

GEOLOGICAL AND GEOCHEMICAL REPORT

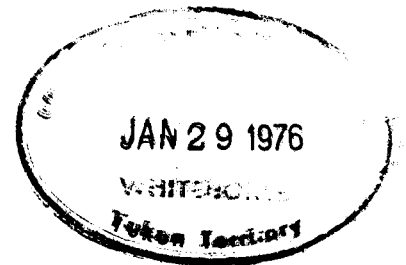
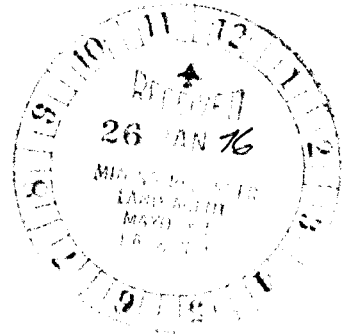
ON

ODD CLAIMS

Upper Lansing River Area

105° 13' 63" 50' 132° 05'

MAYO MINING DIVISION



By: J. T. SHEPHERD

Supervised By: D. L. McKelvie, P. Eng.

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$ 15,400.00

[Signature]

Resident Geologist or
Resident Mining Engineer

FOR

MCINTYRE MINES LIMITED



Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

[Signature]

L.R. BAXTER
Supervising Mining Recorder
Commissioner of Yukon Territory

Field Work.....June 30 - August 3, 1975

Report Completed.....January 13, 1976

0-55-9

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SUMMARY

- (1) Results of geological mapping, geochemical sampling, trenching and diamond drilling are compiled for assessment purposes.
- (2) Investigations focused on a group of closely associated carbonate-hosted sphalerite-galena occurrences.
- (3) Geological mapping was based on five distinct stratigraphic units.
- (4) Geochemical surveys indicate a close association between mineralized outcrop pattern and anomalous soil samples.
- (5) Trenching and diamond drilling demonstrated that massive mineralization crosscuts bedding with limited extensions along strike.

INTRODUCTION:

Aerial reconnaissance in late August 1974, near Einarson Lake, Yukon Territory, uncovered a thin, but very extensive horizon containing many small zinc-lead occurrences. These showings occur in the same Late Precambrian carbonate sequence found on the TOM CLAIMS, twenty-four miles north, and are associated with similar but much less abundant dolospar alteration. Dolomite zones are restricted to two thin stratigraphic intervals and individual pods seldom exceed a thickness of 5 feet or strike length of 20 feet. In conjunction with a larger program dealing with the TOM Group, detailed geological mapping, stratigraphy, diamond drilling, trenching and geochemical sampling was undertaken to evaluate the ODD CLAIMS in 1975. The following report has been prepared to fulfill the requirements of the Yukon Quartz Mining Act governing the acceptance of geological and geochemical surveys for assessment purposes. Costs applicable to assessment work have been previously submitted.

PROPERTY:

On September 9, 1975, claims ODD 1 to 48 were recorded in the Mayo Mining Division, Y.T. An additional 42 tie-on claims were recorded December 20, 1974, as ODD 49 - 90 for a total of 90 full sized claims. Maps 1 and 2 show the location of these claims.

These claims have been grouped as follows:

	<u>Claim Name</u>	<u>Claim Number</u>
(1)	ODD 1 - ODD 4 Inclusive	Y-96861 - Y-96864 Inclusive
	ODD 9 - ODD 12 "	Y-96869 - Y-96892 "
	ODD 33 - ODD 40 "	Y-96893 - Y-96900 "
(2)	ODD 5 - ODD 8 Inclusive	Y-96865 - Y-96868 Inclusive
	ODD 14	Y-96874
	ODD 16	Y-96876
	ODD 53 - ODD 56 Inclusive	Y-97175 - Y-97178 Inclusive
	ODD 59	Y-97181
	ODD 68	Y-97190
	ODD 70 - ODD 72 Inclusive	Y-97192 - Y-97194 Inclusive
	Odd 74	Y-97196

	<u>Claim Name</u>	<u>Claim Number</u>
(3)	ODD 13	Y-96873
	ODD 15	Y-96875
	ODD 17 - ODD 25 Inclusive	Y-96877 - Y-96885 Inclusive
	ODD 27	Y-96887
	ODD 29 - ODD 32 Inclusive	Y-96889 - Y-96892 Inclusive
(4)	ODD 26	Y-96886
	ODD 28	Y-96888
	ODD 41 - ODD 48 Inclusive	Y-96901 - Y-96908 Inclusive
	ODD 49 - ODD 52 "	Y-97171 - Y-97174 Inclusive
	ODD 64	Y-97186
	ODD 66	Y-97188
(5)	ODD 63	Y-97185
	ODD 65	Y-97187
	ODD 67	Y-97189
	ODD 69	Y-97191
	ODD 77 - ODD 88 Inclusive	Y-97199 - Y-97210 Inclusive
(6)	ODD 57	Y-97179
	ODD 58	Y-97180
	ODD 60 - ODD 62 Inclusive	Y-97182 - Y-97184 Inclusive
	ODD 73	Y-97195
	ODD 75	Y-97197
	ODD 76	Y-97198
	ODD 89	Y-97211
	ODD 90	Y-97212

LOCATION AND ACCESS:

The ODD Group is located approximately 135 air miles north east of Mayo, Yukon Territory (N.T.S. 1050-13, 63°50' 132°05'). Access is by fixed wing aircraft to a small unnamed lake 4 miles northeast of the claims. Transportation from the large base camp on Bonnet Plume Lake, 40 miles north of the ODD Claims, and from local fly camps was provided by a chartered Hiller 12E from Mayo Helicopters Limited.

GEOLOGY:

General:

Regional geology has been compiled by the Geological Survey of Canada and is available as 1:250,000 maps of Open

File 205 by S. L. Blusson, 1974. Rocks underlying the claims have been assigned to the informal Late Precambrian "Grit Unit". This unit is described in G.S.C. Memoir 366 (1973, approximately 100 miles to the southeast as follows (Page 30):

"The "Grit Unit" comprises about equal amounts of argillaceous and quartzose rocks and includes from 5 - 10 percent limestone and minor phyllite."

"Blocky weathering limestone, in beds tens of feet thick, occurs at or near the top of the "Grit Unit"."

Strata of the "Grit Unit" can be traced from Alaska through Yukon into British Columbia. In the Einarson Lake region the "Grit Unit" forms part of the extensive Selwyn Basin which is bounded by the major "Hess Valley fault" to the northeast.

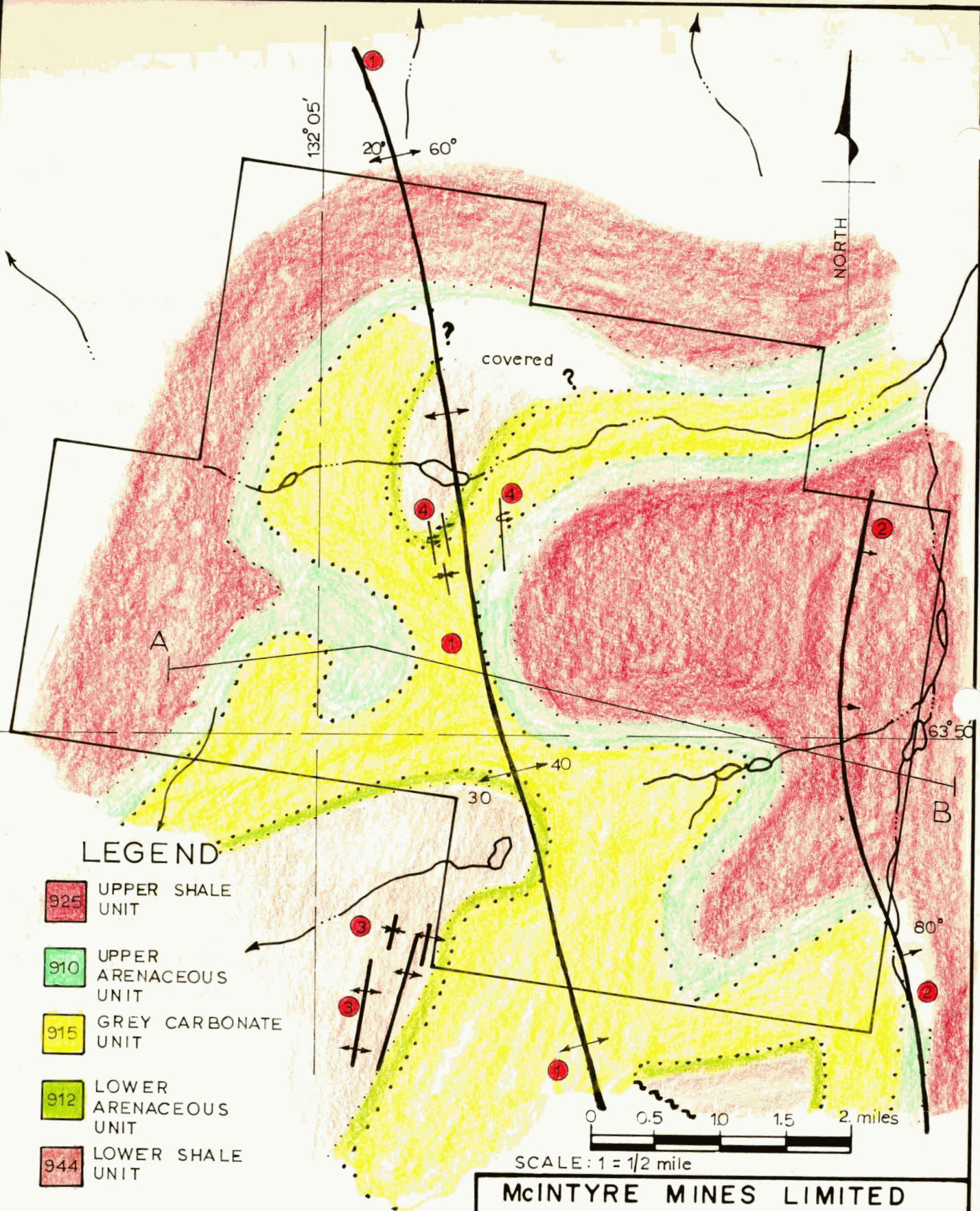
The structural setting of the ODD GROUP is relatively simple in comparison to the high degree of deformation in the surrounding area. Seven stratigraphic sections were measured on the property, complimenting the sections studied around the TOM CLAIMS to the north. Geology maps discussed in this report are:

<u>Map</u>	<u>Scale</u>	<u>Area</u>
(a) Entire claim group	1" = 1000'	17,000' x 16,000'
(b) AB-43 Area	1" = 200'	6,000' x 6,500'

Mapping was done on an orthophotograph (1' = 1000', 100 contours) together with a 1" = 200' topographic base map (25' contours). The alpine terrain allowed fairly accurate location of reference points on the orthophoto and other base maps. For added control, altimeter readings and many chain, clinometer and compass traverses were carried out.

Classification of general carbonate rock types followed Folk, 1959 (Practical Petrographic Classification of Limestones, also 1962, 1965) as closely as possible, emphasizing particle size, texture, and type of cement. Field etching and use of a diamond saw aided in rock identification.

Main structural elements are shown in Figure I and tabulated as Table I. Deformation is relatively simple and is characterized by shallow dips and gentle open folds.



LEGEND

- 925 UPPER SHALE UNIT
- 910 UPPER ARENACEOUS UNIT
- 915 GREY CARBONATE UNIT
- 912 LOWER ARENACEOUS UNIT
- 944 LOWER SHALE UNIT

MAJOR STRUCTURAL FEATURE.

SCALE: 1 = 1/2 mile

McINTYRE MINES LIMITED

ODD CLAIMS MAYO M.D. Y.T.

SKETCH MAP OF MAJOR STRUCTURAL FEATURES.

WORK BY J.S.

DATE NOVEMBER 7 75

DRAWN BY JS

N.T.S. 105-O-13

TABLE I

Key to Sketch Map of Major Structural Features.

- (1) Major N-S broad, open anticline
- (2) Steeply dipping monocline on eastern boundary
- (3) Large tight isoclinal folds on western boundary
- (4) Smaller scale intense folding, recumbent or overturned, subsidiary to (1)

There is a narrow N-S zone of more intense folding (#4) following the axial trace of the major central anticline (#1). Large steeply dipping, tight, asymmetrical folds occur on the east and southwest boundaries. Figure II illustrates a cross section through AB.

