86-600 -15194

GEOCHEMICAL ASSESSMENT REPORT

OF THE GOLD, SILVER, PLATINUM AND PALLADIUM POTENTIAL OF THE

NIK 1 - 4 CLAIMS

OWNED BY BP MINERALS LIMITED

OPERATED BY BP RESOURCES CANADA LIMITED #700 - 890 West Pender Street, Vancouver, B.C. V6C 1K5

OMINECA MINING DIVISION

NTS 94D/9E

FILMED

Located approximately 10 km northeast of the airstrip at Johanson Lake

Long. 126⁰ 08', Lat. 56⁰ 40'

Dr. S.J. Hoffman Geochemist

R.H. Wong Project Geologist

GEOLOGICAL BRANCH A SSMENT REPACTONER, 1986

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SUMMARY

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The Au, Ag, Pt and Pd potential of the NIK was assessed by the reanalysis of 320 archive sample pulps for a suite of 30 elements soluble in aqua regia, augmented by determination of Au, Pt and Pd following a fire assay preconcentration. Results were disappointing, as only three weak Au anomalies having maximum values of less than 100 ppb were identified. Results for Ag, Pt and Pd were less than 1 ppm and at the 50 ppb, 50 ppb detection limit, respectively. Reanalysis of samples for Pt and Pd using a 2 ppb detection limit is needed before comment can be made on the platinum potential of a large zoned ultramafic complex.

The study reaffirmed the Cu and Mo anomalies but failed to identify sweateners, such as Ag, Cd, W, Au and Pb to the ore element suite. The property thus has to be assessed based on base metal values alone along the southwestern margin of an ultramafic complex, and associated with volcanics units along an east-west trending valley south of the ultramafic intrusion.

The multielement study has effectively mapped the ultramafic intrusion into many more units than are mapped geologically. These may become important should at a Pt group element potential be recognized.

RECOMMENDATIONS

- Samples should be reanalyzed for Pt and Pd using a 2 ppb detection limit.
- Continued analysis of archive pulps is to be recommended in areas on the claim group where these data are not yet available.
- 3. The ICP data for Sb, W, As and Pb associated with ultramafic rocks should be reviewed, in view of the unusual matrix comprising ultramafic-derived soils.

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INTRODUCTION

In recent years exploration emphasis has shifted to Au, Ag, Pt and Pd. In view of the occurrence of extensive copper soil anomalies within each of the claims and associated ultramafic rocks, it was decided to evaluate the claim areas by reanalysis of 320 available samples for metals of interest including lead, nickel, gold, silver, platinum and palladium. A multi-element analytical technique was also selected to assist geological mapping and perhaps identify alteration zones. This report summarizes results from that work.

LOCATION AND ACCESS

The NIK claims lie within the Omineca Mining Division, 10 km NNE of the airstrip at Johanson Lake, B.C. (Fig. 1).

Access to the claims is by helicopter from Johanson Lake, located on the Omineca highway from Fort St. James. A four wheel drive access road was constructed to the property in 1977, but is probably not useable today without upgrading.

CLAIM STATUS (Fig. 2)

- 2. NIK 2 (#140(10)) 18 units recorded Sept. 16, 1976 (450 hectares)

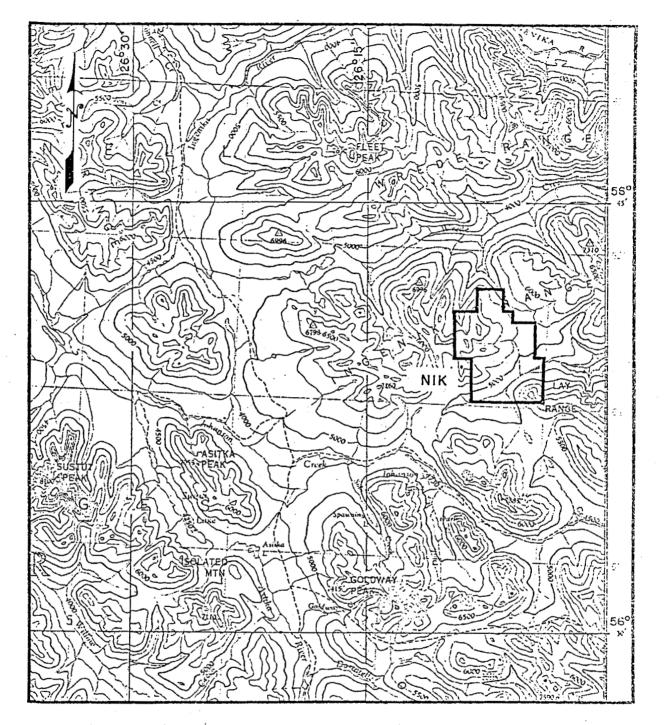




 Image: BP Minerals Limited

 TOODOGGONE - MESILINKA, B.C.

 INGENIKA - NIK

 PROPERTY

 SCALE 1 Inch = 250,000 Feet

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 F13. 1

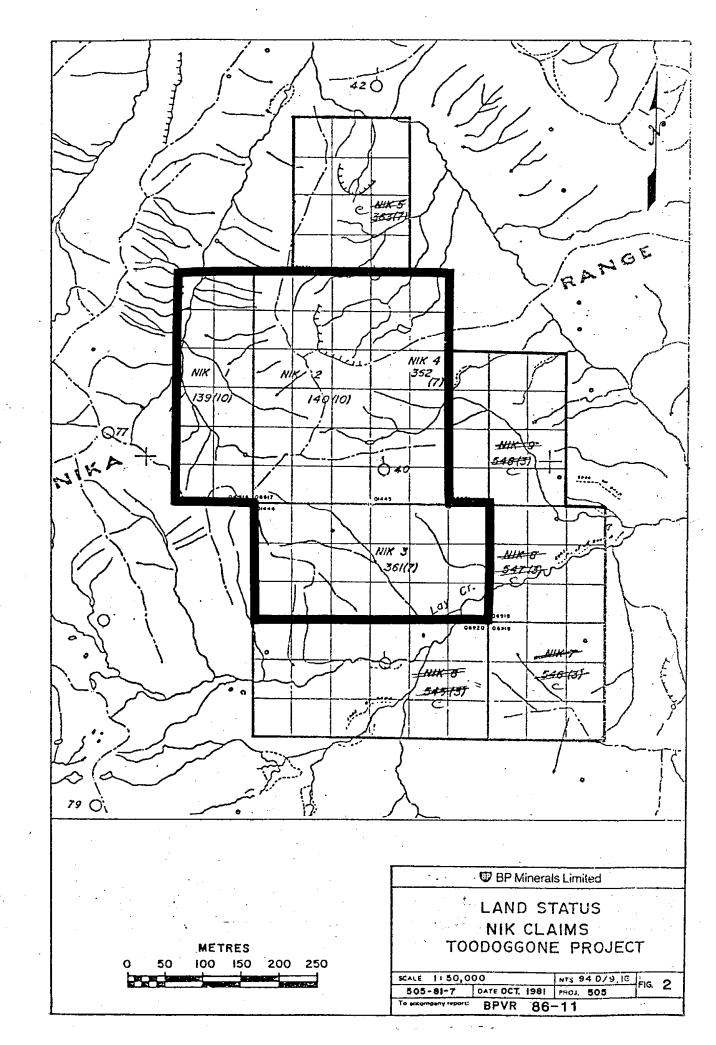
 SCALE 1 Inch = 250,000 Feet

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 To accompany report:

 BPVR 86-11



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- 4. NIK 4 (#362(7)) 12 units recorded July 19, 1977
 (300 hectares)

GENERAL GEOLOGY

Claims lie within the "Quesnel Trough", a northwest trending linear belt of Mesozoic volcanic and sedimentary units separating late Palezoic rocks of the Pinchi Geanticline in the west from Proterozoic and Paleozoic metasediments of the Omineca Geanticline in the east. The claims are underlain by Takla Group, fine- to coarse-grained pyroclastic and flow andesites along the south, southeastern and eastern margins of the claims, in contact with pyroxenite and/or peridotite of the NIK claims ultramafic pluton. Plugs and dykes of diorite, monzodiorite and quartz diorite intrude claim units. A major structural zone, labelled the NIK lineament trends northwestward through the claims. Northwestward trending thrust faults position Proterozoic and Pennsylvanian units to the northeast of the land holding.

Intense structural preparation combined with strong coppermolybdenum geochemical anomalies in overburden have attracted exploration interest to the area. Chalcopyrite and/or bornite occurrences are found in boulders within locally derived overburden or in bedrock. These grade up to 1 to 2% copper. The geology on these claim groups have never been tested for their Au, Ag, Pt or Pd potential.

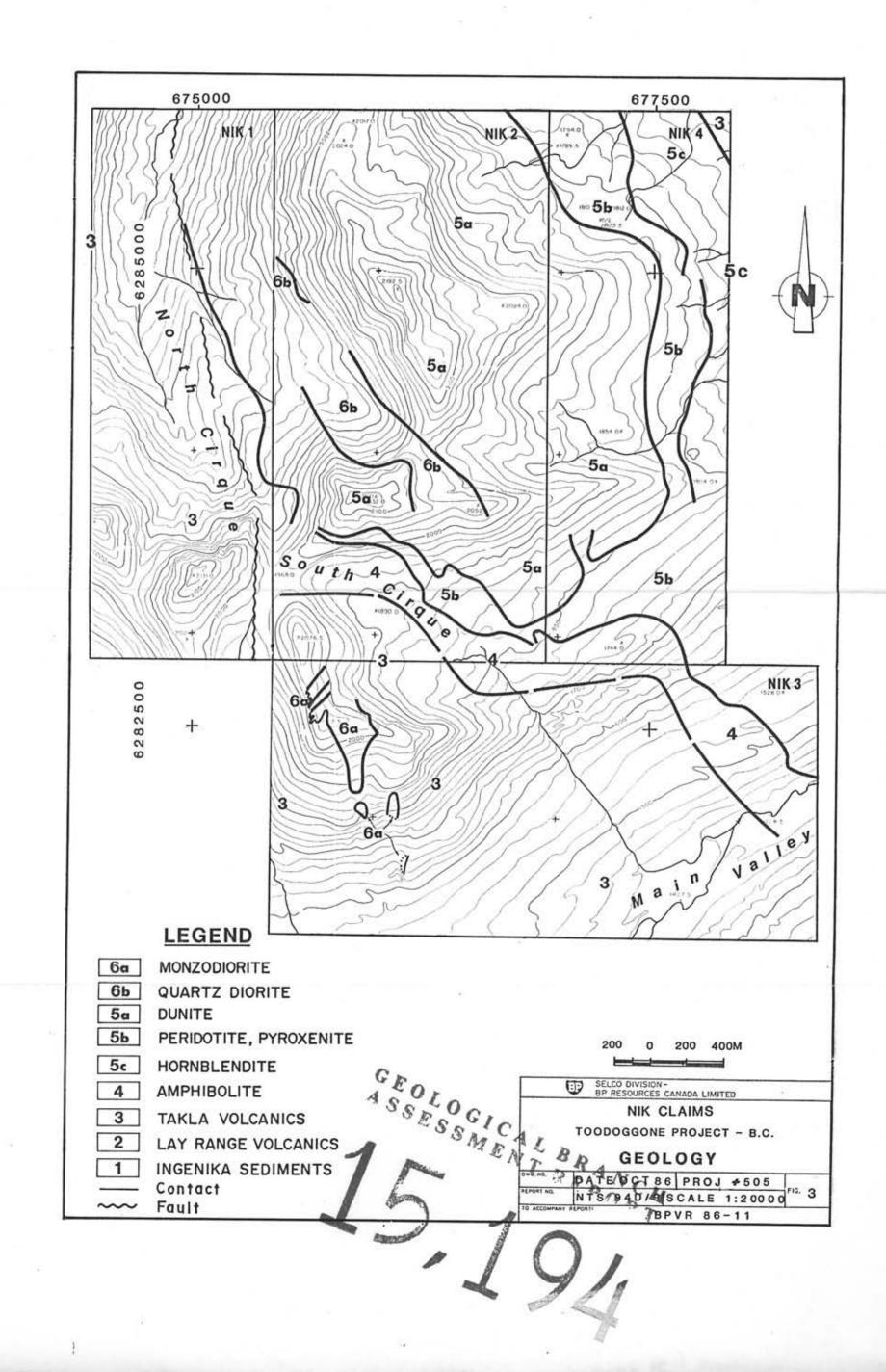
PROPERTY GEOLOGY

The NIK 1-4 claims cover most of Wrede Creek zoned ultramafic complex, the largest of several such ultramafic bodies in the McConnell Creek map-area. The complex is exposed over an area 2 km by 5 km and is elongate in a northwesterly direction (Fig. 3). A major north-trending fault, the NIK fault forms the western border of the complex, while faults generally trending northwest bound the complex on its northeastern and eastern sides. To the south and southeast, the ultramafic rocks are in intrusive contact with hornfelsed volcanic units of the Takla Group.

a) Ingenika Sediments and Lay Range Volcanics

The Ingenika Sediments and Lay Range Volcanics (units 1 and 2 in the geologic legend) occur to the northeast of the claim area and are in fault contact both with each other and the ultramafic complex. The Ingenika Sediments, of Proterozoic age, comprise a monotonous sequence of

.3.



quartzo-feldspathic gritty sandstone, siltstone, shale and minor conglomerate and limestone with metamorphic equivalents up to kyanite grade. The Lay Range Volcanics are of Pennsylvanian age and consist of intermediate to mafic lithic tuff, breccia and pillow lava.

b) Takla Volcanics and Amphibolite

Rocks of the Upper Triassic Takla Group (unit 3) make up a thick succession of volcanic and sedimentary strata striking in a general east-west direction and dipping moderately to the south. Massive andesitic, augite-rich, coarse pyroclastics and flows pass upward into fine-grained tuffs and tuffaceous arenites containing interbeds of argillite and limestone. Along the southern margin of the ultramafic complex, hornfelsing of the volcanics has produced an amphibolite (unit 4) aureole up to 400 m in width. Hornblende hornfels, displaying rare relict volcanic textures, occurs immediately adjacent to the ultramafic complex. This grades outward into rocks of the albite-epidote hornfels facies in which relict augite and relict pyroclastic textures are evident.

c) Ultramafic Rocks: Dunite, Peridotite-Pyroxenite,

The ultramafic complex displays a crudely concentric zoning,

Hornblendite (Units 5a,b,c)

progressing outward from a core of dunite to a rim of pyroxenitic rocks. Within this rim of pyroxenitic rocks, lithologies are seen to pass gradationally outward from olivine pyroxenite to pyroxenite, to hornblende pyroxenite <u>+</u> olivine. Peridotite occurs as small irregular zones within the pyroxenite. Extensive metasomatism at the margin of the ultramafic complex has transformed much of the peripheral hornblende-olivine pyroxenite into an altered rock referred to here as metasomatic hornblendite.

The dunite core dominates the ultramafic complex both areally and topographically. Massive dunite, outcropping over an area approximately 2 km by 3 km, forms the broad ridge central to the claim area.

Dunite is distinguished by a commonly well-developed skin of orange-brown weathering which ranges up to 3 cm in thickness. On fresh surfaces, the dunite displays a characteristic granular texture with medium-grained (1-4 mm), black olivine composing 95 to 98 percent of the rock.

Slightly finer-grained chromite makes up 2 to 5 percent of the rock, occurring as disseminations and rare schlierenlike concentrations. These latter concentrations of

chromite are the only suggestions of cumulate or compositional layering evident in the dunite. A moderately to well-developed set of orthogonal fractures is common in the dunite.

Although less well-exposed than the dunite for the most part, pyroxenitic rocks appear to constitute a continuous rim ranging from 50 to greater than 1000 m wide on the northern, eastern and southern sides of the dunite. In plan, the pyroxenitic unit is widest in the southeast and tapers considerably to the west and northwest. On the western side of the dunite, the pyroxenitic rim has been truncated by a major north-trending fault.

Where exposed, the contact between dunite and the pyroxenitic unit is very sharp, occurring within 5 m. The contact itself is locally a zone of weakness and is marked topographically by curving gullies.

Olivine pyroxenite is invariably found immediately adjacent to the dunite contact and is commonly present for up to 100 m outward. Where the pyroxenitic rim tapers in the

southwest of the complex, only 50 m of olivine pyroxenite separates dunite from hornfelsed country rocks.

Olivine pyroxenite is a medium-grained equi-granular rock which weathers to a grey-green colour. On fresh surfaces, invariably serpentinized olivine, comprising 3-10% of the rock, appears as small blackclots interstitial to the generally unaltered clinopyroxene. Olivine is less commonly pseudomorphed by strongly coloured green bowlingite or red-brown iddingsite.

The gradational nature of the contact between olivine pyroxenite and pyroxenite is best seen in drill core. Olivine gradually becomes more and more sporadic in occurrence before disappearing completely. This change generally occurs within tens of metres. Interestingly, within some of these sporadic zones of olivine occurrence, the olivine may constitute up to 50 percent of the rock and in these cases could more correctly be called peridotite. Peridotite pods within the pyroxenite outcrop in at least two places. Peridotite is easily recognized by its irregular weathered surface due to the differential weathering of clino-pyroxene and olivine. Also, peridotite tends to be more resistant than the surrounding pyroxenite, owing to the usually high degree of serpentinization of the olivine.

Hornblende-olivine pyroxenite was not noted in outcrop and was only seen in a single diamond drill hole where it constitutes the peripheral 200 m or more of the ultramafic complex. In hand-specimen, the rock is dark black, very strongly magnetic, and displays abundant hornblende crystals commonly up to 1 cm or more in length.

Metasomatic hornblendite outcrops intermittently along the northern, eastern and southern edges of the ultramafic body but is most prevalent in the southeastern portion of the complex. Although it appears to constitute a relatively large proportion of the ultramafic body areally, the extent of this unit is probably exaggerated somewhat by the combined effects of topography and a possible southeasterly plunge to the complex.

Metasomatic hornblendite is considered by the writer to be the altered equivalent of hornblende-olivine pyroxenite based on its relative position, distribution and contact

relations within the complex, its highly-magnetic and hornblende-rich nature, and its extensive metasomatic alteration. The hornblendite is a coarse-grained rock containing 40 to 80 percent hornblende in a matrix of white to light green interstitial material and magnetite.

The contact between metasomatic hornblendite and adjacent pyroxenite is broadly gradational over tens of metres. Outward from pyroxenite, the rock progresses to pyroxenite replaced or "dyked" by hornblendite, to hornblendite containing small unreplaced zones of pyroxenite (and/or hornblende-olivine_pyroxenite), to massive hornblendite.

d) Monzodiorite and Quartz Diorite

Numerous dykes, ranging from .5 m to 150 m in width, intrude the ultramafic complex and adjacent Takla Group volcanics. Dyke rocks vary considerably both in texture and composition. Equigranular to porphyritic diorite, quartz diorite and monzodiorite are the predominant lithologies, but granodiorite and rare quartz-k-feldspar pegmatite are also present. A large intrusive body of mainly monzodiorite composition, known as the Fleet Peak pluton, outcrops to the north within 3 km of the ultramafic complex. This pluton is Jurassic in age and correlative with the Omineca Intrusions. Dioritic to granitic dykes evident in the study area are considered by the writer to be apophyses of this pluton, representing early to late differentiates.

TOPOGRAPHY

The NIK claims cover an "F" shaped ridge, the adjoining valley to west ("Fault Creek") and south and the area to the east; including the "Main Valley" (containing the south fork of Wrede Creek) and the westernmost tip of the Lay Range. The "F" shaped ridge has steep slopes along its western, southern and northern sides but opens broadly and gradually to the valleys on the north The Lay Range has steeply sloping sides on its western and east. and northern flanks. The valleys on the north and east of the "F" shaped ridge, the "Main Valley" and the valley of Upper Lay Creek exhibit the characteristic "U" shape erosional form produced by valley glaciers. "South Cirque" is a gently rolling, broad, hanging wall valley. "North Cirque" has a narrow, steeply sloping headwall typical of local alpine glaciation. Elevations range from 1400 m in the "Main Valley" to 2200 m on top of the "F" shaped ridge and the Lay Range.

VEGETATION

Timberline is locally variable but averages about 1700 m in elevation. The forest cover below this level is predominantly coniferous; consisting of black spruce and balsam fir with alder dominating large seepage areas and "Main Valley" bottom land. Grass, moss, lichens and alpine flowers are common above 1700 m in "North" and "South" cirques. Vegetation is sparse over much of the northern and central portions of the area. The ultramafic rocks are deficient in potassium, phosporus and other mineral constituents needed to aid plant growth.

OVERBURDEN AND SOILS

Overburden comprises locally derived residual material at upper elevations, particularly over ultramafic units. Downslope, colluvial movement or landsliding has produced talus fans aproning the mountain ranges. Glacial tills are thin except perhaps along the main valley of the tributary of Wrede Creek. In the latter environment, alluvial deposits of the creek are also prominent.

