



IDA CLAIMS

YUKON

1980 GEOLOGY AND GEOCHEMISTRY

A. Winkler

J. McClintock

January 1981

VOLUME I

TEXT AND APPENDICES

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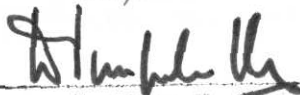
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Location 116-A/4

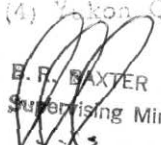
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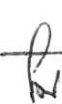
This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$ 60,000.⁰⁰



Resident Geologist or
Resident Mining Engineer

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


E. F. BAXTER
Supervising Mining Recorder

 Commissioner of Yukon Territory

IDA CLAIMS
GEOLOGY AND GEOCHEMISTRY

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SUMMARY

During the period May 30 through August 25, 1980 a crew ranging in size from 6 to 8 people carried out a programme of geological mapping, soil sampling and rock chip sampling on the Ida claims located 90km east of Dawson, Yukon.

Geological mapping determined the claims to be underlain by Ordovician-Silurian shale, siltstone, chert, sandstone and quartzite of the Road River Formation which have been folded into a series of southeasterly trending synclines and anticlines. Subsequent to folding, these sedimentary rocks were extensively faulted along northerly and easterly directions. Concurrently with the faulting, the sedimentary rocks were intruded by three small monzonite stocks and related dykes, and a later, highly kaolinized feldspar porphyry.

During mapping, an 1800 by 2100m area located in the centre of the claim block was noted in which the rocks were bleached, silicified and argillically altered. Bleaching transformed the normally black to grey Road River Formation rocks to white and clear colours. Silicification consisted of the introduction of fine drusy quartz veins and the near total replacement of the rock by silica. Argillic alteration ranged from moderate kaolinization of feldspar to the total replacement of all rock constituents, other than quartz, to clay minerals. Intensity of the alteration was controlled by fracture spacing and rock type. Most intense alteration occurred in highly fractured fault zones, however, alteration spread laterally from fault zones where fault zones passed through sandstone and quartzite. Dense

rocks such as the monzonite and chert were found not to be altered more than a few metres from a fault zone.

Soil sampling located large areas of coincident arsenic, antimony and mercury anomalous values centered over the areas of bleached, silicified and kaolinized rock.

Rock chip sampling within the 1800 by 2100m area located a 500 by 600m area in which sampled outcrops had an average gold content of 0.3 g/t and some outcrops up to 3.0 g/t gold over 10m. The rock chip samples are widespaced and the zone remains open to the west, north and east. There is, therefore, potential for a 100 by 200m zone, in or adjacent to the 500 by 600m zone, having an average grade of 2.0 g/t.

In 1981 it is recommended that further rock chip sampling be undertaken to ascertain the limits to gold mineralization and to better determine grades. It is also recommended that 600m of trenching be conducted to determine gold grades in overburden covered areas. Cost of the proposed 1981 programme is estimated at \$85,000.

1. INTRODUCTION

In early August, 1979, Rio Tinto Canadian Exploration Limited staked a group of 120 mineral claims, the "Ida" claims, located in the Dawson area, Yukon. The claims were staked to cover a mercury, arsenic and antimony silt anomaly detected during the Aurora Gold Project as a result of silt sampling the Dawson Fault Region, (Dwg. L-6604).

Subsequent to staking, the claims were cursorily prospected and soil and rock sampled in late August and early September 1979, to determine the source of the high arsenic, antimony and mercury. A complete discussion of the findings of the 1979 work is available in the Riocanex report

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The discovery of extensive silicification in several fault zones coupled with an assay of 4.5 g/t from one of these fault zones prompted a second programme of detailed soil and rock sampling to determine the extent and grade of gold mineralization. This second programme of soil sampling and geological mapping was undertaken from June to August 1980 and is discussed in this report.

1.1 LOCATION AND ACCESS

The property is located in central Yukon within map sheet 116A-4. The claims are situated midway between Aussie and Hamilton Creeks, 90km east of Dawson. Centre of the property occurs at latitude $64^{\circ} 09'N$, and longitude $137^{\circ} 37'W$.

The claims are shown on the accompanying drawing (Dwg. L-6604) and are described in detail in the schedule of claims, Appendix I.

Currently, the property is accessible only by helicopter, the closest being a Bell 206 B operated by Trans North Turbo Air out of their permanent base in Dawson. Considerable savings during mobilization can be obtained by driving equipment and personnel to the old Yukon Consolidated Gold Corporation dam located 16km east of the property and by flying the equipment from that location.

1.2 TOPOGRAPHY AND VEGETATION

The Ida claims lie within the southern Ogilvie Ranges, a moderately rugged range of mountains having relief between mountain peaks and valleys in the order of 750m. The region has been glaciated and is characterized by broad "U" shaped valleys with steep walls.

Vegetation consists of black spruce, alders and fir in the valleys thinning to tag alder and buck brush by 1350m. Above 1350m, vegetation is restricted to grasses and moss. Rock exposure and talus is widespread, particularly above 1220m, where rock and talus forms approximately 60% of the surface area.

1.3 REGIONAL GEOLOGY

The region of the claims was mapped in 1961 at the scale of 1;250,000 by L.H. Green of the Geological Survey of Canada (G.S.C. Memoir 364). Green shows that the property lies within Ordovician and Silurian Road River Formation which, in the vicinity of the claims, consists of interbedded black chert, argillite and quartzite intruded by Cretaceous syenite.

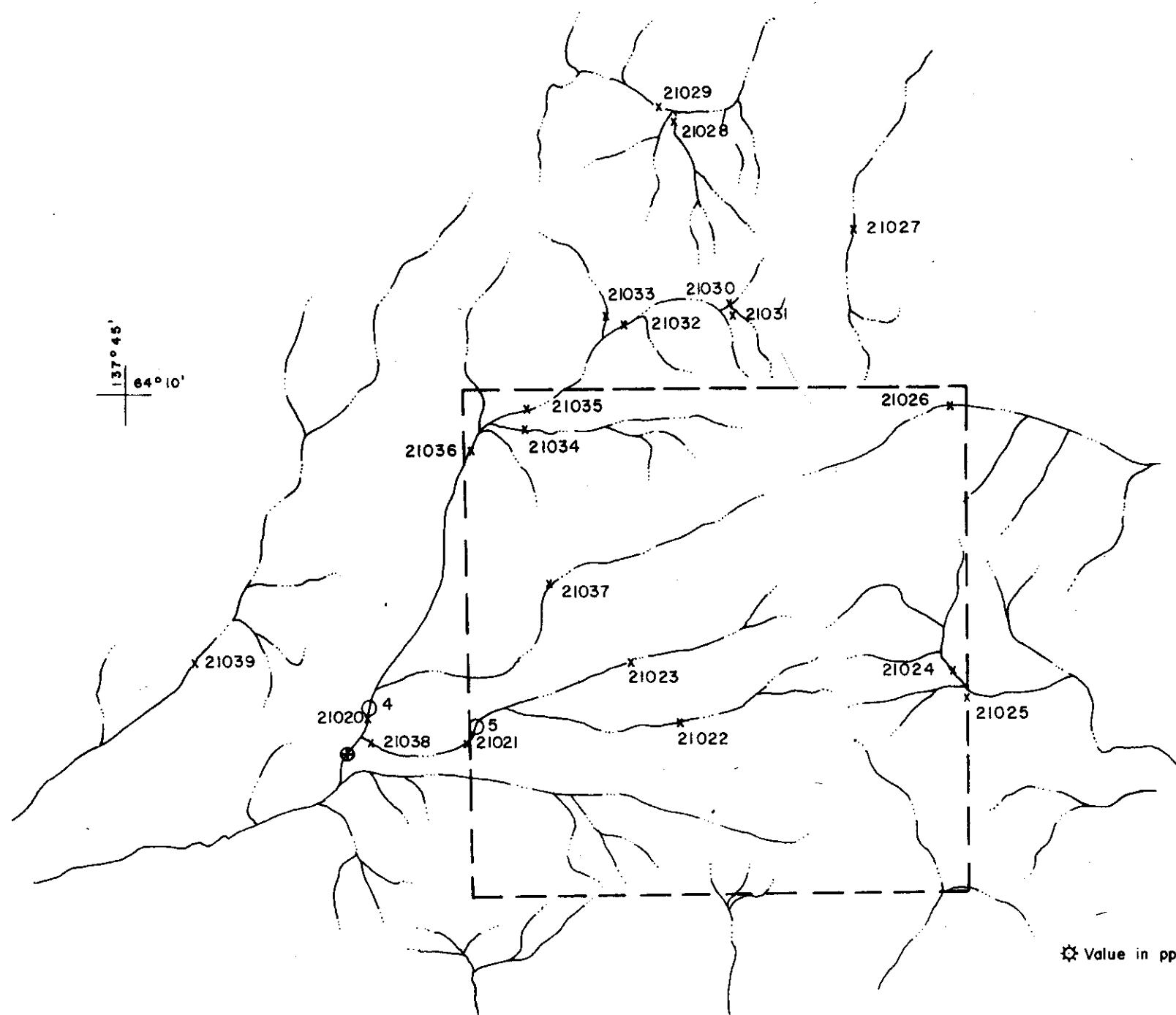
2. WORK BY RIOCANEX

In the 1979 field season a regional reconnaissance programme was undertaken over the Dawson Fault region in search of large-tonnage, low-grade gold deposits similar to those found at Carlin and Cortez, Nevada. The Dawson Fault Region was selected because of favourable rock types and structures. Methods of examination consisted of helicopter-supported silt sampling over portions of the Dawson Fault region in which the Geological Survey of Canada had detected anomalous mercury values. All silt samples collected were analysed for arsenic, antimony and mercury. Samples collected in the vicinity of Aussie Creek contained spectacular values for each of the three gold-pathfinder-elements prompting staking of 120 claims.

