

ARIS SUMMARY SHEET

District Geologist, Smithers

Off Confidential: 89.06.16

ASSESSMENT REPORT 17495

MINING DIVISION: Atlin

PROPERTY: Lear

LOCATION: LAT 59 36 38 LONG 133 36 11

UTM 08 6608662 578831

NTS 104N12E

CLAIM(S): Nanaimo, Lucky Liverpool, Paris Exhibition, Unknown, Nimrod, Imperial
Sultan Fr., Transit Fr., Princess Pat, Pilot, Raf, Observer

OPERATOR(S): Homestake Min. Dev.

AUTHOR(S): McIvor, D.F.

REPORT YEAR: 1988, 32 Pages

COMMODITIES

SEARCHED FOR: Gold

GEOLOGICAL

SUMMARY:

The claims are underlain by Permo-Pennsylvanian Cache Creek Group andesites and Permian ultramafic rocks. Contacts between the two units appears to be structural, often with associated hydrothermal alteration and weak gold enrichment.

WORK

DONE: Geological

GEOL 150.0 ha

Map(s) - 7; Scale(s) - 1:2500, 1:1000, 1:100

ROCK 245 sample(s) ;ME

MINFILE: 104N 008

LOG NO: 0627	RD.
ACTION:	
FILE NO:	

FILMED

SUMMARY REPORT; GEOLOGICAL MAPPING
AND LITHOGEOCHEMICAL SAMPLING
PROGRAMS ON THE LEAR PROPERTY,
(WEST CLAIM GROUP)

ATLIN MINING DIVISION
BRITISH COLUMBIA

GEOLOGICAL BRANCH
ASSESSMENT REPORT

17,495

NTS: 104N.12E
LATITUDE: 59° 37' NORTH
LONGITUDE: 133°37' WEST
OWNER: LEAR OIL AND GAS CORPORATION
OPERATOR: HOMESTAKE MINERAL DEVELOPMENT COMPANY LTD.
BY: DUNCAN MCIVOR
DATE: JANUARY 1988

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1. SUMMARY

The Lear property, comprised of 12 reverted crown grants, is situated 7 kilometers northeast of the town of Atlin, in northwestern British Columbia. The property covers an historically known gold showing known as the "Imperial", which was discovered and worked in the early 1900's.

In 1987, after acquisition from the Lear Oil and Gas Corporation, Homestake Mineral Development Company Ltd. completed a program of detailed geological mapping and lithogeochemical sampling on the property.

The mapping delineated a northwest-southeast trending structurally emplaced zone of ultramafic rocks, bounded to the west and east by andesitic volcanics. Within the ultramafic rocks, a zone of intense hydrothermal alteration and extensive intrusion of intermediate and mafic dyke rocks defines a discordant structure trending at 120°-300°. Several large quartz veins, including the historic Imperial Vein, on which some 150 meters of underground development work has taken place, occur within the hydrothermal alteration zone. Sampling of these veins indicated that, while they consistently carry anomalous gold and associated pathfinder trace-element values, none approach economic grades over economic widths.

A second major structure, as defined by intense hydrothermal alteration and shearing of host andesitic volcanics, trends 010°-190° across the extreme western edge of the property. Several quartz-carbonate veins and silica-carbonate altered shear zones proximal to this structure return anomalous gold (and associated pathfinder trace-element) values in the 100's of ppb range. While in themselves uneconomic, they may be indicative of a more strongly mineralized zone beneath the unexposed envisioned structure.

2. INTRODUCTION

2.1 Scope of Report

This report serves to briefly summarize the exploration efforts of Homestake Mineral Development Company Ltd. on the Lear Property during the period June through October 1987.

2.2 Location, Access and Physiography

The Lear Property, comprised of 12 reverted crown grants, is situated 7 kilometers northeast of the town of Atlin, in northwestern British Columbia (see Figures 1 and 2).

The property is situated on the south facing slope of Mt. Munro, which rises 500 meters from its base, at the southern edge of the property, to its crest, along the northern edge of the property.

A secondary bush road runs north from the Surprise Lake Road to within a few hundred meters of the southern boundary of the property. From that point, most areas of the property can be reached by foot within an hour and a half's climb.

Outcrop exposure constitutes 25% of the property, most occurring in the northwest corner of the claim group and along the crest of Mt. Munro. The remainder of the ground is covered by a thin veneer of glacial sediments and talus.

Vegetation changes from poplar at the base of the mountain, to stunted scrub at the top.

A small spring fed lake on top of the mountain is situated in the north-central part of the property, and is the only water source on the claim group.

2.3 Claim Status

The property is comprised of the following twelve reverted crown grants;

<u>NAME</u>	<u>LOT NO.</u>	<u>RECORD NO.</u>
Nanaimo	193	909
Lucky Liverpool	194	910
Paris Exhibition	195	911
Unknown	196	912
Nimrod	197	913
Imperial	198	914
Sultan Fr.	199	915
Transit Fr.	200	916
Princess Pat	4,366	917
Pilot	4,367	918
R.A.F.	4,368	919
Observer	4,369	920

as well as the Leo 1, Leo 2, Jack 10 and Jack 11 Fractions.

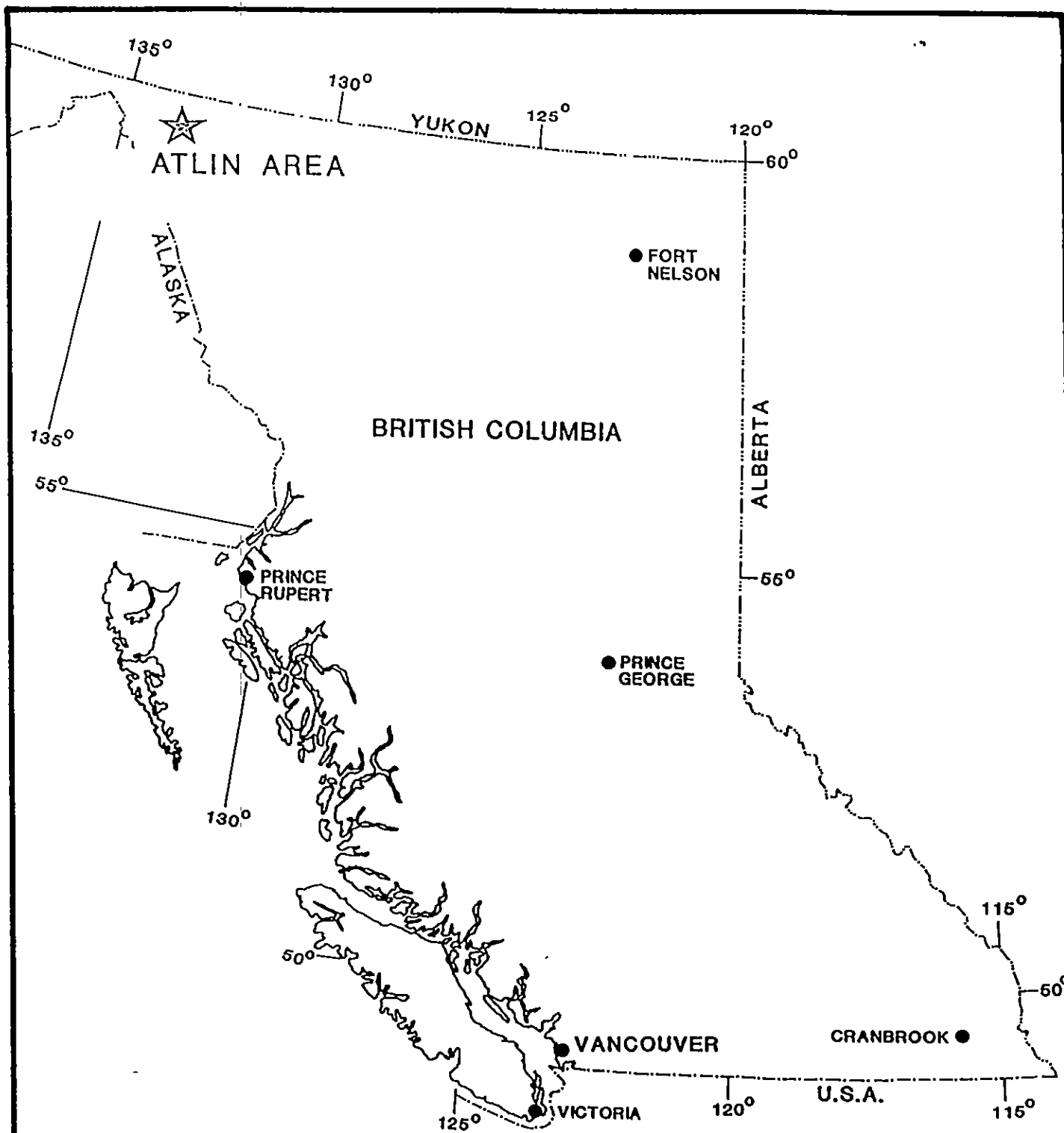
All claims are currently in good standing.

2.4 General Geologic Setting

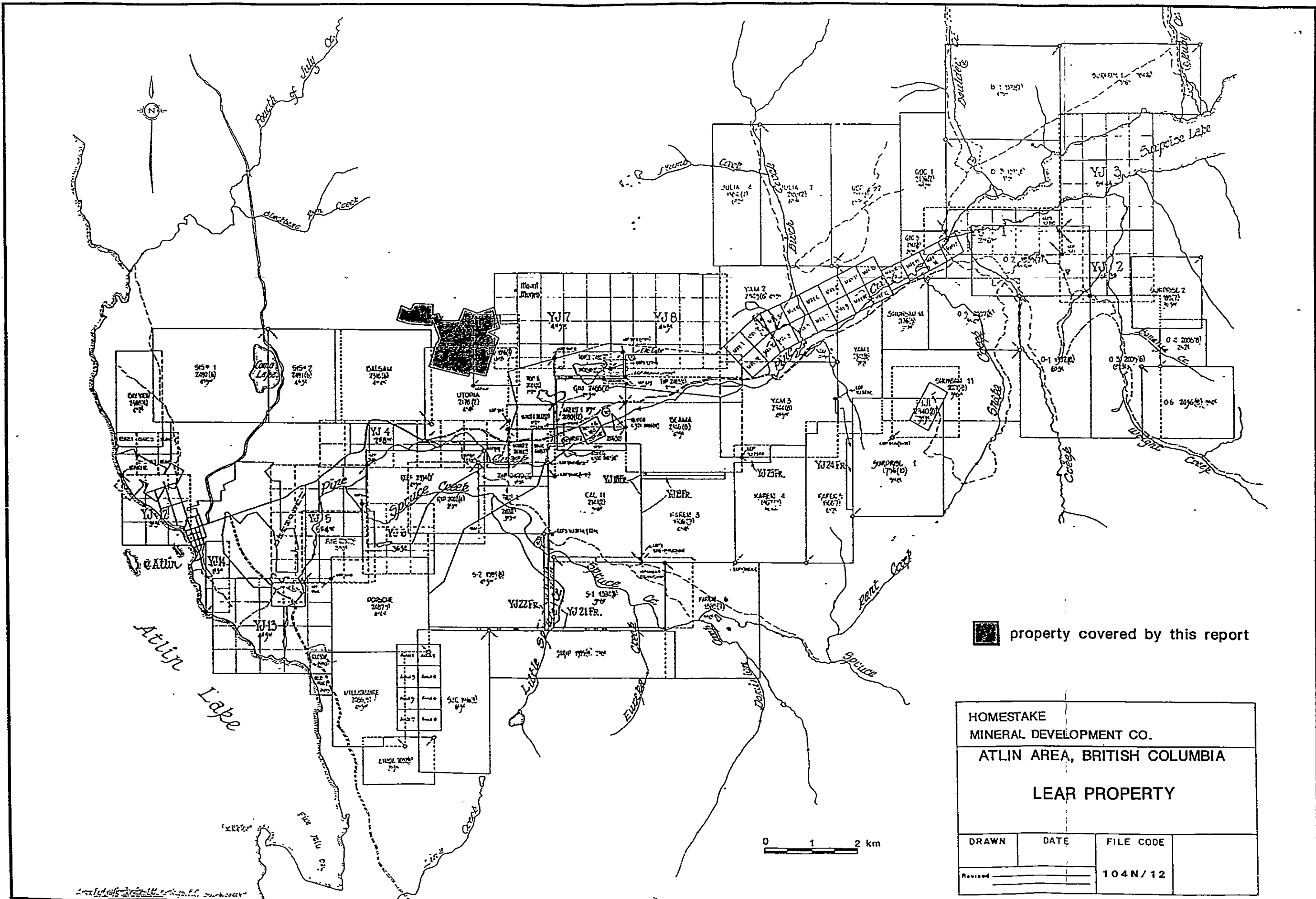
The Lear Property lies near the western edge of the northwest trending "Atlin Terrane", which is underlain by Upper Paleozoic oceanic crustal rocks (Monger, 1975). These rocks are correlated with the Cache Creek Group rocks of southern and central British Columbia.

