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PROPERTY EXAMINATION & EVALUATION REPORT
IRENE 1-4, CLAIM GROUP
SILVER-LEAD PROSPECT
RAMBLER HILL, YUKON TERR.

BY

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PROPERTY EXAMINATION & EVALUATION REPORT ON THE IRENE 1-4 CLAIM GROUP SILVER-LEAD PROSPECT RAMBLER HILL-YUKON TERRITORY

LATITUDE 64° 04½'

LONGITUDE 135° 14'

MAYO MINING DISTRICT, Y.T.

SHEET 106O-3

GALENA HILL - KENO HILL AREA

FOR

SILVER SPRING MINES LTD (N.P.L.)

VICTORIA, B.C.

BY

R.G. HILKER, P. ENG.
CONSULTANT GEOLOGIST
WHITEHORSE, YUKON TERRITORY

OCTOBER 7th, 1971

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INTRODUCTION

A property examination and evaluation was conducted, on the request of Mr. Art Becker of Silver Spring Mines Ltd. (N.P.L.), on the Rambler Hill property located in the Keno Hill-Galena Hill area of the Yukon Territory. The company has several claim groups in the area, on which exploration work has been conducted in the past.

The first discovery of silver-lead veins in the area at Galena Creek was made about 1906 and small tonnages were high graded from 1913 to 1919. In 1919 a rich silver-lead discovery was made on Keno Hill and the consequent stampede to stake claims covered numerous mineral prospects. The first shipments of high grade lead-silver ore was made by the Keno Hill Limited company in the winter of 1920-21 from Keno Hill.

In 1920 the Treadwell Yukon Company geologist Livingstone Wernecke acquired several of the discovered veins and commenced serious mining. Mining was suspended in the area in 1941 due to the war and the death of Mr. Wernecke.

From 1941 to 1946 the properties in the Galena Hill and Keno Hill areas were idle until the assets and claims of the Treadwell Yukon Company were sold to United Keno Hill Mines Limited. The area has produced silver-lead-zinc-cadmium since 1946 to the present.

It is significant to quote the following from Bulletin III - Geology, Geochemistry, and Origin Of The Lead - Zinc - Silver Deposits of the Keno Hill - Galena Hill Area, Y.T. by R.W. Boyle.

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"The Keno Hill-Galena Hill lodes are the richest silver deposits in Canada, and rank with the great Silver-lead deposits of the world. These deposits up to 1960 produced more than 110 million ounces of silver, 353 million pounds of lead, 164 million pounds of zinc, and 1.8 million pounds of cadmium. In value this production amounted to more than $139 million, in addition to which about two million dollars worth of gold has been won from the placers of the area.

Despite the fact that the deposits of the Keno Hill-Galena Hill area have been known and exploited since the turn of the century, the mineralized belt is far from being exhausted. It will long remain one of Canada's principal sources of silver, as well as of lead, zinc, cadmium, and some gold and tungsten."

The property examination and evaluation was conducted on September 14th by R.G. Hilker, P. Eng. Approximately five hours were used to examine, sample and locate the vein zone that was exposed in the tractor made trench on the Irene 3 & 4 claims. The writer drove to the Silver Spring Mines Ltd. (N.P.L.) Campsite in the Elsa area from Whitehorse on September 13th. The return trip to Whitehorse from the Galena Hill area was on September the 15th.

Assaying, of the 18 mineralized samples that were collected from the vein zone in the trench dug on the Irene 3 & 4 claims, was done by George Spalding - Assayer of the Whitehorse Assay Office. Sample inspection, report preparation, drafting, typing and duplication was done between the period of September 16th and October 7th in the office of R.G. Hilker Limited at Whitehorse.

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LOCATION & ACCESS

The Elsa Galena Hill and Keno Hill silver-lead mining area is located about 210 airmiles north of Whitehorse, the capital of the Yukon and the main transportation hub of the Territory. An excellent all-weather gravel road has been built between Whitehorse and Mayo - Elsa and Keno City (Mile 283). The Keno City road departs from the Alaska Highway at Mile 924 and is 283 miles long.

The Irene 1-4 (Y33743 - Y33746) claim group is located at approximately latitude 64°04 1/2' and longitude 135°14', in the Mayo Mining District of the Yukon Territory. The claims were staked on Rambler Hill and located on N.T.S. Sheet 106O-3, that is situated in the Davidson Range in the Central Yukon. Rambler Hill is located southeast of McQuesten Lake and northeast of Hanson Lake.

The Rambler Hill area has road access from the Hanson Lake road and then by a tractor or four wheeled drive truck type of road, to the Irene claim group. The Hanson Lake road departs northeastward from Mile 277.4 of the Whitehorse - Keno City Road. A tractor road has been built from the Hanson Lake Road (about Mile 12.2) just north of Cache Creek to the top of Rambler Hill. The tractor road is a distance of 4.8 miles from the intersection of the Hanson Lake Road and the Irene claim group trenching.

The Mayo area is serviced three times weekly on Monday, Thursday, and Friday by Great Northern Airways (1970) Ltd., "A" Division Northward from the Whitehorse airport. Return fare from Whitehorse to Mayo is $50.00 for an adult on a DC-3 aircraft.

