86-434-15008

GEOLOGICAL BRANCH ASSESSMENT REPORT

15,008

ASSESSMENT REPORT

TRENCHING (GEOLOGICAL/GEOCHEMICAL)

THIM GROUP - PAC CLAIMS

GREENWOOD MINING DIVISION

N.T.S. 82E/2E Lat. 49°06.7' Long. 118° 30.5'

> SUB-RECORDER RECEIVED AUG 11 1986 M.R. # _____ \$ _____ VANCOUVER, B.C.

John Keating (Project Geologist) Ian Mitchell (Field Geologist) Noranda Exploration Company, Limited Owner/Operator (No Personal Liability) Nov. 1, 1985 - Nov. 5, 1985 TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	LOCATION AND ACCESS	1
3.	TOPOGRAPHY AND PHYSIOGRAPHY	1
4.	CLAIM INFORMATION	2
5.	HISTORY	2
6.	TRENCHING	2
	6.1 Introduction 6.2 Trench Geology	2
	6.3 Soil Profiles	4
	6.4 Sampling (Geochemical Survey)	4
	6.4a Methodology	4
	6.4b Sample Preparation	4
	6.4c Analysis	5
	6.5 Discussion of Results	5
7.	SUMMARY AND RECOMMENDATIONS	6

PAGE

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APPENDICES

Appendix	A	Soil/Rock	Geo	ochem Results	
Appendix	в	Statement	of	Costs	
Appendix	С	Statement	of	Qualifications	

DRAWINGS

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Drawing 1 Trench and Pit Locations Drawing 2 Trenching and Soil Profiles 1. INTRODUCTION

The Thim Group of mineral claims, comprising of 38 units, is owned and operated by <u>Noranda Exploration Company, Limited</u> (No Personal Liability), situated at 1050 Davie Street, Vancouver, B.C.

Kettle River Resources, Limited are Joint Venture partners in the property with a 49% interest.

During the period November 1 to November 5, 1985 trenching, piting, rock sampling and soil profiles were conducted on the Thimble Grid of the Thim Group.

This work was done in order to test three H.L.E.M. (Max Min II) conductors which were strong on both 444 H_2 and 1777 H_2 frequencies. Two of the conductors have a minor coincident magnetic response.

These conductors were discovered in February 1985 during follow up of a 1984 Dighem III airborne mag./E.M. geophysical survey flown during the Spring for Noranda Exploration Company, Limited and Kettle River Resources Ltd.

2. LOCATION AND ACCESS

The Thim Group of claims are located some 3 km north and 13 km east of Greenwood B.C. at longitude 118°30' W and latitude 49°06' N, within the Greenwood Mining Division, on N.T.S. mapsheets 82E/2E and 82E/1W.

Easy access is achieved from Highway 3A, along a good gravel road beginning approximately 17 km east of Greenwood or 2 km south of Wilgress Lake, on the east side of the Highway. The Thim claims are located approximately 3 km. east on this gravel road which runs through the middle of the claim group.

3. TOPOGRAPHY AND PHYSIOGRAPHY

Thimble Claim Group lies adjacent to the north side of Fisherman Creek on elevations ranging from approximately 3300 ft to 3700 ft.

Terrain on the claims consists mainly of gentle slopes in mature forest on the west side, to moderate slopes with some steep open bluffs on the east side.



4. CLAIM INFORMATION

Claim Name	Owner	Units	Record	#	Anniv.	Date
*Thim 1	Noranda Exploration	18	4345	May	17/87	
*Thim 2	Company, Limited	12	4346	May	17/87	
Pac 49	(No Personal Liability)	1	22152	Nov.	2/89	
Pac 50		1	22153	Nov.	2/88	
Pac 51		1	22154		н	
Pac 52		1	22155			
Pac 53		1	22156			
Pac 54	n	1	22157			
Pac 55	0	1	22158			
Pac 56		1	22159		11	

* Claim which assessment work is being applied to.

HISTORY

There is very little mining history associated with the Thim Group, other than old hand dug trenches and test pits.

In 1984 an airborne man./E.M. geophysical survey was flown by Dighem, of Toronto, for Noranda Exploration Company, Limited and Kettle River Resources, Limited.

During February 1985 the thimble grid (see Drawing 1) was established over two airborne E.M. anomalies. H.L.E.M. (Max Min II) and magnetometer surveys were conducted on the grid by Noranda. Three E.M. conductors were discovered each of which had responses on both 444 H₂ and 1777 H₂ frequencies. These conductors form an anomalous trend for at least 300 metres and may be open to the north where the trend dips under unconformably overlying Tertiary flows. Two of the conductors display weak coincident magnetic responses.