Within the Atlin Terrane, andesitic to basaltic flows are overlain by cherts and thick shallow water carbonate rocks. Discordant granitic plutons, ranging in age from Late Jurassic to early Tertiary, locally intrude the stratigraphy. Some remnant Tertiary volcanics and sediments are found within the area.

Also within the Atlin Terrane, and co-eval or immediately post dating the Cache Creek group rocks, are large ultramafic bodies which define a discordant belt trending west across the tectonic fabric of the terrane. The ultramafic bodies are commonly intensely serpentinized, and in places extensively



HOMESTAKE MINERAL DEVELOPMENT COMPANY			
ATLIN PROJECTS BRITISH COLUMBIA			
LOCATION MAP			
DRAWN KMc	DATE 11/87	FILE CODE 104N/11;12	map 1
Revised _____			



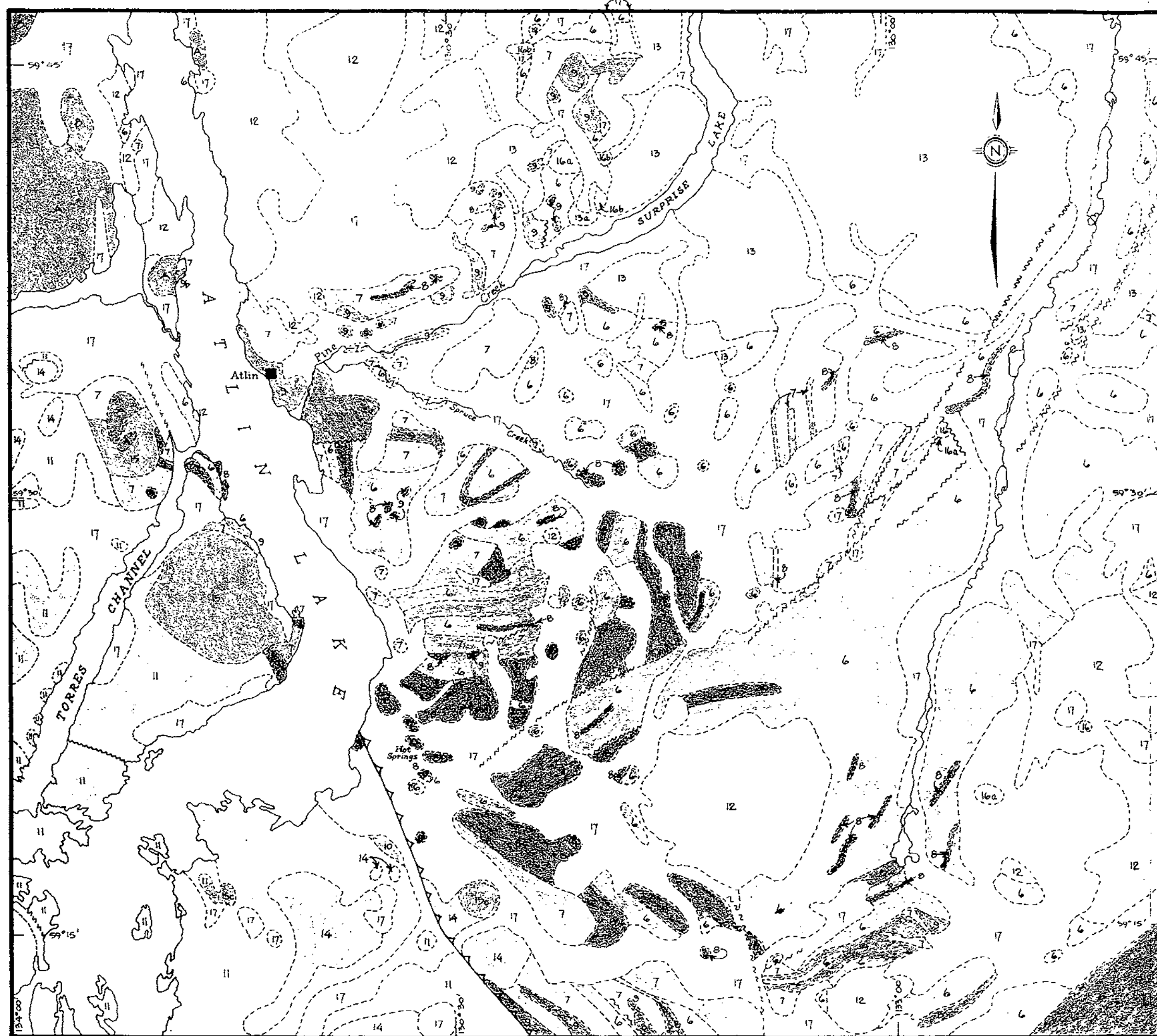
 property covered by this report

HOMESTAKE
MINERAL DEVELOPMENT CO.

ATLIN AREA, BRITISH COLUMBIA

LEAR PROPERTY

DRAWN	DATE	FILE CODE
		104 N / 12
Revised		



LEGEND

CENOZOIC
QUATERNARY
 PLEISTOCENE AND RECENT
 17 GLACIAL DRIFT ; ALLOVIUM

TERTIARY AND QUATERNARY
 16 OLIVINE BASALT AND SCORIA ;
 16a. TERTIARY 16b. PLEISTOCENE

TERTIARY (?)
 15. 15a. QUARTZ MONZONITE 15b. GRANOPHYRE
 15c. GABBRO AND DIORITE

CRETACEOUS OR TERTIARY
 14 SLOKO GROUP
 ANDESITE, BASALT ; ALBITE TRACHITE,
 ALBITE RHYOLITE, DACITE AND RELATED
 PYROCLASTIC ROCKS ; CONGLOMERATE,
 SANDSTONE.

CRETACEOUS
 13 ALASKITE

JURASSIC (MAY BE IN PART OLDER OR YOUNGER)
 12 COAST INTRUSIONS
 UNDIFFERENTIATED GRANITIC ROCKS

JURASSIC
 11 LABERGE GROUP
 VOLCANIC GREYWACKE, SILTSTONE,
 MUDSTONE, SHALE, CONGLOMERATE

TRIASSIC
 10 GREYWACKE, CHERT, ARGILLITE, CONGLOMERATE,
 TUFF, SLATE, GREENSTONE,
 IMPURE LIMESTONE, JASPER.

PALEOZOIC
PENNSYLVANIAN AND PERMIAN

ATLIN INTRUSIONS
 PERIDOTITE ; META-DIORITE AND META-GABBRO ;
 SERPENTINITE ; CARBONITIZED SERPENTINITE ; TALC-BEARING (STEATITIZED) ULTRAMAFIC ROCKS

CACHE CREEK GROUP
 8. LIMESTONE AND LIMESTONE BRECCIA
 7. GREENSTONE AND VOLCANIC GREYWACKE ;
 DERIVED AMPHIBOLITE ; MINOR 6 AND 8.
 6. CHERT, ARGILLITE, CHERT-PEBBLE CONGLOMERATE AND CHERT BRECCIA ;
 QUARTZITE AND SCHIST ; MINOR 7 AND 8

UNDIFFERENTIATED, MAINLY VOLCANIC ROCKS OF UNCERTAIN, POSSIBLY SEVERAL, AGES.

N, W FAULT (ASSUMED, APPROXIMATE.)
 W W W FAULT (DEFINED)
 ▲▲▲ FAULT (THRUST)
 ---- GEOLOGICAL CONTACT

HOMESTAKE MINERAL DEVELOPMENT COMPANY

**ATLIN PROPERTIES
 BRITISH COLUMBIA
 REGIONAL GEOLOGY**

0 20 40 60 80 100km
 1:253,440

DRAWN KMc	DATE	FILE CODE	
Revised		104N/12	

hydrothermally altered to a silica-carbonate-mariposite assemblage similar to a "listwanite".

The Lear property is underlain predominantly by ultramafic and associated mafic intrusive rocks, and andesitic volcanics of the Cache Creek Group. Figure 3 illustrates the general geology of the Atlin area, and the location of the Lear property within that geologic setting.

2.5 Preliminary Economic Assessment

The majority of known lode gold mineralization within the Atlin Camp is associated with intensely altered (silica-carbonate-mariposite/fuchsite) ultramafic rocks proximal to their fault bounded or intrusive contacts with rocks of the Cache Creek Group.

The mineralization is almost exclusively hosted in quartz-quartz-carbonate veins and vein stockworks within these altered packages of rocks, occurring either as often spectacular free gold, or in intimate association with gangue sulphides such as pyrite, chalcopyrite, arsenopyrite, sphalerite, galena, and sulfosalts (pyrargyrite, tetrahedrite).

The Lear property, which covers a major contact between ultramafic intrusive and andesitic volcanic rocks, and hosts a historical Au showing known as the "Imperial" vein, holds good potential for lode gold mineralization.

2.6 Exploration History

The property was first staked in 1899, and in 1900 the Nimrod Syndicate built a 5-stamp-mill and bunkhouse, and did considerable development work. Two crosscut tunnels were driven to intersect an outcropping quartz vein, that on surface trends from 295°-310°, dips southwest at 50°-60°, and varies in width from 12 cm. to 2.6 meters.

The two crosscuts, 8.2 meters and 37 meters in length, intersected the vein at elevations of 3,350 and 3,260 feet A.M.S.L. respectively.

On the Upper or No. 1 tunnel, 55 meters of drifting was completed, and on the Lower or No. 2 tunnel, 45 meters of drifting was completed.

In 1900, the mine produced 274 tons of ore from the No. 1 level, which probably hand cobbled averaged 0.4 oz/t Au.

In 1902, a 3267 lb. test sample from the Upper Level was treated in Vancouver, and reportedly contained 1.2 oz/t Au and 1.26 oz/t Ag. (BCMMAR, 1931).

In 1933, a B.C.M.M. geologist took 14 samples from the vein, and reported;

"The samples indicate a 20 inch width of ore in the upper tunnel over a length of 35 feet at the western end of the drifting, which averages 0.8 oz/t Au, and 1 oz/t Ag. Unfortunately, the work on the lower level of the property has been done on the eastern end of the vein and away from the possible downward continuation of the small ore-shoot

remaining in the upper level. Work to the western end of the lower level should pick up the ore with less than 125 feet of drifting along the vein."

Little or no exploration work on the property took place from 1902, when the mine closed, to 1984, when the property was acquired by Lear Oil and Gas. They subsequently contracted Minorex, a Kamloops based consulting firm to evaluate the property.

Minorex completed a program of geological mapping, soil geochemical sampling, and VLF-EM and magnetometer surveys on the property. Based on the results of that work, an additional program of surface trenching and sampling was proposed, but no further exploration activity took place on the property until acquisition by Homestake Mineral Development Company Ltd.

2.7 Work Completed

During the period June through October 1987, the following work was completed by Homestake Mineral Development Company Ltd. on the Lear property;

- re-establishment and topographic correction of approximately 19 kilometers of flagged-line grid.
- detailed geological mapping of the property @1:1000 scale.
- collection and multi-element analysis of 245 rock and 26 soil samples from the property.

