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ANVIL MINING CORPORATION LIMITED  
EXPLORATION PROGRAM FOR 1972

U. Jansons  
Feb. 24, 1972

ANVIL MINING CORPORATION LIMITED

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Anvil Mining Corporation Limited  
Faro, Yukon Territory

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## SUMMARY

The 1972 exploration will carry out a regional soil geochemistry program and a regional geological mapping program in addition to follow-up drilling, rotary drilling and geophysical programs. Payments are to be made for Swim Lake Area claims and RAM claims. The specifics of the program are:

### 1. Regional Soil Geochemistry

This is an extension of the 1971 program. Nearly 3,800 samples of "B" soil are to be taken on a 1,200 foot by 200 foot grid. Alternate samples, those forming a 1,200 foot by 400 foot grid, will be analyzed for total Cu, Pb and Zn content. A two man sample team will be used. The cost of this program is estimated at \$8,335.

### 2. Regional Geological Mapping

This program will produce a regional geological map of the Anvil claim area on a 1" = 1000' scale. This program will be carried out full time by two geologists with part time assistance by a third geologist. Cost of this program is estimated at \$66,546.

### 3. Diamond Drilling

#### A) BOB-RICH-DY Claims

Follow-up diamond drilling of two holes, for a total of 1,000 feet, will be undertaken in the BOB-RICH-DY area. This drilling was approved but not completed in 1971. Cost of this is estimated at \$13,000.

#### B) RAM and TED Claims

Drilling will test anomalies on the RAM and TED claims. Drilling of two 500 foot holes on each claim group, for a total of 2,000 feet of drilling, will take place. Access to the areas is by helicopter. The estimated cost for these programs is \$28,750.

(C) Swim Lakes Area Drilling

Specific targets will be outlined by the 1972 programs. Specific areas of interest are extensions of the SEA sulfide outcrops and evaluation of the horizon containing the SWIM orebody. For this program \$59,836 is budgeted.

4. Geophysical Programs

Geophysical programs include an evaluation of electromagnetic techniques over the Faro and Swim orebodies. The quoted cost for this is \$8,143.

Gravity surveys will also be carried out on the DEA, KAY, TED and RAM claim groups. On the DEA claims, a gravity survey will test the extension of a Kerr-Addison residual gravity anomaly from the SWIM claim group on to Anvil claims. On the KAY claims, a gravity survey will test for mass concentrations that would account for an overburden trench geochemical anomaly. Gravity surveys on the TED and RAM claims will test IP anomalies before any drilling is to be done on these claims. The estimated cost for this is \$9,000.

5. Payment

Payment in lieu of assessment work, for six months for Swim Lakes area claims and three months for RAM claims, is to be made to permit a logical sequence of ground investigation in these areas. The cost for this is \$4,150.

6. Personnel

Personnel requirements, in addition to those at Anvil, will include two summer students; one to help with geological mapping and one to supervise the soil sampling, and a high school student to help with the soil sampling.

7. Budget

The budget for 1972 exploration is as follows:

Source of Funds

Anvil Mining Corp. Ltd. Share	\$200,000
Pelly River Mines Ltd. Share	5,000
Carried over from 1971	<u>9,760</u>
Total	\$214,760

Cost of Programs

Soil Geochemistry	\$ 8,335
Geology	66,146
Geophysics	22,143
Property Payments	4,150
Drilling	<u>113,586</u>
Total	\$ 214,760

EXPLORATION PROGRAM FOR 1972 ON THE  
ANVIL AND RELATED CLAIM GROUPS

The 1972 exploration program for the Anvil and related claim groups is presented below. The programs, personnel requirements, and costs are outlined. A map of the area to be investigated is attached.

The Anvil exploration for 1972 can be divided into: (1) regional programs, and (2) follow-up programs for anomalies already known. The regional programs will include the completion of the soil sampling and geological mapping of the entire claim group. The follow-up work will include diamond drilling to test anomalies, and gravity surveys to better delineate drilling targets within zones of broad electrical and/or geochemical anomalies. Overburden drilling in the Swim Lakes area will be limited to specific areas for overburden and bedrock sampling for chemical analysis and also for assessment requirements. Also, a detailed electromagnetic "orientation" survey will be performed over the Faro #3 orebody and possibly the Swim orebody to test the usefulness of ground electromagnetics in prospecting for massive sulfide bodies in the Anvil range.