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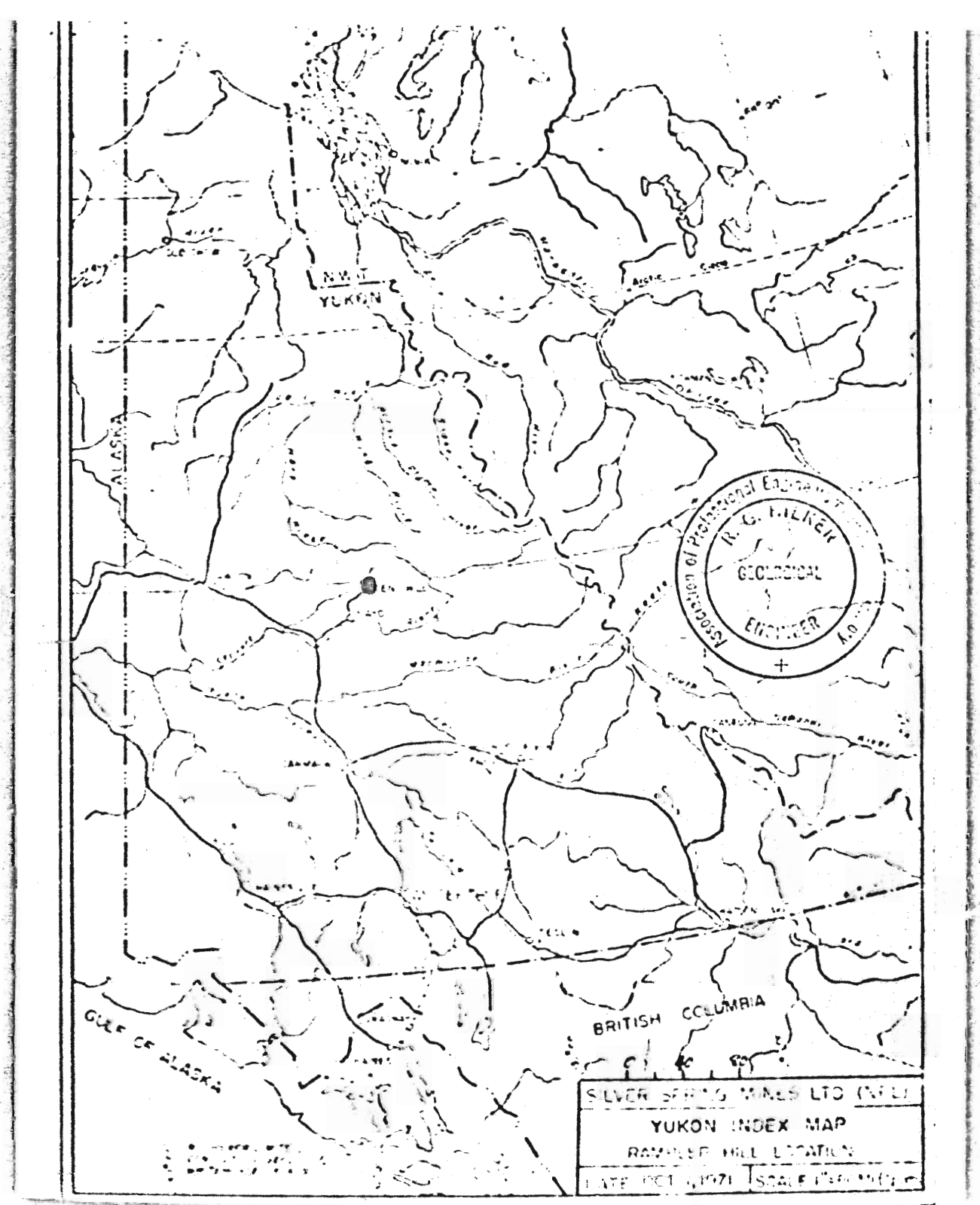
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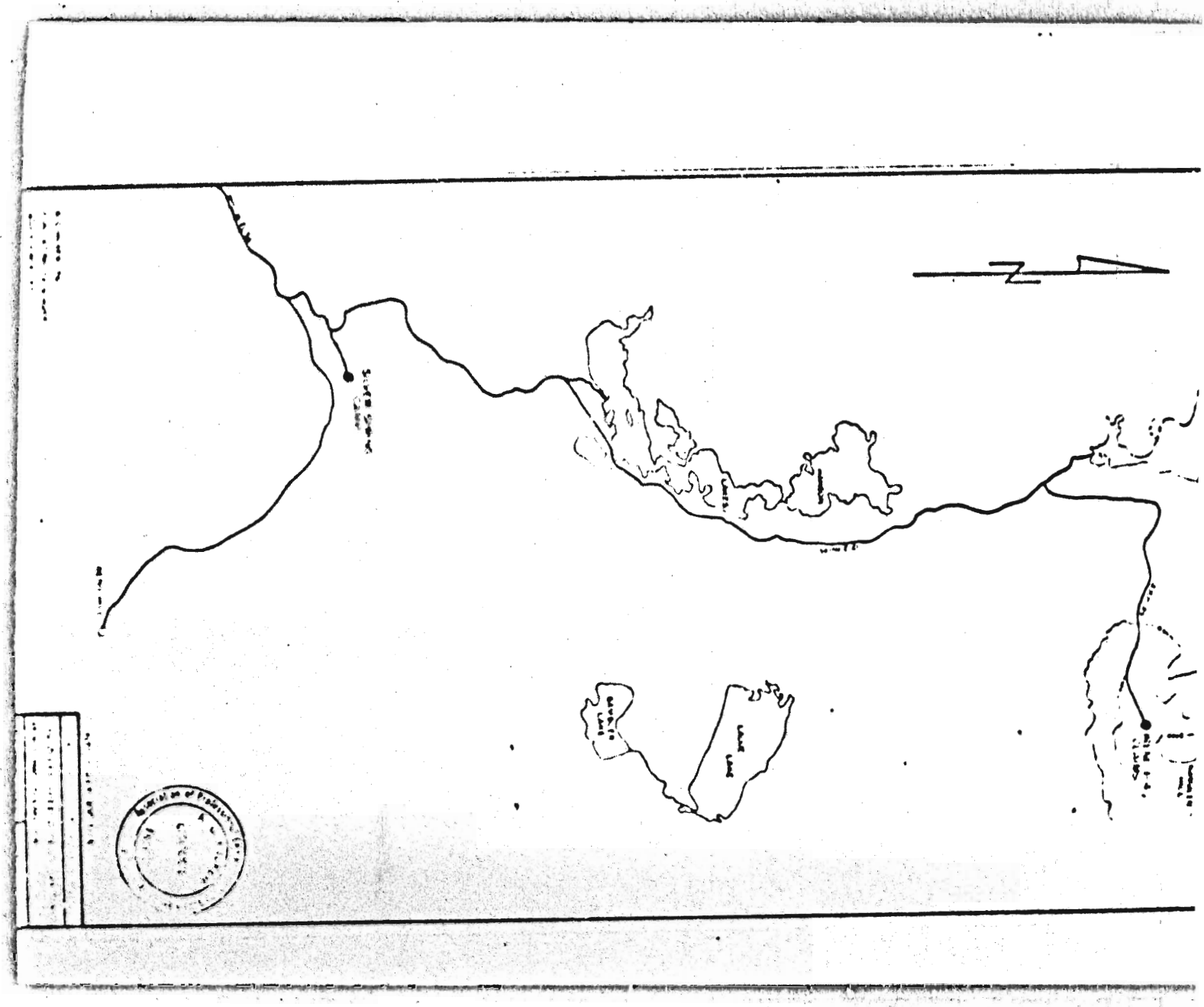
GULF OF ALASKA
BRITISH COLUMBIA
Association of Professional Engineers
R. G. HILKER
GEOLOGICAL
ENGINEER
SILVER SPRING MINES LTD (N.P.L.)
YUKON INDEX MAP
RAMBLER HILL LOCATION
DATE OCT. 1971



CLAIMS - Rambler Hill

The Irene 1 - 4 claim groups are located on Sheet 1060-3 in the Mayo Mining District, Y.T. The claims are situated on the west side of Rambler Hill at approximately the 4500 foot elevation and south of the highest peak on the hill. The Irene claims are located at latitude 65° 04 1/2' and longitude 135°14' on the N.T.S. sheet 1060-3.

The following claim data was searched at the Mayo Mining Recorders office on September 15th, 1971 by R.G. Hilker.

Claim Name	Grant Number	Grantee Registered Owner	Anniversary Date
Irene 1	Y33743	John Strebchuk	Dec. 11/71
Irene 2	Y33744	John Strebchuk	Dec. 11/71
Irene 3	Y33745	John Strebchuk	Dec. 11/71
Irene 4	Y33746	John Strebchuk	Dec. 11/71

John Strebchuk is the grantee of the Irene 1-4 claim group with 100% interest in the claims.

