporation**, 3rd Floor - 311 Water St., Vancouver, B.C. and have been with this company and its predecessor, Minnova Inc. for seven years.

3. I personally carried out or supervised the work reported herein.

PROFESSIONAL
PROVINCE OF
C. M. BURGE
BRITISH COLUMBIA
GEOSCIENTIST

Colin M. Burge

March 4, 1994
Date

Appendix III

Horn Property Claim status

Horn Property

CLAIM #	CLAIM NAME	UNITS	RECORD DATE	EXPIRY DATE
212445	HORN 1	1	21-May-91	21-May-95
212446	HORN 2	1	21-May-91	21-May-95
212447	HORN 3	1	22-May-91	22-May-95
212448	HORN 4	1	22-May-91	22-May-95
212449	HORN 5	1	22-May-91	22-May-95
212450	HORN 6	1	22-May-91	22-May-95
212451	HORN 7	1	20-May-91	20-May-95
212452	HORN 8	1	20-May-91	20-May-95
212453	HORN 9	1	20-May-91	20-May-95
212454	HORN 10	1	20-May-91	20-May-95
212455	HORN 11	1	20-May-91	20-May-95
212456	HORN 12	1	20-May-91	20-May-95
212457	HORN 13	1	21-May-91	21-May-95
212458	HORN 14	1	21-May-91	21-May-95
212459	HORN 15	1	21-May-91	21-May-95
212460	HORN 16	12	23-May-91	23-May-98
212461	HORN 17	20	24-May-91	24-May-99
212462	HORN 18	1	22-May-91	22-May-98
212463	HORN 19	1	22-May-91	22-May-98
212464	HORN 20	1	22-May-91	22-May-98
212465	HORN 21	5	22-May-91	22-May-98
300176	HORN 26	1	06-Jun-91	06-Jun-98
300177	HORN 27	1	06-Jun-91	06-Jun-98
300181	HORN 28	1	06-Jun-91	06-Jun-98
300182	HORN 29	1	06-Jun-91	06-Jun-95
300183	HORN 30	1	06-Jun-91	06-Jun-95
300185	HORN 31	1	06-Jun-91	06-Jun-95
300196	HORN 32	1	06-Jun-91	06-Jun-95
300197	HORN 33	1	06-Jun-91	06-Jun-95

300206	HORN 34	1	06-Jun-91	06-Jun-95
300208	HORN 35	1	06-Jun-91	06-Jun-95
300277	HORN 36	1	06-Jun-91	06-Jun-95
300325	HORN 25	20	05-Jun-91	05-Jun-99
300326	HORN 22	20	03-Jun-91	03-Jun-99
300327	HORN 23	18	04-Jun-91	04-Jun-00
300328	HORN 24	12	05-Jun-91	05-Jun-04
302045	HORN 45	1	14-Jul-91	14-Jul-95
302046	HORN 46	1	14-Jul-91	14-Jul-95
302047	HORN 47	1	14-Jul-91	14-Jul-95
302048	HORN 48	1	19-Jul-91	19-Jul-95
302049	HORN 49	1	14-Jul-91	14-Jul-95
302050	HORN 50	1	14-Jul-91	14-Jul-95
302051	HORN 51	1	14-Jul-91	14-Jul-95
302052	HORN 52	1	14-Jul-91	14-Jul-95
302053	HORN 53	1	14-Jul-91	14-Jul-95
302054	HORN 54	1	14-Jul-91	14-Jul-95
302055	HORN 55	1	14-Jul-91	14-Jul-95
302056	HORN 56	1	15-Jul-91	15-Jul-95
302057	HORN 57	1	15-Jul-91	15-Jul-95
302058	HORN 58	1	15-Jul-91	15-Jul-95
302059	HORN 59	1	15-Jul-91	15-Jul-95
302060	HORN 60	1	15-Jul-91	15-Jul-95
302061	HORN 61	1	15-Jul-91	15-Jul-95
302062	HORN 62	1	15-Jul-91	15-Jul-95
302063	HORN 63	1	15-Jul-91	15-Jul-95
302064	HORN 64	1	15-Jul-91	15-Jul-95
302065	HORN 65	1	15-Jul-91	15-Jul-95
302066	HORN 66	1	15-Jul-91	15-Jul-95
302067	HORN 67	1	15-Jul-91	15-Jul-95
302068	HORN 68	1	15-Jul-91	15-Jul-95
302069	HORN 69	1	15-Jul-91	15-Jul-95
302070	HORN 70	1	15-Jul-91	15-Jul-95

302071	HORN 71	1	15-Jul-91	15-Jul-95
302072	HORN 72	1	15-Jul-91	15-Jul-95
302073	HORN 73	1	15-Jul-91	15-Jul-95
302074	HORN 74	1	16-Jul-91	16-Jul-95
302075	HORN 75	1	16-Jul-91	16-Jul-95
302076	HORN 76	1	16-Jul-91	16-Jul-95
302077	HORN 77	1	16-Jul-91	16-Jul-96
302078	HORN 78	1	16-Jul-91	16-Jul-95
302079	HORN 79	1	16-Jul-91	16-Jul-95
302080	HORN 80	1	16-Jul-91	16-Jul-95
302081	HORN 81	1	16-Jul-91	16-Jul-96
302082	HORN 82	1	16-Jul-91	16-Jul-95
302083	HORN 83	1	16-Jul-91	16-Jul-95
302084	HORN 84	1	16-Jul-91	16-Jul-95
302085	HORN 85	1	16-Jul-91	16-Jul-95
302240	HORN 37	1	27-Jun-91	27-Jun-95
302241	HORN 38	1	27-Jun-91	27-Jun-95
302242	HORN 39	1	27-Jun-91	27-Jun-95
302243	HORN 40	1	27-Jun-91	27-Jun-95
302245	HORN 42	1	27-Jun-91	27-Jun-95
302246	HORN 43	1	27-Jun-91	27-Jun-95
302247	HORN 44	1	27-Jun-91	27-Jun-95
302330	HORN 41	1	27-Jun-91	27-Jun-95
303015	HORN 86	1	11-Aug-91	11-Aug-95
303016	HORN 87	1	11-Aug-91	11-Aug-95
303017	HORN 88	1	11-Aug-91	11-Aug-96
303018	HORN 89	1	11-Aug-91	11-Aug-96
303019	HORN 90	1	11-Aug-91	11-Aug-96
303020	HORN 91	1	11-Aug-91	11-Aug-96
303021	HORN 92	1	11-Aug-91	11-Aug-96
303022	HORN 93	1	11-Aug-91	11-Aug-96
303023	HORN 94	1	11-Aug-91	11-Aug-95
303024	HORN 95	1	11-Aug-91	11-Aug-96

303025	HORN 96	1	13-Aug-91	13-Aug-95
303026	HORN 97	1	13-Aug-91	13-Aug-95
303027	HORN 98	1	13-Aug-91	13-Aug-95
303028	HORN 99	1	13-Aug-91	13-Aug-95
303029	HORN 100	1	13-Aug-91	13-Aug-95
303030	HORN 101	1	13-Aug-91	13-Aug-95
303932	HORN 114	8	10-Sep-91	10-Sep-00
305253	HORN 150	1	10-Oct-91	10-Oct-95
305254	HORN 151	1	10-Oct-91	10-Oct-95
305610	HORN 102	1	21-Oct-91	21-Oct-95
305611	HORN 103	1	21-Oct-91	21-Oct-95
305612	HORN 104	1	17-Oct-91	17-Oct-95
305613	HORN 105	1	17-Oct-91	17-Oct-95
305614	HORN 106	1	17-Oct-91	17-Oct-95
305615	HORN 107	1	17-Oct-91	17-Oct-95
305616	HORN 108	1	17-Oct-91	17-Oct-95
305617	HORN 109	1	17-Oct-91	17-Oct-95
305618	HORN 110	1	17-Oct-91	17-Oct-95
305619	HORN 111	1	17-Oct-91	17-Oct-95
305620	HORN 112	1	21-Oct-91	21-Oct-95
305621	HORN 113	1	21-Oct-91	21-Oct-95
306421	NEE 1	1	16-Nov-91	16-Nov-94
306422	NEE 2	1	16-Nov-91	16-Nov-94
306423	NEE 3	1	16-Nov-91	16-Nov-94
306424	NEE 4	1	16-Nov-91	16-Nov-94
306425	NEE 5	1	16-Nov-91	16-Nov-94
306426	NEE 6	1	17-Nov-91	17-Nov-94
306427	NEE 7	1	17-Nov-91	17-Nov-94
306428	NEE 8	1	17-Nov-91	17-Nov-94
306429	NEE 9	1	17-Nov-91	17-Nov-94
306430	NEE 10	1	17-Nov-91	17-Nov-94
306431	NEE 11	1	18-Nov-91	18-Nov-94
306432	NEE 12	1	18-Nov-91	18-Nov-94

