THE KING 1-3 MINERAL CLAIMS

SOUTH CENTRAL GRAHAM ISLAND

QUEEN CHARLOTTE ISLANDS, B. C.

N.T.S. 103 F/8 W

Lat. 53°26' N
Long. 132°20' W

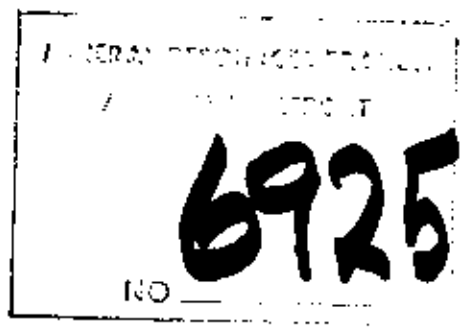
SKEENA MINING DIVISION

REPORT ON GEOLOGY, GEOCHEMISTRY AND ECONOMIC POTENTIAL

by

J. S. CHRISTIE, Ph.D.

G. G. RICHARDS, M.A. Sc., P.Eng.



June 10, 1978

OWNERS OF RECORD: KING #1, J.S. CHRISTIE
KING #2-#3, G.G. RICHARDS

OPERATOR: NEWMONT MINES LIMITED

CONTRACTOR: JMT SERVICES CORP.

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1.	Geology
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INTRODUCTION

(a) General

The area south of King Creek now constituting the property, was first recognized to be of possible interest in late May, 1977 during several reconnaissance traverses by J.S. Christie and G.G. Richards prospecting with the financial aid of B.C. Prospectors Assistance grants. Heavy pyrite mineralization was noted in limy argillites, black limestones and silicified conglomerates. Silt samples collected at this initial stage returned exceptionally anomalous results for arsenic and mercury and follow-up geochemical sampling was completed about a month later. Results indicated a large area of anomalous arsenic and mercury and a mineral claim, KING #1, was staked. Gold geochemistry was weakly anomalous and spotty.

In October Newmont Mines Limited took up the property and contracted to JMT Services Corporation the job of completing a geological and geochemical survey on a scale of 1" = 400'. The KING #1 claim was abandoned and restaked as it partially overlapped a mineral reserve, OC3929, which reserve was cancelled shortly after KING #1 was located. The KING #2 and #3 mineral claims had been added in September to better cover the geochemical anomaly.

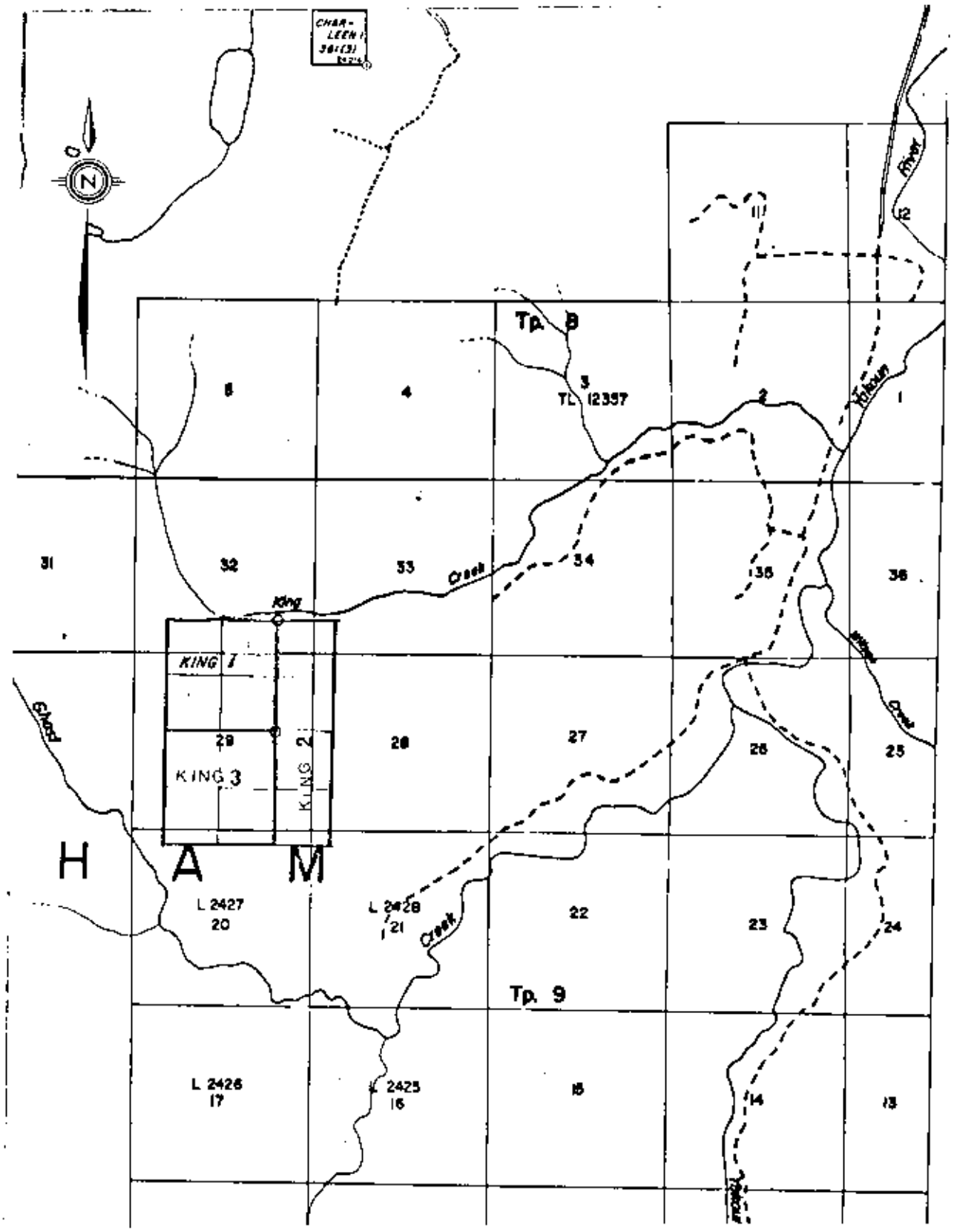
A geochemical survey was conducted over KING #1, #2, and #3, consisting of 91 rock chips, 206 soils and 63 silts, each analyzed for Au-As-Hg.