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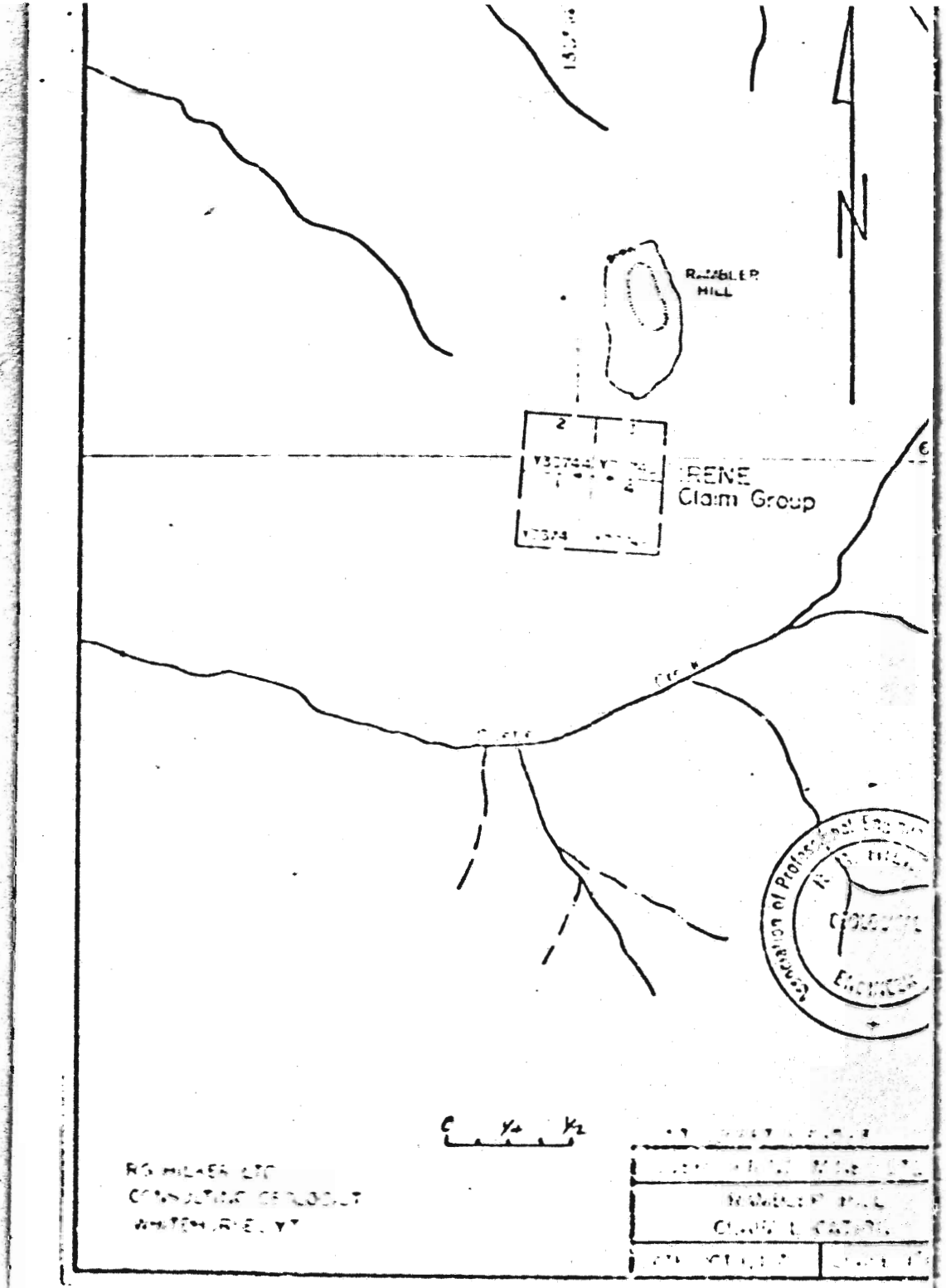
RAMBLER HILL
IRENE
Claim Group

GEOLOGY
PHYSIOGRAPHY AND TOPOGRAPHY

The Eastern Yukon Plateau is a area of plateau country lying between the Selwyn Mountains on the northeast, Pelly Mountains on the south, Tintina Valley on the southeast, and Ogilvie Mountains on the north. The Eastern Yukon Plateau comprises of three plateau areas, Pelly Plateau on the southeast, MacMillan Plateau in the central part, and the Stewart Plateau on the north.

The Galena Hill and Keno Hill silver-lead mining area, is located within the Stewart Plateau in the central part of the Yukon Territory. The Stewart Plateau is situated on the northeast side of the Tintina Valley, the valley is a feature of the major Tintina fault. The Ogilvie Mountains bound the Stewart Plateau to the northwest and the Bermecke and Hess Mountains border the plateau on the northeast. The MacMillan Plateau is located southeast of the Stewart Plateau, with the division at the MacMillan River.

The Stewart Plateau is a tablelands type of topography that has been formed by a network of deeply cut, broad valleys. The plateau contains long, connected ridges with even and narrow summits. This type of stream dissection is typical of unglaciated regions.

The principal mineral deposits in the area occur on three adjacent hills, Galena, Keno and Scurdough (see geology Sketch #4). Ramolar Hill is located north of Keno Hill and the two areas are divided by the Keno River valley. Scurvatte peak occurs on the east side of Keno Hill and is a part of the hill. Ramolar Hill has an elevation in excess of 5000 feet and is gentle sloping on the top

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The principal mineral deposits in the area occur on three adjacent hills, Galena, Keno and Sourdough (see Geology Sketch #4). Rambler Hill is located north of Keno Hill and the two areas are divided by the Keno River valley. Scauvette peak occurs on the east side of Keno Hill and is a part of the hill. Rambler Hill has an elevation in excess of 5000 feet and is gentle sloping on the top

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part and covered by low willow bush two to three feet high. The lower part of Rambler Hill, from about the 4000 foot level to the valley floor at 2200 feet is covered with ten foot high willows, aspen, birch and spruce. Beauvette Hill is nearly flat on the east side of the 5000 foot peak and is covered with grass and two to three foot high willow shrubs. A fair amount of rock outcrop occurs on parts of Rambler - Beauvette Hills and in particular the gulches and cirques. Glacial overburden covers most of the area that is enclosed by the two claim groups on the two hills. The lower slopes are covered by till soil, rock debris, muck and muskeg in which aspen, birch, willows, spruce and other vegetation grow abundantly. The lower slopes were glaciated during Pleistocene time by east-west flowing ice sheets. After glaciation gravel, glacial till and debris were deposited on the slopes of the hills and valley floors 5 to 20 feet in thickness.

The Rambler Hill and Beauvette Hill area is in a region of permafrost conditions. The permafrost is irregularly distributed and the occurrence depends on elevation, hillside exposure, depth of overburden, amount of vegetation cover and the presence of flowing underground and surface water. The permafrost conditions and overburden cover directly affect geochemical exploration methods in the area.

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GENERAL GEOLOGY - Galena - Keno Hills Area

The Galena Hill and Keno Hill area mainly contains Precambrian and/or Palaeozoic aged sedimentary rock types. (Unit 1-7). The older sedimentary assemblage is intruded by small stocks and dikes of Cretaceous aged intrusives (Unit 8-9-10).

The sedimentary assemblage of rocks are contained in the Yukon Group and are of the following rock types; quartzites, schists, argillites, slates and phyllites. The Yukon Group has been folded, faulted and metamorphosed to a varying amount of distortion. Abundant Cretaceous aged greenstone lenses and sills occur in the sedimentary strata. Intrusive granite stocks have intruded the sedimentary rocks southeast and northwest of Galena Hill. A few scattered quartz - feldspar porphyry and granite porphyry sills trend in a east-west direction across Galena Hill and Keno Hill. Small skarn zones have developed near the edges of the granite stocks when calcareous rocks are present in the Yukon Group sedimentary strata.

The Davidson Range is a circular mountain feature roughly 12 miles in diameter and is located north of Galena and Keno Hills. The Range consists of Rebbler Hill, Forbes Hill, Zahn Hill and Mount Cameron. The Davidson Range contains mainly the Lower Schist Formation (Unit 1) rock types and the Central Quartzite Formation (Unit 2) quartzites. Abundant greenstone lenses and sills have

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intruded the sedimentary strata. A later aged Yukon Group (unit 7) quartzite, slate and phyllite occurs on the northeast side of the Range.

The lower part of the Yukon Group has been differentiated into three formations, as the Central quartzite Formation has contained the most economic silver-lead vein systems and ore shoots to the present time. The Yukon Group Formations are referred to as:

Unit 3 - Upper Schist Formation
Unit 2 - Central Quartzite Formation
Unit 1 - Lower Schist Formation

Most of the economic silver-lead vein production to date, has occured in an east-west trending and gentle south dipping belt of Central Quartzite Formation rocks on Galena Hill and Keno Hill. The main economic mineralization in the area occurs in brecciated fault zones that strike northeast, dip steeply southeast and contain silver-lead lode type of deposits. The early faults, vein systems and ore shoots are contained within the Central Quartzite Formation and are offset by later faulting.