The details of this work are presented in the following section of this report.

3. DETAILED TECHNICAL DATA

3.1 Geological Mapping

3.1.1. Methods Employed

As mentioned, approximately 19 line-kilometers of flag-line grid were re-established on the property and corrected for topography.

From an east-west trending baseline across the northern part of the property, crosslines were established at 100 meter intervals and extended due north and south of baseline for an average of 300 and 1,000 meters respectively. Stations were established at 25 meter intervals on all cross lines.

In the course of mapping, all encountered outcrops were physically tied into the grid, and their perimeters followed by hip-chain and compass. This provided very accurate establishment of outcrop locations.

Detailed notations as to outcrop lithology, structural orientation, and the presence or absence of any significant alteration, veining, and mineralization were made in the field, and transferred to a 1:1,000 scale geology plan base map. Very detailed mapping, at a 1:100 scale, was completed around the area of the two adits.

Appendix 1 contains the 1:1,000 geology map of the property, and Appendix 2 the 1:100 scale geology map of the adit area.

3.1.2. Results and Interpretation

Lithologies

Six major "lithological" groups were noted in outcrop, and below are descriptions of each. Note that the unit numbers correspond with those of the map legend.

Unit 2 - Serpentinized Ultramafic

Serpentinized ultramafic rocks form a northwest-southeast trending zone through the central part of the property. They are typically very fine grained to aphanitic, dark green, and very strongly to intensely serpentinized, the serpentine content ranging from approximately 60% to 100% of the rock. Weathered surfaces are a characteristic tan to buff colour. The rock, in places, is porphyritic, with up to 15% 3-5 mm pyroxene and weakly steatized pyroxene phenocrysts, which stand out in relief on weathered surfaces. The rock is generally very strongly magnetic, with as much as 30% magnetite in places, occurring as thin bands and fracture infillings.

While predominantly massive, a few locations exhibit localized shearing, and an associated weak talc alteration.

Unit 3 - Totally Altered (Silica-Carbonate-Mariposite)

Rock

This unit is sub-divided based on identifiable protolith.

3a - Altered Ultramafic Rocks

Within the serpentinized ultramafics are several exposures of totally (to silica-carbonate-mariposite) altered ultramafics. These rocks, products of intense hydrothermal alteration, are crudely aligned in a northwest-southeast zone that probably represents a major structure.

The rock is characteristically beige to grey, aphanitic to very fine grained, and has a highly variable mariposite content ranging from 5% to 30%. The presence of this much mariposite is what differentiates altered ultramafics from equally intensely carbonatized and silicified andesites and intermediate dykes.

Carbonate alteration, predominantly magnesite but to a lesser extent ferroan dolomite and ankerite, is pervasive and intense, often comprising 70-80% of the rock. The high carbonate content results in a characteristic bright rusty orange weathered surface on these exposures.

Silica alteration of a pervasive nature is sporadic, but where present can be intense, often lending a gray cherty appearance to the rock. Quartz-carbonate stringers on the millimeter scale are ubiquitous, and appear to represent late stage fracture filling. Larger quartz-carbonate veins

on the centimeter to meter scale are rare, and have been observed only in a few locations.

The rock is generally massive, with, in a few places, very locally developed schistosity at highly variable orientations.

Sulphides are rare, with occasionally minor disseminated pyrite in both quartz-carbonate veins and wallrock, and minor galena-sphalerite within quartz-carbonate veins. Small 1-2 mm chromite blebs are often disseminated throughout the rock, generally to 1-2%.

3.6 Altered (Silica-Carbonate) Andesite

Altered andesites outcrop in the extreme western portion of the property, and are very similar in appearance to altered ultramafics but for a lack of significant quantities of mariposite (generally trace to nil).

The rocks is generally beige, very strongly carbonatized and moderately silicified (although these alteration intensities are variable), and also weathers a characteristic rusty orange. The rock is generally massive in the sense that it exhibits no pervasive foliation/schistosity, but is often extensively cut by thin shear zones on the centimeter scale. Quartz-carbonate veins on the centimeter scale are common, and in many places, appear to be infilling a prominent jointing pattern (120°/60°N).

Very minor amounts of disseminated pyrite occur in the host, and traces of pyrite, galena, sphalerite and chalcopyrite in the veins.

3c. Altered (silica-carbonate) Intermediate Dyke Rock

Intruding the serpentinized ultramafic and altered ultramafic rocks in the central part of the property are numerous intermediate dykes (unit 4C) up to 5 meters in width. The dykes exhibit no preferential orientation, and are highly variable in appearance. In many cases, they are intensely altered (silica-carbonate) and very similar in appearance to the altered ultramafics. The distinguishing characteristic of these altered dykes, as opposed to altered ultramafics, is a very minor (trace to 1%) mariposite content, and a very fine grained somewhat granular appearing texture.

Generally they are beige, massive, and weather rusty orange. Quartz-carbonate stringers on the millimeter to centimeter scale are common, with trace amounts of pyrite. These dykes seem spatially related to the structure controlling alteration that trends at approximately 120°-300° through the centre of the ultramafic belt, and may have utilized that structure for emplacement.

Unit 4 - Intermediate to Mafic Intrusive Rock

4a. Undifferentiated

In several area of the property, most notably within the ultramafic package that trends north-west through the centre of the claim group, intermediate to mafic dykes extensively intrude the local stratigraphy. In many places they clearly are diabasic to gabbroic, elsewhere clearly "intermediate",

but in some areas, the rock appears transitional between the two, or is locally highly variable in appearance, from one to the other with no observed contacts. Where this is the case, the "undifferentiated" terminology is employed.

4b. Diabase-Gabbro

Intruding the western portion of the ultramafic "belt" is a large body of massive medium grained to coarse grained predominantly gabbroic appearing rock. Locally, variable plagioclase/ferromagnesian mineral content lends a dioritic to pyroxenitic appearance to the rock, but for the most part, the rock is composed of 50% plagioclase, often weakly sausseritized, and 50% pyroxene. This may be genetically related to the host ultramafic rocks, as a late stage differentiate, but clearly intrudes the ultramafics with a plug like morphology.

Elsewhere on the property, cutting all lithologies on the property, are thin diabasic dykes.

4c. Intermediate Dyke Rock

As mentioned, a series of chemically intermediate dykes extensively intrude the package of ultramafic rocks trending northwest across the property. These dykes, up to 5 meters in thickness, exhibit locally highly variable orientations, but crudely define a trend at 120°-300° through the ultramafic rocks. The dykes are usually strongly silica-carbonate altered and appear spatially associated with the alteration in their host ultramafic rocks. Where unaltered, the dykes are generally light green to pinkish green, with a massive aphanitic intermediate groundmass, and 0-5% small ferromagnesian mineral "phenocrysts" to 1-2 mm. Very minor quartz and feldspar have been observed as small phenocrysts in places.

Their appearance is highly variable, primarily due to varying intensities of alteration.

These dykes may have utilized a 120°-300° trending structure that is presumed to have controlled hydrothermal alteration in the ultramafic package for emplacement.

Unit 5 - Feldspar Porphyry

This lithology outcrops sporadically in a generally east-west trending band across the centre of the property. The unit is clearly intrusive and relatively young, as it appears to cut all other lithologies on the property.

The rock is comprised of a light green very fine grained to aphanitic groundmass, with an average of 25-30% sub to euhedral feldspar phenocrysts, 5-10% quartz phenocrysts, and 3-5% ferromagnesian mineral (hornblende) phenocrysts.

The unit is predominantly massive. In a few locations, the porphyry is strongly sheared, exhibiting a strong east-west trending, vertically dipping schistosity. Where sheared, the porphyritic texture is obliterated, and the rock is strongly hematized.

Unit 9 - Andesite

This lithology outcrops extensively in the northwest and northeast portion of the property. It is predominantly very fine grained to aphanitic, dark green, massive, and very homogeneous. It is usually very strongly jointed, the prominent jointing direction 120° , with variable dips from vertical to 60° north and south.

In a few locations, the andesite exhibits a weak porphyritic and very fine grained crystalline texture, with a few feldspar and ferromagnesian phenocrysts to 5%.

Unit 14 - Limestone

A few very small exposures of limestone were noted in the central and southeast portions of the property. The rock is generally a fine grained, granular re-crystallized appearing massive rock, composed almost entirely of calcite.

Structure/Stratigraphic Setting

There are four major structures envisioned as occurring on the property, two of which appear to control emplacement of the ultramafic intrusive rocks into the thick pile of andesitic volcanics.

The western contact, between andesites to the west and ultramafics to the east, appears to be a structure trending at 25° - 205° , and is a distinct topographic low.

There is no exposure in this "valley", and the exact nature of the contact is not known, but its linear nature and discordant trend implies a tectonic as opposed to intrusive style to the contact.

The eastern contact, between ultramafics to the west and andesites to the east, is a distinct linear magnetic feature trending at 160° - 340° , and also appears to be tectonic in nature. The presence of strong hydrothermal alteration in ultramafic and intermediate dyke rocks proximal to this contact, and the presence of local shearing at this orientation, corroborates the structural interpretation.

A third major structure envisioned as occurring on the property cuts andesitic volcanics at the extreme western end of the claim group. This feature, seen trending at 10° - 170° is again a distinct topographic low in which there is no exposure. Immediately east of the envisioned fault, however, the andesites are in places intensely altered (to silica-carbonate), and extensively sheared. Two prominent shear orientations are seen in outcrop, one roughly paralleling the envisioned major structure at 160° - 20° and dipping at 50° - 60° east, a second paralleling the strong regional jointing pattern in the andesites, at 120° - 130° and dipping 60° north.

These shears are usually occupied by thin (to 50 centimeters) quartz-carbonate veins, around which there are strong hydrothermal alteration halos (silica-carbonate) to 2-3 meters in width.

The fourth major structure envisioned as occurring on the property cuts the ultramafic intrusive rocks in the center of the claim group, at an orientation of 120° - 130°. The evidence for this structure is circumstantial but strong, that being;

- the widespread intense hydrothermal alteration of the ultramafics along this trend.
- the extensive intrusion of intermediate dykes along this trend, and their subsequent alteration.
- the intrusion of large plugs of gabbroic rocks along and proximal to this trend.
- the very complex nature of the dyke-host rock contacts, which appear to be highly irregular (to the point of being virtually impossible to accurately trace - note the absence of contacts on the enclosed geology map).

Several smaller scale structural features were observed on the property, as areas of local shearing and distinct linear topographic lows, but the aforementioned four are the most important from a geologic and economic viewpoint.

Economic Aspects of the Encountered Geology

The most encouraging aspects of the encountered geology, from a gold potential point of view, are the areas of intense hydrothermal alteration associated with the aforementioned structures cutting the ultramafics in the centre of the property, and the andesites in the western portion of the property. The extensive nature of the alteration, and the presence of secondary quartz-carbonate veins as expressions of dilatancy development all are indicative of the right kinds of system at work, the key ingredient, as discussed below, now being gold grades, and their continuity and extent.

3.2 Lithogeochemical Sampling

3.2.1. Methods Employed

In the course of mapping, 245 rock samples were collected from the property, and forwarded to Acme Analytical Laboratories in Vancouver for 30 element ICP and geochemical gold analysis. Obviously, the purpose of the extensive sampling program was to evaluate the economic potential of the large areas of hydrothermally altered rocks exposed on the property. In addition to the gold analyses, the wide spectrum of elements analyzed for by the ICP method provides some very useful trace-element geochemical data. Gold mineralization in the Atlin camp often occurs with highly elevated contents of Cu, Zn, Pb, Sb, As and Ag, all of which are part of the multi-element ICP package. Elevated contents of these elements, even in the absence of anomalous gold values, may serve as pathfinders to auriferous quartz vein systems.

All sample locations appear on the enclosed geology maps in Appendices 1 and 2, followed by the sample gold content in ppb. The ICP analytical data appears in Appendix 3.