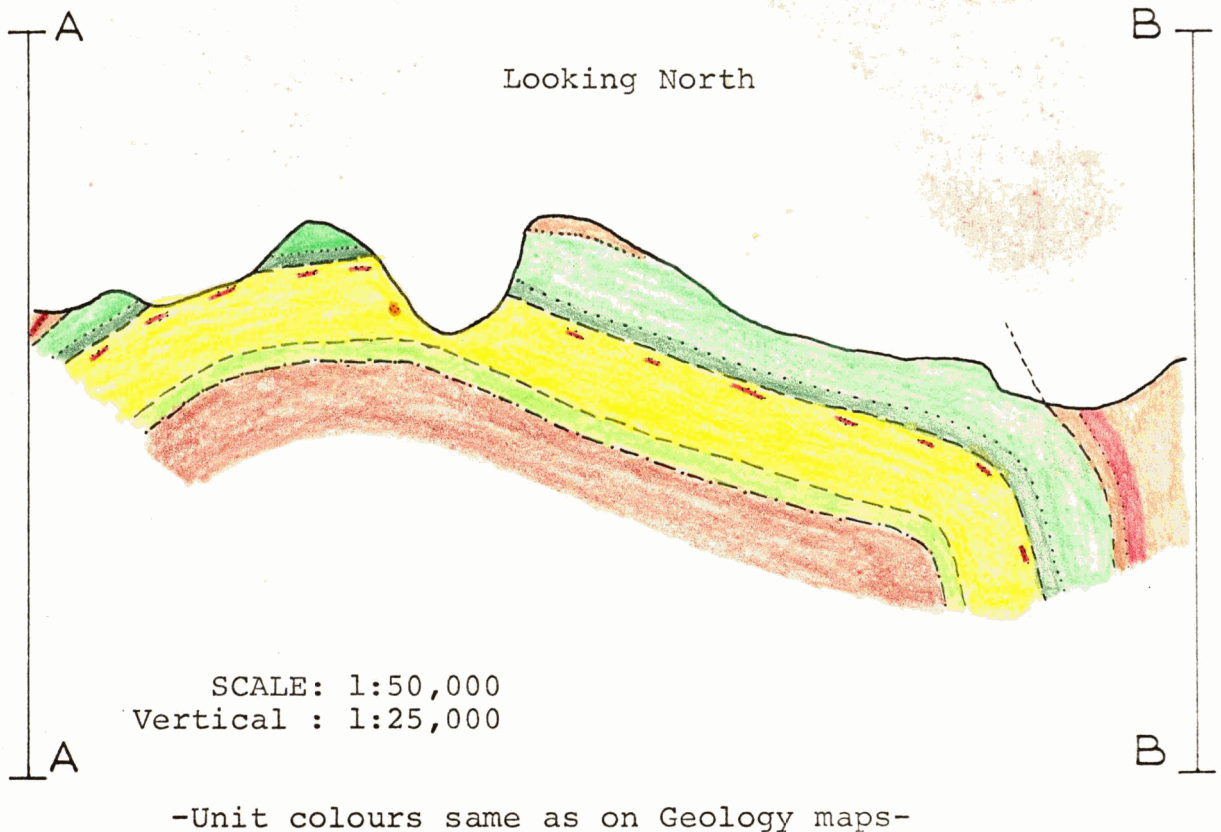


FIGURE II - Cross Section AB ODD CLAIMS

Faulting is limited to fairly small scale displacements but strike-slip movement along bedding planes may be more common than recognized. Massive, white, coarsely crystalline, calcite veins up to 4 feet wide are implaced in definite fracture patterns but apparently are not related to directions of other structures.

Stratigraphy: Map Units

The entire stratigraphic section is well exposed and easily accessible. The apparently conformable sequence was differentiated into five major stratigraphic units as a basis for geological mapping and are listed in Table II. The sequence is essentially very similar to the TOM Claims with minor variations.

TABLE II

	<u>Name of Unit</u>	<u>Thickness</u>
(e)	Upper varicoloured shale unit	Very thick, no top seen on claims
(d)	Upper arenaceous unit	200 [±] - 450 [±] feet
(d ₁)	Upper thin bedded limy clastics	300 [±] - 600 [±] feet, variable
(c)	Grey weathering micrite unit	700 [±] feet
(b)	Lower arenaceous unit	120 [±] - 250 [±] feet
(a)	Lower shale unit	Very thick, no major lithology change to 1500'

Although the lower shale unit is not well exposed on the claims, excellent, easily studied sections occur to the south-west. Coarser clastics are found close to the Grey micrite unit and were mapped as the Lower arenaceous unit. The Grey weathering carbonate unit is traceable from the Upper Lansing River south to the Rogue River. Zinc mineralization was noted over a wide area.

A distinctive sequence of shale, thin bedded quartzite, very limy clastics and numerous intraclastic beds occur in gradational contact above the Grey weathering micrite unit. This complex assemblage varies considerably in thickness before the thick bedded quartzites typical of the Upper arenaceous unit predominate. The Upper varicoloured shale unit is characterized by red-maroon shale beds similar to the sequence on the TOM claims.

(a) Lower shale unit: (Very thick, no bottom noted at ODD)

This map unit is composed of dark brown, often rusty to orange weathering, laminated to thinly bedded, dark brown, light brown to apple green mudstone-slate. Slaty cleavage is typically not well developed although in some areas well defined cleavage is prominent. In some sections, minor dark weathering black, shaly micrite was noted around 500' below the Grey carbonate unit. Slickensides are common but obvious offsets or shear zones are lacking.

(b) Lower arenaceous unit: (120[±] - 250[±] feet)

Limy, friable, dark weathering sandstone and minor shale usually occurs immediately under the Grey micrite unit. Relatively minor, light grey weathering, massive, well indurated quartzite with the characteristic yellow lichen cover is found below this limy sandstone sequence.

(c) Grey weathering carbonate unit: (700[±] feet)

Lead-zinc mineralization associated with special dolospar replacement-solution features led to a detailed examination of this unit. Several important subunits based on carbonate lithologies were used in detail mapping. These are summarized as follows:

- (1) Micrite: black, microcrystalline, also fine grained calcite, sandy.
- (2) Intraclastic: intramicrite, well rounded to angular clasts.
- (3) Oolitic: variable quartz content, selective dolomite replacement.
- (4) Chert nodule horizons, balls, elongate, digitate star shaped.
- (5) Dolomite, fine grained, often orange weathering.
- (6) Dolomite, sparry white
- (7) Zebra rock, zebra breccia, dolobreccia.
- (8) Leached or deeply weathered carbonate, Iron oxide encrusted.

The upper 300 - 400 feet is characterized by altered oomicrite and blocky, black micrite in almost equal abundance.

Sparry white dolomite has selectively replaced many, and sometimes all, of the original ooliths (or pisolites). Under the microscope ghost outlines of banding features are occasionally seen but usually only a subspherical cluster of equant dolomite rhombs, totally masking original textures, is apparent. This produces a peculiar weathering pattern of crowded, well rounded, small whitish lumps of dolomite standing in relief in a micrite matrix. Crude original bedding and larger outlines of intra-clast can be found. Pelletoid textures are common.

Chert occurs as, probably early diagenetic, large nodules elongated parallel to bedding, and as numerous small balls. Many of these small balls are irregular in shape and have holes or weathered depressions in the center. Spectacular large digitate star-shaped chert nodules were noted in the southeast corner of the property. Near the bottom of the carbonate unit a (3 - 8') thinly bedded black chert horizon is widespread marker. Black micrite predominates in the lower portion of the section similar to the TOM sequence. Primary sedimentary structures, including ripples, graded and cross bedding, load and slump casts, are common.

Dolomite occurs sporadically throughout the section but is primary concentrated in two thin horizons toward the top. A distinctive alteration product composed of narrow, alternating, brecciated, linear bands of white dolospar and dark grey fine grained dolomite has been named "zebra breccia". Pore filling grain overgrowths are common near the vuggy sections of the white dolomite and many of the subsequently restricted vugs are infilled with uniform quartz. Zebra breccia zones have a very irregular surface distribution and individual pods seldom exceed a thickness of 5 feet or strike length of 20 feet. The larger zebra zones appear to be connected in a 3 dimensional network of finger-like "veins" of dolospar alteration.

Dolomite alteration on the ODD is only a fraction of the great abundance of zebra on the TOM claims.

A 3' thick lens of rusty weathering, white shale very similar to the marker horizon on the TOM claims occurs below the AB-43 showing. The Grey weathering carbonate unit is at least 200' thicker at the TOM Group than at the ODD Claims. Part of the carbonate-rich clastic sequence included as the lower part of the Upper arenaceous unit at the ODD could correlate with the purer micrite on the TOM.

Upper arenaceous unit: (500[±] - 1050[±] extremely variable)

This unit was taken to contain all the rocks from a gradational contact of the Grey weathering micrite and light

brown weathering, very sandy micrite-limy sandstone to the top of the thick bedded, well indurated quartzites. This distance varies from around 500 to over 1000 feet of section.

The lower limy, thin bedded sequence consisted of brown weathering, often crossbedded, limy coarse clastics and shale with numerous intraclastic beds. The most readily recognizable bed was a dark brown weathering, very silty intramicrite with large angular grey recessive carbonate clasts, 10 - 20' thick. This bed and distinctive platy talus was observed over the entire claim group. Sandy rocks are notable for well developed crossbedding and abundance of muscovite flakes. The upper massive beds are recognizable from a distance by the characteristic yellow lichen cover that seems to grow best on very dense well indurated quartzites.

(e) Upper shale unit: (very thick, no top seen in ODD area)

North of the ODD Claims the red-maroon shales characterizing this unit are interbedded with Hadrynian volcanics. On the TARA Claims, 60 miles northwest, similar but apparently thicker redbeds occur unconformably under Early Paleozoic carbonates. Nowhere are redbeds observed below the Grey micrite to at least a measured 1500 feet.

The lower part of the sequence, composed mainly of dark weathering, thinly bedded, greenish mudstone-slate, is superficially similar to the Lower shale unit. The redbeds range from 330' to 1200' above the Grey weathering carbonate. This variation is thought to be a function of the extremely erratic nature of the volcanic-chemical environment. Red shale grades over several feet to green shale and isolated "nodule-like" bleached areas are common in redbed sequences. The number of distinct separate red shale beds will change over a relatively short distance.

Redbeds on the ODD are much thicker and extensive than on the TOM.

Mineral Occurrences:

Most of the massive lead-zinc showings are closely associated with zebra breccia development. Sphalerite is the principal zinc mineral and several varieties ranging from dark green to red were noted. Between the larger massive green ZnS showings, on the same stratigraphic level, vugs are sporadically filled with red sphalerite and galena. White hydrozincite and light brown to colourless Zn oxides are the main alteration products of sphalerite. Usually galena appears to be later than the green ZnS but is definitely earlier when associated with red vug filling sphalerite. Pyrite is noticeably absent

in Pb-Zn handspecimens although some shear zones and fractures are infilled with ferruginous residue.

The showings on the ODD group are also closely associated with cross-cutting fractures which is in sharp contrast to the strictly conformable mineralization at the TOM. Sphalerite and galena were also noted filling fractures in unaltered matrix close to massive showings. Trenching on AB-43 and S-16 (TR-75-4, and 21) give typical results for a massive green ZnS showing and Trench-75-27 shows a group of red ZnS filled vugs.

GEOCHEMISTRY:

The claims are located entirely within the alpine environment, a few subalpine spruces grow along the eastern boundary. Valley bottoms are underlain mainly by carbonate and many karst features have developed. The highest peaks are more than 6700' and the lowest points are in the NE and SW corners at 4200'. Treeline is about 4000 feet. Rock glaciers on north facing slopes and other solifluction features are very common. Geological Survey of Canada reports indicate the Pleistocene glacial history to be related to a thick transection ice sheet network with a source area to the east and southeast.

Locations of the 2 main soil grids are shown on Map 3. The southern edge of both grids is on the lower slopes of a series of coalescing talus fans. A special effort was made to collect talus fines if no suitable soil sample was available.

Ground control and sample procedure:

Grids were set up with two carefully chained baselines and several cross tie-lines for ease of sampling and correction in the field. The main baseline was surveyed by chain, compass and clinometer, and, located in conjunction with a prominent landmark on the orthophoto. From a tie-line, other baselines parallel to the main baseline were also run and the relative location of these checked by tie-lines at the ends of the baselines.

Samples were taken at 200-foot intervals with lines 400' apart on the AB-43 grid and 200-foot intervals with lines 200' apart on the S-16 grid. This configuration was chosen to give maximum coverage along the restricted trend of the mineralized beds. Samples were collected just below the A-B soil horizon interface (Podzolic soils), if present or upper "c" horizon, with a grubhoe or short handled shovel. Preparation and analysis was then carried out as described in Appendix I.

Histograms of zinc and lead results, Figures 3 and 4, from similar conditions on the TOM group were plotted having threshold values of Zn - 185 ppm and Pb - 59 ppm. When results from the ODD claims are plotted a similar threshold value for Pb is obtained but the zinc is much lower. This is probably a reflection on the large number of talus fines samples included in the ODD soil results. A 110 ppm Zn contour line does not alter the anomaly pattern to any appreciable extent. Silver values correlate with high zinc and lead concentrations. However, silver also has a high background level and it is not possible to contour silver in any coherent fashion.

Soil horizons are not well developed on the claims except on the large grassy meadows at lower elevations. A typical soil profile is given below:

Typical Soil Profile(south facing slope)

<u>Horizon</u>	<u>Depth</u>	<u>Description</u>
A	2 - 7" or greater	Very Black, organic rich, sometimes grey-black.
B-C (mixed)	7 - 16"	Yellow-brown, grey, slight organic content.
C	16" -	Yellow-brown, broken bedrock, no organic content.

In higher elevation soil horizon development is limited to a very thin organic layer with light grey mixed soil below. Permafrost was often noted on north facing slopes.