Rambler Hill is lacking in outcrops and is partially covered by glacial debris and abundant vegetation cover. The Geological Survey of Canada geology mapping indicates that Rambler Hill contains rock types of the Lower Schist Formation (Unit 1) and a belt of Central Quartzite Formation (Unit 2) occurs on the northeast side of the peak of the Hill.

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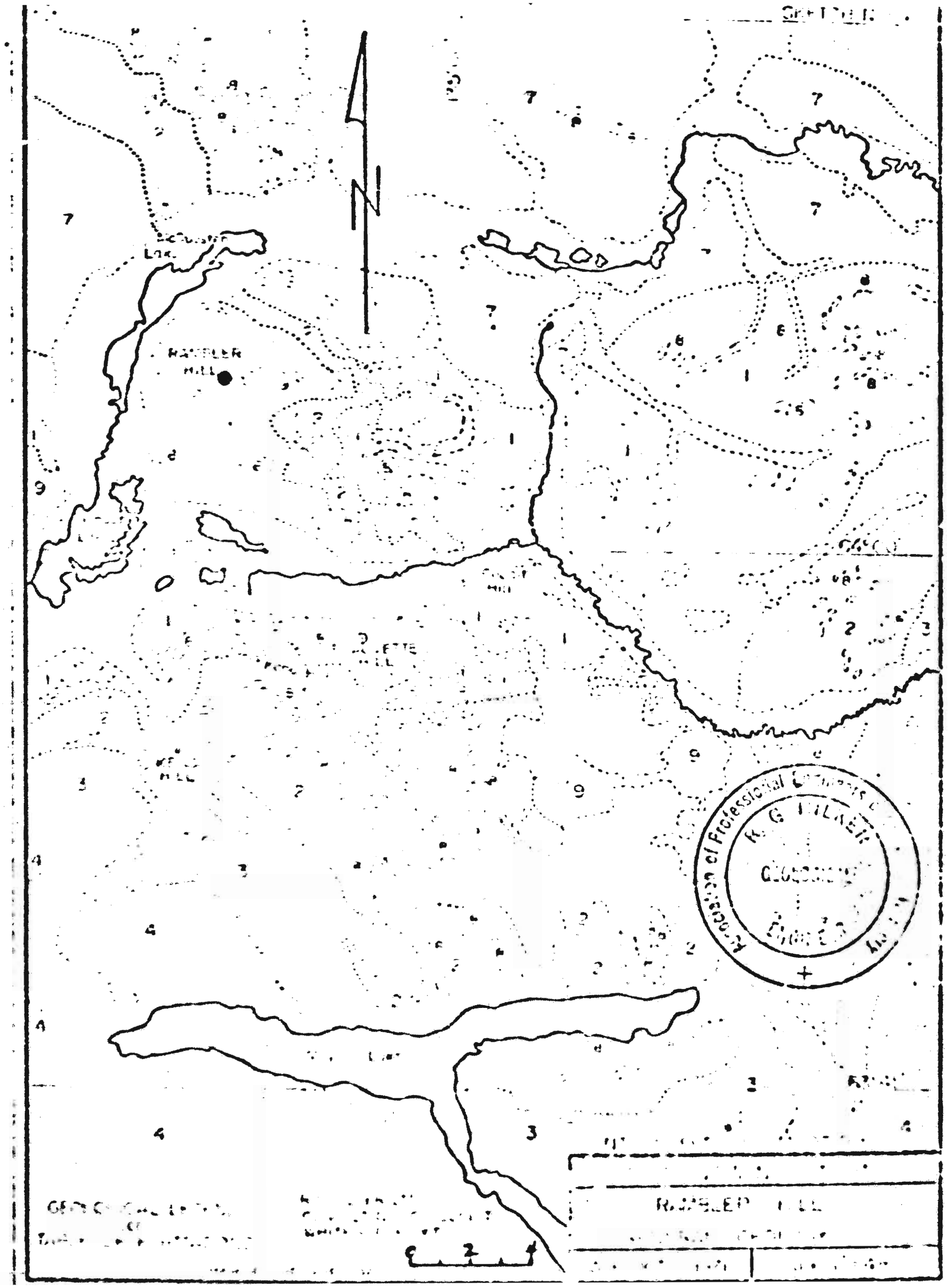

RAMBLER HILL
Association of Professional Engineers
R. G. HILKER
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TABLE FORMATIONS

After R.U. Boyle

CENOZOIC

Quaternary

[Q] Glacial debris

MESOZOIC

Cretaceous (?)

[10] Quartz - feldspar porphyry, granite porphyry.

[9] Intrusives - granite, granodiorite, diorite.

[6] Metamorphosed diorite and gabbro (greenstone).

PRECAMBRIAN and/or PALAEOZOIC
(Same units may be late Palaeozoic or early Mesozoic)

YUKON GROUP

[7] Quartzite, slate, phyllite.

[6] Slate, schist.

[5] Quartzite, quartz - mica schist, slate.

[4] Quartz - mica schist, pebbly quartzite, minor limestone.

Upper Schist Formation

[3] Quartz - mica schist, graphitic schist, phyllitic quartzite, minor limestone.

Central Quartzite Formation

[2] Thick and thin - bedded quartzite, charty quartzite, graphitic schist, minor limestone, graphitic phyllite, argillite. Main formation for the occurance of economic silver - lead veins.

Lower Schist Formation

[1] Graphitic schist, thin-bedded quartzite, quartz-mica schist, phyllite, calcareous schist and quartzite.

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REFERENCE TO PUBLISHED GEOLOGY AND GEOCHEMISTRY

1. Bulletin III - Geological Survey of Canada Geology, Geochemistry, And Origin Of The Lead - Zinc - Silver Deposits Of The Keno Hill - Galena Hill Area, Yukon Territory - 1965 By - R.W. Boyle.
2. Memoir 247 - Canada Department Of Mines And Resources - Geological Survey Physiography Of The Canadian Cordillera With Special Reference To The Area North Of The Fifty-Fifth Parallel - 1948 Reprinted in 1965 - By H.S. Bostock.
3. Geochemistry Reconnaissance Survey - Keno Hill Area, Yukon Territory

   MAP 45-1965 - Lead Content
   46-1965 - Silver Content
   47-1965 - Zinc Content
   48-1965 - Arsenic Content
   49-1965 - Antimony Content
   50-1965 - Copper Content
   51-1965 - Molybdenum Content
   52-1965 - Tungsten and Tin Content
   53-1965 - Nickel Content
   54-1965 - Cobalt Content
   55-1965 - Manganese Content
4. Summary Report, 1921, Part A - Canada Department of Mines - Geological Survey. Silver - Lead Deposits of Davidson Mountains - Mayo District, Yukon: W.E. Cockfield. Map Publication No. 1937

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CLAIM GEOLOGY

The Irene 1 - 4 claim group is located at the 4500 foot level south of the peak on Rambler Hill. The west side of the Davidson Range contains Rambler and Forbes Hill and rocks underlying these two features are contained in the Lower Schist Formation (Unit 1). The (Unit 1) Lower Schist Formation contain the oldest rocks in the Precambrian and/or Palaeozoic Yukon Group. Abundant greenstone lenses and sills that are Cretaceous in age intrude the sedimentary Lower Schist Formation. The (Unit 1) rocks are an assemblage of the following types: thick and thin bedded quartzite, phyllite, graphitic schist, argillite, calcareous schist and quartz - sericite schist. The Central Quartzite Formation (Unit 2) rock types occur on the northeast side of Rambler Hill peak. Rock types in (Unit 2) are; thick-bedded cherty quartzite, thick and thin bedded quartzite, graphitic phyllite, graphitic schist and argillite. The rock types in the Lower Schist and Central Quartzite Formations are based on rock types that occur on Calena and Keno Hills.