In addition, to the standard silt samples, 2000gm bulk-samples of stream sediment were also collected. These bulk-samples were treated on a Wilfley Table producing a concentrate and a slime fraction. Of the two bulk-samples collected from the vicinity of the Ida claims, both contain high gold in their concentrate fraction and one has anomalous gold in its slime.

During late August and early September 1979 the Ida claims were prospected, rock sampled and soil sampled by a two-man crew to determine the source of the arsenic, antimony and mercury anomalies. A total of 68 soil and 44 rock samples were collected during this follow-up programme. Favourable findings lead to a full scale geochemical and geological evaluation of the claims by a crew ranging in size from 6 to 8 persons during the period June to August 1980.

The 1980 programme consisted of soil sampling of the entire claim block on a 150 by 50m grid, detail geological mapping and chip sampling of rock outcroppings in regions defined as anomalous for arsenic, antimony and mercury by soil sampling. During the programme approximately 3200 soil and 500 rock samples were collected and analysed.



Silt Sample No.	Analytical Result ppm				
	As	Sb	Hg	Cu	Mo
21020	210	< 5	130	53	2
21021	200	< 5	160	39	4
21022	500	125	3400	150	5
21023	880	16	410	225	3
21024	900	11	550	139	4
21025	400	70	250	80	4
21026	445	9	310	90	3
21027	17	< 5	90	61	9
21028	16	< 5	160	72	4
21029	11	< 5	130	33	3
21030	20	< 5	125	40	4
21031	240	< 5	170	123	6
21032	240	< 5	125	95	2
21033	13	< 5	105	40	5
21034	500	7	115	127	9
21035	120	< 5	140	76	5
21036	240	< 5	140	95	2
21037	>1000	8	380	146	3
21038	400	< 5	360	88	4
21039	13	< 5	100	20	3

⊛ Value in ppb

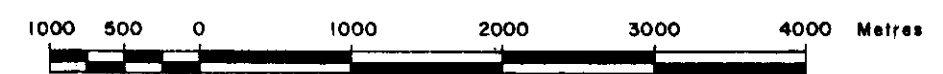
LEGEND

- Bulk Sample
- ⊕ G.S.C. Mercury Anomaly
- x 21037... Silt Sample Location
- IDA Claim Boundary



N. T. S. 116 A/4

SCALE 1:50,000



RIO TINTO CANADIAN EXPLORATION LTD		
DAWSON FAULT REGION		
AUSSIE CREEK - IDA CLAIMS		
MERCURY ANOMALY 4		
NOV 79	s. g.	DWG. GC-6581

3. GEOCHEMISTRY

3.1 SAMPLING, SAMPLE PREPARATION AND ANALYTICAL PROCEDURE

Soil samples were collected at 50m intervals along east-west trending lines spaced 150m apart. At each sample site, soil was collected from the "B" soil horizon. Where "B" horizon soil was not present, no sample was collected and the site was marked as N.S. Soil samples collected during the programme were placed in kraft paper envelopes and were shipped to Riocanex's laboratory in North Vancouver. Samples were then oven dried at 30°C and were sieved through 80 mesh bolting cloth with over sized material being discarded. Analysis was carried out on the -80 mesh material by atomic absorption spectrometer after digestion with hot nitric and per chloric acid. All samples treated by this technique were analysed for arsenic, antimony and mercury.

3.2 INTERPRETATION OF RESULTS

Results of analysis of the soil samples are displayed on drawings GC-8860 through GC-8862. A complete listing of results for rock, soil and silt samples is provided in Appendix II.

Threshold and anomalous levels for each of the elements analyzed in silt samples have been derived from statistics carried out on the 3200 samples collected during the programme. Results for each element were plotted on log probability paper. Threshold and anomalous levels were taken at the upper 95 and 97.5 percentile respectively. A summary of the threshold and anomalous levels for each of the pathfinder elements is listed in Table 1.

TABLE 1

Threshold and Anomalous Element Values in Soil Samples, Ida Claims

<u>Element</u>	<u>Threshold</u>	<u>Anomalous</u>
As	600ppm	1000ppm
Sb	20ppm	50ppm
Hg	500ppb	1000ppb

Results reveal that large portions of the claim block are anomalous for arsenic, antimony and mercury. With few exceptions, each of the pathfinder-elements have anomalies which are co-incident, with anomalies varying only in lateral extent. Closest correlation occurs between antimony and arsenic, though anomalous mercury is absent from some of these arsenic and antimony anomalies.

For the most part the anomalous values of pathfinder-elements are concentrated in a northerly trending, 5,000 by 1,000m zone located in the central portion of the claim block. Within this zone the anomalous values occur in linear or sinew like bands generally having length to width ratios in excess of 4:1. The linear anomalies are oriented with their long axis in northerly to northwesterly directions and to a lesser extent in east-west directions. This preferential orientation corresponds with the two dominant fault directions noted during mapping. Further evidence of fault control of the anomalies is their cross-cutting of geological contacts. The only obvious influence of rock type on geochemical anomalies is the lateral spreading of all three element anomalies in unit 3 quartzite, sandstone and siltstone.

Mercury has the most directionally controlled trend of the three elements. There are two main mercury anomalies and several smaller anomalies on the claims. The largest occurs from 300m N to 450m N and from 200m W to 600m W. At 300m N, 600E the anomaly abruptly swings to the northwest in a 50 to 150m wide band to 1800m N, 150m W. Past this point the anomaly broadens and becomes oriented in an east-west direction. The second main anomaly is m by m W, and trends northerly. Elsewhere on

the claims mercury anomalies are restricted to single samples or narrow northerly trending zones rarely exceeding 400m in length and 100m in width.

The mercury anomalies cross-cut all rock types and occur over or adjacent to known faults. Factors affecting this linear distribution of anomalous mercury values appear to be faults and unit 3 quartzite and sandstone.

Arsenic is the most widespread of the three elements analysed. As in the case of mercury, the arsenic anomalies are directionally oriented, northerly and easterly. The correlation between mapped faults and anomalous arsenic values is not as apparent as that with mercury. This lack of direct correlation is most probably due to the greater mobility of arsenic in soil and the presence of numerous discontinuous arsenopyrite bearing breccia bodies and quartz veins present in smaller faults and shear zones away from the main fault.

As with the mercury anomalies, those for arsenic cross-cut all rock types and appears to be fault controlled. Anomalous arsenic values display, however, a greater lateral extent at the intersection of major faults and over the more porous unit 3 quartzite and sandstone.

Soil samples anomalous for antimony occur in a northerly-trending zone straddling the survey baseline and stretching from 1650m S to 2850m N. Within this broad region, anomalous antimony forms irregular northerly and easterly trending 50 to 500m wide zones. As in the case of mercury and arsenic the location of the antimony appears to be fault controlled and differs

from those of mercury and arsenic in that lateral spreading along faults occurs within intrusive rocks as well as within unit 3 quartzite and sandstone. The reason for the spreading of the antimony from the faults within the intrusive rocks is not fully understood.

Away from the centre of the claim block there are numerous single location and smaller antimony anomalies. With the exception of an anomalous zone located at 1650 N and 1000 E, all these smaller anomalous zones are co-incident with mercury and/or arsenic anomalies.

4. GEOLOGY

The Ida claims are underlain by Ordovician-Silurian Road River Formation rocks which in the vicinity of the claims consist of interbedded black to green chert, black to grey argillite and quartzite (Dwg. G-8865-1/2). On the claim block the Road River Formation can be divided into three distinctive rock units, the interrelationship of which is uncertain:

- Unit 1 consisting of non-silicious, interbedded, black, grey and brown siltstone, mudstone and shale with occasional thin beds of fine, brown sandstone and a single, dark grey limestone. Relative proportions of siltstone, mudstone and shale vary; however, shale comprises 65% of the unit with mudstone and siltstone forming the remainder. Although present throughout the unit, mudstone and siltstone are more common in the lower portions of the unit. Mudstone and siltstone form beds rarely exceeding 30cm, while shale forms beds up to 4m in thickness. Many of the shale beds in the unit have a graphitic sheen on parting surfaces. Thickness of the unit is estimated at 50 to 100m.
- Unit 2 comprises resistant black and grey chert interbedded with minor siliceous shale and mudstone. Bedding varies from a few cm to over 1m. Contact with unit 1 is gradational with interbedding of chert and siliceous black shale. Thickness of the unit is estimated at 150m.