Distribution of anomalous values (Maps #6, 6a, 6b, 7, 7a, 7b) is closely associated with the numerous small showings. Primary dispersion along surface drainage patterns; i.e. slope wash gullies, creek valleys, outcrop exposures and talus cones account for most of the anomalous values. Hydromorphic dispersion is more important in the S-16 grid where anomalies appear along the break in slope and are not due to extent of mineralized outcrop. Lead values correspond more closely with the distribution of highgrade showings than do zinc results.

Figure 3

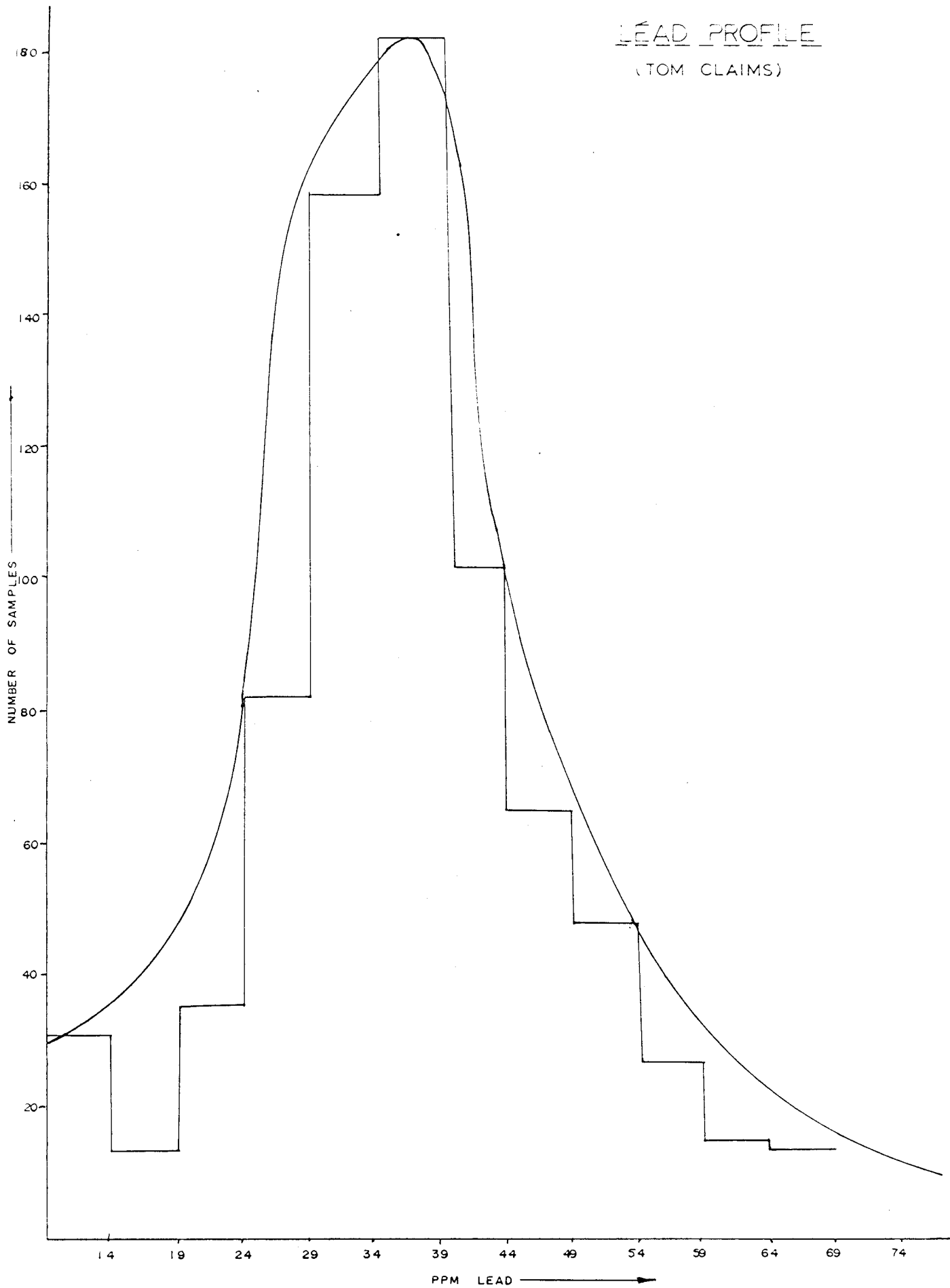
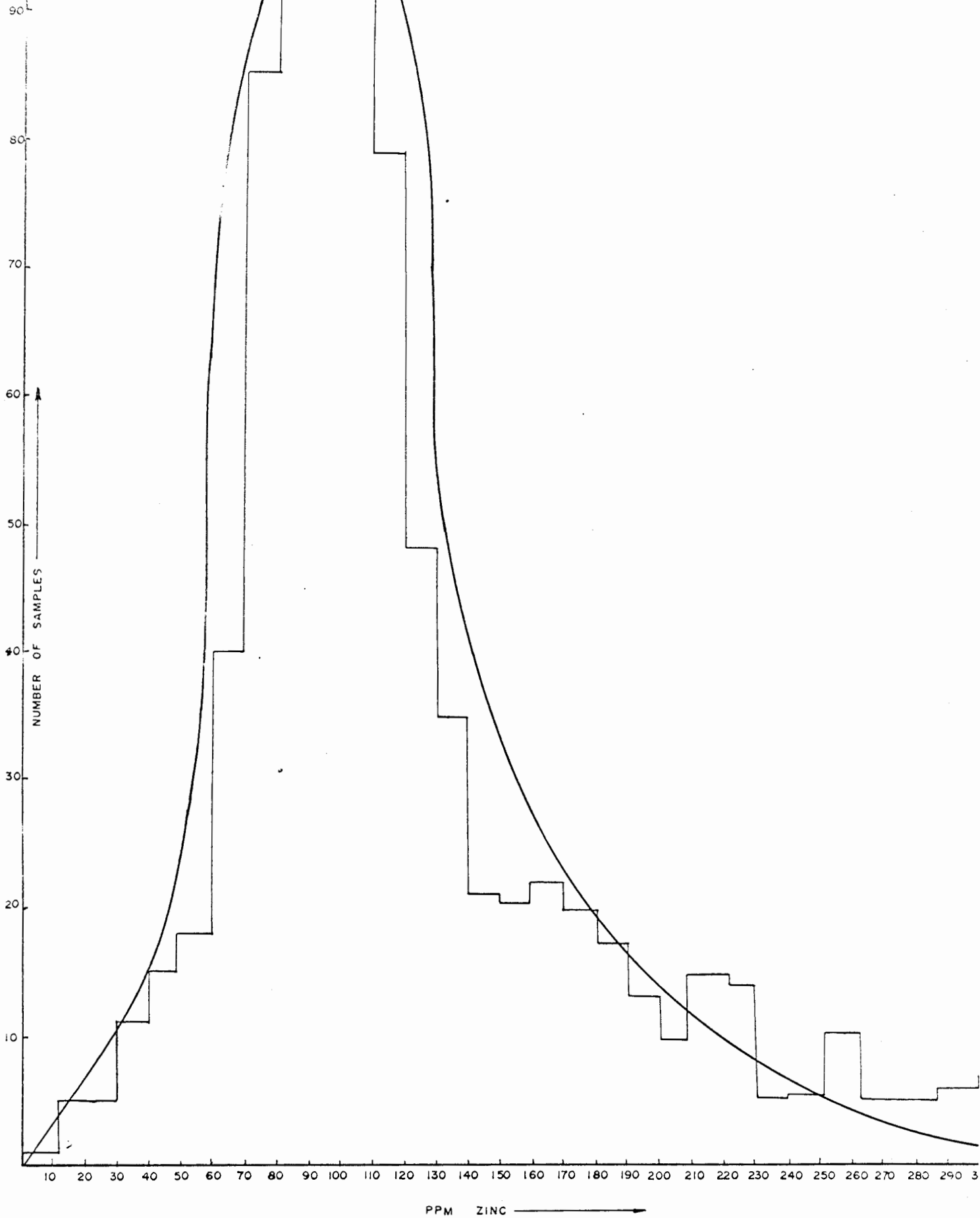


Figure 4

ZINC PROFILE

(TOM CLAIMS)



TRENCHING:

Trenching was done using an Atlas Copco cobra BEM-43L rock drill, 40% Forcite, Amex II, and B-Line detonating cord. Bedrock occurs only a few inches below surface but generally is very broken requiring trenches to be driven fairly deep for solid sampling surfaces. Sketches of trenches and assay results are in Appendix II.

Talus removal with Amex II was fairly successful in four areas of highgrade float. The underlying rock was well exposed in two areas but in other areas the talus was too deep, although a good cross section of the slide was obtained.

DIAMOND DRILLING:

A Winkie drill, equipped with an EXT corebarrel assemblage, started on August 4, 1975. A total of 148 feet was drilled in 4 holes on the AB-43 showing.

The high grade showings, such as AB-43 were found to definitely cross-cut bedding and have limited extension along strike. DHW-75-26 did not intersect the surface showing where expected but did encounter mineralization further down.

Core recovery, while good in black micrite, was poor in mineralized sections. Most of the water was recovered due to permafrost. The core was cut with a diamond saw and examined with a 10-20X binocular microscope. Showing size and near surface distribution make the Winkie drill an ideal sampling tool.

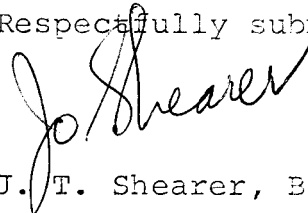
CONCLUSIONS AND RECOMMENDATIONS:

A group of stratiform carbonate-hosted zinc and lead occurrences were studied by geological and geochemical investigations. A close association of sphalerite and galena with replacement dolospar alteration was demonstrated. The stratigraphic position of the mineralized zebra zones is within a short distance of the contact between the Grey weathering and Upper arenaceous units.

Lack of thick sequences of dolomite alteration limits the potential occurrence of large pods of mineralization although sphalerite-filled fractures in unaltered micrite should

be studied in more detail. The Winkie drill is an ideal tool for sampling these widespread, near surface showings.

Respectfully submitted,



J. T. Shearer, B.Sc.



Supervised by D. L. McKelvie, P.Eng.

JTS/nh

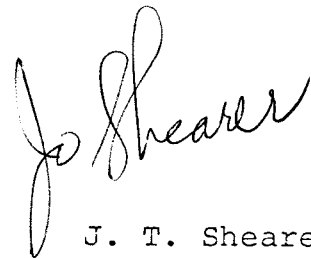
REFERENCES:

- Blusson, S. L. 1974 - Open File 205, Operation Stewart, 1:250,000, 105C, 106B, geology maps, Geological Survey of Canada.
- Folk, R. L. 1959 - Practical Petrographic Classification of Limestones: American Association Pet. Geol. Bull. V43, pg 1 - 38
Also Folk 1962, 1965.
- Gabrielse, H., Blusson, S. L., Roddick, J.A. 1973 - Geology of Flat River, Glacier Lake, and Wrigley Lake Map Areas, Dist. of Mackenzie and Y.T.
Memoir 366, Geol. Survey of Canada
- Ricker, K. E. 1974 - Surficial Geology of the Nadaleen River Map Area, Y.T. - N.W.T. 106C
Open File 207, Geol. Survey of Canada

STATEMENTS OF QUALIFICATIONS:

I, J. T. Shearer of the City of Vancouver, in Province of British Columbia, do hereby certify as follows:

- (1) I am a graduate of the University of British Columbia (B.Sc. 1973) Honours Geology).
- (2) I have been engaged in mining exploration in Canada as a geologist since 1973.
- (3) I am an Associate member of the Geological Association of Canada.



J. T. Shearer

January 13, 1976
Vancouver, B.C.

STATEMENT OF QUALIFICATIONS:

I, D. L. McKelvie, of 4420 Maple Lane, Delta, B.C.,
state that:

- (1) I am a graduate of Queen's University, Kingston, Ontario, in Geological Sciences (Engineering), having obtained a Bachelor of Science degree in 1958.
- (2) I am a member of the Association of Professional Engineers of the Province of British Columbia, a member of the Association of Professional Engineers of the Province of Ontario, and, a fellow of the Geological Association of Canada.
- (3) I have practised as a professional geologist since 1958 in the employ of McIntyre Mines Ltd., American Smelting and Refining Co., and Alrae Engineering Ltd.
- (4) I have first hand knowledge of all the data contained in this report, and, that all work performed was under my management.



D. L. McKelvie, P.Eng.

1521 PEMBERTON AVENUE, NORTH VANCOUVER, B.C.

January 5, 1976

TO: McIntyre Mines Ltd.,
1003 - 409 Granville Street,
Vancouver, B. C.,
V6C 1T2
Attention: Mr. Joe Shearer

FROM: Mr. Conway Chun,
Vangochem Lab Ltd.,
1521 Pemberton Avenue,
North Vancouver, B. C.

SUBJECT: Analytical procedure used to determine acid soluble
Pb, Zn, Ag, Cd, and background correction for Ag
in geochemical samples.

Re: 1975 silt and soil geochemical program in Yukon.

1. Sample Preparation

- (a) Geochemical soil or silt samples were received in the laboratory in wet-strength 3½ x 6½ Kraft paper bags.
- (b) The wet samples were dried in a ventilated oven.
- (c) The dried soil and silt samples were sifted by using a shaking machine with an 80-mesh stainless steel sieve. The plus 80-mesh fraction was rejected and the minus 80-mesh fraction was transferred into a new bag for analysis later.

