# $07 / 86$ <br> ASSESSMENT REPORT <br> DRILLING <br> DDH BAR 85-1 <br> ON THE BAR 8 MINERAL CLAIM <br> N.T.S. 82G/5W <br> Lat. $49^{\circ} 27^{\prime} \mathrm{N} \quad$ Long. $115^{\circ} 56^{\prime} \mathrm{W}$ 

FILMED
FORT STEELE MINING DIVISION

# GEOLOGICAL BRANCH ASSESSMENTRFARCRT 

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14,548
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Owner : Therm Exploration
Operator: Noranda Exploration Company, Limited (no personal liability)
Author : James McDonald
Date : September 12, 1985
PAGE

1. INTRODUCTION ..... 3
2. LOCATION AND ACCESS ..... 3
3. TOPOGRAPHY ..... 3
4. CLAIMS INFORMATION ..... $3 \& 4$
5. MODELING ..... 4
6. DRILLING ..... 5
7. CONCLUSION ..... 5
APPENDICES
Appendix 1 Statement of Costs
Appendix 2 Statement of Qualifications
Appendix 3 Drill Logs
DRAWINGS
Drawing 1 Drill Section DDH Bar 85-1 ..... Scale 1:1000

## 1. INTRODUCTION

During 1985 diamond drill hole Bar $85-1$ was initiated in order to test the Sullivan time horizon for a Sullivan type ore body. The objective of the hole was to intercept the large mineralized apron associated with such an ore body, and then follow the apron to the ore body with additional drill holes. The hole was postponed at $1,265 \mathrm{~m}$ (4148 ft.), an estimated 85 m ( 280 ft .) above the targeted Sullivan time horizon. The hole is to be extended to the target depth in the fall.

## 2. LOCATION AND ACCESS

Diamond drill hole Bar $85-1$ is located approximately 12 km southwest of Cranbrook, B.C. on the southwestern end of the Lumberton reservoir, at approximately the following co-ordinates:

$$
\begin{array}{ll}
\text { Longitude: } & 115^{\circ} 56^{\prime} \mathrm{W} \\
\text { Latitude : } & 49^{\circ} 27^{\prime} \mathrm{N}
\end{array}
$$

It is accessed by about 1 l km of paved highway (非3) southward, 12 km of gravel road westward and northward, and 2 km of dirt road eastward to the drill site.

## 3. TOPOGRAPHY

The relief on the property is variable with slopes varying from $10^{\circ}$ to $90^{\circ}$. Maximum relief is about 2,100 feet. Vegetation consists primarily of second growth pine, douglas fir, spruce, and tamarack, and a good portion of the west and central portions of the property have been logged off.

## 4. CLAIMS INFORMATION

The Cranbrook-Bar property consists of 15 mineral claims comprising two claim groups having a total of 108 units, Claims information is as follows:

BAR GROUP

| Claim Name | Units | Kecord Number | Record Date |
| :---: | :---: | :---: | :---: |
| Bar 1 | 20 | 2015 | November 10, 1983 |
| Bar 6 | 14 | 2028 | December 14, 1983 |
| Bar 7 | 2 | 2029 | December 14, 1983 |
| Vine 55 | 18 | 1871 | July 18, 1983 |



| Claim Name | Units | Record Number | Record | Date |
| :---: | :---: | :---: | :---: | :---: |
| Bar 8 | 1 | 2164 | July | 3, 1984 |
| Bar 9 | 1 | 2165 | July | 3, 1984 |
| Bar 10 | 1 | 2166 | July | 3, 1984 |
| Bar 11 | 1 | 2167 | July | 3, 1984 |
| Bar 12 | 18 | 2168 | July | 3, 1984 |
| Bar 13 | 10 | 2169 | July | 3, 1984 |
| Bar 14 | 1 | 2170 | July | 3, 1984 |
| Bar 15 | 1 | 2171 | July | 3, 1984 |
| Bar 16 | 1 | 2172 | July | 3, 1984 |
| Bar 17 | 6 | 2354 | February | 20, 1985 |
| Bar 18 | 3 | 2355 | February | 20, 1985 |
| Bar 19 | 8 | 2356 | February | 20, 1985 |
| Bellville | Crown |  |  |  |
| Lookout | Crown |  |  |  |

## 5. MODELING

The initial model used in targeting the Bar 85-1 drill hole was that of a simple, uncomplex sub-basin formed by a transverse fault in a spreading ridge environment. In analagous situations in modern day basins these spreading ridges follow some linear trend and the tensional stress built up by them is periodically taken up by cross-cutting transverse faults. It is the downfaulting caused by these transverse faults that forms a sub-basin necessary for the accumulation of sulfide bodies. The Sullivan ore body is thought to sit in such a sub-basin. Comtemporaneous with these spreading ridges is the injection of sills into unconsolidated sediment. These sills supply the heat needed to drive a hydrothermal convective cell required to leach lead and zinc from surrounding sediments and concentrate them as sulfides on the sea floor, with the transverse fault acting as a heat sink for the convective cell. Under such a model there is a large, stratiform apron of sulfides flanking the orebody, as seen at the Sullivan Mine. Cominco's Vine property, a crosscutting vein with high grade lead-zinc, may have been derived from such an apron, and diamond drill holes, drilled by Cominco, in the region of the Vine have reportedly intercepted thin layers of stratiform sulfides at the Sullivan horizon. These thin layers of sulfide are believed to be part of a large apron flanking a stratiform lead-zinc orebody. The direction of thickening of this apron would likely be northward towards the Cranbrook Fault, because it represents a transverse fault active during the Sullivan time, and would have caused down-faulting and the development of a sub-basin in which economic thickness of sulfide could accumulate.

