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EXPLORATION REPORT 1973

FOR

ANVIL MINING CORPORATION LIMITED

Submitted by:

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Chief Exploration Geologist

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S U M M A R Y

On the Anvil claims five Turam and three gravity surveys were conducted to explore for base metal mineralization. Four diamond drill holes were completed on the geophysical targets. These include a gravity anomaly on the FARO claims, a gravity anomaly on the SUN claims, and two holes on a Turam survey on the MOR claims.

Exploration of the Pelly River Mines' claims included Turam surveys on the GALE and TIE claims and on part of the JOE claims. On the GALE claims four zones of conductor were found. One of these may represent the north-westward continuation of rocks which host the Swim deposit. Additional follow-up may be required on these anomalies. Conductor anomalies were not found on surveyed parts of the TIE or JOE claims surveyed.

Anvil started an aggressive regional exploration program in 1973. The program included examination of mineral properties, aeromagnetic anomalies, regional soil and stream geochemical sampling and a joint venture reconnaissance stream silt sampling program.

The outside property examination led to the staking of the MM claim group in the Seagull Creek area, about 40 miles south of Ross River, Y.T. The staking of the claims was based on the presence of extensive pyrrhotite and pyrite mineralization plus the presence of massive stratabound base metal mineralization, reportedly containing more than 19% combined lead-zinc in high grade samples. Field work by Anvil included geological mapping. Magnetic, gravity and soil geochemical surveys led to drilling of two bore holes on the property. While up to 40% sulfides were encountered in several multiple foot intersections, the highest combined assay was 0.89% Pb-Zn in a 10 foot intersection in one hole, and a 150 foot zone of 0.20-0.25% Pb-Zn was found in the second.

Regional soil and stream silt geochemical sampling programs were conducted in the Blind Creek Basin, the Tummel-Pelly River Basin, and the Lapie Lakes-Seagull Creek area. Sampling in the Blind Creek area revealed two main zones of anomalous lead and zinc anomalies - one at Mt. Mye and the other on the eastern slopes bordering the basin. In the Tummel-Pelly River Basin, highly anomalous base metals were found in silts from Anvil Creek and possibly anomalous values near Fishhook Creek on Tay Mountain. In the Lapie Lakes-Seagull Creek areas the available results reveal an eight mile by eight mile zone with anomalous samples near the headwaters of Groundhog Creek in the vicinity of Canol Mines' molybdenum-tungsten property.

The regional follow-up of sixty-two aeromagnetic anomalies indicates that most are caused by magnetite and pyrrhotite, not all could be evaluated by brief field investigation and further follow-up is recommended on three in the Seagull Creek area, two on the north side of the Anvil Range, and one each on the Glenlyon and Quiet Lake map areas.

Reconnaissance geological mapping in three areas defined the distribution of pelitic rock units which host lead and zinc mineralization in the Anvil area. The mapping was in the Tummel-Pelly River Basin, the southwest margin from the Glenlyon Range to the Hoole River, and the core of the Glenlyon Range.

Investigation of 27 selected properties from the Northern Cordilleran Mineral Inventory led to the recommendation of the acquisition of four on a low priority basis and one on a high priority basis.

Investigation of other properties by A. Allan resulted in the recommended joint venturing on two properties in the Mayo Mining District. One is based on a soil geochemical survey on a property held by Rackla River Mines north of Kathleen Lake, the other is a major outcropping zone of sphalerite mineralization in the Goz and Duo Creek areas held by Barrier Reef Resources.

Two regional reconnaissance stream silt sampling joint venture programs were completed in the Virginia Falls and Glacier Lake map areas of the Northwest Territories with Cyprus Exploration Corp. Ltd. Two zones of highly anomalous zinc content in stream silt samples were defined and three hundred and fifty mineral claims were staked over these zones.

Most of Anvil's claims in the Anvil Range are in good standing until 1974. Eighteen SB claims were staked on Swim Lake. The CROWN, MOR and SINK claims will be recommended to be allowed to lapse.

The budget review indicates projected expenditures to December 31, 1973 at \$460,865.00 out of a budget of \$466,000.00 from Anvil and \$23,710 (less \$13,988 or Anvil's share) from Pelly River Mines, for a total budget of \$475,722.00.

Surface trenching at the Tantalus Butte coal mine indicates the main coal seam to extend 4000 feet past the present working face believed to be sufficient for a life of 24 years at a 100 ton per day operation.

For 1974 exploration programs of geophysics and diamond drilling is proposed for follow-up work on the Anvil claims. Continuation of the Lapie Lakes-Seagull Creek Tummel-Pelly Basin geochemical surveys and a soil geochemical survey to explore pelitic rocks on the southwest side of the Tintina Trench (Pelly River Valley) from Faro to Ross River is recommended. A regional soil geochemical survey is also recommended for Summit Lake-Howard's Pass rock equivalents on the Sheldon and Tay River map areas.