306433	NEE 13	1	18-Nov-91	18-Nov-95
306434	NEE 14	1	18-Nov-91	18-Nov-95
306435	NEE 15	1	18-Nov-91	18-Nov-94
306436	NEE 16	1	18-Nov-91	18-Nov-94
306437	NEE 17	1	18-Nov-91	18-Nov-95
306438	NEE 18	1	18-Nov-91	18-Nov-95
306439	NEE 19	1	19-Nov-91	19-Nov-94
306440	NEE 20	1	19-Nov-91	19-Nov-94
306441	NEE 21	1	19-Nov-91	19-Nov-95
306442	NEE 22	1	19-Nov-91	19-Nov-94
306443	NEE 23	1	19-Nov-91	19-Nov-95
306444	NEE 24	1	19-Nov-91	19-Nov-95
306445	NEE 25	1	19-Nov-91	19-Nov-95
306446	NEE 26	1	19-Nov-91	19-Nov-95
306447	NEE 27	1	21-Nov-91	21-Nov-95
306448	NEE 28	1	21-Nov-91	21-Nov-95
306449	NEE 29	1	21-Nov-91	21-Nov-95
306450	NEE 30	1	21-Nov-91	21-Nov-95
306452	NEE 32	1	21-Nov-91	21-Nov-94
306453	NEE 33	1	21-Nov-91	21-Nov-94
306454	NEE 34	1	21-Nov-91	21-Nov-94
306455	NEE 35	1	21-Nov-91	21-Nov-94
306456	NEE 36	1	21-Nov-91	21-Nov-94
306457	NEE 43	1	20-Nov-91	20-Nov-94
306458	NEE 44	1	19-Nov-91	19-Nov-94
306739	LUCKY DAY 1	1	13-Dec-91	13-Dec-95
306740	LUCKY DAY 2	1	13-Dec-91	13-Dec-95
306741	LUCKY DAY 3	1	13-Dec-91	13-Dec-95
306742	LUCKY DAY 4	1	13-Dec-91	13-Dec-95
306743	LUCKY DAY 5	1	13-Dec-91	13-Dec-95
306744	LUCKY DAY 6	1	13-Dec-91	13-Dec-95
307299	NEE 31	1	01-Feb-92	01-Feb-95
309955	HORN 45(a)	1	03-Jun-92	03-Jun-95

309956	HORN 46(a)	1	03-Jun-92	03-Jun-95
309957	HORN 47(a)	1	03-Jun-92	03-Jun-95
309958	HORN 48(a)	1	03-Jun-92	03-Jun-95
309959	HORN 49(a)	1	03-Jun-92	03-Jun-95
309960	HORN 50(a)	1	03-Jun-92	03-Jun-95
309961	HORN 51(a)	1	03-Jun-92	03-Jun-95
309962	HORN 52(a)	1	03-Jun-92	03-Jun-95
309963	HORN 53(a)	1	03-Jun-92	03-Jun-96
321266	ZN-1	1	30-Sep-93	30-Sep-98
321267	ZN-2	1	30-Sep-93	30-Sep-98
321268	ZN-3	1	30-Sep-93	30-Sep-98
321269	ZN-4	1	30-Sep-93	30-Sep-98
321270	ZN-5	1	30-Sep-93	30-Sep-98
321271	ZN-6	1	30-Sep-93	30-Sep-98
321272	ZN-7	1	30-Sep-93	30-Sep-97
321273	ZN-8	1	30-Sep-93	30-Sep-97
321274	ZN-9	1	30-Sep-93	30-Sep-97
321275	ZN-10	1	30-Sep-93	30-Sep-97
321276	ZN-11	1	30-Sep-93	30-Sep-97
321277	ZN-12	1	30-Sep-93	30-Sep-97
321278	ZN-13	1	01-Oct-93	01-Oct-97
321279	ZN-14	1	01-Oct-93	01-Oct-97
321280	ZN-15	1	01-Oct-93	01-Oct-97
321281	ZN-16	1	01-Oct-93	01-Oct-97
321282	ZN-17	1	01-Oct-93	01-Oct-97
321283	ZN-18	1	01-Oct-93	01-Oct-97
321284	ZN-19	1	01-Oct-93	01-Oct-97
321285	ZN-20	1	01-Oct-93	01-Oct-97

Appendix IV

Drill Logs: H-93-07, H-93-08

HOLE NUMBER: H-93-07

MINNOVA INC.
DRILL HOLE RECORD

DATE: 8-March-1994
IMPERIAL UNITS: METRIC UNITS: X

PROJECT NAME: HORN
PROJECT NUMBER: 675
CLAIM NUMBER: HORN 23
LOCATION: ST. MARY'S LAKE

PLOTTING COORDS GRID: CLAIR
NORTH: 1031.00S
EAST: 3115.00W
ELEV: 1320.00

ALTERNATE COORDS GRID: IDEAL
NORTH: 7+ 0S
EAST: 7+35W
ELEV: 1310.00

COLLAR DIP: -77° 0' 0"
LENGTH OF THE HOLE: 770.20m
START DEPTH: 0.00m
FINAL DEPTH: 770.20m

COLLAR GRID AZIMUTH : 90° 0' 0"

COLLAR ASTRO. AZIMUTH : 63° 0' 0"

DATE STARTED: October 9, 1993
DATE COMPLETED: October 19, 1993
DATE LOGGED: October 19, 1993

COLLAR SURVEY: NO
MULTISHOT SURVEY: NO
RQD LOG: NO

PULSE EM SURVEY: YES
CAPPED: NO
HOLE SIZE: NQ

CONTRACTOR: LECLERC DRILLING
CASING: 18.3 M
CORE STORAGE: VINE VEIN

PURPOSE: TO TEST THE REGIONAL DEEPEM CONDUCTOR ASSOCIATED WITH THE CLAIR FRAGMENTAL

COMMENTS :

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments	Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
154.60	-	-78° 0'	ACID	OK		-	-	-	-	-	
255.20	-	-77° 0'	ACID	OK		-	-	-	-	-	
310.10	-	-76° 0'	ACID	OK		-	-	-	-	-	
401.40	-	-74° 0'	ACID	OK		-	-	-	-	-	
465.40	-	-73° 0'	ACID	OK		-	-	-	-	-	
538.60	-	-72° 0'	ACID	OK		-	-	-	-	-	
608.70	-	-69° 0'	ACID	OK		-	-	-	-	-	
672.70	-	-67° 0'	ACID	OK		-	-	-	-	-	
736.70	-	-65° 0'	ACID	OK		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 18.30	«OB»					Casing
18.30 TO 28.55	«QTZITE»	Colour: light grey Grain Size: f.gr. Locally well bedded, white cherty(?) sections occur locally 21.0 bedding @	55	‡18.3-28.55‡ «patchy biot-chl» -patchy weak to moderate biotite-chlorite 26.2-28.55 -pervasive, moderate to strong chlorite -biotite due to proximity of gabbro	‡18.3-28.55‡ «tr po, py» -traces of disseminated pyrite and pyrrhotitte	
28.55 TO 108.50	«GABBRO»	Colour: greenish grey Grain Size: f.gr. to m.gr. Massive to weakly foliated; upper contract indistinct may 1 or 2 small (0.2 m long) screens of altered Aldridge quartzites 40.2 foliation @ -altered fsp crystals aligned in foliation plane Central part of sill has good intergranular textures and is massive 72.05-73.25 -f.gr. foliated zone associated with qtz-carb vein at 72.7-73.05 72.5 foliation @ 74.8 -gabbro becomes f.gr. and light grey in colour - still massive 108.5 lower contact, sharp @	55 55 50	Chloritic throughout	Trace diss. po 49.4-49.8 -3% po, tr cp in siliceous zone within grabbro	
108.50 TO 115.10	«QTZITE, SL ST»	Colour: light grey to brownish grey Grain Size: f.gr. -well foliated 108.8 foliation @ -thin bedded grey quartzite beds interlayered with biotitic siltstones	45	-pervasive weak to moderate sericite-biotite-chlorite -silty beds are moderately to strongly biotitic with minor chlorite	-tr diss. po	Foliation and bedding are parallel

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		-quartzite beds 0.5-1.5 m thick 114 foliation @	40	113.7-115.1 -intense biot alteration due to proximity to gabbro		
115.10 TO 130.45	«GABBRO»	Colour: greenish grey Grain Size: f.gr. to m.gr. 115.1-119.5 -well foliated 118 foliation @ 119.5-128.15 -massive to weakly foliated 128.15-130.45 -well foliated -lower contact obscured by intense foliation - absence of leucoxene is end of gabbro	35	128.4-130.45 -1-2% light brown leucoxene aligned parallel to foliation	tr. diss. po, cp	
130.45 TO 332.40	«QTZITE»	Colour: grey Grain Size: v.f.gr. to f.gr. -upper part well foliated (130.45-132.0) - becoming massive to weakly bedded - quartzite is thickly bedded 131 foliation @ 134.5 bedding @ ‖134.9-135.25‖ «Fault» -fault gouge and milled qtzite in black argillaceous matrix	65 55	‖130.45-132.0‖ «mod biot-chl» -moderate biotite-chlorite ‖130.45-134.9‖ «2-3% qtz-ablite veins» - 2-3% qtz albite veins -albite is creamy white and occurs as fracture anhedral grains in qtz veins ‖138.3-163.3‖ «mod Ser» -moderate sercite with traces of creamy white albite in veinlets in upper of altered zone -alteration gives quartzite a buff yellowish grey colour - becoming patchy at depth -locally have good grid work type	‖130.45-140.35‖ «1% py, tr po» -sulphides occur as blebs, disseminations and wisps parallel to foliation or bedding	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
				alteration -traces of tourmaline = small (<0.1 mm) black specks		
		143 bedding @	50			
				-qtz veins with traces of py, po and tourmaline-rich selvages at 150.15-150.8 151.4-151.6		
				163.3-176.6 -patchy muscovite-sercite and pervasive weak biotite		
		167.5 bedding @	70			
		179.9-180.0 -fault - milled qtzite in black argillaceous matrix, tr py		‡176.6-184.15‡ «mod Ser» -pervasive, moderate sericite		
					189.1 -1 mm po veinlet - conductive	
				184.15-200.7 -pervasive, weak bio-chl with patchy ser		
		191.7 bedding @	80			
		199.7 bedding @	80			
				200.5-208.7 216.8-241.7 -1-3% white siliceous patches with 1% pink anhedral garnets + chl-biot spots -matrix is pervasively mod to strong biot +/- musc	-2-3% diss po, tr-1% py in siliceous patches	Siliecous patches locally look granophyric
		213.7 -flame structure indicates tops up hole -bedding @	80			
		236.3 bedding @	70			
		‡252.1-253.65‡ «Fault» -core well foliated, have fault gouge and milled qtzite in black argillite + green chlorite + qtz matrix				
		253 foliation @	50			
				253.65-332.4 -patchy sericite in a pervasively biotitic qtzite - bleached light grey colour along veins and veinlets	263.15-263.3 -5% po in siliceous patch 264.95-265.05	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
				-locally have 2-3% muscovite flakes	-2-35 po, tr py - weakly conductive	
				266.6-267.5 268.75-269.4 -siliceous zones with biot-chl-ser veins	266.6-267.5 268.75-269.4 -tr po, py in siliceous zones	
		277.4 bedding @	65		277.5-277.65 -5-10% po, tr cp as disseminations	
		285 bedding @	60	283.15-283.45 -qtz vein		
		299.5 bedding @	55		292.1-292.15 -5% po, tr cp as disseminations in a band parallel to bedding	
				300.05-310.85 -1% siliceous patches occur locally - contain chl-bio specks and veinlets plus diss. po, py +/- cp, largest one at 309.4-310.85	308.4-308.5 -5% po, tr cp in biotitic zone - sulphides occur as disseminations - conductive	
					309.4-310.85 -1-2% po, tr py occur as veinlets in siliceous zones - conductive over narrow intervals	
				zones of rounded (3-4 mm diam.) biot-qtz spots at: 304.25-304.35 306.6-306.9 313.9-316.25 316.75-317.05		
				‖318.3-321.0‖ «S sil» -strongly silicified zone with biot veinlets and remnants of qtzite occurring as angular frags		
		321.0-323.25 -strongly foliated - possible fault zone? - possible fault zone?		‖321.0-323.25‖ «S bio-chl» -intense biot-chl in strongly foliated zone		
		322 foliation @	25			
		325.5 bedding @	50			
				No alteration at contact with gabbro		