A geologic map at a scale of 1" = 400' was made over KING #1, #2, and #3, (an area of 4000 feet by 8000 feet).

(b) Claims

The property consists of the KING 1-3 mineral claims described below and shown on the accompanying map.

Name	Units	Record No.	Record Date	Locator
KING #1	4	455	November 1, 1977	J. S. Christie
KING #2	4	447	October 13, 1977	G.G. Richards
KING #3	4	448	October 13, 1977	G.G. Richards



SCALE 1:50,000

KING PROSPECT CLAIM MAP

103 F/8W

(c) Location and Access

The property lies between King Creek and Ghost Creek, four miles west of the Yakoun River, seventeen miles northwest of Queen Charlotte City and fourteen miles south of Juskatla. The claims lie entirely within MacMillan Bloedel's Tree Farm License and are accessible via their logging roads from Queen Charlotte City (21 miles) or Port Clements (27 miles). Access by truck is possible along MacMillan Bloedel's main haulage road to either the King Creek spur (Branch 41D) which leads three miles west to the northeast end of the property, or to the Ghost Creek spur (Branch 46) which leads four miles west to the south end of the property.

(d) Topography and Vegetation

Elevations on the property range from 700 feet along King Creek to just over 1400 feet on a northwest trending ridge that begins at the south end of the property and runs northwest several miles. A broad hill reaching 1200 feet elevation lies along the east edge of the property. A north flowing creek lies between the northwest trending ridge and the broad hill and flows into King Creek where King Creek changes from a southerly flow to an easterly flow.

The northwest trending ridge is covered by a spruce-hemlock forest with cypress swamps along the ridge. The broad hill to the east and its lower slopes are covered by hemlock-cedar-spruce forests with many cypress swamps. No logging has been done over the claim area but much of the southern quarter has road access and will probably be logged soon. A hauling road has been surveyed along the east side and top of the northwest ridge but is not planned for construction until late 1978 or 1979.

Bedrock exposures are abundant along the north flowing creek in the centre of the claims and along small steep tributaries flowing off the northwest ridge. East of the north flowing creek, outcrops are rare, occurring only in the larger tributary creeks. A mantle of till covers most of the broad hill and lower slopes but nowhere along the major tributaries, where the till has been dissected to bedrock, was it seen to be more than 20 feet deep and till is probably about that depth over the broad hill.

JMT SERVICES CORP.

KING PROSPECT

PROPERTY LOCATION MAP

SCALE

Mile 0 136 Miles

Prepared by Drawn by	Date : Revised.	NTS MAP AREA 103 F/8W	DRAWING No.

GEOLOGY

Regional mapping by Sutherland-Brown, 1968, B.C. Department of Mines Bulletin 54, indicated that the King area is underlain by rocks of the Kunga Formation of Triassic age to the east and by rocks of the Masset Formation of Tertiary age to the west. The Kunga Formation is described as "a sedimentary unit composed primarily of limestone and argillite. It rests conformably on the Karmutsen Formation and may be overlain conformably by the Maude Formation or disconformably by the Yakoun Formation." Several fossils have identified the outcrops indicated as Kunga Formation.

The northwest trending ridge is not underlain by Masset Formation as indicated on the geology map of Bulletin 54, but by probable Honna Formation. The Honna Formation is the middle unit of the Cretaceous Queen Charlotte Group above the Haida and below the Skidegate Formations. The Honna Formation is composed of conglomerate and coarse arkosic sandstone with minor shale or siltstone. Fossils are rare in the Honna Formation and none was found on the property. The unit was identified by the occurrence of granitic pebbles. The Honna Formation is the oldest formation on the Queen Charlotte Islands known to contain granitic pebbles.