Detailed field follow-up will be required on the MM claims in the Seagull Creek area and the Anvil-Cyprus joint venture claim groups in the Northwest Territories. Potential joint ventures may be worked with Rackla River Mines, Barrier Reef Resources, Hecla Mining Co. of Canada, and Cyprus Exploration Corporation Ltd. on various projects.

The projected budget for the 1974 exploration programs is:

Committed	Continuing Programs	\$ 402,410.00
	Raw Prospects and Follow-Up	69,500.00
	Possible Joint Venture	<u>605,000.00</u>
	Total	\$ 1,121,910.00

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showed a strong response in contrast to the AEM survey which indicated a decreasing response in this zone. This could be interpreted as a deepening of the conductor and possibly a change in conductivity within the conductor unit. Three gravity profiles were obtained across this zone, but they revealed no associated mass concentrations. The Turam anomaly probably reflects an increase in graphite content in phyllites at depth, while the AEM suggests an increasing thickness in the overburden cover.

SINK Claims:

The Turam survey on the SINK claims, which were staked to cover an airborne magnetometer anomaly, revealed several bands of east-west trending conductors, but none were correlated directly with the magnetic anomaly. A ground magnetometer and a gravity survey were conducted over parts of the Turam grid and these located the zone of anomalous magnetic response, but no zones of anomalous mass concentration. The magnetic anomaly is correlated with a zone of virtually no electrical response. This combination, and the characteristic Turam profiles, suggest the presence of underlying amphibolite. The zones of conductors probably reflect graphitic phyllites.

DY-GALE Claims:

The Turam survey of the DY-GALE claims was to provide exploration data for the Blind Creek basin, and to trace the graphitic strata which host the Swim sulfide deposit to the west from the SWIM claim block onto Anvil's claims. This survey detected four zones of conductors - the northern most of which may be the extension of rocks from the SWIM claims. The other anomalies appear to be shallow conductors, possibly related to graphitic zones within the phyllite rock units. In several cases, outcrops

of graphitic phyllite have been found near areas of anomalous conductors. To date no follow-up exploration work has been done on these anomalies.

MOR, PEA, LEA, etc. Claims:

The MOR, LEA, PEA, etc. claim area is one of limited outcrop and limited previous exploration, and was selected for a Turam survey. This survey revealed two areas of vastly different conductive characteristics. The east half of the survey area is one with poor to non-conductive background which contains several distinct narrow conductor zones. The west half of the survey area is a strongly conducting zone, but in which three broad east-west striking bands of conductors can be distinguished.

An east northeasterly trending zone of moderate conductivity which appears to cut across the inferred geological grain in the east half of the survey area was selected for drill testing. The abundance of conductors in the western half of the survey area makes it impossible to evaluate if any of these are associated with mineralization.

GAL Claims:

The Turam survey on the GAL and TIE-JOE claims was conducted to provide exploration data in an area where only geological mapping and soil geochemical surveys had been conducted. The area is known to be underlain by phyllites along the western side of the survey area and calc-silicate rocks and small areas of biotite muscovite schists, in which the Faro ore bodies occur, outcrop in part of the eastern part of the survey area. The Turam survey indicated a band of shallow, probably graphitic conductors along the western margin of the survey area and virtually no anomalous conductors in the eastern two-thirds of the surveyed area.

Gravity Surveys:

Gravity surveys were conducted in areas of known or suspected moderate to strong electrical conductors, as indicated by the Lockwood AEM surveys. Three areas, the SEA-MOR, DEA-DY, and SUN claims, were selected for extensive gravity surveys, while three other areas, the CROWN, East SEA and SINK claims, were selected for reconnaissance gravity lines across Turam detected conductors.

SEA-MOR Claims:

The gravity survey on the SEA-MOR claims checked for possible mass association with an AEM indicated conductive rock unit and a spatially closely related parallel linear AMAG anomaly. It also filled a gap in gravity data between surveys on the SEA and MOR claims. Anomalous gravity responses were not detected, but the survey did suggest that the area is underlain by zones of two different densities. The two calculated specific gravities are about 2.5 and 2.9, which are similar to those measured for phyllites and amphibolites, respectively. It also suggests, therefore, that the conductive part of the area is probably underlain by graphitic phyllite and the magnetic area is underlain by amphibolite.