The Irene 1 - 4 claim group is covered with glacial debris that consists of glacial clay and till, gravel and boulders. The surface vegetation consists of alpine meadow grass and willows 2 - 3 feet high. The claims are located on a gentle south sloping tableland to the south of the Rambler Hill Peak. A crawler tractor built trench was dug nearly continuously for a distance of 650 feet in a northward direction from an old adit. The trench exposed

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bedrock with about 2 - 3 feet of glacial overburden cover and a siderite - galena - manganese - limonite vein zone. The trenches, vein zone, old adit and shaft was located in relation to the Irene 1 - 4 claim group. A centre line was located in the northward bearing trenches and the vein zone was sampled by taking grab samples from within the vein zone and noting the approximate width of the zone. The north part of the trench contained greenstone and the southern trenches contained graphitic schist, chlorite schist and sericite schist (see trenching plan).

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CLAIM TABLE FORMATIONS

CENOZOIC

Quaternary

Pleistocene

[Q] Glacial till, rock debris, gravel.

MESOZOIC

Cretaceous

[7] Greenstone - diorite, gabbro lenses and sills.

PRECAMBRIAN and/or PALAEOZOIC

YUKON GROUP

Upper Schist Formation

[6] Graphitic schist, graphitic phyllite, thin - bedded quartzite, argillite, quartz-mica schist, limestone.

[5] Quartz sericite schist.

Central Quartzite Formation

[4] Thick and thin-bedded quartzite, graphitic phyllite, graphitic schist, argillite.

[3] Thick-bedded cherty quartzite, white to pale grey colour.

Lower Schist Formation

[2] Quartz-sericite schist.

[1a 1b] 1a - Graphitic schist, graphitic phyllite, thin bedded quartzite, calcareous schist, slate, may contain some unit 2.
1b - Thick and thin-bedded quartzite phyllite, graphitic schist.

[V] Vein Zone - siderite, limonite, sheared galena, fine grained galena, wad (pyrolusite, psilomelane, manganite).

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ECONOMIC GEOLOGY

Occurences

The structural controls of ore shoots, vein systems and transverse and longitudinal vein faults in the Galena and Keno Hill area have been reported, to be as follows.

1. Mineralized zones below schist cappings.
2. Vein fault junctions or intersections.

Thick-bedded quartzites are the most favorable host rocks for the above type of controls and greenstone host rock is the second most common rock type for economic deposition. Thin-bedded quartzites, phyllites and schists form part of the wallrocks in several economic deposits. It is reported by R.W. Boyle that only three ore shoots are wholly enclosed and therefore controlled by thin-bedded quartzites, phyllites and schists in the area.

Mineralization

The most economic supergene minerals present in the vein systems are limonite, lead, cerussite, smithsonite, anglesite, native silver, pyrargyrite (ruby silver), bindheimite and boulangerite. The limonite is particularly rich in zinc, cadmium, copper, lead, tin, silver, gold, arsenic and antimony. The forementioned mineralization has developed in the oxidation zone by descending ground water.

Irene Vein Zone

It is interesting to note that the rock types in the trench suggests that the greenstone is altered to a chlorite-sericite zone and then a carbonate-chlorite zone developed. The highly oxidized

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vein zone appears to be a transverse fault that strikes oblique to the strike of the host rock. Oxidation of the supergene zone has produced abundant limonite and wad that acheres to siderite and small pods or pockets of sheared and fine crystal galena. The galena occures in small pods along strike in 2-6 inch widths. Shearing alignment of the galena trystals is in the same direction as the vein zone strikes. All vein faults, in the area can be expected to be oxidized from surface to 40-50 feet deep and to a maximum depth of 500 feet. Oxidation will depend on permafrost conditions, location of vein to slope and groundwater. Below the oxidation zone a zone of cementation usually occures.

The oxidation material that occurs in the vein zone appears to pinch and swell and has a varying width that was noted to thin to four feet and expand in parts to a maximum of ten feet. In places within the vein zone gangue and host rock material occures in bands that vary between 4-6 inches in width, making the vein zone intermittant with gangue and oxidation minerals. The most common and recognizable minerals present in the oxidation zone was galena, limonite, siderite and wad. The vein zone material also appears to be similiar to fault gouge and is particular clayish when wet.

The assaying results of the grab samples taken within the vein zone indicates high silver values occur with the massive galena. In parts, high zinc values (samples 3508 & 3516) occur in limonite rich vein oxidation material. Free samples containing predominately

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siderite silver-lead and zinc, (samples 3518 & 3520) fair values were reported.

There is a total discontinuous distance of 655 feet that the vein zone has been exposed by stripping off the glacial overburden. The vein zone may or maynot be continuous along the forementioned distance, however the strike of the vein zone, 355° bearing, in the north trenching is consistant along a length of 375 feet. An inferred fault may exist between the north and south trenching, as there is a change of direction in the vein zone that suggests offseting by a slightly rotated (about 20°) longitudinal fault. A slight, but steep sloping hill drops to the south between the north and south trenching, that may be a surface feature of the upthrow side of a fault. The vein zone is exposed for a distance of 100 feet, at a 15 degree bearing, in the south trenching. The vein zone appears to dip vertical in all, parts exposed along the tranches. Due to very little host rock being exposed, frost action within the greenstone and foliation of the schists, it was not determined what direction the country rock was striking. The vein zone did appear to cut nearly perpendicular to the greenstone wallrock, therefore it may be expected that the strike of the enclosing rock is approximately eastward.

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ASSAY DATA

A total of 18 samples were collected from within the vein zone, from the Irene claim groups, and were assayed by the Whitehorse Assay Office. Twelve of the samples were assayed for silver-lead-zinc and manganese content and six samples were assayed for silver-lead and zinc only. Silver values ranged from a low of 0.12 to a high of 105.28 ounces per ton in the 18 samples. The silver averag in 11 of the samples that contained one oz./ton or more of silver is 37.37 oz./ton.

There was a total of 12 samples (#3513-#3524 incl.) gathered from the north trenching, that averages 30.46 oz./ton of silver in all samples that were assayed over a length of 375 feet. A total of 6 samples (#3507-#3512 incl.) averages 7.55 oz. per ton of silver, over a length of 100 feet, that were gathered from the south trenching.

The average price of silver is quoted as $1.42 5/8 per ounce for the week ending September 24th, as quoted by the Engineering and Mining Journal - Metals Deck New York Silver Handy & Harman. The average Canadian silver price is quoted as $1.421 per ounce by Handy & Harman - Canada in the September 30th, Globe & Mail.

Therefore, basing the price of silver at $1.42 per ounce, the following calculations are made:

North Trenching

Average value of silver/ton
30.46 $\frac{\text{oz.}}{\text{Ton}}$ x $1.42 = $43.25 (+) zinc and lead values.

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South Trenching

Average value of silver/ton
7.95 oz./Ton X $1.42 = $11.28 (+) zinc and lead values.

The following is a brief description of the grab samples from within the vein zone, location and assay determinations : Ratios of silver in ounces/Ton : lead percentage is indicated when applicable.

South Trenching (Samples #3507-3512 incl.)