Unit 3 consists of black to brown sandstone, quartzite, siltstone, minor chert and black shale. Transition from unit 2 is gradational and marked by the increase in siltstone and sandstone interbeds in unit 2. As defined, unit 3 consists of no less than 30% sandstone and quartzite. Unit 3 displays classic features of turbidity deposition including alternating beds of fine and coarse clastics, graded bedding, cross and current bedding, channel scouring, ripple and groove marks. Thicknesses of individual turbidite sequences in unit 3 vary from 1cm to 20m, but the average thickness is 10cm. The sandstone is generally quartz-rich with subordinate amounts of feldspar. Shale is a very minor constituent of the unit, but is important in that fossil remains of the graptolite "monograptus vomeriums" and "monograptus spiralus" were found in this shale. These graptolites give a lower Silurian age to the unit. In unit 3 coarse clastic sediment is most common in the middle of the unit. Upwards, finer clastics and chert dominate. Unit 3 is transitional into black and grey chert which is undifferentiable from unit 2.

The Road River Formation on the claim block has been intruded by a Cretaceous hornblende-monzonite. This monzonite consists of 3 separate stocks and numerous related dykes. The 3 main stocks are small, all being less than 0.06 km² in area. These 3 stocks provide the backbone for the main north-south ridge on the claims. The southern-most stock is equigranular while the middle and northern stock are porphyritic.

Principally, each of the stocks comprises a biotite-hornblende monzonite which locally grades into syenite and quartz diorite. The monzonite is composed of equal amounts of potash and plagioclase feldspar with 5 to 10% mafic minerals. Quartz is present as occasional rounded grains. Fine disseminated grains of pyrite were also noted. The porphyritic texture of the northern two stocks and related dykes is imparted by 0.5 to 2cm potash and plagioclase phenocrysts in a 1 to 2mm hypidio-morphic granular ground mass. Phenocrysts of feldspar form 10 to 20% of the rock.

Monzonite dykes peripheral to the stocks vary in size from 1 to 30m in width and most are over 1000m in length. These dykes are preferentially oriented east-west and north-south. The majority of the dykes are porphyritic and have a composition similar to the main stock; however, dykes less than 3m in width display compositional variations, ranging from aplite to gabbro.

In addition to the monzonite and its related dykes, there is a second, later series of dykes, unit 5. These dykes cross-cut all Road River Formation rocks and the monzonite. All unit 5 dykes are porphyritic in texture and have been extensively, argillically altered. Typically, they consist of 0.2 to 1cm phenocrysts of intensely kaolinized feldspar in a kaolinite matrix. Phenocrysts form 15 to 50% of the rock. Mafic minerals, if present, have been totally destroyed by the argillic alteration. In the field, unit 5 dykes are easily recognized by their light cream and rust colour. The rust stain is the result of weathered sulphide which appears to have originally formed up to 5% of the dyke.

Unit 6 comprises thermally metamorphosed shale and siltstone. This unit is restricted to the immediate sediments in contact with the monzonite stocks and rarely persists farther than 10m from this contact. Typically, the sedimentary rocks have been metamorphosed to a fine-grained biotite hornfels that is characteristically a purplish-brown colour. The hornfels often contains trace to 5% pyrrhotite with subordinate amounts of arsenopyrite and rare chalcopyrite. This hornfels zone is discontinuous along the sedimentary-intrusive contact, being restricted to where shale and siltstone are cut by the monzonite.

4.1 STRATIGRAPHY

A determination of the exact stratigraphic section on the Ida claim block has not been possible due to the poor rock exposure, the discontinuous lateral continuity of the turbidite sequences of unit 3, and extensive folding and faulting of the rocks. Despite these difficulties the rocks on the claims can be divided into two distinctive sequences. A lower sequence consisting of a transition from unit 1 shale and siltstone into chert of unit 2 and a second sequence consisting of the thick turbidite series of unit 3.

The lower sequence consists of a lower 50 to 100m thick package of unit 1 interbedded shale and siltstone which gradually become interbedded with chert of unit 2. The transition between unit 1 and unit 2 occurs over approximately 50m and is marked by the appearance of progressively thicker chert beds within unit 1 and the transition from non-siliceous shale into siliceous shale and cherty mudstone. Transition from siltstone and shale into chert represents a transition to a

sediment starved basin. Unit 2 chert was deposited during a long period in which the influx of clastic sediment was at a minimum.

The second sequence, unit 3, represents a period in which turbidity currents were the dominant mode of sedimentation. Transition from chert of unit 2 to the turbidite sequence of unit 3, as in the transition from unit 1 to unit 2, is also marked by interbedding of the overlying and underlying units. Because of the lateral discontinuity of the turbidite sequences in unit 3, little of its exact internal make-up can be determined, other than that the stratigraphically lower portions of unit 3 contain a higher proportion of coarse clastic sediment while upper portions are dominated by chert and siliceous mudstone. Unit 3 rocks are transitional into black and grey chert which is identical to the chert beds of unit 2. This similarity of the chert overlying unit 3 to that within unit 2, combined with the structural complexities and poor rock exposures, makes differentiation of the two chert sequences impossible in many locations. The upper chert therefore, was not defined as a separate unit during mapping. Total thickness of unit 3 is estimated to be at least 200m.

4.2 STRUCTURE

Structural interpretation of the geology on the Ida claims is complicated by poor rock exposure, the discontinuous nature of the turbidite sequences of unit 3 and the similarity of many of the rock types located in different parts of the stratigraphic section. The best rock exposures, and therefore the best structurally understood portion of the claims, occur in the southern

part of the claim block. At this location rocks of units 1 and 2 strike northwesterly and are folded into a series of synclines and anticlines that plunge gently to the southeast. The folds are assymmetric with the north limbs dipping approximately 45° and the south limbs dipping near vertically. In the southern part of the claim block the folds have amplitudes ranging from 100 to 200m. Toward the northern portion of the claims, the amplitude and wavelength appear to increase to between 200 and 500m. The limbs of these folds have been deformed into a series of low amplitude warps. Wave length of these warps are between 10 and 20m with an average amplitude of 1m.

Faulting is very extensive in the vicinity of the claims. The most prominent direction of faulting is north-south to north-northwest. A second less prominent fault direction occurs along east-west directions.

Northerly trending faults have dips ranging from 45° to near vertical. To the west of the intrusive the fault planes are inclined to the west. To the east of the intrusives, rock exposures were too poor to determine dips on the fault planes. Displacement along the faults is vertical and reverse with relative movement along the faults less than 100 metres. Spacing between faults decreases towards the three monzonite stocks. These northerly trending faults are usually accompanied by zones of intense fracturing from less than 1 to 10m.

It appears that these northerly trending faults predate, or were contemporaneous with the intrusion of monzonite. No obvious displacement of the monzonite by the faults was observed and many of the smaller monzonite dykes are oriented parallel to the strike of these faults.

The second prominent fault direction, the east-west faults, although less numerous, are major structural breaks. Displacement across faults exceeds 100m and relative movement appears to have been both lateral and vertical. As with the northerly faults, the east-west faults appear to predate or be contemporaneous with the intrusion of the monzonite. This assumption is based on the lack of obvious displacement of the monzonite by these faults and the fact that monzonite dykes appear to have intruded along these faults. Rock outcroppings are too limited to dismiss the possibility that movement occurs along either the northerly or east-west trending faults subsequent to the intrusion of the monzonite.

5. MINERALIZATION

During the 1979 preliminary prospecting, gold was discovered in a silicified fault zone south of Gigi creek (Dwg.8865-2). Chip samples from the fault zone assayed up to 4.5 g/t gold. Silicification in the fault zone consists of thin drusy quartz veins and replacement of the rock between veinlets by silica.

In 1980, geological mapping and rock chip sampling were concentrated on locating and defining areas of silicification in an attempt to determine the extent, grade and controls of gold. Mapping and rock chip sampling determined that the gold found in 1979 was restricted to a 1m wide fault breccia.

Although the discovery zone proved disappointing, mapping in 1980 located a region 2000m by 1800m located in the centre of the claim block in which all rocks have undergone varying degrees of hydrothermal alteration (Dwg.8865-2). Within this zone, the typical black to grey-black colour of the rock has been bleached to light tan, cream, green and white colours. Most of the rocks are streaked with limonite. Colour change of the rocks is the result of argillic alteration of all minerals except quartz, including the destruction of all carbonaceous material. Silicification is in the form of introduction of very fine drusy quartz veinlets and replacement of the wall rock by silica. Drusy quartz veins contain cavities filled with limonite and other amorphous yellow and orange-red ochrous minerals. Some of these ochres were identified as scorodite and some of the reddish and bright yellow ochres are suspected to be cinnabar, orpiment and realgar. The limonite is from weathering of pyrite and arsenopyrite, as in some locations, remnants of these sulphide minerals were found in the centres of limonitic vugs.

Intensity of the alteration within the alteration zone ranges from the complete transformation of the rock into quartz and kaolinite to moderate kaolinization and bleaching of the rocks adjacent to fractures. The intensity of alteration is controlled by two factors: fracture spacing and the grain size of the original rock. Fracture spacing is dependant on proximity to faults, with most intense fracturing occurring at the intersection of east-west and northerly trending faults. The inherent porosity and permeability of rocks near the faults also controls the intensity of alteration. Intense silicification and kaolinization is more pervasive and extensive within the sandstone and quartzites of unit 3 than the chert of unit 2. Where sandstone

and cherty mudstone are interbedded, alteration of the sandstone is more extensive and complete than in the cherty mudstone. The monzonite intrusive, with the exception of localized zones along the sedimentary-intrusive contact, was not altered.