DEA-DY Claims:

The gravity survey on the DEA-DY claims, on the Swim Lake side of Blind Creek, checked for mass associations in an area of extremely high (to 4,000 ppm) zinc soil geochemical results, which is known to be underlain in part by graphitic phyllite. Some trench samples of graphitic material indicated anomalous zinc in rock. Strong positive residual gravity anomalies were not found to be associated with soil geochemical anomalies in this area.

SUN Claims:

The gravity survey on the SUN claims covered the area to the south-west of the GALE claims and Vangorda Mines' claims. The survey in this area was designed to check for possible mass associations with graphitic conductive horizons in an area where anomalous high base metal in soil geochemical samples were found. This survey found one strong isolated residual gravity anomaly to the southwest of Shrimp Lake. Diamond drilling of this anomaly suggests that it represents a high in the bedrock topography. No zones of massive sulfides were encountered. The source of the anomalous base metals was not found. The 800 foot line spacing suggests that if massive sulfides are present in this area, that they probably are not present in economically significant volumes.

CROWN, East SEA Claims, and SINK Claims:

Gravity profiles were obtained for areas of anomalous Turam conductivity. Zones of mass concentration were not associated with these conductors.

Drilling:

Four diamond drill holes, 73X1, 73X2, 73X3 and 73X4 were completed on Anvil Mining Corporation's claims in 1973 as follow-up of geophysical results. The details are:

73X1 - Faro Claims - This drill hole was located on a gravity anomaly on the east side of the Faro orebody. The survey conducted in 1966 revealed an extensive gravity anomaly. It was previously tested only at the north end by one diamond drill hole and further drilling was warranted. From the results it appears that the gravity anomaly reflects a ridge in the bedrock topography.

73X2 - SUN Claims - The isolated gravity anomaly on the southwest side of Shrimp Lake was drilled to 543 feet. Interpretation of the available exploration data suggests that the gravity anomaly reflects a ridge in the bedrock topography.

73X3 - MOR Claims - A Turam anomaly cuts across the interpreted geological grain of the region. Drilling is in progress at the present time.

73X4 - MOR Claims - A Turam anomaly (same as 73X3) cuts across the interpreted geological grain of the region. This drill hole intersected 141 feet of graphitic phyllite at the top of the hole. Sphalerite was found in a 1 inch quartzite stringer at 72 foot depth. The remaining footage was biotite chlorite sericite phyllite to depth of 479 feet. Sulfide minerals are sparse in this drill core.

EXPLORATION OF PELLY RIVER MINES' CLAIMS

Exploration work on Pelly River Mines' claims was comprised of Turam coverage of the entire GALE claim group and part of the TIE and JOE claim groups. Geophysical surveys on the SUN and DY claims were used for assessment credits in the GALE claim group to restore the full assessment credits on ground which was lost due to the inadvertent lapse of the BOB and LAKE claims in 1972. The details of the surveys were previously covered in the section dealing with Anvil claims (see p.3).

MM CLAIMS

One hundred and fifty-seven mineral claims were staked as a result of regional exploration follow-up of magnetic anomalies and properties selected from the Northern Cordilleran Mineral Inventory. Grab samples from this area reportedly contained more than 19% combined zinc and lead. Field investigation revealed not only extensive areas of limonite staining but also extensive pyrite and pyrrhotite mineralization. Further investigation, sampling, and geological mapping found one 300 foot long and 50 foot thick zone of magnetic sphalerite mineralization. Assays from this area are:

High Grade Sample No. 1	2.1 % Pb	9.4 % Zn
High Grade Sample No. 2	1.5 % Pb	14.2 % Zn

Chip Channel Samples:

Sample A 50 foot width; tr. Au; .70 Ag; 1.20 Pb; 1.02 Zn;
.08 Cu.

Sample B 40 foot width; tr. Au; .20 Ag; .83 Pb; 2.22 Zn;
.10 Cu.

Sample C 40 foot width; tr. Au; .32 Ag; 1.60 Pb; 5.28 Zn;
.22 Cu.

Sample D 300 foot length; tr. Au; .62 Ag; 2.20 Pb; 2.64 Zn;
.08 Cu.

Because the magnetic mineralization occurs in a cirque wall and appears to occur in a flat lying quartz feldspathic-schistose rock, a ground magnetometer and soil sampling program was conducted in the vicinity of the known mineralization on the slopes away from the cirque face. Three bands

of coinciding magnetic and geochemical anomalies were obtained. A weak magnetic anomaly and strong geochemical anomaly was associated with the known massive sulfide mineralization. Because of the extent of the anomalies, a gravity survey was conducted to define better two drill targets within the zones of the anomalies.