#3507 Station 2+50S, massive sheared galena. Galena occurs in pockets in vein zone 4 ft. wide, schist host rock.
34.88 oz/T Ag - 57.5% Pb - 1.00% Zn
Ag:Pb - 0.6:1

#3508 Station 2+25S, veinlets of galena, wad, limonite, siderite, pyrite, chunky soft material, schist host rock.
0.46 oz/T Ag - 0.26% Pb - 1.50% Zn - 3.4% Mn

#3509 Station 1+05S, siderite vein material with wad, limonite and disseminated galena.
11.96 oz/T Ag - 18.5% Pb - 1.08% Zn
Ag:Pb - 0.6:1

#3510 Station 1+75S, wad, limonite, some siderite, disseminated pyrite, vein zone 7 ft. wide graphitic schist wallrock.
0.20 oz/T Ag - 0.09% Pb - 2.08% Zn - 6.4% Mn

#3511 Station 1+65S, siderite, wad, limonite. At a junction of vein zone (minor faulting?), vein zone may be up to 10 ft. wide.
0.12 oz/T Ag - 0.09% Pb - 1.08% Zn - 8.9% Mn

#3512 Station 1+50S, wad, limonite, some siderite, graphitic schist host rock.
0.12 oz/T Ag - TR.Pb - 0.74% Zn - 9.6% Mn

North Trenching

#3513 Station 0.00%, wad, limonite, some disseminated galena, siderite, chlorite-sericite schist host rock.
1.40 oz/T Ag - 1.30% Pb - 0.90% Zn - 7.1% Mn
Ag:Pb - 1:1

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#3514 Station 0+25N, siderite, wad, limonite, disseminated galena, cubic pyrite, vein zone five feet in width, chlorite-sericite schist wallrock.
0.72 oz/T Ag - 0.18% Pb - 1.42% Zn - 6.1 % Mn

#3515 Station 0+50N, highly leached limonite, orange-brown colour, granular, chlorite-schist host rock that appears to strike 115° and dip 41°S W.
0.18 oz/T Ag - 0.10% Pb - 1.12% Zn - 0.8% Mn

#3516 Station 1+50N, limonite, soft and wet, some wad, vein zone 6 ft. wide, greenstone host rock.
4.64 oz/T Ag - 1.25% Pb - 3.24% Zn - 4.5% Mn
Ag:Pb - 3.7:1

#3517 Station 1+85N, pod of medium crystalline galena. The vein pinches and swells from 4 ft. to 7 ft. in width and undulates slightly off strike, main part of zone consists of siderite, limonite and wad.
71.40 oz Ag - 59.6% Pb - 0.62% Zn
Ag:Pb - 1.2:1

#3518 Station 2+00N, siderite, wad, limonite, 4 inch wide seam of siderite-wad that has lumps of galena throughout, abundant galena in sample, vein zone 8 ft. wide in greenstone host rock.
48.52 oz/T Ag - 38.4% Pb - 2.26% Zn - 3.9% Mn
Ag:Pb - 1.2:1

#3519 Station A - 2+25N, course crystalline sheared galena, vein zone contains lumps and pods of massive galena, siderite, wad, zone 6-11 ft. wide in greenstone host rock. Vein zone has vertical dip.
105.28 oz/T - 75.0% Pb - 0.16% Zn
Ag:Pb - 1.4:1

#3520 Station B - 2+25N, siderite, wad, limonite, disseminated galena, from same vein zone as described at #3519.
28.12 oz/T Ag - 20.3% Pb - 1.16% Zn - 1.7% Mn
Ag:Pb - 1.4:1

#3521 Station 2+50N, wad, limonite, siderite, vein zone 5 ft. wide, greenstone host rock.
0.40 oz/T Ag - 0.8% Pb - 1.14% Zn - 5.4% Mn

#3522 Station 3+25N, siderite, limonite, wad, minor disseminated galena, vein zone 8 ft. wide, greenstone host rock that may strike 30° but highly fractured.
4.48 oz/T Ag - 2.70% Pb - 1.00% Zn - 1.5% Mn
Ag:Pb - 1.6:1

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#3523 Station A - 3+75N, 60% galena with crustad siderite, wad and limonite. Bands of massive crystalline galena 2-4 inches thick in pods or pockets within vein zone that is 10-14 ft. in width. Strike of vein zone is 355 degrees and vertical dip.
19.60 oz/T Ag - 14.6% Pb - 5.04% Zn
Ag:Pb - 1.3:1

#3524 Station B - 3+75N, same as station #3523, solid massive galena pod from within siderite, wad and limonite vein zone.
80.80 oz/T Ag - 65.1% Pb - 1.40% Zn
Ag:Pb - 1.2:1

The vein zone samples from both the north and south trenching indicates a fairly uniform ratio of 1.3:1 of silver to lead content. The 1.3:1 ratio is based on the average of silver to lead content in eleven samples calculated. Zinc content is fairly uniform throughout the length of the vein zone and averages 1.52% in the 18 samples assayed.

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ASSAY CERTIFICATE

DATE: September [illegible], 1971.

FILE NO. [illegible]

WHITEHORSE ASSAY OFFICE

P.O. BOX 346, WHITEHORSE, YUKON

RECEIVED FROM: R. C. [illegible] Limited

SAMPLE NO.	~~XXXX~~ Oz. Per Ton	SILVER Oz. Per Ton	Lead	Zinc	Manganese %		
3507		34.83	57.5	1.00	-		
3508		.45	.26	1.50	3.4		
3509		11.36	16.5	1.06	-		
3510		.20	.05	2.05	6.4		
3511		.13	.05	1.03	8.9		
3512		.12	Tr	.74	9.6		
3513		1.40	1.30	.60	7.1		
3514		.72	.13	1.22	6.1		
3515		.18	.10	1.12	.8		
3516		4.64	1.25	3.24	4.5		
3517		71.40	59.6	.62	-		
3518		43.52	30.4	2.28	3.9		
3519		105.23	76.0	.18	-		
3520		26.12	20.5	1.16	1.7		
3521		.40	.6	1.14	5.4		
3522		4.43	2.70	1.00	1.5		
3523		19.60	14.6	5.04	-		
3524		80.80	65.1	1.40	-		

[illegible signature]

SUMMARY

A silver-lead vein zone was exposed on the Irene claim group on Rambler Hill in the Galena Hill - Keno Hill mining area of the Yukon. The vein zone strikes in a northward direction, pinches and swells in width, consists mainly of limonite, wad, siderite and galena and occurs within the surface oxidized zone. The vein zone has been exposed for a total distance of 655 feet, but parts of this length are overburden covered.

The southern part of the vein zone is exposed in the south trench for a distance of 100 feet. The vein strikes 15 degrees, varies in width intermittently between 4 - 10 feet and 6 grab samples (#3507 - 3512 incl.) assayed an average of 7.95 oz/Ton silver. The south part of the exposed vein zone appears to be offset by a longitudinal fault from the northern part of the vein. A schist host rock is exposed adjacent to the vein zone in the south trench.

The vein zone is evident for a distance of 375 feet in the north trenching. The strike of the zone was 355 degrees and varies intermittently in width between 4 - 10 feet. Twelve grab samples collected along the strike of the north vein (#3513 - #3524 incl.) assayed an average of 30.46 oz/Ton of silver.

The silver-lead ratio averages 1.3:1 in eleven samples from along the vein zone, compared to approximately a 7:1 ratio in the Galena Hill and Keno Hill areas.

The vein zone occurs in the Lower Schist Formation

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of the Yukon Group of rocks, that are Precambrian and/or Palaeozoic in age. The economic silver-lead veins on Galena and Keno Hills occur in the Middle Quartzite Formation of the Yukon Group.

Part of the north trench contains schist host rock that contacts with a greenstone lens or sill. The contact between the schist, Lower Schist Formation, and the Cretaceous aged greenstone is overburden covered. The size and the extent of the greenstone lens or sill was not determined. The greenstone lenses or sills throughout the area may vary from a few feet in thickness up to a maximum of 200-300 feet. From the experience of mining operators in the area, the vein systems pinch out when entirely within a schist host rock. Good vein zone widths usually are maintained when thick bedded quartzite or greenstone wallrock occurs on one or both walls of a vein zone. It will be necessary to clean the existing trenches with a small crawler tractor and fully expose the enclosing wallrock on the east and west side of the vein zone. It appears as if the south part of the trenching indicates that schist host rock occurs as wallrock on both sides of the vein zone. If this is correct, the vein zone may not be expected to have continuity at depth. However, if greenstone wallrock occurs on one side of the vein system there is a good chance of continuity of the zone. The thickness of the greenstone should be determined by additional tractor trenching. The greenstone trenching should indicate if the sill or lens is a few feet thick or if there is a possibility of the thickness being in the 100 - 200 foot range.