Within the alteration zone there are 10cm to 1m wide vuggy quartz veins. These occupy fault zones, are irregular and rarely exceed 200m in length. They contain arsenopyrite and pyrite in amounts ranging from a few percent to arsenopyrite forming over 90% of the vein. At one location, a vein of quartz was noted to contain coarse crystalline, black tourmaline. Although the majority of the quartz-veins did occur in altered rock, a few are present outside of the alteration zone.

In addition to the main alteration zone, there are several smaller alteration zones peripheral to the main zone. All of these alteration zones occur on or adjacent to mapped fault zones.

The alteration zones mapped on the claims correspond closely to the regions which soil sampling determined to be anomalous for arsenic, antimony and mercury. Generally, all altered zones are anomalous for arsenic and antimony though arsenic and antimony are more widespread than the zones of altered rock. Mercury, unlike the other elements, is present only within the alteration zones, and only parts of these zones are anomalous for mercury.

Rock chip sampling was conducted over the entire claim block to locate gold mineralization. A total of 450 samples were collected. All of these samples consisted of 10m chip samples from either outcrop or felsenmere. In locations where 10m of continuous outcrop or felsenmere were not present, rock chips were collected over 3 by 3m areas. Rock chip samples were collected from both altered and unaltered areas including both sedimentary and intrusive rocks.

Analysis of the rock samples found that the background value for rocks outside the altered zones was approximately 5 ppb, while altered zones had gold background levels of 50 ppb. The background of gold in the altered zone represents an enhancement of 10 times the general background levels of the Road River Formation. Samples collected from the monzonite, with exception of those collected near the contact with altered sedimentary rocks, rarely exceed 8 ppb gold.

Within the main alteration zone, a 400 by 600m zone was located that has an average of 0.3 g/t gold with certain locations containing up to 3.0 g/t over 10m. Chip sampling in this region is widely spaced and this zone is open to the west, north and south. Much of the region is covered by talus, grasses and intrusive rubble preventing full surface sampling of this zone; there is therefore, potential for smaller 100 by 200m regions within this over all area having a higher grade.

The best gold grades appear related most closely with silicification. Intensity of kaolinization and bleaching does not show any apparent relationship to the grade of gold. Chip samples collected from the 10cm to 1m arsenopyrite-bearing quartz veins, with the exception of a single sample, contain less than 100 ppb gold. The single exception is an arsenopyrite-bearing breccia located on the southern margin of the auriferous zone which contained 2.0 g/t gold.

Correlation of gold with the pathfinder elements is closest with mercury. Arsenic, although anomalous within the gold-bearing zone, is laterally more widespread than the gold. Antimony displays the poorest correlation with gold.

Controls on the emplacement of gold, on the presence of anomalous arsenic, antimony and mercury in soil and on the hydrothermal alteration, are primarily faulting and the porosity of the faulted sedimentary rocks. The wide-spread zone of high gold occurs in a region where northerly and east-west trending faults intersect in quartzite and sandstone of unit 3.

6. CONCLUSIONS

The 1980 field programme located a 500 by 600m area in the central part of the Ida claims in which rock chip samples average 0.3 g/t gold with individual samples within this assaying up to 3.0 g/t gold. This area is open to the north, east and west. Sampling in 1980 was insufficient to preclude the potential for a smaller 100 by 200m zone having higher average grade than the larger gold-bearing zone.

The high gold values occur within an 1800 by 2100m region in the centre of the claim block in which sandstone, quartzite and chert have undergone extensive silicification, bleaching and argillic alteration. Coincident with the alteration are arsenic, antimony and mercury geochemical anomalies in the soil.

Emplacement of the gold alteration and soil geochemical anomalies have been controlled by east-west and northerly trending faults. Also influencing the location and intensity of gold mineralization, alteration and soil geochemical anomalies are the porosity and permeable of the original sedimentary rocks. Non-porous and non-permeable rocks on the property, such as the monzonite and chert, show little alteration except where cut by faults.

Peripheral to the main zone of alteration and accompanying gold mineralization are smaller alteration and soil geochemical anomalies. None of these exceeds 100 by 400m and all are related to fault zones. Rock chip samples from these zones reveal that gold occurs in 1m or less fault zones, outside of which gold values are very low. The highest gold value obtained from one of these fault zones was 4.5 g/t in a selected grab sample from the Discovery zone. The limited size and low-grade of these peripheral zones makes them of no further interest.

7. RECOMMENDATIONS

It is recommended that the following programme be undertaken on the Ida claims in 1981:

- (1) During June 1981 the remaining unsampled outcrops within the 500 by 600m gold-bearing region defined in 1980 should be rock chip sampled, and rock sampling should be extended beyond this region to determine the full extent of gold mineralization and;
- (2) 600m of trenches should be hand-blasted during July and August over the higher grade gold-bearing rock outcrops detected in 1980 and in June 1981.

The purpose of further sampling is to ascertain the extent, controls and surface grades of gold mineralization. Trenching is planned to test overburden covered regions within the gold bearing zone. Cost of the 1981 field programme is estimated to be \$85,000.

/mp

APPENDIX I

CLAIM STATUS

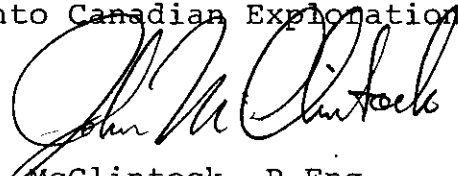
<u>CLAIMS</u>	<u># GROUPS</u>	<u>YEARS APPLIED</u>	<u>NEW EXPIRY</u>
IDA 1-120	10	5 Each	10 Nov 85

STATEMENT OF QUALIFICATIONS

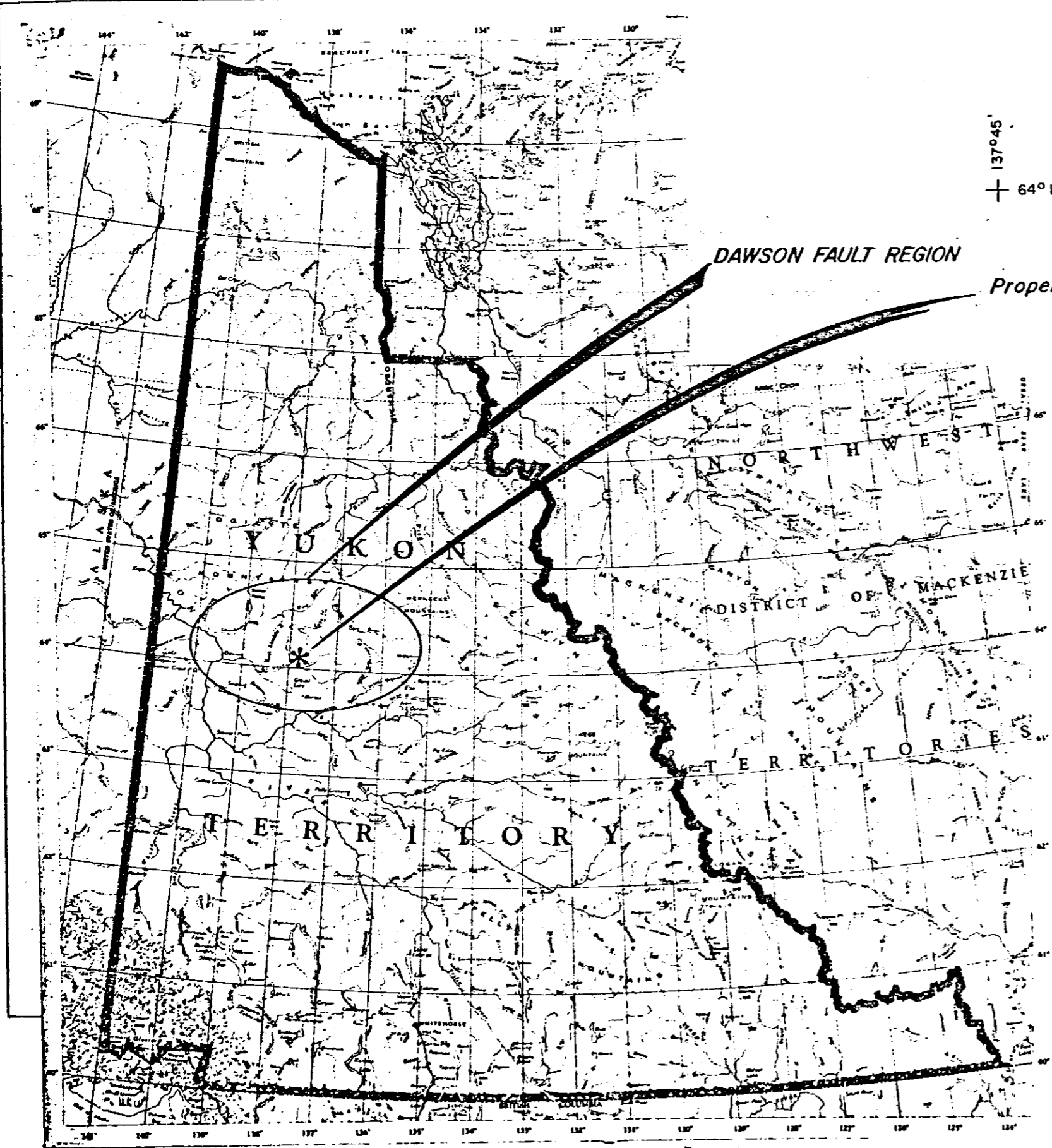
J. A. McClintock

- 1) I am a geologist residing at 32841 Ashley Way, Clearbrook, British Columbia and am currently employed by Rio Tinto Canadian Exploration Ltd. of #520 - 800 W. Pender Street, Vancouver, B.C.
- 2) I graduated from the University of British Columbia in 1973 with a BSc honors degree in Geology and have practiced my profession since that time.
- 3) I supervised the 1980 field work for Rio Tinto Canadian Exploration Limited which form the basis of this report.
- 4) I am a member of the Professional Engineers of British Columbia.

