

INTRODUCTION:

In 1964 massive pyritic lead-zinc deposits were discovered in the Swim Lake area of the Whitehorse Mining District by Kerr Addison Mines Ltd. Following the discovery and staking by Kerr Addison, peripheral claims were staked in the area by Dynasty Explorations Ltd. Continuing exploration in the Anvil Range eventually led to the discovery of the large (63,000,000 tons) massive pyritic lead-zinc deposit at Faro Creek some 25 miles to the northwest of the Swim Lake area. The find of the huge massive base metal sulfide deposit led to renewed interest in exploration and further claim staking in the Anvil Range. Dynasty Explorations Ltd. staked over 3,000 claims to cover the favourable phyllite and schist units in which the known massive sulfide deposits are located. After the formation of Anvil Mining Corporation Ltd. as an operating company to explore the Faro deposits, extensive exploration programs have been carried out to evaluate the mineral potential of the staked claims.

This report on the eastern portion of the SEA claims is a part of the evaluation of these claim groups. The east SEA claims are defined here to include 65 SEA claims in the eastern part of the SEA claims.

SUMMARY:

The eastern group of SEA claims, here discussed as the "East SEA" group has been explored by geological, geochemical, geophysical and overburden drilling methods. Only the overburden samples from rotary drill holes yielded anomalous metal values which required follow-up work. The anomalous values - mainly Zn up to 6000 ppm and only one anomalous Pb sample - are believed to reflect underlying rock. None of the geophysical surveys (magnetic, electromagnetic and gravimetric) indicate any anomalous zones or zone suggestive of massive sulfides. Worthwhile, near surface drilling targets cannot be extracted from the exploration data.

The claims should be lapsed.

EVALUATION OF THE EAST SEA CLAIMS:

Location and Access:

The "East" SEA claims are located in the Whitehorse Mining District east of Swim Lake, directly south of Moose Lake, and are shown on mineral claim sheet 105 K-2. Their relationship to the rest of the Anvil claim holdings is shown on Figure I.

Access to this area can be by dirt road from Blind Creek, by fixed wing aircraft to Little Long Lake located in the center of this claim group, or by helicopter. Ground access to the claims by 4 wheel drive vehicles can be obtained during dry summer months when most of the swamps and bogs have had a chance to drain. Ground access by wheeled vehicles to this area can be difficult. Ground access to this area by double track skidoo snow machines was effective in late winter and spring. This method was effectively used in 1972 and 1973 for geophysical work in this area.