REGIONAL PROGRAMS

The two regional exploration programs are outlined below. The costs and personnel requirements are indicated.

1. Soil Geochemical Survey

The 1972 soil geochemical survey will be an extension of the 1971 survey from Blind Creek to the southeast boundary of the Anvil claim group. Samples of the "B" horizon will be taken on a 1200 x 200 foot grid with alternate samples analyzed for the total Cu, Pb, and Zn content. The intermediate samples are to be analyzed in areas where anomalous metals are indicated. Approximately 141 line miles are to be sampled. This would consist of nearly 3,800 samples of which at least 1,900 would be analyzed. The cost of analysis, plus preparation costs, are \$2.05 per sample (quoted by Coast Eldridge, Vancouver) for a total cost of analysis of \$3,895. With 10% volume discount, the final analytical cost should be \$3,505.

A two man sample team is envisaged to do this job. Since approximately the same amount of samples will be taken as in 1971, the cost of labour for sampling should also be similar, or \$4,330. If it is required for the samplers to stay at the Swim Lake camp, equipment and supplies would have to be provided, for a total estimated cost of \$500.

Total cost of geochemical soil sampling survey for 1972 would be:

Labour	\$ 4,330
Supplies	500
Sample Analysis	<u>3,505</u>
	\$ 8,335

The personnel required would be as follows:

- a. Geology student, for party chief
- b. One helper, hired locally.

## 2. Geological Mapping

Geological mapping of the claims is to be carried out on a 1" = 1000' scale. This mapping will require the preparation of a 1" = 1000' topographic base map. A cost of \$30 per square mile has been quoted (by Lockwood Survey Corporation) for the 201 square mile map. The total cost is therefore about \$6,000. Other estimates have been from \$35 per square mile (from McElhanney Engineering & Survey Corp.) and \$30 to \$50 (from Northwest Survey Corp.). \$6,000 is budgeted is budgeted for the preparation of the base map.

Personnel required for the geological mapping would include one summer student in addition to the personnel already present at Anvil.

The cost for this program is as follows:

Salaries

Geologists	\$ 43,894
Draftsman	9,600
Vehicles, Gas & Equipment	7,052
Topographic Map	<u>6,000</u>
TOTAL	\$ 66,546

DETAILED PROGRAMS

1. Geophysical Programs

Two types of geophysical surveys are proposed. One is an "orientation" survey to evaluate "deep-probing" electromagnetic techniques to determine which, if any, of these methods could be used for ground evaluation of various anomalies. A proposal for setting up and doing this work for the Faro, Vangorda and Swim orebodies was drawn up. The total cost for investigating all three would be approximately \$11,594. This, when itemized separately, is as follows:

Faro	\$ 4,893
Vangorda and Swim	<u>6,701</u>
Faro, Swim and Vangorda	\$ 11,594

If geology at Vangorda and Swim is similar, either the Vangorda or the Swim area might be investigated for \$3,350, or a total cost of \$8,143 for the orientation program. Because of the difference in host rocks, it is recommended that both areas, Faro and Vangorda or Swim be investigated. See Appendix I.

The second group of geophysical surveys is gravity coverage of the DEA, RAM, TED and KAY claims. The

area of the DEA claims has been previously investigated by soil geochemistry, ground and airborne E-M, and ground magnetometer surveys. Highly anomalous zinc contents in soil were detected in some samples. The ground E-M survey traces out a band of conductors, probably graphitic pyllite, from the SWIM claims on to the DEA claims. The SWIM orebody was located by Kerr-Addison within the graphitic unit by a gravity survey. The gravity survey would be eight line miles at a cost of approximately \$500 per mile, a total cost of \$4,000. Possibly a contingency of additional survey of two miles, or \$1,000, should be allowed for some detail lines, for a total cost of \$5,000.