3.2.2. Results and Interpretation

Of the 245 samples collected from the property, 63 returned anomalous gold values of greater than 50 ppb. Some of the better results are discussed below.

Adits Area (see Appendix 2)

Results from a sampling program of veins exposed in the "Adits Area", while encountering several areas of anomalous gold mineralizations, were disappointing.

Underground, in the No. 2 (lower) Adit, a large (to 2.4 m. thick) quartz vein is exposed by drifting for 45 meters. The vein, hosted in altered intermediate dyke rock (unit 3C), trends northeast at 160° to 120°, and dips to the southwest at 60°. The vein was extensively sampled by Minorex Consulting Ltd. in 1984, with very poor results. In order to assess the validity of their sampling program, several of their higher grade (to 0.105 oz/T) chip channel sample locations were re-sampled, the result being consistently lower grade Au values, none approaching an economic level. They were:

Sample 33384

Chip across 1 m. quartz vein, which previously ran 0.044 oz/t Au (1,452 ppb), returned a gold value of 470 ppb Au (with 3378 ppm Pb, 1996 ppm Zn, 12.8 ppm Ag, 112 ppm As, 48 ppm Cd, 35 ppm Sb).

Sample 33382

A 1 meter chip sample from the hanging wall altered intermediate dyke returned values of 167 ppb Au, 1835 ppm Pb, 1675 ppm Zn, 8.4 ppm Ag, 410 ppm As, 16 ppm Cd, 40 ppm Sb.

Sample 33386

A 1 meter chip channel sample from the footwall altered intermediate dyke rock, returned values of 39 ppb Au, with 175 ppm Zn, 0.5 ppm Ag.

Sample 33339

A chip channel sample across 1 meter exposure of the quartz vein, which previously assayed 0.105 oz/t Au (3465 ppb), returned values of 240 ppb Au, 153 ppm Pb, 293 ppm Zn, 2.3 ppm Ag, 138 ppm As, 5 ppm Cd, 11 ppm Sb.

Sample 33340

A chip channel sample across 1.2 meters of exposed quartz vein, which previously assayed 0.01 oz/t (330 ppb) returned values of 77 ppb Au, 1496 ppm Pb, 169 ppm Zn, 4.2 ppm Ag, 5 ppm Cd, 6 ppm Sb.

Based on these results, and the results of Minorex's sampling program, it is clear that the exposed vein, while carrying anomalous gold and associated pathfinder trace elements, nowhere approaches economic grades in the No. 2 adit. It is interesting to note the presence of a weak Au-trace element halo in the host altered intermediate dyke, but again, this is of no economic significance.

Two additional samples were taken from underground, both thin (centimeter scale) quartz veins proximal to the "main vein".

Sample 33383

A grab from a galena bearing quartz stringer hosed in a thin shear zone, carried 2610 ppb Au, with 616 ppm Cu, 24792 ppm Pb, 675 ppm Zn, 70.6 ppm Ag, 125 ppm As, 15 ppm Cd, 70 ppm Sb.

Sample 33385

A grab sample from a chalcopyrite bearing quartz stringer exposed in the hanging wall altered intermediate dyke, returned a value of 560 ppb Au, with 2352 ppm Cu, 1621 ppm Pb, 2331 ppm Zn, 12.8 ppm Ag, 112 ppm As, 48 ppm Cd and 35 ppm Sb.

These thin stringers, again, carry highly anomalous gold and trace-element values, but their width precludes the possibility of any economic potential

Surface sampling of the "Main Vein" exposed in outcrop at the portal of the upper No. 1 Adit, yielding similarly disappointing results.

Four samples were taken from the vein over an exposed strike length of 16 meters. The results are as follows:

Sample 33333

1240 ppb Au, 320 ppm Cu, 487 ppm Pb, 231 ppm Zn, 8.0 ppm Ag, 247 ppm As, 5 ppm Cd, 9 ppm Sb.

Sample 33330

88 ppb Au, 250 ppm Pb, 101 ppm Zn, 6 ppm Ag, 140 ppm As, 9 ppm Sb.

Sample 33329

90 ppb Au, 197 ppm Zn, 2.1 ppm Ag, 213 ppm As, 15 ppm Sb.

Sample 33300

1160 ppb Au, 0.6 ppm Ag.

While highly anomalous, the results do not approach economic value. Historically reported gold grades from the vein exposed in the upper Adit, which is now inaccessible, were in the 0.4 oz/t range. This huge discrepancy in gold grades of the main vein is disturbing, and can probably only be resolved by re-accessing and sampling the Upper Adit. It may be that there is an ore grade shoot within the vein that is neither exposed on surface or underground in the Lower No. 2 Adit.

Sampling of other thin veins in the Adit Area parallel to or cross-cutting the main vein returned anomalous but sub-economic grades over sub-economic widths. The best surface sample from the Adit Area came from a thin 1 meter wide shear zone located approximately 22 meters northwest of the Upper No. 1 Adit. The shear, trending at $160^{\circ}/75^{\circ}W$, and hosted in "intermediate dyke rock", returned a gold value of 6,710 ppb, with 4.1 ppm Ag and 5 ppm Sb (sample 33302). This shear appears to parallel an envisioned structure controlling emplacement of the ultramafic rocks, immediately to the east of the exposure. This may represent a previously unrecognized target, and warrants further investigation.

Other Areas Hosting Anomalous Gold Values

Extensive sampling of the northeast trending structurally related zone of intense hydrothermal alteration, affecting both ultramafic and intermediate dyke rocks, indicated that while several thin quartz-carbonate veins contained anomalous mineralization on the 100's of ppb (Au) level, none approached economic grades or widths.

A second prominent area of anomalous Au mineralization on the property is the extreme western edge of the claim group, where an envisioned major structure cuts andesites at a $010^{\circ} - 170^{\circ}$ orientation. On the west facing slope of this distinct topographic low, intensely carbonate-silica altered andesites are exposed. Vein sets and thin shear zones are present in both the intensely altered andesites, and along the whole exposure in fresher andesites.

These sets parallel the envisioned fault, at $160-20^{\circ}/50^{\circ}-60^{\circ}E$, and parallel a prominent jointing direction in the andesites, at $120^{\circ}-130^{\circ}/60^{\circ}N$.

Anomalous gold values, to as high as 805 ppb but more commonly in the 50-300 ppb range, are consistently returned from these veins and shears. Associated with the anomalous gold values are elevated As, Ag and Sb contents, indicating the presence of the right kinds of hydrothermal alteration. While none of these values approach economic grades or widths, the envisioned structure controlling the alteration and mineralization, as it is unexposed, warrants testings.

A third feature carrying anomalous gold values is a thin (maximum 50 centimeters) continuous quartz vein/shear that can be traced for 300 meters through relatively fresh, unaltered andesites, along the south face of a large outcrop of the northwest corner of the property.

The vein/shear, trending at 120° and dipping 60° north, parallels a prominent jointing direction in the andesites, and may represent a late stage infilling of a major fracture.

The vein returns consistently anomalous gold values along its entire length, to as high as 2150 ppb Au, but more commonly in the 200 to 1000 ppb range. Highest gold values are associated with pods of galena-sphalerite mineralization in the vein. The vein extends west into the envisaged 010°-190° structure at the western edge of the property, which may be its point of (genetically) origin.

Isolated anomalous gold values, on the 100's of ppb level, also occur in thin quartz veins cutting fresh andesites and feldspar porphyry in the eastern portion of the property. The highest value returned from such a vein was 510 ppb Au, but exposure is poor throughout much of this area, and the size and extent of these veins is unknown.

A small soils geochemical survey was completed downslope of one such anomalous vein, which where exposed (at L105+S0E, 2+60S), carried 225 ppb Au. A strong soil anomaly, of as high as 490 ppb Au, was detected down slope from the vein. The strength of this anomaly, and poor exposure of the vein, warrants that a more detailed investigation of this and similar isolated anomalies within the andesites be carried out.

4.0 ITEMIZED COST STATEMENT AND ALLOCATION OF EXPENDITURES

4.1 Itemized Cost Statement

The following expenses were incurred as a direct result of the exploration work described in this report.

1) Salaries and Wages

Duncan McIvor: (Including Report Preparation Costs)

July 17-August 3, 1987 19 days
August 7-16, 1987 11 days
Sept. 15, 16, 1987 2 days
January 4-7, 1987 4 days
36 days

@\$115.00/day \$ 4,140.00

Joanne Bozek:

July 17-August 3, 1987 19 days
August 7-16, 1987 11 days
30 days

@\$85.00/day \$ 2,550.00

Phil Southam:

July 17-August 3, 1987 19 days
September 15, 16, 1987 2 days
21 days

@\$85.00/day \$ 1,785.00

SUB TOTAL \$ 8,475.00

+20% BENEFITS, ETC. 1,695.00

TOTAL \$ 10,170.00

2. Analytical Costs

245 rock samples, 30 elements ICP
analysis and geochemical Au analysis
@\$14.25/sample

\$ 3,491.25

26 soil samples, 30 element ICP
analysis and geochemical Au analysis
@\$12.00/sample

312.00

TOTAL \$ 3,803.25

3. Food and Accommodation Costs

@\$35/day per man x 87 days

\$ 3,045.00

4. Transportation Costs

Fuel and Maintenance on 2 trucks
@\$25/day x 32 days \$ 800.00

5. Miscellaneous Field Equipment Costs

- flagging tape, toprofil, sample bags
mylar, etc. \$ 300.00

TOTAL EXPENDITURES \$ 18,118.25

4.2 Allocation of Expenditures to Claims

All expenses are allocated on a pro-rate basis. The property consists of 12 - 1 unit reverted crown grants and thus total costs/12 is the allocation to each claim.

GROUP: Parts of "West"

<u>CLAIM</u>	<u>REC. NO.</u>	<u>UNITS</u>	<u>ALLOCATION</u>
NANAIMO	909	1	1,509.85
LUCKY LIVERPOOL	910	1	1,509.85
PARIS EXHIBITION	911	1	1,509.85
UNKNOWN	912	1	1,509.85
NIMROD	913	1	1,509.85
IMPERIAL	914	1	1,509.85
SULTAN FR.	915	1	1,509.85
TRANSIT FR.	916	1	1,509.85
PRINCESS PAT	917	1	1,509.85
PILOT	918	1	1,509.85
R.A.F.	919	1	1,509.85
OBSERVER	920	1	1,509.85

These costs are to be applied to claims as outlined in the Statement of Exploration and Development.

DMc/mm

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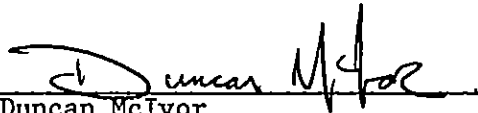
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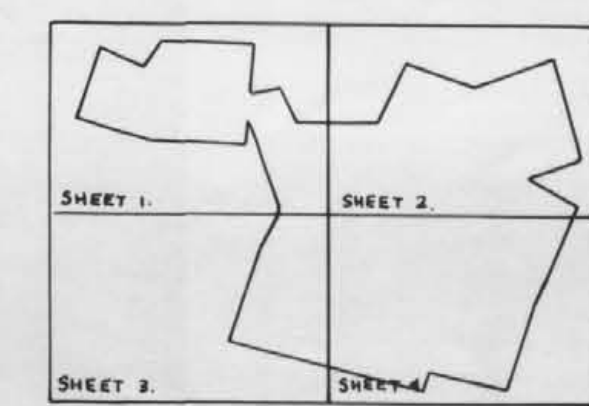
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AUTHOR'S QUALIFICATIONS

I, Duncan Forbes McIvor, do hereby state that;

- I am a graduate of the University of Waterloo, and hold an Honours Bachelor of Applied Science degree.
- I have been practising my profession as an exploration geologist on a full time basis since 1982.
- I have personal knowledge that all information presented in this report is true and accurate.