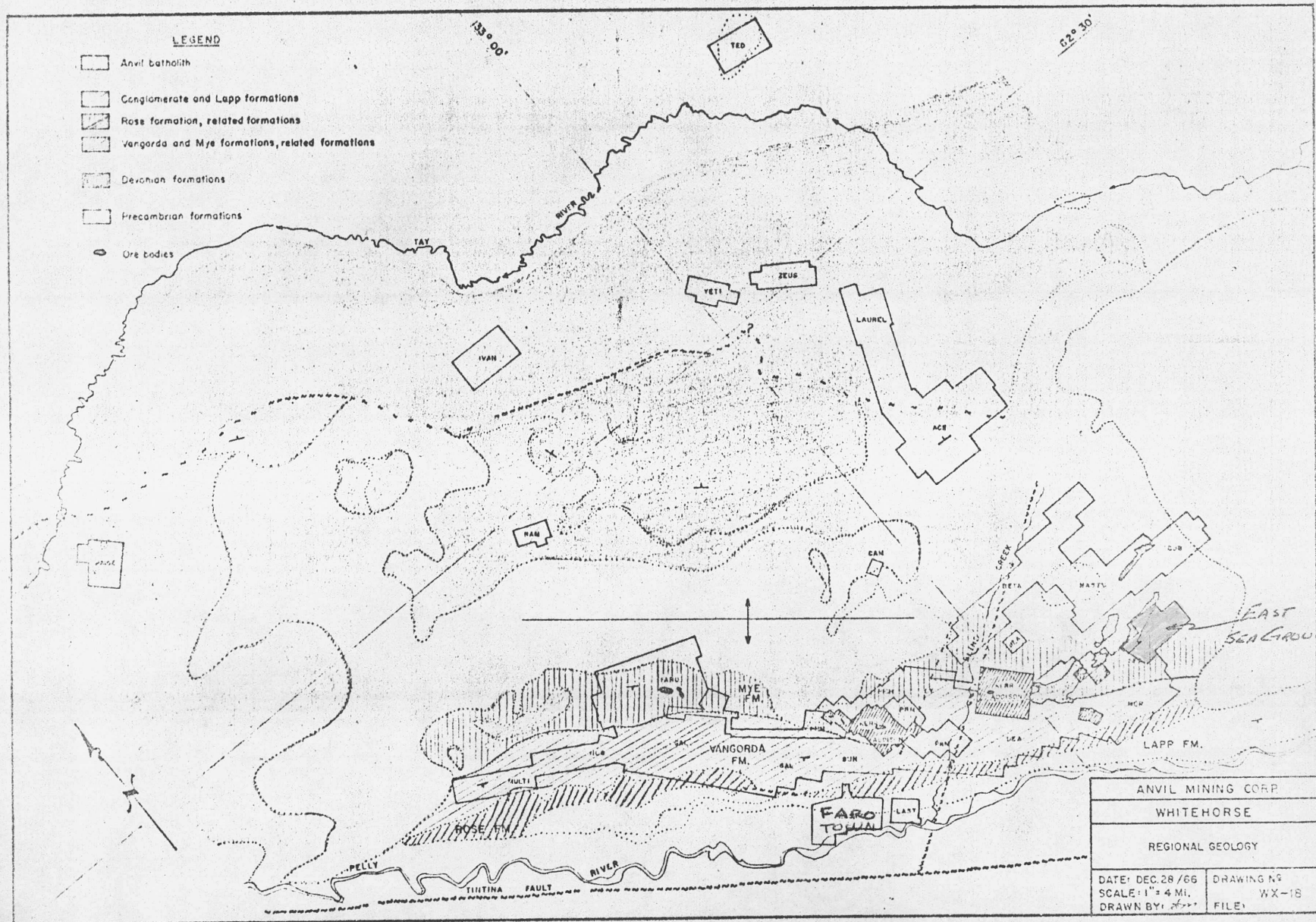
History:

The SEA claims, including the East SEA group, were staked in two stages. The first period, in 1964 Dynasty Explorations Ltd. staked peripheral claim blocks to those held by Kerr Addison Mines Ltd. in the Swim Lake area (NTS Map 105 K-2). The second period of staking was in the fall and winter of 1965 following the discovery of the Faro orebodies some 25 miles northwest of Swim Lake. This staking was designed to tie up additional areas of what were considered to be "favourable" units for exploration.

Exploration work by Dynasty Explorations Ltd. and Anvil Mining Corporation Ltd. on these claims includes airborne electromagnetic survey (1965), ground magnetometer (Adamson - 1966), two soil geochemical surveys (Hampton - 1966, Jansons - 1972), overburden drilling (Jansons - 1972), Turam electromagnetic survey (Walcott - 1973), gravity surveys (Walcott - 1973), and a more complete gravity follow-up on the Turam survey (Walcott - 1974). All the above data have been compiled on one map and are appended to this report as Figure 2.

DISCUSSION OF EXPLORATION RESULTS:

The purpose of original staking of the eastern part of the SEA claims was to tie up all zones thought to be underlain by phyllite and schist units which were equivalent to host rocks of the massive sulfide deposits in the district.



ANVIL MINING CORP.	
WHITEHORSE	
REGIONAL GEOLOGY	
DATE: DEC. 28/66	DRAWING NO.
SCALE: 1" = 4 MI.	WX-18
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Fig. 1

While little outcrop is present in the area of the SEA claims, geophysical data suggest that host rock units of the Swim massive sulfide deposit may project across and through the East SEA claims.

The evaluation of the potential presence of massive sulfides located on the East SEA group is based on results of soil geochemical and geophysical surveys. The interpretation of underlying rock units in this area is also in most part based on interpreting results of geophysical surveys.

