OCT 18-92

FINAL SUBMISSION

ARVO SALO

OP92-043

SUMMARY TECHNICAL REPORT

GERMAN TOWNSHIP PROJECT

I ARVO SALO WAS THE ONLY ONE TO APPLY FOR ASSISTANCE FOR THIS PROJ

010

II LOCATION AND ACCESS

LOCATION MAPS ARE ENCLOSED. CLAIM MAP WAS SUBMITTED WITH APPLICATION. LOCATION IS THE N½ OF LOT 2, CONC. 6, GERMAN TOWNSHIP. ACCESS IS BY HIGHWAY 67, JUST PAST KETTLE LAKES PROVINCIAL PARK, TURN RIGHT ON FINN ROAD, 4 MILES TO THE END OF THE ROAD.

III GEOLOGY

ENCLOSED IS A REPORT ON THIS DIAMOND DRILL HOLE G-92-1 PREPARED BY KEITH GREEN OF THE NORANDA EXPLORATION COMPANY WHO LOGGED THE CORE PAGES 2-3, AS WELL AS THE LOGS ENCLOSED DISCUSS THE NEW GEOLOGICAL INFORMATION IN DETAIL.

GEOLOGY

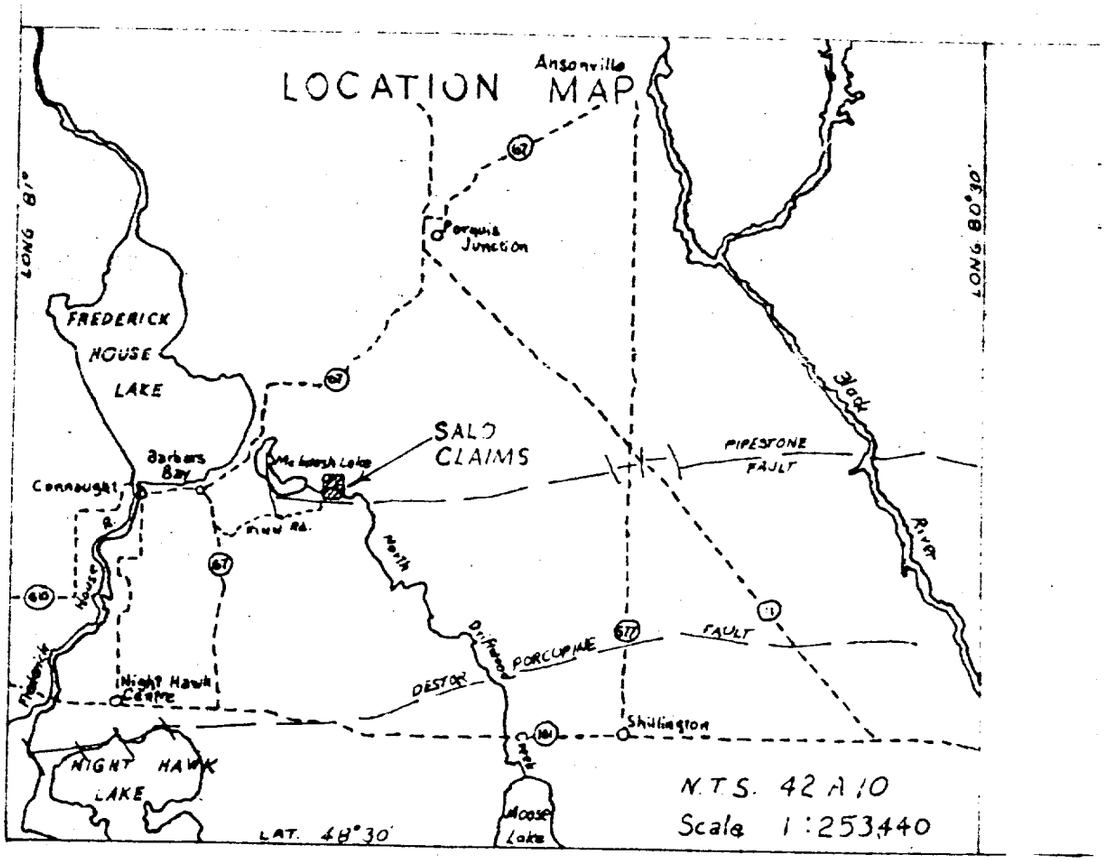
REGIONAL

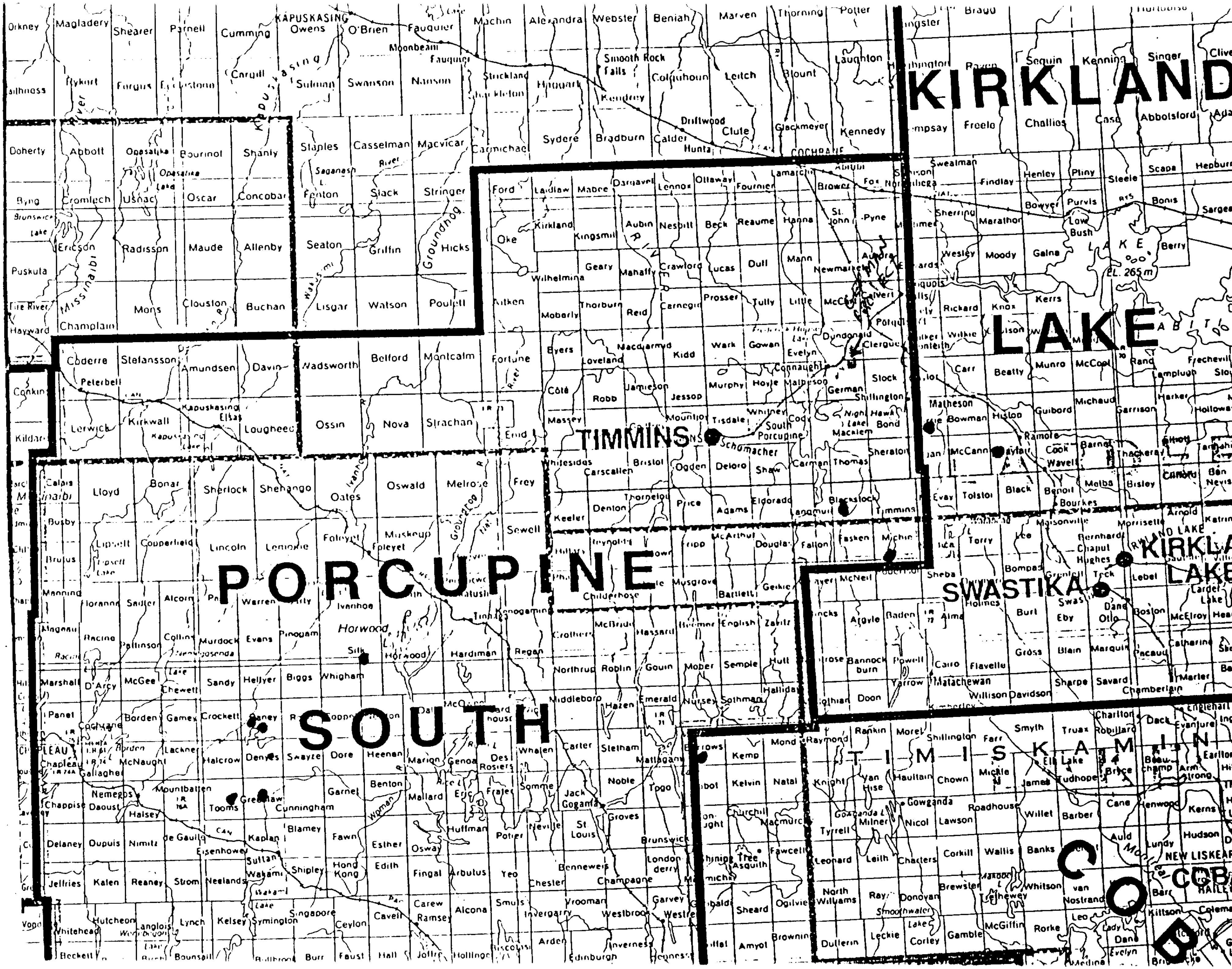
THE PROJECT AREA LIES WITHIN THE CENTRAL ABITIBI GREENSTONE BELT, EAST OF TIMMINS. THE MAJOR ROCK UNIT CONSISTS OF AN EAST-WEST FAULT BOUNDED SUITE OF SEDIMENTARY ROCKS ADJOINED ON THE NORTH + SOUTH BY MAFIC TO ULTRAMAFIC VOLCANICS. THIS SEDIMENTARY BASIN IS UP TO 7 KM IN WIDTH AND CONTAINS FINELY BEDDED TO UNBEDDED SILTSTONE, GREYWACKE AND TUFF.