Duncan McIvor



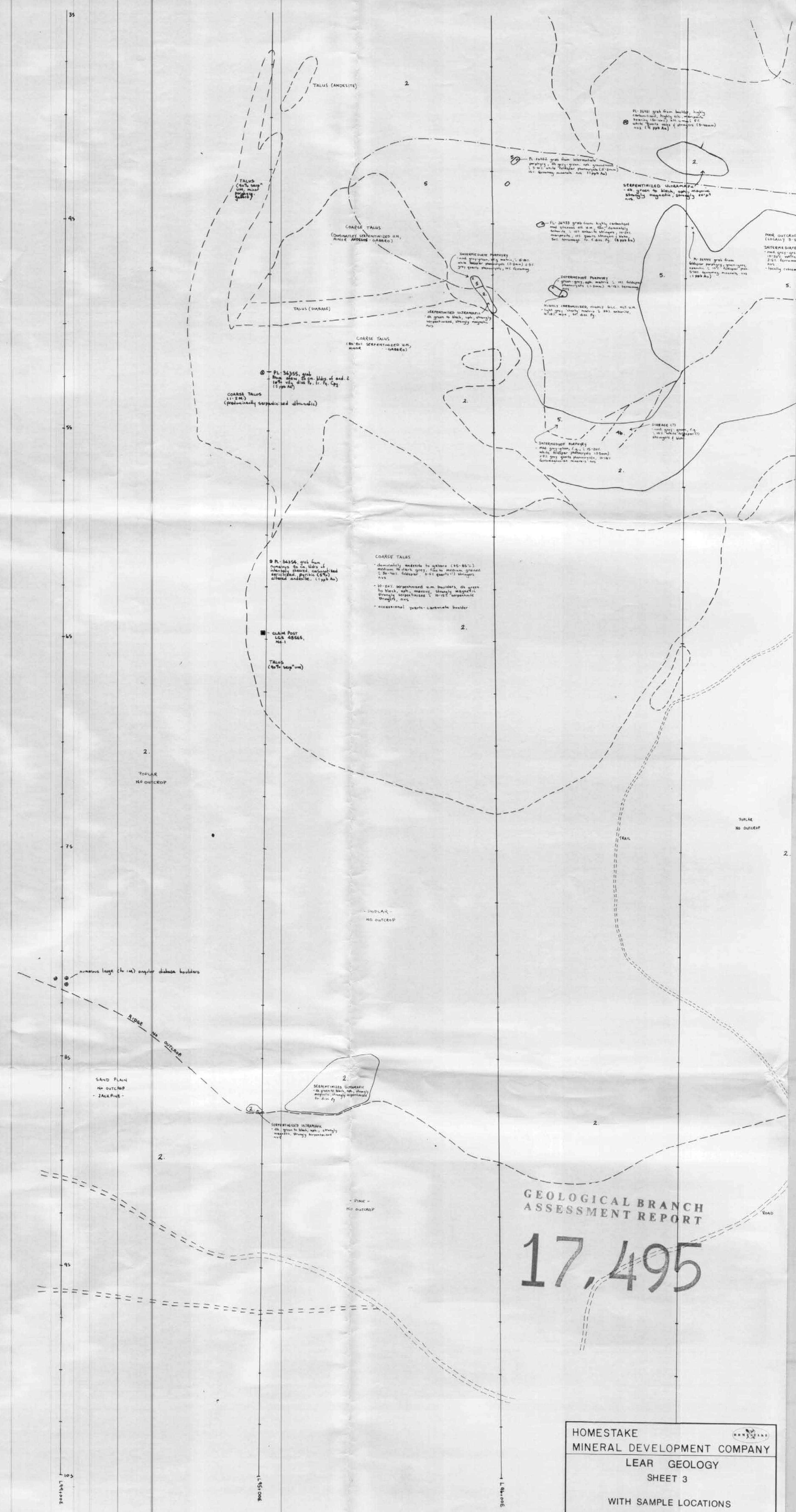
HOMESTAKE
MINERAL DEVELOPMENT COMPANY

LEAR PROPERTY : GEOLOGY
SHEET 3

WITH SAMPLE LOCATIONS AND GOLD GEOCHEMISTRY

DRAWN	DATE	FILE CODE
REVISED		

- LEGEND**
- LITHOLOGIES**
- 1 BASALT
 - 2 SERPENTINITE (ALTERED ULTRAFIC INTERFLUX)
 - 3 COMPLETELY ALTERED (ULTRAFIC ALTERED ULTRAFIC)
 - 4 INTERMEDIATE TO HIGH GRADE (ULTRAFIC ALTERED ULTRAFIC)
 - 5 FELDSPH PHERYTES
 - 6 SYENITE
 - 7 DIORITE
 - 8 GREENSTONE
 - 9 ANDESITE (ULTRAFIC PHERYTES)
 - 10 PYROXENITE (ULTRAFIC PHERYTES)
 - 11 GRANITIC CHEST
 - 12 ARGILLITE
 - 13 GRANITE
 - 14 LIMESTONE
- SYMBOLS**
- GEOLOGIC CONTACT (DIPPERED/ASSUMED)
 - SCHISTOSITY
 - BEDDING
 - QUARTZ VEIN
 - PRINTING
 - BASTIATION
 - FAULT
 - SAMPLE POINT
 - TRAIL
 - TOPOGRAPHIC/GEOGRAPHICAL FEATURE
 - ROAD
- 0m 10m 20m 30m 40m 50m



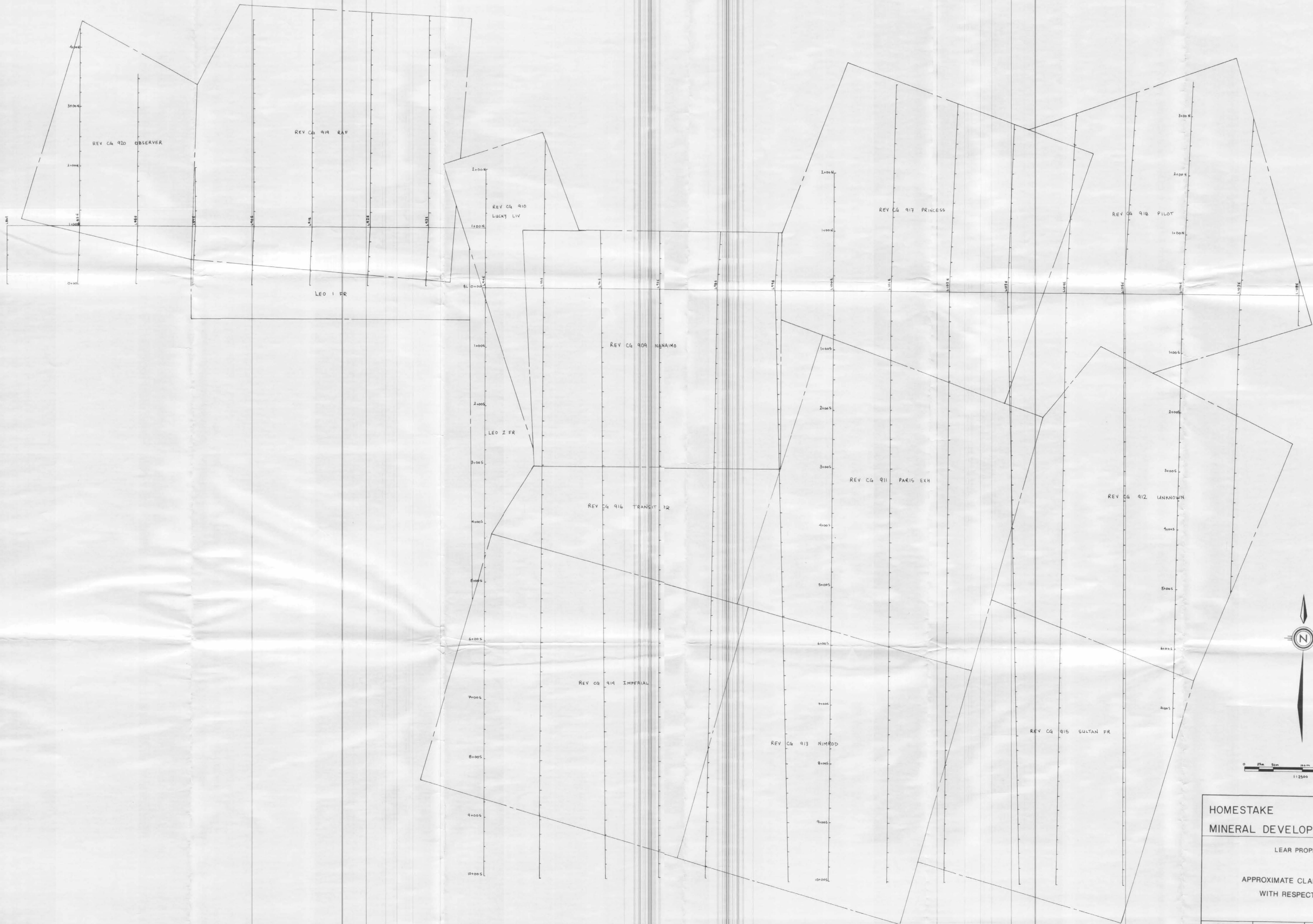
GEOLOGICAL BRANCH
ASSESSMENT REPORT
17,495

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MINERAL DEVELOPMENT COMPANY

LEAR GEOLOGY
SHEET 3

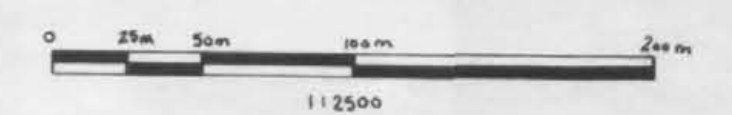
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AND GOLD GEOCHEMISTRY

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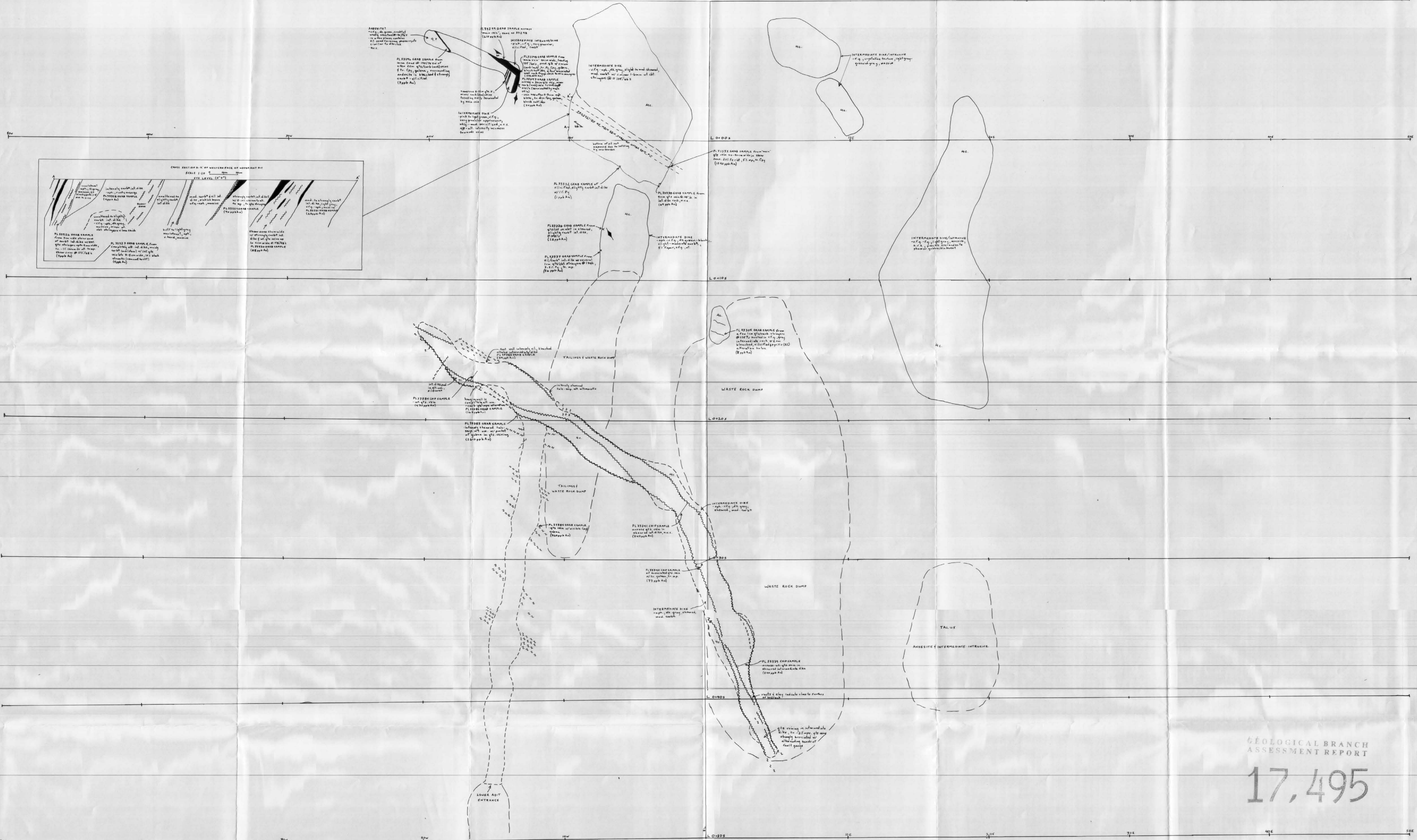