Rio Tinto Canadian Exploration Ltd.



John A. McClintock, P.Eng.

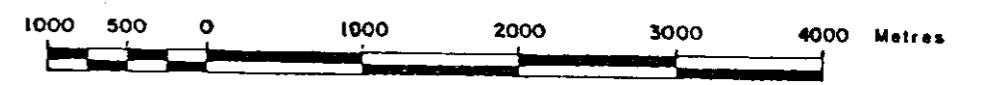


137°45'
+ 64°10'



20	18	16	14	12	10	8	6	4	2
19	17	15	13	11	9	7	5	3	1
40	38	36	34	32	30	28	26	24	22
39	37	35	33	31	29	27	25	23	21
60	58	56	54	52	50	48	46	44	42
59	57	55	53	51	49	47	45	43	41
80	78	76	74	72	70	68	66	64	62
79	77	75	73	71	69	67	65	63	61
100	98	96	94	92	90	88	86	84	82
99	97	95	93	91	89	87	85	83	81
120	118	116	114	112	110	108	106	104	102
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SCALE 1:50,000



N.T.S. 116 A / 4

RIO TINTO CANADIAN EXPLORATION LTD.

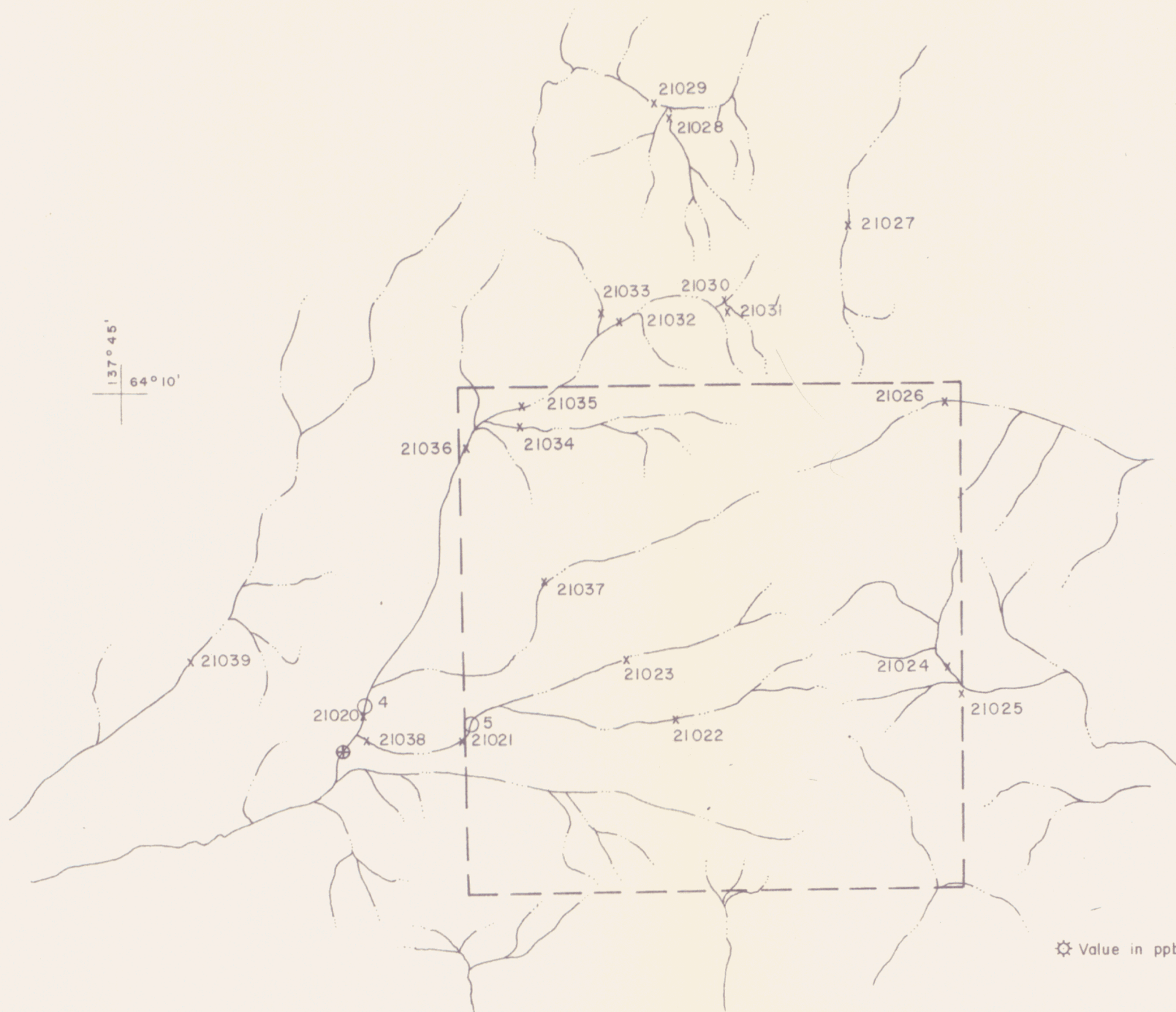
IDA CLAIMS

LOCATION MAP

JAN. 80

J.M./y.m.

DWG.
L - 6604



Silt Sample No.	Analytical Result ppm				
	As	Sb	Hg*	Cu	Mo
21020	210	< 5	130	53	2
21021	200	< 5	160	39	4
21022	500	125	3400	150	5
21023	880	16	410	225	3
21024	900	11	550	139	4
21025	400	70	250	80	4
21026	445	9	310	90	3
21027	17	< 5	90	61	9
21028	16	< 5	160	72	4
21029	11	< 5	130	33	3
21030	20	< 5	125	40	4
21031	240	< 5	170	123	6
21032	240	< 5	125	95	2
21033	13	< 5	105	40	5
21034	500	7	115	127	9
21035	120	< 5	140	76	5
21036	240	< 5	140	95	2
21037	>1000	8	380	146	3
21038	400	< 5	360	88	4
21039	13	< 5	100	20	3

* Value in ppb



LEGEND

- Bulk Sample
- ⊕ G.S.C. Mercury Anomaly
- x 21037... Silt Sample Location
- IDA Claim Boundary

N. T. S. 116 A/4

SCALE 1:50,000



RIO TINTO CANADIAN EXPLORATION LTD

DAWSON FAULT REGION

AUSSIE CREEK - IDA CLAIMS

MERCURY ANOMALY 4

NOV 79

s. g.

DWG.GC-6581



LEGEND
 22506 Sample location (all numbers prefixed by 80)
 Sample interval 50 metres

1
 2

SCALE 1:5000
 0 50 100 150 200 250 300 350 400 Metres

NTS. 116 A / 4

RIO TINTO CANADIAN EXPLORATION LTD.

IDA CLAIMS

SOIL SAMPLE LOCATION

DATE Feb. 1981 DRAWN BY eo TDWG. L-8659-1



LEGEND
 20700 Sample location (all numbers prefixed by 80)
 Sample interval 50 metres