A thin bedded carbonaceous sandstone occurs over the southern 800 feet of the northwest trending ridge. This sandstone is tentatively grouped with the more massive conglomeratic Honna with which it appears to be in fault contact. A massive grey argillite, also apparently fault bounded, occurs just west of the northerly flowing creek and east of all Honna outcrops. This unit is of unknown age. It is non-calcareous and may be part of the uppermost Kunga Formation or possibly even of the Cretaceous Haida Formation.

Numerous small fine-grained light to medium grey feldspar porphyry dykes were noted within all units mentioned above. A larger intrusive body of similar looking rock occurs along the lower one thousand feet of the northerly flowing creek. Calcite, bitumen and fine pyrite, partly, and sometimes completely, fill vesicles and rare fractures. The dykes not uncommonly display convoluted and digitated intrusive contacts that are strongly controlled by bedding and fractures. The dykes bear a close spatial relationship to alteration and anomalous geochemistry in a regional sense.

STRUCTURE

Major faults probably form most of the contacts between the formations described above. Much of the stratigraphic succession is lacking on the property, including all of the Jurassic Yakoun Formation and probably at least some, if not all, of the Cretaceous Haida Formation. This lack can be explained by an unconformity as suggested by the change in attitudes from vertical Kunga Formation to flat-lying Honna Formation within one hundred feet, or by major faulting as indicated by outcrop patterns and the strong topographic linear along which the fault is drawn on the accompanying geologic map. The two major NNW faults are drawn to confine the massive grey argillite west of the north flowing creek.

Several east-west faults are indicated on the map, including one referred to in "Geology" as separating possible Honna sandstone from Honna conglomerate. Several parallel minor faults observed cutting conglomerate are mineralized with pyrite in ankeritic carbonate and rare quartz.

ALTERATION AND MINERALIZATION

Significant though contrasting styles of alteration occur in the different rock types. The outermost style of alteration in all rocks is the occurrence of pyrite indicated on the geology map and measuring 8000 feet by 4500 feet aligned parallel to the northwest ridge and major NNW faults.

Within the Honna conglomerate a zone of nearly continuous intense silicification with one per cent disseminated pyrite and minor fracture pyrite-arsenopyrite lies parallel to the NNW major fault. This zone is separated from the fault by 50 to 200 feet of less intensely silicified and mineralized conglomerate and surrounded by similar alteration to the limits of pyrite.

The carbonaceous sandstone lying along the southern end of the northwest ridge lies at the southern end of the silicified zone described above but exhibits strongly contrasting alteration. Silicification is weak and pyritization is strong, averaging five per cent but varying from about one per cent to about fifteen per cent in hand specimens. Most of the pyrite is disseminated.

Within the Kunga (and massive grey shale) intensity of sulphide mineralization is apparently closely related to the grey feldspar porphyry dykes. In limy argillites fine pyrite occurs disseminated along fractures and in bedded form. Pyrite beds up to 2 cm thick may indicate selective replacement mineralization, but could also be a feature of primary sedimentation.

Mineralization within the massive grey shale is weak and patchy and entirely related to the grey feldspar porphyry dyke contact zones where the shale is hornfelsic.

GEOCHEMISTRY

In total, 91 rocks, 206 soils, and 63 silts have been analyzed for Au-As-Hg. Rock samples were made from 3 to 10 rock chips collected from outcrops. Strong arsenic and mercury anomalies are indicated, but gold is at best weakly anomalous and shows no particular correlation with the anomalous patterns for the other elements.

All analyses were done by Bondar-Clegg and Company, 1500 Pemberton Avenue, North Vancouver, using the following standard procedures on -80 mesh material:

Arsenic	Perchloric Nitric - colourimetric
Mercury	Controlled Aqua Regia - closed cell atomic absorption
Gold	Fire Assay and Hot Aqua Regia - atomic absorption

(a) Arsenic

Arsenic forms two regional anomalies larger than any others known to the writers on the Charlottes, and exceptionally strong in comparison to the anomalies associated with known gold mineralization in the area. Both regional anomalies, as shown on the Arsenic Geochem Map (#2), exceed 5000 feet in length and range in width from 1000-2000 feet. Both anomalies extend beyond the limits of the survey and are not totally defined. Within the mapped anomalies arsenic values in soil exceed 100 ppm, and values exceeding 1000 ppm are common. Elsewhere in the district a 50 ppm arsenic result would be considered interesting.

The two arsenic anomalies both have north to northwest trends but the westernmost anomaly has the highest values and coincides with a mapped zone of strong silicification within a broader zone of pyrite mineralization. The eastern anomaly is less well defined and weaker, but lies on gently sloping till-covered terrain inferred to be underlain by limy argillites of the Kunga Formation. It is also inferred to lie within the mapped zone of hydrothermal pyrite mineralization although in this area the eastern limit of pyrite is not well defined by outcrop.

These arsenic anomalies are believed to be caused by arsenopyrite mineralization, which mineral has been identified at several locations within the western anomaly. Arsenopyrite tends to be fine grained and may be more common than reported on account of difficult identification under the conditions of poor light and visibility that prevailed in the dark, wet October rain forest when this work was done.