GEOLOGICAL BRANCH
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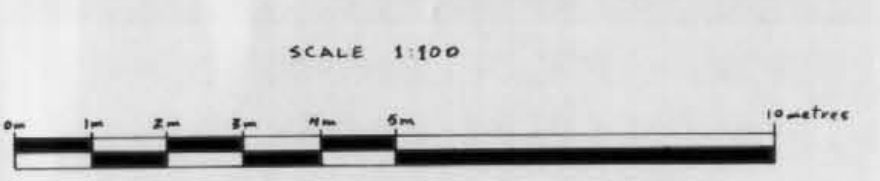


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LEAR PROPERTY			
APPROXIMATE CLAIM LOCATIONS WITH RESPECTIVE GRID			
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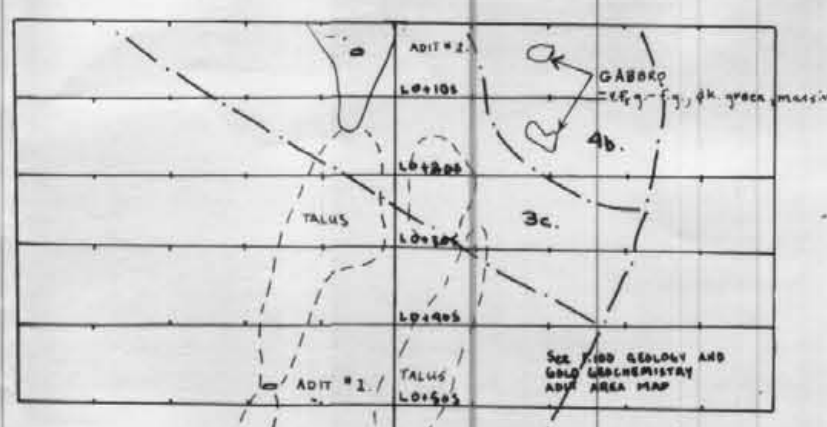
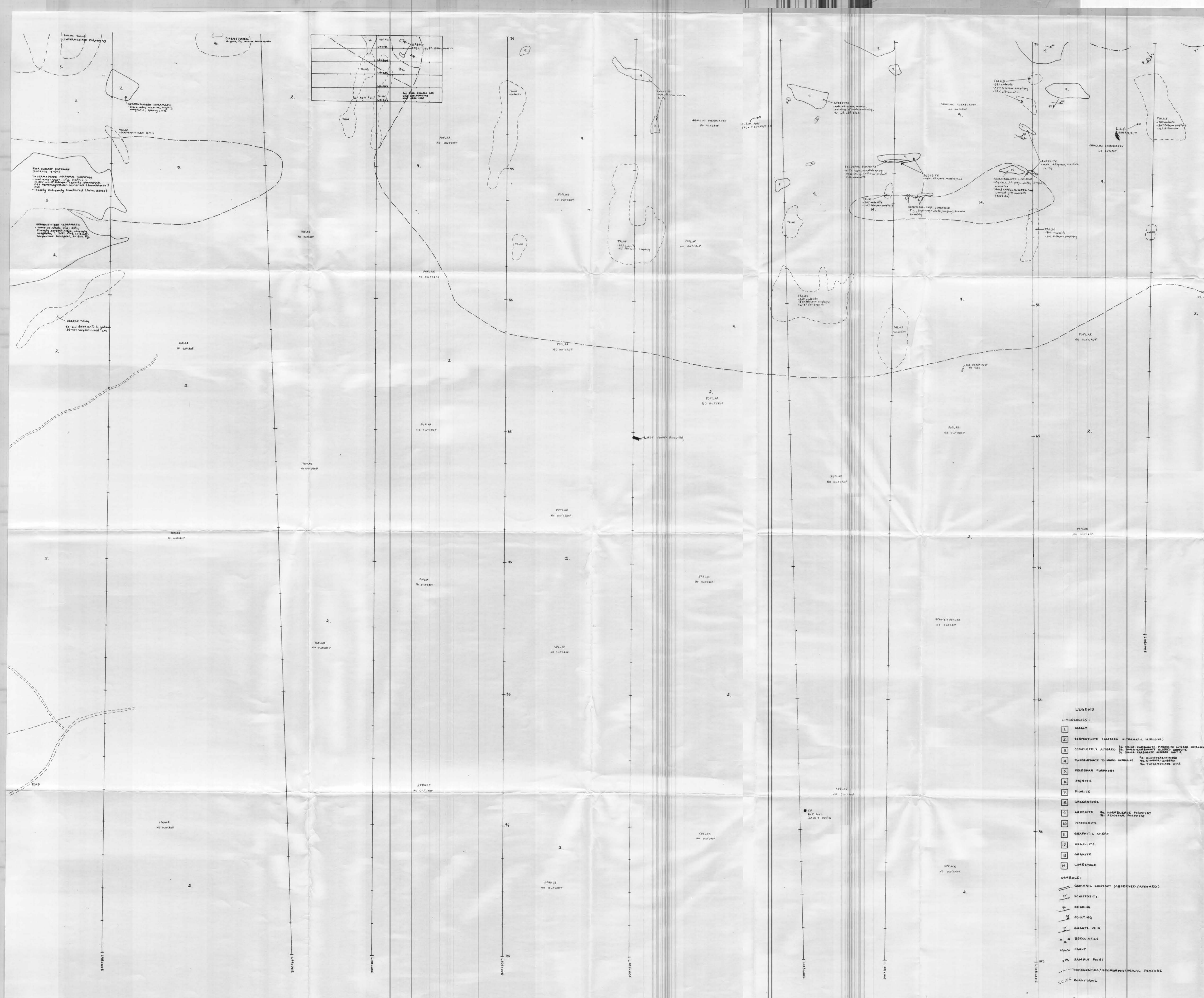
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- LITHOLOGIES**
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 - 3 COMPLETELY ALTERED SILICA-CARBONATE-MANIPHYLITE ALTERED ULTRAMAFIC
 - 4 INTERMEDIATE - MAFIC INTRUSIVE
 - 4a UNDIFFERENTIATED
 - 4b DIABASE/GABBRO
 - 4c INTERMEDIATE DIKE
 - 5 ANDESITE
 - 5a HORNBLAND PORPHYRY
 - 5b FELDSPAR PORPHYRY
- SYMBOLS**
- GEOLOGIC CONTACT (OBSERVED/ASSUMED)
 - - - SCHISTOSITY
 - QUARTZ VEIN (INCLINED/VERTICAL)
 - FAULT/SHEAR ZONE (DEFINER/ASSUMED)
 - SAMPLE POINT
 - OUTLINE OF LOWER ADIT AND ADIT
 - TOPOGRAPHIC/GEOMORPHOLOGICAL FEATURE
 - BASALT VEINING



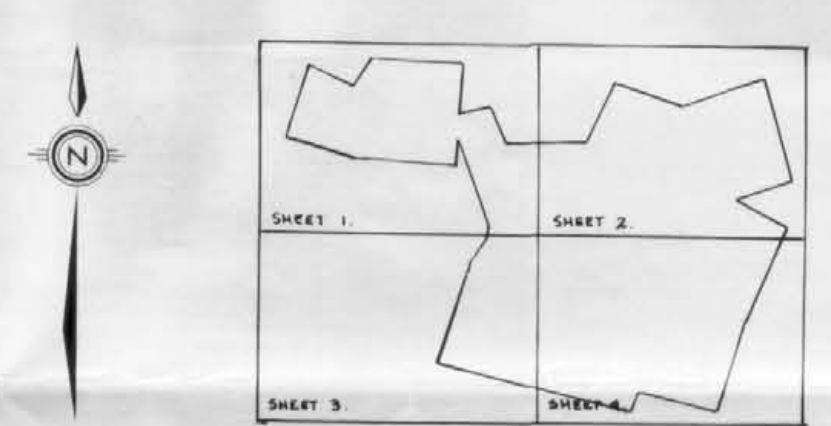
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MINERAL DEVELOPMENT COMPANY
LEAR PROPERTY

GEOLOGY AND GOLD GEOCHEMISTRY
ADIT AREA - SOUTH SHEET

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- LEGEND**
- LITHOLOGIES:**
- 1 BASALT
 - 2 DIORITE (ALTERED ULTRAMAFIC INTRUSIVE)
 - 3 COMPLETELY ALTERED IN SILEX (ALTERED DIORITE)
 - 4 INTERMEDIATE TO BASIC INTRUSIVE (ALTERED DIORITE)
 - 5 FELDSPAR PORPHYRY
 - 6 DIORITE
 - 7 DIORITE
 - 8 GNEISS
 - 9 GNEISS
 - 10 GNEISS
 - 11 GNEISS
 - 12 GNEISS
 - 13 GNEISS
 - 14 LIMESTONE
- SYMBOLS:**
- GEOMORPHIC CONTACT (OBSERVED/ASSUMED)
 - ~ SCHISTOSITY
 - ~ BEDDING
 - ~ JOINTING
 - ~ QUARTZ VEIN
 - ~ BRECCIATION
 - ~ FAULT
 - SAMPLE POINT
 - ~ TOPOGRAPHIC/GEOMORPHOLOGICAL FEATURE
 - ROAD/TRAIL



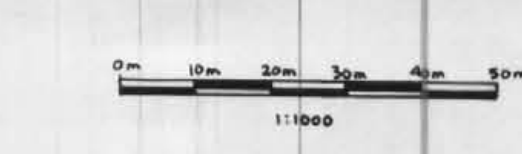
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LEAR PROPERTY : GEOLOGICAL BRANCH
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 SHEET 4

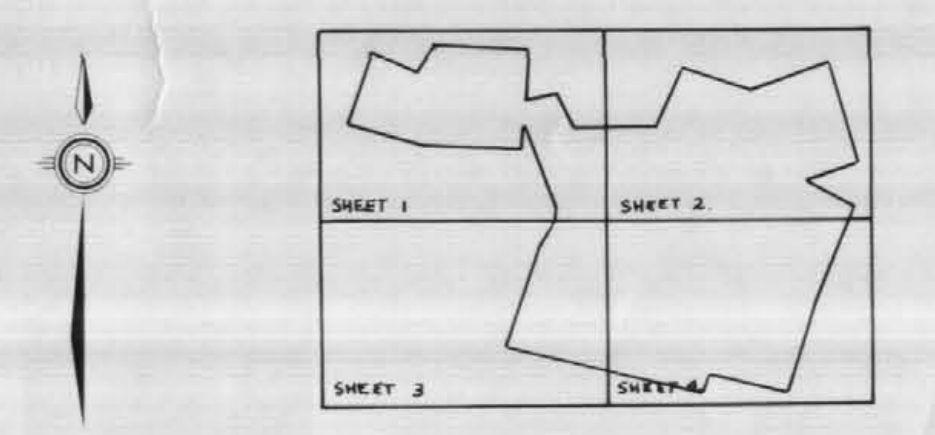
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WITH SAMPLE LOCATIONS AND GOLD CHEMISTRY