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
332.40 TO 474.70	«GABBRO»	Colour: greenish grey Grain Size: f.gr. to c.gr. -massive -contact marked by .1 meter qtz vein -f.gr. at contact becoming m.gr. within 3 meters -5% diss. leucoxene crystals		-nil	-nil	
					347.5 -trace cp in narrow qtz vein	
		348.5-349.1 -crystals indistinct; matrix weakly chlor/ser altered; porphyritic texture absent			348.5-349.1 -trace cp/po	
		350.5-351.6 -sheared texture			350.5-351.6 -tr cp	
		-occasional barren qtz veinlets common up to 5 cm thick				
		⫞375.5-376.0⫟ «Qtz vn» -barren; contains angular chloritic clasts probably digested gabbro				
		⫞393.5-394.9⫟ «AND D» -andesite dyke - green, f.gr., wk epidote, homogeneous				
		⫞418.6-420.5⫟ «AND D» -massive, grey green, 1-2 cm sheared margins, feldspar phenocrysts vague				
		434.2-439.7 -strongly foliated gabbro(?)		434.2-437.5 -mod sericite/chlorite -hornblende becomes chlorite altered	-nil	Sheared Unit
		437.0 foliation @	45			
		⫞437.35⫟ «FLT» -intensely deformed C-S fabric and gouge over 30 cm -very strongly developed penetrative fabric; leucoxenes common in gabbro still visible; sheared zone mantled by irregular carbonate vnlts				
		below 441.5 -resume massive equigranular diorite/gabbro				

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		453.2 -massive barren qtz vein - 2 cm wide Contact indistinct possibly @	30		459.6 -3 cm carbonate band/vein -tr cp, po oding vein margins	
474.70 TO 513.00	QUARTZITES, QTZ WACKES «QTZITE»	Colour: light grey green to brownish grey Grain Size: f.gr. -massive to well foliated unit @ -homogeneous -very thickly bedded 490.5 -1-2 mm vague, elliptical features, possible clasts aligned parallel to foliation 500.5 -flt, 1 cm sericite gouge 501.3 -qtz vein parallel to foliation - barren, 4 cm 506.4-513.0 -biotite bearing qtz wacke (argillaceous component)	25	¦474.7-506.4¦ «Stg Ser» -moderate to strong sericite development	-2-3% pyrite/pyrrhotite, disseminated and locally as vein stockworks 492.6 -weak pyrrrhotite stockwork over .3 m conductor -occasional 2x3 cm pyrrhotite rich elliptical clasts	4800.7-483.7 litho 16709 510-513 litho 16710
513.00 TO 558.40	«ARGILL QTZ WACKE»	Colour: brown grey Grain Size: f.gr. -contact gradational -thick bedded -foliation @ -argillaceous qtz wackes, biotite bearing 514.0 -barren, narrow qtz veins </= 3 cm wide	40		533.4 -laminations of pyrrhotite-biotite	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
					over 10 cm; does not conduct; assoc. with a large clasts or concretion; not laterally extensive; bedding @ 25 deg., but probably local	
				539.4-539.8 -moderate sericite zone mantling minor qtz veinlet	539.5 -minor qtz veinlet, <1 cm wide, tr sph, 1% galena or tetrahedrite(?)	
					543.7 -minor <1 cm qtz veinlet; tr sph and 1-2% pyrrhotite	544.6-547.6 litho 16711
		548.5-548.9 -bed of f.gr. material; mudstone? -bedding angle appears to be	60		548.2-548.3 -3-5% pyrrhotite, poor conductor	
		549.8 -laminated zone over 10 cm -bedding @	50		549.0 -tr sph, cp in minor carbonate vein 550-553.5 -occasional minor 1 cm qtz pyrrhotite veinlets; pyrrhotite forms lacework in veins and often conducts	
558.40 TO 745.40	CONGLOMERATE «CONG»	Colour: lt. grey to brown Grain Size: f.gr. -contact gradational -matrix supported -biotitic, argillaceous matrix, massive, no bedding -abundant 1x.5 cm size clasts flattened into foliation at top of unit -foliation @	40	-pyrrhotite rich clasts are accompanied by biotite	‖558.4-745.4‖ «po clasts» -pyrrhotite rich clasts make up bulk of clasts near top of unit, 1 cm size clasts contain up to 60% po	Probably forms a conformable unit
		below 568.2 -clasts are rare and vague, however bands up to 10 cm of clast rich material still occurs			568.0 -tr sph in minor qtz veinlets 568.3 -clast of pyrrhotite contains trace sphalerite	581.3-584.3 litho 16712
		Unit is cut by numerous qtz veinlets, 1-2 mm wide accompnaied by traces of pyrrhotite and			572.1 -trace arsenopyrite, sphalerite as	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		base metal			disseminations	
					572.3 -minor qtz veinlet carrying trace gn, sph	
					578.5 -1-2 cm pyrrhotite vein - trace sph	
		‖588.4-589.0‖ «AND D» -feldspar porphyritic -epidotized feldspars			586.4 -10 cm bands, 7-10% pyrrhotite	
		‖589.5-590.5‖ «AND D» -as above				
		‖593.5-594.5‖ «CLST D» -clastic dyke, heterolithic, carbonate altered, chill margin at lower ctc			-tr sph associated with siliceous material at clastic dyke upper margin	
					‖596.3‖ «Sph Stgr» -1 cm wide vein of sphalerite, pyrrhotite and galena	Conductive
		599.5-608.0 -resume clast rich material -elliptical clasts - well sorted includes rare muscovite rich clasts			‖598.0‖ «Po/Sph Stgr» -pyrrhotite-sphalerite, chalcopyrite over 1 cm @ 40 deg	Conductive
					‖604.7‖ «Po/Sph Stgr» -1-2 cm wide vein of pyrrhotite, 2-3% sphalerite	Narrow sulphide stringers at 30-40 deg to core axis
		608.0-623.4 -clast poor material, argillaceous wacke matrix			599.5-608.0 -3-5% Po rich clasts	611.7-614.7 litho 16713
					‖611.0‖ «Po Stgr» -1 cm wide, trace sphalerite	
		623.4-628.9 -clast rich interval, framework supported in places -fragmentf flattened or elongated @	50		‖628.6‖ «Po Bed?» -6-7 cm zone with 10% Po; tr sph; possible bed	
					630.0-652.1 -minor qtz-carb veinlets carry base	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		628.9-635.6 -clast poor wacke interval; occasional pyrrhotite rich clasts 1x3 mm in size 635.6-639.2 -clast rich - framework supported; heterolithic clast size usually 1x3 cm ‡639.6-640.6‡ «AND D» -andesite dyke, feldspar porphyritic; epidotized feldspars 639.2-645.0 -clast poor interval 645.0-650.3 -clast rich, numerous pyrrhotite rich flattened clasts 650.3-653.4 -siltstone interval with thin quartzite beds and muscovite rich zones bedding @ 653.4-666.6 -clast poor interval, weak sericite-muscovite masking fragments 666.6-710.0 -clast rich, rare cherty fragment, well sorted abundant pyrrhotite rich clasts, Po rich clasts seem to increase downhole	40	653.4-656.4 -weak to moderate sericite alteration	netal in trace amounts 649.8-650.0 -tr-1% sphalerite associated with qtz veinlets and disseminated in a silty unit ‡650.8‡ «tr sph» -3x2 cm clot of pyrrhotite and sphalerite 666.0 -pyrrhotite vein 1 cm possible bed 666.6-669.5 -Po rich clasts 672-676.7 -trace sphalerite and rare galena associated with narrow 1-2 mm quartz carbonate veinlets 686.0-709 -becomes pyrrhotite clast rich; 1 cm elliptical shapes	645.3-648.3 litho 16714 681.8-684.8 litho 16715