(b) Mercury

Mercury, like arsenic, forms large regional anomalies considerably stronger than any others known on the Charlottes. The strongest anomaly, in which mercury concentration in soils exceeds 5000 ppb, is generalized on the enclosed Mercury Geochem Map (#3). This anomaly trends ENE and appears to lie along an inferred fault which forms the southern boundary of the conglomerate. Mercury values in soil and silt exceeding 10,000 ppb are common within this anomaly which extends beyond the survey and claim boundary to the east and west.

Two weaker mercury anomalies, although still very strong by local standards, have been generalized on the Mercury Geochem Map to include most areas where mercury concentration in soil exceeds 1000 ppb. These two anomalies are coincident with the arsenic anomalies described above although slightly smaller in size. The westermost of these two anomalies includes the areas of strongest silicification known on the property.

(c) Gold

Gold in soils is weakly anomalous in the 10-20 ppb range within several areas of the property, although the pattern is spotty and not entirely coincident with the arsenic-mercury anomalies. A noteworthy gold anomaly occurs in till soils on the northeast corner of the property in an area with no bedrock exposure, just north of the most easterly arsenic-mercury anomaly.

In rocks, gold values are also inconsistent but most of the higher values occur within the area of mapped silicification or within the arsenic-mercury geochem anomalies.

CONCLUSIONS

A hydrothermal sulphide system exceeding 8000 feet in length and 4000 feet in width has been mapped on the King Property. Within this sulphide system two extremely large and exceptionally strong coincident arsenic-mercury geochem anomalies have been identified and partially defined as a result of work to date. Gold geochemistry is weak and spotty and apparently not entirely coincident with the arsenic-mercury patterns.

The most westerly of the two arsenic-mercury anomalies lies within an area of mapped silicification and a broader area of pyritization in conglomerate and sandstone of Cretaceous age. The easterly anomaly is inferred to be underlain by pyritized limy argillites of Triassic age, but no bedrock is exposed within the anomaly and geochem response is likely inhibited by till cover over the entire area.

A third exceptionally strong 1000 foot wide mercury anomaly appears to crosscut the other geochem patterns along a WSW-ENE trend. This pattern is believed to be related to an inferred fault shown on accompanying maps forming the southern boundary of the mineralized conglomerate. A minimum 5000 foot strike length is indicated, but the limits and significance of this mercury anomaly have not yet been ascertained.

RECOMMENDATIONS

1. Establish Limits of Geochem

The regional arsenic-mercury anomalies are open to the east and west and additional soil lines are required to provide cut-offs, and establish the actual size and shape of the anomalies. The eastern anomaly lies in an area that appears to be altogether lacking in outcrop and mantled with a blanket of till that may interfere with or mask the geochemical expression of underlying bedrock. Additional soil lines and a more thorough search for bedrock may provide better definition, but some form of bedrock sampling (percussion drilling or augering) will likely be required eventually.

2. Stake More Claims

Additional claims are needed to the east and possibly to the west as the anomalous zones extend beyond the current claim boundaries.

3. Consider Potential for Gold

(a) Near Surface

Gold mineralization has been shown to be extremely weak at surface within the areas sampled and assayed on the King Property. Within the western anomaly sampling is sufficiently dense and judged effective enough to rule out any possibility of commercial grade gold mineralization at surface. Within the eastern anomaly, the large area of till cover of unknown depth could possibly conceal zones of gold mineralization undetected by surface sampling done to date. Coverage has been sparse considering the large size of the arsenic-mercury anomaly and the relatively small size of a gold mineralized zone that could be of economic importance. Also the geochemical mobility of gold in such a heavy till environment would be predictably less than that of arsenic or mercury, so that buried gold mineralization might have no gold geochemical expression at surface.

(b) At Depth

Abrupt vertical grade transitions are known to occur within hydrothermal gold mineralized systems of various types for a number of reasons (experimental work and field studies). Temperature and pH

of the mineralizing fluids appear to influence precipitations of gold at the highest degree; however, at King there is no way to estimate any of the following:

(i) pH of the hydrothermal mineralizing solutions,

(ii) temperature of the hydrothermal system at the level of the present surface,

(iii) if gold is or was present in the system in significant amounts at any level, and assuming gold mineralization was present, whether it lies beneath the present surface or has already been stripped away by erosion.

At King it could be argued that the current surface represents a high level in the hydrothermal system, based on the irregular fracture controlled forms and vesicular habit of the leucocratic feldspar porphyry dykes, which are mineralized. An argument that gold may be present in this system could be advanced by analogy with the Babe (Specogna) system to the east and the Courte system to the west which have many features in common.

Short of a complex research project to estimate the temperature and pH of the mineralizing solutions, and the other pertinent physio-chemical parameters, at King more direct evaluation of the gold potential could be made as follows:

(i) Determine the arsenic centres in rock (rock geochem) within both the east and west anomalies as accurately as possible. Percussion drilling would be required to obtain rock samples in the eastern anomaly.