Dea Gravity

Gravity surveys are to be done on the RAM and TED claims following ground investigation by geology personnel. Induced polarization surveys have indicated anomalous conductors on both of these claim groups. Soil geochemical surveys did not indicate significantly large areas of anomalous metal content. The areas of IP anomalies on the RAM claims could be covered by 6.5 line miles of traverses on lines spaced 800 feet apart, for a cost of about \$3,250, plus approximately \$1,000 for helicopter time.

Ram / Ted

The coverage on the TED claims is 13,000 feet, or 2.5 miles of traverse at a cost of \$500 per mile, plus helicopter at \$1,000, for a total cost of \$2,250 for the TED claim group. This coverage would include three lines spaced at 400 feet over the main part of the induced polarization anomaly and four lines spaced at 1,000 feet to follow the induced polarization anomaly.

A gravity survey is to be conducted over the claims KAY 19 to KAY 26 in the Swim Lakes area, where a high overburden geochem value of 720 ppm Zn was found in a bulldozer trench that was cut for assessment purposes. This survey will consist of 7 lines, 3,000 feet long spaced 800 feet apart, and consisting of approximately 4 line miles of surveying. This cost, at \$500 per line mile, would be approximately \$2,000, with \$500 included for contingency. Because of the great variability in thickness of overburden, overburden drilling for geochemical sampling and estimates of depth of bedrock will also be done.

Kay

2. Drilling Programs

Drilling programs for the Anvil claims will include the testing of targets on the BOB-RICH-DY claims that was proposed and approved in 1971 but not started due to weather, plus rotary overburden-bedrock drilling in the Swim Lakes area. This drilling in the Swim Lakes area will be performed with a Nodwell mounted rotary diamond drill unit. The cost per foot of drilling in 1971 averaged \$12.74 per foot (exclusive of sample analysis, drilling supervisor, 4 x 4, D-7 or Bombardier costs). If 10 foot samples are taken and the Cu, Pb and Zn content in samples is analyzed, an extra 20-25¢/foot of drilling must be included to the costs. A cost of \$13.00 per foot of drilling will be used to determine the drilling costs.

The following areas are considered possible drill targets:

1. BOB-RICH-DY Claims - Hole 71-213 is to be drilled to 500 feet with a second hole to test the continuity of the gravity anomaly.  
Cost 1,000 feet @ \$13.00 \$ 13,000

2. RAM Claims - The drilling of these holes is contingent on the field investigation and gravity survey.

Two holes should adequately test the presence of sulfides within the anomalous conductive zone outlined by the induced polarization survey. Depth of conductor shown by IP to be about 400 feet.

- Cost 2 holes 500 feet @ \$13.00 \$ 13,000  
plus helicopter time  
4 hours @ \$275 1,110  
\$ 14,100

3. TED Claims - Drilling of these holes is contingent on the field investigation and gravity survey. Two holes should adequately test the presence of sulfides within the IP conductors.

- Cost 2 holes 500 feet @ \$13.00 \$ 13,000  
helicopter time 6 hrs. 1,650  
\$ 14,650

4. Swim Lakes Claims - Drilling in this area is required to extend the expiry dates of these claims into at least 1973. This drilling will have to be completed before November 1972. Specific targets have not been outlined for this area and the drilling program will have to follow the field investigations in this area when significant targets have been developed. Possible extensions of SWIM and SEA sulfide masses are already suggested by the overburden drilling program during 1971. The extension of the ore can be extended both to the east and west of the SEA ore zone but the Swim orebody itself, its position relative to the local regional geology, doesn't fit in with the regional pattern. This is a problem that might be best first followed up by detailed geological mapping in this area. Help in this area might also be obtained by the regional soil geochemical survey.

#### ASSESSMENT REQUIREMENTS - 1972

Most of Anvil's and Pelly River Mines' claims are in good standing until 1973 or later except for 69 claims in the Swim Lake area, 28 RAM claims and 22 TED claims for which assessment work will be required in 1972. Other claims will require assessment work to see the claims through 1973 if it will be deemed necessary following the investigation of the data in 1972.