THE EDGES OF THE SEDIMENTARY GRABEN ARE DEFINED BY THE PORCUPINE-DESTOR FAULT ON THE SOUTH SIDE AND THE PIPESTONE FAULT ON THE NORTH SIDE. THE VOLCANIC ROCKS NORTH OF THIS SEDIMENTARY GRABEN, IN THE AREA OF THE PIPESTONE FAULT RANGE FROM MAFIC TO ULTRAMAFIC FLOWS TO RHYOLITIC TUFFS AND FLOWS OF THE TISDALE AND STOUGHTON-ROQUEMAURE SERIES RESPECTIVELY. THE FELSIC VOLCANICS ARE PART OF THE HUNTER MINE GROUP WHICH HOSTS THE GREAT KIDD CREEK VOLCANOGENIC MASSIVE SULPHIDE ORE BODY.


HUDSON
BAY
N
MANITOBA
ONTARIO
JAMES
BAY
MOOSONEE
RED LAKE
ONTARIO
QUEBEC
KENORA
LAKE
OF THE
WOODS
LAKE
NIPIGON
GERALDTON
LAKE ABITIBI
GERMAN
Project
NORANDA
ROUYN
TIMMINS
RAINY
LAKE
THUNDER
BAY
LAKE SUPERIOR
DULUTH
SAULT
STE. MARIE
SUDBURY
LAKE
NIPISSING
GEORGIAN
BAY
LOCATION SKETCH
LAKE
HURON
TORONTO
ONTARIO
LAKE MICHIGAN
Scale 1"=160 mi.
DETROIT
ERIE

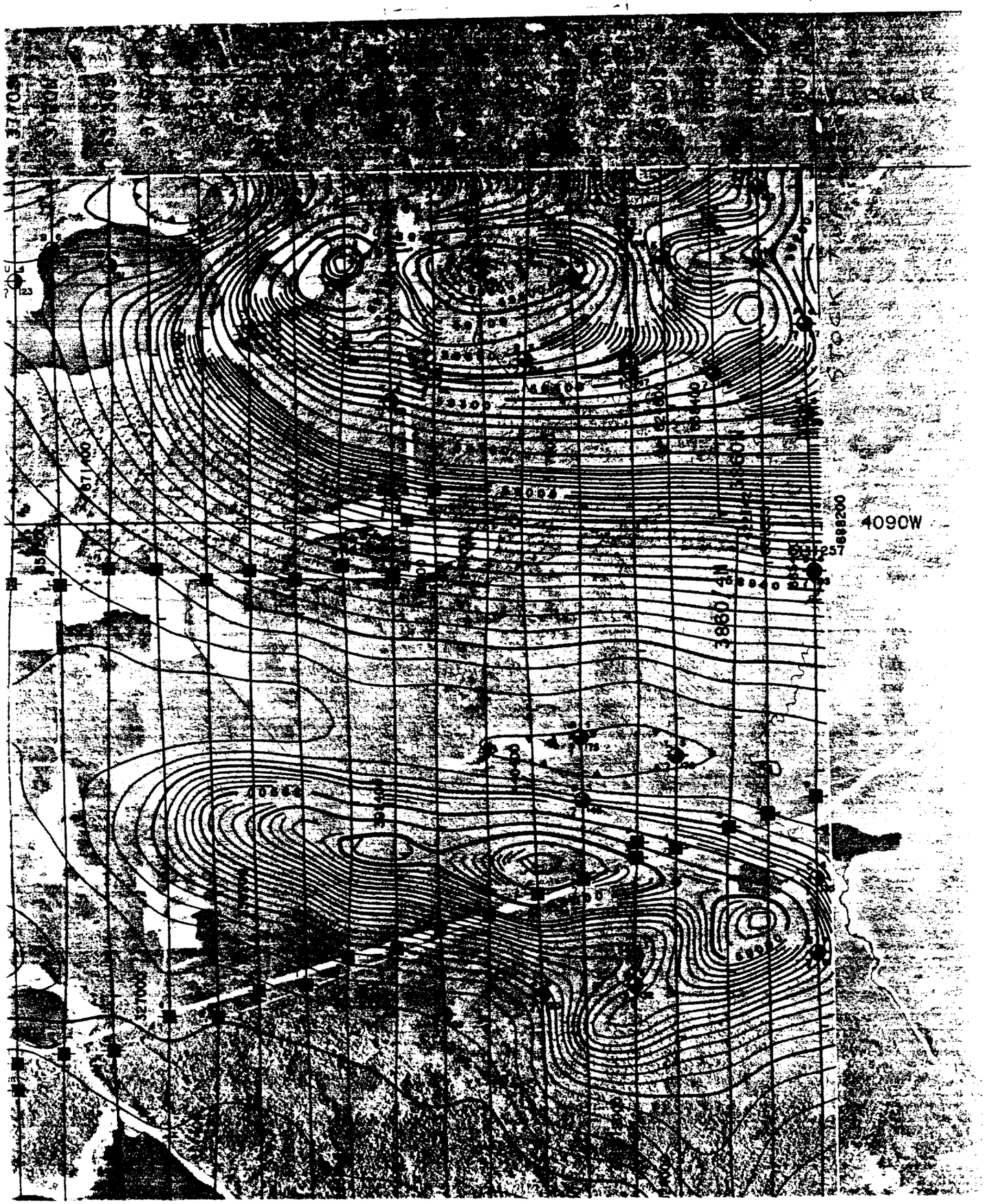
FIG. 1


LOCATION MAP
Ansonville
Porquis Junction
FREDERICK HOUSE LAKE
Barbers Bay
Connaught
SALO CLAIMS
PIPESTONE FAULT
PORCUPINE FAULT
DESTOR
Night Hawk Centre
NIGHT HAWK LAKE
Shillington
Moose Lake
LONG 81°
LONG 80°30'
LAT. 48°30'
N.T.S. 42 A/10
Scale 1:253,440