6. TRENCHING

6.1 Introduction

During November 1985 Noranda initiated a trenching programme to identify the source of geophysical H.L.E.M. conductors (see History) and geology as the area of interest was largely overburden.

John Deere backhoe, operated by Bud Pasco of Greenwood B.C., was used for trenching.

Due to the thick overburden, only two trenches (see Drawings 1 & 2) reached bedrock.

Trench 1 was 8 metres in length over which all but 2 metres exposed outcorp.

Mapping within the trenches was carried out at a scale of 1:100.

Where overburden was too thick, test pits for soil profiling and sampling were dug. Eight such pits occur adjacent to trench 1 with 2 more pits dug to test the conductor on line 184+00 N (see Drawings 1 & 2).

6.2 Trench Geology

Two rock units were found to exist in both trenches:

Trench 1

-

- in which 4 metres of bedrock was exposed, consisted mainly of unit 1 which bounds a 1 metre wide section of unit 2 (sharpstone). Their contacts trend approx. Az. 030°.

Unit 1 (Intrusive Bx?)

- a dark grey to black breccia, with white to green chlorite rich siliceous clasts containing up to 30% disseminated Pyrite. In contrast the fine grained dark matrix, which is only slightly softer than quartz, contains 5-10% disseminated Pyrite. The unit is typically highly fractured to crumbly with some local limonitic (gossan) weathering. Breccia clasts are poorly sorted, from less than 0.5 mm to 1 cm in size and generally white to grey. Clasts are set in a matrix containing numerous small mafic and feldspar crystals usually less than one millimetre long. Soft blackish, weathered sulphides are locally common in the matrix and may be slightly graphitic but do not appear conductive when tested with an ohm-metre.

Unit 2 (Sharpstone)

- greyish green breccia skarned with epidote, chlorite, hematite and calcite healed fractures. Pyrite occurs locally in trace amounts, usually along thin somewhat rusty fractures, or disseminated in white angular siliceous clasts which are pervasive throughout Unit 2. Little other structure is evident in Trench 1.

Trench 2

- located 30 m north of Trench #1. Consists almost entirely of Unit #1, except for the easternmost 2 metres which are Unit #2. The contact between these two units is a thin shear running at 34°, dipping steeply to the west. Little structure can be determined from the remainder of the trench, due to the extreme fracturing and crumbly nature of Unit #1. However, some prominent shearing occurs in the midsection of this trench, where a roughly N-S shear and E-W shear intersect, dropping the south trench wall (i.e. bedrock) beneath the trench floor. 6.3 Soil Profiles

The ten pits excavated in which bedrock was not exposed, were generally 3 to 4 metres in depth.

Three distinct soil horizons were distinguished. The upper of "A" horizon was generally 10 to 15 cm thick, consisting essentially of humus.

Beneath the "A" is the "B" horizon consisting of 2 distinct layers. The upper layer is generally 20 to 30 cm thick, consisting of yellowish to orange-brown silt and sand, with minor gravel. The lower unit was generally 30 to 100 cm thick, consisting of yellow to greyish-brown unconsolidated sandy to sility soil with gravel and cobbles throughout.

The lowest horizon was till?, consisting of clay rich silty to sandy poorly sorted, greyish consolidated sediments. Gravel and boulders are common throughout sometimes weathering to soil.

6.4 Sampling (Geochemical Survey)

6.4a Methodology

Rock chip samples were taken from each trench with longitudinal soil samples taken from each horizon or layer in each pit.

All soils and rocks were analyzed for parts per million (p.p.m.) Cu, Pb, Zn, Ag, As and parts per billion (p.p.b.) Au. Except for the 5 Trench 1 samples which were not analyzed for Pb.

Trench 1 had 5 rock chip samples taken across 4 m.

Trench 2 had 19 one metre rock chip samples taken.

The ten soil profile pits had a cumulative of 30 longitudinal soil samples taken.

Analyses were done at Rossbacher Laboratory Ltd.; 225 S. Springer Avenue, Burnaby, B.C.

6.4b Sample Preparation

Soil: dried at approximately 80°C and then sieved with a -80 mesh nylon screen. The -80 mesh (0.18 mm) fraction is then used for geochemical analysis.