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Core recovery by diamond drilling is extremely poor in schists, argillite, thin-bedded quartzites, phyllites, faulted breccia zones and oxidized vein zones. The core recovery, in the forementioned rock types, may be expected to be about 40%. Therefore, it is suggested that surface geochemistry, magnetics, and tractor trenching will give the better dollar value than diamond drilling in the initial stages 1 and 2 of the surface exploration programme. Underground drifting from an adit would also be much too costly at this stage of exploration, as the risk of the vein zone pinching out is too great. The object of further exploration on the Irene claim group would be to succeed in finding an ore shoot with large enough tonnage or of sufficient grade for profitable exploitation.

It is suggested that only the necessary tractor work be done on the claim group to expose sufficient geological structure. If it is not necessary to spend all of the tractor budget, the remaining balance could be used on other company projects.

If the surface work results are encouraging it will be necessary to check the continuity of the vein zone at depth. A third stage of exploration consisting of diamond drilling may be necessary.

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RECOMMENDATIONS

The Irene 1 - 4 claim group warrants further surface exploration to fully evaluate the extent and economic potential of the vein zone, discovered by trenching. A two stage programme of geochemical and geophysical prospecting, to be followed by and in conjunction with, tractor trenching, is recommended on the property. The tableland terrain would permit a 100 foot spaced linegrid to be made by using a Caterpillar D-6 sized crawler tractor, to strip the small willow and surface vegetation off the crosslines. The tractor built lines must be laid off with a survey transit, and the surface overburden should not be disturbed to prevent contamination of soil samples. Soil sampling, magnetics and test electromagnetic (E.M. -16) programme surveys conducted over the claim group would be desirable. The E.M.-16 electro-magnetic method, used on the proposed linegrid, that will cross the exposed vein zone, will show if there is sufficient lead within the zone to produce conductivity. The graphitic schist can be expected to be very conductive and will complicate the use of this geophysical method. The magnetics geophysical method ought to outline the extent of greenstone lenses or sills that are present in the area. It would be advisable that the grid system be planned perpendicular to the northward striking vein zone and the baseline therefore, be laid off in a north-south direction with 100 foot crosslines in an east-west direction. The crosslines should be chained every 100 feet and all soil samples and geophysical instrument readings taken at each 50

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foot interval along the crosslines. Each alternate crossline should have station determinations made at odd 50 foot spaced footages; eg. line 0+00 would have soil samples and geophysical determinations made at 25 ft. - 75 ft. - 125 ft. - 175 ft. etc. intervals: the next line adjacent L 1+00N would have soil samples and geophysical determinations made at 50 ft. - 100 ft. - 150 ft. - 200 ft. etc. In this manner a maximum coverage of the grid system would be accomplished to outline any other vein zones that may exist on the Irene claim group.

When all data has been processed, after the surface exploration has been completed, crawler tractor trenching would enable evaluation of favourable areas of interest. The present trenches require additional clean-up tractor work to permit the determination of the wallrock along the entire length of the vein zone. The wallrock types of rock adjacent to the vein zone should be geologically mapped in detail. If new areas of interest are discovered on the Irene claim group by geochemical and geophysical methods of exploration, trenching is recommended to expose bed-rock.

Several fault zones, with silver-lead mineralization, have been indicated by W.E. Cockfield on the geology map accompanying the report on Rambler Hill - Summary Report 1921. All of the fault zones on Rambler Hill trend northward and one fault trends northeast. It is suggested that any claims covering these fault zone prospects be acquired and prospected.

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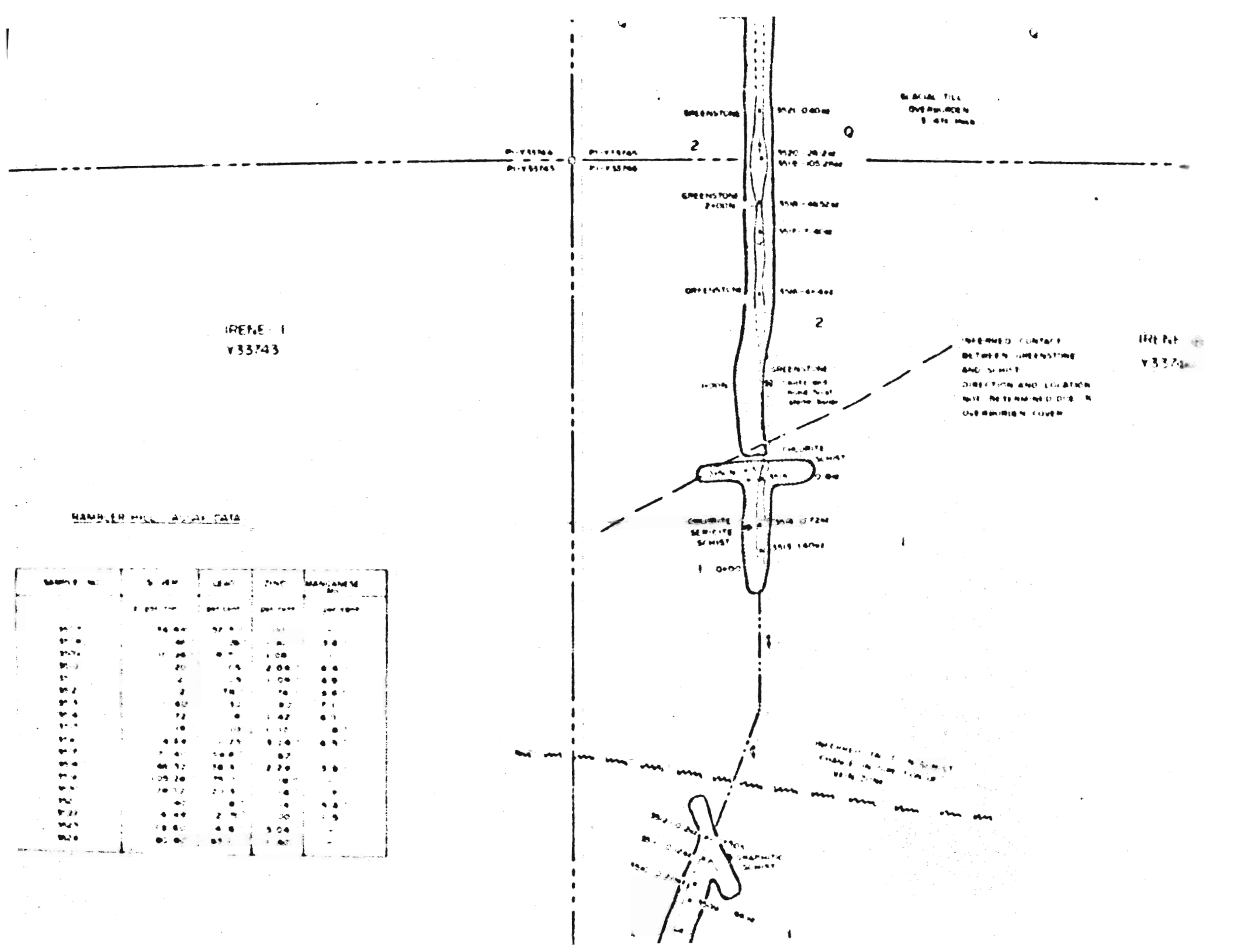
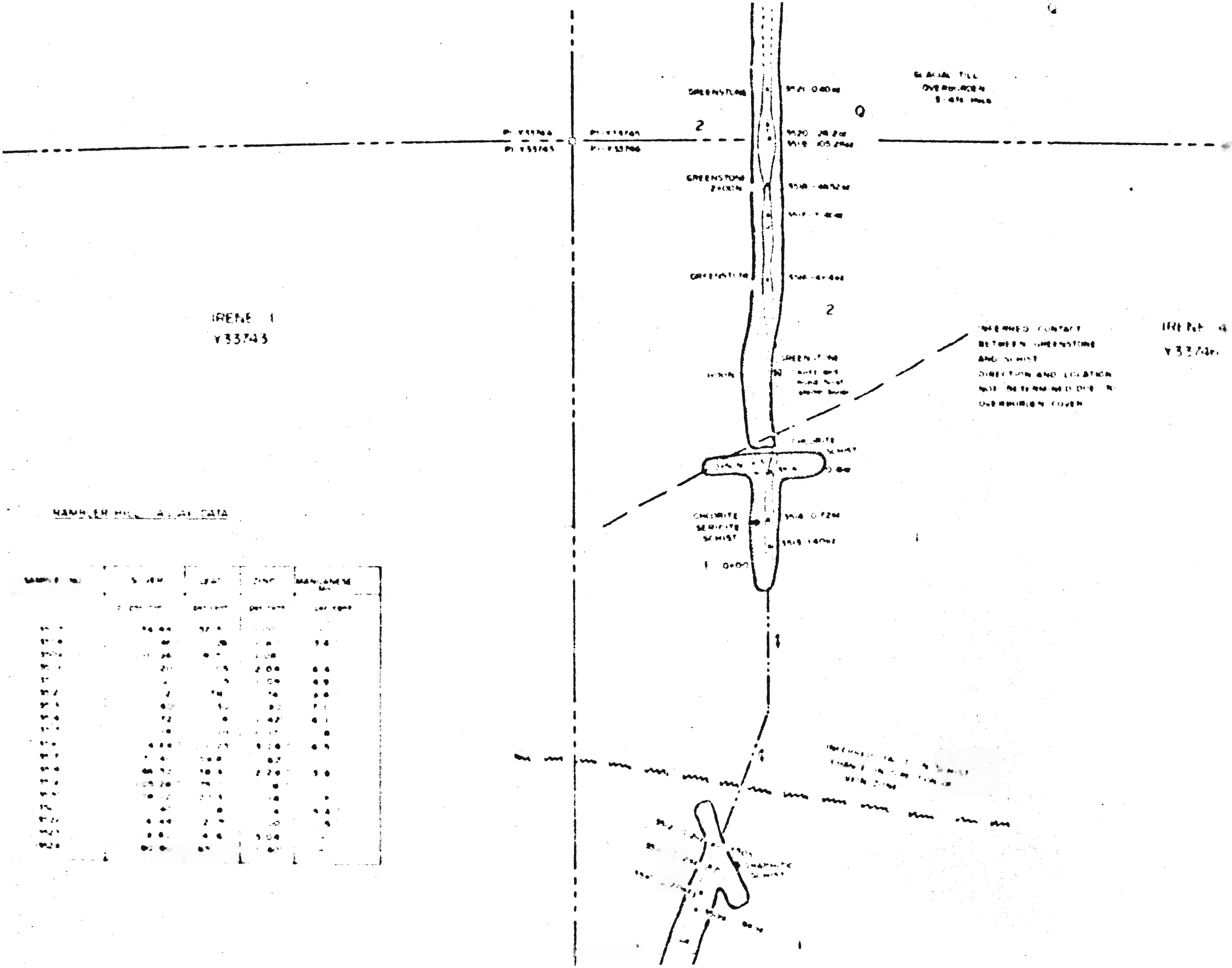