Overburden thickness generally averages 1 to 3 m at higher elevation, and between 5 m and 30 m in cirque valleys and the Main Valley. A solifluction lobe is a prominent feature of North

Cirque. Thick overburden accumulations in the two cirque valleys is a reflection of extensive landsliding rather than being due to glacial action.

Soils are weakly developed. They generally have a thin leaf Humus (LH) horizon several cm thick, underlain by a medium brown zone slightly modified from underlying parent material (BM). Accumulation of Fe to form a BF horizon defined as a medium red brown layer, is not common.

SAMPLE ANALYSIS

Soil samples at 320 sites (Fig. 4) have been reanalyzed. Samples comprise inorganic material collected from the top of the "B" soil horizon in 1976-1977 and stored as pulps on behalf of Selco Division by Vangeochem Labs Ltd. They were required to subject the samples to a multi-element analysis, as well as determine their Au, Pt and Pd contents. Analytical methods are summarized in Appendix 1.

METHOD OF DATA EVALUATION

Appendix 2 lists field technical data and analytical results in three parts, appropriately numbered in the upper right hand

corner of each page. Histograms were drawn to summarize the distribution of metal values in soil samples on the NIK claims (Fig. 5).

The interpretation of histograms procedure is relatively straightforward: subjectively determine population groupings on histograms constructed using either arithmetic or geometric (logarithmic) concentration intervals and then highlight the upper tails of each population. The influence of exceptionally high values can be minimized by truncating for this purpose. Histogram interpretation has been used to establish contour - levels for the geochemical maps of Fig. 6.

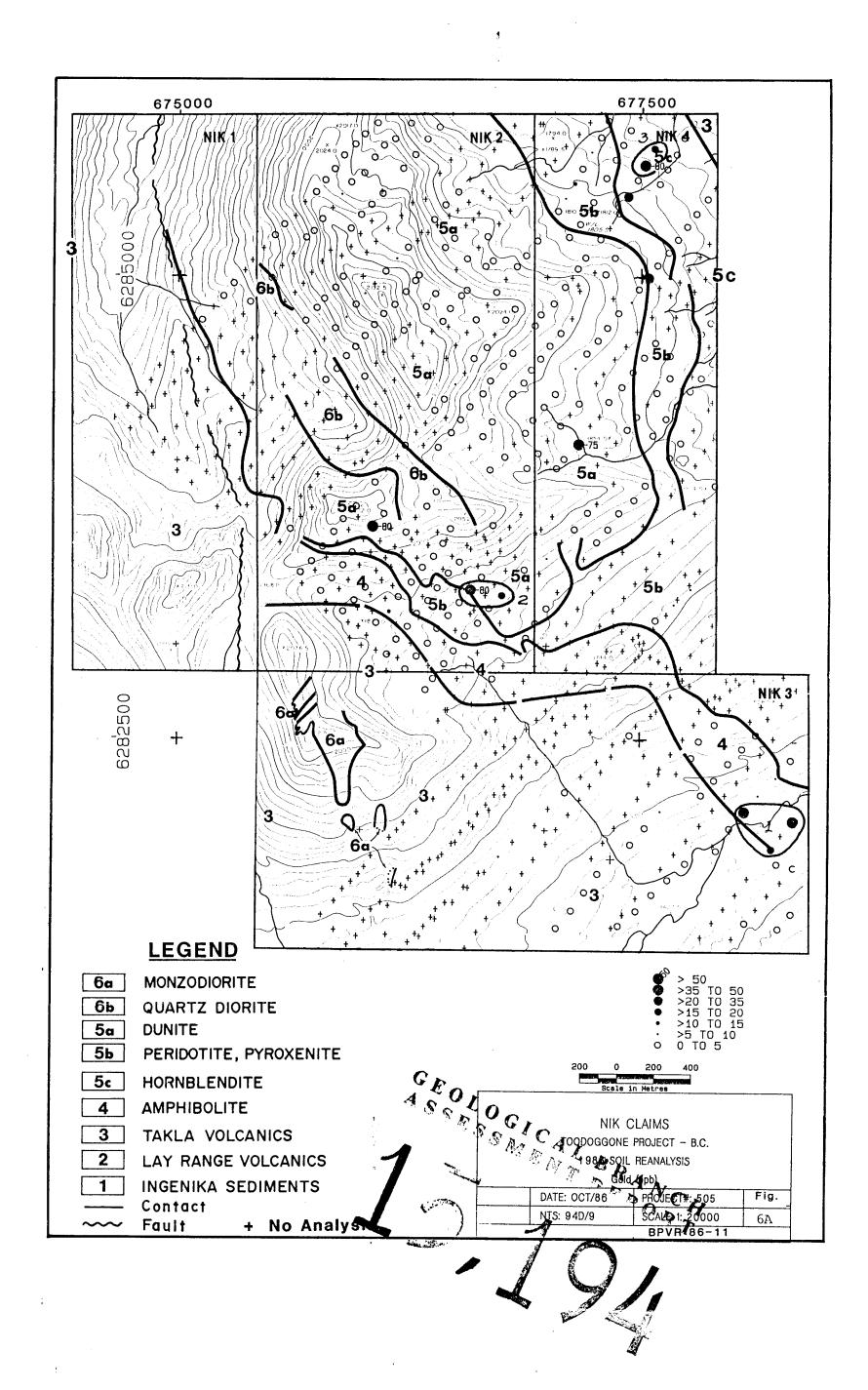
DESCRIPTION OF RESULTS

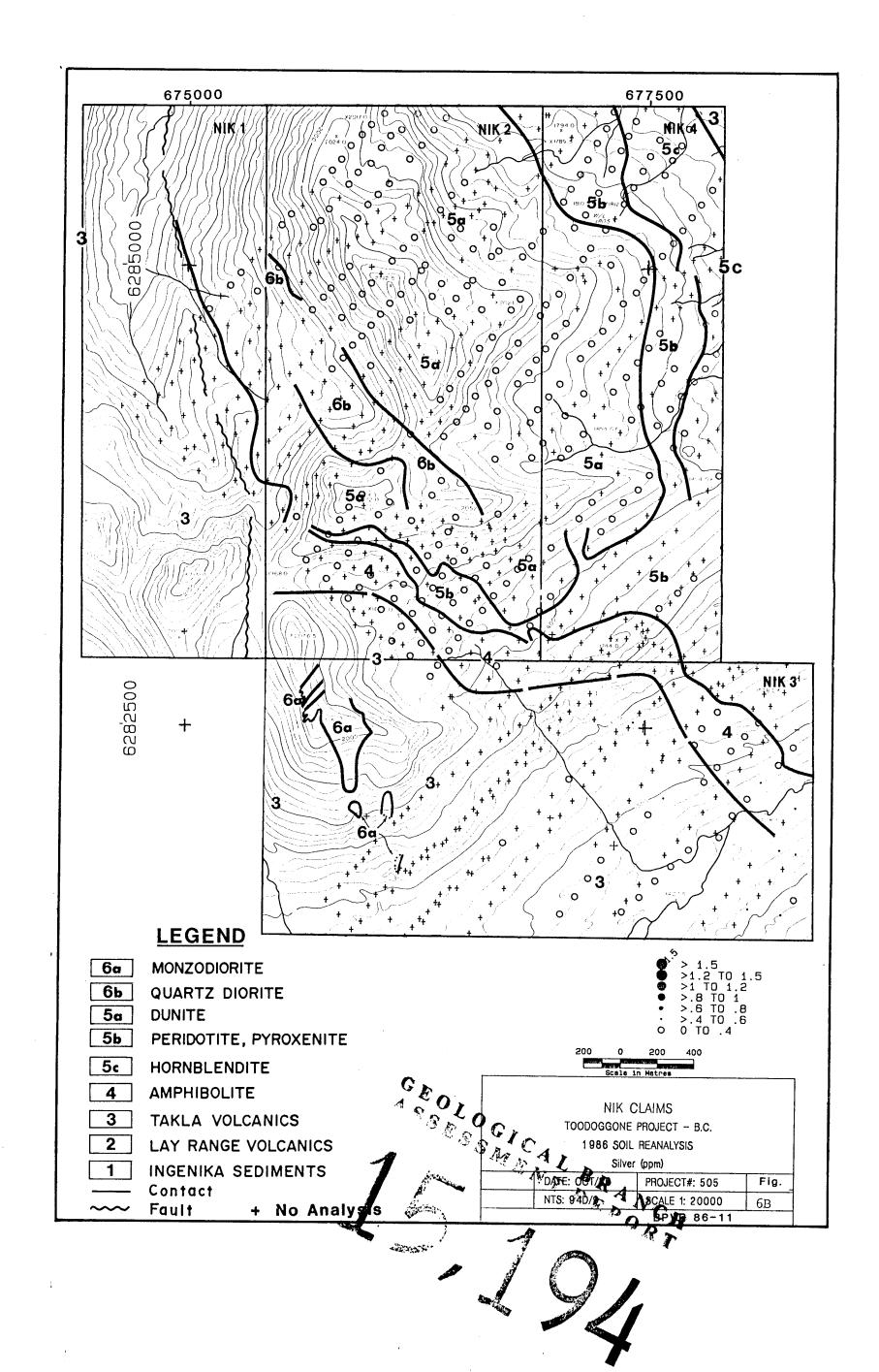
1. Introduction

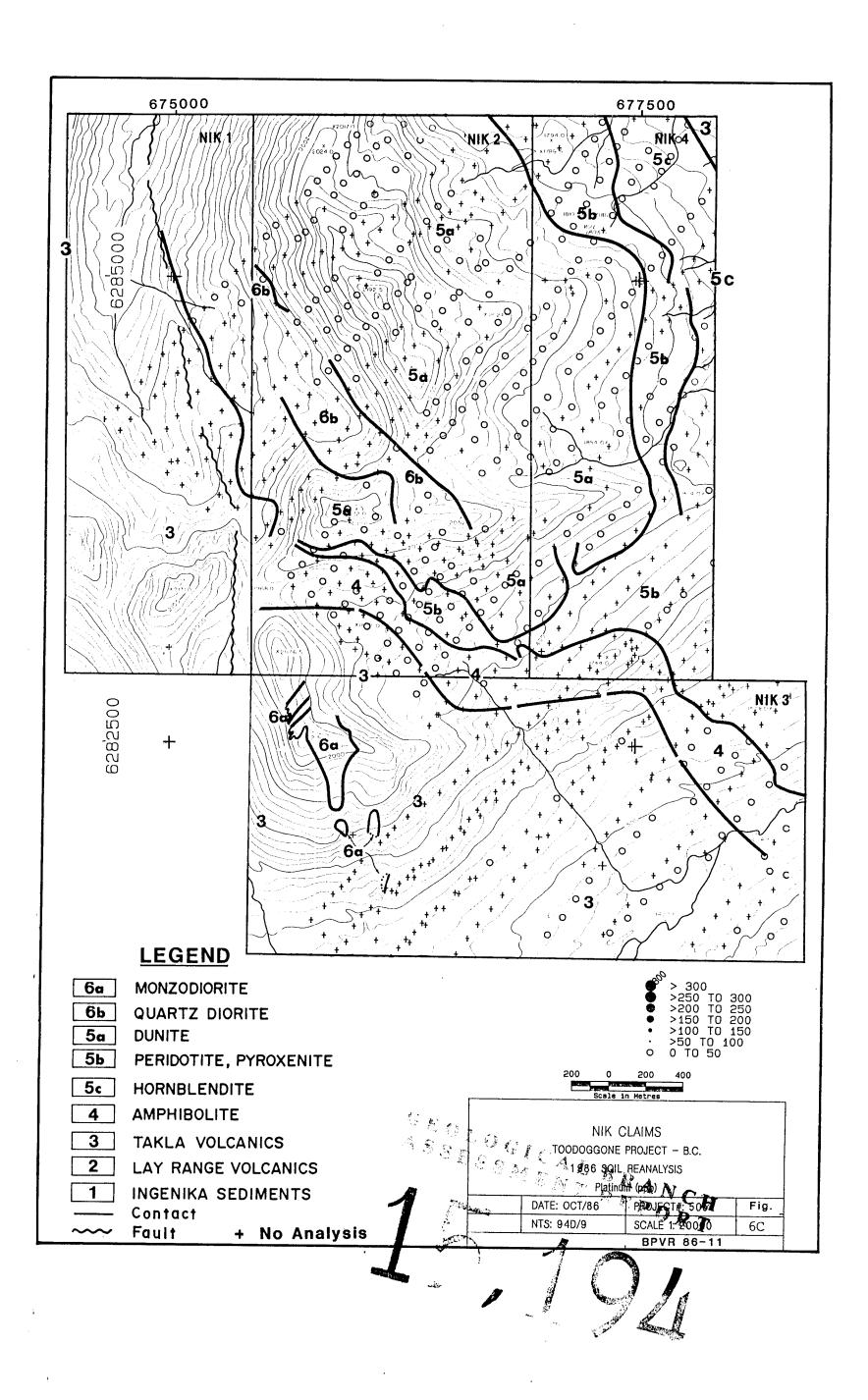
Geochemical data for the NIK claims are presented on Fig 6. reanalyzed for purposes of this report, the location is nevertheless indicated by a cross (+).

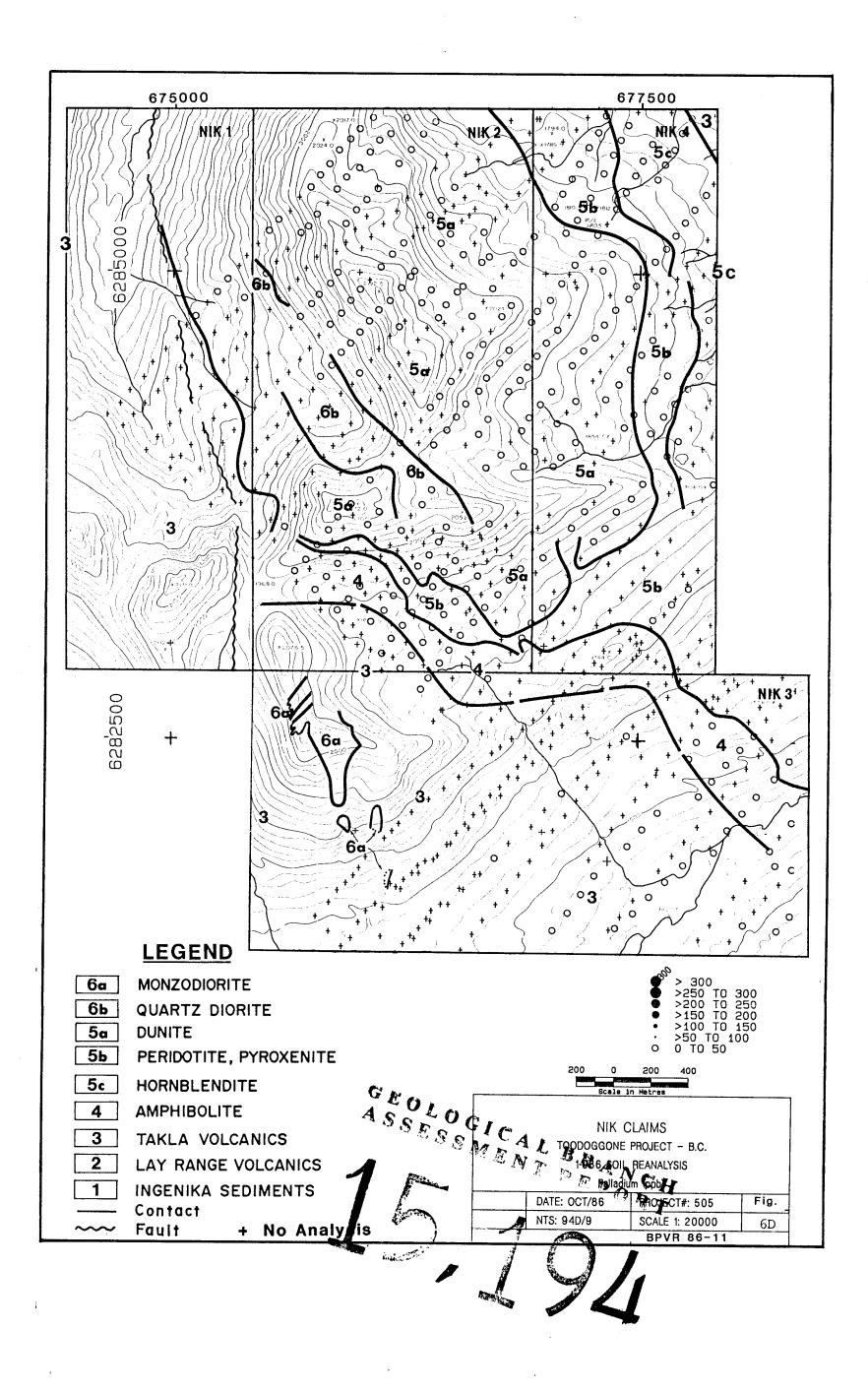
2) <u>The Precious Metals</u> Au (Fig. 6a), Ag (Fig 6b), Pt (Fig 6c), Pd (Fig. 6d).

Of all the precious metal data, only 3 multisample gold anomalies are outlined. Remaining Au values are at









backgrounds of less that 10 ppb or are represented the odd isolated high value of up to 80 ppb.

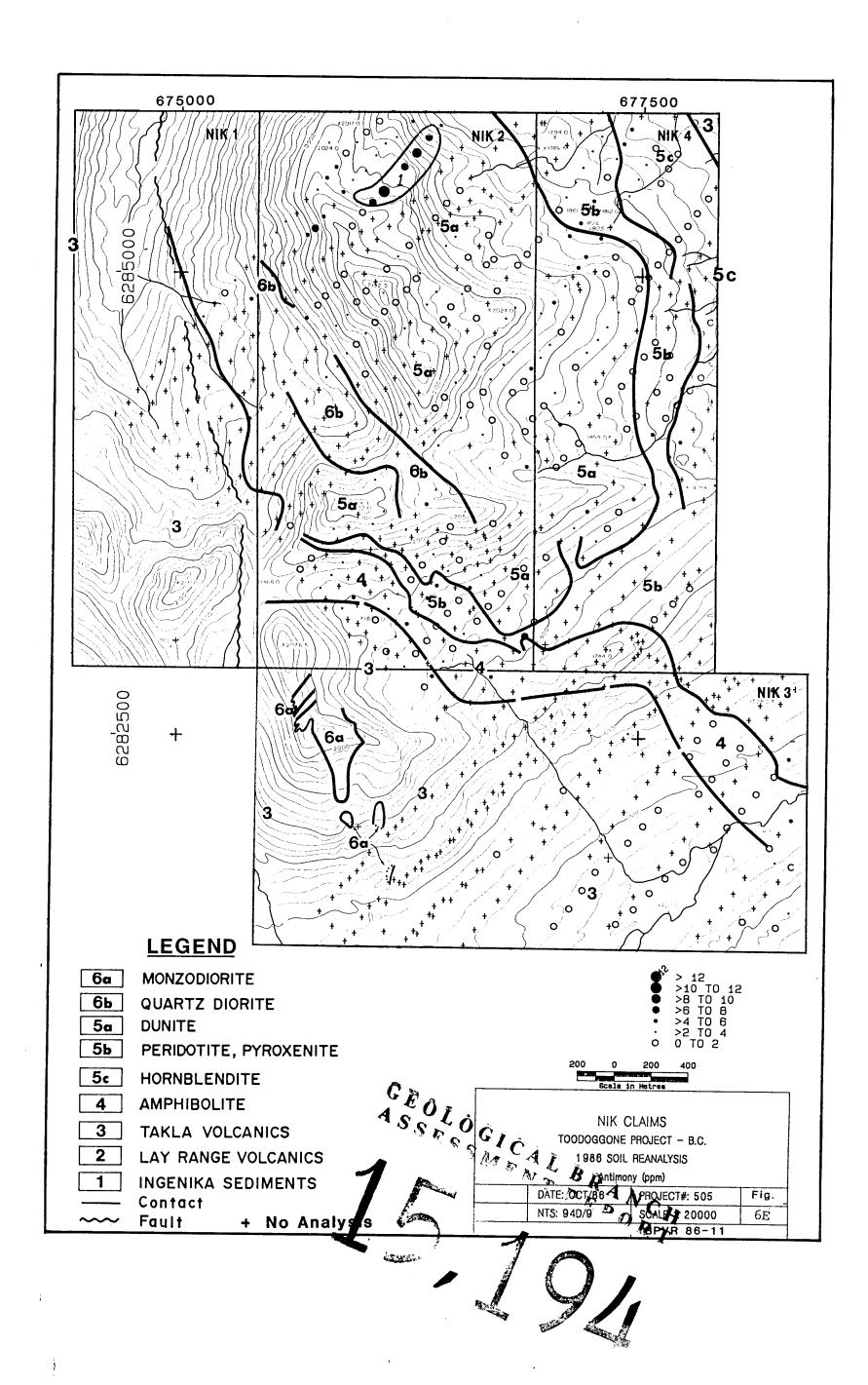
3. The Pathfinder Elements Sb (Fig. 6e), As (Fig. 6f), Bi