2. Methods of Digestion

- (a) 0.50 gram of the minus 80-mesh samples was used. Samples were weighed out by using a top-loading balance.
- (b) Samples were heated in a sand bath with nitric and perchloric acids (15% to 85% by volume of the concentrated acids respectively).

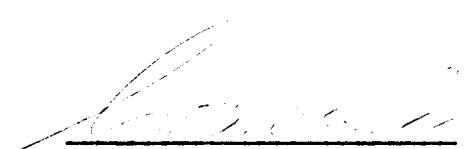
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- (c) The digested samples were diluted with demineralized water to a fixed volume and shaken.

3. Method of Analysis

Pb, Zn, Ag, and Cd analyses were determined by using a Techtron Atomic Absorption Spectrophotometer Model AA4 or Model AA5 with their respective hollow cathode lamp. A Hydrogen Continuous lamp was used to determine the background correction for Ag. The digested samples were aspirated directly into an air and acetylene flame. The results, in parts per million, were calculated by comparing a set of standards to calibrate the atomic absorption unit.

4. The analyses were supervised or determined by Mr. Conway Chun and the laboratory staff.



Conway Chun
VANGEOCHEM LAB LTD.

CC:smb

EXPLORATION DEPARTMENT

MCINTYRE

PORCUPINE MINES LIMITED

DIAMOND DRILL LOG

Property..... ODD CLAIMS
 Location..... 105-0-13
 Claim No..... ODD 16
 Location of Core..... Bonnet Plume Lake

105-0-13 (12004) DHW-75-26

Hole No. DHW-75-26 Sheet No. 1
 Length of Hole ... 42 Feet
 Date Started August 4, 1975 Completed Aug. 5/75
 Core Logged by J. Shearer
 Date August 6, 1975
 Elevation Datum
 Co-ordinates of Collar
 North ODD Group, North of AB-43 Showing
 East

Surveys		
At	Dip	Bearing
0	45	162

BOXES OF CORE; 2 EXT

From	To	Description of Core	Sample No.	FOOTAGE		Width	CORE ASSAYS Oz/ton							
				From	To		%Pb	%Zn	%ZnS	%ZnO	Ag			
		Casing 20 feet.												
0	5	SOIL												
5	31.5	MICRITE - Black to dark grey, Stylolites at 20° to core axis, microcrystalline calcite.												
		27.5 - sphalerite and galena on fracture planes as vein filling and disseminated along white calcite microveins, disseminated pyrite patches gradational contact with dolomite below.												
31.5	36.8	DOLOMITE - Mottled, light to dark grey with sparry white dolomite.	T42	29	37	8'	1.840	4.000	-	-	0.060			
		Yellow sphalerite in massive patches and disseminated crystals. Highest grade section 33.2 - 35.0 mostly in fracture filling veins.												
36.8	42.0	MICRITE:- Black, dark grey, white sparry veins and patches												
	42.0	END OF HOLE												

J. Shearer

EXPLORATION DEPARTMENT

MCINTYRE
PORCUPINE MINES LIMITED

DIAMOND DRILL LOG

Property..... ODD Claims
Location..... 105-0-13
Claim No.....
Location of Core..... Bonnet Plume Lake

105-0-13 (12004) DHW-75-29

Hole No. DHW-75-29 Sheet No. 1
Length of Hole 27'
Date Started August 8, 1975 Completed Aug. 9/75

Core Logged by J. Shearer
Date August 9, 1975

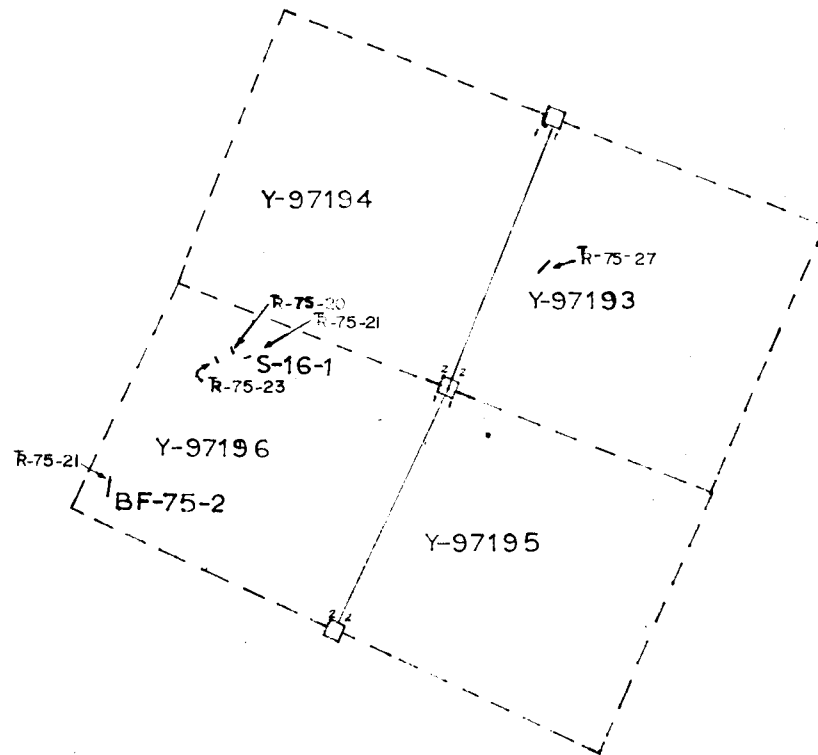
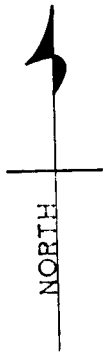
Surveys
At Dip Bearing
0 45

BOXES OF CORE - 1 EXT

Elevation Datum
Co-ordinates of Collar
North ODD Claims, AB43 Showing
East

From	To	Description of Core	Sample No.	FOOTAGE		Width	CORE ASSAYS Oz/ton						
				From	To		%Pb	%Zn	%ZnS	%ZnO ₂	Ag		
		Casing to 12 feet.											
0	4	Soil, broken outcrop											
4	18.5	MICRITE: Black-dark grey microcrystalline calcite - irregular microveinlets of white calcite throughout											
18.5	22.?	Sphalerite and Galena: massive green ZnS and Pb, coarsely crystalline calcite gangue.	T49	18.0	22.0	4'	3.100	32.20	-	-	0.045		
22.?	23.?	Rusty Iron Oxide residue, mineralized cave?											
23.?	27.0	MICRITE: Black-dark grey microcrystalline calcite as above, minor light grey micrite @ 25.6 trace py, disseminated sphal. at end of hole in black micrite.	T51	22	27	5'	0.030	0.420	-	-	0.053		
	27.0	END OF HOLE											

J. Shearer



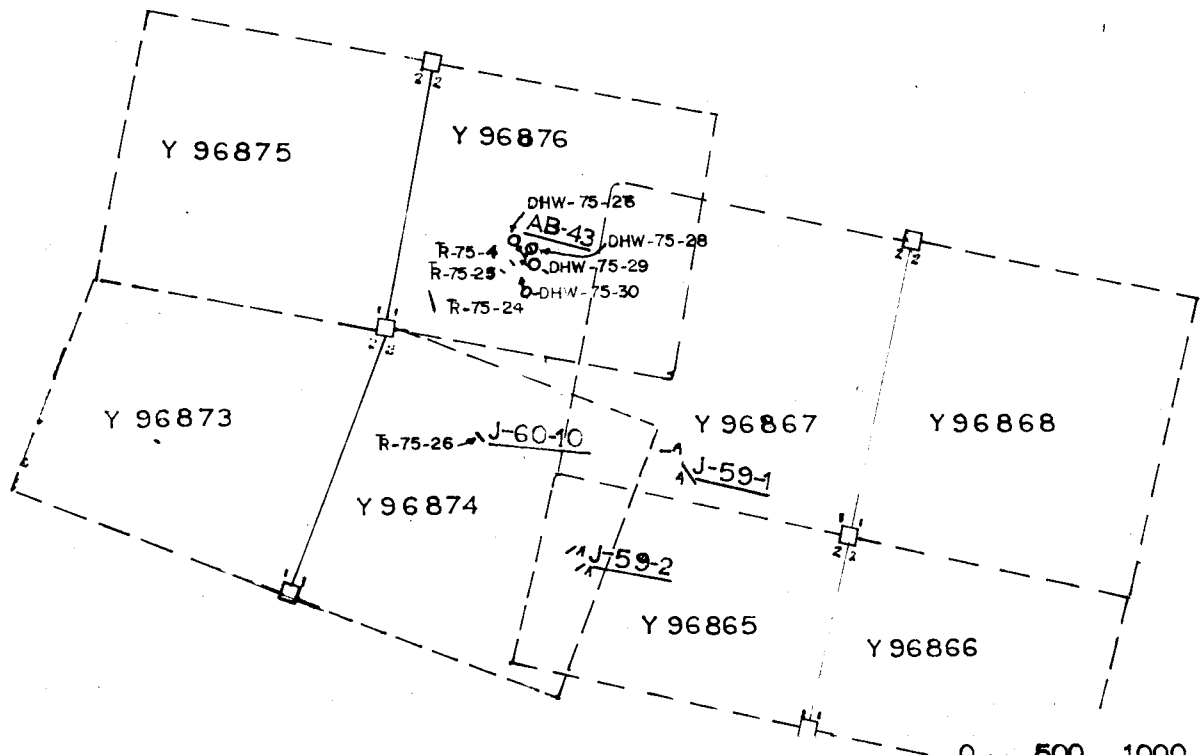
LEGEND

- ∠ TRENCH, USING AMEX II
- TRENCH, DRILLED AND BLASTED
- S 16 AREA NUMBER
- α DIAMOND DRILL HOLE
- CLAIM POST SET, INITIAL AND FINAL
- R-75-TRENCH NUMBER



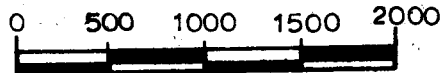
SCALE: 1"=1000'

McINTYRE MINES LIMITED	
ODD CLAIMS MAYO M.D. TRENCHING COMPLETED IN S-16 VALLEY	
WORK BY J.S.	DATE: SEPT 6, 1975
DRAWN BY J.S.	N.T.S. 105-0-13



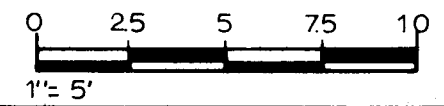
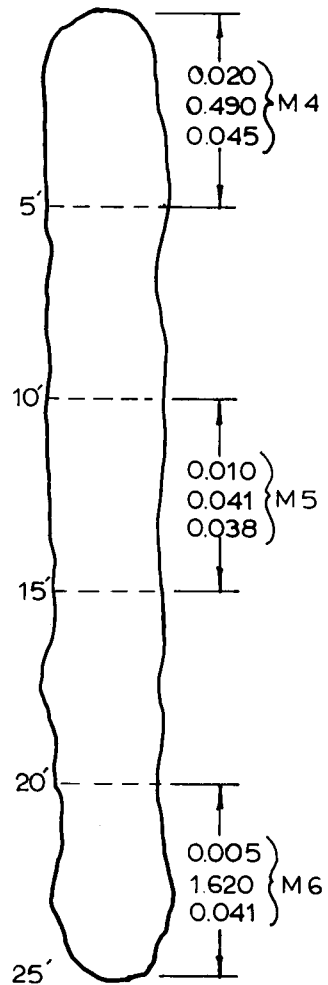
LEGEND

- TRENCH, USING AMEX II
- TRENCH, DRILLED AND BLASTED
- AB-43 AREA NUMBER
- o DIAMOND DRILL HOLE
- I F CLAIM POST SET, INITIAL AND FINAL
- R-75-6 TRENCH NUMBER



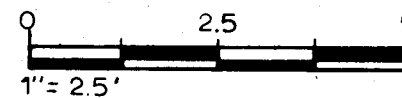
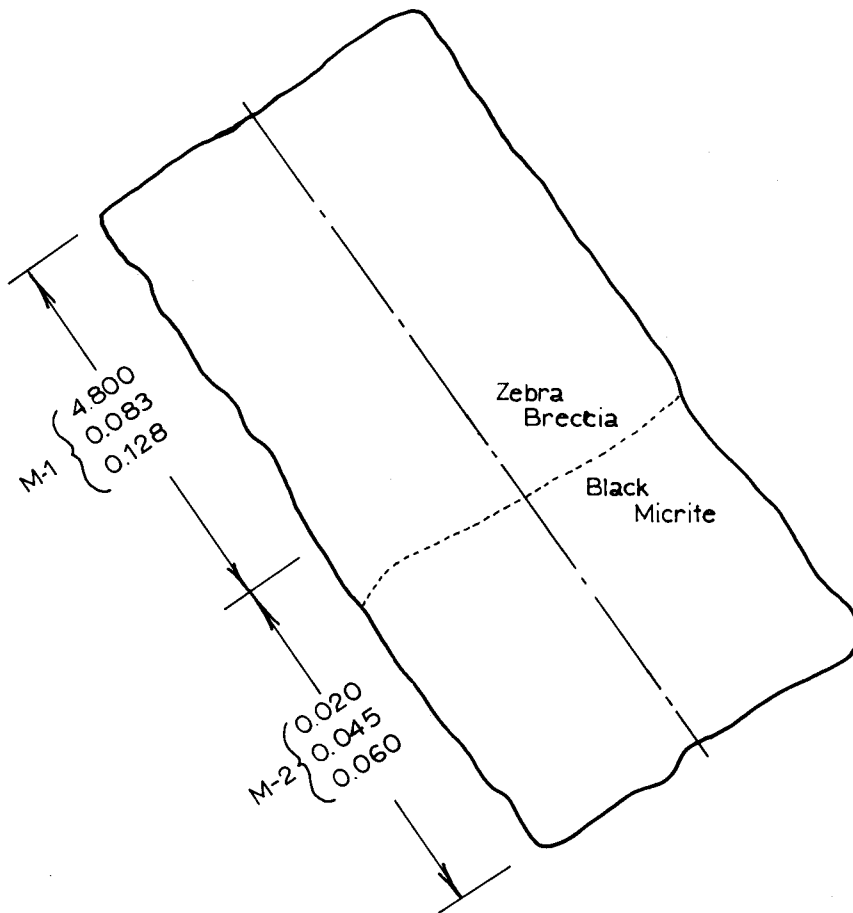
SCALE: 1:1000'