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		below 710 -biotite rich screens represent increase in argillaceous component		739.3-739.8 -bands of silicification	690.7 -tr sph in po-sph veinlet 2-3 mm wide 710.3 -sph-po veinlet assoc. with quartz, irregular < 1 cm wide 717.8 -10 cm band, 7-10% pyrrhotite, tr arsenopyrite	718.4-721.4 litho 16716
745.40 TO 765.60	ARGILLITE SILTSTONE «ARG/SLTST»	Colour: black and white stripes Grain Size: f.gr. -contact gradational over several meters -thin bedded alternating intervals of biotitic argillaceous and siliceous f.gr. material -occasional thickly laminated material -bedding parallel to cleavage @ 753.3 -fault, 2 cm gouge and rubble	50	-narrow bands, 2-5 cm thick of silicified sediment	-trace sphalerite and galena as disseminations and minor veinlets -1-2% pyrrhotite, finely disseminated parallel to bedding -silicified bands usually contain trace base metal	Lower Aldridge - possibly Sullivan muds(?) 745.8-748.8 litho 16717 762.6-765.6 litho 16718
765.60 TO 770.20	QUARTZITE «QTZITE» E.O.H.	Colour: grey Grain Size: f.gr. -gradational contact -thin bedded quartzites -screens of biotite rich material -bedding indistinct -flame structures			-1-2% po, tr sph, gn in minor veinlets	Tops uphole

Sample	From (m)	To (m)	Length (m)	ASSAYS Cu %	Pb %	Zn %	Ag gpt	Au gpt	GEOCHEMICAL Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	Cd ppm	As ppm	COMMENTS
BCD16736	596.15	596.35	0.20			2.39			168	6713	>10000	22.0	18			
BCD16737	597.90	598.10	0.20						161	392	6115	1.5	3			
BCD16750	749.70	750.70	1.00						39	265	311	1.1	1			
BCD16738	758.10	758.90	0.80						28	137	241	1.1	1			

Total amount of samples= 4
Total length sampled = 2.2M

Sample	From (m)	To (m)	Length (m)	Al2O3 %	Ba %	CaO %	Fe2O3 %	K2O %	MgO %	MnO2 %	Na2O %	P2O5 %	SiO2 %	TiO2 %	S %	TOT %	Ag ppm	As ppm	Ba ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb	LOI %	B ppm	F ppm
BCD16701	20.40	23.50	3.10	14.30	.07	2.90	6.34	3.49	1.85	.10	2.11	.12	63.98	.89	.69		.1	1	107	33	34	4	61	2	2.70	8	670
BCD16702	130.50	133.20	2.70	10.46	.02	8.84	9.22	1.09	5.10	.34	2.19	.07	47.72	.79	.12		.1	91	31	16	56	9	83	1	13.00	336	390
BCD16703	151.20	154.25	3.05	13.73	.065	2.32	3.84	3.02	1.03	.06	2.24	.01	69.32	.57	.10		.1	9	70	17	16	4	26	2	3.10	97	390
BCD16704	185.05	188.10	3.05	17.18	.095	1.27	5.22	4.40	1.24	.07	1.69	.02	63.83	.65	.16		.1	1	120	44	21	8	39	1	3.30	52	460
BCD16705	218.60	221.65	3.05	12.71	.065	2.11	3.14	3.09	.66	.07	2.74	.01	71.98	.53	.21		.6	21	112	16	13	5	33	1	1.90	13	400
BCD16706	255.20	258.25	3.05	13.39	.055	1.49	2.72	2.85	.78	.04	3.03	.01	72.35	.40	.09		.5	4	112	7	23	7	31	1	2.10	1	350
BCD16707	286.60	289.65	3.05	15.17	.095	1.06	3.18	4.48	.74	.06	2.22	.01	69.84	.48	.02		.1	1	147	6	13	8	32	2	1.70	1	590
BCD16708	313.90	316.25	2.35	14.51	.105	1.04	2.71	3.77	.70	.05	2.88	.01	71.38	.41	.03		.2	1	191	4	18	5	27	1	1.40	1	400
BCD16709	480.70	483.70	3.00	15.46	.050	.17	4.30	3.79	4.16	.02	.72	.04	66.26	.61	.56		.1	2	58	11	33	16	27	2	3.50	1	470
BCD16710	510.00	513.00	3.00	14.73	.065	1.00	4.70	3.53	1.56	.07	2.13	.02	68.67	.58	.67		.1	1	124	26	28	7	78	2	2.00	51	650
BCD16711	544.60	547.60	3.00	14.00	.075	1.18	4.60	3.69	1.42	.07	1.99	.02	69.50	.55	.63		.1	3	122	27	52	4	82	3	1.80	39	810
BCD16712	581.30	584.30	3.00	13.93	.075	1.72	4.51	3.36	1.54	.09	2.16	.04	68.91	.55	.53		.1	1	127	24	39	5	66	2	2.20	28	700
BCD16713	611.70	614.70	3.00	14.69	.060	1.47	4.96	3.46	1.58	.12	1.88	.02	68.32	.57	.59		.1	17	87	38	104	5	182	1	1.70	60	510
BCD16714	645.30	648.30	3.00	14.18	.070	1.44	4.85	3.49	1.61	.09	1.77	.01	68.82	.56	.63		.1	1	98	31	55	6	161	1	2.40	31	690
BCD16715	681.80	684.80	3.00	14.32	.070	1.39	4.76	3.61	1.56	.14	2.00	.02	68.84	.56	.58		.1	14	111	23	38	5	177	1	1.60	55	670
BCD16716	718.40	721.40	3.00	14.37	.065	1.53	4.40	3.60	1.46	.08	2.33	.01	69.08	.57	.49		.1	1	124	20	32	5	53	1	1.50	22	790
BCD16717	745.80	748.80	3.00	13.55	.085	2.51	4.47	3.29	1.42	.08	2.64	.03	68.69	.52	.62		.2	28	139	24	116	4	71	2	2.00	14	780
BCD16718	762.60	765.60	3.00	15.02	.125	1.10	5.01	4.08	1.58	.10	2.70	.08	66.94	.60	.51		.1	1	181	27	94	5	124	2	1.70	478	800

Total amount of samples= 18
Total length sampled = 53.4M

HOLE NUMBER: H-93-08

MINNOVA INC.
DRILL HOLE RECORD

DATE: 8-March-1994
IMPERIAL UNITS: METRIC UNITS: X

PROJECT NAME: HORN
PROJECT NUMBER: 675
CLAIM NUMBER: HORN 23
LOCATION: ST. MARYS LAKE

PLOTTING COORDS GRID: CLAIR
NORTH: 1031.00S
EAST: 3115.00W
ELEV: 1320.00

ALTERNATE COORDS GRID: IDEAL
NORTH: 0+ 0
EAST: 0+ 0
ELEV: 0.00

COLLAR DIP: -55° 0' 0"
LENGTH OF THE HOLE: 668.10m
START DEPTH: 0.00m
FINAL DEPTH: 668.10m

COLLAR GRID AZIMUTH : 90° 0' 0"

COLLAR ASTRO. AZIMUTH : 63° 0' 0"

DATE STARTED: October 20, 1993
DATE COMPLETED: October 28, 1993
DATE LOGGED: October 28, 1993

COLLAR SURVEY: NO
MULTISHOT SURVEY: NO
RQD LOG: NO

PULSE EM SURVEY: NO
CAPPED: NO
HOLE SIZE: NQ

CONTRACTOR: LECLERC DRILLING LTD.
CASING: 12.2 M
CORE STORAGE: VINE CORE STORAGE

PURPOSE: TO TEST OFFHOLE PEM CONDUCTOR DETECTED IN H-93-07

COMMENTS :

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
14.30	-	-57° 0'	ACID	OK	
120.70	-	-56° 0'	ACID	OK	
209.10	-	-55° 0'	ACID	OK	
347.50	-	-51° 0'	ACID	OK	
455.40	-	-47° 0'	ACID	OK	
600.50	-	-42° 0'	ACID	OK	
293.00	63° 0'	-52° 0'	SING.SHOT	OK	SINGLE SHOT
592.00	68° 0'	-44° 0'	SING.SHOT	OK	SINGLE SHOT
662.00	69° 0'	-40° 0'	SING.SHOT	OK	SINGLE SHOT