It is proposed to pay \$3,450 to extend the time requirements of assessment for the 28 Swim Lake claims for six months so that an orderly procession in exploration can be done in this area. A payment of \$700 for a three month extension is to be made on the RAM claims to permit a ground investigation prior to a decision of a gravity follow-up on which basis a decision would be made to drill or allow this claim group to lapse.

The TED claims are to be checked out on the ground, followed possibly by a gravity survey, and a decision is to be made following these ground surveys whether a drilling program should be conducted or the claims allowed to lapse.

Following payment on the Swim claims, and following the gravity surveys on the DEA claims, a rotary-overburden drilling program is to be carried out to test any gravity targets that are obvious drilling targets that may thus be identified, or to test targets that may be developed to test the overburden-bedrock geochemistry in an area that might be developed by mapping the areas of possible extensions of sulfide zones from the SWIM and SEA sulfide masses.

Cost to maintain land position:

1. Swim Lakes Claims	\$ 3,450
2. RAM Claims	<u>700</u>
	\$ 4,150

### SEQUENCING OF EVENTS

The outlined exploration program and related work will be carried out in the following manner:

Preliminary data evaluation and assessment filing work done in 1971 to be completed by end of April 1972. Regional geology compilations and evaluations will continue to the start of the field season.

Geological mapping will start as soon as ground conditions permit. Crown claims geology will be investigated early in field season. RAM and TED claim geology will be investigated during May-June at same time as gravity surveys. This work should be completed by mid-June 1972. The regional geology of the main claim group will proceed systematically from the Faro area to the southeast border Anvil's claim group. The field program should be completed by October 1972.

The geochemical soil survey consisting of collecting approximately 3800 samples will take approximately 85 days or three months if 45 samples per day are collected. This program will start early June and should be completed by mid-September 1972.

### Geophysical Surveys

The geophysical surveys, electromagnetic orientation and gravity surveys, will be started as soon as ground conditions permit. The electromagnetic survey should start in mid-May 1972 and should be completed by June 1972.

The gravity surveys of the four selected areas should start the mid-May and should be completed by the end of June.

Drilling

Diamond drilling of the selected areas will start in June and will be completed by the end of September. Rotary drilling in the Swim Lakes area will not start till sufficient field data are acquired to indicate areas 1) that should be further tested, and 2) areas that are covered by deep overburden and no other methods are available for obtaining exploration information.

Approximately 4500 feet of drilling can be done with the \$59,836 budgeted for this program, if costs of about \$13/per foot are used.