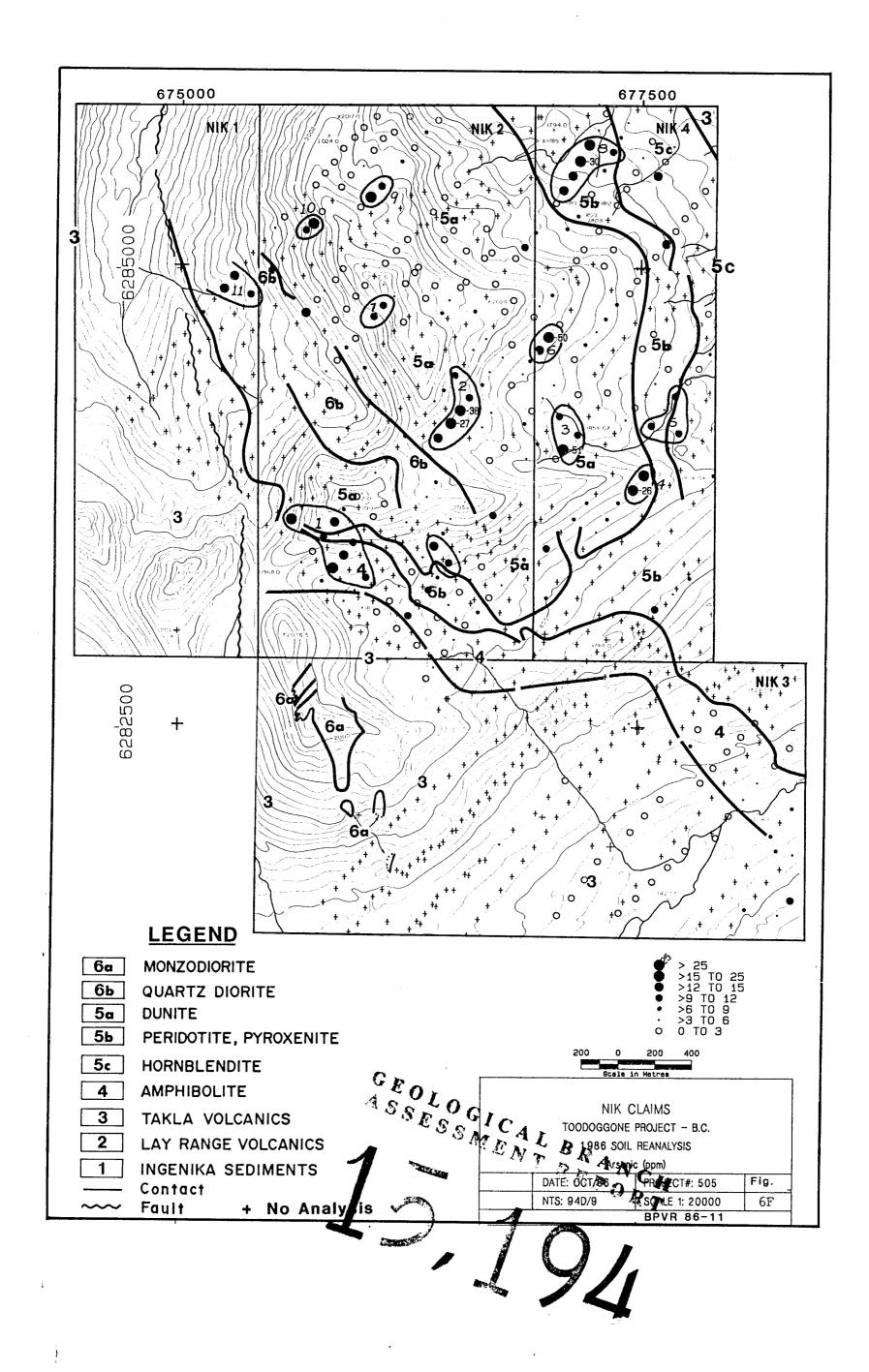
(Fig. 6g).

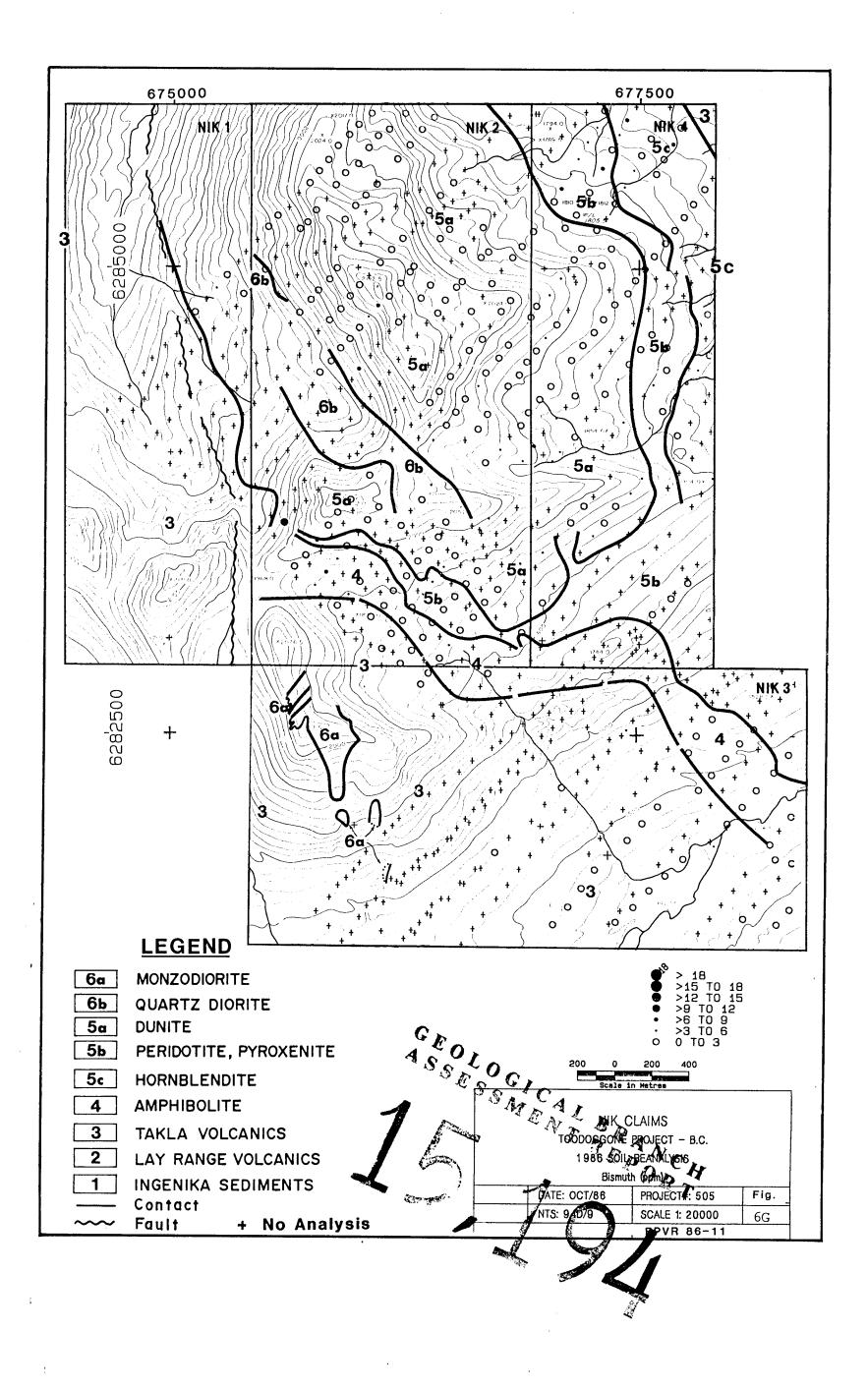
One Sb anomaly is outlined in the north, associated with the dunite. Sb values are generally enhanced over the dunite, and it is suspected that a spectral interference might be spuriously producing the Sb distribution.

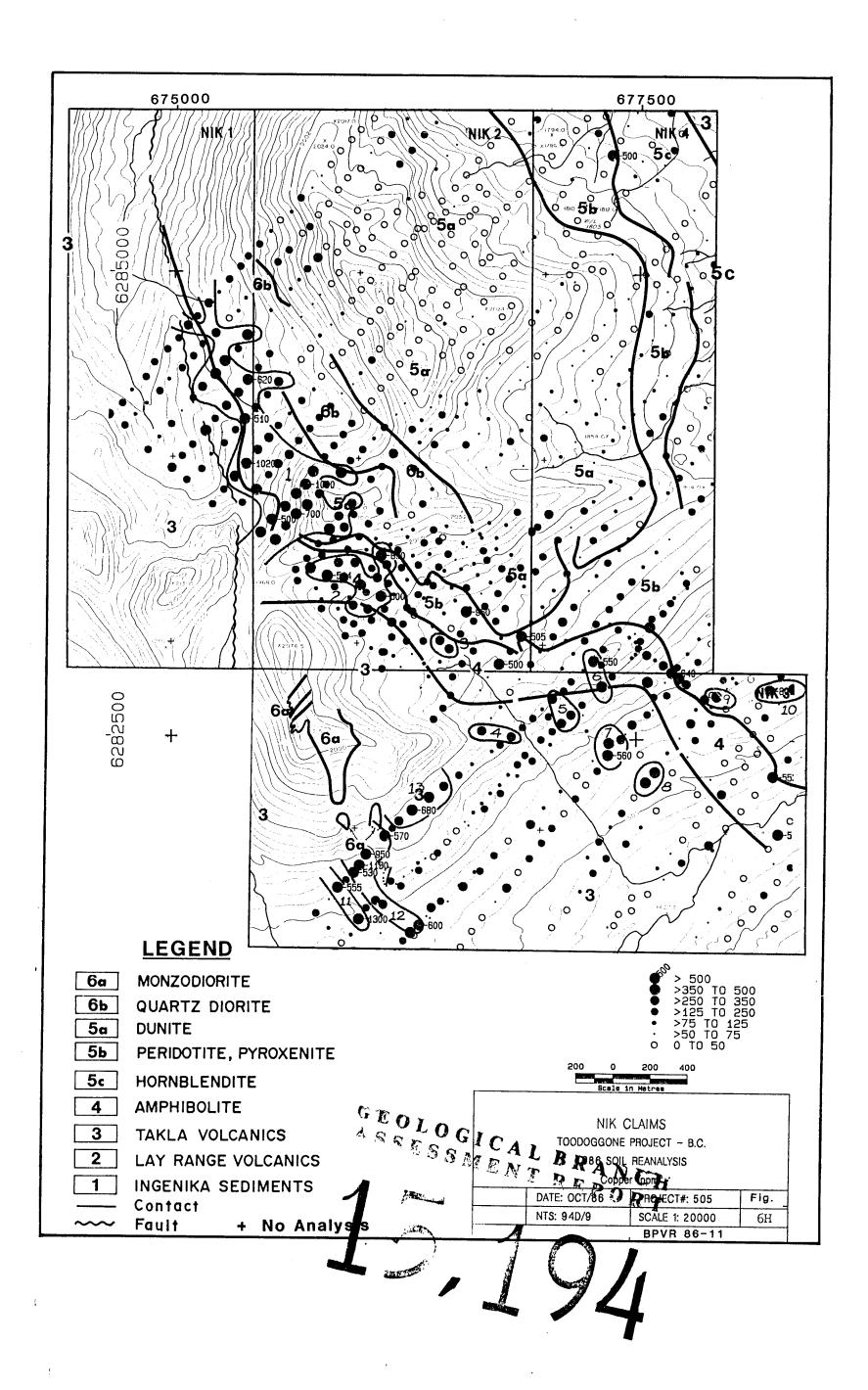
Eleven multisample As anomalies exceed a threshold of 12 ppm, to a maximum of 50 ppm. The largest anomaly is 600 m long and 200 m wide. The majority of the As anomalies appear associated with dunite or peridotite/pyroxenite which generally comprise clusters of two or three contiguous samples. Average As background over these geologic units is also somewhat enhanced compared to the volcanics. Bi levels do not vary sufficiently above background to be considered anomalous.

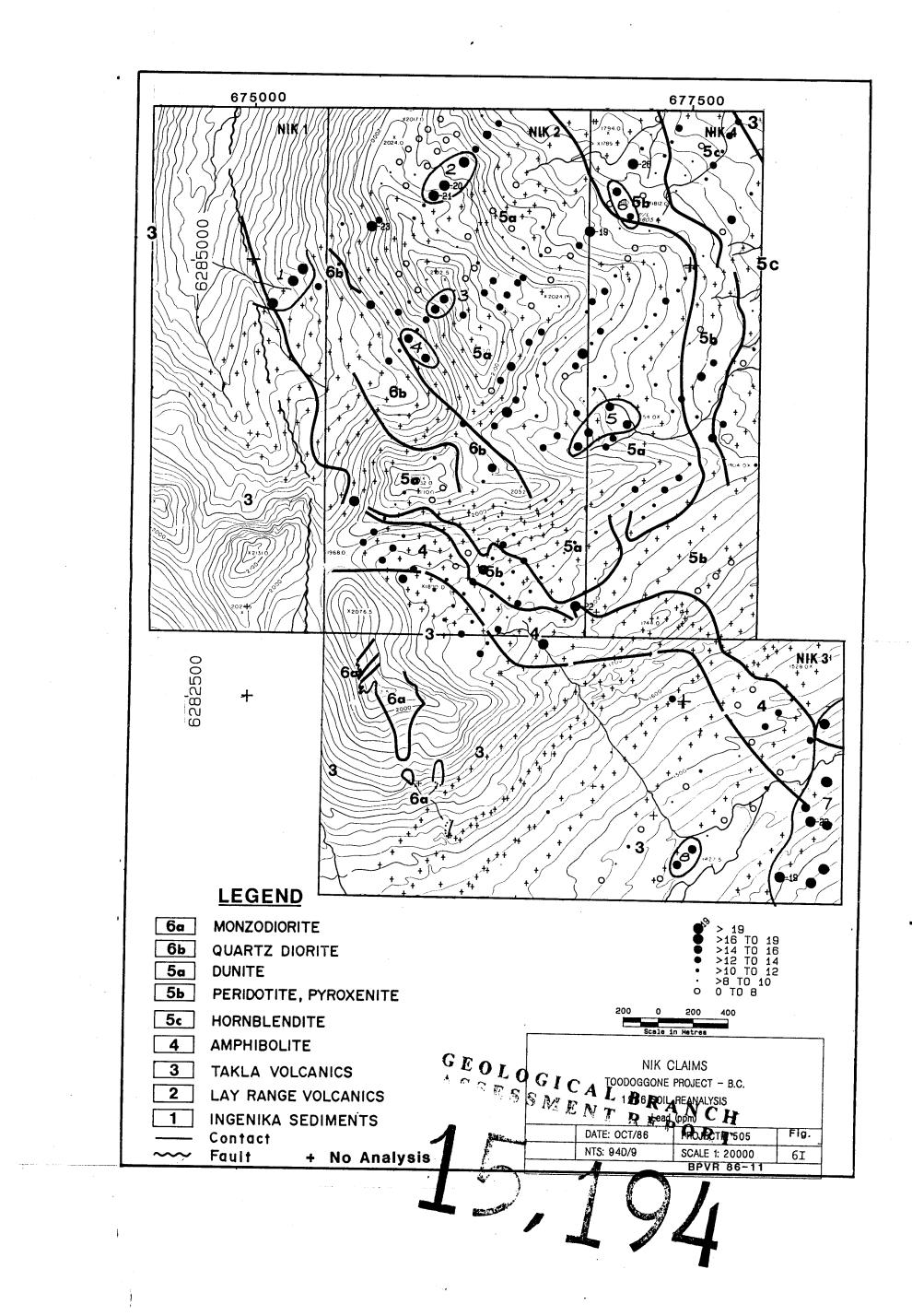
4. <u>The Base Metals</u> Cu (Fig. 6h), Pb (Fig. 6i), Zn (Fig. 6j), Cd (Fig. 6k), Mo (Fig. 6l), W (Fig. 6m). Descriptions of the Cu, Mo and Zn distributions have been reported previously. These have not changed, based on the