KIRKLAND LAKE
PORCUPINE
SOUTH
TIMMINS
SWASTIKA
KIRKLAND LAKE
TIMISKAMING
COCHRANE
KAPUSKASING
NEW LISKEARD
Smooth Rock Falls
Schumacher
South Porcupine
Matheson
Gowganda
Foleyet
Horwood L.
Night Hawk Lake
LAKE ABITIBI
EL. 265 m
Doherty
Abbott
Bourinot
Shanly
Staples
Casselman
Macvicar
Byng
Cromlech
Oscar
Concobar
Fenton
Slack
Stringer
Ericson
Radisson
Maude
Allenby
Seaton
Griffin
Hicks
Puskuta
Mons
Clouston
Buchan
Lisgar
Watson
Poulett
Champlain
Coderre
Stefansson
Amundsen
Davin
Wadsworth
Belford
Montcalm
Fortune
Lerwick
Kirkwall
Lougheed
Ossin
Nova
Strachan
Lloyd
Bonar
Sherlock
Shenango
Oates
Oswald
Melrose
Frey
Sewell
Lincoln
Lemoine
Hardiman
Whigham
Biggs
Sandy
Heenan
Marion
Benton
Esther
Garnet
Cunningham
Halcrow
Denyes
Swayze
Dore
Fingal
Arbutus
Yeo
Alcona
Carew
Ramsey
Ceylon
Singapore
Jack
Noble
Togo
Groves
Brunswick
Chester
Champagne
Garvey
Vrooman
Westbrook
Edinburgh
Ford
Laidlaw
Mabee
Kingsmill
Aubin
Nesbitt
Beck
Reaume
Hanna
Geary
Mahaffy
Crawford
Lucas
Dull
Mann
Moberly
Thorburn
Reid
Carnegie
Prosser
Tully
Little
Macdiarmid
Kidd
Wark
Gowan
Evelyn
Loveland
Robb
Jamieson
Jessop
Murphy
Hoyle
German
Stock
Shillington
Carscallen
Bristol
Ogden
Deloro
Shaw
Carman
Thomas
Denton
Thorneloe
Price
Adams
Eldorado
Langmuir
Blackstock
Keeler
McArthur
Douglas
Fallon
Fasken
Childerhose
Bartlett
Geikie
Musgrove
Sothman
Semple
Hutt
Mond
Kemp
Kelvin
Natal
Sheard
Amyot
Raymond
Rankin
Morel
Knight
Tyrrell
Leonard
Leith
Charters
Corkill
Wallis
Banks
Nicol
Lawson
Roadhouse
Willet
Barber
Smyth
Truax
Charlton
Dack
Chown
Michie
James
Brewster
Whitson
Van Nostrand
McGiffin
Rorke
Gamble
Leckie
Corley
Dufferin
North Williams
Donovan
Carr
Beatty
Munro
McCool
Guibord
Michaud
Garrison
Bowman
Hislop
Ramore
McCann
Cook
Wavell
Barnet
Thackeray
Tolstoi
Black
Benoit
Melba
Bisley
Bourkes
Maisonville
Morrisette
Arnold
Torry
Lee
Bernhardt
Chaput
Hughes
Teck
Lebel
Sheba
Bompas
Burt
Eby
Otto
Boston
McElroy
Baden
Alma
Argyle
Gross
Blain
Marquis
Pacaud
Catharine
Powell
Cairo
Flavelle
Sharpe
Savard
Chamberlain
Matachewan
Willison
Davidson
Doon
Bannockburn
Yarrow
Kirkland
Oke
Wilhelmina
Aitken
Byers
Côté
Massey
Eldorado
Hanna
Fournier
Lamarche
Browne
Lennox
Ottaway
Dargavel
Kerrs
Knox
Rickard
Wesley
Moody
Galna
Berry
Marathon
Bowyer
Purvis
Pliny
Steele
Henley
Findlay
Sweatman
Scapa
Bonis
Challies
Case
Abbotsford
Freelo
Seguin
Kenning
Singer
Clive
Orkney
Magladery
Shearer
Parnell
Cumming
Owens
O'Brien
Fauquier
Machin
Alexandra
Webster
Beniah
Marven
Thorning
Potter
Moonbeam
Carroll
Sulman
Swanson
Nansen
Strickland
Haggart
Kendrey
Colquhoun
Leitch
Blount
Laughton
Sydere
Bradburn
Calder
Clute
Glackmeyer
Kennedy
Driftwood
Hunta

SALO GERMAN PROPERTY

CP 92-043



ARVO SALO

OP92-043

GEOLOGY - REGIONAL (CONT.)

THE SEDIMENTARY ROCKS ARE THOUGHT TO BE YOUNGER THAN THE VOLCANICS, TEMISKAMING IN AGE.

MAFIC TO ULTRAMAFIC ROCKS OCCUR WITHIN THE GRABEN IN THE FORM OF DYKES AND PLUGS. THE MAFIC DYKES TRENDING N-S ARE OF THE MATACHEWAN SERIES AND ARE CUT BY YOUNGER KEEWEENAN DYKES ORIENTED ON A ENE TREND.

FELSIC INTRUSIONS, PORPHYRIES, OCCUR IN THE AREA ESPECIALLY ON ALONG OR NEAR THE PIPESTONE FAULT AND PARALLEL SPLAYS EXHIBITN IN MANY CASES EAST WEST STRIKING LINEARITY.

THE PIPESTONE FAULT AND ITS SPLAYS HAVE SERVED AS CHANNELWAYS FOR ALTERING FLUIDS DERIVED FROM METAMORPHISM AND SHALLOW INTRUSIVE BODIES. THE FAULTED MAFIC/ULTRAMAFIC ROCKS HAVE BEEN ALTERED TO TALC/CHLORITE/CARBONATE SCHIST. FAULTED SEDIMENTARY OR TUFFACEOUS ROCKS GENERALLY EXHIBIT SERICITE/CARBONATE ALTERATION.

GOLD MINERALIZATION IS ASSOCIATED WITH NARROW QUARTZ OR QUARTZ CARBONATE VEINING IN METAVOLCANIC ROCKS, SULPHIDE MINERALIZAT WITH ZONES OF CARBONATIZATION, WITHIN STRUCTURAL FEATURES SUCH AS FAULTS, SHEAR ZONES AND FRACTURES. THE MAJORITY OF KNOWN GOLD OCCURANCES ALONG THE PIPESTONE FAULT HAVE FELSIC INTRUSIONS ASSOCIATED WITH THEM. GOLD BEARING STRUCTURES EXTEND A CONSIDERABLE DISTANCE FROM MAIN FAULTS AS BRANCHES OR HORSETAILS EVIDENCING THE IMPORTANCE OF PARALLEL STRUCTURES.

GEOLOGY

LOCAL

THE LITTLE OUTCROP THAT EXISTS ON THE PROPERTY ON THE NORTHWEST SIDE IS DESCRIBED AS THOLEIITIC PILLOW BASALT WIT DISSEMINATED SULPHIDES, SILICEOUS, CARBONITIZED WITH MINOR BUT ABOVE BACKGROUND VALUES IN NI, CU, ZN + GOLD.