Two diamond drill holes, 73 MM 1 and 73 MM 2, were spotted and drilled to test coinciding geochemical and geophysical anomalies. Zones of massive base metal sulfides were not intercepted in either of the drill holes, but several short zones of 20-40% estimated total sulfides (mainly pyrrhotite with lesser pyrite) were present. Samples were assayed and while none of the samples contained more than 1% combined lead-zinc, 170 feet of 0.20-0.25 combined lead-zinc was obtained. A summary of the assays is given below:

<u>Hole</u>	<u>Element</u>	<u>Range</u>	<u>Best Combined Pb + Zn</u>	<u>Depth= (Feet)</u>
73 MM 1	Cu	Tr. to 0.01%		
	Pb	Tr. to 0.89%		
	Zn	Tr. to 0.11%		
			0.89 %	380-390
73 MM 2	Cu	0.01 - 0.4%		
	Pb	Tr. to 0.14%		
	Zn	Tr. to 0.27%		
			0.27 %	(290-300) (350-360)
			0.30 %	370-380

Additional exploration for base metals is recommended in this area because of the large amount of sulfide mineralization present.

OUTSIDE EXPLORATION AND GEOLOGICAL INVESTIGATIONS

Outside exploration in 1973 included regional soil geochemical surveys, investigation of airborne magnetic anomalies in the Anvil Range of equivalent rocks, property investigations, and regional reconnaissance geological mapping of selected geological areas.

Regional Geochemical Surveys:

Three regional soil and stream silt geochemical sampling programs were conducted during 1973. Two surveys, one in the Blind Creek basin and the other in the Glenlyon area northwest of the Anvil Mine site, were to explore for near surface basemetal occurrences in Anvil Range phyllites, schists, and equivalent rock units. The third survey was in the Lapie Lakes-Seagull Creek area about 40 miles south of Ross River, Y.T., on rocks that host the sulfide mineralization on the MM claims. All samples were analysed for their total copper, lead and zinc content.

Blind Creek Basin Survey:

Soil samples were collected on a 1200 by 200 foot grid pattern where apparently no previous soil geochemical surveys had been conducted. The analytical results have not been plotted and contoured, but two major zones of anomalies and one small area of anomalous values were revealed during the preliminary evaluation of the results.

The main zone of anomalous metal content in soil is on Mt. Mye in the vicinity of the MUR claims held by Spartan Explorations, which were restaked to cover the ground held previously by Anvil as the CAM claims. This is an area of a remnant biotite-muscovite schist roof pendant in the Anvil Batholith. This soil geochemical anomaly which is about 15,000 feet long is spatially approximately related to this schist unit. Lead

veins, reportedly up to two feet wide, have been found previously in this area.

The second zone of anomalous metal content in soil samples is on the east slopes of the Blind Creek basin to the north of Dynasty's FOTO claim group. This anomaly, which is at least 6000 feet long, is open to the east past the sample grid and appears to occur with Anvil Range phyllites and schists near the contact of a satellitic intrusive to the Anvil Batholith.

Tumme1 Basin - Pelly River Basin Surveys:

A combined stream silt and soil sample geochemical program was conducted in the Glenlyon map area on on-strike rock equivalents from the Anvil Mine area. The area sampled extends from Tay Mountain on the southeast to Detour Lakes to the northwest and was confined to the east side of the Pelly River. Sample locations were pre-selected to give an approximate one-half mile grid spacing. Analytical results of only part of the submitted samples are available to date, but these show most of the area not to be underlain by zones of anomalous base metal content except for one group of silt samples taken along Anvil Creek. Silt samples taken from Anvil Creek contained strongly anomalous amounts of lead and zinc from the mouth southeast to the edge of the sampled area. This area will be re-examined by taking check samples from the mouth of Anvil Creek back up stream to include Rose Creek to the Anvil tailings pond. The silt samples may be contaminated by material from the tailings. The distance along the creeks from the tailings to the sample sites is approximately 18 miles and it is not known if the contaminants would travel this far.

Lapie Lakes - Seagull Creek Area:

A combined stream silt and soil geochemical survey was conducted in the Quiet Lake map area between the Lapie Lakes and Seagull Creek over schistose rocks similar in age and type to those which host the sulfide mineralization on Anvil's MM claims. Sample sites were pre-selected to yield an approximate half mile grid sample distribution in areas below the soil and tree line. Results of only part of the samples submitted for analysis are available to date and the preliminary interpretation of these shows an area 8 miles by 8 miles of anomalous lead and zinc in stream silt and soil samples. This area is near the old Canol Mines molybdenum-tungsten property near the headwaters of Groundhog Creek. Analytical results are not yet available for samples taken in the vicinity of the MM claims.

Two main population modes for lead and zinc are revealed in the histogram plots of the analytical results. This may reflect the presence of two different underlying rock types such as limestones and schists, which are known to be present. The analytical results will have to be evaluated carefully so that anomalies over limestone are not overlooked because of their overall lower background base metal content.