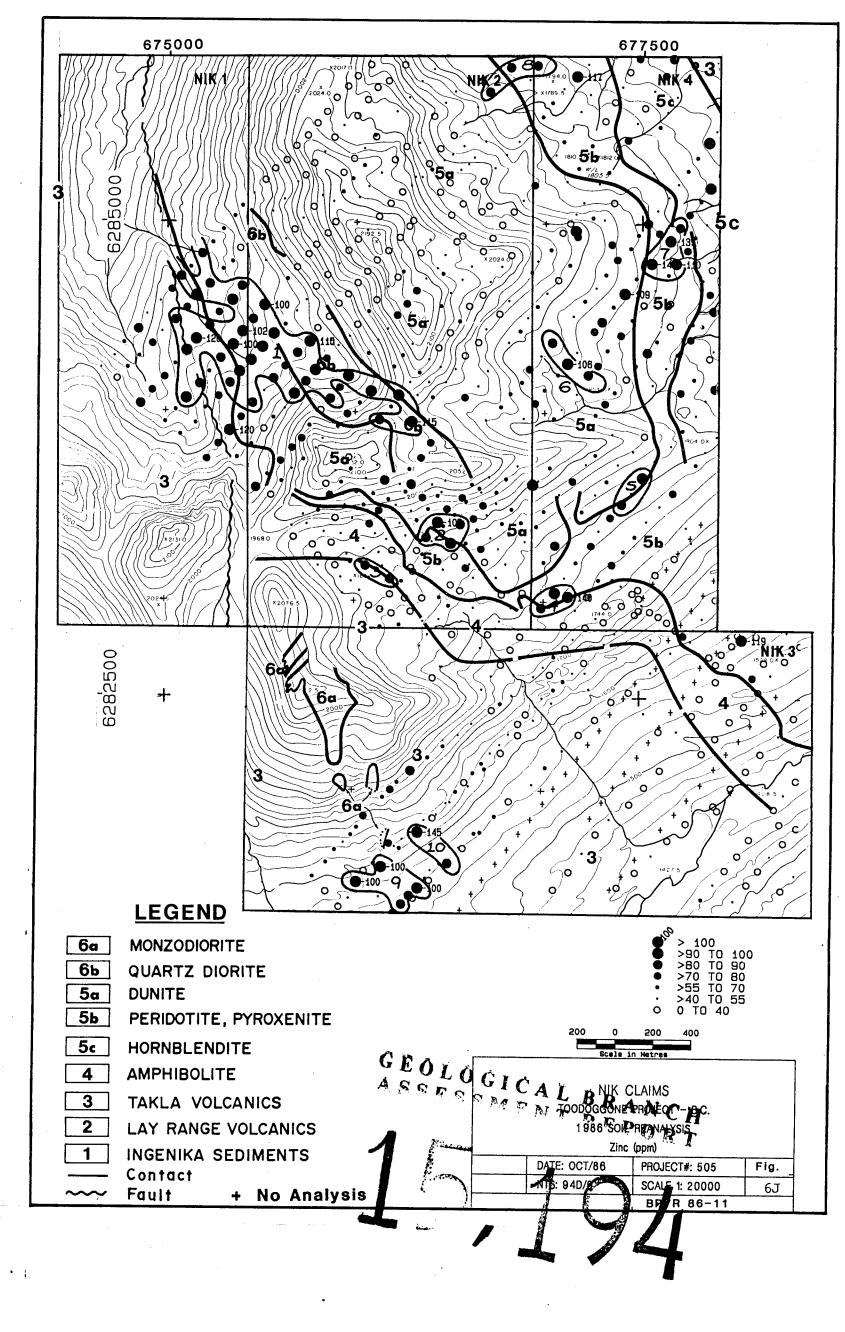




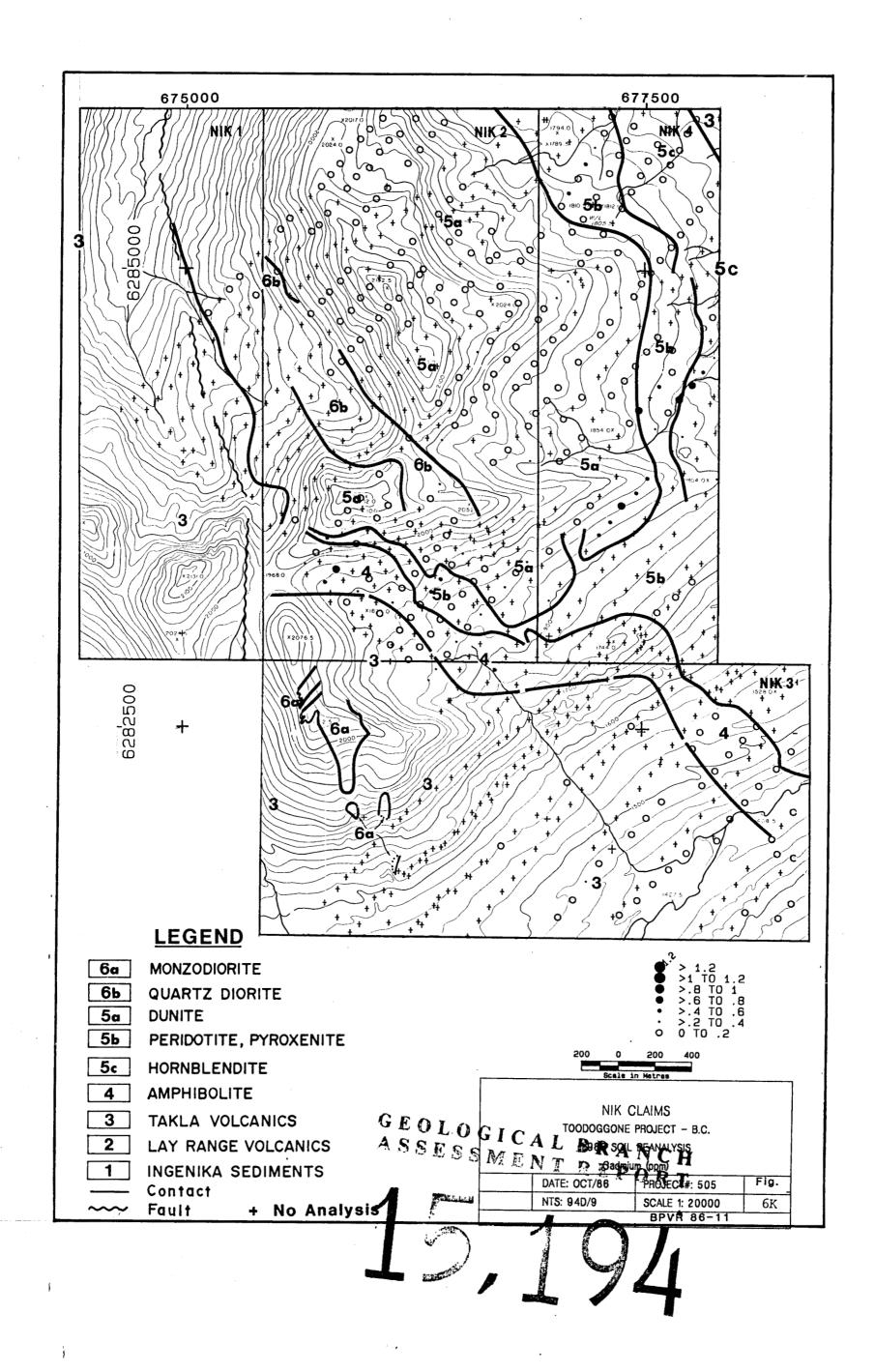


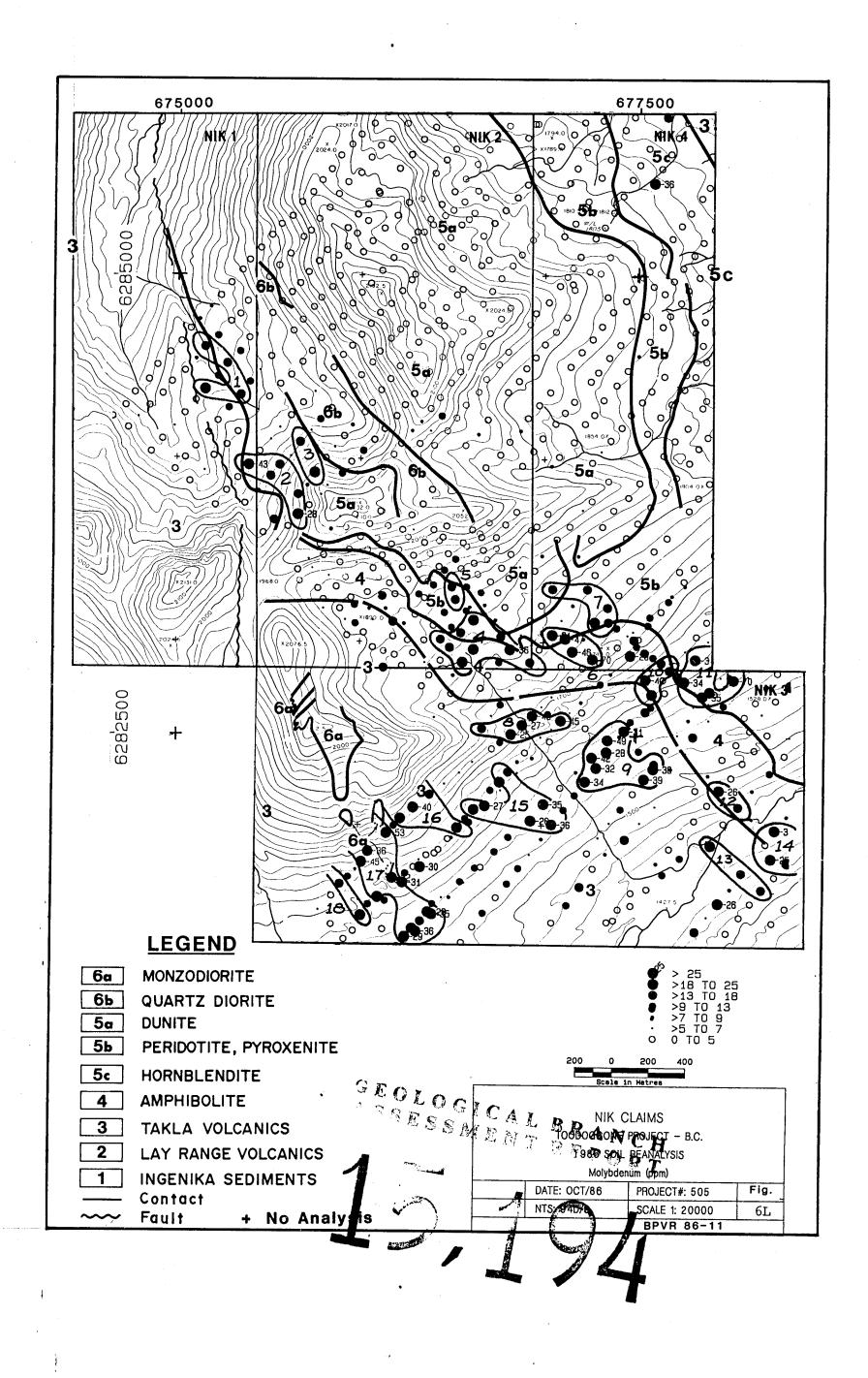


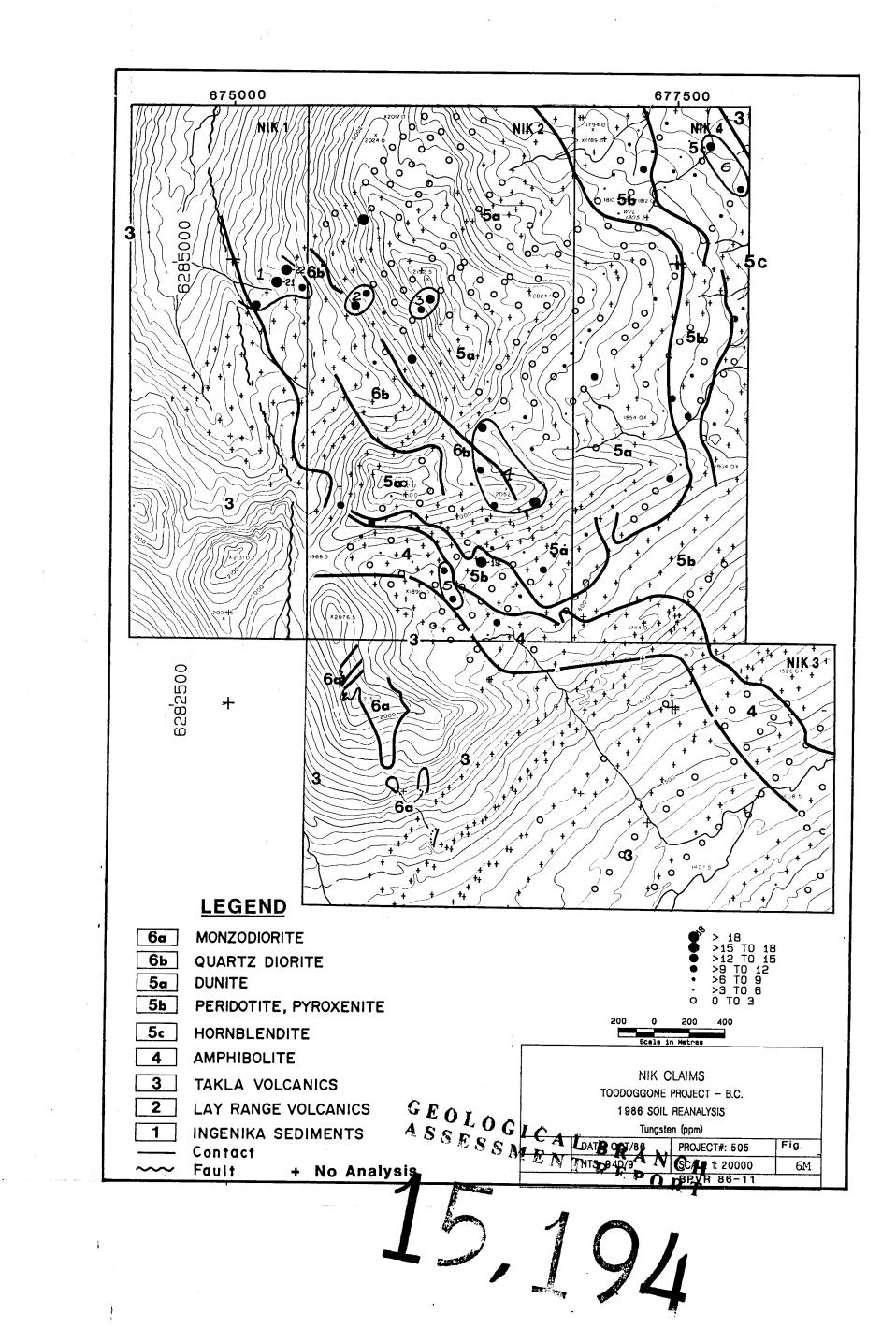
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ICP reanalysis. To summarize findings, Cu has accumulated along the NIK linear, particularly in the North Cirque. Anomaly 1 is over 1 km long and up to 400 m wide where Cu values exceed 250 ppm. South Cirque is associated with similarly enhanced values. Geochemical Cu patterns in North Cirque are readily explained by the occurrence of known mineralized intrusive boulders in the overburden. Cu anomalies 11 through 13 likewise are directly explained mineralized intrusive boulders in talus deposits along the western portion of NIK 3. Anomaly 4 through 10 in the Main Valley lie along the NK fault tread and the margins of the ultramafic complex. They have not been explained. Maximum Cu contents are in the range of 500 to 1000 ppm.

The dunite is a Cu-poor unit, being associated with values less than 75 ppm with a core of less than 50 ppm concentrations. Slightly enhanced Cu backgrounds of 75 to 225 ppm characterize pyroxenite - peridotite-hornblendite units. In this respect, the Cu patterns are parallelled by the Zn distribution which appears to follow underlying geology. Zn values are generally low, at less than 40 ppm, in the core of the dunite, and are enhanced to the 70 to 100 ppm range at the dunite margins or associated with pyroxenite-peridotite. The largest anomaly, No. 1 in North

Cirque, exhibits little internal contrast, suggesting lithological rather than sulphide control. Absence of anomalous Cd values would confirm this interpretation. Elsewhere, enhanced Zn contents are seen in the southwest of NIK 3; these coincide with Cu anomalies, but are probably also lithologically controlled.

Mo accumulation is found along the southwestern margins of the ultramafic intrusion and within the Main Valley. Anomalies 1 to 3 in North Cirque and 4 and 5 in South Cirque are readily explained by molybdenite occurring in bedrock or in glacial/talus float. Anomalies in the Main Valley have not been adequately explained. Maximum values in the latter environment are in the 25 to 50 ppm range and comprise clusters of 5 or more contiguous samples in zones averaging about 400 m in diameter.

The Pb data are new but not particularly interesting. Maximum values average around 20 ppm. Higher values are associated with all geological environments. W was also detected at levels above 9 ppm, primarily along the southwestern portion of the ultramafic unit. The significance of the W values is uncertain. If real, they are certainly anomalous.

5. The Rock Forming Elements: Co (Fig. 6n), Ni (Fig. 6o), Cr (Fig. 6p).

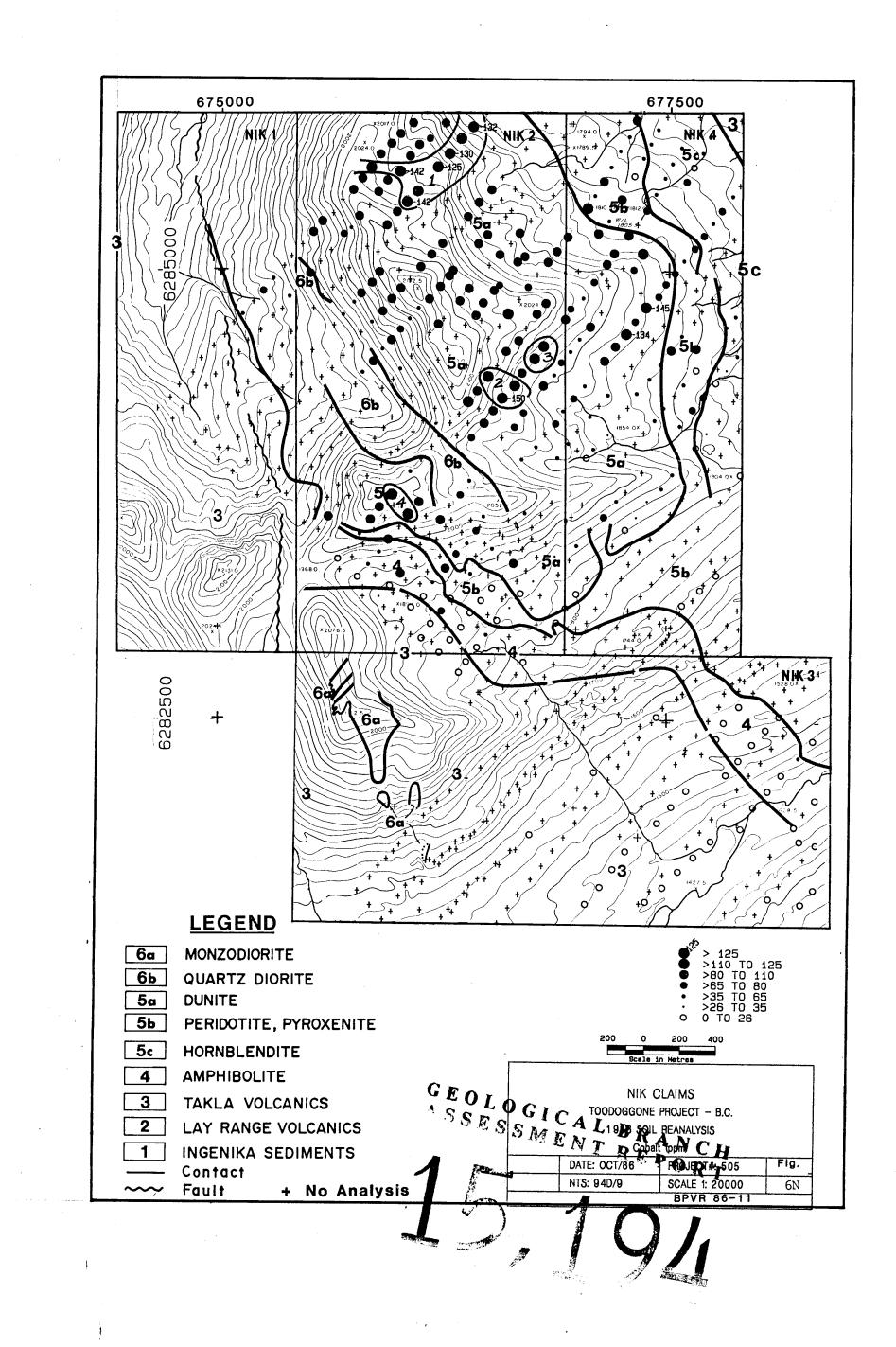
Co and Ni contents are enhanced over the dunite, with a cluster of higher values overlying the northern portion of NIK 2. Maximum values average around 125 ppm and 1700 ppm, respectively. Cr values also cluster into zones exceeding 250 ppm leachable metal, along the margins of the dunite, typically overlying peridotite/pyroxenite. Maximum leachable Cr values average 400 ppm.

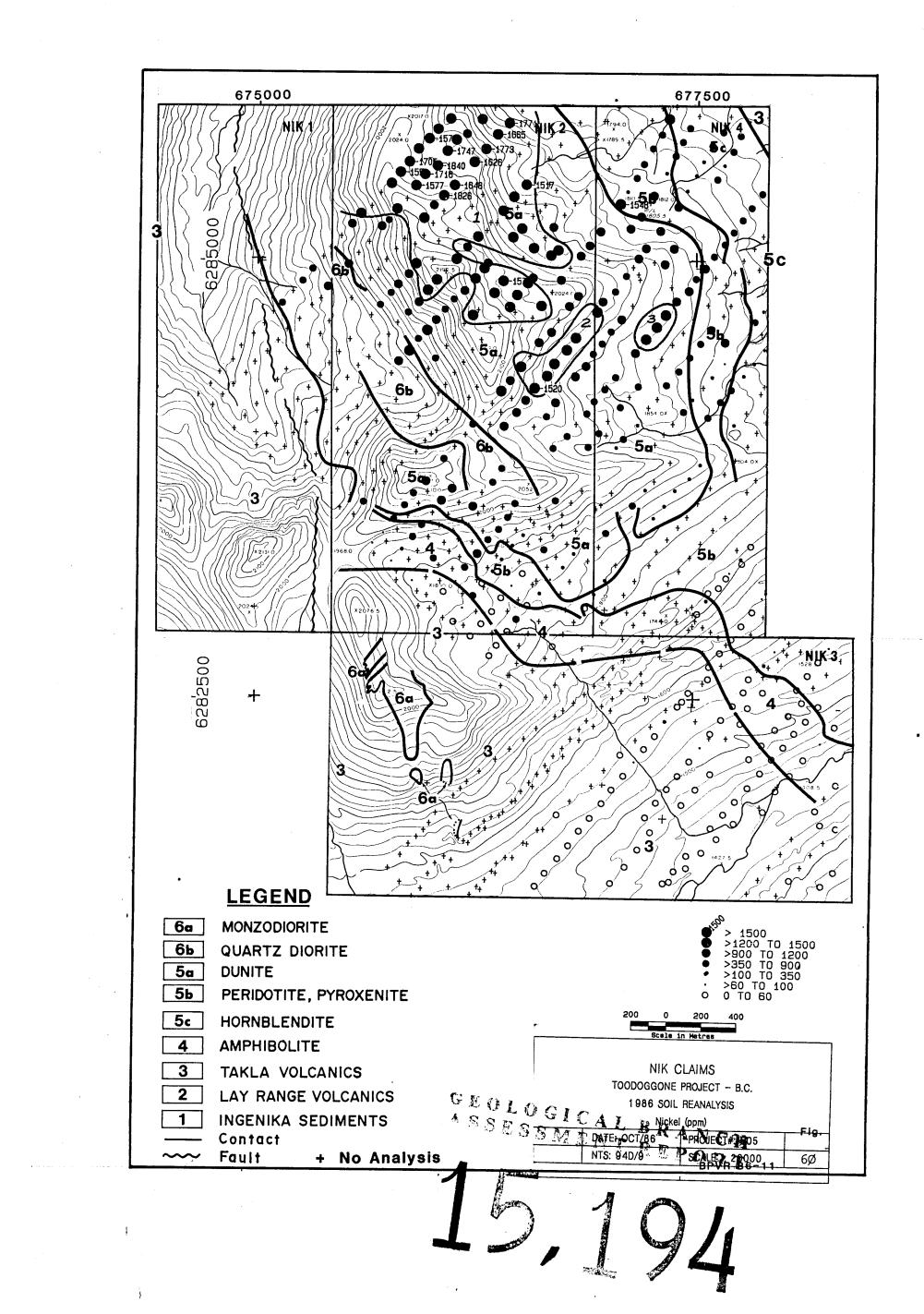
6. Manganese (Fig. 6q) and Iron (Fig. 6r)