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
-	-	-	-	-	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 12.20	«CASING»	OVERBURDEN				
12.20 TO 21.83	QUARTZITE «QTZITE»	Colour: grey with faint pinkish hue Grain Size: f.gr. -medium bedded with occasional laminated zones @ 16.7 -laminated zone - possible marker -rusty cleavage planes in upper portion 19.7-21.8 -becomes strongly deformed and contains bedding, parallel quartz veins	70		-trace pyrrhotite possibly gn? in fracture controlled qtz veinlets	MIDDLE ALDRIDGE 17.1-20.1 litho 16719
21.83 TO 108.35	GABBRO «GB»	Colour: pale green to grey green Grain size: f.gr. to m.gr. -contact sharp @ 21.8-32.0 -strongly sheared 21.8 «FLT?» fabric becomes less pronounced below 35.0 below 40 typical massive equigranular intrusive texture 46.0-46.6 -brecciated zones below 57 gabbro has very fine grain zones 84.1-84.2 -carbonate vein 95.5-96.0 -sheared zone possible fault contact sharp @ -minor gouge	75 70	-nil below 56.7 becomes light grey due to carbonate veining, numerous carb. veinlets 1-2 mm become thicker toward base of unit	-nil	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
108.35 TO 231.60	QUARTZITES «QTZITE»	Colour: light grey to light grey green Grain Size: f.gr. -probably medium to thick bedded quartzites though difficult to distinguish due to silicification and fault		-moderate to strong silicification, pervasive and in minor usually bedding parallel quartz veinlets	-trace pyrrhotite	109-130 -blocky ground -silicification due to sill emplacement?
		117-120 -rubble zones				111.6-114.6 litho BCD16720
		121.3 -f.gr. argillaceous bed @	50			
		123.5 -develops penetrative cleavage parallel to beds continue to rubble and gouge zone at 128.0				
		‡126.0‡ «FLT» -20 cm rubble zone followed by 30 cm gouge zone containing carbonaceous material				minor gouge in gouge zone - weak to moderate coductor
		126-132 -strong to intense bedding parallel fabric		-minor quartz-carbonate veinlets	130.8 -possible trace honey sphalerite in deformed zone	MIDDLE ALDRIDGE SEDIMENTS
		-foliation of deformed zone	75			
		resume massive quartzite, medium to thick bedded white dimpled texture				144.8-147.8 litho 16721
		135.9 -minor fault gouge				
		‡161.1‡ «FLT»				
		160.4-162.1 -sheared material and quartz veins -fault zone -qtz veins barren				
		160.4-162.2 -intensely deformed sediment and quatz veins			-nil	
		foliation @	75			
		162.0-163.0 -gabbro f.gr. margin material				Block caught up in fault?

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		below resume thick bedded massive quartzite			-tr pyrrhotite in minor veinlets	
		170.0 -10 cm gouge like material - possible fault				
		175.6 -4 cm qtz-chlorite vein				
		176.1 -2 cm gouge zone - minor fault				
		177.9 -fault breccia over 10 cm				
		184.1 -10 cm sheared and deformed material fault zone				180.3-183.3 litho 16722
		‡189.8‡ «FLT» -fault system				
		188.6-188.9 -sheared and deformed material				
		189.6-189.9 -intensely deformed zone, crenulations				
		resume massive thick bedded quartzite below 190 m				
		193.5 -rare cherty clast				
		199.1-199.3 -contorted beds to measured bedding - probably @ local biotite content appears to increase below 190.0	75		199.5 -possible pyrrhotite clasts	
		205.6-209.8 -siliceous plus biotite - clear quartzite				
		vague thin beds to thick laminations @	70	‡212.5-212.8‡ «ALB» -albite zone	212.5 -trace po and possible base metal	215.2-218.2 litho 16723

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		222.7-223.4 -small, 1 cm size elliptical biotite rich clasts oriented parallel to bedding {225} «FLT» 224.2-225.1 -deformed zone containing boudins of quartz and chlorite and chlorite -bedding @ -at contact bedding @	 65 60	below 212 -vein selvages are albite or silica altered	218.2 -trace sphalerite? in qtz vein	
231.60 TO 285.10	GABBRO «GAB»	Colour: green Grain Size: f.gr. to m.gr. Contact sharp @ 231.6-235 -v.f.gr. chill margin -massive, leucoxene bearing {248.7-250.8} «AND D» -f.gr., massive, trace to weak epidote 276.7-280.1 -loses equigranular m.gr. texture; develops strong fabric; foliation @ {279.0} «FLT» 276-278 -pink mineral associated with carbonate veins 283.1-283.3 -quartz and chlorite zone {285.2} «FLT» -3 cm gouge zone plus 10 cm qtz mark contact	 60 30	240.2-240.5 -carbonate veins		Deformed zone possible major structure interpreted as a fault

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
285.10 TO 323.20	QUARTZITES «QTZITE»	Colour: light grey to grey brown Grain Size; -massive to thick bedded, well sorted quartzites -faint pinkish hue due to biotite content -rare thin beds			-trace to 1% pyrrhotite, finely disseminated and rare thin laminations	
		304.0 -fault, 2 cm gouge		304 -silicification		304-307 litho 16724
		312-323 -argillaceous component				
		311.9-312.25 -andesite dyke -feldspar phyric?, weak-mod epidote -bedding @	70			
		318.45-318.80 -andesite dyke as above				
		319.2-319.7 -andesite dyke as above				
		320.4-324.0 -laminated material				
		contact sharp @	70			
323.20 TO 527.40	CONGLOMERATE «CONG»	Colour: light grey to dark grey Grain Size: -massive, clast rich, heterolithic clasts have preferred orientation @ -well sorted, sizes up to 1x5 cm -usually elliptical in shape occasionally round	45	-nil	-tr po -rare pyrrhotite rich clasts	
		333.10-333.8 -andesite dyke -chill margins			324.65 -pyrrhotite veinlet cross cuts foliation <1 cm wide 335.7 «sulph clast»	
		338.6-360.5 *-massive, thick bedded biotitic quartzite; no* fragments; occasional thin pyrrhotite laminae			335.7 -2x3 cm sulphide rich clast 50% pyrrhotite, trace arsenopyrite and sphalerite	342.0-345 litho 16725

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
					346.0 -pyrrhotite laminations 1-2 mm size	
					347.25-347.5 -trace sphalerite in 1-2 mm qtz veinlets	
					‡359.4‡ «po-sph clast» -10cm zone 30% po, 1-2% sph, possible clast 5x5 cm	
		360.5-364.5 -clast rich zone, heterolithic, occasional pyrrhotite rich clasts; strong preferred orientation			360.9-361.1 -irregular	
					‡360.9‡ «po vein» -massive pyrrhotite vein; trace arsenopyrite cuts core axis at low angle	CONDUCTOR
		364.5-375.2 -clast poor interval; occasional 1 cm size pyrrhotite rich clast				
		375.2-405.6 -thin bedded interval of biotitic quartzites; includes bands of sulphide rich material - fine grain to vary fine grain -bedding @	75	-3-5 cm bands of muscovite rich material common	‡375.8‡ «sph bed» -3-4 cm band of biotite, ultra fine pyrrhotite and sphalerite, 7-10% sph	
					‡376.2‡ «sph bed» -10 cm zone of 2-3% sph and pyrrhotite - ultra f.gr.	Lower Aldridge sedimentation 376.7-379.7 litho 16726
		405.6-423.5 -weakly fragmental, thick bedded quartzite, occasional clasts -clasts are small <1 cm in size			386.7 -po rich clast 2x7 cm	411.5-414.5 litho 16727 442.6-445.6 litho 16728
					390 -zones of super fine pyrrhotite over 5-10 cm, common 10-20% pyrrhotite	
		‡415.2-417.9‡ «AND D» -green, m.gr. biotite feldspar rich, possibly a gabbro variety -chills the sediment host				
		423.5-509.3 -clast supported conglomerate, .5-1 meter screens of coarser material >2-3 mm size separated by well sorted massive to thick bedded finer clastic material with occasional coarser clast		469-469.5 -silicified zone	-occasional pyrrhotite rich clasts	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		-bedding @	70	472.2-474.8 -mod albite associated with minor qtz veinlets	472.2-474.8 -trace sph gn in veinlets	
					477.0-491.5 -trace sphalerite in minor qtz veinlets 1 mm cutting core at various angles	481.6-484.6 BCD16729
		╢509.3-527.4╟ «Lge. Clasts» -clast supported, very poorly sorted, hetero-lithic; average size 2x3 cm but range up to core size 4x5 cm -clast show preferred orientation -foliation @ -clasts show preferred orientation	65		-pyrrhotite bearing clasts common 1-2% of all clasts 514.3-514.5 -qtz veins 2-3 cm carry 1-2% galena, trace to 1% aspy, tr sph	510.8-513.8 litho BCD16730
527.40 TO 668.10	QUARTZITE/ SILTSTONE «QTZITE/SLT ST» E.O.H.	Colour: white to brownish grey Grain Size: ultrafine grain to fine grain -alternating thin beds of quartzite argillaceous mudstone and siltstones -bedding @ -planar bedded -laminated material -no bedding disruption -colour of beds depends on quantity and proportions of muscovite and biotite 557.7-557.8 -fault gouge zone 561.8 bedding @ 598-600 -thickly laminated to thin bedded 600 bedding @ 601-618 -disrupted beds soft sed disturbances -bedding @ all angles	70 70 80	-bands of siliceous material carrying garnet and biotite occur over 10 cm every 1-2 meters -albitized or siliceous bands common up to 5-10 cm	╢527.4-668.1╟ «tr sph» -trace sphalerite as disseminations in occasional bands -trace arsenopyrite as rare crystals -trace pyrrhotite as laminations and occasional disseminations 550.4 -3-4 cm band of 10% po and biotite ╢594.5-594.8╟ «1% sph» -tr sph in minor veinlets and disseminated 610.4 -2 cm band of sphalerite rich material 621.7-622.2	Lower Aldridge 540.1-543.1 BCD16731 Rare clast rich zones in upper part of unit 574.2-577.2 litho 16732

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
					-trace disseminated sphalerite in bands including a 4 cm siliceous band	
		‡624-625‡ «AND D» -green m.gr. cuts core @	40	below 625.0 -occasional albitized beds over 10-20 cm		
		641.5 ??? @	85			610-613 litho 16733
					640.3 -2-3 cm band carrying 3-5% sph	
		618-668 -laminated intervals frequently within a dominantly thin bedded sequence				651.7-654.7 litho 16734
					654.9 -1 cm sph rich band	
					666.0 -qtz-pyrrhotite vein, 4-5 cm wide cuts core axis at 45 deg	
					668.0 -1 cm sph rich band	