Geology:

Geological mapping of Anvil claims in the Swim Lake area, including the East SEA group, was completed in 1972. Outcrop was not found in the immediate area of the claims but one outcrop to the east of the claim group was mapped as biotite phyllite. Scattered, sparse outcrop to the west of the East SEA claims were mapped as phyllite, and chloritic tuff was encountered in DDH 68-S-1 to the south and west of the East SEA claims. Outcrop was not found within the claim area itself.

Magnetometer Survey:

In 1966 a ground magnetometer survey, using a Sharpe MF-1 fluxgate magnetometer, was completed on 100 foot stations on 400 foot line spacings over the central part of the East SEA claims in order to establish whether the belt of airborne electromagnetic conductors had associated magnetic anomalies. Little anomalous magnetic response was encountered during the course of this survey. Profile plots of magnetic intensities along the profiles are essentially flat except along line 132 E of the magnetometer grid where a local anomaly of about 150 gammas occurs from about 200 north to 1000 north. Turam electromagnetic and gravimetric surveys in this area, but not the same grid lines, revealed no anomalies and the magnetometer survey does not indicate an accumulation of magnetic minerals as is true for the known massive sulfide deposits.

Soil Geochemical Surveys:

Soil geochemical surveys were conducted on the East SEA claims in 1966 and 1972. The 1966 survey used the 1966 grid for control and here samples were collected at 100 foot stations on lines spaced 400 feet apart. This survey covered the

central part of the East SEA claim group to test for potential geochemical anomalies that may have been associated with conductor anomalies detected by an airborne electromagnetic survey.

In 1966 a hot aqua regia digestion of the samples was used prior to a biquinoline extraction for colorimetric sample analysis for copper, lead and zinc content. None of the samples analyzed gave values sufficiently higher than the average to consider any of them anomalous.

In 1972 "B" soil samples were collected on 200 foot spacings on lines 1200 feet apart to give a coverage of the entire SEA claim area. A nitric-per-chloric acid digestion of samples was used to prepare samples for atomic absorption spectrophotometric determination of the total copper, lead and zinc content in the samples. Three zinc, four copper and one anomalous lead value were found. The values ranged up to 275 ppm Zn, 113 ppm Cu, and 50 ppm Pb. Three of the zinc samples contain more than two times the average Zn content as determined for the Swim Lake area. None of the other samples contain twice the average metal content. None of the samples contain two metals in anomalous quantities.

The ^{samples with} (distribution) of anomalous metals appears to be randomly distributed with generally one station anomalies. There is some correlation with geochemical anomalies along the tops of topographic ridges which also parallel the Turam electromagnetic anomalies. No soil geochemical anomalies are associated with the area of anomalous metal content in overburden.

Drilling:

Eleven rotary holes and one diamond drill hole have been completed in the East SEA claim area. Rotary drill holes - 1 in 1969 (69-S-1), 4 in 1970 (70X13, 70X14, 70X15, 70X16), and 6 in 1971 (RH-71-18, RH-71-19, RH-71-20, RH-71-21, RH-71-22, RH-71-23) - were drilled to sample overburden material and one diamond drill hole (68-S-1) was drilled on a gravity anomaly on the East SEA claims. Chemical analysis of overburden material revealed highly anomalous zinc in the 1971 samples.

Overburden Drilling:

Overburden rotary drill holes were drilled in the Swim Lake area in 1969, 1970 and 1972 for assessment purposes. In 1969 and 1970 samples were not retained for chemical analysis and actual site selection was based on access to roads and water due to operating problems on site. The cuttings from the 1972 holes were retained for chemical analysis to determine the total copper, lead and zinc content. None of the rotary drill holes reached bedrock, with the maximum depth drilled at 150 feet. Highly anomalous Zn values were detected in the five drill holes with values up to 6000 ppm and numerous values exceeding 1000 ppm Zn. Only one anomalous lead value (570 ppm) was found at the top of drillhole 71-018, which coincided with the 6000 ppm Zn anomaly. None of the other highly anomalous Zn samples contain anomalous amounts of Pb or Cu. Diamond drill hole 68-S-1 was located to test a 1.0 milligal residual gravity anomaly. Massive sulfides were not encountered in this drill hole and this drill hole anomaly probably represents a bedrock topographic feature rather than massive sulfides.