(ii) Diamond drill the arsenic centres to a depth of 500 feet and assay for gold. Significant vertical grade changes would be obvious.

4. Consider Potential for Quicksilver Deposits

At King it appears that the strongest mercury anomaly is coincident with an inferred fault which may be mineralized and could be significant. Numerous soil and silt samples returned results exceeding 10,000 ppb Hg

but the exact mercury content has not been determined. Nor have these highly anomalous soil and silt samples been satisfactorily correlated with bedrock as they occur in covered areas. Efforts should be made to determine the position of the mineralized fault and to measure the mercury grade. Trenching could be effective but drilling would cause less environmental concern.

5. Consider Potential for Other Metals

Geochemical work at King has not to date considered other metals such as tungsten or tellurium that could be present in such a geological environment. Several multi-element spectrographic analyses should be run on mineralized rocks from different parts of the property. Some specific tungsten analyses should be done because of the poor sensitivity of tungsten by normal spectrographic methods.

Respectfully submitted,

J. S. Christie

G. G. Richards

ITEMIZED COST STATEMENT

WAGES (October 27-31, 1978)				
J.S. Christie	5 days @ $150.00		$750.00	
G.C. Richards	5 days @ $150.00		750.00	$ 1,500.00
FOOD	10 man days @ $15.00			150.00
ACCOMMODATION				55.95
AIR FARE	(1/2 Vancouver to Sandspit - two men)			140.40
CAMPER TRUCK RENTAL				318.37
EQUIPMENT RENTAL AND SUPPLIES (Technical)				125.00
ANALYSIS (Au-As-Hg)				
Soil	206 @	$ 9.85	$2,029.10	
Silt	63 @	9.85	620.55	
Rock	91 @	10.75	987.25	3,636.90
REPORT				500.00
DRAUGHTING				168.80
			TOTAL	$ 6,595.42

STATEMENT OF QUALIFICATIONS

I, James S. Christie do hereby certify that:

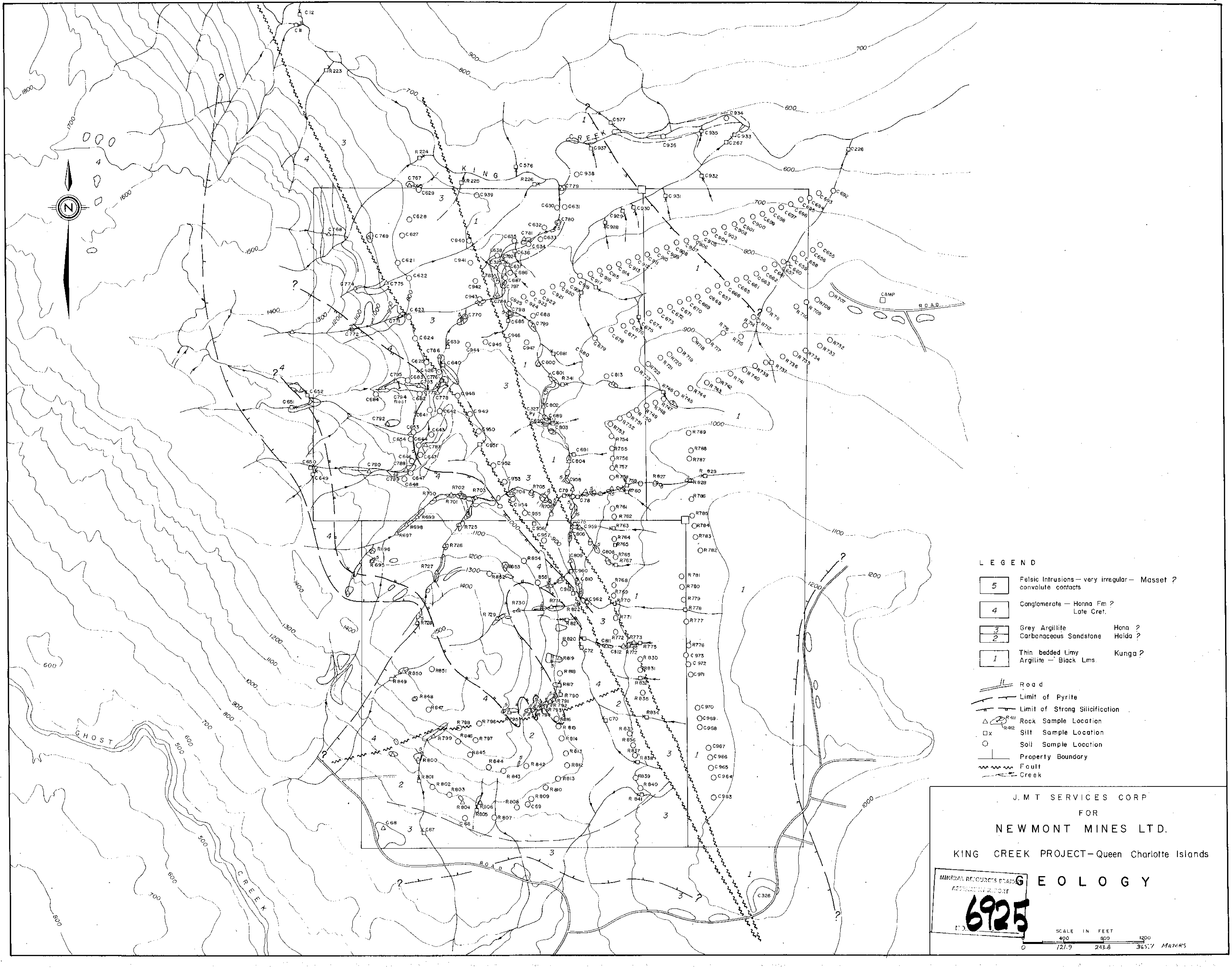
1. I am a Professional Geologist residing at 191 Rondoval Crescent, North Vancouver, B. C. V7N 2W6.
2. I am a graduate of the University of British Columbia, B.Sc. - Honours Geology - 1965; Ph.D. - Geology - 1973.
3. I have practiced my profession as a mining exploration geologist continuously since 1965.
4. I am a Fellow of the Geological Association of Canada.
5. I am a Member of the Geological Society of America.