GEOPHYSICS, MAGNETOMETER, HEM AND ENHANCEMENT DERIVATIVES THEREOF HAVE ESTABLISHED AN ANTICLINAL FOLD TO THE NORTH OF THE PIPESTONE FAULT? (OR PARALLEL SPLAY) WITH TENSION FRACTURES ALONG THE FOLD OFFERING PASSAGEWAY FOR ULTRA - MAFIC INTRUSION. THESE INTRUSIONS ARE HIGHLY CONTORTED WITH A MAIN INTRUSION OR FOLD CORE EVIDENCED BY A VERY STRONG MAGNETIC RESPONSE. THE ULTRAMAFIC CORE IS FLANKED BY MAFIC AND INTERMEDIATE VOLCANICS WHICH APPEAR TO BE ALL CONTAINED IN A PARTIAL PERIPHERAL SEDIMENTARY ENVELOPE. FURTHER FRACTURING BOTH PARALLEL AND TRANSVERSE OFFERS OPPORTUNITY FOR MINERALIZATION TO HALO THE INTRUSIVES

THE 1988 GEOTEM MAP 81074 FURTHER CONFIRMS THIS STRONG E.W. MAGNETIC TREND AND A CLUSTER OF AEM ANOMALIES ASSOCIATED WITH THE MAGNETIC HIGH, WHICH RELATE TO CONDUCTIVETY AND CONDUCTIVE EFFECTS PICKED UP ON THE GROUND, SOME OF WHICH HAVE A COMPONENT PARALLEL TO THE GRID LINES, CORRELATING WITH FLEXURES AND DISCONTINUITIES IN THE ULTRAMAFIC INTRUSIVES AND TRANSVERSE FRACTURES. FURTHER THE ULTRAMAFIC INTRUSIVES ARE IN EN ECHELON DYKES IN 2 DIRECTIONS DUE TO THE DEFORMATIONA OPENING OF 2 SETS OF COMPLIMENTARY SHEAR ZONES. A SECOND MAGNETICALLY WEAKER STRUCTURE, 225 METRES SOUTH OF THE BASE TIE LINE STRONG RESPONSE, IS ANOTHER FAULT SPLAY OR PERHAPS EVEN THE ACTUAL PIPESTONE FAULT PURPORTED TO BE SOUTH OF THE PROPERTY. AN AIRBORNE EM + MAG SURVEY FLOWN BY AERODAT FOR BRUNEAU MINING IN 1984 - TORONTO FILE 2-6917 SHOWS CLEARLY THAT THE PIPESTONE? OR A PARALLEL SPLAY STRUCTURE CROSSES THE NORTHERN PART OF THE PROPERTY WHERE WE PROPOSE TO DRILL. THIS WAS ALSO CONFIRMED BY AN ASSESSMENT MADE BY FENTON SCOTT - CONSULTANT FOR KANGELD RESOURCES. OF SIGNIFICANCE ALSO ARE SEVERAL EW STRIKING LINEARS OF MAGNETIC LOWS WHICH MAY BE RELATED TO PARALLEL FAULT SPLAYS OR ALONG FOLD TENSION FRACTURES, ONE OF WHICH PARALLELS THE CONDUCTOR WE PROPOSE TO DRILL. THE PIPESTONE IS INDICATED TO HAVE PARALLEL SPLAYS FURTHER EAST, MAGNETIC DATA INDICATES ITS SIGNATURE AS A MAGNETIC HIGH AND DRILLING INFORMATION SAYS IT ~~EXISTS~~ CONSISTS OF MAFIC TO ULTRAMAFIC ROCKS. ALTERATION AND OVERBURDEN AS WELL AS INTRUSION ALONG THE FAULT PLANE ATTENTUATE THE INTERPRETED MAGNETIC SIGNATURES OF THE STRATIGRAPHY AND THEREFORE THE ~~TRUE~~ FAULT ZONE POSITION OF THE PIPESTONE AND EVEN OF ITS PARALLEL SPLAY STRUCTURES BECOME HARD TO DEFINE, FURTHER 2 MAJOR NNE TRENDING FAULTS AND SEVERAL OTHER TRANSVERSE FRACTURES CUT E-W STRUCTURES AND THE HIGH MAGNETIC UNIT ON THE PROPERTY, WITH LOW MAGNETIC SIGNATURES AT THE JUNCTIONS EVIDENCING PROBABLE MAGNETITE DESTRUCTION. SIMILAR TRENDING STRUCTURAL ZONES AND JUNCTIONS AND THE PERIPHERIES OF LINEAR MAGNETIC LOWS IN THE AREA HAVE PROVEN TO BE IDEAL LOCATIONS FOR MINERALIZATION.

ARVO SALO
OP-92-043

WORK DONE

ONE DIAMOND DRILL HOLE WAS DRILLED AS PROPOSED IN THE LOCATION AS INDICATED, CONSISTING OF 802' OF BQ SIZE DRILLING. THE HOLE WAS DRILLED AT -50° TOWARDS AZIMUTH 210°, AND WITH ALL DUE RESPECT TO KEITH GREEN OF NORANDA, WAS DESIGNED NOT ONLY TO TEST A MAGNETIC LOW AREA WITH 2 FLANKING MAGNETIC HIGHS BUT ALSO TO TEST CONDUCTIVETY ESTABLISHED BY GROUND SURVEYS COINCIDENT WITH AN AIRBORNE GECTEM E.M. CONDUCTOR ON FLIGHT LINE 3820/2N.

RESULTS

RESULTS ARE COVERED IN THE REPORT BY KEITH GREEN OF NORANDA EXPLORATION LTD. THE HOLE WAS PROPERLY DRILLED ACCORDING TO THE CORE AXIS OF THE FOLIATION AND THE GEOLOGICAL CONTACTS, AND BOTH THE FLANKING MAG HIGHS AND THE MAG LOW AREA WAS EXPLAINED. TWO GRAPHITIC CONDUCTIVE FAULT ZONES WERE INTERSECTED TO EXPLAIN THE CONDUCTIVETY, NO SIGNIFICANT MINERALIZATION WAS INTERSECTED IN THE DRILLING THE GEOLOGY AND STRUCTURE INTERSECTED IS INTERESTING HOWEVER, THE THICK FRACTURE FAULT ZONE, THE THOLEIITIC BASALTS, AND THE SEDIMENTS WEDGED BETWEEN ULTRAMAFIC UNITS INDICATE THAT WE ARE IN THE BALLPARK, EVEN THOUGH MORE DRILLING IS REQUIRED, TO ESTABLISH WHERE THE PLUMBING IS LOCATED. IT MAY BE ALSO THAT WE MAY HAVE A SITUATION SIMILAR TO NORANDA'S LIGHTNING ZONE, AS DEEP OPEN FISSURES

MAY HAVE DURING THE MINERALIZING EVENT OR EVENTS ALTERED TEMPERATURE AND PRESSURE GRADIENTS SO AS TO RELEASE MINERALIZATION MUCH DEEPER BY EARLY SATURATION OF SOLUTIONS. I BELIEVE AS SOON AS NORANDA IS ABLE TO DEAL WITH CANAMAX, CLAVOS + BRUNEAU THEY WILL OPTION.