Electrical Surveys:

An airborne electromagnetic (E-M) and a ground Turam E-M survey has been conducted over the East SEA claims.

A Lockwood 4000 Hz in-phase/out-of-phase helicopter borne survey flown at a terrain clearance of 200 feet on 1000 foot line spacings was conducted in 1965 over the Swim Lake area and indicated two broad low intensity east-west striking conductors across the East SEA claims and one isolated E-M anomaly at the eastern end of the claim group. The two east-west striking conductors merge at the west end of Little Long Lake with one band located to the north and the other to the south of Little Long Lake.

These two conductive zones were subsequently investigated by soil sampling and ground magnetometer surveys to test for the presence of near surface base metal and magnetic sulfide deposits.

A 400 Hz Turam E-M survey was conducted over the East SEA claims to locate these airborne E-M conductors on the ground and to test for conductivities which may have been characteristic of base metal sulfides. This survey was carried out at 100 foot station intervals on lines spaced 800 feet apart. This additional survey of the East SEA claims was initiated to determine if zones of massive sulfides are present in and near the area of the zone of anomalous zinc content in overburden samples from drill holes RH-71-20, RH-71-21, RH-71-22 and RH-71-23.

The 1973 ground Turam survey located and defined four anomalies (A, B, C, D) similar to those discovered by the Lockwood airborne survey. Zone "A" of anomalous conductors was found in the east end of the survey. Here the Turam survey indicated a more conductive underlying zone while the airborne E-M suggested a zone of decreasing conductivity. Gravity profiles across this zone indicated no anomalous mass concentrations associated with this conductor anomaly.

Anomalous conductors were not found in the zone of geochemically anomalous overburden samples.

Two broad conductor bands (Zones B and C) across the claim group appear to represent moderate conductor units - probably the phyllite. Their extent, uniform width and uniform conductivity response suggests that these anomalies represent changes in underlying rock units.

Anomaly Zone "D" also appears to reflect changes in underlying rock types.

Gravity Surveys:

Two periods gravity surveys on the East SEA claims tested the Turam conductors. The survey grid was the Turam grid with 100 foot stations on lines spaced 800 feet apart. A Sharpe CG-2 gravity meter was used for the survey. Three profiles tested the anomalous Turam response relative to the airborne E-M response. Later a complete gravity coverage of all Turam conductor zones tested for possible mass anomalies. This survey indicated no residual gravity anomalies over the entire surveyed area.

INTERPRETATION OF EXPLORATION RESULTS:

Soil geochemical surveys revealed no anomalies and, therefore, no near surface base metal sulfide deposits are indicated. Overburden sample geochemical anomalies in which generally only high zinc was present suggested that the area warranted additional exploration to the north of the previous ground magnetometer survey.

A 400 Hz Turam survey was conducted over the claim area to define zones of characteristic and anomalous conductivity, and to select areas for gravity follow-up to test for associated massive sulfide deposits.

The Turam survey revealed several conductive zones on the claims which can be interpreted as rock formations by their shape and characteristic response. Other smaller and discontinuous zones of characteristic anomalous conductors could not be related as directly to being rock units.

Gravity surveys over all the conductors indicated no anomalous near surface mass concentrations within the areas surveyed.

It is concluded that no near surface massive sulfide deposits underlie the East SEA claim block. The anomalous zinc in overburden probably reflects an underlying rock unit of high zinc concentration. A similar response of high zinc in overburden was encountered on other Anvil claims (DEA, KAY) in the Swim Lake area. In the DEA, KAY area the underlying material was black shale which contained high zinc.

An alternative explanation is that the zinc in overburden has a source, possibly near surface massive sulfides, outside Anvil's claim holdings. Previous experience in the district shows anomalous copper, lead and zinc and not just anomalous zinc in overburden where the source material was a massive sulfide deposit.