J. S. Christie

I, Gordon G. Richards do hereby certify that:

1. I am a Professional Engineer of British Columbia residing at 818 West 68th Avenue, Vancouver, British Columbia V6P 2V2.
2. I am a graduate of the University of British Columbia, B.A.Sc. - 1968; M.A.Sc. - 1974.
3. I have practiced my profession as a mining exploration geologist continuously since 1968.

G. G. Richards



KING CREEK
GHOST CREEK
CAMP
ROAD
LEGEND
5 Felsic Intrusions — very irregular — convolute contacts Masset ?
4 Conglomerate — Honna Fm ? Late Cret.
3 Grey Argillite Hona ?
2 Carbonaceous Sandstone Haida ?
1 Thin bedded Limy Argillite — Black Lms. Kunga ?
Road
Limit of Pyrite
Limit of Strong Silicification
Rock Sample Location
Silt Sample Location
Soil Sample Location
Property Boundary
Fault
Creek
J.M.T SERVICES CORP
FOR
NEWMONT MINES LTD.
KING CREEK PROJECT — Queen Charlotte Islands
GEOLOGY
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6925
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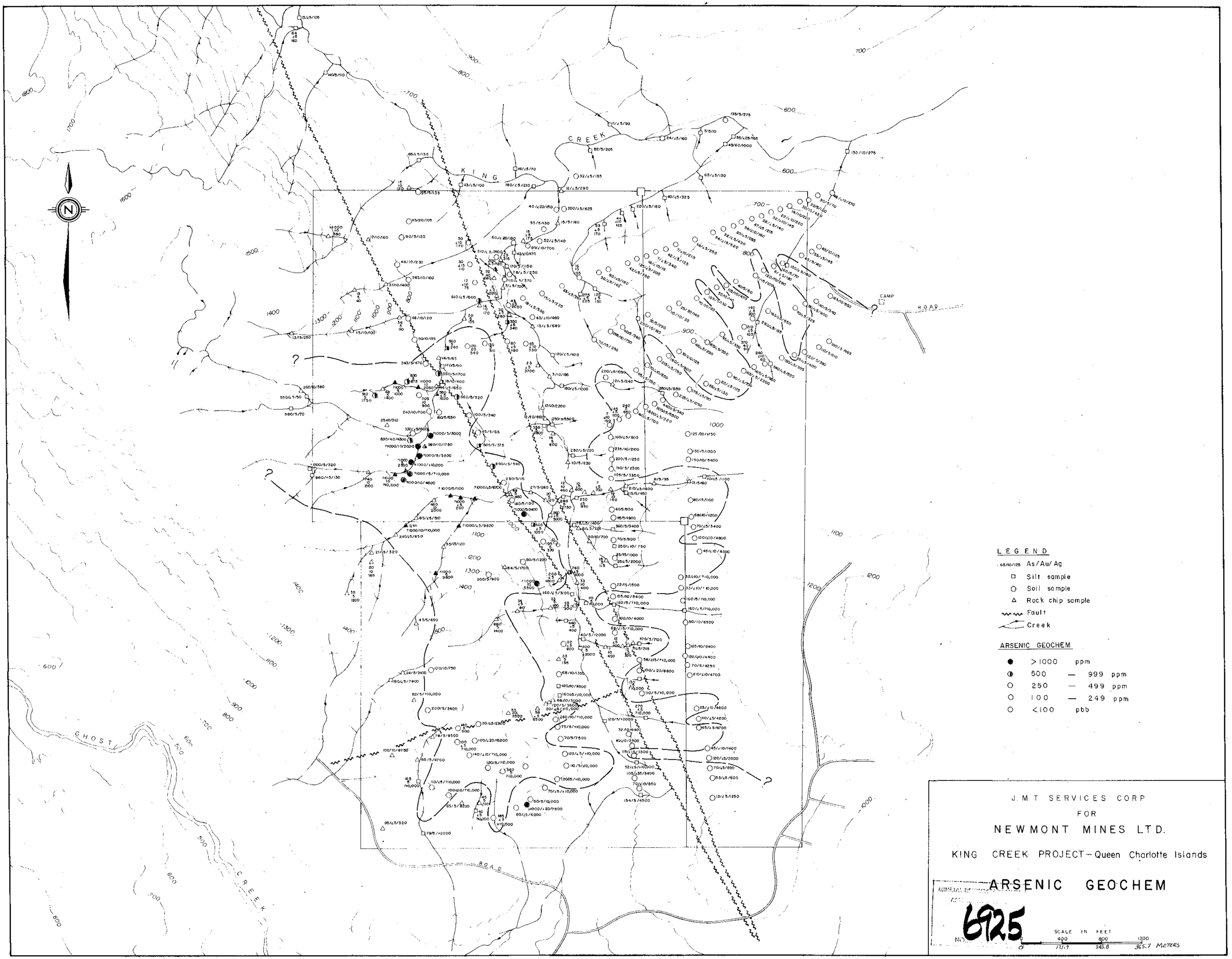
KING CREEK
GHOST CREEK
CAMP
ROAD
ROAD
N
LEGEND
65/10/125 As/Au/Ag
Silt sample
Soil sample
Rock chip sample
Fault
Creek
ARSENIC GEOCHEM
>1000 ppm
500 — 999 ppm
250 — 499 ppm
100 — 249 ppm
<100 ppb
J.M.T SERVICES CORP
FOR
NEWMONT MINES LTD.
KING CREEK PROJECT – Queen Charlotte Islands