1
 2

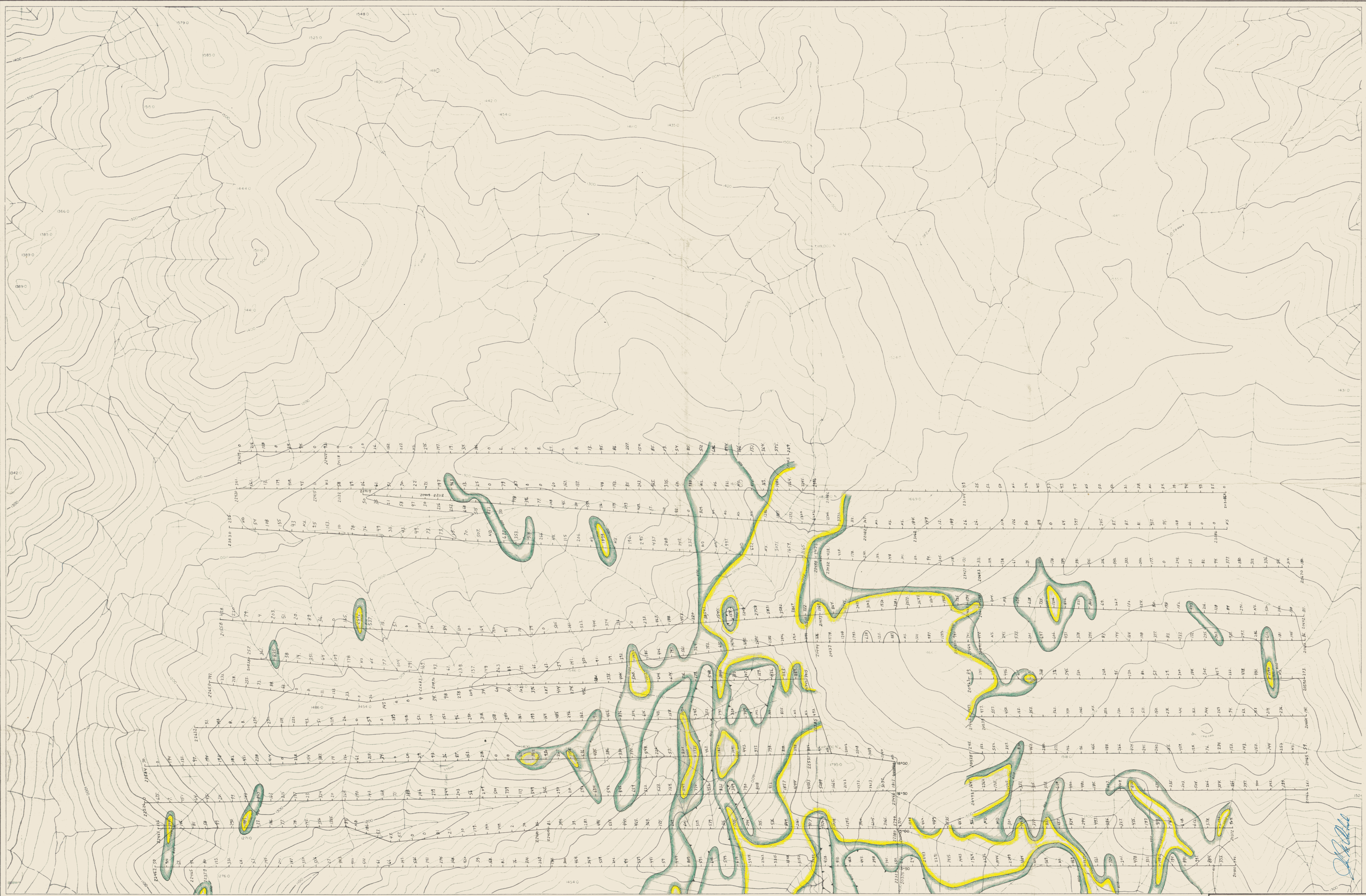
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NTS. 116A/4

RIO TINTO CANADIAN EXPLORATION LTD.
 IDA CLAIM

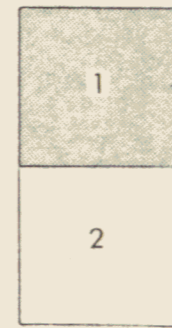
SOIL SAMPLE LOCATION

DATE Feb 1981 DRAWN BY ea DWG. L-8559-2



LEGEND

364 ppm As
 22462 Sample number (all numbers prefixed by 80) : Sample interval 50 metres



NTS 116A/4

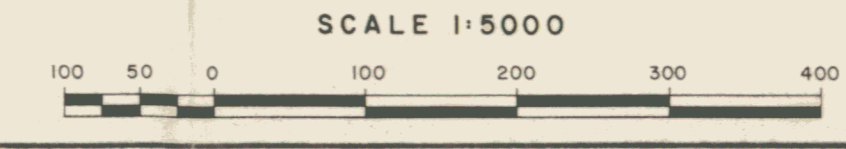
RIO TINTO CANADIAN EXPLORATION LTD.

IDA CLAIMS

SOIL SAMPLES

As ppm

DATE: Feb. 1981
 DRAWN BY: ed
 I.D.W.G.
 GC-8660-1



Handwritten signature



LEGEND

2.0 ppm As

20730 - Sample number (all numbers prefixed by 80) : Sample interval 50 metres

1
2

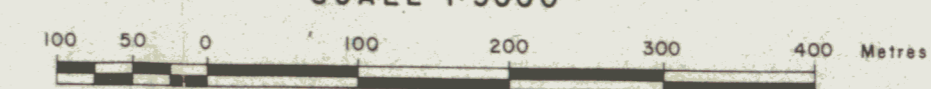
NTS. 116A/4

RIO TINTO CANADIAN EXPLORATION LTD.

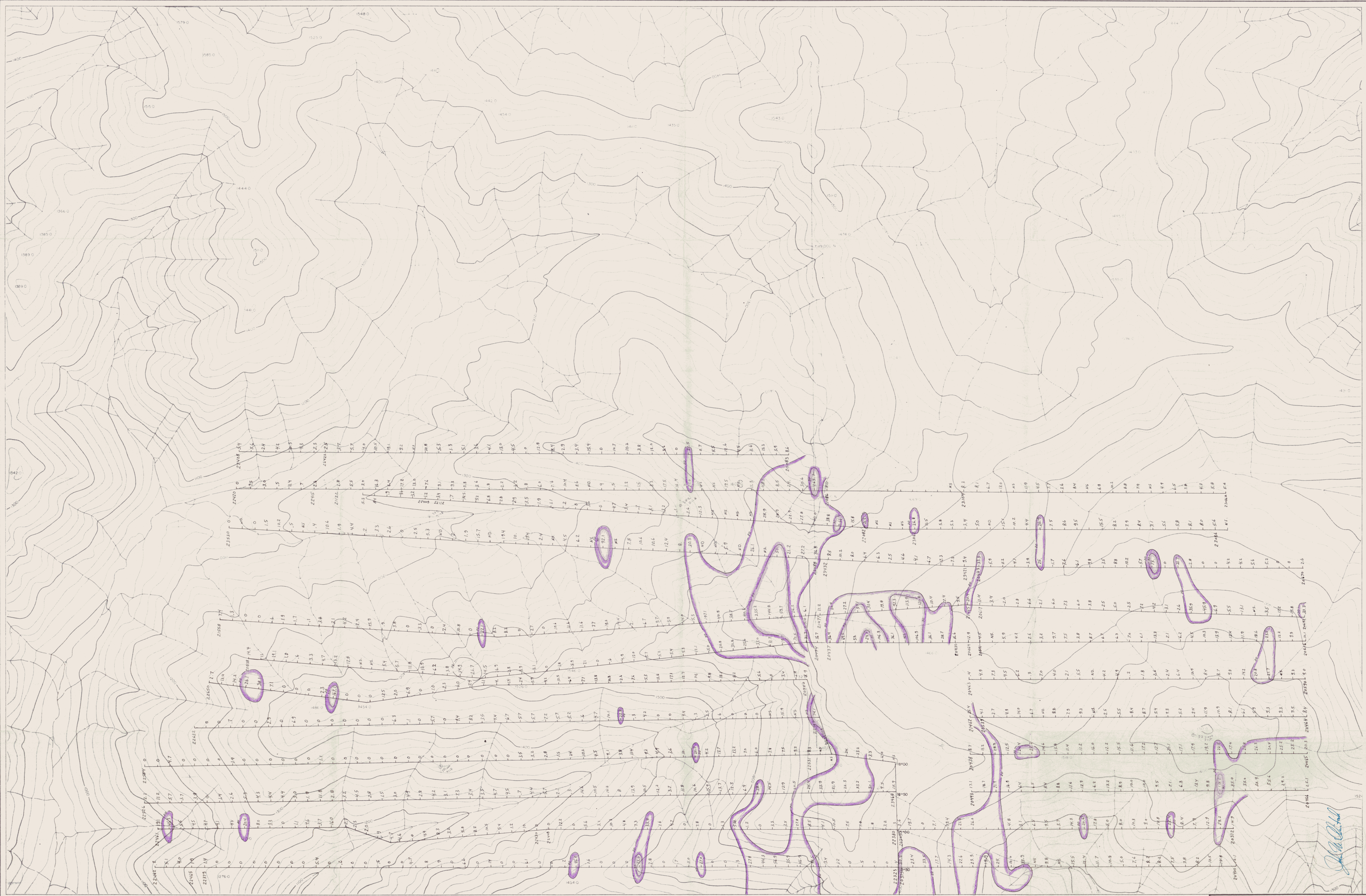
IDA CLAIMS

SOIL SAMPLES
As ppm

SCALE 1:5000

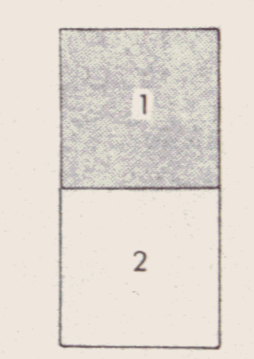


DATE Feb 1981 DRAWN BY [Signature] DWG. GC-8860-2



LEGEND

11.4 ppm Sb
 22462 Sample number (all numbers prefixed by 80) Sample interval 50 metres



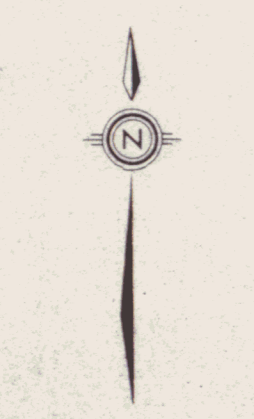
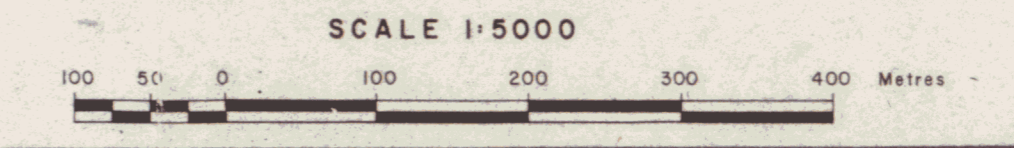
NTS 116A/4