Regional Aeromagnetic Anomaly Investigation (D. S. Jennings):

Because of the near coincidence of federal aeromagnetic anomalies with known sulfide deposits of the Anvil district, a program of regional aeromagnetic investigation was undertaken. Aeromagnetic (AMAG) anomalies in pelitic rocks correlative to those of the Anvil district were targets for ground investigation on the Glenlyon, Tay River, Finlayson Lake, Quiet Lake and Wolf Lake sheets. From the available Federal Government aeromagnetic maps, anomalies that could not be related directly to changes in rock types were selected for field investigation. Of the sixty-two anomalies investigated on the ground, 27 were on mafic igneous rocks, 21 on pelitic rocks, 3

on calc silicates, 4 on carbonate rocks, 4 on other intrusives. Although the cause of most of the anomalies was found to be magnetite and/or pyrrhotite in the rocks, specific causes of 16 anomalies were not found. Several of the weak anomalies at contacts of rock units may be the result of weakly contrasting magnetic susceptibilities, others still remain to be explained.

The anomalies of interest for further follow-up include: 1) three areas of no outcrop near the MM claims (where AMAG anomalies are known to be related directly to pyrrhotite in schistose rocks), 2) two anomalies on the north side of the Anvil Range which occur over biotite muscovite schists such as those which enclose the Faro deposit, and 3) one anomaly on the Glenlyon map area and two on the Quiet Lake map area are of lower exploration priority.

Reconnaissance Geological Mapping (D. S. Jennings):

Three areas were geologically mapped in reconnaissance fashion to delineate pelitic rock units equivalent to those which host lead and zinc mineralization in the Anvil area. These areas include:

1) strike equivalents to the northwest of the Anvil metamorphic belt covering 575 square miles of Tummel Basin between Tay Mountain and Macmillan River.

2) Anvil Range correlative pelitic rocks along the southwest margin of Tintina Trench between Glenlyon Range and Hoole River, covering an 800 square mile area.

3) correlative pelitic rocks over a 200 square mile area in the core of Glenlyon Range.

Mineral Property Investigations (D. S. Jennings):

Twenty-seven properties selected mainly from the Northern Cordilleran Mineral Inventory were visited. Acquisition of four is recommended on a low priority basis, one was staked (MM claims), and one acquisition is recommended on a high priority basis because of its known zones of geochemical anomalies, minor exposed sulfide mineralization, and its position in an area of recommended regional geochemical exploration.

Property Visits (A. Allan):

Six properties, five of which contained lead-zinc mineralization and one which contained copper mineralization, were examined. This resulted in recommended follow-up on Rackla River Mines' property located to the north of Kathleen Lakes, Mayo Mining District, and on Barrier Reef Resources Ltd.'s property located in the Goz and Duo Creek areas of the Mayo Mining District.

The Rackla River Mines' property contains a 1200 x 3000 foot area of strongly anomalous lead and zinc in soils overlying shales, limestones, and dolomites. Small zones of sulfide mineralization are present elsewhere on the property. Agreement in principle has been reached between Rackla River Mines and Anvil Mining Corporation Ltd. on a 70%-30% option agreement-joint venture on the property.

The Barrier Reef property is an excellent zinc prospect located on Goz and Duo Creeks about 120 miles northeast of Mayo, Y.T. Anvil has expressed a strong desire to Barrier Reef's management to joint venture on this property. Barrier Reef has indicated that it does not want to deal with anyone on the property at the present time, and if it wants to deal on this property with Anvil in the future, they will make contact.

Cyprus-Anvil Joint Venture:

Anvil participated on a 50-50 basis with Cyprus Exploration Corp. Ltd. in two regional reconnaissance stream silt exploration programs which were based on the exploration of "shale-out", or shale-limestone-dolomite facies change areas. These zones are known to contain lead-zinc mineralization in many parts of the world. The programs in the Selwyn depositional basin were compiled and areas for follow-up were selected by Cyprus Exploration Corp. Ltd. of Vancouver, B.C. Anvil joined this program when Cyprus did not have sufficient funds to complete the programs in the two selected areas. Participation in this joint venture was recommended because of the success of this type of an exploration program by Canex-Placer at Summit Lake, Y.T. and discovery of large areas of lead-zinc mineralization in similar geological environments at Godlin Lakes by Welcome North Mines Ltd., and at Goz Creek by Barrier Reef Resources Ltd. Also, the Pine Point, N.W.T., deposits occur in this type of geologic setting.