Rock: specimens are pulverized to -120 mesh (0.13 mm).

6.4c Analysis

Ag, Cu, Pb and Zn: 0.200 grams of -80 mesh material is digested in concentrated perchloric acid and nitric acid (3:1) at reflux temperature for 5.0 hours. A Varian-Techtron Model AA-5 or AA-475 Atomic Absorption Sectrophotometer is then used to determine the parts per million (ppm) silver, copper, lead, zinc and molybdenum in each sample.

Au: 10.0 grams of -80 mesh material is digested with aqua regia (one part nitric acid and 3 parts hydrochloric acid). The resulting solution is subjected to MIBK (Methylisobutyl Ketone) extraction, which extract is analyzed for parts per billion (ppb) gold using a AA-475 Atomic Absorption Spectrophotometer.

As: 0.2 - 0.3 grams of -80 mesh material is digested with 1.5 ml of (70%) perchloric acid and 0.5 ml of concentrated nitric acid. A Varian AA-475 Atomic Absorption Spectrophotometer, equipped with an As-EDL, is used to measure arsenic content in the digest.

6.5 Discussion of Results

As a whole geochemical results in both trenches and pits were low. Zinc and Aresenic analyses showed the greatest variation and have been plotted with the sample numbers on Drawing 2. Remaining analyses for Au, Cu, Pb and Ag can be found in Appendix "A".

Rocks in both trenches were no higher in Au than the lower detection limit (10 ppb). Silver was also low ranging between 0.2 ppm being the lower detection limit. Copper values were low ranging from 20 to 64 ppm. Zinc values ranged from 62 to 242 ppm with the majority lying between 70 to 90 ppmZn. Lead values ranged from 4 to 20 ppm with an average of around 14 ppmPb. Arsenic was weakly anomalous ranging from 28 to 354 ppm with background being a round 30 to 50 ppmAs.

Highest values in every element except zinc occurred within a 6 metre wide zone in trench 2 from 10 m E to 16 m E which represents the area covered by sample numbers 804896 to 80500 and 76776. This is the highly fractured zone where shearing occurs. The highest zinc values (162 ppmZn, 242 ppmZn) occur in the 2 metres of skarned breccia at the west end of trench 2. Zinc in the sheared zone ranges from 126 ppm to 144 ppm, which are distinctly higher than the remainder of the rock samples.

Soil analyses of the soil profiles were generally low, as the following ranges indicate Au (10-20 ppb), Ag (0.2-0.6 ppm), Cu (28-62 ppm), Zn (64-120 ppm), Pb (8-20 ppm) and As (10-32 ppm).

The highest values found in all elements except lead, occurred in the central portion of the pit zone, over a 14 meter stretch on LINE 185+00N between 217+17E, and 217+31E. All these highest values occurred within the "B" horizon, where the most active chemical and physical changes occur. The highest lead values occur in the till horizon on LINE 184+00N.

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The only apparent correlation between sample sites occurs between the 14 metre central portion of LINE 185 N where the pits are on strike with shearing found in a 6 metre zone of trench #2. Element enrichment, although weak, may be due to remobilization along some or all of these shear zones.

7. SUMMARY AND RECOMMENDATIONS

Ground geophysical follow-up in 1985 of a 1984 airborne geophysical survey led to the discovery of three H.L.E.M. conductors which form an anomalous trend for at least 300 metres. Two conductors display weak coincident magnetic responses.

Extensive overburden and shortage of funds for drilling initiated this 1985 trenching programme.

Bedrock was intersected in two trenches. Both of these contained sharpstone conglomerate and what might be an intrusive bx. Neither of which is conductive.

Ten pits were dug and soil profiles taken in areas where bedrock could be exposed due to overburden thickness.

Numerous soil (30) and rock (24) samples were taken and analyzed for Cu, Pb, Zn, Ag, As and Au. Slight elevations in geochemical response appears to be associated with shearing and are thought to be of little importance.

Low soil analyses may not be conclusive, due to the till like nature and thickness of overburden in the soil profile pits.

Trenching did not explain the geophysical anomalies and it is for this reason that drilling of at least one of the conductors is recommended.

APPENDIX A

SOIL/ROCK GEOCHEM RESULTS

OSSBACHER LABORATORY LTD.

CERTIFICATE OF ANALYSIS

I): NORANDA EXPLORATION CO. LTD. 1050 DAVIE STREET VANCOUVER B.C.