HAMMER HOLE ASSAY DATA

SAMPLE NO.	FROM	TO	GOLD	ZINC	MANGANESE



RAMBLER HILL ASSAY DATA

SAMPLE NO.	SILVER	LEAD	ZINC	MANGANESE Mn
	oz per ton	per cent	per cent	per cent
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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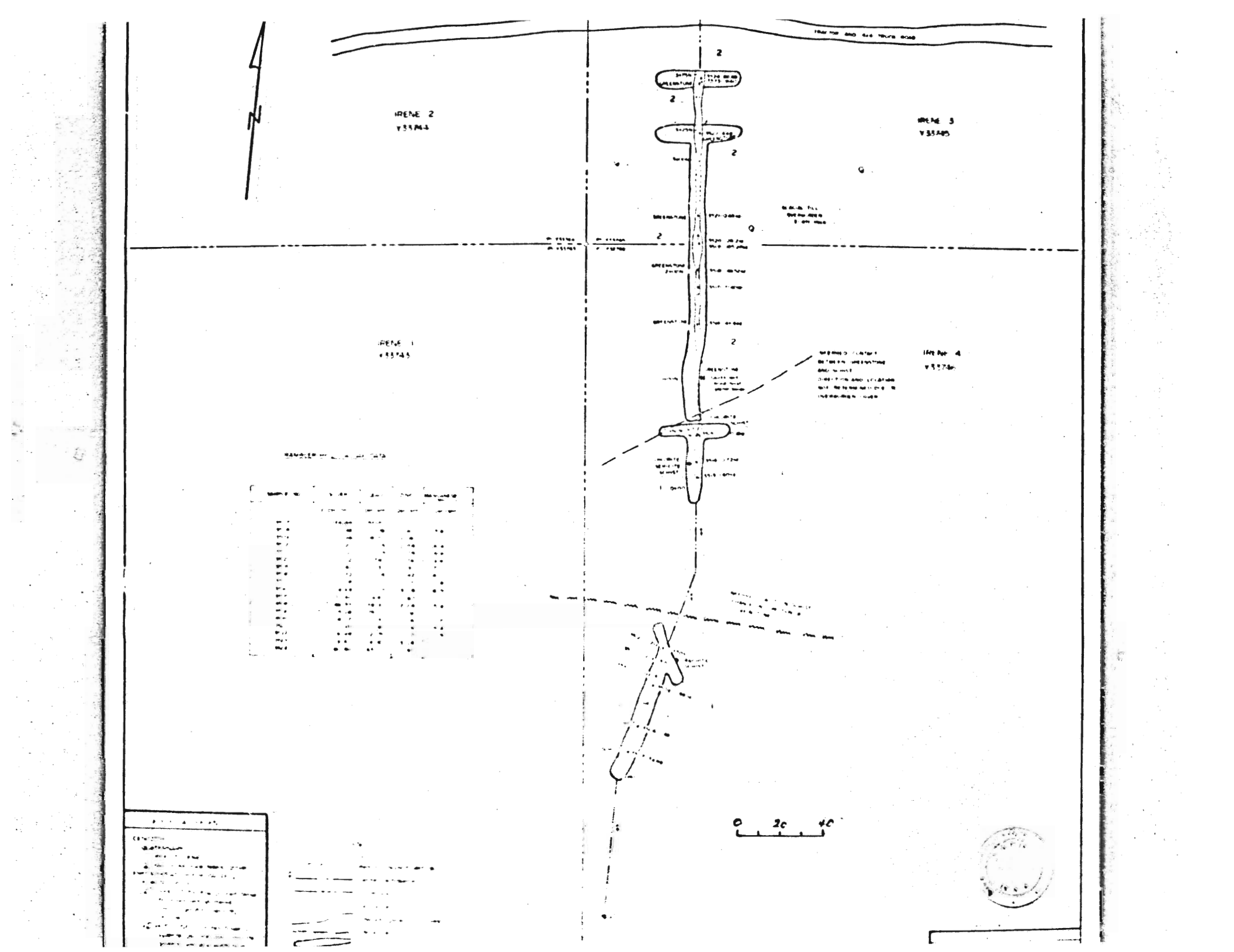
IRENE 2
IRENE 3
IRENE 1
0 20 40