The source of the high zinc is not believed to be a massive sulfide deposit of the Faro-Swim-Vangorda type. Worthwhile drill targets for near surface shallow massive sulfides are not indicated by the exploration data. Zones of massive sulfides probably are not present in the claim area.

The claims should be allowed to lapse.

LAND STATUS:

Sixty-five claims are defined in this report to constitute the East SEA claims of Anvil Mining Corporation Ltd. Of these claims, five have expiry dates on November 2, 1974, fifty-five expire on November 2, 1975, and five expire as of January 7, 1975. The position of the claims and their expiry dates is shown on Figure 3 and these claims along with their grant numbers are tabulated in Table I.

TABLE I

	<u>Claim</u>	<u>Grant Number</u>	<u>Expiry Date</u>
1.	SEA 98	93550	Nov. 2, 1975
2.	" 99	93551	"
3.	" 100	93552	"
4.	" 101	93553	"
5.	" 102	93554	"
6.	" 103	93555	"
7.	" 104	93556	"
8.	" 105	93557	"
9.	" 106	93558	"
10.	" 107	93559	"
11.	" 108	93560	"
12.	" 109	93561	"
13.	" 110	93562	"
14.	" 111	93563	"
15.	" 112	93564	"
16.	" 113	93565	"
17.	" 114	97516	Jan. 7, 1975
18.	" 115	97517	"
19.	" 116	97518	"
20.	" 117	97519	"
21.	" 118	97520	"
22.	" 119	93571	Nov. 2, 1975
23.	" 120	93572	"
24.	" 121	93573	Nov. 2, 1974
25.	" 122	93574	"
26.	" 123	93575	Nov. 2, 1975
27.	" 124	93576	"
28.	" 125	93577	"

TABLE I (CONTINUED)

	<u>Claim</u>	<u>Grant Number</u>	<u>Expiry Date</u>
29.	SEA 126	93578	Nov. 2, 1975
30.	" 127	93579	"
31.	" 128	93580	Nov. 2, 1974
32.	" 129	93581	"
33.	" 131	93582	Nov. 2, 1975
34.	" 132	93583	"
35.	" 133	93584	"
36.	" 134	93585	"
37.	" 135	93586	"
38.	" 136	93587	"
39.	" 137	93588	"
40.	" 138	93589	"
41.	" 139	93590	"
42.	" 140	93591	"
43.	" 141	93592	"
44.	" 142	93593	"
45.	" 143	93594	"
46.	" 144	93595	"
47.	" 145	93596	"
48.	" 146	93597	"
49.	" 147	93598	"
50.	" 148	93599	"
51.	" 149	93600	"
52.	" 150	93601	"
53.	" 151	93602	"
54.	" 152	93603	"
55.	" 153	93604	Nov. 2, 1974
56.	" 156	93605	Nov. 2, 1975
57.	" 157	93606	"
58.	" 158	93607	"
59.	" 159	93608	"

TABLE I (CONTINUED)

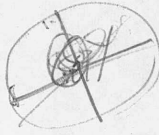
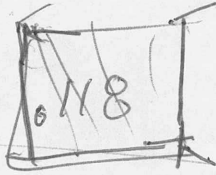
	<u>Claim</u>	<u>Grant Number</u>	<u>Expiry Date</u>
60.	SEA 160	93609	Nov. 2, 1975
61.	" 161	93610	"
62.	" 162	93611	"
63.	" 163	93612	"
64.	" 164	93613	"
65.	" 165	93614	"



Fig. 3: OUTLINE OF THE EAST SEA CLAIM GROUP

- Mer.
- Ars
- Cad
- Manganese

5000

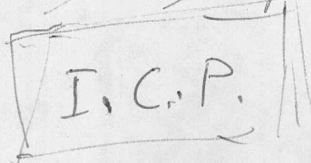


Semi Quant
emission spec scan

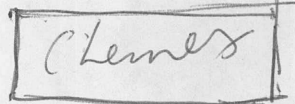
Neutron Activation

50 - Semi
- GOLD-SCAN

30 Samp



Gold + 30 elements



Multi element

Package

Gold + related trace

7 -

24 - 11.00 \$

$\frac{1}{15}$

32 elements

- stronger