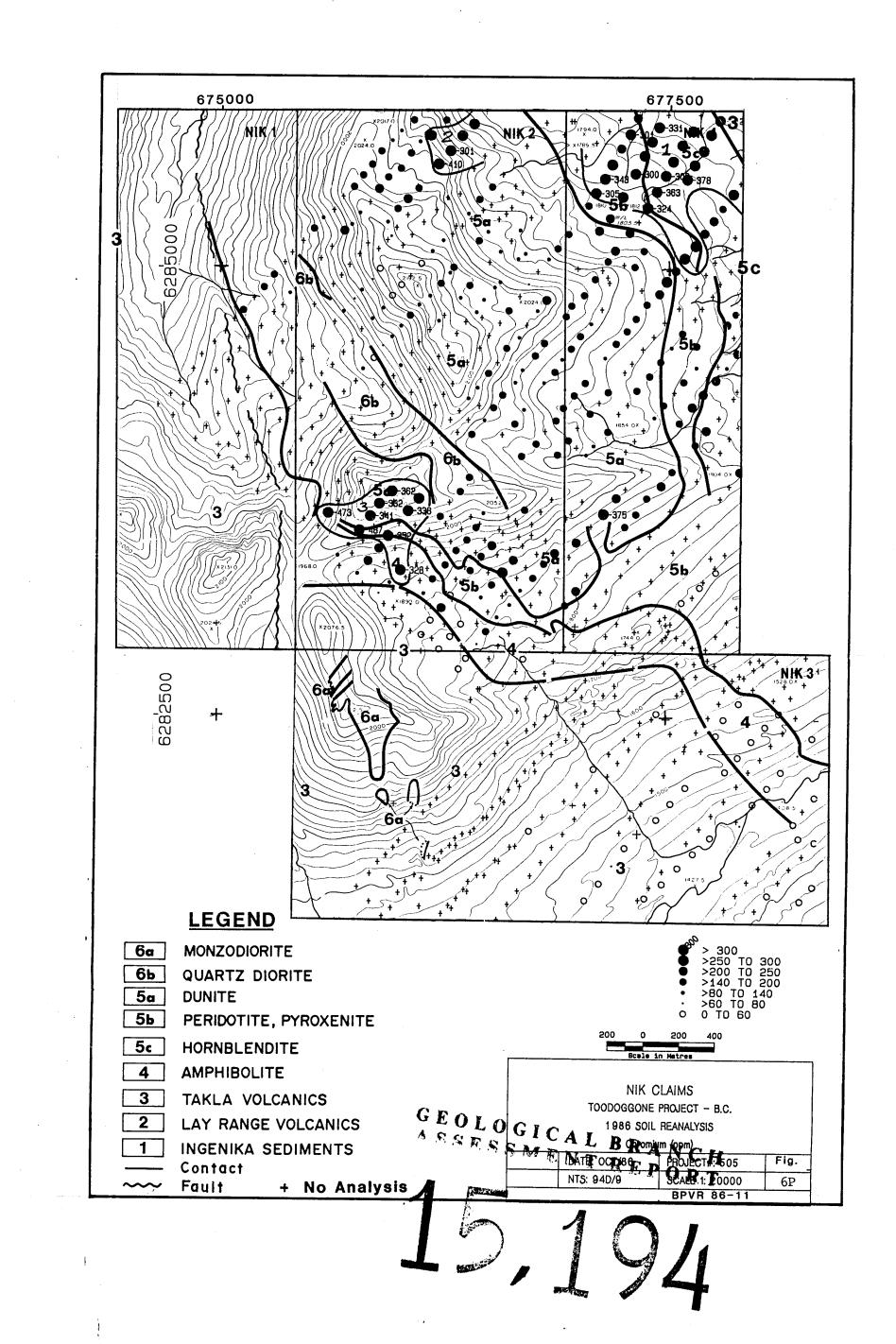
The Mn distribution reflects a geologic influence, low values below 500 ppm characterizing the volcanics, high be defined by values exceeding 1250 ppm, with maximum, values averaging 1500 ppm. The Fe distribution is very similar to that of Mn, being geologically controlled by the composition of ultramafic units.

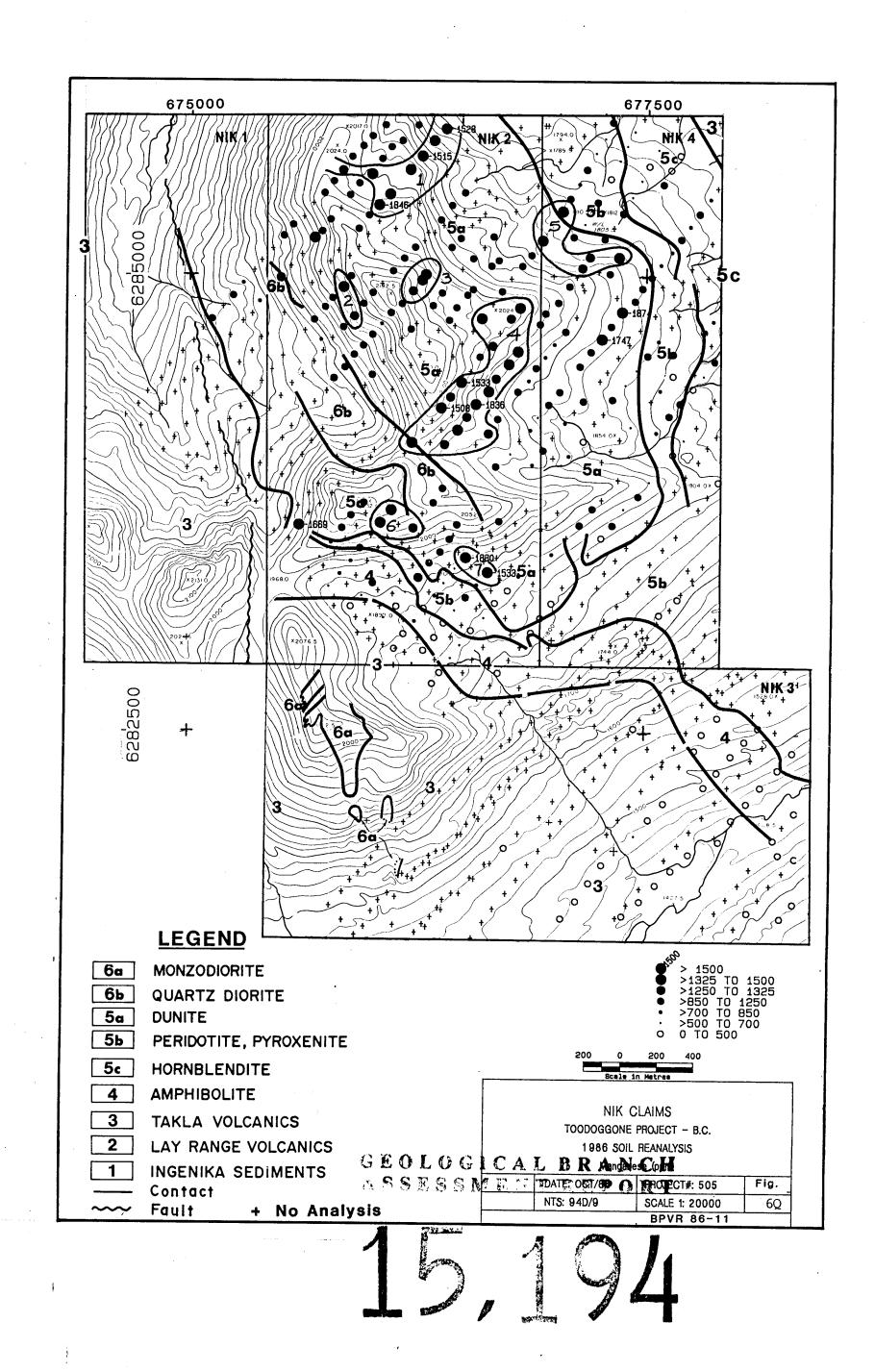
7. Magnesium (Fig 6s)

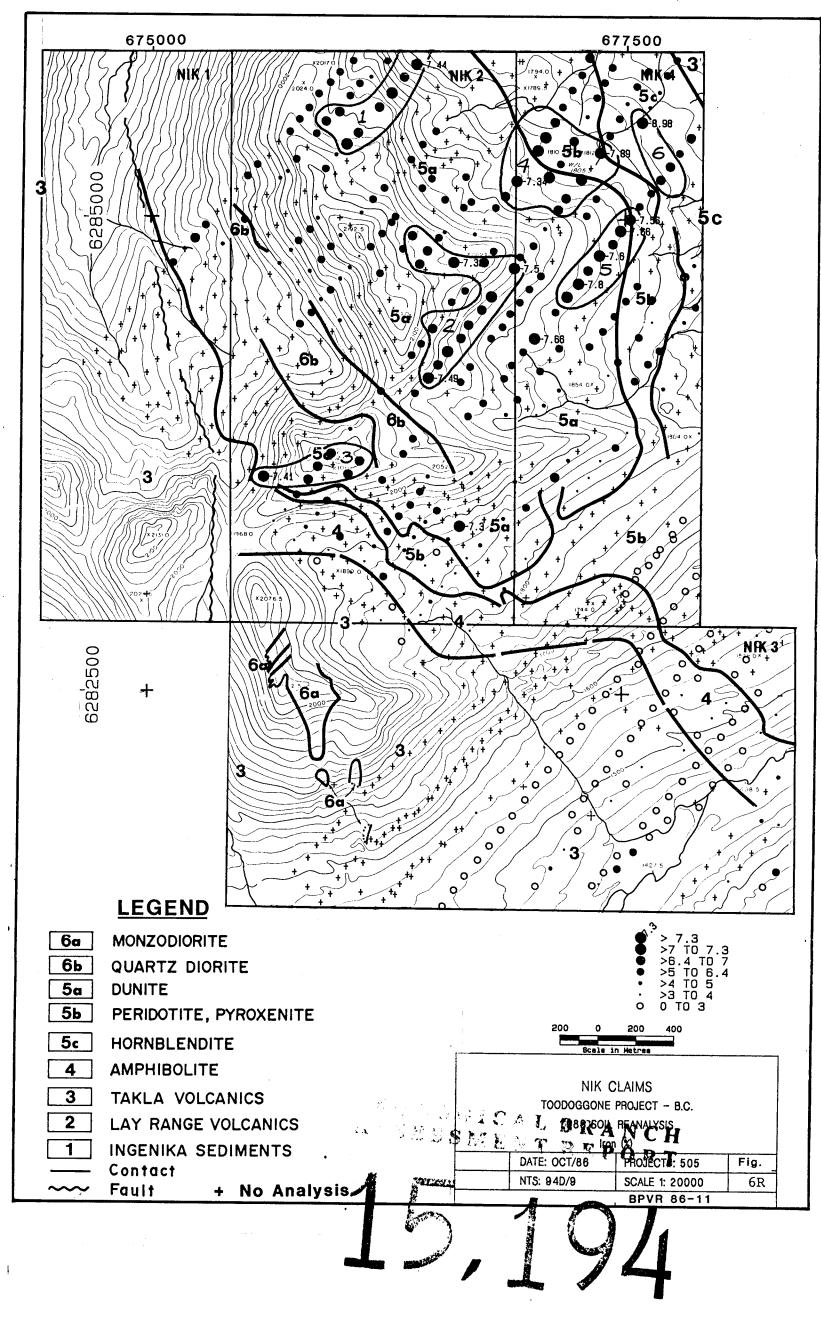
The Mg distribution defines the northern half of the ultramafic complex to be Mg-rich, in contrast to peridotite /pyroxenite. Maximum values are about 25% Mg.









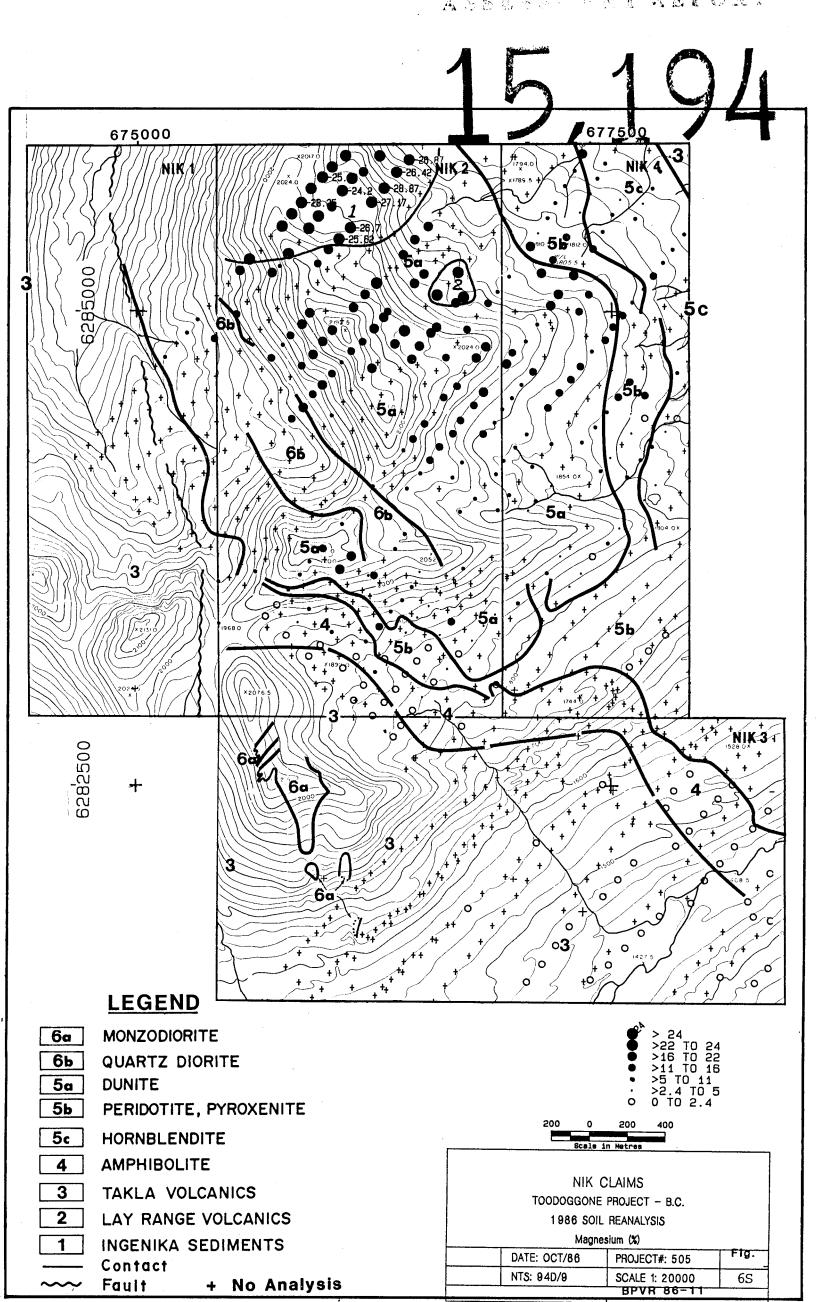


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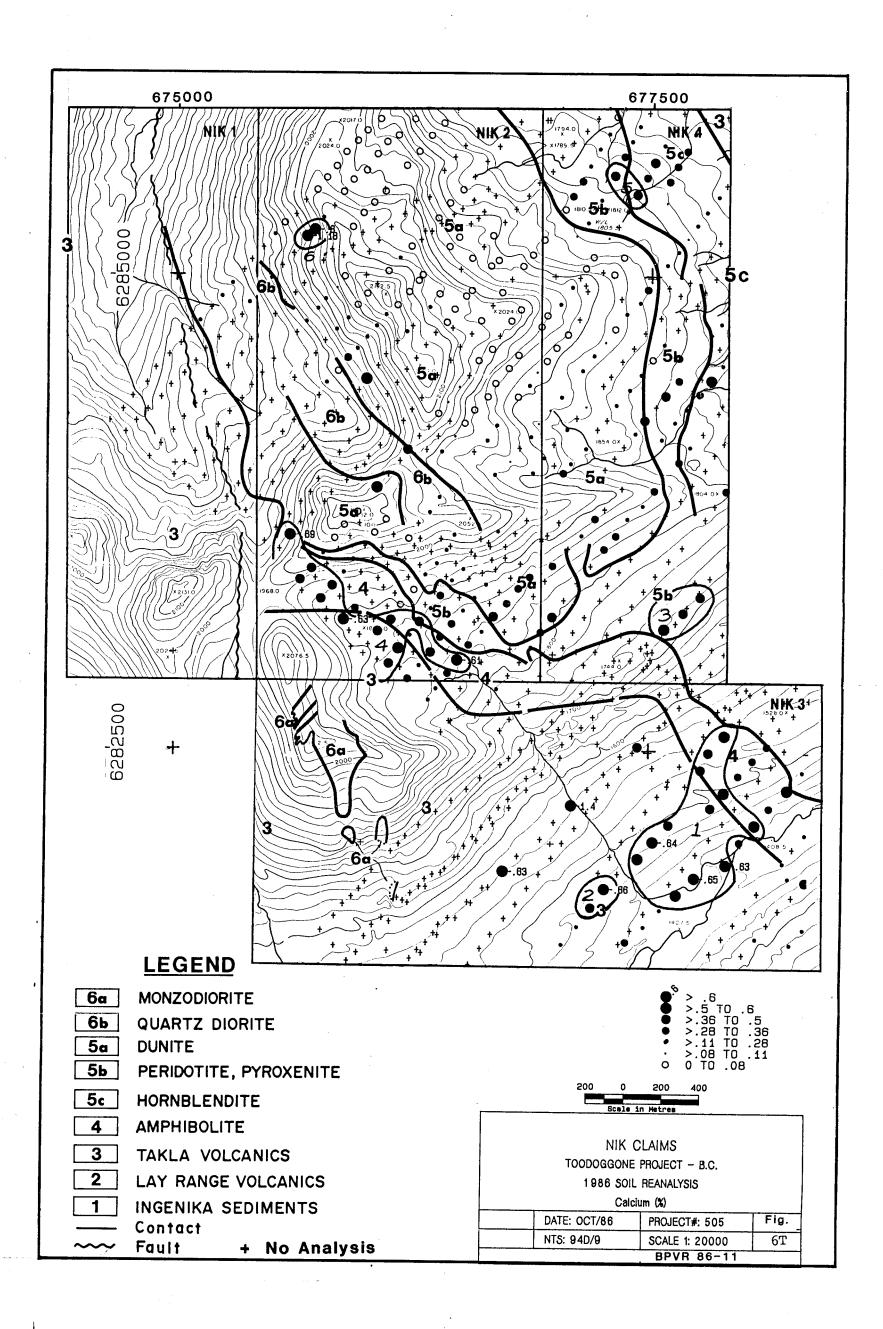
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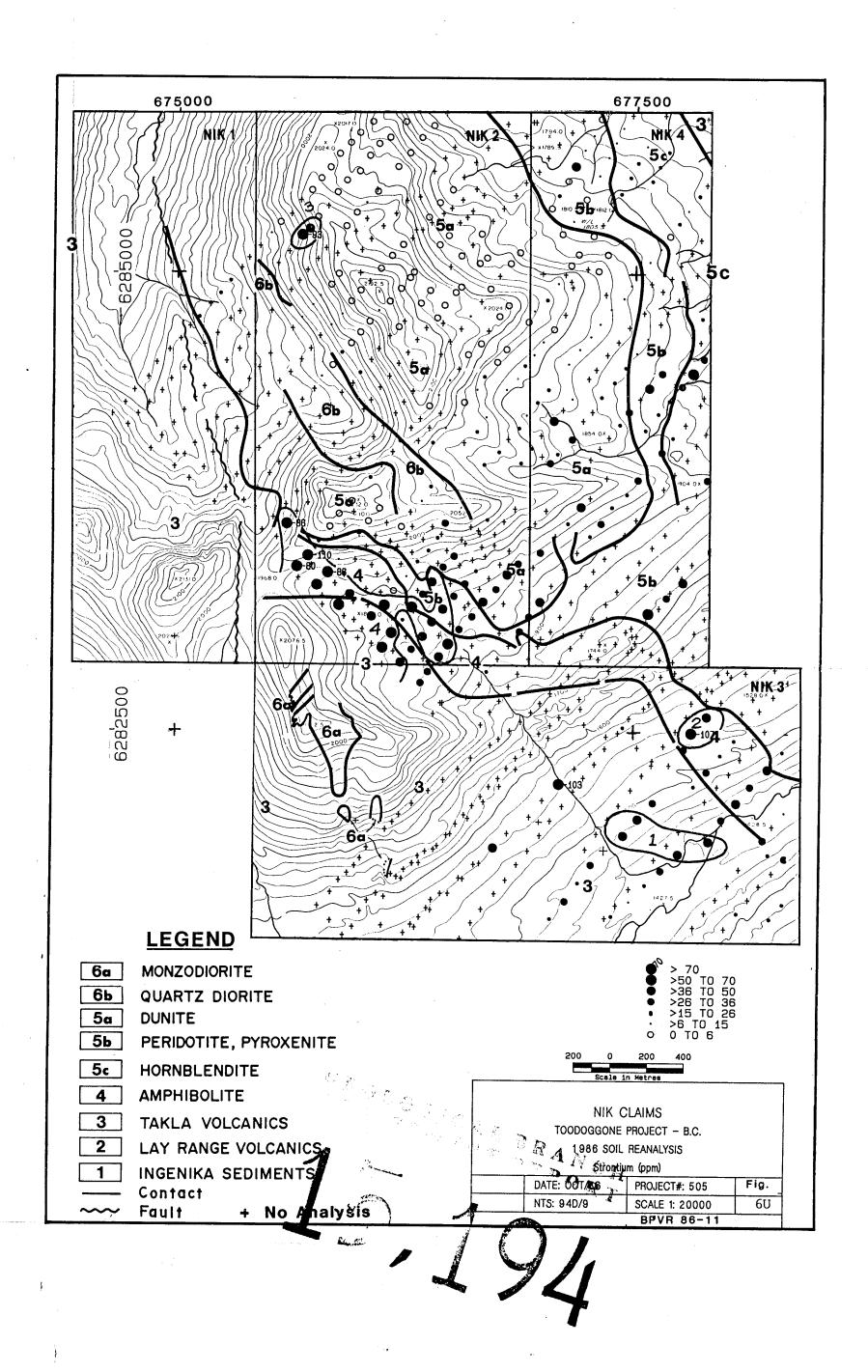
- 8. <u>The Alkaline Earths</u> Ca (Fig 6t), Sr (Fg 6u), Ba (Fig 6v) The Ca and Sr distributions are similar, high values overlying volcanics in South Cirque and Main Valley. The northern portion of the dunite is low in these elements, whereas values are slightly elevated to the south and west. Backgrounds are significantly higher overlying pyroxenite except for a large Ba anomaly (No. 1) associated with a quartz diorite intrusion. High background leachable Ba contents, in the 35 to 75 ppm range, are found overlying southern portions of the dunite and associated with pyroxenite-peridotite. Similar levels of Ba are associated with areas underlain by Takla volcanics.
- 9. <u>Aluminum</u> (Fig. 6w) and <u>Potassium</u> (Fig. 6x) Enhanced Al contents describe homogeneous patterns