## 6. DRILLING

At the time of report writing the drill hole sits at $1,265 \mathrm{~m}$ below the collar and is to be deepened another 150 to 200 m sometime in the fall. Only the first 107.41 m have been applied for assessment with more of the hole to be applied at a later date.

The first 37 m of the hole consisted of gabbroic sill with about $45 \%$ hornblende and pyroxene and $55 \%$ plagioclase. The remainder of the 107.41 m consisted of typical Middle Aldridge turbidites consisting of massive to thick bedded quartz wackes at the turbidite base with thin to medium bedded siltstones and/or mudstones at the turbidite tops. This section of the hole is interpreted to consist of proximal turbidites because it consists of frequent scour marks separated by thick to massive bedded, often amalgamated, quartz wacke bases (i.e. Bouma A horizon), and thinner siltstone and mudstone tops with plane parallel laminations and rare cross ripple laminations (i.e. Bouma $C$ to $E$ horizons). Whereas distal turbidites consist of thinner bedded, unamalgamated, turbidite bases with rare scour marks and relatively thicker turbidite tops with common cross ripple laminations.

Note: In the accompanying logs Boumas turbidite sequence of $A, B, C, D$, and $E$ is used with a variation of $A_{1}, A_{2}, A_{3}$ to account for inverse grading, clasts, and vague current laminations within the turbidite base.

## 7. CONCLUSIONS

The first 107 m of the hole intercepted typical Middle Aldridge rocks, including a gabbroic sill through the first 37 m . These rocks consist of repetitive sequences of thick to massive bedded, quartz wackes with thin to medium bedded siltstone or mudstone tops. Based upon the thicknesses of individual beds and associated sedimentary features these rocks are interpreted to represent a sequence of proximal turbidite flows.

## APPENDIX I

 STATEMENT OF COSTSPROJECT CRANBROOK
TYPE OF REPORT DRILLING

```
a) Wages:
    No. of Days 147
    Rate per Day $ 105.30
    Dates From: May 1 - August 31, 1985
    Total Wages 147 < $ 105.30 15,478.72
    b) Food and Accomodation:
    No of days 147
    Rate per day $ 51.27
    Dates From: May 1 - August 31, 1985
    Total Cost 147 7 $ 51.27 536.76
    c) Transportation:
    No of days 147
    Rate per day $ 44.49
    Dates From: May 1 - August 31,.1985
    Total Cost 147 X $ 44.49
d) Instrument Rental:
    Type of Instrument
    No of days
    Rate fer day $
    Dates From:
    Total Cost
        X $
    Type of Instrument
    No of days
    Rate per day $
    Dates From:
    Total Cost X $
```

f) Analysis(See attached schedule)
g) Cost of preparation of Report
Author ..... 200.00
Drafting ..... 200.00
ryping ..... 100.00
h) Other:
Contractor ..... 174,292.20
Total Cost ..... $\$ 204,347.04$
e) Unit costs for DrillingNo of days
No of units 1,267.9 MetersUnit costs 161.17 / Meter
Total Cost $1,267.9 \times 161.17$ ..... \$204,347.04Assessment for this report on first 107.41 meters @ $161.17 / \mathrm{m} \quad \$ 17,311.27$

## APEX <br> STATEMENT OF QUALIFICATIONS <br> APPENDIX II

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I, James McDonald of the City of Vancouver, Bricish Colurbla, do ceccify chat:

1. I am a graduate of the Universicy of Alberta uith a Bachelor of Sclence in Geology.
2. I have been steadily employed by Noranda Explocation Company, Limited since May, 1983.


# APPENDIX III 

## DRILL LOGS

NORANDA EXPLORATION COMPANY LTD.


NORANDA EXPLORATION COMPANY LTD.


NORANDA EXPLORATION COMPANY LTD.


NORANDA EXPLORATION COMPANY LTD.


Date
Logged By $\qquad$

NORANDA EXPLOR ATION COMPANY LTD.


Date $\qquad$ Logged By

NORANDA EXPLORATION COMPANY LTD.


NOR ANDA EXPLORATION COMPANY LTD.


Date Logged By


NORANDA EXPLOR ATION COMPANY LTD.


NORANDA EXPLORATION COMPANY LTD.
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## D.D.H. C•85•1


CASING

Gabbro Sill

Proximal Turbidites, thick A with thin C to E
$\longrightarrow$ Gabbro Sill
Proximal Turbidites, thick A with thin C to E
Distal Turbidites with thin B to E
107.41 m

| REVISED | RANBROOK PROJECT |
| :---: | :---: |
|  | D.D.H. $\mathrm{H}^{\text {D }}$. 1 |
|  |  |
|  |  |
| Prou. No. 3140 |  <br> Office: Vancouver |
| N.t.s. |  |
| DWG. No. |  |