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

GEOCHEMICAL SURVEY

SOIL

GEOLOGICAL MAPPING

CROWN CLAIMS

RAM

TED

REGIONAL

GEOPHYSICAL SURVEY

E-M CORRELATION

GRAVITY

RAM

TED

DEA

KAY

DRILLING

DIAMOND DRILLING

Bob - Rich - DY

RAM

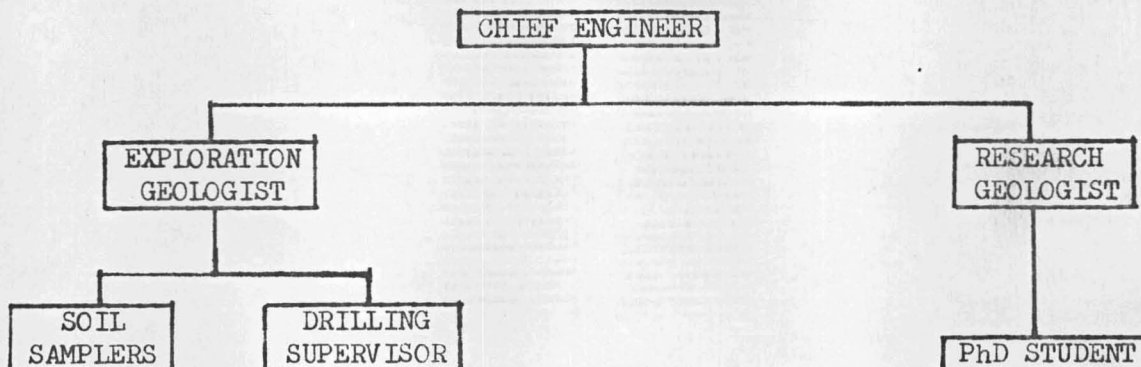
TED

ROTARY DRILLING

ASSESSMENT

DATA COMPILATION

PERSONNEL



DUTIES

- Exploration Geologist - (U. Jansons) - Supervise exploration program, look after assessment, supervise soil geochemistry, supervise drilling programs, assist with regional mapping as available.
  
- Research Geologist - (D. Jennings) - In charge of geology phase of exploration program.
  
- Drilling Supervisor - (J. Scheelar) - Supervise all field work of drilling programs. Run drill camps, look after core.
  
- PhD Student - (J. Heslop) - Assist in regional geological mapping. Work in close connection with Research Geologist.
  
- Soil Samplers - (Two to be hired) - One geology student (undergraduate or recent graduate) to run field party. One high school student to be hired locally to assist in sampling and preparing samples at field sites.  
The high school student is responsible for sampling and preparing samples to analytical laboratory.

EQUIPMENT REQUIREMENTS

The following equipment requirements are indicated for the exploration program:

- 3 pick-up trucks
  - two for geologists
  - one for soil samplers
  
- 1 Bulldozer
  - D-7 for drill site preparation and line cutting
  
- 1 Foremost Flextrack for water truck during Swim Lakes drilling program
  
- 1 Bombardier for transportation in Swim Lakes area

Potential \$94,000  
Mob-Demob 9,000  
\$85,000 potential net

$$\frac{\$85,000}{13} \approx \underline{\underline{6500}} \text{ feet}$$

$$\frac{\$51,000}{13} \approx \underline{\underline{3940}} \text{ feet}$$

BUDGET

SOURCE OF FUNDS

Anvil	\$ 200,000
Carried Over From 1971	9,760
Pelly River Mines (to be contributed) (based on area to be mapped)	<u>5,000</u>
	\$ 214,760

PROPOSED EXPENDITURES

SOIL GEOCHEMISTRY

Labour	\$ 4,330
Analysis	3,505
Supplies	<u>500</u>
	\$ 8,335

GEOLOGY

Salaries - Research Geologist	\$ 18,880
- Exploration Geologist	18,880
- Student	6,134
Supplies (as 1971)	1,652
Vehicles & Gas	5,400
Draftsman	9,600
Topographic Map	<u>6,000</u>
	\$ 66,546

GEOPHYSICS

Consultation	\$ 8,143
Contract - DEA	5,000
- KAY	2,500
- RAM	4,250
- TED	<u>2,250</u>
	\$ 22,143

PROPERTY STATUS

Payments in Lieu of Assessment	
Swim Area	\$ 3,450
RAM	<u>700</u>
	\$ 4,150

DRILLING

Supervisor	\$ 12,000
BOB-RICH-DY 1000' @ \$13	13,000
RAM 1000' @ \$13, plus helicopter	14,100
TED 1000' @ \$13, plus helicopter	14,650
Swim Lakes	
Mobilization and demobilization (1971 data)	9,375
3800' @ \$13	<u>50,461</u>

\$ 50,461 ?

3000

Potential Drilling

500  
2000  
14100  
14650  
31,250

60  
91  
3 Good  
91 x 10

\$ 50,461  
\$ 63,125  
\$ 164,299

APPENDIX I

**PETER E. WALCOTT & ASSOC. LTD.**

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Q U O T A T I O N  
=====

Client: Anvil Mining Corporation Ltd.  
Project: E.M. tests over (1) Faro (2) Vangorda (3) Swim Lake deposits.  
Area: Faro, Yukon Territory  
Access: (1) By road (2 & 3) by road, tracked vehicle or helicopter?  
Timing: June 1972  
Equipment: (1) Turam  
(2) Large loop vertical E.M.  
(3) Crone C.E.M.  
(4) E.M. 25 by Geonics?