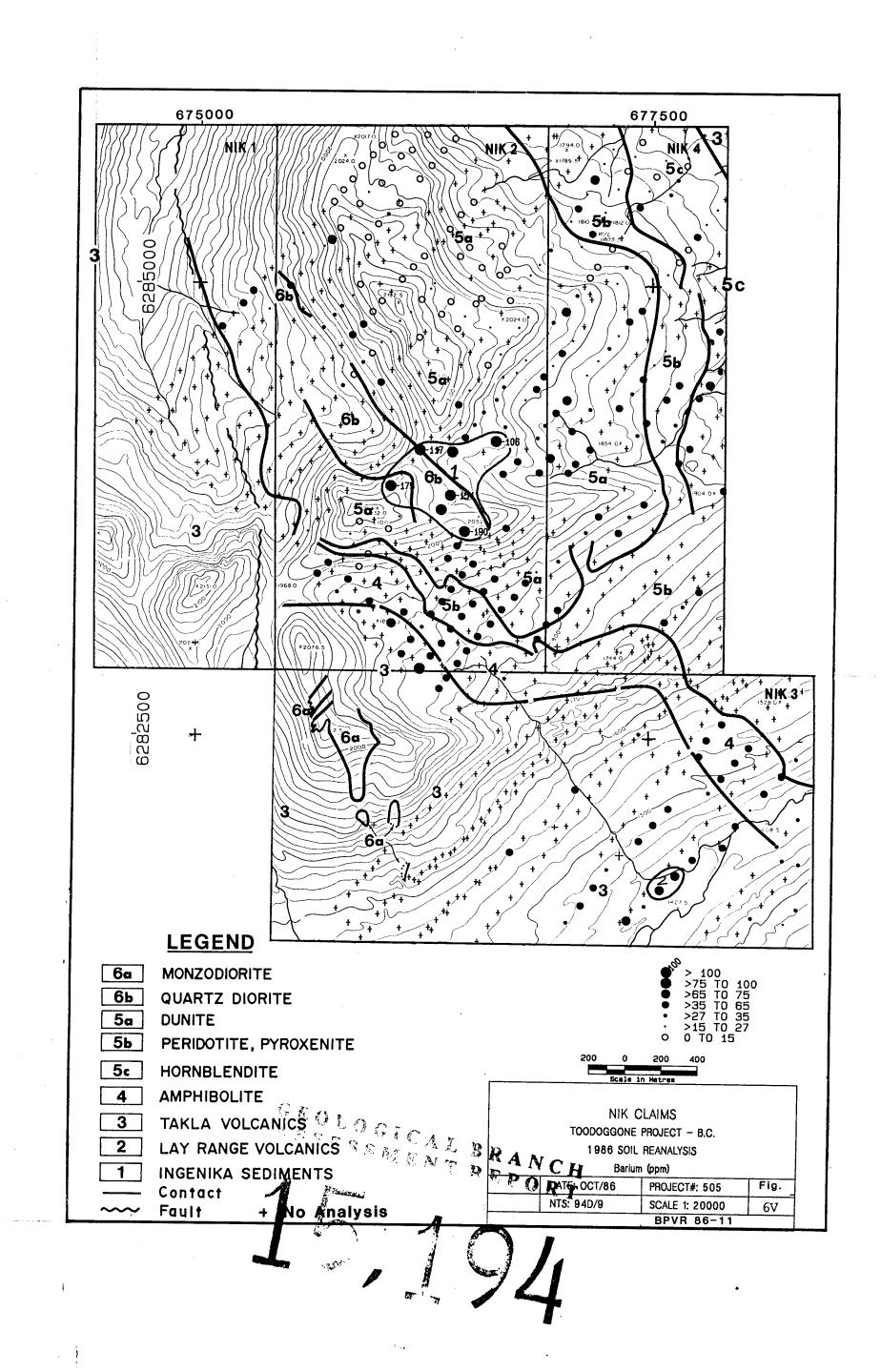
suggestive of lithological control. Volcanics in South Cirque and Main Valley are homogeneously enriched. Lowest values characterize the northern dunite, whereas southern portions are associated with weakly elevated levels, as are areas underlain by pyroxenite-peridotite. Enhanced contents along the eastern margins of the quartz diorite intrusion of North Cirque are a possible alteration indication.

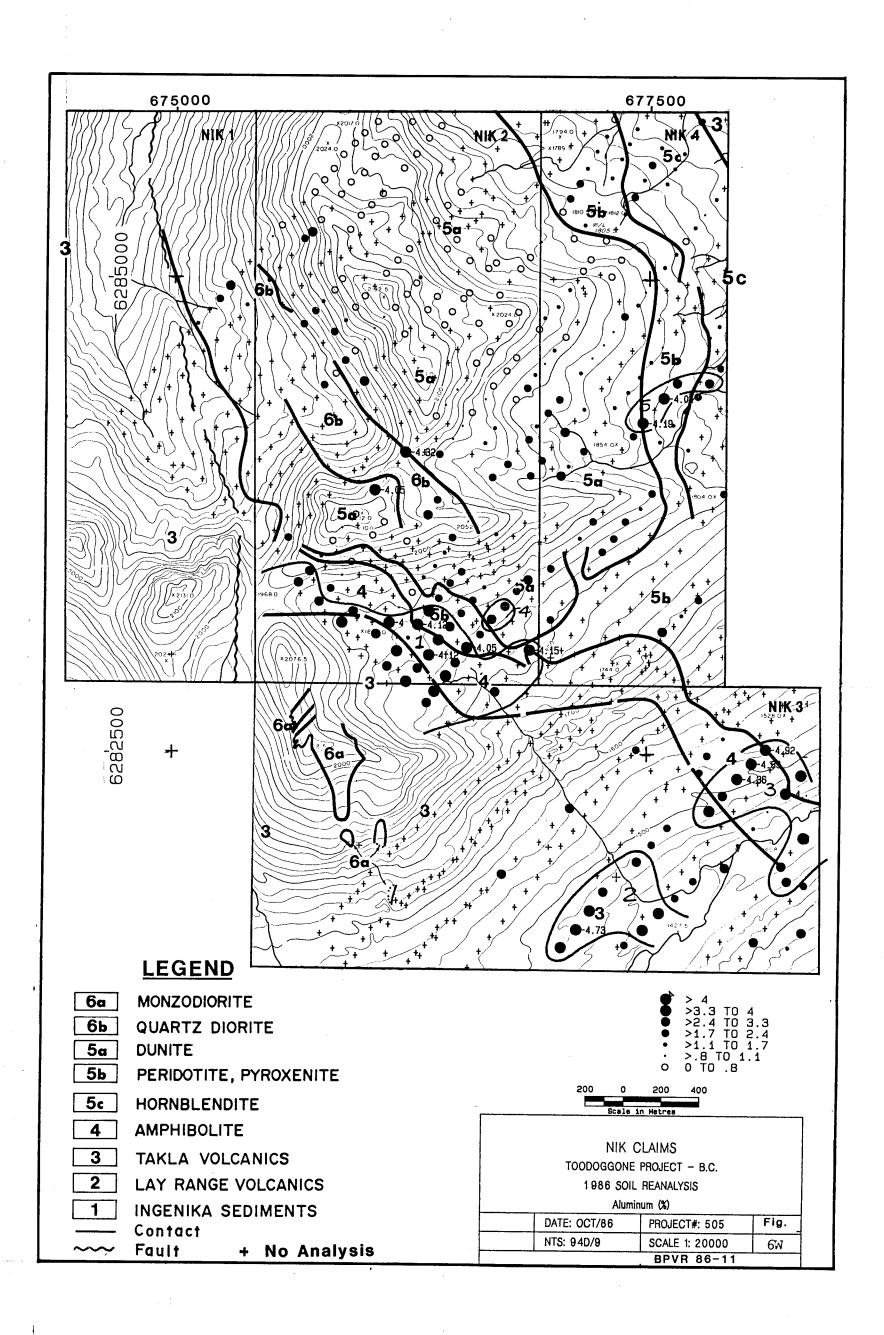
K contents vary too close to the detection limit to be considered meaningful.



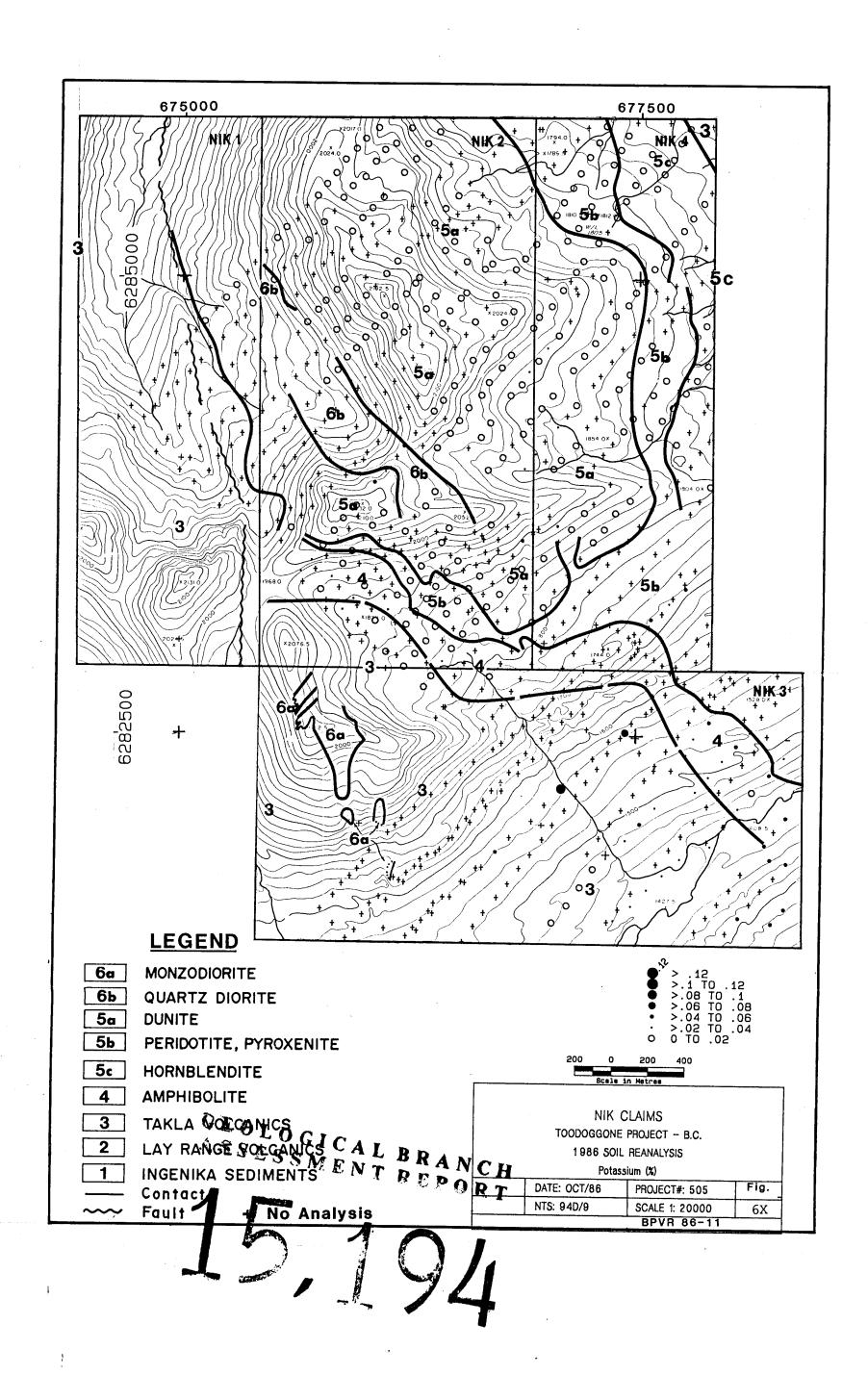
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DISCUSSION OF RESULTS

The NIK claims were assessed for the Au, Ag, Pt and Pd potential, with disappointing results. The sample coverage is by no means complete, and scope remains to locate a significant anomaly within the survey area, within the North Cirque, for example. That could be the subject for additional investigations in 1987.

A problem arises concerning the adequacy of the available Pt and Pd data. Detection limits for both elements are quoted at 50 ppb, and it is usual that values of Pt and Pd will have to be at 3X the detection limit, or 150 ppb, to be meaningful. Maximum Pt and Pd values at Stillwater, where soil geochemistry were instrumental in discovery of an ore deposit averaging about 8 gm Pt and 24 gm Pd per ton, is only about 100 ppb and 200 ppb, respectively. Clearly, the detection limit must be lowered here before the Pt/Pd potential of the property can be realistically assessed.

The multielement data confirm the anomalous character of the NIK linear and the Main Valley for Cu and Mo. Available data do not suggest other elements are accompanying the Cu and Mo in anomalous amounts, for example Ag, Pb, Zn, Cd, or Au. The previous assessment of base metal potential of the ground remains unchanged by the new work.

The multi-element analysis has been particularly effective in mapping the ultramafic complex based on the composition of overlying residual soils. The multi-element concentrations are those leachable into aqua regia, and for elements such as Cr, Ni, Mg, Mn, Fe, etc., absolute abundances are likely to be even higher. Nevertheless, the data indicate rock types are probably varying more completely than shown on the geology map (Fig. 3), dunite for example appears subdividable based on these above other element distributions, into a northern and southern portion. This may become important if a Pt group element potential can be identified, associated with the dunite in this example.

The unusually high concentration of metals in soils represents an unusual matrix probably affecting the ICP analysis. High levels of Sb, W, Pb, and As associated with ultramafic units are unusual, and may represent analytical artifacts. If not, they may play a role in determining prospectiveness of an ultramafic body to host a Pt/Pd deposit. Further work is required to evaluate this application of the data.

CONCLUSION

Reanalysis of 320 samples for a suite of 30 agua regia leachable metals, as well as for Au, Pt and Pd has failed to identify a precious metal potential for the claim group. Reanalysis of the same samples for Pt and Pd using a 2 ppb detection limit for each element is necessary before the Pt group element potential can be adequately determined.

APPENDIX 1

Geochemical Preparation

and

Analytical Procedures

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October 8th, 1986

- TO: Stan Hoffman BP-SELCO 700 - 890 W. Pender St. Vancouver, B.C. V6C 1K5
- FROM: Vangeochem Lab Ltd. 1521 Pemberton Ave. North Vancouver, B.C. V7P 2S3
- SUBJECT: Analytical procedure used to determine multiple elements in hot acid soluble by Induction Couple Plasma Spectrometer (ICP) analysis.

1. Method of Sample Preparation

- (a) Geochemical soil, silt or rock samples were received in the laboratory in wet-strength 4" x 6" Kraft paper bags or rock samples sometimes in 8" x 12" plastic bags.
- (b) The dried soil and silt samples were sifted by hand using a 8" diameter 80-mesh stainless steel sieve. The plus 80-mesh fraction was rejected and the minus 80mesh fraction was transferred into a new bag for analysis later.
- (c) The dried rock samples were crushed by using a jaw crusher and pulverized to 100-mesh or finer by using a disc mill. The pulverized samples were then put in a new bag for later analysis.

2. <u>Method of Digestion</u>

- (a) 0.500 gram of -80 mesh sample was used.
- (b) Samples were digested in a hot water bath at 95 C for 75 minutes with diluted aqua regia acids. (3 : 1 : 3, HCl : HNO3 : H2O)
- (c) The digested samples were diluted to a fixed volume and shaken well.



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- 2 -

Method_of_Analysis з.

4.

determined The analyses were by using a Jarrel Ash ICAP model 9000 direct reading emission spectrometer an inductively coupled with plaama excitation source. Background and inter-element corrections (IEC'S) were applied. All data is compiled into an Apple IIe computer, stored on floppy disk and printed by an Epson 100 dot-matrix printer.

The analyses were supervised by Mr. Wade Reeves and Mr. Conway Chun of Vangeochem Lab Ltd. and their staff.

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October 8th, 1986

- Stan Hoffman TO: **BP-SELCO** 700 - 890 W. Pender St. Vancouver, B.C. V6C 1K5
- FROM: Vangeochem Lab Ltd. 1521 Pemberton Ave. North Vancouver, B.C. V7P 2S3
- SUBJECT: Analytical procedure used to determine gold by fireassay method in geological samples.

Method of Sample Preparation 1.

- Geochemical soil, silt or rock samples were received in (a) the laboratory in wet-strength 4" x 6" Kraft paper bags or rock samples sometimes in 8" x 12" plastic bags.
- The dried soil and silt samples were sifted by hand (b) using a 8" diameter 80-mesh stainless steel sieve. The plus 80-mesh fraction was rejected and the minus 80mesh fraction was transferred into a new bag for analysis later.
- The dried rock samples were crushed by using a jaw cru-(c)sher and pulverized to 100-mesh or finer by using a disc mill. The pulverized samples were then put in a new bag for later analysis.
- 2. Method_of_Digestion
 - 20.0 30.0 grams of the pulp samples were used. (a) Samples were weighed out by using a top-loading balance into a fusion pot.
 - (Ъ) A Flux of litharge, soda ash, silica, borax, flour, or potassium nitrite is added, then fused at 1900 degrees F and a lead button is formed.
 - (c) The gold and silver is extracted by cupellation, silver is then dissolved with diluted nitric acid.



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3. <u>Method_of_Calculation</u>

The gold is calculated by weighing of the bead and then ounce per ton is calculated.

4. The analyses were supervised or determined by Mr. Conway Chun or Mr. David Chiu.

David Chiu VANGEOCHEM LAB LTD.



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October 8th. 1986

- TO: Stan Hoffman BP-SELCO 700 - 890 W. Pender St. Vancouver, B.C. V6C 1K5
- FROM: Vangeochem Lab Ltd. 1521 Pemberton Ave. North Vancouver, B.C. V7P 2S3
- SUBJECT: Analytical procedure used to determine Platinum & Palladium by fire-fire-assay, AAS method in geological samples.

1. Method of Sample Preparation

- Geochemical soil, silt or rock samples were received in the laboratory in wet-strength 4" x 6" Kraft paper bags or rock samples sometimes in 8" x 12" plastic bags.
- (b) The dried soil and silt samples were sifted by hand using a 8" diameter 80-mesh stainless steel sieve. The plus 80-mesh fraction was rejected and the minus 80mesh fraction was transferred into a new bag for analysis later.
- (c) The dried rock samples were crushed by using a jaw crusher and pulverized to 100-mesh or finer by using a disc mill. The pulverized samples were then put in a new bag for later analysis.