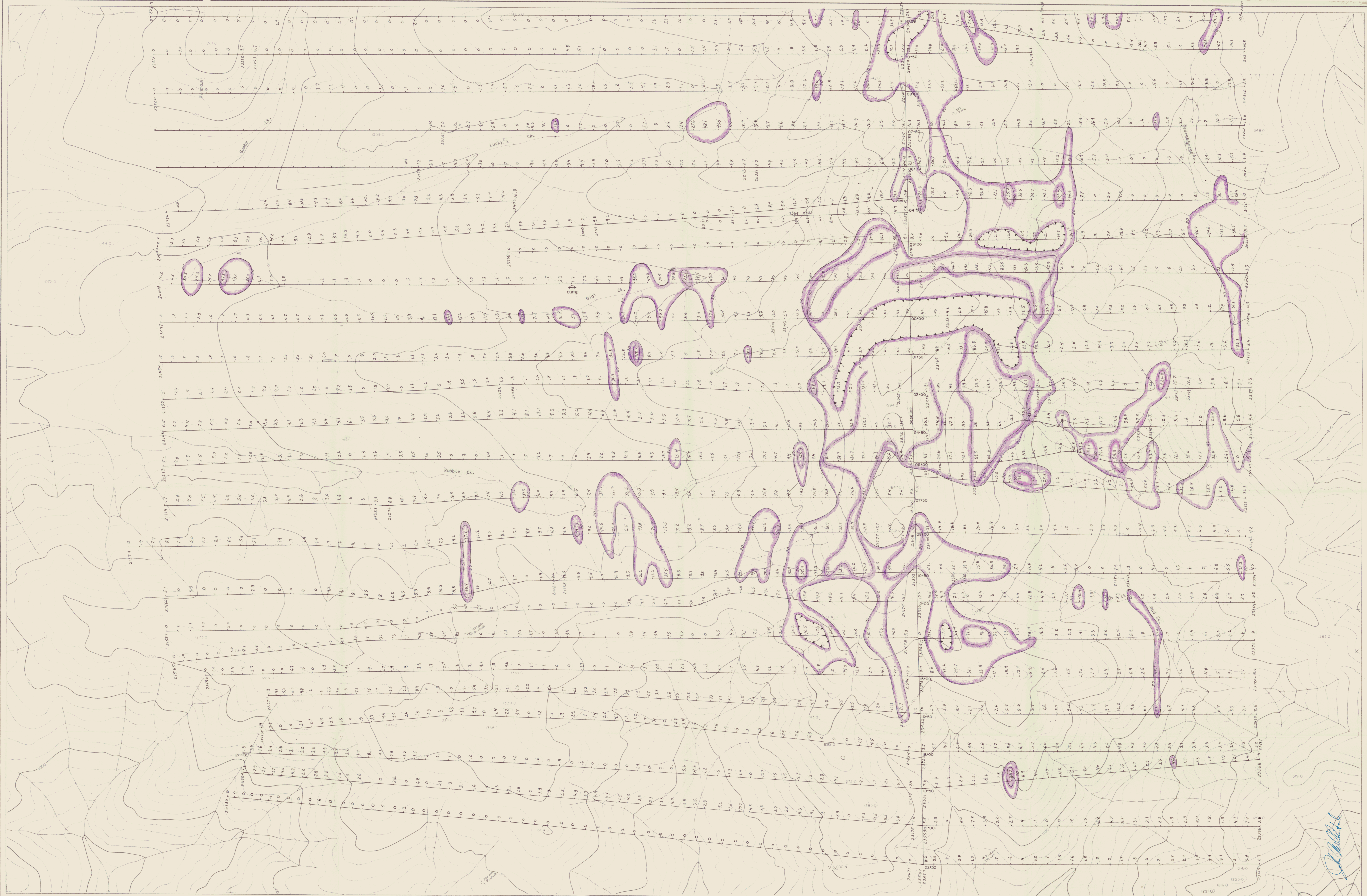
RIO TINTO CANADIAN EXPLORATION LTD.

IDA CLAIMS

SOIL SAMPLES
 Sb ppm

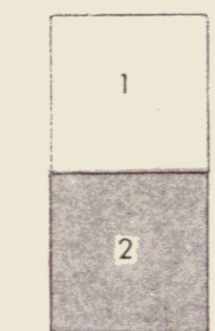
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 DWG. NO: GC-8861-1





LEGEND

- 4.6 ppm Sb
- 20730 - Sample number (all numbers prefixed by 80) : Sample interval 50 metres



SCALE 1:5000



NTS, 116A/4

RIO TINTO CANADIAN EXPLORATION LTD.

IDA CLAIMS

SOIL SAMPLES

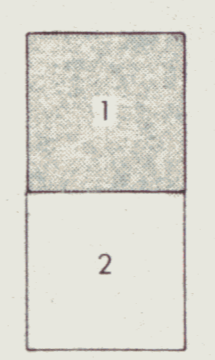
Sb ppm

DATE: Feb 1981 | DRAWN BY: ea | DWG: GC-8861-2

Handwritten signature



LEGEND
 100 ppb Hg
 22462 Sample number (all numbers prefixed by 80) Sample interval 50 metres



SCALE 1:5000
 0 50 100 200 300 400 Metres

NTS. 116A/4

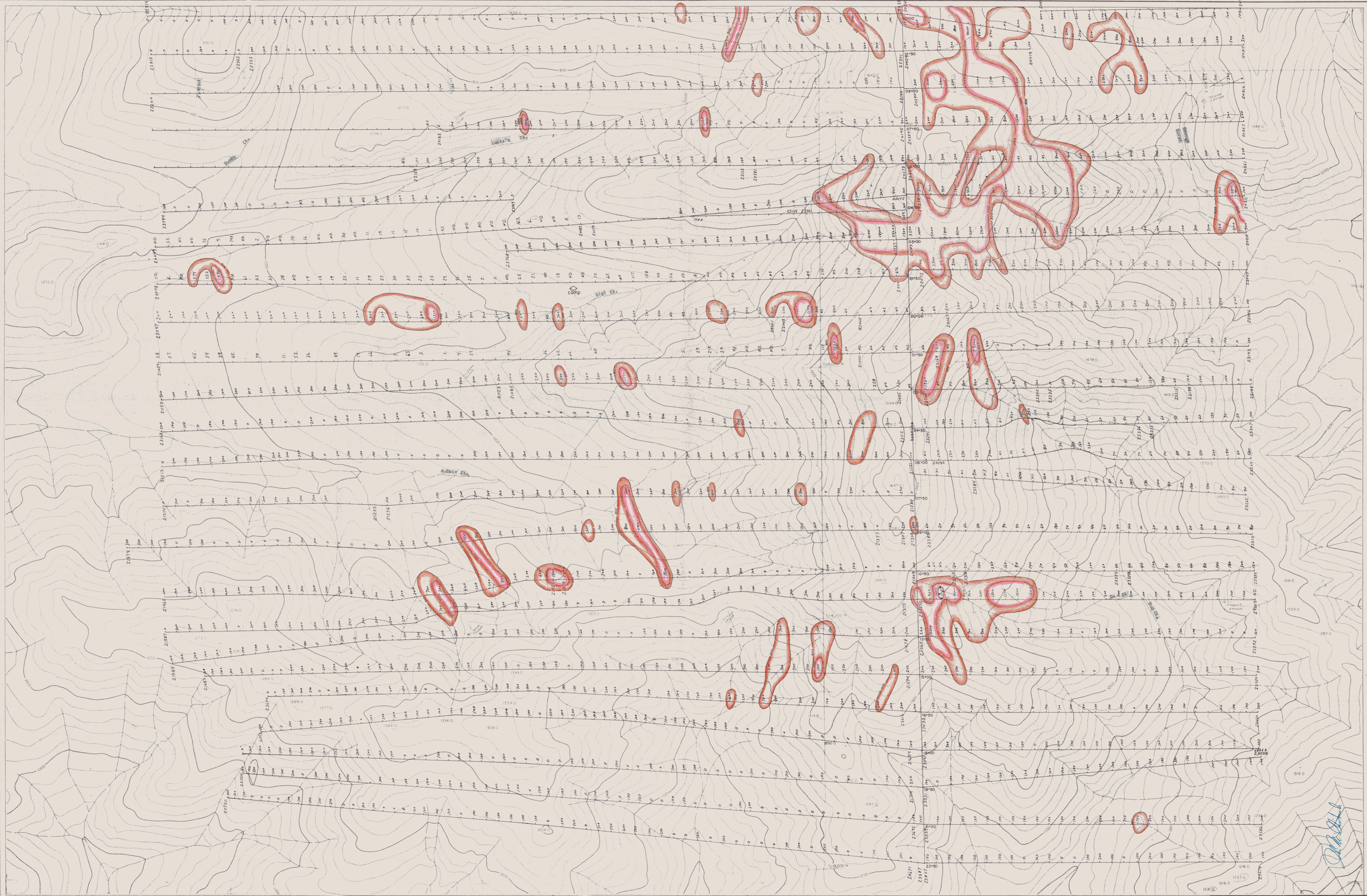
RIO TINTO CANADIAN EXPLORATION LTD.