McINTYRE MINES LIMITED	
ODD CLAIMS MAYO M.D. TRENCHING COMPLETED IN AB-43 VALLEY	
WORK BY J.S.	DATE: SEPT. 6, 1975
DRAWN BY J.S.	N.T.S.: 105-0-13



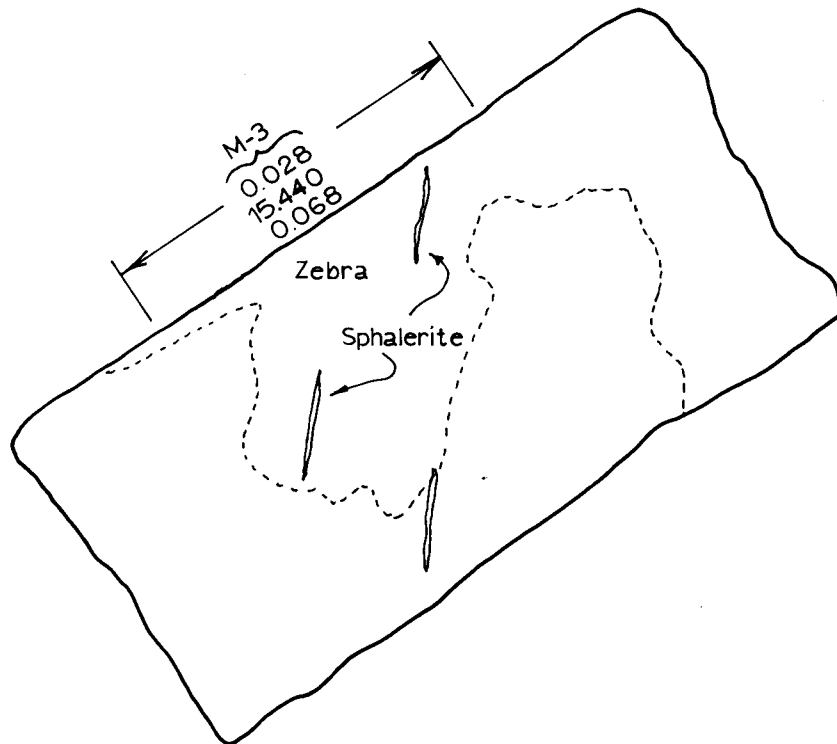
Pb %
Zn %
Ag oz / ton

McINTYRE MINES LIMITED	
ODD CLAIMS MAYO M.D.	
TRENCH -75-22 SAMPLE LOCATIONS	
WORK BY	DATE: OCT. 14, 1975
DRAWN BY TB	N.T.S.: 105-0-13

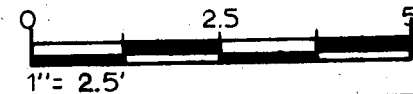


Pb %
Zn %
Ag oz / ton

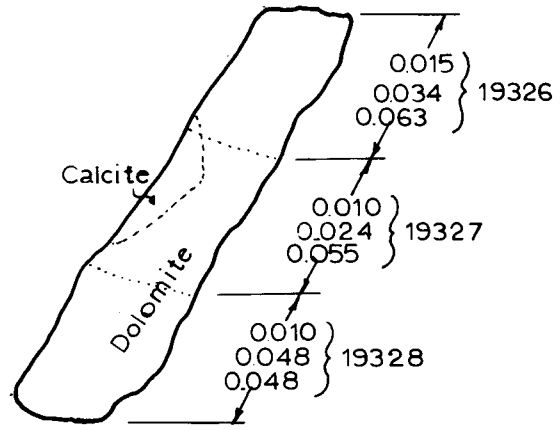
McINTYRE MINES LIMITED	
ODD CLAIMS MAYO M.D.	
TRENCH-75-20 SAMPLE LOCATIONS	
WORK BY	DATE: OCT. 14 1975
DRAWN BY TB	N.T.S. 105-0-13



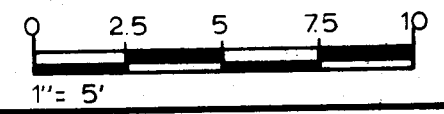
Pb %
 Zn %
 Ag oz / ton



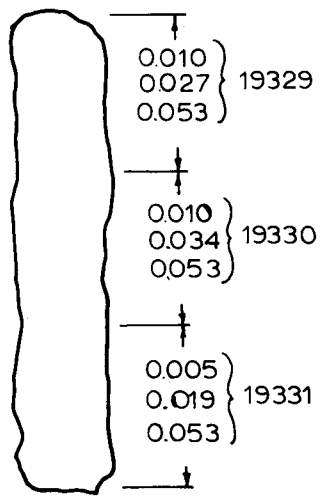
McINTYRE MINES LIMITED	
ODD CLAIMS MAYO M.D.	
TRENCH 75 21 SAMPLE LOCATIONS	
WORK BY	DATE : OCT. 14, 1975
DRAWN BY TB	N.T.S. : 105-0-13



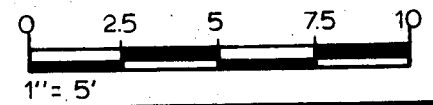
Pb %
 Zn %
 Ag oz / ton



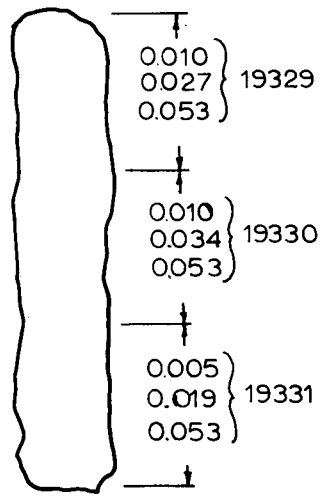
McINTYRE MINES LIMITED	
ODD CLAIMS MAYO M.D.	
TRENCH-75-24 SAMPLE LOCATION	
WORK BY	DATE : OCT 15, 1975
DRAWN BY TB	N.T.S. : 105-0-13



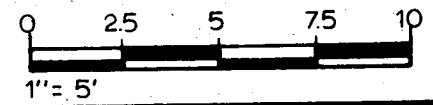
Pb %
 Zn %
 Ag oz / ton



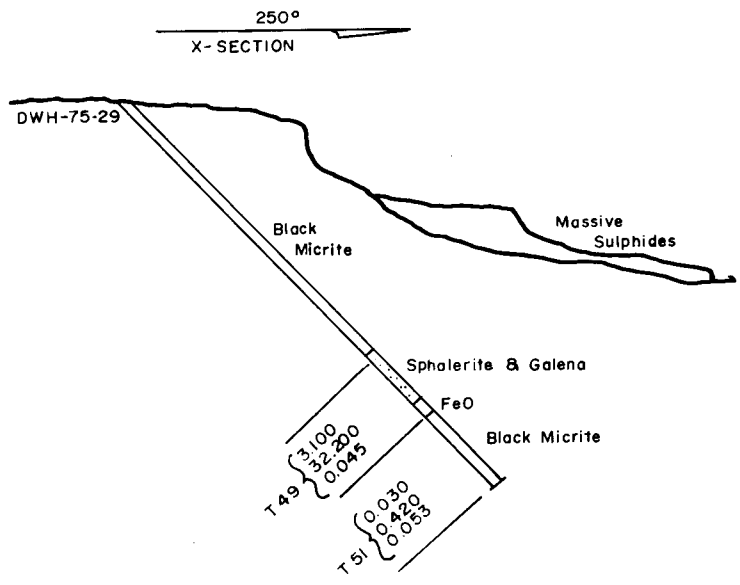
McINTYRE MINES LIMITED	
ODD CLAIMS MAYO M.D.	
TRENCH-75-25 SAMPLE LOCATIONS	
WORK BY	DATE: OCT. 15, 1975
DRAWN BY TB	N.T.S.: 105-0-13



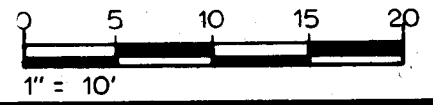
Pb %
 Zn %
 Ag oz / ton



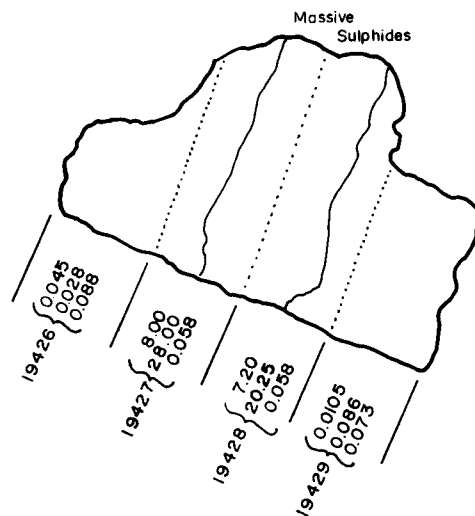
McINTYRE MINES LIMITED	
ODD CLAIMS MAYO M.D.	
TRENCH-75-25 SAMPLE LOCATIONS	
WORK BY	DATE: OCT. 15, 1975
DRAWN BY TB	N.T.S.: 105-0-13



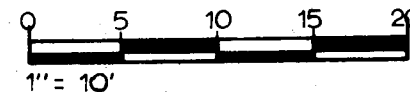
Pb %
Zn %
Ag oz / ton



McINTYRE MINES LIMITED	
ODD CLAIMS MAYO M.D.	
DRILL X-SECTION	
WORK BY	DATE : OCT. 16 1975
DRAWN BY TB	N.T.S. : 105-0-13



Pb %
Zn %
Ag oz/ton



McINTYRE MINES LIMITED

ODD CLAIMS MAYO M.D.

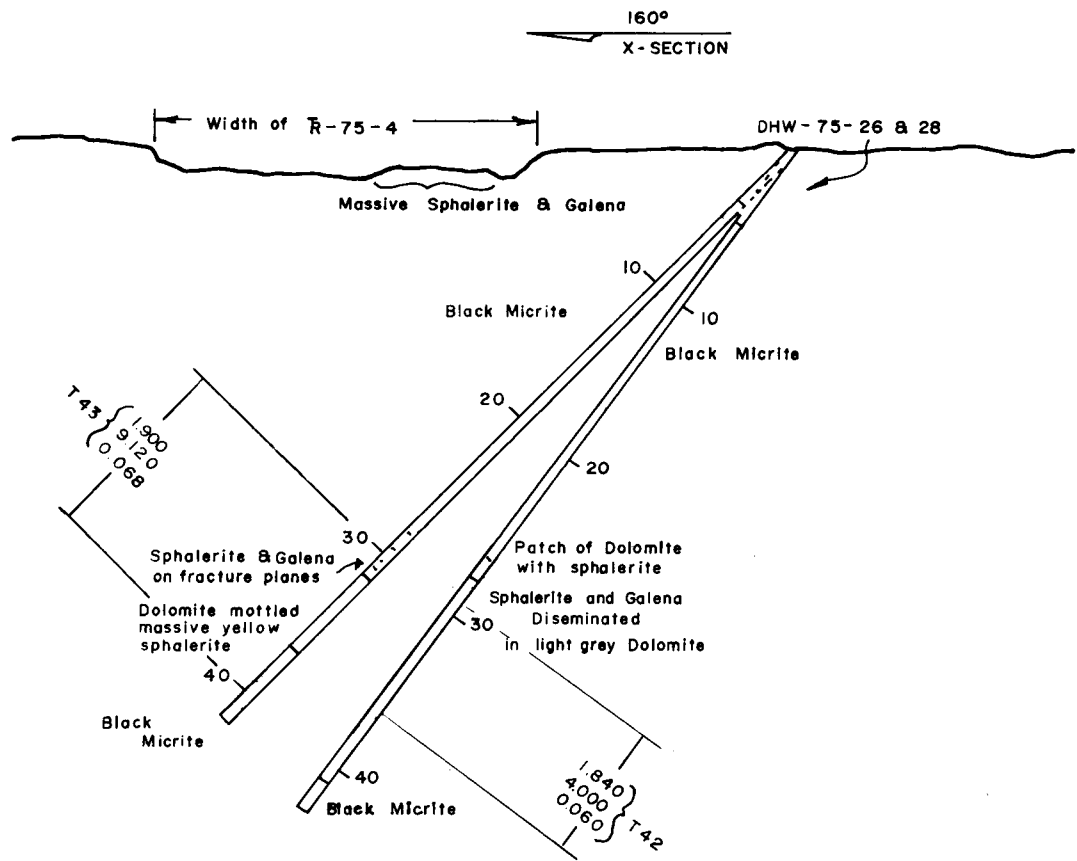
TRENCH 75 4 SAMPLE LOCATIONS

WORK BY

DATE: OCT. 16, 1975

DRAWN BY TB

N.T.S.: 105-0-13



Pb %
Zn %
Ag oz / ton



McINTYRE MINES LIMITED	
ODD CLAIMS MAYO M.D.	
DRILL X-SECTIONS	
WORK BY	DATE : OCT. 15, 1975
DRAWN BY TB	N.T.S. : 105-0-13

APPENDIX III

List of Names and Addresses of Employees

<u>Name</u>		<u>Address</u>
D. L. McKelvie	Geologist	4420 Maple Lane, Delta, B.C.
J. T. Shearer	Geologist	R.R.#1 Mason Ave., Port Coquitlam, B.C.
W. S. Heyworth	Driller	General Delivery, Merritt, B.C.
Bryan Fraser	Student	11233 - 64th Ave., Vancouver, B.C.
M. A. Jerema	Student	10734 - 120th St., Surrey, B.C.
A. S. Robb	Student	Box 206, Princeton, B.C.
T. J. Bryan	Technician	180 Nicholson St., Prince George, B.C.
S. Angust	Student	12474 Crescent Rd., Surrey, B.C.
F. M. LaBrie	Soil Sampler	Mayo, Y.T.