2. <u>Method of Digestion</u>

- (a) 20.0 30.0 grams of the pulp samples were used. Samples were weighed out by using a top-loading balance into a fusion pot.
- (b) A flux of litharge, soda ash, silica, borax, flour, or potassium nitrate is added, then fused at 1900 degrees F and a lead button is formed.
- (c) The silver bead containing Platinum and Palladium is extracted by cupellation then parted with diluted nitric acid. Silver is then remove as AgCl.
- 3. <u>Method_of_Detection</u>



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- (a) A solution of Lanthanum oxide is added as buffer.
- (b) The Pt and Pd analyses were detected by using a techtron model AA5 Atomic Absorption Spectrophotometer with Pt and Pd hollow cathode lamps. The results were read out on a strip chart recorder. The values in parts per billion were calculated by comparing them with sets of standards.
- The analyses were supervised or determined by Mr. Conway 4. Chun or Mr. David Chiu and his laboratory staff.

David Chia

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APPENDIX 2

LIST OF ANALYTICAL DATA

GENERAL

| GENERAL | | | | | | | LIST 1 |
|--|---|--------------|--|---|--|---|--|
| 1-2 SAMPLE TYPE | | | | | | _ | |
| 10. Stream sediment | 1-2 <u>SAMPLE TYPE</u> Cont. 51. Soil-other horizons (organic- | | SAMPLE TYPE Cont. Channel sample/split core | | PROJECT IDENTIFICATION Blank-reconnaissance | | INTRUSIVE ROCKS |
| 11. Stream water | rich samples or when 2 samples | 86. | Drill chips | | A.B.C. etc properties, | | QUARTZ RICH Granite |
| 12. Drainage ditch sediment 18. Heavy mineral concentrate | taken at same hole) 52. Frost boil or seepage boil | | Drill sludge Heavy Mineral concentrate | | anomalies, (List 6) | | Quartz Monzonite Granodiorite |
| 20. Seepage (spring) sediment 21. Seepage (spring) water | 54. Groundwater sample 55. Deep overburden sample | *89. *90. | High grade sample Special sample-specify | | DUPLICATE SAMPLES Label duplicates as 1,2, etc. | | Quartz diorite |
| Lake sediment - lake center | 58. Heavy mineral concentrate | 99. | Standard sample | | (collect 1 duplicate pair in 30) | -2- | INTERMEDIATE |
| 31. Lake water 32. Lake sediment-near shore | 60. Talus fines 63. Talus blocks-hand sample | *Cle | arly label if high grade. | | SAMPLER IDENTIFICATION | 1 2 | Syenite Monzonite |
| 40. Bog-upper 100 cm 41. Bog-stagnant water | 64. Talus blocks-chips 68. Heavy mineral concentrate | | Special Note | (10-11 |)(List 7) | | Diorite Gabbro |
| 42. Sog-below 100 cm | 7D. Biogeochemical sample | | For keypunchers benefit, 7's should be crossed 7 and 0's | (12-15 | SAMPLE NUMBER | | FELDSPATHOID RICH |
| Bog-organic material at mineral horizon interface | 75. Radon 80. Bedrock hand Specimen | | (letter) should be slashed Ø | | EAST COORDINATE | 1 | Nepheline Sycnite |
| 44. Bog-mineral horizon 50, Soil-top of the B horizon | 81. Bedrock chips <u>*</u> hand sample 82. Float hand specimen | 3-4 | YEAR | | NORTH COORDINATE | | Nepheline Monzonite |
| (or top of the C horizon | 83. Float chips + hand sample | 5-7 | PROJECT NUMBER | 34-38 | <u>NTS MAP SHEET NUMBER</u> Example: record 927/3 as | -40 | CARBONATITES |
| if B horizon absent) | 84. Drill core specimens | · · · | | | 92F03 | | SPECIAL TYPES |
| STREAM SEDIMENTS | | | | | | | Pegmatite Aplite |
| 40 SAMPLE ENVRIONMENT | 45 OVERBURDEN ORIGIN Cont. | 53-5 | S AVERAGE DEPTH OF STREAM-CM | 68 | ORGANIC FRACTION *(Complete | 3 | Lamprophyre |
| 1. Side of creek | 7. Lake sediment-clay | 56 | | | where sediment composition is | | Trap Felsite |
| 4. Middle of stream 9. Composite across stream | 8. Talus 9. Residual •use only if | 20 | STREAM VELOCITY 1. Dry | | unusual) 2. Large amount of undecom- | 6 7 | Intrusion Breccia Diabase |
| A. Soil | C. Boulder field* former origin | | 2. Stagnant | | posed leaves, twigs, etc. 4. Large amount of well-de- | / | LIST 2 |
| 41 WATER HURKINESS | D. Gravel* cannot be E. Soil* identified | | Slow Moderate | | composed vegetation | 2 | VOLCANIC ROCKS |
| Blank-clear 1. Murky (report findings in | 46 BEDROCK | | 5. Fast | | 5. Moss 7. Sediment grains coated in | | UNDIFFERENTIATED |
| note section) | 46 <u>BEDROCK</u> M. Mineralized | | 6. Turbulent | | organic matter 8. Lake sediment ooze. | -1- | BASALT |
| 42 PRECIPITATE | P. Present within 100m upslope | 57 | INDICATE AS TRIBUTARY | | | -1- | |
| Blank-none 1. Record colour (report | D. Present within 100m down- slope | | R. Stream enters on the right looking down main stream | 69 | MINERAL FRACTION *(Complete where composition is un- | -3- | DACITE |
| presence of precipitate | B. Underlies sample site G. Gossan | | L. Stream enters on left | | usual) | -4- | RHYOLITE |
| in immediate vicinity in stream bed. If heavy | F. Fe surface stains | | looking down main stream | | Notable content of mafic minerals, resistates | -5- | QUARTZ LATITE |
| precipitate, sample separately as sample type | R. Radioactivity | 58~6 | LOCAL BEDROCK COMPOSITION | | Very high content of mafics, resistates | -6- | LATITE |
| separacely as sample type 90) | 47-48 pH | | Estimate-use Lists 1-4 | 71 | | | TRACHYTE |
| 43 OVERBURDEN TRANSPORT | 49 SAMPLE TEXTURE | 61-60 | COLOUR | | SCINTILLOMETER NUMBER GAMMA COUNT AT SAMPLE DEPTH | | PHONOLITE |
| L. Local N. Mixed local | Ø. Organic-decomposed 1. Clay | | Munsell notation or abbreviation | 12-13 | (make note if landscape is | -9- 1 | NEPHELINE LATITE Fine grained flows |
| E. Extensive E extensive U. Unknown | Silt and fine sand Sand | 67 | | | affecting gamma count) | | Prophyritic flows |
| 45 OVERBURDEN ORIGIN | 4. Gravel | 67 | CONTAMINATION Blank - none L - logging | 76 | ROCK | 4 | Ash tuffs |
| 1. Till-angular boulders | 6. Cemented 7. Precipitate | | C - culvert M - mine | | *Star if bedrock is influen- ing scint count | 5 6 | Lapilli tuffs Agglomerate |
| Outwash-sandy, rounded boulders | 8. Twigs or undecomposed | | F - farming R - road G - garbage T - trench | 77-78 | APPROXIMATE SLOPE ANGLE | 7 | Lapilli breccia |
| 3. Lake sediment-sand/silt 4. Alluvium-stream deposit | organic matter 50-52 AVERAGE WIDTH OF STREAM-M | | H - house Ø - other - spec. | | APPROXIMATE SLOPE DIRECTION | | Block breccia Turbidite |
| | | | | | | | |
| 5. Peat-bog | Decimal point in col 51 (or col | | I - industry | /9~80 | APROXIMIC SCOPE DIRECTION | | LIST 3 |
| 5. Peat-bog 6. Colluvium* | Decimal point in col 51 (or col 52 if stream > 10m wide) | | I - Industry | /9~80 | AFRONIDIE SCOPE DIRECTION | 3 | LIST 3 SEDIMENTARY ROCKS |
| 6. Colluvium* | | | 1 - Industry | | | -1- | SEDIMENTARY ROCKS |
| 6. Colluviúm* SOILS | 52 if stream > 10m wide) | | | | · · · | | SEDIMENTARY ROCKS ARENACEOUS Siltstone |
| 6. Colluvium* | 52 if stream > 10m wide) 45 <u>OVERBURDEN DRIGZN</u> | 55-56 | 5 SOIL HORIZON | 57 | <u>SOIL TYPE</u> Cont. | -1- 1 2 | SEDIMENTARY ROCKS ARENACEOUS Silistone Mudstone Greywake |
| 6. Colluvium* SOILS 40 <u>SITE TOPOGRAPHY</u> 1. Hill top 2. Gentle slope | 45 <u>OVERBURDEN DRIGIN</u> 1. Till-angular boulders 2. Outwash-sandy, rounded | 55-56 | 5 <u>SOIL HORIZON</u> LH. Leaf, humus layer, unde- composed vegetation lying | | <u>SOIL TYPE</u> Cont. L. Luvisol+ƏT horizon diagnostic | -1- 2 3 4 5 | SEDIMENTARY ROCKS ARENACEOUS Siltstone Mudstone Greywake Sandstone Quartzite |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope | 52 if stream > 10m wide) 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt | 55-56 | 5 SOIL HORIZON LM. Leaf, humus layer, unde- composed vegetation lying on the ground surface (do not sample) | | <u>SOIL TYPE</u> Cont. L. Luvisol-ƏT horizon dıaqnısıtıc P. Podzol-BF horizon diaqnostic | -1- 1 2 3 4 5 6 | SEDIMENTARY ROCKS ARENACEOUS Siltstone Mudstone Greyvake Sandstone Quartzite Conglomerate |
| 6. Colluvium* SOILS 40 <u>sttE TOPOGRAPHY</u> 1. Hill top 2. Gentle slope 3. Steep slope > 20° | 45 OVERBURDEN ORIGIN 1. Till-angular boulders 2. Outwash-sandy, rounded boulders 3. Lake sediment-sand/silt 4. Alluvium-stream deposit | 55-54 | SOIL HORIZON LH. Leaf, humus layer, unde- composed vegetation lying on the ground surface ido not sample) AH. Dark grey to black, organic | | SOIL TYPE Cont. L. Luvisol-ƏT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-ƏM horizon is | -1- 2 3 4 5 | SEDIMENTARY ROCKS ARENACEOUS Siltstone Mudstone Greywake Sandstone Quartzite |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 20° 4. Base of slope 5. Valley floor 6. Depression 7. Level | 45 OVERBURDEN DRIGIN Till-angular boulders Gutwash-sandy, rounded boulders Lake sediment-sand/silt Alluvium-stream deposit Peat-bog Colluvium | 55-56 | 5 SOIL HORIZON LM. Leaf, humus layer, unde- composed veyetation lying on the ground surface ido not sample) AH. Dark rey to black, organic -rich mineral horizon usually no deeper than 15cm | | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-little or no soil | -1- 1 2 3 4 5 6 -2- 1 2 | SEDIMENTARY ROCKS ARENACEOUS Silistone Mudstone Greywake Sandstone Quartzite Conglomerate ARGILLACEOUS Shale Argillite |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression | 52 if stream > 10m wide) 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Alluvium-stream deposit Peat-bog Colluvium Lake sediment-clay Talus | 55-54 | 5 SOIL HORIZON LH. Leaf, humus layer, unde- composed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic -rich mineral horizon usually no deeper than 15cm from the surface (do not sample) | 57 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only LH (maybe) | -1- 1 2 3 4 5 6 -2- 1 | SEDIMENTARY ROCKS ARENACEOUS Siltstone Mudstone Greywake Sandstone Quartzite Conglomerate ARGILLACEOUS Shale Argillite CALCAREOUS |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 20° 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling | 52 if stream ? 10m wide! 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Peat-bog Colluvium Lake sediment-clay | 55-54 | 5 SOIL HORIZOM LK. Leaf, humus layer, undecomposed vegetation lying on the ground surface ido not sample? AH. Dark grey to black, organic rich mineral horizon usually no deeper than 15cm from the surface ido not sample? AE. Grey to white (occassionally | 57 | SOIL TYPE Cont. L. Luvisol-ƏT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only Li (maybe) and C horizon | -1- 1 2 3 4 5 6 -2- 1 2 2 3- | SEDIMENTARY ROCKS ARENACEOUS Siltstone Mudstone Greywake Sandstone Quartzite Conglomerate ARGILLACEOUS Shale Argillite CALCAREOUS |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 20° 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog | 52 if stream ? 10m wide! 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Alluvium-stream deposit Peat-bog Colluvium Lake sediment-clay Talus Residual Frost bouls* B. Seepage boils* | 55~54 | SOIL HORIZON LH. Leaf, humus layer, unde- composed vegetation lying on the ground surface ido not sample) AH. Dark grey to black, organic -rich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occassionally brown) leached mineral horizon near ground sur- | 57 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only LH (maybe) and C horizon G. Gleysol-BC horizon diagnostic | -1- 1 2 3 4 5 6 -2- 1 2 -3- 1 2 1 2 | SEDIMENTARY ROCKS ARENACEOUS Silistone Mudstone Greywake Sandstone Quartzite Conglomerate ARGILLACEOUS Shale ArgIllite CALCAREOUS Limestone Dolomite CHEMICAL PRECIPITATE |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-hummocky 2. Tundra-dry | 52 if stream > 10m wide) 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Alluvium-stream deposit Peat-bog Colluvium Lake sediment-clay Talus Residual Frost boils* | 55-54 | 5 SOIL HORIZON LM. Leaf, humus layer, undecomposed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic - rich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occassionally brown) leached mineral horizon near ground surface, usually sandy; accompanied by Br or BT | 57 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only LU (maybe) and C horizon G. Gleysol-BC horizon | -1- 1 2 3 4 5 6 -2- 1 2 -3- 1 2 -4- 1 2 | SEDIMENTARY ROCKS ARENACEOUS Siltstone Mudstone Greywake Sandstone Quartzite Conglomerate ARGILLACEOUS Shale Argillite CALCAREOUS Limestone Dolomite CHEMICAL PRECIPITATE Chert Marble |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 20° 4. Base of slope 5. valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-dry 3. Tundra-dry 3. Tundra-swampy 4. Grassland, meadows | 52 if stream ? 10m wide! 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Aluvium-stream deposit Peat-bog Colluvium Lake sediment-clay Talus Residual Frost boils* Seepage boils* Coluder field* Gravel* Use only if former origin | 55~54 | 5 SOIL HORIZON LH. Leaf, humus layer, undecomposed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic reich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occassionally brown) leached mineral horizon near ground surface (asually sandy; accompanied by BF or BT horizon at depth | 57 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podsol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-Initie or no soil horizon, only LH (maybe) and C horizon G. Gleysol-BC horizon diagnostic Ø. Organic soil-bog vegeta- tion-no mineral matter LOCAL BERRCK COMPOSITION | -1- 1 2 3 4 5 6 -2- 1 2 -3- 1 2 -4- 1 2 | SEDIMENTARY ROCKS ARENACEOUS Silistone Mudstone Greywake Sandstone Quartzite Conglomerate ArgillaceCous Shale Argillite CALCAREOUS Limestone Dolomite CHEMICAL PRECIPITATE CHERT CHERT |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 20° 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-hummocky 2. Tundra-hummocky 3. Tundra-swampy 4. Grassland, meadows 5. Peat mounds 6. Bog in depression | 52 if stream ? 10m wide! 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Alluvium-stream deposit Peat-bog Colluvium Lake sediment-clay Talus Residual Frost bouls* Sepage boils* Sepage boils* Goulder field* Gravel* Use only if former origin cannot be identified. | 55~54 | SOIL HORIZOM LK. Leaf, humus layer, unde- composed vegetation lying on the ground surface ido not sample? AH. Dark repy to black, organic -rich mineral horizon usually no deeper than 15cm from the surface ido not sample? AE. Grey to white (occassionally brown) leached mineral horizon near ground sur- face, usually sandy; accompanied by BF or BT horizon at depth ido not sample? BH. Black, organic-rich min- | 57 58-60 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only Li (maybe) and C horizon G. Gleysol-BC horizon diagnostic Ø. Organic soil-bog vegeta- tion-no mineral matter LOCAL BERROCK COMPOSITION Estimate-use Lists 1-4 | -1- 1 2 3 4 5 6 -2- 1 1 2 1 2 1 2 1 2 3 | SEDIMENTARY ROCKS ARENACEOUS Silistone Mudstone Greywake Sandstone Quartzite Conglomerate ARGILLACEOUS Shale Argillite CALCAREOUS Limestone Dolomite CHEMICAL PRECIPITATE Chert Marble Iron Formation LIST 4 |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-hummocky 2. Tundra-hummocky 4. Grassland, meadows 5. Peat mounds 6. Bog in depression 7. Forest-conferous | 52 if stream ? 10m wide! 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Alluvium-stream deposit Peat-bog Colluvium Lake sediment-clay Talus Residual Frost boils* Budder tolls* Budder tolls* Gravel* Use only if former origin cannot be identified. 46 BEDROCK | 55-56 | 5 SOIL HORIZON LH. Leaf, humus layer, undecomposed vegetation lying on the ground surface ido not sample) AH. Dark grey to black, organic - rich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occassionally brown) leached mineral horizon near ground surface, usually sandy; accompanied by BF or BT horizon at depth (do not sample) BH. Black, organic-rich mineral horizon at depth graek than 15cm | 57 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podsol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-Initie or no soil horizon, only LH (maybe) and C horizon G. Gleysol-BC horizon diagnostic Ø. Organic soil-bog vegeta- tion-no mineral matter LOCAL BERRCK COMPOSITION | -1- 2 3 4 6 -2- 1 2 1 2 1 2 1 2 3 3 | SEDIMENTARY ROCKS ARENACEOUS Silistone Mudstone Greywake Sandstone Quartzite Conglomerate ARGILLACEOUS Shale Argillite CALCAREOUS Limestone Dolonite CHEMICAL PRECIPITATE CHEMICAL PREC |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-dry 3. Tundra-dry 3. Tundra-swampy 4. Grassland, meadows 5. Peat mounds 6. Bog in depression 7. Forest-decideous 8. Forest-decideous 9. Forest-decideous | 52 if stream ? 10m wide! 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Alluvium-stream deposit Peat-bog Colluvium Lake sediment-clay Talus Residual Frost bouls* Seepage boils* Boulder field* Gravel* Use only if former origin cannot be identified. 46 <u>BEDROCK</u> M. Hineralized Present within 100m up- | 55-50 | 5 SOIL HORIZON LH. Leaf, humus layer, undecomposed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic rich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occassionally brown) leached mineral horizon near ground surface (sueally sandy; accompanied by BF or BT horizon at depth doit sample) BH. Slack, organic-rich mineral horizon at depth (do not sample) BB Bed-brown incorrich | 57 58-60 61-66 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon of profile R. Regosol-little or no soil development. No 8 soil horizon of profile G. Gleysol-BC horizon diagnostic O. Organic soil-bog vegeta- tion-no mineral matter LOCAL BEDROCK COMPOSITION Estimate-use Lists 1-4 COLOUR Munsell notation or abbrevation | -1- 2 3 4 5 6 -2- 1 2 1 2 1 2 3 1 2 3 3 3 3 | SEDIMENTARY ROCKS SILISTONE Mudstone Greywake Sandstone Quartzite Conglomerate ARGILLACEOUS Shale Argillice CALCAREOUS Limestone Dolomite CALCAREOUS Limestone Dolomite CALCAREOUS Limestone Dolomite CALCAREOUS Limestone Dolomite CALCAREOUS Limestone Dolomite CALCAREOUS Limestone Dolomite CALCAREOUS Limestone Dolomite CALCAREOUS Limestone Dolomite CHEMICAL PRECIPITATE Chert Marble Iron Formation |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-dry 3. Tundra-dry 1. Tundra-dry 3. Tundra-dry 3. Tundra-dry 4. Grassland, meadows 5. Peat mounds 6. Bog in depression 7. Forest-decideous 8. Porest-decideous 9. Forest-decideous 9. Forest-de | 52 if stream > 10m wide) 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Alluvium-stream deposit Feat-bog Colluvium Lake sediment-clay Talus Residual Frost boils* Boepage boils* Cavel* Use only if former origin cannot be identified. 