RECOMMENDATIONS

THE NORANDA REPORT OUTLINES THEIR RECOMMENDATIONS BUT DOES NOT RECOMMEND DEEP DRILLING OF THE SITUATION WE HAVE ALREADY ESTABLISHED; OR DEEP DRILLING OF THE SOUTH MAGNETIC LOW, BY DEEPENING & CONTINUING THIS HOLE. EVEN CANAMAX DID NOT ACHIEVE SUBSTANTIAL WIDTHS IN THEIR ZONES UNTIL BELOW 650' VERTICAL. WE MAY CONTINUE THIS HOLE BEFORE TESTING THE OTHER TARGETS, AS THE DRILL IS AVAILABLE AND ON THE HOLE.

Salo

ARVO J SALO

OPAP-92-043

020

REPORT ON DIAMOND DRILLING

FOR ARVO SALO

GERMAN TOWNSHIP

NORANDA EXPLORATION COMPANY, LIMITED
(no personal liability)

Keith Green
October 1992

INTRODUCTION

This brief report discusses the results of 1 drill hole located on a 4 unit Patent claim group held by Arvo Salo in the north central part of German Township. A drill log, drill section, together with chemical analysis and assays are included in the back of the report.

GENERAL GEOLOGY

The property is located approximately 4.5 kms to the west and along stike of the Clavos Gold deposit held by Canamax Resources. The gold deposit hosts drill indicated reserves of 470,000 tons at 7.27 g/t Au in three zones over a 1.5 km strike length. It is hosted within felsic dykes that cut altered and deformed pseudo-fragmentals (possibly altered sediments) in contact to the south with Porcupine Group sediments and to the north with an ultramafic intrusive body. The regionally extensive Pipestone Fault Zone marks the altered contact zone hosting the deposit.

DRILL PROGRAM

One diamond drill hole, G-92-1 was drilled on Salo's property in September 1992, consisting of 802 ft. of BQ drilling. The hole was drilled at -50° towards 210° azimuth and was designed to test a magnetic low with two flanking highs.

G-92-1 SUMMARY

The drill hole collared in a 123 ft. thick unit of weakly foliated ultramafic rock with moderate chlorite, weak talc and minor calcite-quartz veining. Minor <1% pyrrhotite-pyrite occurs smeared along fracture planes. At 174.2 ft., a 2 inch wide quartz-calcite vein contained 2 flecks of chalcopyrite. Towards the base of the ultramafic, a slight increase of carbonate alteration is noted. The lower contact of the ultramafic is marked by a 5.6 ft. wide graphitic fault zone with local gouge. This fault zone extends for an additional 26 ft. down into the underlying unit as a zone of strong fracturing and broken core. This ultramafic rock represents the northern magnetic high fracture that was targeted by the drill hole.

Underlying the ultramafic rock is a 243 ft. thick package of mafic flow breccia, weakly pillowed flows and greywacke-argillite. The mafic volcanic is weakly silicified with intensity of silicification and calcite alteration increasing towards the base of the unit. Black silica occurs within rare pillow selvages as well as filling fractures and hosts minor stringer and disseminated pyrite. Marking the contact between the volcanics and the sediments is a 4 ft. thick graphitic fault zone with minor silty sediment, followed by an 8 ft. wide barren milky white quartz vein with fracture filling graphite. The greywackes and argillites are interbedded and weakly foliated with locally pyrite over 3-6 inches of up to 3%.

Underlying the sediments is a 32 ft. wide sequence of strongly serpentinized, soft, foliated ultramafic rock, followed by a 6.8 ft. wide section of weakly silicified, banded argillite with locally 10-15% quartz veining. This sequence of mafic volcanics and sediments represents the magnetic low targeted by the drill hole.

The lower most unit in the hole represents a 288 ft. thick unit of serpentinized and chloritized ultramafic rock. The rock hosts minor quartz-ankerite veinlets as well as local asbestos veinlets (1-2mm wide). The ultramafic unit represents the southern most magnetic high targeted by the drill hole.

Core axis of the foliation and geological contacts in the holes suggests a sub vertical to 85° dip to the northeast, indicating that the hole was drilled in the proper direction.

GEOCHEMISTRY-ASSAYS

In total, 3 rock samples were sent to Chemex Labs for whole rock analysis, 6 for Cu, Zn, Ni, Au and 14 for Au analysis. The results are included in the back of the report.

Whole rock analysis of the uppermost ultramafic rock indicates that the unit is high in magnesium (36.8%), suggesting that the unit is an ultramafic intrusive rather than a flow. Analysis of two samples of the mafic volcanics indicates that these rocks are probable magnesium tholeiitic basalts and not andesites as logged.

No significant Au or Cu, Zn, Ni values were returned from the hole. A value of 65 ppb Au over 3.9 ft. was intersected within a graphitic fault zone. The Ni values of 1200-1300 ppm represent typical background for ultramafic intrusives in the general Timmins area and are not considered anomalous.

FUTURE WORK - CONCLUSIONS

The drill hole was successful in explaining the magnetic features that were targeted. However, the hole failed to intersect any type of interesting mineralization. The presence of a thick fracture-fault zone in the hole (32 ft. wide) is notable, but no Au mineralization occurs with the zone.

In a conversation on September 24, 1992, two possible targets were discussed for future work.

a) Deepening hole G-92-1 to fully penetrate the south magnetic high and test the flanking south magnetic low.

b) Drill testing an EM conductor between lines 1070 and 970W.

It is not feasible to test the first target by deepening the present hole. It would be better to collar a new hole, 250-275 metres southwest of hole G-92-1 on the same line and dip. The magnetic low may represent the location of the Pipestone Fault on the property and is therefore an attractive gold target.

However the second target is more favourable from a base metal prospective as the conductor may have a sulphide source. Alternatively, the conductor may represent a cross-structure and may have potential as a gold target. In general, there is very little within the drill hole to suggest any potential for mineralization on the property. Additional drilling is required to gain more stratigraphic and structural information and to locate the Pipestone Fault Zone on the property in view of known mineralization at the Clavos gold deposit to the east.

Respectfully Submitted

K G

Keith Green
Project Geologist

LATITUDE 125N of Base Line

DEPARTURE 1250W

ELEVATION Surface

DIP AT COLLAR -50° BEARING 210°

TOTAL DEPTH 802 ft. CORE SIZE BQ

CORE STORAGE Aunor Mine Site.