Sample	From (m)	To (m)	Length (m)	ASSAYS Cu %	Pb %	Zn %	Ag gpt	Au gpt	GEOCHEMICAL Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	Cd ppm	As ppm	COMMENTS
BCD16739	360.85	361.15	0.30						246	9	44	.1	27		768	
BCD16740	375.30	375.80	0.50						28	43	913	1.1	2		1	
BCD16741	376.00	376.30	0.30						30	29	304	.8	1		1	
BCD16742	589.90	590.90	1.00						28	59	159	.5	8		1	
BCD16743	590.90	591.90	1.00						22	41	97	.4	2		1	
BCD16744	591.90	592.90	1.00						25	49	181	.6	1		5	
BCD16745	592.90	593.90	1.00						31	52	81	.4	1		1	
BCD16746	593.90	594.90	1.00						29	63	207	.7	1		11	
BCD16747	594.90	595.90	1.00						21	60	94	.8	3		1	
BCD16748	621.80	622.40	0.60						27	38	164	.8	1		1	
BCD16749	667.00	667.80	0.80						19	53	104	.5	2		1	

Total amount of samples= 11
Total length sampled = 8.5M

Sample	From (m)	To (m)	Length (m)	Al2O3 %	Ba %	CaO %	Fe2O3 %	K2O %	MgO %	MnO2 %	Na2O %	P2O5 %	SiO2 %	TiO2 %	S %	TOT %	Ag ppm	As ppm	Ba ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb	LOI %	B ppm	F ppm
BCD16719	17.10	20.10	3.00	16.65	.09	1.54	5.62	4.75	1.46	.07	1.18	.02	64.33	.78	.33		1.4	73	182	32	20	3	38	1	2.40	56	890
BCD16720	111.60	114.60	3.00	14.08	.05	1.92	2.41	2.15	.78	.03	4.07	.01	71.23	.40	.17		.4	51	97	29	11	4	27	5	1.80	98	320
BCD16721	144.80	147.80	3.00	11.64	.045	1.28	3.34	2.45	.71	.07	1.78	.01	75.62	.49	.05		.4	13	49	24	11	1	23	9	1.90	224	330
BCD16722	180.30	183.30	3.00	11.28	.055	2.75	3.08	2.73	.76	.07	2.56	.01	73.03	.56	.05		.5	10	60	9	12	1	25	1	2.10	162	420
BCD16723	215.20	218.20	3.00	11.50	.045	1.41	4.10	1.97	.98	.07	2.77	.01	73.96	.43	.07		.4	4	76	15	8	2	28	2	1.80	239	320
BCD16724	304.00	307.00	3.00	11.86	.030	1.13	3.27	2.57	2.05	.04	1.59	.01	74.02	.39	.37		.4	1	46	20	22	4	27	6	2.30	234	380
BCD16725	342.00	345.00	3.00	15.27	.080	1.39	5.32	4.14	1.78	.10	1.49	.04	66.39	.62	.77		.7	1	131	29	48	2	114	1	2.40	253	700
BCD16726	376.70	379.70	3.00	14.52	.065	2.12	5.00	3.64	1.81	.08	1.89	.01	67.23	.59	.81		.7	1	134	26	34	2	80	1	2.00	195	880
BCD16727	411.50	414.50	3.00	13.90	.065	1.54	4.18	3.46	1.51	.05	1.52	.01	69.90	.55	.68		.8	1	90	20	12	2	45	1	2.40	168	830
BCD16728	442.60	445.60	3.00	13.75	.065	1.70	4.28	3.70	1.41	.07	1.50	.01	69.87	.54	.65		.9	35	131	20	16	3	56	1	2.20	192	790
BCD16729	481.60	484.60	3.00	12.39	.055	1.97	3.58	2.58	1.05	.06	2.73	.01	72.54	.47	.59		.8	20	115	18	37	1	81	1	1.50	139	540
BCD16730	510.80	513.80	3.00	14.50	.065	1.85	4.61	3.53	1.53	.07	1.98	.01	68.50	.57	.75		.9	1	133	25	30	2	77	1	1.90	141	730
BCD16731	540.10	543.10	3.00	12.59	.080	2.99	4.57	3.33	1.64	.13	2.31	.03	67.90	.53	.72		.9	1	140	26	70	1	114	1	2.80	112	760
BCD16732	574.20	577.20	3.00	12.51	.060	1.81	2.85	2.54	.63	.06	2.95	.01	73.93	.36	.54		.5	3	81	16	25	1	67	1	1.60	98	490
BCD16733	610.00	613.00	3.00	13.88	.060	1.75	5.35	3.06	1.67	.11	2.58	.01	67.76	.57	.73		1.0	1	115	30	81	1	144	1	2.10	80	820
BCD16735	643.40	643.45	0.05	14.66	.110	1.60	4.63	4.90	1.08	.06	1.91	.05	67.42	.59	1.03		.7	1	98	32	35	1	54	9	2.30	1	350
BCD16734	651.70	654.70	3.00	10.56	.045	1.42	3.46	2.54	.78	.07	1.99	.01	76.42	.42	.50		.4	4	75	13	45	1	65	7	1.30	1	430

Total amount of samples= 17
Total length sampled = 48.1M

Appendix V

Geochemical Analytical Procedures

MINERAL
• ENVIRONMENTS
LABORATORIES

Division of Assayers Corp. Ltd.

ANALYTICAL PRECEDURE REPORT FOR ASSESSMENT WORK:

PROCEDURE FOR WET GOLD GEOCHEMICAL ANALYSIS

Samples are processed by Min-En Laboratories, at 705 West 15th Street, North Vancouver, employing the following procedures.

After drying the samples at 95 C, soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized on a ring mill pulverizer.

5.00 grams of sample is weighed into porcelain crucibles and cindered @ 800 C for 3 hours. Samples are then transferred to beakers and digested using aqua regia, diluted to volume and mixed.

Further oxidation and treatment of 75% of the above solution is then extracted for gold by Methyl Iso-butyl Ketone.

The MIBK solutions are analyzed on an atomic absorption spectrometer using a suitable standard set.

IC' ND LABORATORIES.
W.. FIFTEENTH STREET, NORTH VANCOUVER, B.C.
ADA V7M 1T2

PHONE: (604) 980-5814 (604) 988-4524
TELEX: VIA USA 7601067
FAX: (604) 980-9621

MINERAL
• ENVIRONMENTS
LABORATORIES

Division of Assayers Corp. Ltd

ANALYTICAL PROCEDURE FOR ASSESSMENT WORK

Fluorine Geochem

Samples are processed by Min-En Laboratories at 705 West 15th Street, North Vancouver, employing the following procedures:

After drying the samples at 95 degrees celsius, soil and stream sediment samples are screened to -80 mesh for analysis. Rock samples are crushed by a jaw crusher and then pulverized to 90% -120 mesh.

A 0.200 gram sub-sample is fused using NaOH, leached overnight with water and then dissolved using H_2SO_4. A buffer is added and the sample is adjusted to pH 7.0 using NaOH.

The solutions are analyzed using specific ion electrodes and compared to known certified natural standards.

OFFICE AND LABORATORIES:
5 WEST FIFTEENTH STREET, NORTH VANCOUVER, B.C.
CANADA V7M 1T2

PHONE: (604) 980-5814 (604) 988-4524
TELEX: VIA USA 7601067
FAX: (604) 980-9621

MINERAL
• ENVIRONMENTS
LABORATORIES

Division of Assayers Corp. Ltd

ANALYTICAL PROCEDURE FOR ASSESSMENT WORK

Boron Geochem

Samples are processed by Min-En Laboratories at 705 West 15th Street, North Vancouver, employing the following procedures:

After drying the samples at 95 degrees celsius, soil and stream sediment samples are screened to -80 mesh for analysis. Rock samples are crushed by a jaw crusher and then pulverized to 90% -120 mesh.

A 0.500 gram sub-sample is fused using KOH, leached overnight and then dissolved using HCL. The solution is diluted to volume and mixed.

The solutions are analyzed by computer operated Jarell Ash 9000 ICAP or Jobin Yvon Type II Inductively Coupled Plasma Spectrometers. The results are compared to certified natural standards.

FICE AND LABORATORIES:
5 WEST FIFTEENTH STREET, NORTH VANCOUVER, B.C.
N. DA V7M 1T2

PHONE: (604) 980-5814 (604) 988-4524
TELEX: VIA USA 7601067
FAX: (604) 980-9621

MINERAL
• ENVIRONMENTS
LABORATORIES

Division of Assayers Corp. Ltd.

ANALYTICAL PROCEDURE FOR ASSESSMENT WORK

WHOLE ROCK ANALYSIS

Samples are processed by Min-En Laboratories at 705 West 15th Street, North Vancouver, employing the following procedures.

After drying the samples at 95 C, soil and stream sediment samples are screened to -80 mesh for analysis. Rock samples are crushed by a jaw crusher and pulverized to 90% -120 mesh.

A 0.200 gram subsample is fused using lithium metaborate, dissolved and diluted to standard volume.

The solutions are analyzed by computer operated Jarrall Ash 9000 ICAP or Jobin Yvon Type II Inductively Coupled Plasma Spectrometers.

ICE AND LABORATORIES:
W[illegible]T FIFTEENTH STREET, NORTH VANCOUVER, B.C.
VA[illegible] V7M 1T2

PHONE: (604) 980-5814 (604) 988-4524
TELEX: VIA USA 7601067
FAX: (604) 980-9621

MINERAL
ENVIRONMENTS
LABORATORIES

Division of Assayers Corp. Ltd.