F ROJECT: 428 8511-024

TYPE OF ANALYSIS: GEOCHEMICAL

Thimple (1K) PAGE # :

CERTIFICATE#: 85487

DATE ENTERED: 85-11-26

FILE NAME: NOR85487

INVOICE#:

6125

1

E X	SAMPLE NAME	PPM Cu	PPM Ag	PPM Zn	PPM Pb	PPB Au	PPM As	
	76776	64	0.6	144	18	10	354 \	
	76777	56	0.4	94	14	10	88)	
Z	76778	38	0.4	92	8	10	86 /	TRHY
6	76779	42	0.4	96	12	10	106	1- 4 -
*	76780	44	0.6	100	16	10	118)	
	80457	44	0.2	90	16	10	16	
S	80458	36	0.4	64	10	10	18	
	80459	40	0.4	74	10	10	22	÷ -
T.	80460	46	0.2	76	10	10	10	*
5	80461	60	0.6	68	8	20	16	
9	80462	38	0.2	80	12	10	16	
7	80463	52	0.2	88	16	10	16	15
5	80464	36	0.2	68	10	10	14	
S	80465	62	0.2	82	10	10	14	
	80466	50	0.2	82	12	10	14	
1	80467	56	0.2	70	8	10	18	
S	80468	28	0.4	88	10 -	10	12	
-	80469	42	0.4	76	12	10	10	- (j.
	80470	62	0.6	78	12	10	20	
S	80471	48	0.4	76	14	10	10	
<i>c.</i> ;	80472	52	0.2	80	14	10	16	
	80473	56	0.2	74	10	10	14	
5	80474	30	0.2	120	10	10	14	11
S	80475	58	0.2	82	14	10	12	
	80476	40	0.2	78	10	10	10	
	80477	34	0.2	94	8	10	14	
S	80478	56	0.4	78	12	10	16	
r-	80479	44	0.4	76	10	1.0	1.2	
	80480	36	0.2	96	10	1.0	14	
5	80481	44	0.4	92	14	10	14	
5	80482	56	0.4	86	10	10	22	
	80483	28	0.4	98	В	10	12	
-	80484	54	0.4	106	20)	10	321	
S	80485	50	0.2	90	10	1 O	1 65	
	80486	36	0.2	106	10	10	14	
·	80487	18	0.2	242	-1	10	28	
H	80488	26	0.2	162	6	10	34)	
25	80489	42	0.4	70	16	1.0	50 5	-P .
	80490	48	0.4	86	14	10	38	
FT	30491	58	0.6	108	10	10	34	

CERTIFIED BY :

Nonstar

8511-024 2225 S. SPRINGER AVENUE BURNABY, B.C. V5B 3N1 TEL : (604) 299 - 6910

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	92	01	oı	811	4.0	242	26408	A
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APPENDIX B

STATEMENT OF COSTS

NORANDA EXPLORATION COMPANY, LIMITED

STATEMENT OF COST

PRO	DJECT : THIM	GROUP				DATE :	November 1985	
TYF	PE OF REPORT :	Geologica	L/G	eochemic	al			
(د	Wanes							
a)	No of Dave	5						
	Roto par Days	¢ 81 00						
	Dates From:	Nov 1 -	No	w 5 19	85			
	Total Wages	5	×	\$ 81.0	0		\$ 405.00	
ь)	Food and Acco	modation:						
	No of days	5						
	Rate per day	\$ 65.00						
	Dates From:	Nov. 1 -	No	v. 5, 19	85			
	Total Cost	5	×	\$ 65.0	0		\$ 325.00	
c)	Transportatio	n:						
	No of days	5						
	Rate per day	\$ 41.00						
	Dates From:	Nov. 1 -	No	v. 5, 19	85			
	Total Cost	5	x	\$ 41.00			\$ 205.00	
d)	Instrument Re	ntal:						
	Type of Instr	ument						
	No of days							
	Rate per day	\$						
	Dates From:							
	Total Cost		X	\$				
	Type of Instr	ument						
	No of days							
	Rate per day	\$						
	Dates From:							
	Total Cost		x	\$				