132° 05'



ODD CLAIMS
1-90

Map No. 2

McINTYRE MINES LIMITED

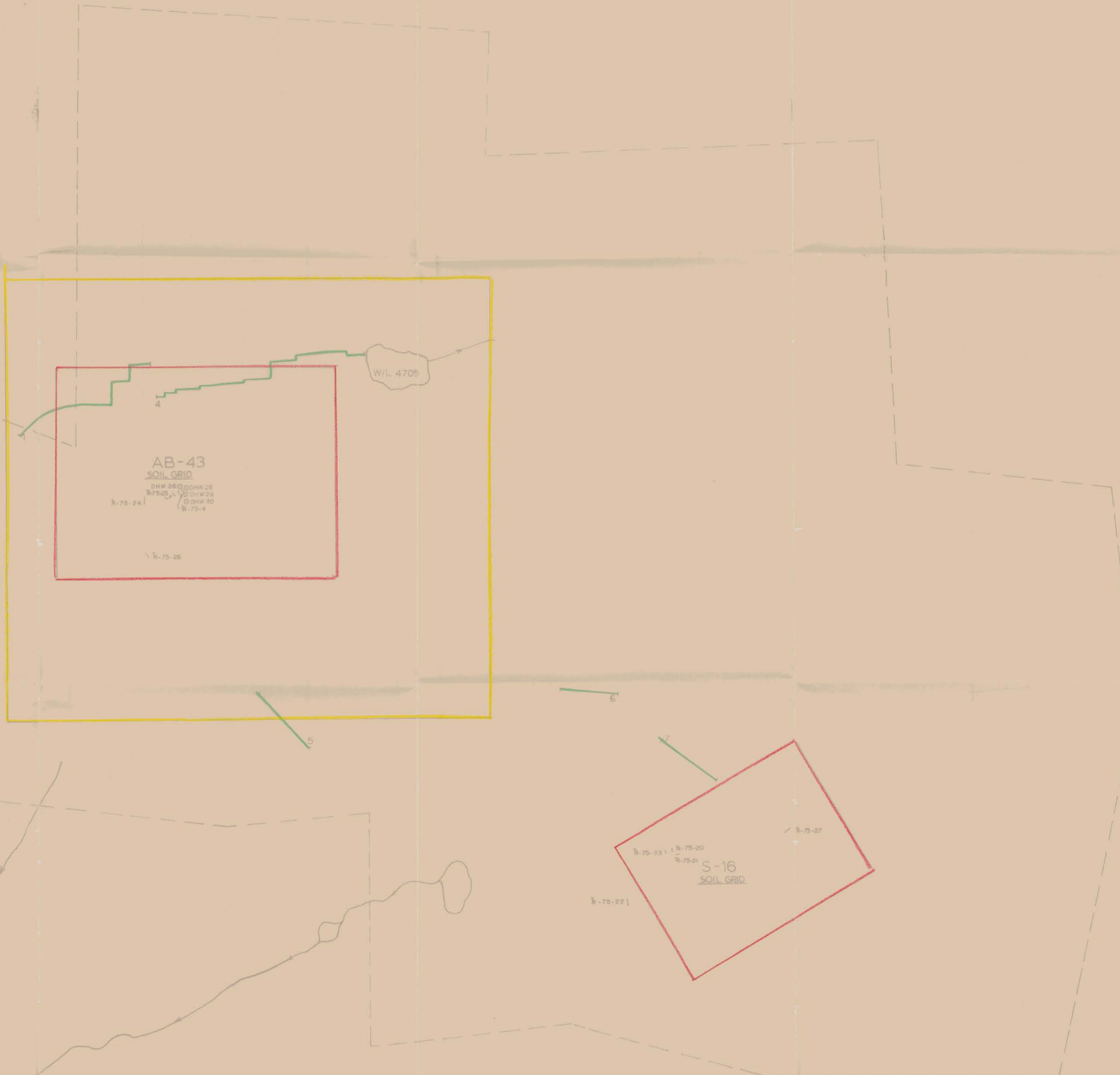
ODD CLAIM BOUNDARIES

DATE: OCT. 17, 1974

SCALE: 2 inches = 1 mile

DRAWN BY: J.S.

N.T.S. 105-0-13



LEGEND

-  CLAIM BOUNDARY
-  OUTLINE GEOCHEMICAL GRID
-  1" = 200' GEOLOGICAL MAP
-  STRATIGRAPHIC SECTION MEASUREMENT TRAVERSE



McINTYRE MINES LIMITED	
ODD CLAIMS MAYO M.D.	
COMPOSITE OVERLAY II	
WORK BY:	DATE OCT 6, 1975
DRAWN BY TB	NTS 105-0-13

NORTH

WELL DEVELOPED
ROCK GLACIER COMPLEX



STRATIGRAPHIC LEGEND

- COLOUR**
- UPPER TERRIGENOUS UNIT**
- 910 Quartz pebble conglomerate
 - 910 Conglomerate: quartz pebbles, large angular carbonate and shale clasts
 - 910 Quartzite: very well indurated, thick bedded, slightly arkosic, yellow lichen cover characteristic
 - 909 Siltstone: thin bedded, micaceous plus intercalated quartzite and shale
 - 925 Slate-Mudstone: deep red, slaty cleavage usually well developed thin laminated
 - 943 Slate-Mudstone: green grey, slaty cleavage usually well developed, thinly laminated
- CARBONATE UNIT:**
- 915 Micrite: light grey weathering, black to dark grey; usually silty
 - 915 Micrite: Very sandy
 - 915 Micrite: very shaly thinly laminated
 - 915 Pelmicrite
 - 915 Micrite with thin sandy layers
 - 942 Intramicrite: very sandy, rounded to angular carbonate clasts, gradational with 1a
 - 942 Intrasparrite: little sand or silt usually well rounded clasts
 - 942 Oomicrite: oolitic rocks, often intraclastic, and sandy
 - 942 Oosparrite: sparry matrix
 - 915 Recrystallized micrite: coarse medium crystalline black calcite
 - 915 Chert: usually as elongate banded nodules, small spheres, thinly laminated beds
 - 918 Oodolomite: dolomitized oolitic-pisbitic rock
 - 918 Dolomite: tan yellow, finely crystalline
 - 918 Dolomite: mottled, grey and sparry white, often buff weathering
 - 930 Zebra rock: fine grained dark grey dolomite brecciated in a linear fashion by sparry white dolomite
 - 930 Zebra breccia: irregular zebra rock, commonly very vuggy
 - 918 White dolospar: erratic in distribution, vuggy
 - 918 Dolomite: dark grey-black, finely crystalline, occasionally coarse grained
 - 916 Calcite: very deeply weathered or leached
- LOWER TERRIGENOUS UNIT**
- 912 Quartzite: well indurated, slightly arkosic, yellow lichen cover characteristic
 - 913 Arkose: friable, intercalated with dark brown shale or mudstone
 - 912 Quartz pebble conglomerate: well indurated, gradational with Quartzite units
 - 912 Conglomerate: quartz pebbles, large angular carbonate and shale fragments
 - 944 Slate-Mudstone: dark brown, grey-green, usually thinly laminated, but often medium to thick bedded, minor limy shale and thick black micrite and oomicrite beds

- Cliff Face
- Talus Cones
- Outcrop Patterns (definite, near outcrop, talus)
- Geological contact (definite, approximate, assumed)
- Fault
- Fold axis, anticlinal, synclinal, direction of plunge
- Joint attitude
- Cleavage attitude
- Attitude of zebra laminations
- Strike and Dip of bedding (true, apparent)
- Sphalerite and Galena, ZnO
- Widespread talus cover
- Leached, brecciated carbonate, solution breccia
- Trench
- Drill hole BBS I
- Drill hole Winkle
- Recrystallization
- Red hematite stain
- Current direction (crossbedding)
- Claim post
- Disseminated sulphides