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- LEGEND
- 1 BASALT
 - 2 SERPENTINITE (ALTERED ULTRAMAFIC INTERFLUX)
 - 3 COMPLETELY ALTERED TO SOIL (CONTAINING SOILS)
 - 4 SERPENTINITE TO MAFIC INTERFLUX
 - 5 FELDSPAR PORPHYRY
 - 6 ANDALUSITE
 - 7 DIORITE
 - 8 GNEISS/GNEISS
 - 9 ANDALUSITE TO SERPENTINITE PORPHYRY
 - 10 SERPENTINITE
 - 11 GRANITIC GNEISS
 - 12 GRANULITE
 - 13 GRANITE
 - 14 LIMESTONE
- - - GEOLGIC CONTACT (OBSERVED / INFERRED)
 - - - SCHISTOSITY
 - - - BEDDING
 - - - DIRT ROAD
 - - - QUARTZ VEIN
 - - - A & B BECCONING
 - - - FAULT
 - - - SAMPLE POINT
 - - - TOPOGRAPHIC / GEOMORPHOLOGIC FEATURE
 - - - ROAD / TRAIL

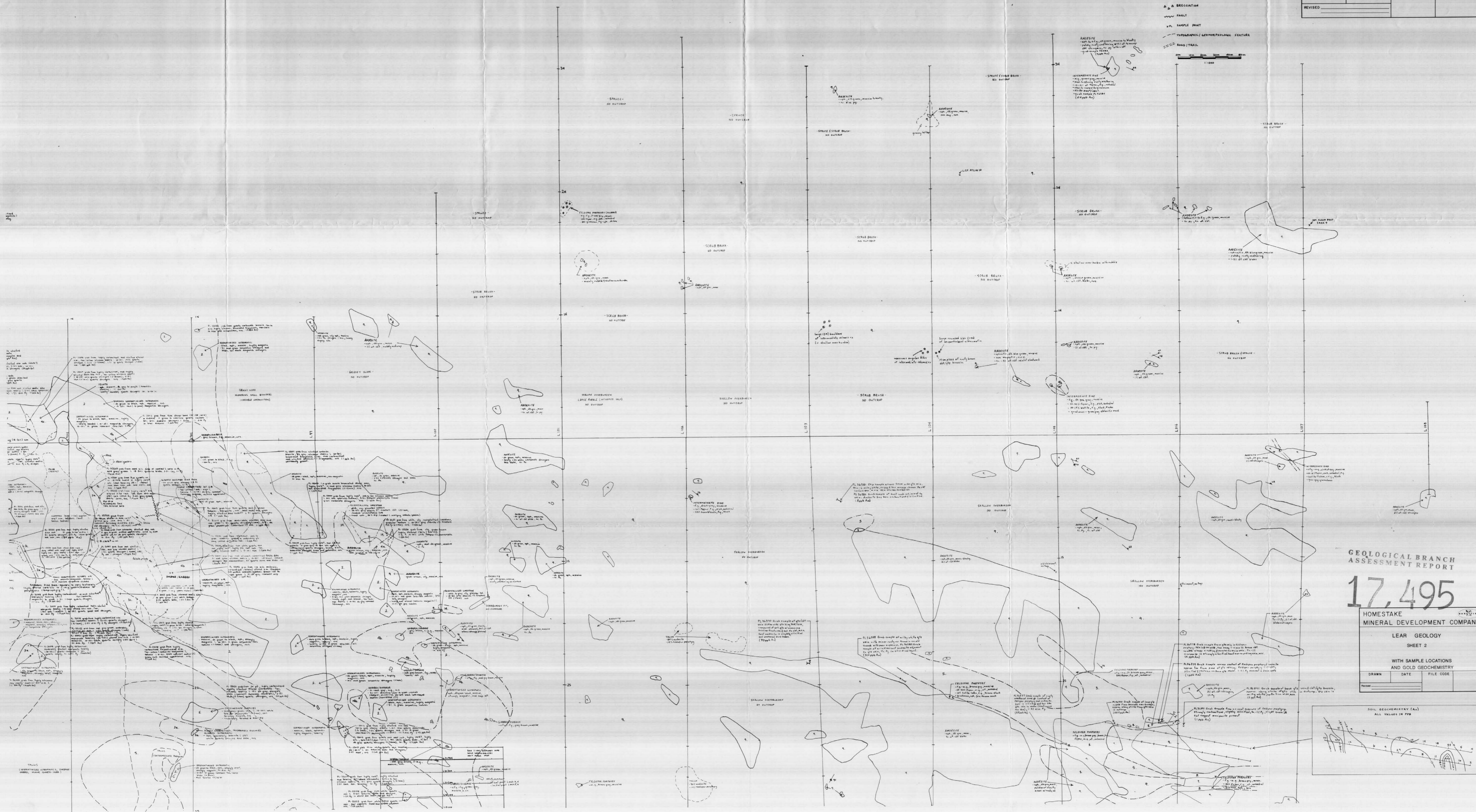


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SHEET 2

WITH SAMPLE LOCATIONS AND GOLD GEOCHEMISTRY

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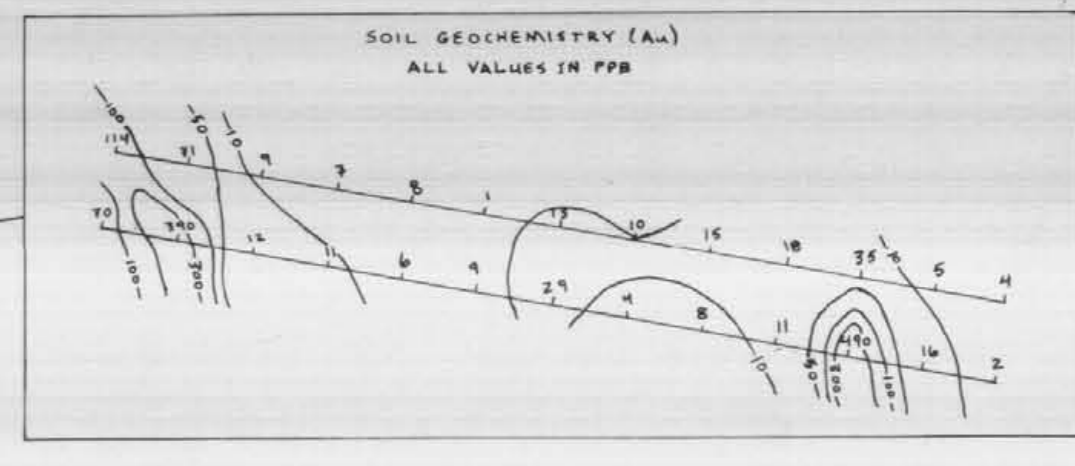
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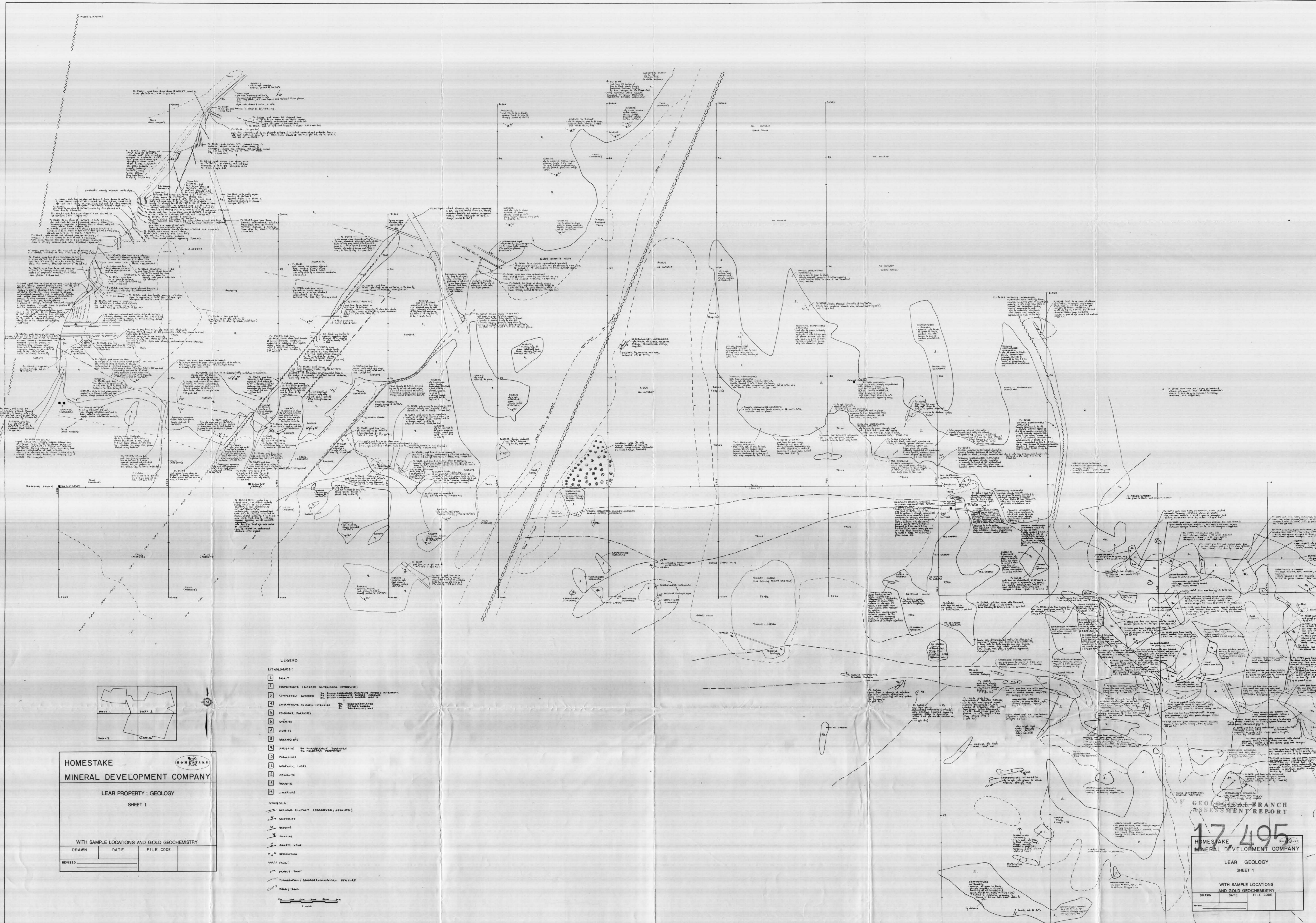
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LEAR GEOLOGY
SHEET 2

WITH SAMPLE LOCATIONS AND GOLD GEOCHEMISTRY

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- LEGEND**
- LITHOLOGIES:**
- 1 BASALT
 - 2 SERPENTINITE (ALTERED ULTRAMAFIC INTRUSIVE)
 - 3 COMPLETELY ALTERED
 - 4 SEMI-PURE TO PURE (INTRUSIVE)
 - 5 FELDSPATHIC PORPHYRY
 - 6 GYPSITE
 - 7 DORITE
 - 8 GREENSTONE
 - 9 ANDALUSITE TO HORNBLANDITE PORPHYRY
 - 10 PORPHYRY
 - 11 LEPIDOLITE CHERT
 - 12 ARGILLITE
 - 13 GRANITE
 - 14 LIMESTONE
- SYMBOLS:**
- GEOLGIC CONTACT (OBSERVED/ASSUMED)
 - UNSTABILITY
 - BEDDING
 - FOLDING
 - DIKES VEIN
 - A A SECTION
 - W W FAULT
 - SAMPLE POINT
 - TOPOGRAPHIC / GEOMORPHOLOGICAL FEATURE
 - ROAD / RAIL