REMARKS ARV6 SALO - CPAP-92-043

NORANDA EXPLORATION COMPANY LIMITED

DIAMOND DRILL CORE LOG

Test Depth	Dip	Magnetic Bearing	Corrected Bearing

Sheet No. 1 OF 3

Project No. General 101 Hole No G-92-1

Property Salo-German

NTS 42-A/10 TWP. German Claim No. Patent

Date started Sept 2, 1992 completed Sept 13, 1992

Contractor Sparta Drilling

Logged by Keith Green K. Keith Green

Depth & Lithology	Description (colour, grain size, texture, structure, etc.)	Alteration	Mineralization	Remarks
0.0-110.0	Casing			Ultramafic flow explains magnetic high the hole collared in!
110.0-223.0 **ULTRAMAFIC FLOW**	Dark green to black coloured, weakly foliated ultramafic flow. Foliation varies from 50-70° to core axis overall. Rock is weakly magnetic throughout. 196.0-223.0 Rock becomes lighter grey green colour towards fault zone at base of unit. Below 218.6-223.0, rock is bleached pale green colour to grey coloured.	1-3% 1mm-1cm wide fracture filling calcite-quartz veinlets, minor sericite. Pervasive chlorite alteration with weak talc with calcite-quartz veinlets. **202.0-223.0** Increase in number of calcite-quartz veinlets to 5% over 3-7" wide zones.	Minor pyrrhotite occurs smeared along fracture surfaces with calcite-quartz veinlets as well pyrrhotite-pyrite disseminations At 174.2, 2" wide calcite-quartz vein with two 1/2" flanks of chalcopyrite.	**112.0-115.2** Rubble zone in ultramafic. **215.7-255.0** Broad zone of fracturing and rubbly core with approximately 95-98% core recovery. Fault Zone. Minor iron staining (brown colour) in fractures.
223.0-228.6 **GRAPHITIC FAULT ZONE**	Zone of black graphite with 20% translucent quartz veining. 50% of zone is rubble and gouge. Core axis of fault zone appears to be 30°		Trace pyrite, pyrrhotite.	Conductive Zone

P.A.P. 14064

NORANDA EXPLORATION COMPANY LIMITED

DIAMOND DRILL CORE LOG

A. SALO Sheet No. 2 OF 3

Project No. OPAP-93-043 Hole No. G-92-1

Property Salo-German

Depth & Lithology	Description (colour, grain size, texture, structure, etc.)	Alteration	Mineralization	Remarks
228.6-302.0 **INTERMEDIATE FLOW BRECCIA**	Light grey to grey green coloured, intermediate (probably andesitic) volcanic. Light grey-green fragments of feldspar porphyritic volcanic sit in matrix of pale grey, silica alteration, together with dark grey to black silica. Fragments of pillow lava are common with finely vesicular rims preserved. Weak foliation is developed at 40° to c.a. 228.6-255.0 Fracture zone-part of contact fault zone.			Whole Rock 277.0-277.5 #0580
302.0-437.1 **WEAKLY PILLOWED INTERMEDIATE VOLCANIC**	Light grey-green coloured, fine grained weakly feldspar porphyritic, rarely pillowed intermediate flow. Tiny <1mm sized calcite filled vesicles occur throughout. Pillow selvages typically 1-3cm wide and contain black, siliceous material with minor pyrite stringers. Rock becomes darker grey coloured below 412.0 and no pillow selvages are present.	Minor calcite-quartz filling fractures. Black silica fills fractures and occurs in pillow selvages. Weak pervasive silicification, increasing downhole along with pervasive calcite.	Minor pyrite overall, typically occurring with black silica along pillow selvages and fractures. **341.0-343.0** Minor to 2% pyrite stringers with black silica.	Whole Rock 422.0-423.0 #0581
437.1-441.0 **GRAPHITIC FAULT ZONE**	Zone with 25% graphitic sediment and soft, massive possible sediment of dark grey colour. Foliation and upper contact is @ 25-30° to c.a. Section is fractured and rubbly with gouge over 1" area.		Minor nodules and veinlets of pyrite.	Conductive Zone
441.0-449.0 **QUARTZ VEIN**	Milky white barren quartz vein with fracture filling graphite. Upper contact not cored, lower contact at 20° to c.a.			

PAP - E 1558

NORANDA EXPLORATION COMPANY LIMITED

DIAMOND DRILL CORE LOG

ARVC SALO

Sheet No 3 OF 3

Project No. OPAP-92-043 Hole No G-92-1

Property Salo-German

Depth & Lithology	Description (colour, grain size, texture, structure, etc.)	Alteration	Mineralization	Remarks
449.0-472.0 **GREYWACKE/ ARGILLITE**	Dark grey to black coloured massive to banded and foliated greywacke with more weakly carbonaceous argillite towards the base. Rock is foliated at 45-50° to c.a. throughout. Top 6" is zone of sheared graphite.	Pervasive calcite. 2-5% quartz-calcite -ankerite veinlets, typically cross-cutting foliation.	Trace to 1% pyrite overall. Local stringers, clots and disseminated pyrite up to 1-3% over 3"-6".	
472.0-507.0 **ALTERED ULTRAMAFIC FLOW**	Light blue-grey coloured, moderately foliated, soft, altered ultramafic flow. Foliation typically 45-50° to c.a. Possible that this unit is altered sediments?	**472.0-507.0** Strongly serpentinized ultra-mafic blue-grey colour.		
507.0-513.8 **SILICEOUS ARGILLITE**	Medium grey coloured, siliceous banded argillites. Foliation consistent at 50° to c.a. Upper contact is ambiguous. At 512.2, infolded block of underlying ultramafic. Lower contact is at 45° to core axis.	Weakly silicified. **510.8-513.8** Pale grey, intensely silicified. 10-15% quartz veining.	Trace pyrite.	Zones of fractured broken core occur throughout. At 522.0 & 524.0: 2-10cm wide gouge zones and rubble over 50cm.
513.8-802.0 **SERPENTINIZED ULTRAMAFIC FLOW**	Olive green to black coloured, soft, altered ultramafic flows. Rocks are weakly to moderately foliated at 20-40° to c.a. Rocks are weakly magnetic and are strong serpentinized.	1-3% fracture filling quartz-ankerite and minor <1mm asbestos veinlets. Minor green sericite with quartz. Strong serp-entinization and moderate chlorite alteration.		Ultramafic explains magnetic high south of where hole collared. <u>Whole Rock</u> 572.0-572.5 #0582
802.0	END OF HOLE			

PAP - E 1556

NORANDA EXPLORATION COMPANY LIMITED

DIAMOND DRILL CORE ASSAY RECORD

LAB. ch

SAMPLE NUMBER	FROM	TO	LENGTH	ASSAYS					SAMPLE NUMBER
				Au (ppb)		Cu	Zn	Ni (ppm)	
0559	125'	130'	5'	<5		5	30	1300	
560	130'	135'	5'	<5		4	<1	1300	
561	135'	140'	5'	<5		4	29	1250	
562	168.7'	173.7'	5'	<5		14	30	1250	
563	173.7	174.7'	1'	<5		131	34	1250	
564	174.7	179.7	5'	<5		24	33	1200	
566	212.6	218.6	5'	<5					
567	218.6	223	4.6'	25					
568	223	228.6	5.6'	<5					
569	228.6	234	5.6'	<5					
570	336	341	5'	<5					
571	341	343	3'	<5					
572	343	348	5'	<5					
573	437.1	441.	3.9'	65					
574	441	446	5'	<5					
575	446	449	4'	25					

P.A.P. 14066

ARVC SALO
OPAP-92-C4-3

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: NORANDA EXPLORATION

P.O. BOX 1205
TIMMINS, ONTARIO
P4N 7J5

Project : 101
Comments: ATTN: JOHN WAKEFORD

Page Number 1
Total Pages 1
Certificate Date 30-SEP-92
Invoice No. I-9221945
P.O. Number :
Account :