Personnel, Equipment & Mobilization at following rates:

1.	Mobilization: 2 men & equipment Vancouver - Whitehorse - Vancouver	Cost + 10%
2.	Provision of senior geophysicist	\$140.00 per day
3.	Provision of senior operator	\$100.00 " "
4.	Provision of local helper	\$30.00 " "
5.	Provision of Turam (minimum rental 14 days)	\$30.00 " "
6.	" " V.E.M. (minimum rental 14 days)	\$15.00 " "
7.	" " C.E.M. ( " " " )	\$15.00 " "
8.	Truck	Cost + 10%
9.	Room & board	Cost + 10%
10.	Draughting	\$6.00 per hour
11.	Interpretation and report writing	\$125.00 per day

Daily charges for personnel will commence with departure of crew from Whitehorse and end with return of crew to same. Daily charges for equipment will commence from shipment from Vancouver and end with return to same.

Planned Procedure

1. Faro No. 3 deposit.

In order to avoid the electrical noise from pit operations the survey will take place when operations in the pit are shut down i.e. 12.00 a.m. to 6.00 a.m. Tests therefore need to be carried out when sufficient daylight available for working these hours i.e. June.

Propose to survey Lines 48 W, 52 W and 56 W respectively from maximum 20 S to 30 N (approx. 3 miles) where we already have I.P. and resistivity data, and thoroughly covering orebody and surrounding graphite.

Day 1. Vertical loop E.M. survey - geophysicist and operator. Helper laying out inductive loop for Turam survey to the south.

Day 2. Turam E.M. surveying outside inductive loop. Helper laying out additional wire for grounded cable source.

Day 3. Turam E.M. surveying using long grounded cable - Helper picking up loop.

Day 4. C.E.M. surveying. Helper laying out large inductive loop around orebody.

Day 5. Turam surveying inside inductive loop.

Day 6. Pick up wire. E.M. 25 survey if functional and available.

2. Vangorda and Swim Lake deposits.

At this time we do not know about accessibility of these deposits from Faro and whether or not need to establish camps.

However procedure will be the same except day in and day out time must be allowed if necessary to camp.

Estimated costs:

Faro:

- |    |  |            |
|----|--|------------|
| 1. | Mobilization of equipment & men<br>Vancouver - Whitehorse - return | \$1,000.00 |
|----|--|------------|

Estimated costs cont'd

2.	Provision of geophysicist, operator & helper for 2 days: Whitehorse - Faro - return - at \$270.00 per day	\$540.00
3.	Provision of same for 6 days - at \$270.00 per day	\$1,620.00
4.	Provision of Turam	\$420.00
5.	Provision of V.E.M.	\$210.00
6.	Provision of C.E.M.	\$210.00
7.	Provision of truck for 8 days - at \$30.00 per day	\$240.00
8.	Room and board for 8 days - at \$17.00 per man day	\$408.00
9.	Draughting - estimate 20 hrs.	\$120.00
10.	Interpretation & report writing	<u>\$125.00</u>

\$4,893.00

Vangorda & Swim Deposits

3.	Provision of geophysicist, operator & equipment for 16 days at \$270.00 per day	\$4,320.00
4.	Provision of Turam 12 days (credit of 4 days from above)	\$360.00
5.	Provision of V.E.M. 12 days	\$180.00
6.	Provision of C.E.M. 12 days	\$180.00
7.	Provision of truck for 16 days at \$30.00 per day	\$480.00
8.	Room & board for 16 days at \$17.00 per man day	\$816.00
9.	Draughting - estimate 40 hours at \$6.00 per hour	\$240.00
10.	Interpretation & report writing	<u>\$125.00</u>

\$6,701.00

Estimated costs cont'd

Total estimated cost                    \$11,594.00  
=====

+ transportation to Vangorda  
& Swim if can't drive.

Possible additions:

1.            Delays due to weather
2.            Extra time due to need to increase and/or decrease size of  
loop and possibly move loop on Turam survey on first test.

Possible reductions:

1.            Crew might be in the Whitehorse area so mobilization costs  
could be split.