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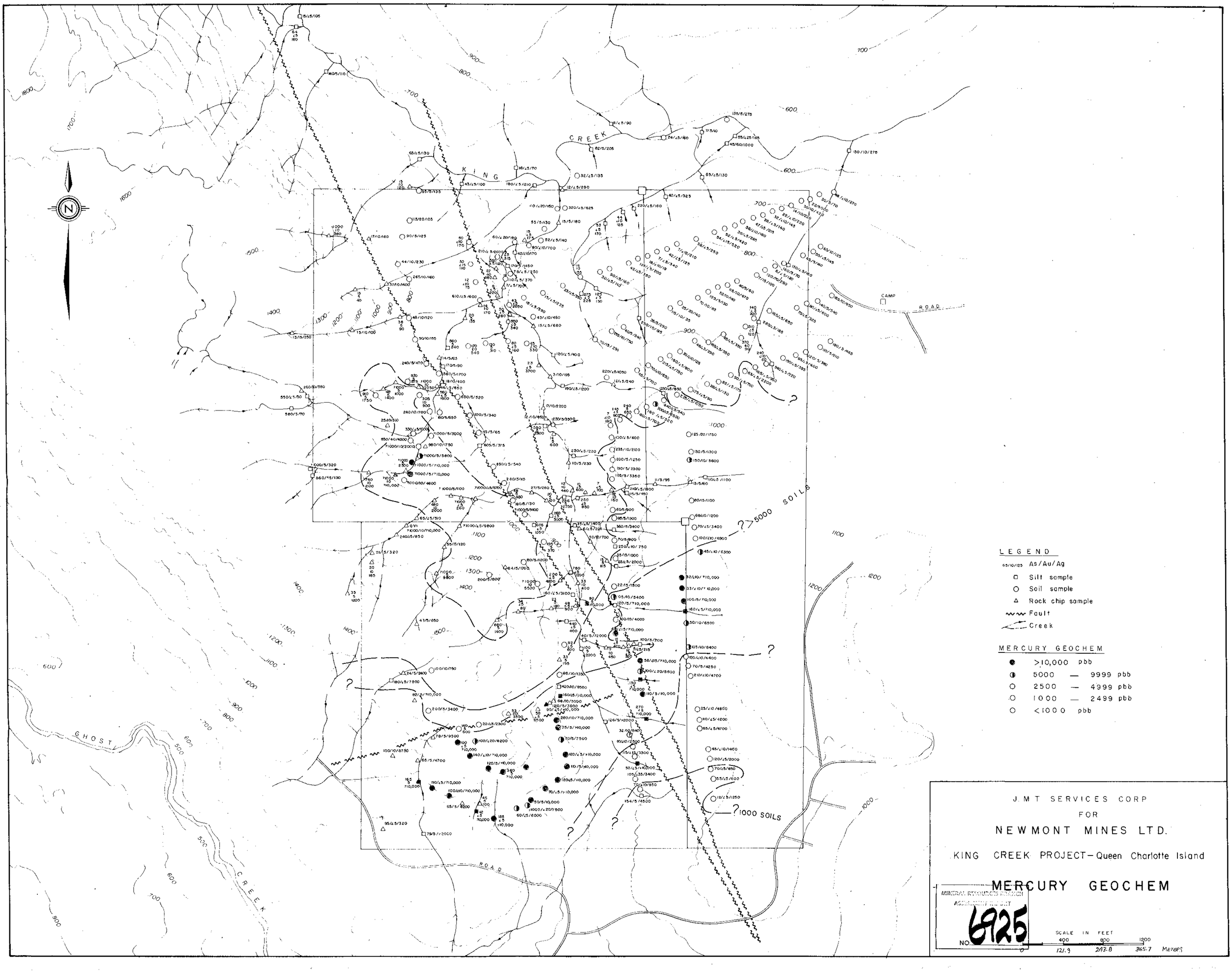
KING
CREEK
CAMP
ROAD
GHOST
CREEK
ROAD
5000 SOILS
1000 SOILS
LEGEND
65/10/125 As/Au/Ag
Silt sample
Soil sample
Rock chip sample
Fault
Creek
MERCURY GEOCHEM
>10,000 ppb
5000 — 9999 ppb
2500 — 4999 ppb
1000 — 2499 ppb
<1000 ppb
J.M.T SERVICES CORP
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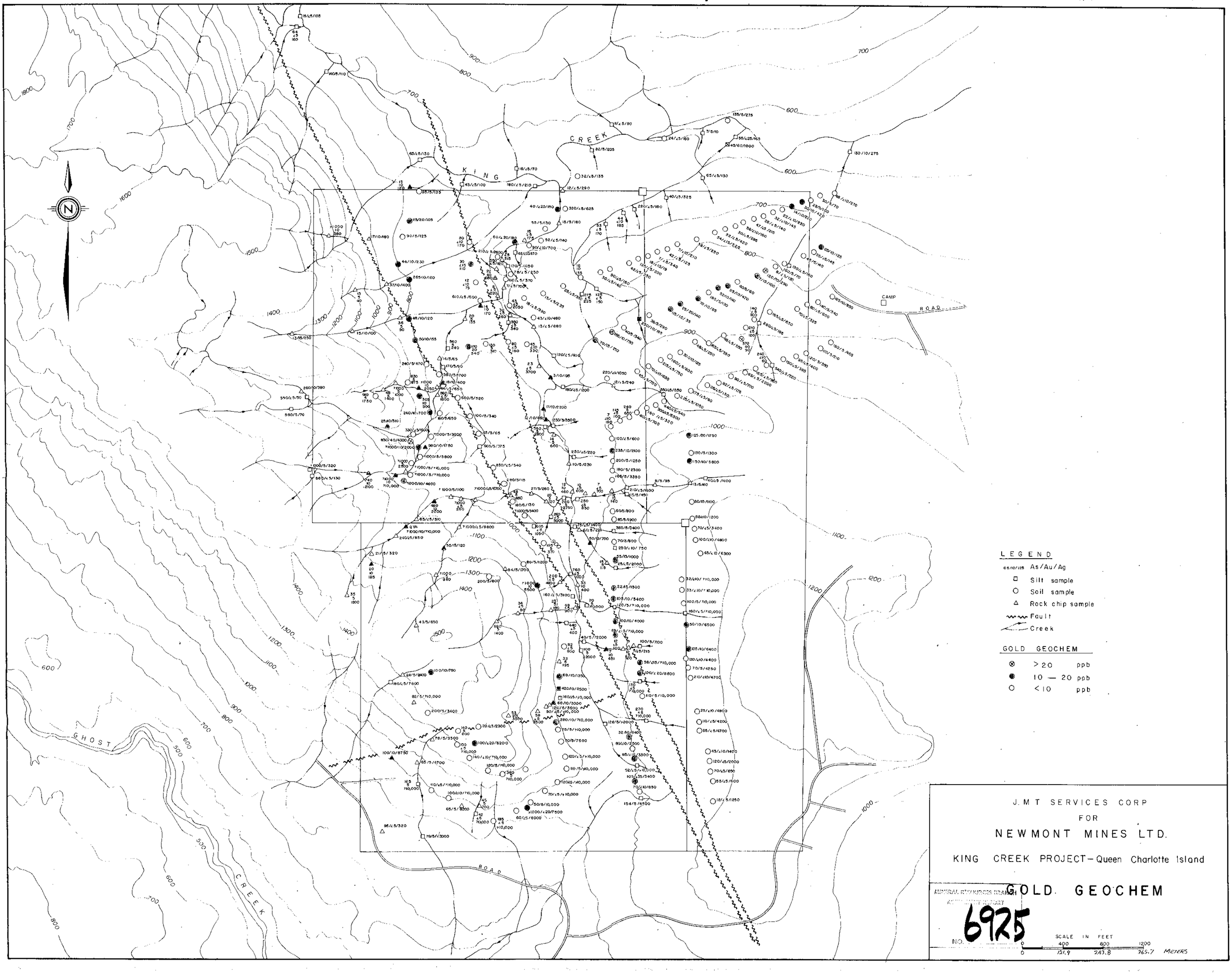
CREEK
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GOLD GEOCHEM
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10 — 20 ppb
<10 ppb
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