McINTYRE MINES LIMITED

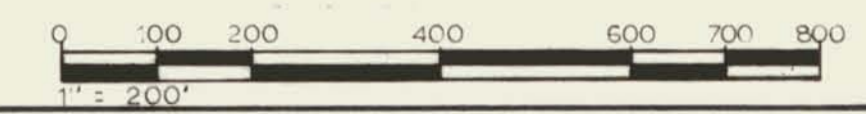
ODD CLAIMS MAYO MD

GEOLOGY

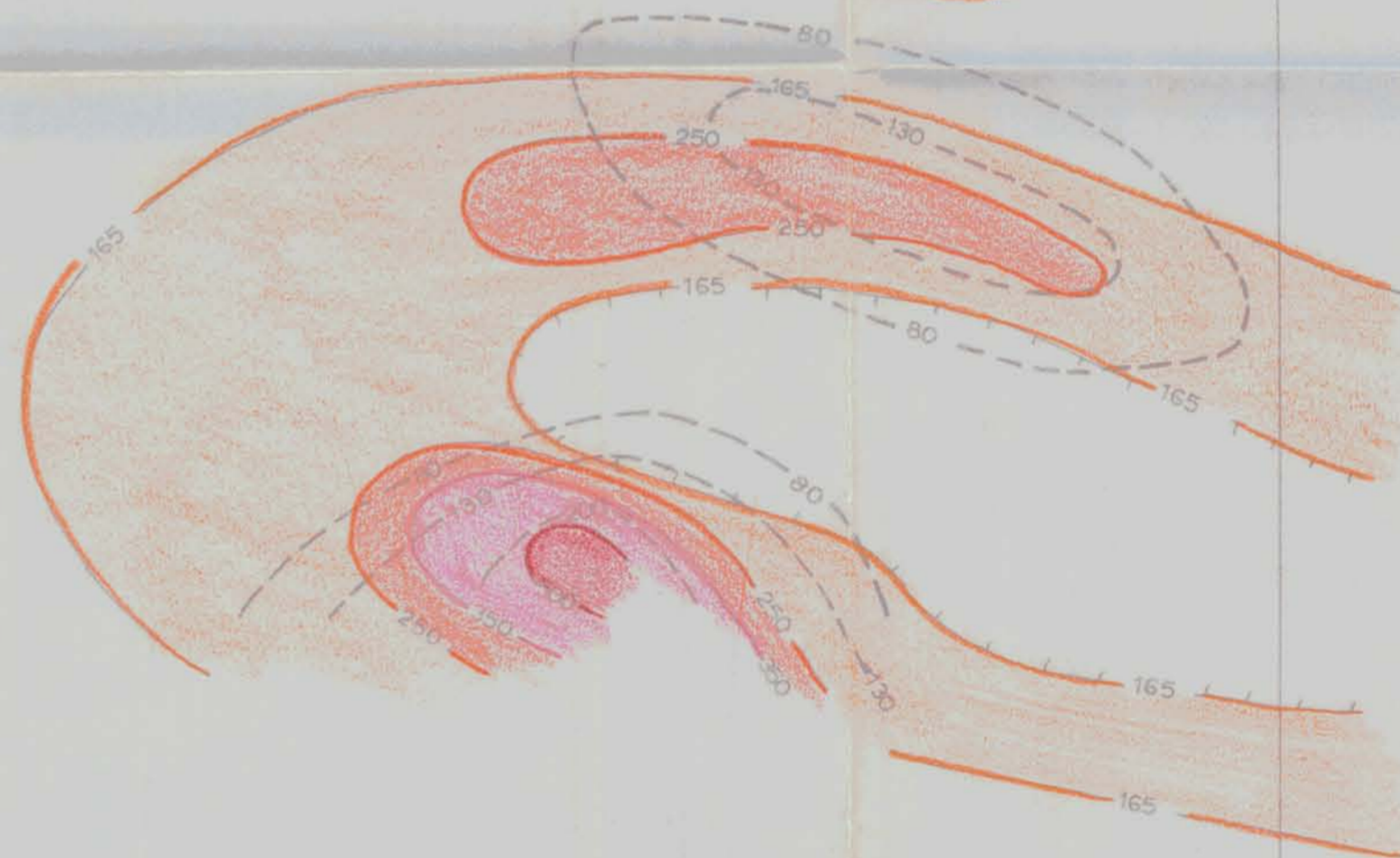
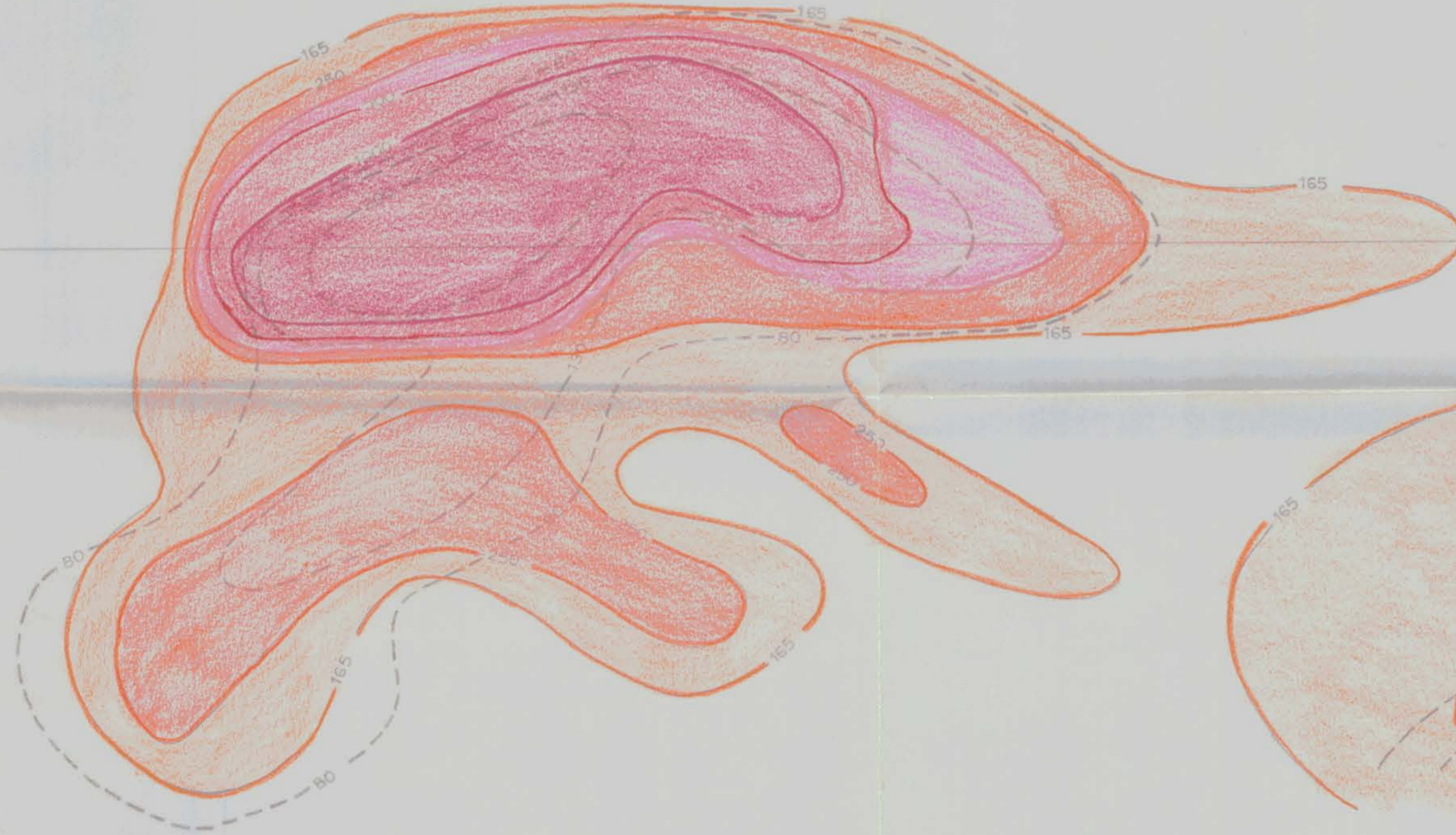
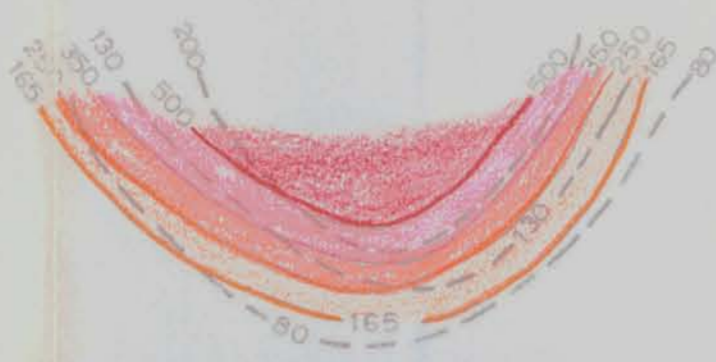
WORK BY J.S. B.F.	DATE NOVEMBER 24, 1977
DRAWN BY J.S. B.F.	NTS 105-0-13



LEGEND
 Zn (ppm) } RESULT
 Pb (ppm) }
 Ag (ppm) }
 □ CLAIM POST



McINTYRE MINES LIMITED	
ODD CLAIMS MAYO M.D.	
GEOCHEMICAL SOIL GRID (SAMPLE LOCATIONS) AB-43	
WORK BY	DATE OCT. 21, 1975
DRAWN BY TB	NTS: 105-0-13



CONTOUR LEGEND

LEAD

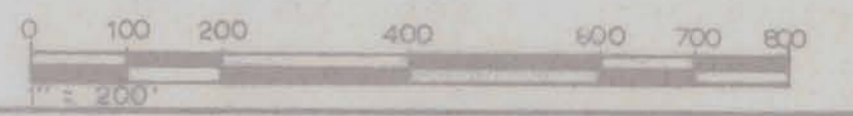
CONTOUR LINES 80, 130, 200 ppm

913	80 - 129 ppm
910	130 - 199 ppm
911	> 200 ppm

ZINC

CONTOUR LINES 165, 250, 350, 500, 1000 ppm

918	165 - 249 ppm
921	250 - 349 ppm
922	350 - 499 ppm
923	500 - 1000 ppm
925	> 1000 ppm



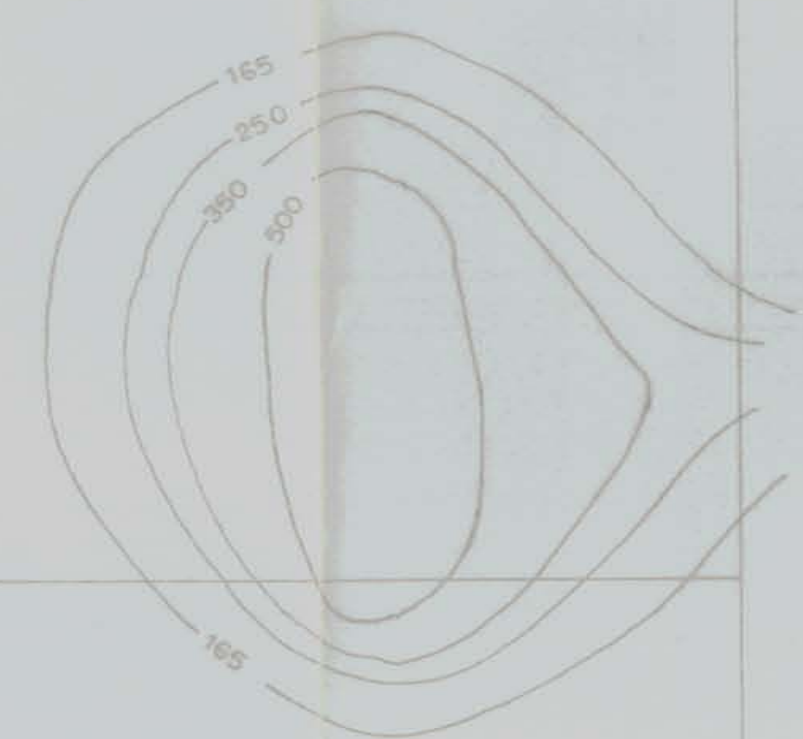
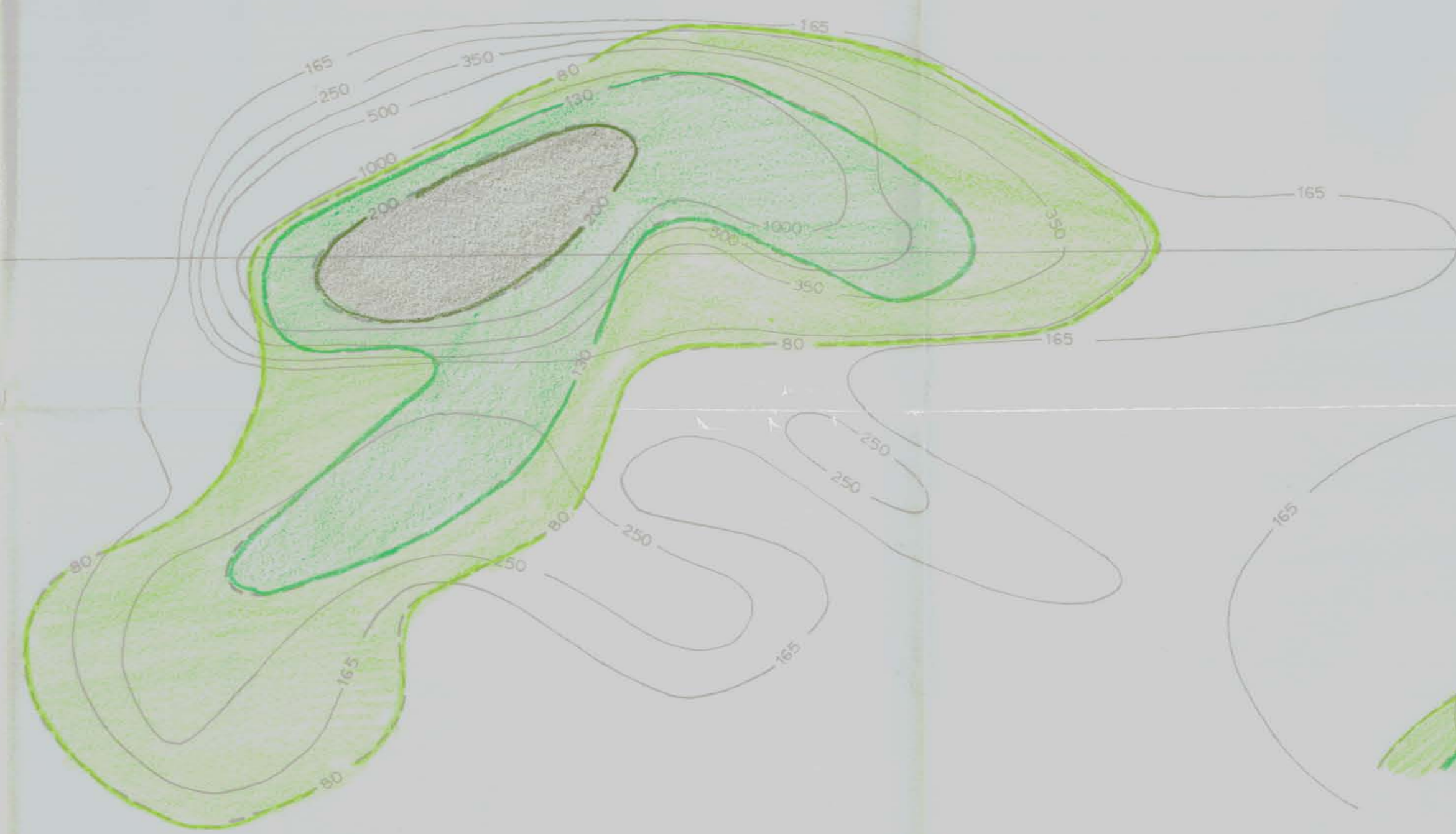
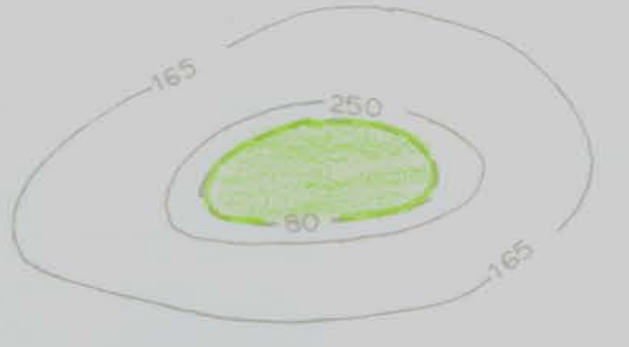
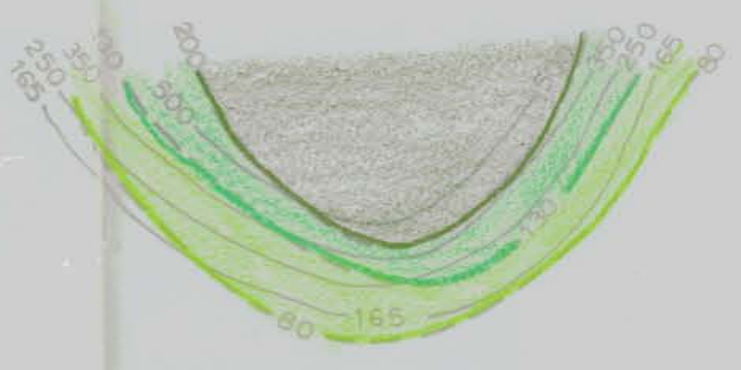
McINTYRE MINES LIMITED

ODD CLAIMS MAYO M.D.