ANALYTICAL PROCEDURE REPORT FOR ASSESSMENT WORK:

PROCEDURE FOR TRACE ELEMENT ICP

Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cu,
Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb,
Sr, Th, U, V, Zn, Ga, Sn, W, Cr

Samples are processed by Min-En Laboratories, at 705 West 15th Street, North Vancouver, employing the following procedures.

After drying the samples at 95 C, soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized on a ring mill pulverizer.

0.50 gram of the sample is digested for 2 hours with an aqua regia mixture. After cooling samples are diluted to standard volume.

The solutions are analyzed by computer operated Jarrall Ash 9000 ICAP or Jobin Yvon 70 Type II Inductively Coupled Plasma Spectrometers.

FICE AND LABORATORIES:
ST FIFTEENTH STREET, NORTH VANCOUVER, B.C.
NADA V7M 1T2

PHONE: (604) 980-5814 (604) 988-4524
TELEX: VIA USA 7601067
FAX: (604) 980-9621

Appendix VI

Geochemical Results

COMP: METALL MINING
PROJ: HORN
ATTN: Colin Burge

MIN-EN LABS — WHOLE ROCK ANALYSIS

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 3V-0736-RL1
DATE: 93/10/29
* rock * (ACT:F26)

SAMPLE NUMBER	AL2O3 %	BA %	CAO %	FE2O3 %	K2O %	MGO %	MNO2 %	NA2O %	P2O5 %	SIO2 %	SR %	TIO2 %	LOI %	S %
BCD 16701	14.30	.070	2.90	6.34	3.49	1.85	.10	2.11	.12	63.98	.050	.89	2.70	.69
BCD 16702	10.46	.020	8.84	9.22	1.09	5.10	.34	2.19	.07	47.72	.070	.79	13.00	.12
BCD 16703	13.73	.065	2.32	3.84	3.02	1.03	.06	2.24	.01	69.32	.040	.57	3.10	.10
BCD 16704	17.18	.095	1.27	5.22	4.40	1.24	.07	1.69	.02	63.83	.035	.65	3.30	.16
BCD 16705	12.71	.065	2.11	3.14	3.09	.66	.07	2.74	.01	71.98	.045	.53	1.90	.21
BCD 16706	13.39	.055	1.49	2.72	2.85	.78	.04	3.03	.01	72.35	.040	.40	2.10	.09
BCD 16707	15.17	.095	1.06	3.18	4.48	.74	.06	2.22	.01	69.84	.040	.48	1.70	.02
BCD 16708	14.51	.105	1.04	2.71	3.77	.70	.05	2.88	.01	71.38	.045	.41	1.40	.03
BCD 16709	15.46	.050	.17	4.30	3.79	4.16	.02	.72	.04	66.26	.025	.61	3.50	.56
BCD 16710	14.73	.065	1.00	4.70	3.53	1.56	.07	2.13	.02	68.67	.055	.58	2.00	.67
BCD 16711	14.00	.075	1.18	4.60	3.69	1.42	.07	1.99	.02	69.50	.040	.55	1.80	.63
BCD 16712	13.93	.075	1.72	4.51	3.36	1.54	.09	2.16	.04	68.91	.040	.55	2.20	.53
BCD 16713	14.69	.060	1.47	4.96	3.46	1.58	.12	1.88	.02	68.32	.040	.57	1.70	.59
BCD 16714	14.18	.070	1.44	4.85	3.49	1.61	.09	1.77	.01	68.82	.040	.56	2.40	.63
BCD 16715	14.32	.070	1.39	4.76	3.61	1.56	.14	2.00	.02	68.84	.050	.56	1.60	.58
BCD 16716	14.37	.065	1.53	4.40	3.60	1.46	.08	2.33	.01	69.08	.055	.57	1.50	.49
BCD 16717	13.55	.085	2.51	4.47	3.29	1.42	.08	2.64	.03	68.69	.060	.52	2.00	.62
BCD 16718	15.02	.125	1.10	5.01	4.08	1.58	.10	2.70	.08	66.94	.045	.60	1.70	.51

COMP: METALL MINING CORP.
PROJ: HORN
ATTN: Colin Burge

MIN-EN LABS — WHOLE ROCK ANALYSIS

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 3V-0757-RL1
DATE: 93/11/10
* core * (ACT:F26)

SAMPLE NUMBER	AL2O3 %	BA %	CAO %	FE2O3 %	K2O %	MGO %	MNO2 %	NA2O %	P2O5 %	SIO2 %	SR %	TIO2 %	LOI %	S %
16719	16.65	.090	1.54	5.62	4.75	1.46	.07	1.18	.02	64.33	.010	.78	2.40	.33
16720	14.08	.050	1.92	2.41	2.15	.78	.03	4.07	.01	71.23	.015	.40	1.80	.17
16721	11.64	.045	1.28	3.34	2.45	.71	.07	1.78	.01	75.62	.010	.49	1.90	.05
16722	11.28	.055	2.75	3.08	2.73	.76	.07	2.56	.01	73.03	.010	.56	2.10	.05
16723	11.50	.045	1.41	4.10	1.97	.98	.07	2.77	.01	73.96	.010	.43	1.80	.07
16724	11.86	.030	1.13	3.27	2.57	2.05	.04	1.59	.01	74.02	.005	.39	2.30	.37
16725	15.27	.080	1.39	5.32	4.14	1.78	.10	1.49	.04	66.39	.010	.62	2.40	.77
16726	14.52	.065	2.12	5.00	3.64	1.81	.08	1.89	.01	67.23	.015	.59	2.00	.81
16727	13.90	.065	1.54	4.18	3.46	1.51	.05	1.52	.01	69.90	.015	.55	2.40	.68
16728	13.75	.065	1.70	4.28	3.70	1.41	.07	1.50	.01	69.87	.015	.54	2.20	.65
16729	12.39	.055	1.97	3.58	2.58	1.05	.06	2.73	.01	72.54	.015	.47	1.50	.59
16730	14.50	.065	1.85	4.61	3.53	1.53	.07	1.98	.01	68.50	.015	.57	1.90	.75
16731	12.59	.080	2.99	4.57	3.33	1.64	.13	2.31	.03	67.90	.015	.53	2.80	.72
16732	12.51	.060	1.81	2.85	2.54	.63	.06	2.95	.01	73.93	.010	.36	1.60	.54
16733	13.88	.060	1.75	5.35	3.06	1.67	.11	2.58	.01	67.76	.015	.57	2.10	.73
16734	10.56	.045	1.42	3.46	2.54	.78	.07	1.99	.01	76.42	.010	.42	1.30	.50
16735	14.66	.110	1.60	4.63	4.90	1.08	.06	1.91	.05	67.42	.015	.59	2.30	1.03

COMP: METALL MINING
PROJ: HORN
ATTN: Colin Burge

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 3V-0736-RJ1
DATE: 93/10/29
* rock * (ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	BA PPM	CU PPM	PB PPM	SB PPM	ZN PPM	Au-Wet PPB
BCD 16701	.1	1	107	33	34	4	61	2
BCD 16702	.1	91	31	16	56	9	83	1
BCD 16703	.1	9	70	17	16	4	26	2
BCD 16704	.1	1	120	44	21	8	39	1
BCD 16705	.6	21	112	16	13	5	33	1
BCD 16706	.5	4	112	7	23	7	31	1
BCD 16707	.1	1	147	6	13	8	32	2
BCD 16708	.2	1	191	4	18	5	27	1
BCD 16709	.1	2	58	11	33	16	27	2
BCD 16710	.1	1	124	26	28	7	78	2
BCD 16711	.1	3	122	27	52	4	82	3
BCD 16712	.1	1	127	24	39	5	66	2
BCD 16713	.1	17	87	38	104	5	182	1
BCD 16714	.1	1	98	31	55	6	161	1
BCD 16715	.1	14	111	23	38	5	177	1
BCD 16716	.1	1	124	20	32	5	53	1
BCD 16717	.2	28	139	24	116	4	71	2
BCD 16718	.1	1	181	27	94	5	124	2

COMP: METALL MINING CORP.
PROJ: HORN
ATTN: Colin Burge

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 3V-0757-RJ1
DATE: 93/11/10
* core * (ACT:F31)