CERTIFICATE OF ANALYSIS A9221945

SAMPLE DESCRIPTION	PREP CODE	Au ppb FA+AA	Cu ppm	Zn ppm	Ni ppm					
0559	205 274	< 5	5	30	1300					
0560	205 274	< 5	4	< 1	1300					
0561	205 274	< 5	4	29	1250					
0562	205 274	< 5	14	30	1250					
0563	205 274	< 5	131	34	1250					
0564	205 274	< 5	24	33	1200					
0566	205 274	< 5	-----	-----	-----					
0567	205 274	25	-----	-----	-----					
0568	205 274	< 5	-----	-----	-----					
0569	205 274	< 5	-----	-----	-----					
0570	205 274	< 5	-----	-----	-----					
0571	205 274	< 5	-----	-----	-----					
0572	205 274	< 5	-----	-----	-----					
0573	205 274	65	-----	-----	-----					
0574	205 274	< 5	-----	-----	-----					
0575	205 274	< 5	-----	-----	-----					
0576	205 274	< 5	-----	-----	-----					
0577	205 274	< 5	-----	-----	-----					
0578	205 274	< 5	-----	-----	-----					
0579	205 274	< 5	-----	-----	-----					

CERTIFICATION: _____

ARV: 5A10
GPAP-92-043

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: NORANDA EXPLORATION

P.O BOX 1205
TIMMINS, ONTARIO
P4N 7J5

Project 101
Comments: ATTN: JOHN WAKEFORD

Page Number 1
Total Pages 1
Certificate Date 30-SEP-92
Invoice No. I-9221942
P.O. Number :
Account :

CERTIFICATE OF ANALYSIS A9221942

SAMPLE DESCRIPTION	PREP CODE		Al2O3 %	CaO %	Cr2O3 %	Fe2O3 %	K2O %	MgO %	MnO %	Na2O %	P2O5 %	SiO2 %	TiO2 %	LOI %	TOTAL %	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Y ppm	Zr ppm
580	208	274	16.96	4.55	0.01	11.45	0.16	8.71	0.18	2.71	0.18	48.03	1.22	5.82	99.98	40	10	< 5	140	30	110
581	208	274	15.06	5.26	< 0.01	6.79	0.08	4.57	0.12	5.51	0.22	53.61	1.06	7.02	99.31	700	< 10	< 5	210	20	110
582	208	274	1.88	0.16	0.37	10.91	< 0.01	36.89	0.05	< 0.01	0.07	34.70	0.10	13.03	98.18	< 10	< 10	< 5	< 10	< 10	10

CERTIFICATION: _____

10/01/92 7:48AM CHEMEX LABS VAX-FAX PAGE 02

A. SALO OPAP-92

MAP SYMBOLOGY

Aerial Cableway
Boundary
International
Interprovincial
District, Township Indian Reserve
Approximate
Lot, Concession
Approximate
Park Boundary
Bridge
Road, Railroad
Building
Chimney
Cliff, Pit, Pile
Contours
Interpolated
Approximate
Depression
Control Points
Horizontal
Vertical
Culvert
Falls
Fence, Hedge, Wall
Feature Outline
Flooded Land
Lock
Marsh or Swamp
Mast
Mine Head Frame
Outcrop

Pipeline
Railroad
Single Track
Double Track
Abandoned
Turntable
Road
Highway, County Township
Access (road of doubtful maintenance or significant driveway)
Trail, Bush Road (portage alley)
Rapids
Double line river with multiple rapids
Double line river with multiple rapids
Reservoir
River, Stream, Canal
Approximate boundary
Direction of flow
Rock
Significant
Shoal
Spot Elevation
Tower
Transmission Line
Poles
Pylons
Tunnel
Utility Poles
Wharf, Dock, Pier
Wooded Area

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY
S.R.O. – SURFACE RIGHTS ONLY
M.+ S. – MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition	File

(R1) CERTIFIED AGRICULTURAL LAND

(R2) MINING RIGHTS ONLY WITHDRAWN UNDER SECTION 36 OF THE MINING ACT R.S.O. 1980 ORDER NO. W-1/3/87 AUG 10 87

(R4) W 76/77 22/9/77 S.R.O. 54339

(R5) SEWAGE DISPOSAL SITE — BONA FIDE APPLICATION UNDER P.L.A.

(R6) ~~MINING RIGHTS ONLY WITHDRAWN UNDER SECTION 36 OF THE MINING ACT R.S.O. 1980 ORDER # "14"~~

(R7) MINING AND SURFACE RIGHTS WITHDRAWN UNDER SECTION 36 OF THE MINING ACT R.S.O. 1980 ORDER NO. W-9/88 JAN. 29/88 SPECIAL GRANT PENDING UNDER SECTION 190(2) OF THE MINING ACT

(R8) MINING RIGHTS ONLY WITHDRAWN UNDER SECTION 36 OF THE MINING ACT R.S.O. 1980 ORDER NO. W-10/88 JAN. 29/88 SPECIAL GRANT PENDING UNDER SECTION 190(2) OF THE MINING ACT

(R9) MINING AND SURFACE RIGHTS WITHDRAWN UNDER SECTION 36 OF THE MINING ACT R.S.O. 1980 ORDER NO. W-01/88 P SEPT. 15/88 SPECIAL GRANT PENDING UNDER SECTION 190(2) OF THE MINING ACT

(R10) APPLICATION UNDER P.L.A. SEC. 3b & 3a.

F1 - THIS TWP SUBJECT TO FOREST ACTIVITY IN 1991/92. FURTHER INFORMATION AVAILABLE ON FILE . . .

(R12) MINING AND SURFACE RIGHTS RE-OPENED TO PROSPECTING STAKING OUT, SALE OR LEASE UNDER SECTION 36 OF THE MINING ACT R.S.O. 1980, EFFECTIVE DECEMBER 17, AT 7:00 A.M., E.S.T. ORDER NO. S.P. 7/88 MR DATED 86-DEC 05. (ORDER NO. W-10/88 AND PART OF ORDER NO. W-9/88).

DUNDONALD TWP

MATHESON TWP

STOCK TWP.

MACKLEM TWP

Frederick House Lake
Barbers Bay
Mc Intosh Lake
Hughes Lake
Night Hawk Lake
KETTLE LAKES PROV. PARK
KETTLE LAKES PROVINCIAL PARK
CONNAUGHT
CANAMAX
BRUNEAU
NIGHT HAWK CENTRE
HWY 101
EXPLORATORY LICENCE No. 11928
FALCONBRIDGE
SALO GERMAN PROPERTY
PROPOSED DRILL HOLE

8395000mN
8390000mN
8386000mN
80°56'
80°50'
48°36'
48°34'
805000mE
810000mE
815000mE

LEGEND

HIGHWAY AND ROUTE No
OTHER ROADS
TRAILS
SURVEYED LINES:
TOWNSHIPS, BASE LINES, ETC
LOTS, MINING CLAIMS, PARCELS, ETC
UNSURVEYED LINES
LOT LINES
PARCEL BOUNDARY
MINING CLAIMS ETC
RAILWAY AND RIGHT OF WAY
UTILITY LINES
NON-PERENNIAL STREAM
FLOODING OR FLOODING RIGHTS
SUBDIVISION OR COMPOSITE PLAN
RESERVATIONS
ORIGINAL SHORELINE
MARSH OR MUSKEG
MINES
TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" , SURFACE RIGHTS ONLY	◒
" , MINING RIGHTS ONLY	◓
LEASE, SURFACE & MINING RIGHTS	■
" , SURFACE RIGHTS ONLY	◪
" , MINING RIGHTS ONLY	◩
LICENCE OF OCCUPATION	▼
ORDER-IN-COUNCIL	OC
RESERVATION	⊕
CANCELLED	⊗
SAND & GRAVEL	⊖

NOTE MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 83, SUBSEC. 1.