HOMESTAKE MINERAL DEVELOPMENT COMPANY

LEAR PROPERTY: GEOLOGY

SHEET 1

WITH SAMPLE LOCATIONS AND GOLD GEOCHEMISTRY

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GEOLOGICAL BRANCH ASSESSMENT REPORT

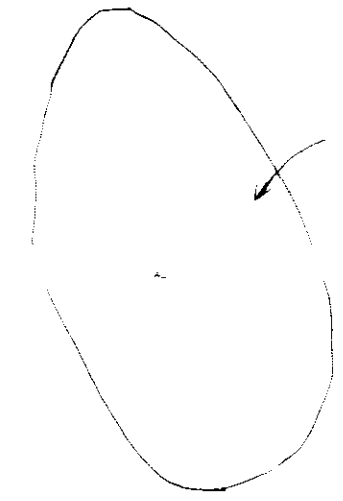
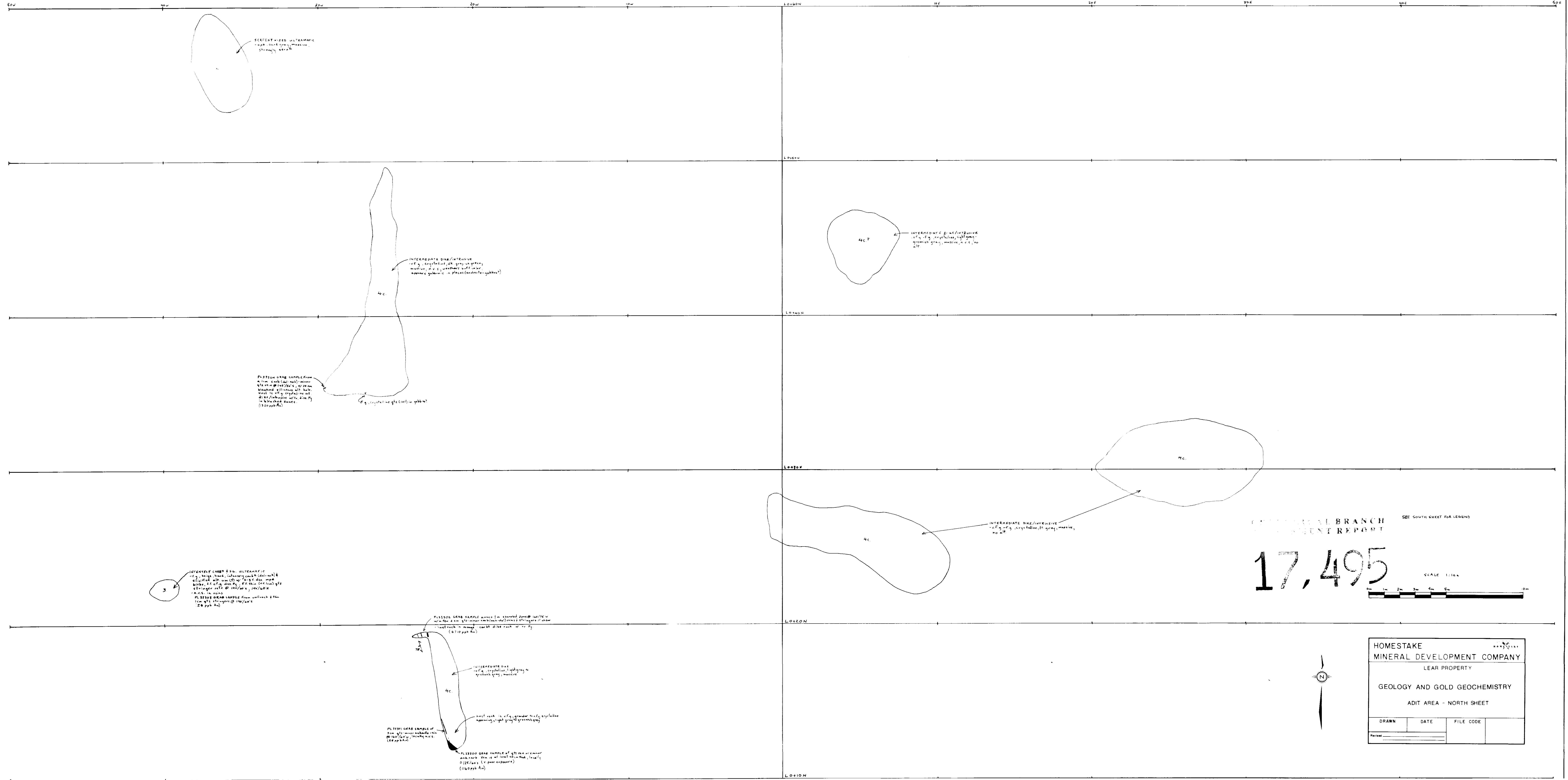
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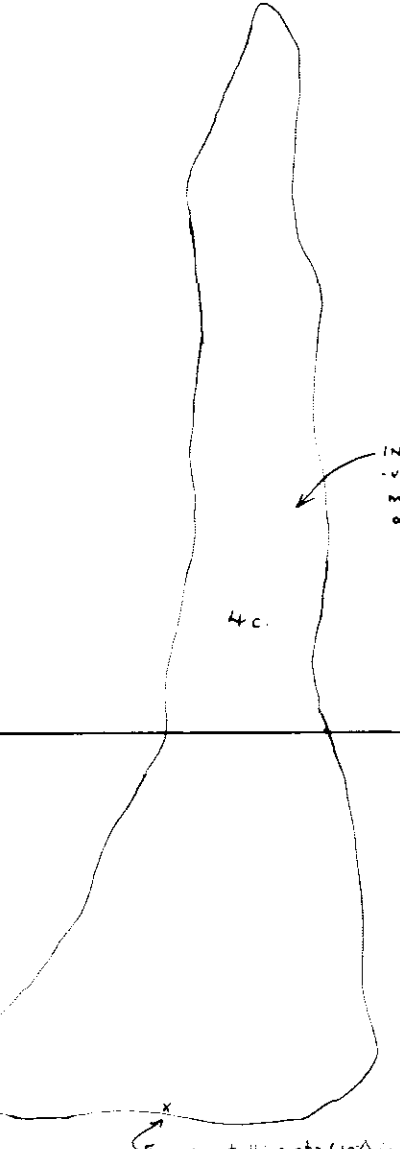
LEAR GEOLOGY SHEET 1

WITH SAMPLE LOCATIONS AND GOLD GEOCHEMISTRY

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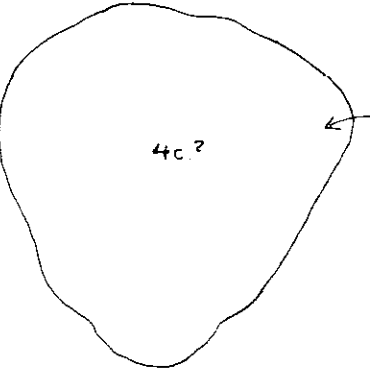


SECTION 4000 - UTMARINE
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 strongly veined

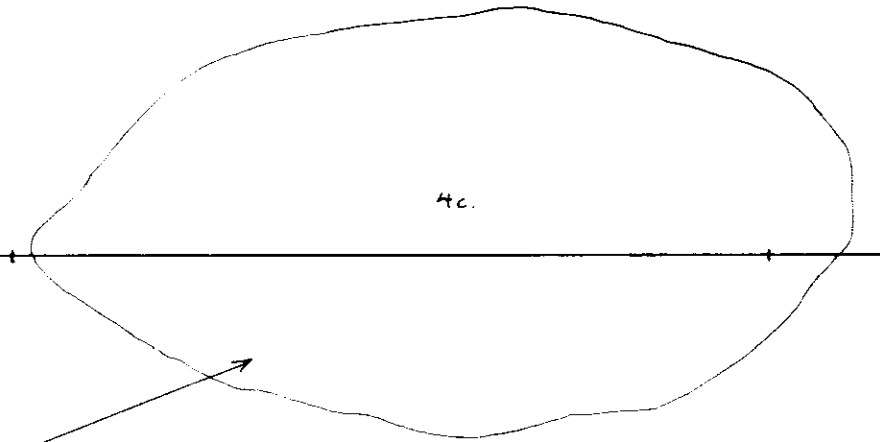


INTERMEDIATE DIKE/INTRUSIVE
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 crystalline, with some
 massive gabbroic in places (see photo)

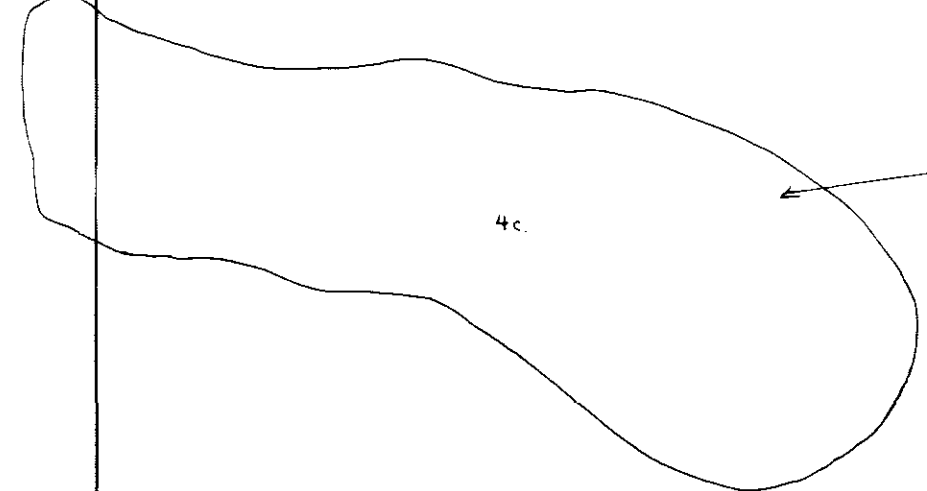
PLAZIO GABR SAMPLE from
 a low (about 100m) mesa
 @ 100/200, 100/200
 (see photo) - all base
 rock is very crystalline
 and has a massive texture
 in places (see photo)



INTERMEDIATE DIKE/INTRUSIVE
 - light gray, massive, highly
 crystalline, with some
 massive gabbroic in places

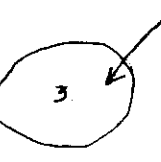


4c



INTERMEDIATE DIKE/INTRUSIVE
 - light gray, massive, highly
 crystalline, with some
 massive gabbroic in places

4c



INTERMEDIATE DIKE/INTRUSIVE
 - light gray, massive, highly
 crystalline, with some
 massive gabbroic in places
 (see photo) - all base
 rock is very crystalline
 and has a massive texture
 in places (see photo)



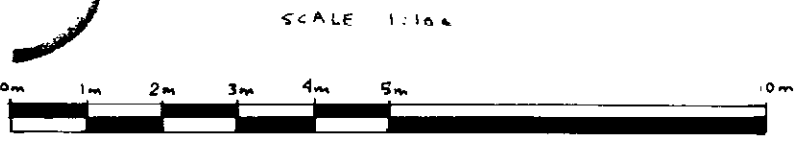
INTERMEDIATE DIKE/INTRUSIVE
 - light gray, massive, highly
 crystalline, with some
 massive gabbroic in places

PLAZIO GABR SAMPLE from
 a low (about 100m) mesa
 @ 100/200, 100/200
 (see photo) - all base
 rock is very crystalline
 and has a massive texture
 in places (see photo)

PLAZIO GABR SAMPLE from
 a low (about 100m) mesa
 @ 100/200, 100/200
 (see photo) - all base
 rock is very crystalline
 and has a massive texture
 in places (see photo)

SEE SOUTH SHEET FOR LEGEND

17,495



HOMESTAKE MINERAL DEVELOPMENT COMPANY		
LEAR PROPERTY		
GEOLOGY AND GOLD GEOCHEMISTRY		
ADIT AREA - NORTH SHEET		
DRAWN	DATE	FILE CODE