SAMPLE NUMBER	AG PPM	AL %	AS PPM	B PPM	BA PPM	BE PPM	BI PPM	CA %	CD PPM	CO PPM	CU PPM	FE %	K %	LI PPM	MG %	MN PPM	MO PPM	NA %	NI PPM	P PPM	PB PPM	SB PPM	SR PPM	TH PPM	TI PPM	V PPM	ZN PPM	GA PPM	SN PPM	W PPM	CR PPM	Au-Wet PPB
16719	1.4	1.88	73	1	182	.2	16	.59	.1	14	32	3.51	1.14	16	.67	370	1	.02	14	440	20	3	6	163	2637	29.6	38	23	1	7	65	1
16720	.4	.93	51	1	97	.5	4	.60	.1	5	29	1.23	.40	10	.32	133	2	.05	8	220	11	4	8	136	201	12.0	27	12	1	8	142	5
16721	.4	.82	13	1	49	4.0	6	.49	.1	5	24	1.61	.28	10	.29	312	2	.02	4	140	11	1	6	120	524	10.8	23	12	1	6	98	9
16722	.5	.66	10	1	60	.3	5	.87	.1	4	9	1.48	.33	7	.32	329	1	.04	4	160	12	1	11	127	618	13.4	25	12	1	8	152	1
16723	.4	.97	4	1	76	.4	7	.54	.1	8	15	2.13	.36	10	.45	326	1	.03	5	180	8	2	4	128	895	11.4	28	15	1	7	111	2
16724	.4	1.24	1	1	46	.2	7	.46	.1	7	20	1.86	.32	13	1.05	208	2	.03	10	390	22	4	5	121	634	9.7	27	19	1	10	146	6
16725	.7	1.40	1	1	131	.1	11	.45	.1	12	29	3.21	.89	22	.83	550	2	.03	15	450	48	2	7	152	1519	18.6	114	23	1	7	80	1
16726	.7	1.39	1	1	134	.1	11	.48	.1	12	26	3.10	.94	21	.89	452	4	.04	13	440	34	2	7	141	1732	21.3	80	22	1	8	106	1
16727	.8	1.09	1	1	90	.1	9	.55	.1	9	20	2.45	.47	12	.66	247	3	.03	11	390	12	2	8	139	1099	11.6	45	20	1	7	93	1
16728	.9	1.20	35	1	131	.1	10	.51	.1	11	20	2.53	.80	15	.62	348	3	.03	8	370	16	3	6	132	1365	14.7	56	19	1	9	139	1
16729	.8	.96	20	1	115	.1	9	.40	.1	9	18	2.34	.63	14	.53	332	3	.05	8	330	37	1	6	118	1400	17.2	81	18	1	8	127	1
16730	.9	1.36	1	1	133	.2	13	.47	.1	11	25	3.03	.82	19	.78	411	2	.04	13	450	30	2	7	149	1628	20.3	77	23	1	9	120	1
16731	.9	1.19	1	1	140	.1	12	1.13	.1	11	26	2.78	.86	18	.82	721	2	.04	10	460	70	1	12	126	1580	20.0	114	22	1	6	83	1
16732	.5	.62	3	1	81	.1	6	.41	.1	6	16	1.57	.39	8	.24	235	2	.05	6	240	25	1	3	116	690	8.8	67	12	1	8	141	1
16733	1.0	1.42	1	1	115	.1	12	.49	.1	11	30	3.40	.86	23	.88	646	2	.04	7	390	81	1	4	142	1786	23.7	144	26	1	8	101	1
16734	.4	.76	4	1	75	.1	6	.36	.1	6	13	1.86	.43	12	.35	289	1	.05	6	140	45	1	6	101	765	12.6	65	13	1	10	186	7
16735	.7	.93	1	1	98	.6	9	.56	.1	12	32	2.86	.41	17	.48	343	4	.04	12	490	35	1	4	133	1096	17.8	54	20	1	9	148	9

COMP: METALL MINING CORP.
PROJ: HORN
ATTN: Colin Burge

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 3V-0768-RJ1
DATE: 93/11/16
* core * (ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	CU PPM	PB PPM	ZN PPM	Au-Wet PPB
BCD16736	22.0	1	168	6713	>10000	18
BCD16737	1.5	1	161	392	6115	3
BCD16738	1.1	1	28	137	241	1
BCD16739	.1	768	246	9	44	27
BCD16740	1.1	1	28	43	913	2
BCD16741	.8	1	30	29	304	1
BCD16742	.5	1	28	59	159	8
BCD16743	.4	1	22	41	97	2
BCD16744	.6	5	25	49	181	1
BCD16745	.4	1	31	52	81	1
BCD16746	.7	11	29	63	207	1
BCD16747	.8	1	21	60	94	3
BCD16748	.8	1	27	38	164	1
BCD16749	.5	1	19	53	104	2
BCD16750	1.1	1	39	265	311	1

MINERAL
• ENVIRONMENTS
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

3V-0736-RG1

Company: **METALL MINING**
Project: HORN
Attn: Colin Burge

Date: OCT-29-93
Copy 1. Metall Mining, Vancouver, B.C.

We hereby certify the following Geochemical Analysis of 18 rock samples submitted OCT-22-93 by C. Burge.

Sample Number	B PPM	F PPM
BCD 16701	8	670
BCD 16702	336	390
BCD 16703	97	390
BCD 16704	52	460
BCD 16705	13	400
BCD 16706	1	350
BCD 16707	1	590
BCD 16708	1	400
BCD 16709	1	470
BCD 16710	51	650
BCD 16711	39	810
BCD 16712	28	700
BCD 16713	60	510
BCD 16714	31	690
BCD 16715	55	670
BCD 16716	22	790
BCD 16717	14	780
BCD 16718	478	800

Certified by _____

MIN-EN LABORATORIES

MINERAL
• ENVIRONMENTS
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

3V-0757-RG1

Company: **METALL MINING CORP.**
Project: HORN
Attn: Colin Burge

Date: NOV-10-93
Copy 1. Metall Mining Corp., Vancouver, B.C.

We hereby certify the following Geochemical Analysis of 17 core samples submitted NOV-02-93 by C. Burge.

Sample Number	B PPM	F PPM
16719	56	890
16720	98	320
16721	224	330
16722	162	420
16723	239	320
16724	234	380
16725	253	700
16726	195	880
16727	168	830
16728	192	790
16729	139	540
16730	141	730k
16731	112	760
16732	98	490
16733	80	820
16734	<1	430
16735	<1	350

Certified by _____

MIN-EN LABORATORIES

MINERAL
• ENVIRONMENTS
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

3V-0768-RA1

Company: **METALL MINING CORP.**
Project: HORN
Attn: Colin Burge

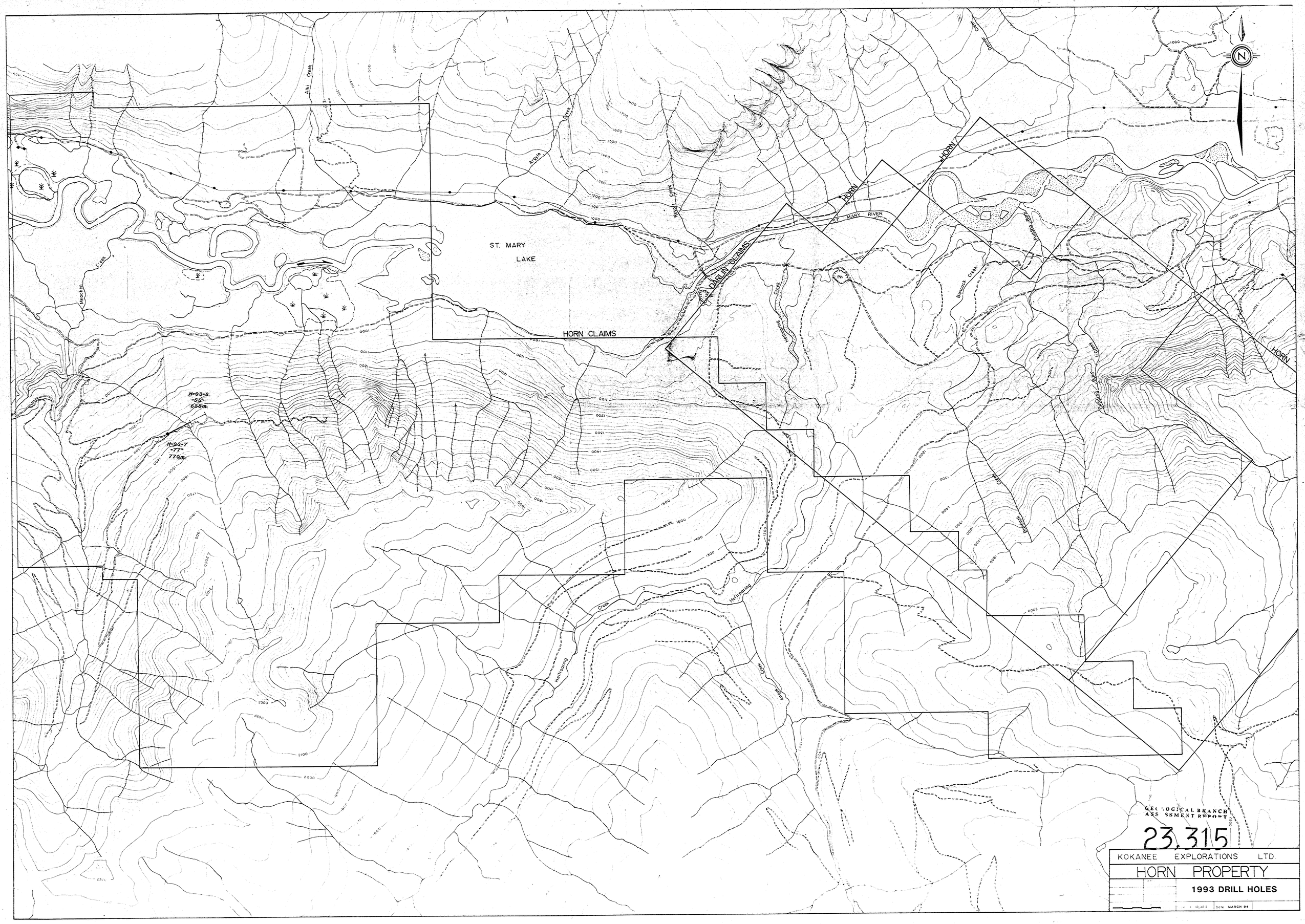
Date: NOV-16-93
Copy 1. Metall Mining Corp., Vancouver, B.C.

We hereby certify the following Assay of 15 core samples submitted NOV-04-93 by C. Burge.

Sample Number	Zn %
BCD16736	2.39

Certified by _____

MIN-EN LABORATORIES



GEOLOGICAL BRANCH
ASSESSMENT REPORT

23,315

KOKANEE EXPLORATIONS LTD.

HORN PROPERTY

1993 DRILL HOLES

Scale 1:10,000 | Date MARCH 94