The two areas selected for stream silt sampling are on the National Topographic Survey (NTS) 1:250,000 scale Virginia Falls (95 F) and Glacier Lake (95 L) map sheets. Only preliminary investigation of the geochemical results has been done by Anvil to date. While low intensity anomalous zones appear on the Virginia Falls area, two strong zinc anomalies are present within a Devonian-Mississippian (?) black shale unit near Grizzly Bear Lake area of the Glacier Lake map area. Three hundred and fifty claims were staked to cover the two anomalous zones.

B U D G E T

The Anvil 1973 exploration budget was reviewed with the Accounting Department. The status of the budget to October 20th. is:

Cost to September 30	\$ 295,472.45	
Payable to October 15	61,792.44	
Cyprus Joint Venture (estimated)	<u>61,000.00</u>	
	\$ 418,264.89	
On Going Drilling (MOR Claims, estimated cost)	<u>15,000.00</u>	
	\$ 433,264.89	
Salaries to Dec. 31, 1973	<u>18,000.00</u>	
		\$ 451,264.89
Deferred Turam Costs (estimated)	<u>\$ 9,600.00</u>	
		<u>9,600.00</u>
Total Estimated Exploration Costs		\$ 460,864.89

The costs to Pelly River Mines (PRM) are:

GALE Claims Turam		
22.7 miles at \$320.94/mile	\$ 7,285.33	
TIE-JOE Claims (estimated)		
10.3 miles at \$305.94/mile	<u>3,151.17</u>	
Total	\$ 10,436.52	

Cost of Program to PRM Shareholders:

Anvil Mining Corporation Ltd.	\$ 5,959.23	
Rose Creek - Vangorda Mines Ltd.	2,984.84	
Cyprus Exploration	897.55	
Dynasty	<u>584.88</u>	
	\$ 10,426.50	

The 1973 Anvil exploration budget is \$466,000.00 and the Pelly River Mines' contribution is \$23,710.00 (less \$13,988 for Anvil's share of Pelly River Mines) for a total budget of \$475,722. Expenditures projected to December 31, 1973 suggest that all the proposed programs will be under budget.

LAND STATUS

Nearly all Anvil claims have or will have sufficient work done for assessment credits to extend the expiry dates of the claims to at least 1975.

In 1973, 18 SB claims were staked to cover mineralized ground in Swim Lake formerly held by Kerr-Addison Mines. This ground was staked to improve Anvil's land position near a ground magnetic anomaly which will be drilled this winter or as soon as lake ice conditions permit.

The CROWN, SINK and MOR claims will be allowed to lapse because no zones of near surface mineralization have been indicated by exploration work.

EXPLORATION AT TANTALUS BUTTE (D. S. JENNINGS)

An underground drilling and surface trenching program to develop coal reserves is nearing completion at Tantalus Butte. Results of the trenching program on the main coal bed indicate total reserves of 1.47×10^6 tons of commercial grade coal along a 4,000 foot strike length north of the present workings. The weighted average thickness of coal intercepts on the main bed is 15.7 feet with a probable down-dip extent of 550 feet from the surface to

the main entry level. At 60% recovery, 882,000 tons of recoverable coal are indicated, sufficient reserves for 24 years operation at Faro at an annual consumption of 36,500 tons/year (100 tons/day).

The trenching information further suggests the hanging and foot wall coal beds to be uncommercial, as was suggested in the 1972 surface trenching and underground cross cut. Open pit possibilities for a thickened portion of the main bed are being considered. The underground drilling program is in its initial phases with no significant results to date.

OTHER 1973 EXPLORATION

The examination of the AMAG anomalies led to the ground follow-up exploration of anomaly No. 11 on the Glenlyon map area. Three lines of Turam, ground magnetometer and soil sampling surveys were conducted. The Turam survey indicated no conductors associated with the peak magnetic anomaly as located on the surface by a ground magnetometer survey. Anomalous base metals were not found in soil samples taken along the geophysics lines. The magnetic anomaly is believed to represent a lens of unshered magnetic andesite within chloritic phyllites which are the result of shearing of andesite. This phenomenon can be seen on a small scale in the area immediately outside the anomaly.

PRELIMINARY PROPOSALS FOR 1974 EXPLORATION

A preliminary compilation of potential exploration programs for 1974 is presented. Detailed final proposals will be made after all 1973 exploration data have been received and reviewed in light of other available exploration data. The proposed programs include continuation of 1973 programs, investigation of specific properties, and initiation of regional reconnaissance geological programs.

Committed and Continuing Programs:

These programs are follow-up or extensions of surveys conducted in 1973. These include work on Anvil claims in the Anvil Range, MM claims, Anvil-Cyprus joint venture in the Northwest Territories, and continuation of stream silt and soil geochemical sampling.