CONTOUR OVERLAY Pb,Zn RESULTS

AB-43 AREA

WORK BY MJ, FL, AR	DATE NOV. 13, 1975
DRAWN BY TB, JS	NTS: 105-0-13



CONTOUR LEGEND

LEAD

CONTOUR LINES 80, 130, 200 ppm

80-129 ppm

130-199 ppm

> 200 ppm

ZINC

CONTOUR LINES 165, 250, 350, 500, 1000 ppm

165-249 ppm

250-349 ppm

350-499 ppm

500-1000 ppm

> 1000 ppm



McINTYRE MINES LIMITED

ODD CLAIMS MAYO M.D.

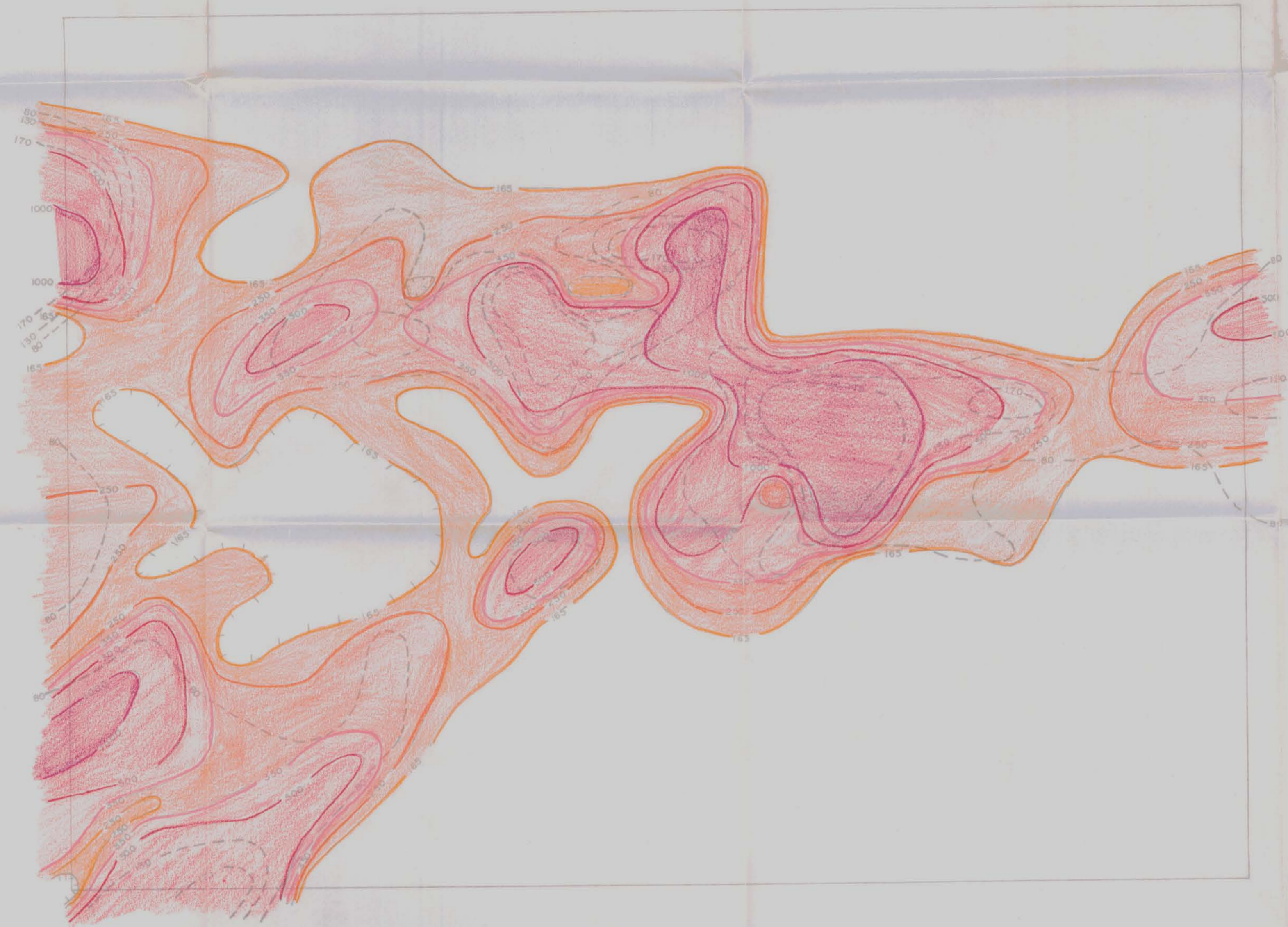
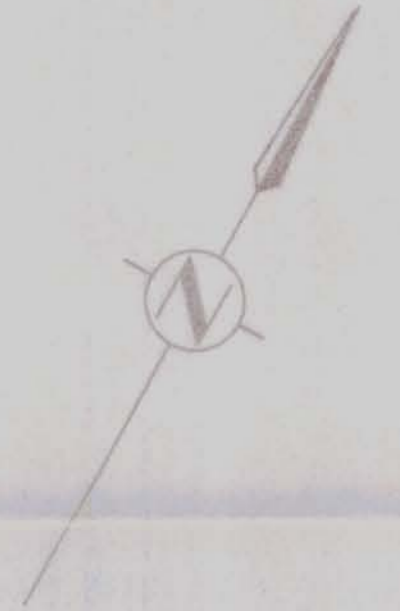
CONTOUR OVERLAY Pb,Zn RESULTS

AB-43 AREA

WORK BY: M.J., F.L., A.R.	DATE: NOV 13, 1975
DRAWN BY: T.B., J.S.	NTS: 105-0-13



McINTYRE MINES LIMITED	
ODD CLAIMS MAYO MD. GEOCHEMICAL SOIL GRID and RESULTS S-16 VALLEY	
WORK BY	DATE OCT. 29, 1975
DRAWN BY T.B.	NTS: 105-0-13



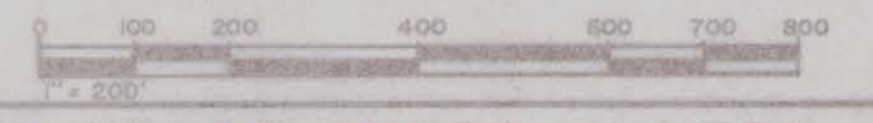
CONTOUR LEGEND

LEAD
--- CONTOUR LINES 80,130,170 ppm

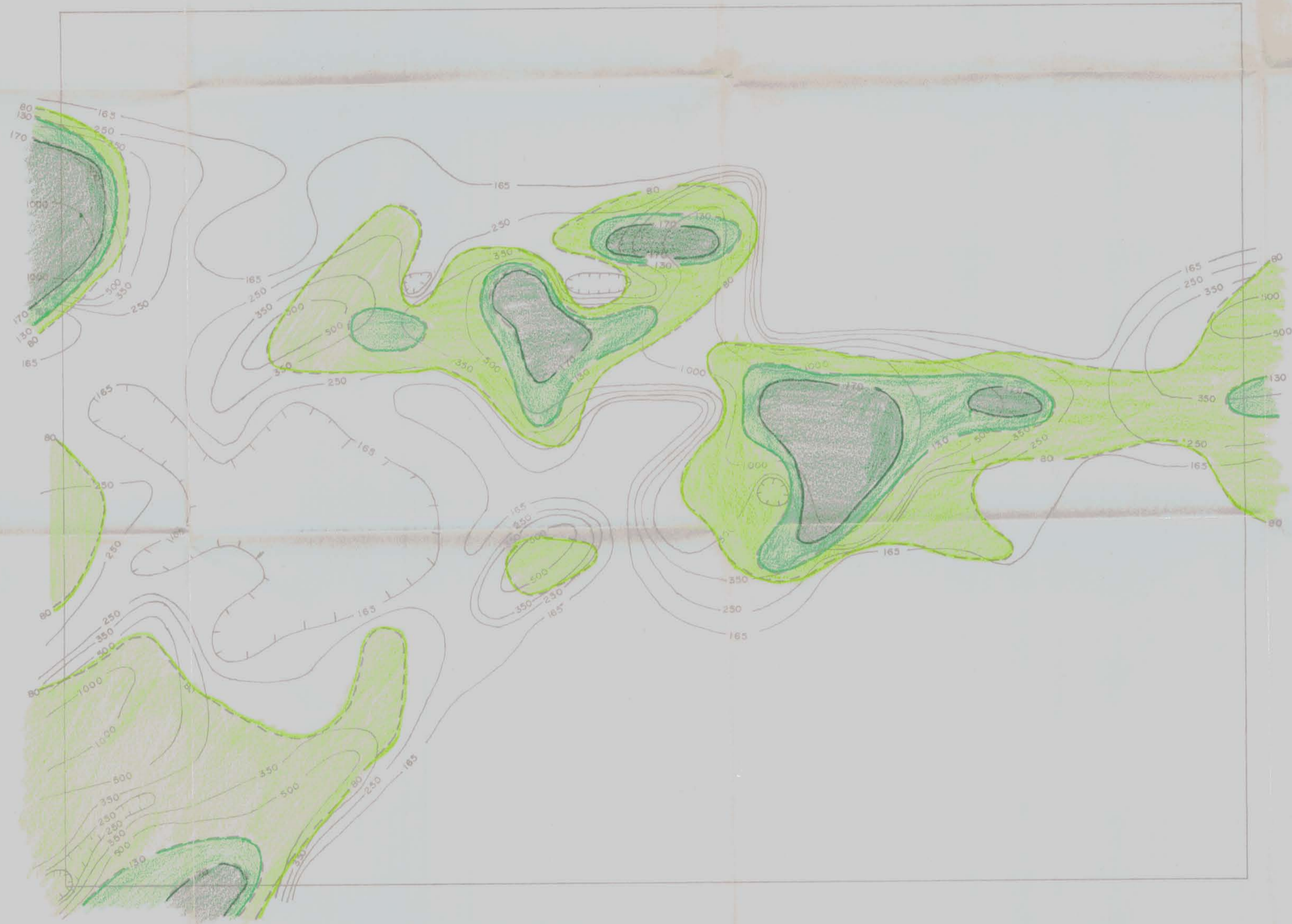
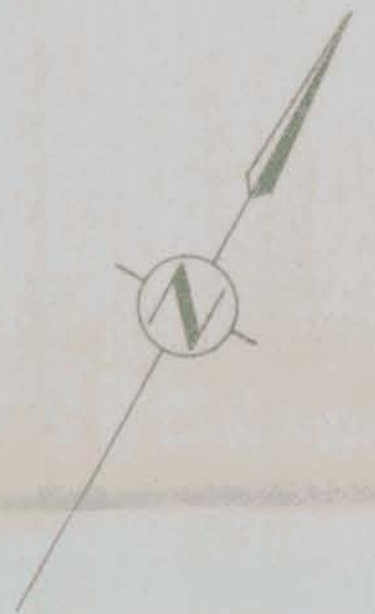
- 913 80-129 ppm
- 910 130-169 ppm
- 909 > 170 ppm

ZINC
--- CONTOUR LINES 165,250,350,500,1000 ppm

- 918 165-249 ppm
- 921 250-349 ppm
- 929 350-499 ppm
- 924 500-1000 ppm
- 925 > 1000 ppm

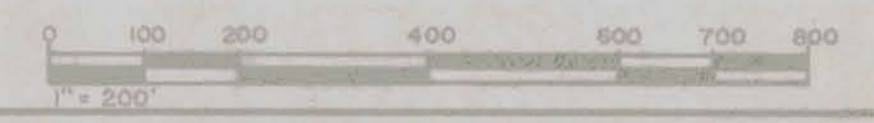


McINTYRE MINES LIMITED	
ODD CLAIMS MAYO MD.	
CONTOUR OVERLAY Pb & Zn RESULTS	
S-16 Valley	
WORK BY JS	DATE NOV, 10, 1975
DRAWN BY TB	NTS. 105-0-13



CONTOUR LEGEND

- LEAD**
- CONTOUR LINES 80,130,170 ppm
 - 80-129 ppm
 - 130-169 ppm
 - > 170 ppm
- ZINC**
- CONTOUR LINES 165,250,350,500,1000 ppm
 - 165 - 249 ppm
 - 250 - 349 ppm
 - 350 - 499 ppm
 - 500 - 1000 ppm
 - > 1000 ppm



McINTYRE MINES LIMITED	
ODD CLAIMS MAYO MD.	
CONTOUR OVERLAY Pb & Zn RESULTS	
S-16 Valley	
WORK BY JS	DATE NOV. 10, 1975
DRAWN BY TB	NTS: 108-0-13