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f)	Analysis (See attached schedule)		\$ 526,20
g)	Cost of preparation of Report		
	Author		\$ 150.00
	Drafting		\$ 150.00
	Typing		\$ 75.00
h)	Other: Contractor:		
	3 days X \$ 280.00 - Backhoe 27 hrs. X \$ 18.00/hr. + \$ 100.00 - (Operator)	\$ 840.00 \$ 586.00	
		\$ 1,426.00	\$ 1,426.00
To	tal Cost		\$ 3,262.20
e)	Unit costs for Geology		
	No of days 2		
	No of units		
	Unit costs \$ 262.00 /		
	Total Cost 2 × \$ 262.00		\$ 524.00
f)	Unit costs for Geochem		
	No of days 3		
	No of units 54 samples		
	Unit costs \$ 24.30		
	Total Costs 54 x \$ 24.30		\$ 1,312.20
Cor	ntractor		\$ 1,426.00
Tot	tal Cost		\$ 3,262.20

NORANDA EXPLORATION COMPANY, LIMITED (WESTERN DIVISION)

DETAILS OF ANALYSES COSTS

PROJECT: THIM GROUP

<u>E</u>	LEMENT NO. OF	DETERMINATIONS	COST PER DETERMINATION	TOTAL
SOILS:				
	Cu	30	1.60	48.00
	Zn	30	.60	18.00
	РЬ	30	.60	18.00
	Ag	30	.60	18.00
	Au	30	4.00	120.00
	As	30	1.50	45.00
				\$ 267.00
POCKS				E
ROCKD.	Cu	24	1 60	38 40
	Zn	24	.60	14.40
	Pb	20	. 60	12.00
	Ag	24	. 60	14.40
	Au	24	4.00	96.00
	As	24	1.50	36.00
	Special Preparation	n 24	2.00	48.00
				\$ 259.20
Total	Analysis: \$ 267.0	00 + \$ 259.20 =		\$ 526.20

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APPENDIX C

STATEMENT OF QUALIFICATIONS

I, John Keating of the City of Vancouver, Province of British Columbia, do hereby certify that:

I am a resident of British Columbia, residing at 1877 West 5th. Avenue.

I am a graduate of Concordia University, Montreal, with a Bachelor of Science Degree in Geology.

I am a member in good standing with the Canadian Institute of Mining and Metallurgy.

-

I have been a temporary employee with Noranda Exploration Company, Limited since May, 1979 and a permanent employee since March, 1983.

John Keating Project Geologist Noranda Exploration Company Limited(No Personal Liability)

STATEMENT OF QUALIFICATIONS

I, Ian G. Mitchell of the City of Vancouver, Province of British Columbia, do hereby certify that:

I am a geologist residing at 2044 West 29th Avenue, Vancouver, B.C.

I have graduated from the University of British Columbia in 1983 with a B. Sc. in geology.

I have worked in mineral exploration since 1978.

I have been employed by Noranda Exploration Company, Limited, intermittently since May, 1983.

Mishell

Ian G. Mitchell



HEMATITE AND CALCITE, TRACE PYRITE, OFTEN IN RUSTY WEATH -ERED FRACTURES, OR OCCASIONALLY DISSEMINATED. WHITISH SILICEOUS CLASTS (<1cm.) ARE COMMON.

DARK GREY TO BLACKISH BRECCIA WITH WHITISH TO GREENISH CHLORITE RICH SILICEOUS CLASTS WITH UP TO 30% PYRITE. MINOR DISSEMINATED SULPHIDES ONLY IN DARK MATRIX, WHICH IS ONLY SLIGHTLY SOFTER THAN QUARTZ. TOTAL AUG. SULPHIDES = 5-10% HIGHLY TO EXTREMELY FRACTURED, WITH GOSSAN WEATHERING. OFTEN ROCK IS CRUMBLY, WITH MUCH LIMONITE AND SOFTER GREYISH-BLACK WEATHERED OUT SULPHIDES LOCALLY. POSSIBLY GRAPHITIC. CLASTS VARY FROM <.5mm to <1cm, ARE POORLY SORTED AND GENERALLY WHITISH. MATRIX HAS NUMEROUS TINY FELDSPAR AND MAFIC CRYSTALS (USUALLY <.5mm LONG).



COPPER(Cu) - Highest Value only 62ppm .. Not





Soil Profile Pits Bluff or Cliff Road Cleared Area (concave towards trees) Creek	
Scale 1:2500 50 100 150 200 250 Metres SYLVESTER'K' J. V. SYLVESTER'K' J. V. THIMBLE GRID TRENCHING LOCATION MAP RVEY BY: I.M.& D.D. DATE: July/86 AWN BY DATE: 1:2500 NORANDA EXPLORATION OFFICE: Vancouver	