500 0 1000 Metres
10 0 10 20 30 40 50 60 70 Chains
500 0 1000 2000 3000 4000 5000 Feet

SCALE 1:20 000
GRID ZONE : 17

NOTES

FLOODING RIGHTS ON NIGHTHAWK LAKE AND FREDRICK HOUSE RIVER TO ELEV. 903·5' RESERVED TO ONTARIO HYDRO.

FLOODING RIGHTS ON FREDRICK HOUSE LAKE TO ELEV. 903·0' TO ONTARIO HYDRO

REGISTERED PLAN OF SUBDIVISION

TOWNSHIP

GERMAN

M.N.R. ADMINISTRATIVE DISTRICT
TIMMINS
MINING DIVISION
PORCUPINE
LAND TITLES / REGISTRY DIVISION
COCHRANE

Ontario · Ministry of Natural Resources · Land Management Branch

ORIGINAL COMPILATION JULY 1984
REVISED July 23/93 GG July 29/93 CJ
Number G-3992

42A10SW0053 0192-043 DUNDONALD

200

A. SALO GERMAN PROPERTY - OP92-43

DIAMOND DRILL HOLE G-92-1 LOCATION MAP

1785 mW 1770 mW | 1720 mW | 1670 mW | 1620 mW | 1570 mW | 1520 mW | 1470 mW | 1420 mW | 1370 mW | 1320 mW | 1270 mW | 1220 mW | 1170 mW | 1120 mW | 1070 mW | 1020 mW | 970 mW

LOT 2 — DUNDONALD TWP — GERMAN TWP — LOT 1

900 mN — 800 mN — 700 mN — 600 mN — 500 mN — 400 mN — 300 mN — 200 mN — 100 mN — SOUTH BASE LINE

N

MAIN BASE LINE

G-92-1 DIP 50° AZ-210°

LINN ROAD

BRIDGE

NORTH DRIFTWOOD RIVER

N of Lot 6 CONCESSION

SCALE - 1-1250

Map A

A. SALO - OPAP-92-043

LOCATION - 1250W.
625N.

NW

Azimuth 210°

S.E.

G-92-1

COLLAR TO NORTH BOUNDARY 275m.

COLLAR TO EAST BOUNDARY 280 m.

-50°

Overburden

Ultramafic Volcanic - Intrusive.
- minor po-py
- pers. chlorite, weak talc, calcite-qtz V.

light grey green
5% cal-qtz.

Graphitic Fault zone
gouge

Basalt Flow
Breccia

Zone of
Strong Fracturing

Basalt Flow
- weakly pillowed
- wk-mod silicified
- increasing silica-calcite downhole.
- minor PY
- Black silica with py in fractures.

Graphite
Qtz Vein

Greywacke - Argillite.
- minor - 1% PY

Ultramafic Volcanic - Intrusive.
- Strong serpentine

Silicified Argillite

500

Ultramafic Volcanic - Intrusive
- strong serpentine, mod chlorite.
- minor asbestos veinlets.

EOH 802 ft

Scale: 1" = 60 ft.

Author Salo

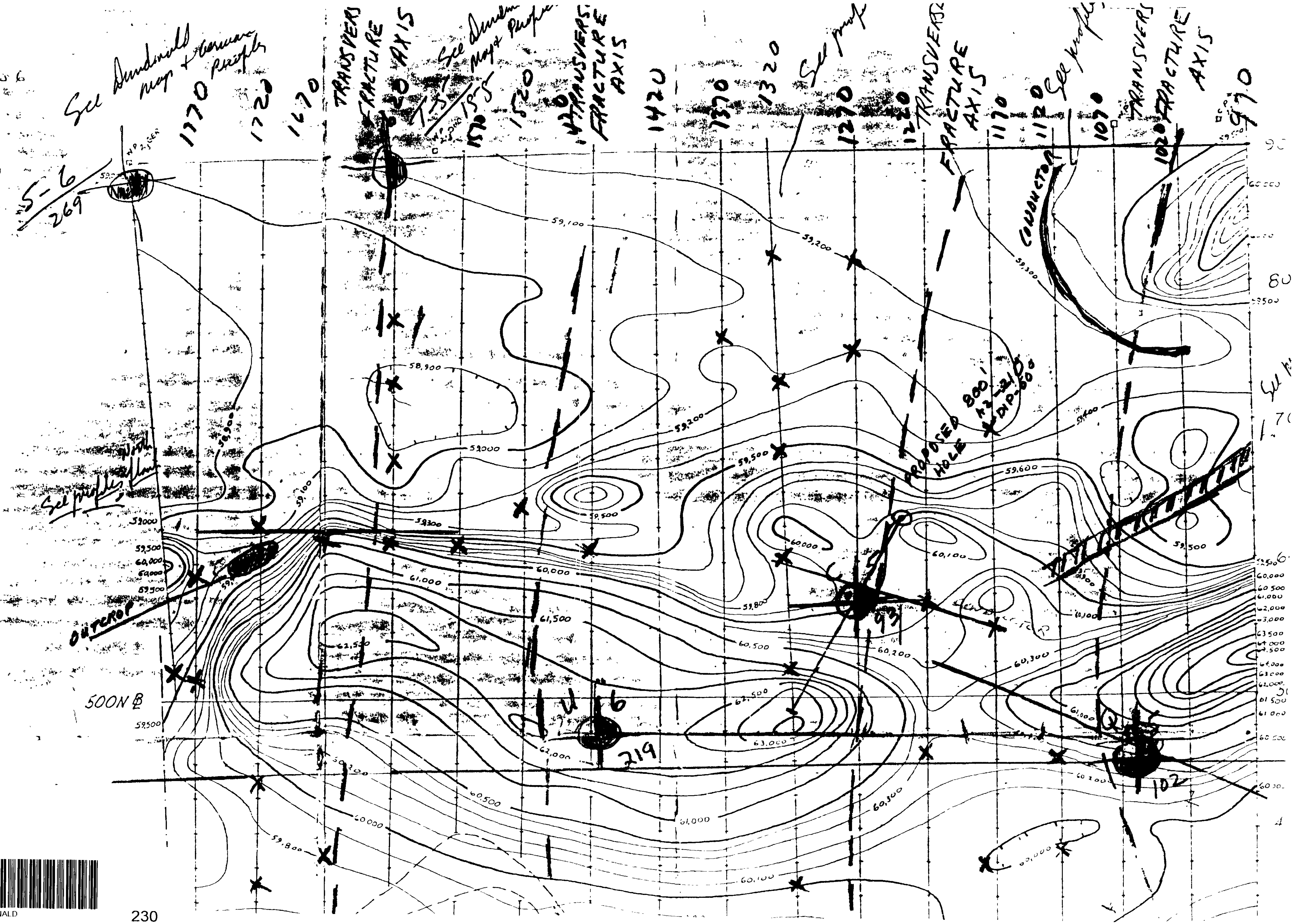
German Twp.

BY K GREEN
NORANDA EXPLORATION LTD

OCT 13-92

A-DALO..OP92-043

N 1/2 LOT 2-CON 6
GERMAN TWP



230

SCALE 1-1250