Anvil Claims in Anvil Range:

Programs on the Anvil claims will include a Turam survey on the GAL-ED claims, geophysics and drilling on Swim Lake, and other programs that will be determined after 1973 geophysical exploration data have been received, reviewed and integrated with the already available exploration data. Preliminary review of these geophysics results indicates that:

1) 30 line miles of gravity and magnetic surveys on half of the LEA, PEA, DP, etc. claims in the Swim Lake area will be required to cover a zone of complex Turam response.

2) evaluation of Turam conductors on the GALE and GAL claims which do not show any associated soil geochemical anomalies will be by gravity and drilling. The electrical responses suggest the conductors are

near surface and the lack of related geochemical anomalies indicates that no near surface base metal deposits are present. If the sulfides are associated with these conductor zones, gravity surveys must be conducted to check for base metal massive sulfide concentrations.

MM Claims:

Soil geochemical and ground magnetometer surveys will be conducted over the entire claim group. Drilling of selected targets will follow the field investigation. Regional investigations of magnetic and geochemical surveys in the areas surrounding these claims will be completed at the same time as the rest of the exploration of the claim group is being undertaken.

Anvil-Cyprus N.W.T. Joint Venture:

Follow-up programs of claims staked in the Northwest Territories will consist of detailed geochemical, geophysical surveys and drill testing of selected specific targets. Because all data from the 1973 programs have not been compiled, the details of any follow-up program will not be final at the present time.

Soil Geochemical Surveys:

Four areas are proposed for regional soil and stream silt geochemical surveys. The areas are:

- 1) Lapie Lakes-Seagull Creek Area - This program will be a continuation of the 1973 Lapie Lakes-Seagull Creek project to test the MM area "schistose" unit for zones of anomalous base metal concentrations.

2) Tummel Basin-Pelly River-Glenlyon Area - This program is a continuation of the 1973 program in this area, plus an extension of this survey to cover equivalent rock units in the Glenlyon Range on the west side of the Pelly River.

3) Southwest Margin of the Tintina Trench from Faro to Ross River - This survey will explore for anomalous base metal concentrations in Anvil Range equivalent rock units in which massive sulfides have been drilled on the LYN claims, also anomalous base metal concentrations in soils and minor amounts of galena in graphitic phyllites on the KIRK claims in the proposed area. Two zones of base metal mineralization are known to exist here and the remainder of the rock section should be investigated for additional zones of sulfide mineralization.

Outside Properties:

Properties outside the Anvil Range that are recommended for further exploration include:

1) Rackla River Mines' Property, Mayo Mining District - Field testing of a large soil geochemical anomaly will be by trenching, additional soil sampling and a contingent diamond drilling program has been recommended. Anvil may earn a 70% interest in the property on the expenditure of \$300,000 on the property.

2) Barrier Reef Resources' Goz Creek Property, Mayo Mining District - A program for field investigation has been proposed in the event that Anvil will be able to work a joint venture or obtain an option on this property. To date, Barrier Reef Resources has indicated that it will not entertain any deals on its property, but may in the future. At that time, it will select the company with which it will deal.

3) Hecla Joint Venture, Anvil Range - Factual data have been exchanged between Hecla Mining Company of Canada Ltd. and Anvil Mining Corporation Ltd. on ground to the northwest of the FARO claim group. This data exchange was to obtain exploration data with which a possible joint venture program on Hecla's ground might be developed.

Evaluation of Hecla's exploration data and a brief geologic reconnaissance of their claims indicates that most, if not all, of their ground is underlain by a thick section of the calc-silicate unit and the best and most obvious targets have already been drilled. Obvious favourable drill targets were not found in the area which has been explored. The south half of the claim group which has virtually been unexplored may be underlain by phyllites which are known to overlie the calc-silicate rock unit.

4) Mt. Nansen Joint Venture, Carmacks Area, with Cyprus Exploration Corporation Ltd. - Cyprus Exploration Corporation Ltd. has been exploring a mineralogically zoned stock for "porphyry copper" type mineralization. Field examination indicates that this is an Arizona-type stock with a history of continuing sulfide mineralization. All exploration to date has been confined to the outer pyritic zone. Zones of mineralization for open pit mining may not be present in the pyritic zone, but deep drilling should explore for the primary copper zone. The target will be a large tonnage underground operation similar to the San Manuel or Kalamazoo ore bodies in Arizona.

Other Programs:

One prime 1974 program for the Anvil Range claims will be to compile and evaluate all available data on the Anvil claim holdings. This should be a nearly full time project for one man. Geological mapping should continue to the northwest along Rose Creek to Anvil Creek from the

FARO claim group to trace rock units found near zones of mineralization.