IDA CLAIMS

SOIL SAMPLES
 Hg ppb

DATE: Feb 1981 DRAWN BY: eo I.DWG.: GC-8862-1

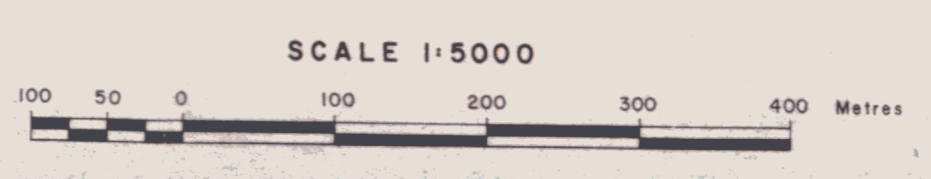
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LEGEND

100 ppb Hg
 20730 Sample number (all numbers prefixed by 80) Sample interval 50metres

1
2



NTS: 1:66A/4

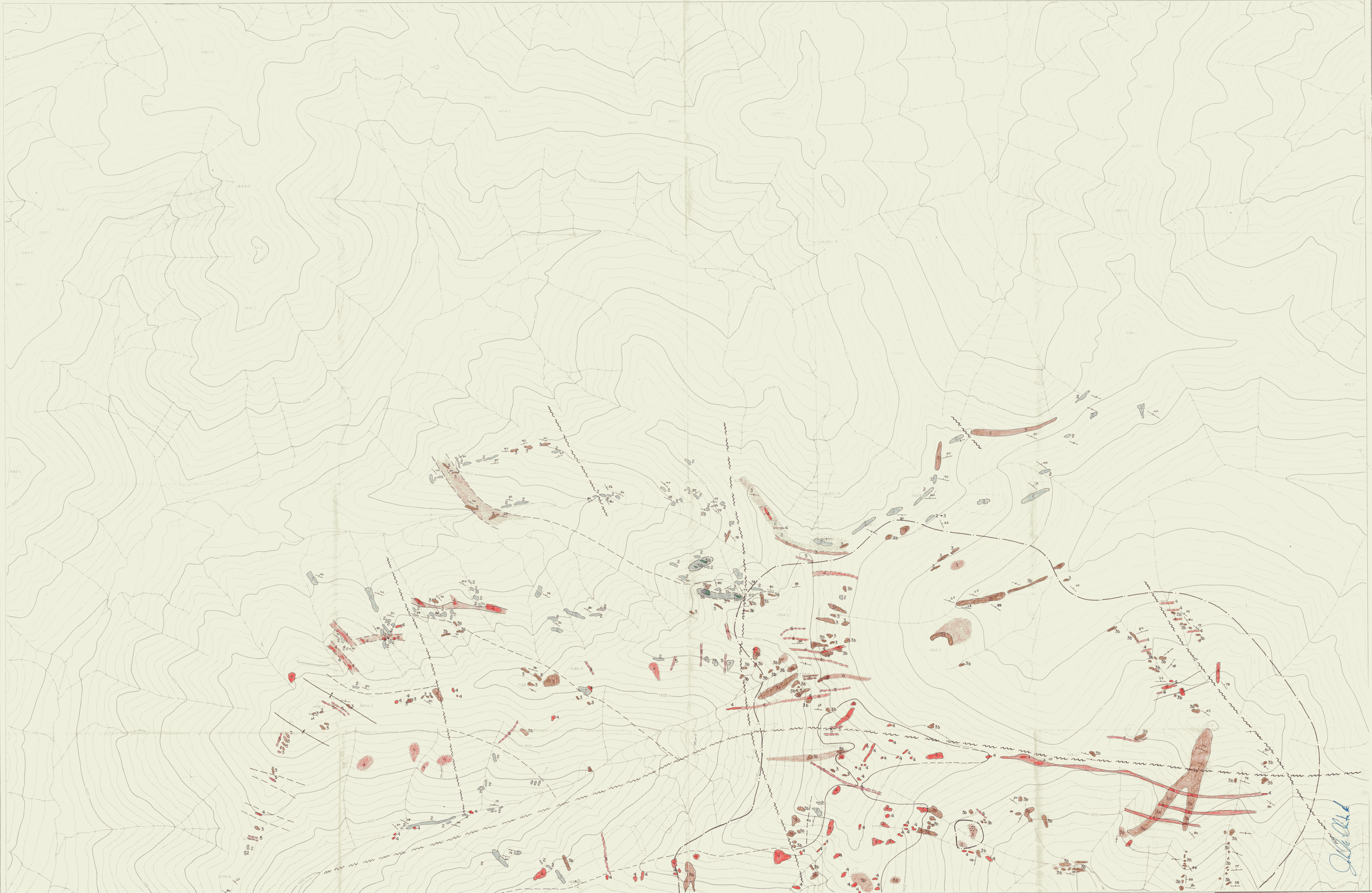
RIO TINTO CANADIAN EXPLORATION LTD.

IDA CLAIMS

SOIL SAMPLES
 Hg ppb

DATE: Feb 1981
 DRAWN BY: ea
 DWG: GC-8662-2

[Handwritten signature]



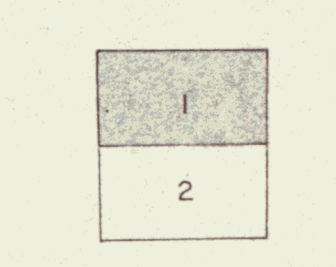
LEGEND

- Unit 1 - Non siliceous, interbedded, black, grey and brown siltstone, mudstone and shale with occasional thin beds of fine brown sandstone and rare limestone
- Unit 2 - Black and grey chert, minor siliceous shale and mudstone
- Unit 3 - Black to brown sandstone, quartzite, siltstone, minor chert and black shale
- Unit 3b - Bleached Unit 3

- Unit 4 - Porphyritic to equigranular monzonite
- Unit 5 - Highly kaolinized feldspar porphyry
- Unit 5a - Dark green breccia
- Unit 6 - Brown hornfels

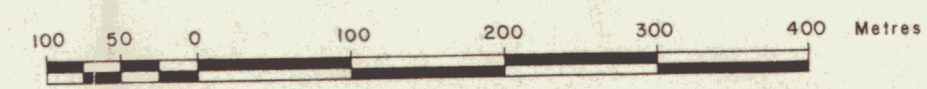
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- o . . . Fold axis minor fold
- - - - - Syncline - Anticline axis
- o . . . Outcrop

- o . . . Talus
- - - - - Geological contact
- - - - - Bleached silicified rocks
- - - - - Fault



CONTOUR INTERVAL 20metres

NTS. 116A/4
SCALE 1:5000



RIO TINTO CANADIAN EXPLORATION LTD.

IDA CLAIMS

GEOLOGY

DATE: JAN. 1981
DRAWN BY: JAM
DWG. G-8865-1

John Clark



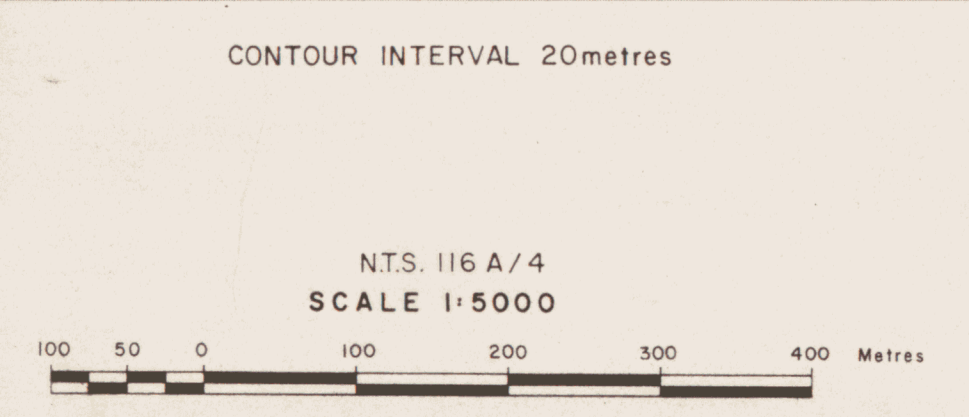
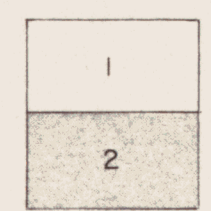
LEGEND

- Unit 1 .. Non siliceous, interbedded, black, grey and brown siltstone, mudstone and shale with occasional thin beds of fine brown sandstone and rare limestone
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- Unit 3 .. Black to brown sandstone, quartzite, siltstone, minor chert and black shale
- Unit 3b .. Bleached Unit 3

- Unit 4 .. Porphyritic to equigranular monzonite
- Unit 5 .. Highly kaolinized feldspar porphyry
- Unit 5b .. Dark green breccia
- Unit 6 .. Brown hornfels

- + , x ... Bedding; horizontal, vertical, inclined
- 10 ... Fold axis minor fold
- + - + ... Syncline - Anticline axis
- ... Outcrop

- ... Talus
- ... Geological contact
- ... Bleached silicified rocks
- ... Fault



RIO TINTO CANADIAN EXPLORATION LTD.

IDA CLAIMS

GEOLOGY

DATE: JAN. 1981 | DRAWN BY: JAMc | DWG: G-8865-2

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