A short soil geochemical sampling program should be completed along the western edge of the SWIM to extend an anomalous zone found in the 1972 survey.

Possible drill testing of anomalies resulting from interpretation of previous exploration data.

A preliminary budget for the 1974 exploration season is presented. These are subdivided into three groups: 1) Committed and continuing programs, 2) Raw prospects (new), and 3) Possible joint ventures.

1) Committed and continuing programs	\$ 402,410.00	
2) Raw prospects and follow-up	69,500.00	
3) Possible joint ventures	<u>650,000.00</u>	
		\$1,121,910.00

In detail, the various categories of commitments are:

1) Committed and continuing programs:		
A) Joint ventures with Cyprus Exploration Corp. Ltd. at Grizzly Bear Lake, N.W.T.		\$ 35,000.00
B) MM Claims		
Ground Mag	\$ 2,000.00	
Soil Geochem and Analysis	8,000.00	
Drilling (2500 ft. @ \$20.00/ft.)	50,000.00	
Helicopter Support	8,500.00	
Linecutting (89.1 line miles)	8,910.00	
Map and Photos	<u>7,500.00</u>	
		\$ 84,910.00
C) Anvil Claims		
GAL Claims Turam (122 line miles @ \$240.00/line mile)	\$ 29,000.00	
Swim Lake Drill Holes (2400 ft. @ \$16.00/ft.)	36,000.00	
Swim Lake Mag and Gravity (20 miles @ \$500.00/mile)	<u>10,000.00</u>	
		\$ 75,000.00
D) Staff Salaries and Operations Overhead		
Salaries	\$ 75,000.00	
Office Space & Staff	20,000.00	
Office & Field Equipment		
4 x 4 Truck	7,500.00	
Office Equipment	<u>7,500.00</u>	
		\$ 110,000.00

E) Outside Property Investigation		
Cost for Work and Initial Follow-Up	\$ 50,000.00	
Property Investigation Expenses man days @ \$50/man/day	<u>10,000.00</u>	
		\$ 60,000.00
F) Completion of 1973 Geochem Programs		
Lapie Lake-Seagull Creek Area	\$ 7,500.00	
Tummel-Pelly Basin & Glenlyon Area 600 square miles @ \$50.00/square mile	<u>30,000.00</u>	
		<u>\$ 37,500.00</u>
	Sub-Total	\$ 402,410.00
2) Raw Prospects (new)		
A) Recon. Geochem and Geology S.W. Side of Pelly River (to cover Anvil Range Age Rock Equiv.)	\$ 31,500.00	
B) Rackla River Geochem Recon. (estimated)	8,000.00	
C) Follow-up on A and/or B (staking or drilling)	<u>30,000.00</u>	
		<u>\$ 69,500.00</u>
	Sub-Total	\$ 448,910.00
3) Possible Joint Ventures		
A) Joint Venture with Barrier Reef Resources Ltd. on Goz Creek, Mayo M.D. Prospect (see A.F.E.)	\$ 250,000.00	
B) Rackla River Property (see A.F.E.)	30,000.00	
C) Hecla Joint Venture in Anvil Range 2 drill holes to 1500 ft. @ \$20.00/ft.	60,000.00	
D) Mt. Nansen Drilling Joint Venture Porphyry Copper Consultants Diamond Drilling of Deep Holes Three 4,000 ft. holes @ \$25.00	<u>300,000.00</u>	
		<u>\$ 650,000.00</u>
	TOTAL	\$1,121,910.00

To October 20, 1973, Anvil's exploration department explored Anvil's mineral claims, examined regional aeromagnetic anomalies, examined known mineralized properties, and reviewed property submittals. The major change in Anvil's exploration program resulted from the approval by the Board of Directors of aggressive outside exploration. A. (Scotty) Allan was added to the staff as exploration geologist.

ANVIL CLAIMS EXPLORATION

The exploration of the claims in the Anvil Range continued as originally proposed in 1972 except for additional coverage on the MOR, LEA, PEA, etc. groups of claims in the Swim Lake area and the GAL, ED, TIE claims in the Rose Creek valley.

Turam and gravity surveys with follow-up diamond drilling were the principal methods of exploration. Turam surveys were conducted in areas where poor conductors were indicated by the 1966 Lockwood AEM survey. Gravity surveys were conducted in areas of strong Lockwood AEM response.

Turam Surveys:

Five areas (the East SEA; SINK; MOR, LEA, PEA, etc.; DY-GALE; and GAL claim groups) were selected for Turam investigation. The results of these investigations are summarized below.

East SEA Claims:

Two broad parallel east-west trending zones of conductors were detected. These coincide approximately with low intensity conductors on the Lockwood AEM map. The east end of the southern Turam conductor