46 BEDROCK M. Mineralized Present within 100m upslope D. Present within 100m down- | 55-54 | 5 SOIL HORIZON LH. Leaf, humus layer, unde- composed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic -rich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occassionally brown) leached mineral horizon near ground sur- face, usually sandy; accompanied by BF or BT horizon at depth Biack, organic-rich min- eral horizon at depths greater than 15cm (do not sample) BF. Red-brown, iron-rich horizon | 57 58-60 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon of profile R. Regosol-little or no soil development. No B soil horizon, only LU (maybe) and C horizon diagnostic O. Gleysol-BC horizon diagnostic O. Organic soil-bog vegeta- tion-no mineral matter LUCAL BEDROCK COMPOSITION Estimate-use Lists 1-4 COLOUR Nunsell notation or abbrevation CONTAMINATION | -1- 1 2 3 4 5 6 1 1 1 2 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 4 5 6 6 6 1 2 1 2 3 4 5 6 6 1 5 6 6 1 2 2 | SEDIMENTARY ROCKS ARENACEOUS Silistone Mudstone Greywake Sandstone Quartzite Conglomerate ArgillaceCous Shale Argillite CALCAREOUS Limestone Dolomite CALCAREOUS Limestone Dolomite CHEMICAL PRECIPITATE CHEMICAL PRECIPITATE C |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentie slope 3. Steep slope > 20° 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-Nummocky 2. Tundra-Nummocky 2. Tundra-dry 3. Tundra-dry 3. Tundra-dry 4. Grassland, meadows 5. Peat mounds 6. Bog in depression 7. Forest-coniferous 8. Porest-deciduous 9. Forest-mixed A. Alder or willows 8. Cultivated land C. Deert, semi-arid | 52 if stream > 10m wide) 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Aluvium-stream deposit Peat-boq Colluvium Lake sediment-clay Talus Residual Frost boils* Boulder field* Disevel* Use only if former origin cannot be identified. 46 BEDRCK M. Mineralized Present within 100m upsiope D. Present within 100m downslope | 55-51 | 5 SOIL HORIZON LH. Leaf, humus layer, unde- composed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic -rich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occassionally brown) leached mineral horizon near ground sur- face, usually sandy; accompanied by BF or BT horizon at depth Bla Black, organic-rich min- eral horizon at depths greater than 15cm (do not sample) BF. Red-brown, iton-rich horizon BFown, clay-rich horizon BC. Horizon which is water- | 57 58-60 61-66 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only LU (maybel) and C horizon diagnostic G. Gleysol-BC horizon diagnostic O. Organic soil-bog vegeta- tion-no mineral matter LOCAL BEDROCK COMPOSITION Estimate-use Lists 1-4 COLOUR Munsell notation or abbrevation CONTAMINATION Blank - none L - logging C - culvert M - mine | -1- 1 2 3 4 5 6 2 1 1 2 1 2 3 3 4 -10 2 | SEDIMENTARY ROCKS ARENACEOUS Silistone Mudstone Greyvake Sandstone Quartzite Conglomerate ARGILLACEOUS Shale Argillite CALCAREOUS Limestone Dolomite CALCAREOUS Limestone Dolomite CALCAREOUS Limestone Dolomite CALCAREOUS Limestone Dolomite CALCAREOUS Limestone Dolomite CALCAREOUS FINE GRAINED CONTACT PHANERITIC Mathe quartzite Mathe |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-dry 3. Tundra-dry 4. Grassland, meadows 5. Peat mounds 6. Bog in depression 7. Forest-coniferous 8. Porest-deciduous 9. Porest-mixed A. Alder or willows 8. Cultivated land C. Desert, semi-arid D. Barren E. Talus fan | 52 if stream ? 10m wide! 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Alluvium-stream deposit Peat-bog Colluvium Lake sediment-clay Talus Residual Frost boils* Seepage boils* Gavel* Use only if former origin cannot be identified. 46 BEDROCK M. Mineralized Present within 100m upsiope D. Present within 100m down-slope B. Underlies sample site Gossan | 55-54 | 5 SOIL HORIZON LH. Leaf, humus layer, undecomposed veyetation lying on the ground surface ido not sample) AH. Dark grey to black, organic -rich mineral horizon usually no deeper than 15cm from the surface ido not sample) AE. Grey to white (occassionally brown) leached mineral horizon near ground surface, usually sandy; accompanied by BF or BT horizon at depth ido not sample) BH. Black, organic-rich mineral horizon at depth greater than 15cm idon to sample) BF. Red-brown, iron-rich horizon BF. Borown, clay-rich horizon BG. Korizon which is water-saturated most of the | 57 58-60 61-66 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only LU (maybe) and C horizon G. Gleysol-BC horizon diagnostic Ø. Organic soil-bog vegeta- tion-no mineral matter LUCAL BEDROCK COMPOSITION Estimate-use Lists 1-4 COLOUP Munsell notation or abbrevation CONTAMINATION Blank - none L - logging C - culvert M - mine P - faming R - road | -1- 1 2 3 4 5 6 2 1 1 2 1 2 3 3 10 2 10 2 3 3 4 2 3 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 3 | SEDIMENTARY ROCKS SILISTONE Mudstone Greyvake Sandstone Quartzite Conglomerate ARGILLACEOUS Shale Argillite CALCAREOUS Limestone Dolomite CALCAREOUS Limestone Dolomite CHEMICAL PRECIPITATE Chert Marble Iron Formation LIST 4 METAMORPHIC ROCKS FINE GRAINED CONTACT PHANERITIC Meta quartzite Marble Soapstone |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-dry 3. Tundra-dry 4. Grassland, meadows 5. Peat mounds 6. Bog in depression 7. Forest-deciduous 9. Forest-decid | 52 if stream ? 10m wide! 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Aluvium-stream deposit Peat-bog Colluvium Lake sediment-clay Talus Residual Frost bouls* Seepage boils* Coluder field* Gravel* Use only if former origin cannot be identified. 46 BEDROCK Mineralized Present within 100m upslope Underlies sample site | 55-51 | 5 SOIL HORIZON LH. Leaf, humus layer, unde- composed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic -rich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occassionally brown) leached mineral horizon near ground sur- face, usually sandy; accompanied by BF or BT horizon at depth (do not sample) BH. Black, organic-rich min- eral horizon icon-rich horizon BF. Red-brown, icon-rich horizon which is water- saturated most of the year, identified by red brown mottles | 57 58-60 61-66 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon of diagnostic B. Brunisol-BM horizon is anly B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only LU (maybe) and C horizon diagnostic G. Gleysol-BC horizon diagnostic G. Organic soil-bog vegeta- tion-no mineral matter LUCAL BEDROCK COMPOSITION Estimate-use Lists 1-4 COLOUR Munsell notation or abbrevation CONTAMINATION Slank - none L - logging C - culvert M - mine P - faming R - road G - garbage T - trench H - house Ø - other - spec. | -1- 1 2 3 4 5 6 2 1 2 1 2 1 2 3 1 2 1 2 2 1 2 2 3 2 2 3 3 3 3 3 | SEDIMENTARY ROCKS SILISTONE ARENACEOUS SILISTONE Mudstone Greywake Sandstone Quartzite Conglomerate ARGILLACEOUS Shale Argillite CALCAREOUS Limestone Dolomice CHEMICAL PRECIPITATE Chert Marble Iron Formation LIST 4 METMOORPHIC ROCKS FINE GRAINED CONTACT PANNERITIC Meta quartzite Narble Soapstone Hornfels Seppentine Skarn |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-hummocky 2. Tundra-dry 1. Tundra-dry 1. Tundra-dry 3. Tundra-swampy 4. Grassland, meadows 5. Peat mounds 6. Bog in depression 7. Forest-deciduous 9. Forest-deciduous 9. Forest-deciduous 9. Forest-nixed A. Alder or willows 8. Cultivated land C. Desert, semi-arid D. Barren E. Talus fan F. Bank soil-stream | 52 if stream > 10m wide) 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Aluvium-stream deposit Peat-bou Coluvium Lake sediment-clay Coluvium Lake sediment-clay Fratus Residual Frost boils* Boepage boils* Geavel* Use only if former origin cannot be identified. 46 BEDROCK M. Mineralized P. Present within 100m up-slope B. Underlies sample site G. Gossan F. Pe surface stains | 55-54 | 5 SOIL HORIZON LH. Leaf, humus layer, unde- composed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic -rich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occasionally brown leached mineral horizon near ground sur- face, usually sandy; accompanied by BF or BT horizon at depth ido not sample) BH. Black, organic-rich min- eral horizon it depths greater than 15cm (do not sample) BF. Brown, clay-rich horizon BC. Horizon which is water- saturated most of the year, identified by red brown horizon which is only sightly different | 57 58-60 61-66 67 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon of diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only LU (maybe) and C horizon diagnostic G. Gleysol-BC horizon diagnostic G. Organic soil-bog vegeta- tion-no mineral matter LUCAL BEDROCK COMPOSITION Estimate-use Lists 1-4 COLOUR Munsell notation or abbrevation CONTAMINATION Blank - none L - logging C - culvert M - mine F - faming R - road G - garbage T - trench H - house Ø - other - spec. I - industry | -1- 1 2 3 4 5 6 -2- 1 1 2 3 4 -10 -2 1 1 2 1 2 3 4 1 2 3 1 1 3 3 3 | SEDIMENTARY ROCKS ARENACEOUS Siltstone Audstone Greywake Sandstone Quattite Conglomerate Argillacteous Shale Argillite CALCAREOUS Limestone Dolomite CHEMICAL PRECIPITATE Chert Marble Iron Formation LIST 4 METAMORPHIC ROCKS FINE GRAINED CONTACT PHANERITIC Meta quartite Marble Soapstone Morifels Serpenine Skarn Amphibolite |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-dry 3. Tundra-dry 4. Grassland, meadows 5. Peat mounds 6. Bog in depression 7. Forest-deciduous 9. Forest-decid | 52 if stream ? 10m wide! 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Aluvium-stream deposit Feat-bog Colluvium Lake sediment-clay Talus Residual Frost boils* Boepage boils* Cavel* Use only if former origin cannot be identified. 46 BEDROCK M. Mineralized P. Fresent within 100m up-slope D. Fresent within 100m down-slope B. Underlies sample site Gossan F. e surface stains R. Radioactivity | 55-54 | 5 SOIL HORIZON LM. Leaf, humus layer, undecomposed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic rich mineral horizon usually no deeper than 15cm (fon the surface (do not sample) AE. Grey To white (occassionally brown) leached mineral horizon near ground surface, usually sandy; accompanied by BF or BT horizon at depths greater than 15cm (do not sample) BH. Black, organic-rich mineral horizon at depths greater than 15cm (do not sample) BF. Red-brown, inor-rich horizon BC. Korizon which is water-saturated most ôf the year, identified by red brown horizon which is only slightly different in appearance from under- | 57 58-60 61-66 67 68-69 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon is only B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only LE (maybe) and C horizon diagnostic Ø. Organic soil-bog vegeta- tion-no mimeral matter LOCAL BEDROCK COMPOSITION Estimate-use Lists 1-4 COLOUR Hunsell notation or abbrevation CONTAMINATION Blank - none L - logging C - culvert M - mine F - farming R - road G - garbage T - trench H - house Ø - other - spec. I - industry <u>A COARSE FRACHENTS</u> | $\begin{array}{c} -1-\\1\\2\\3\\4\\5\\6\\ -2-\\1\\2\\3\\1\\2\\3\\1\\2\\3\\3\\4\\5\\6\\6\\7\end{array}$ | SEDIMENTARY ROCKS ARENACEOUS Siltstone Mudstone Greywake Sandstone Quattzite Conglomerate Argillate CALCAREOUS Shale Argillite CALCAREOUS Limestone Dolomite CHEMICAL PRECIPITATE Chert Marble Iron Formation LIST 4 METAMORPHIC ROCKS FINE GRAINED CONTACT PHANERITIC Meta quattzite Marble Soapstone Morafels Serpentine Skarn Amphibolite |
| 6. Colluvium* SOILS SITE TOPOGRAPHY Hill top Gentle slope Steep slope > 20° Base of slope Valley floor Depression Level Rolling Bog SAMPLE ENVIRONMENT Tundra-hummocky Tundra-hummocky Tundra-hummocky Tundra-swampy Grassland, meadows Peat mounds Porest-decidous Porest-decidous Porest-decidous Porest-decidous Porest-decidous Cultivated land Deseren, semi-arid Bank soil-stream Bank soil-stream Bank soil-stream Bank soil-stream Site ORNINGE Dry | 52 if stream ? 10m vide) 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Aluvium-stream deposit Peat-boq Colluvium Lake sediment-clay Talus Residual Frost bouls* Boepage boils* Cavel* Use only if former origin cannot be identified. 46 BEDROCK M. Mineralized Present within 100m upslope D. Present within 100m downslope B. Orderlies sample site Gossan F. Pe surface stains R. Radioactivity 47-48 pH G. Organic muck | 55-51 | 5 SOIL HORIZON LM. Leaf, humus layer, undecomposed veyetation lying on the ground surface id on of sample) AH. Dark grey to black, organic -rich mineral horizon usually no deeper than 15cm from the surface ido not sample) AE. Grey to white (occassionally brown) leached mineral horizon near ground surface, usually sandy; accompanied by BF or BT horizon at depth ido not sample) BH. Black, organic-rich mineral forizon at depth greater than 15cm (do not sample) BF. Red-brown, ison-rich horizon BG. Korizon which is water-saturated most of the year, identified by red brown horizon which is only slightly different in appearance from under-lying parent material Cl.2C.2.0, etc. Parent material | 57 58-60 61-66 67 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only LU (maybe) and C horizon G. Gleysol-BC horizon diagnostic Ø. Organic soil-bog vegeta- tion-no mineral matter LOCAL BEDROCK COMPOSITION ESTIMATE-USE Lists 1-4 COLOUP Munsell notation or abbrevation CONTAMINATION Blank - none L - logging C - culvert M - mine G - farbage T - trench H - house Ø - other - spec. I - industry <u>A COARSE FRACKENTS</u> SHAPE OF COARSE FRACKENTS A. Angular | -1- 1 2 3 4 5 6 1 1 2 1 1 2 3 4 -10 -2 1 1 2 3 4 1 2 3 1 1 2 3 3 6 1 2 3 3 3 3 3 3 3 3 3 | SEDIMENTARY ROCKS ARENACEOUS Siltstone Mudstone Greywake Sandstone Quattzite Conglomerate Argillate CALCAREOUS Shale Argillite CALCAREOUS Limestone Dolomite CHEMICAL PRECIPITATE Chert Marble Iron Formation LIST 4 METAMORPHIC ROCKS FINE GRAINED CONTACT PRANERTIC Meta quartzite Marble Soapstone Hornfels Seepentine Skarn Anphibolite Eclogite MECHANICAL MYLonite |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression 7. Lavel 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-hummocky 2. Tundra-dry 1. Tundra-swampy 4. Grassland, meadows 5. Peat mounds 6. Bog in depression 7. Forest-decidous 8. Porest-decidous 9. Barren 1. Talus fan 7. Bank soil-stream 1. Bank soil-stream 1. Bank soil-stream 1. Dry 2. Moist 3. Wet 3. Subst 2. Stream 3. Subst 2 | 52 if stream > 10m wide) 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Aluvium-stream deposit Peat-boq Colluvium Lake sediment-clay Talus Residual Frost boils* Seepage boils* Boulder field* Of Gravel* Use only if former origin cannot be identified. 46 BEDRCXX M. Mineralized P. Fresent within 100m upsiope D. Gravel sample site Gossan F. Pe surface stains R. Raioactivity 47-48 pH 49 SAMPLE TEXTURE | 55-51 | 5 SOIL HORIZON LH. Leaf, humus layer, unde- composed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic -rich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occassionally brown) leached mineral horizon near ground sur- face, usually sandy; accompanied by BF or BT horizon at depth BH. Black, organic-rich min- eral horizon at depths greater than 15cm (do not sample) BF. Red-brown, iton-rich horizon which is water- saturated most of the year, identified by red brown mottles BH. Brown horizon which is only slightly different in appearance from under- lying parent material | 57 58-60 61-66 67 68-69 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only LU (maybel) and C horizon diagnostic O. Organic soil-bog vegeta- tion-no mineral matter LOCAL BEDROCK COMPOSITION Estimate-use Lists 1-4 COLOUR Munsell notation or abbrevation CONTAMINATION Blank - none L - logging C - culvert M - mine F - farming R - road G - gatbage T - trench H - house Ø - other - spec. I - industry <u>CONSE FRACMENTS</u> A. Angular A. Angular | -1- 1 2 3 4 5 6 7 1 1 2 3 1 2 3 1 2 3 1 2 3 4 5 6 7 1 2 3 6 7 1 2 3 3 1 2 3 3 1 2 3 3 1 2 3 3 3 1 2 3 3 1 2 3 3 1 2 3 3 1 2 3 3 1 2 3 3 1 2 3 1 2 3 1 2 3 1 1 2 3 1 1 2 3 1 2 3 1 1 2 3 3 1 2 3 3 1 1 2 3 3 1 3 3 1 3 3 1 2 3 3 1 2 3 3 3 1 2 3 3 3 3 3 3 3 3 3 | SEDIMENTARY ROCKS ARENACEOUS Siltstone Mudstone Greywake Sandstone Quattzite Conglomerate ARGILLACEOUS Shale Argillite CALCAREOUS Limestone Dolomite CHEMICAL PRECIPITATE Chert Marble Iron Formation LIST 4 METAMORPHIC ROCKS FINE GRAINED CONTACT PHANERITIC Meta quartzite Marble Sospetone Hornfels Serpentine Skarn Amphibolite EElegite MECHANICAL MYlonite Flaser Augen |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-dry 3. Tundra-dry 4. Grassland, meadows 5. Peat mounds 6. Bog in depression 7. forest-coniferous 8. Forest-decidous 9. Forest-decido | 52 if stream ? 10m wide! 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Aluvium-stream deposit Feat-bog Colluvium Lake sediment-clay Talus Residual Frost bouls* B. Seepage boils* C. Boulder field* D. Gravel* Use only if former origin cannot be identified. 46 BEDROCK M. Mineralized P. Fresent within 100m up-slope D. Present within 100m down-slope Medries sample site Gossan P. # surface stains R. Radioactivity 47-48 pH 49 SAMPLE TEXTURE Organic muck Fibrous, peaty organic matter Very andy | 55-54 | 5 SOIL HORIZON LH. Leaf, humus layer, unde- composed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic -rich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occassionally brown) leached mineral horizon near ground sur- face, usually sandy; accompanied by BF or BT horizon at depth BH. Black, organic-rich min- eral horizon at depths greater than 15cm (do not sample) BF. Red-brown, iton-rich horizon which is water- saturated most of the year, identified by ged brown mottles BM. Brown horizon which is only slightly different in appearance from under- lying parent material for soil CA. White calcium carbonate precipitate in C horizon | 57 58-60 61-66 67 68-69 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only LU (maybe) and C horizon G. Gleysol-BC horizon diagnostic Ø. Organic soil-bog vegeta- tion-no mineral matter LOCAL BEDROCK COMPOSITION ESTIMATE-USE Lists 1-4 COLOUP Munsell notation or abbrevation CONTAMINATION Blank - none L - logging C - culvert M - mine G - farbage T - trench H - house Ø - other - spec. I - industry <u>A COARSE FRACKENTS</u> SHAPE OF COARSE FRACKENTS A. Angular | -1- 1 2 3 4 5 6 1 1 1 1 2 3 1 1 2 3 1 1 3 1 1 2 3 1 1 2 3 4 5 6 6 2 3 3 2 3 3 2 3 3 3 | SEDIMENTARY ROCKS SILISTONE MUDITION SILISTONE MUDITION Greywake Sandstone Quattite Conglomerate Argillacteous Shale Argillacteous Shale Argillite CALCAREOUS Limestone Olomite CALCAREOUS Limestone CALCAREOUS Limestone CALCAREOUS Limestone CALCAREOUS LIMESTONE FIONE FORMATION LIST 4 METAMORPHIC ROCKS FINE GRAINED CONTACT Meta quattite Marble Soapstone Mornfels Safarn Amphibolite Eclogite MECHANICAL MYlonite Flaser Augen Ultramylonite |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression 7. Lavel 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-hummocky 2. Tundra-dry 1. Tundra-swampy 4. Grassland, meadows 5. Peat mounds 6. Bog in depression 7. Forest-decidous 8. Porest-decidous 9. Barren 1. Talus fan 7. Bank soil-stream 1. Bank soil-stream 1. Bank soil-stream 1. Dry 2. Moist 3. Wet 3. Subst 2. Stream 3. Subst 2 | 52 if stream ? 10m wide! 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Allwium-stream deposit Peat-bog Colluvium Lake sediment-clay Talus Residual Frost bouls* Sepage boils* Boepage boils* Boulder field* Gravel* Use only if former origin cannot be identified. 46 BEDROCK Mineralized Present within 100m upslope Present within 100m downslope Hoderlies sample site Gossan Pe surface stains Radioactivity 47-48 pH 49 SAMPLE TEXTURE Organic muck Fibrous, peaty organic matter Sandy Sandy 4. Sand-silt | 55-54 | 5 SOIL HORIZON LH. Leaf, humus layer, unde- composed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic -rich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occassionally brown) leached minerail horizon near ground sur- face, usually sandy; accompanied by BF or BT horizon at depth BH. Black, organic-rich min- grait horizon at depth BH. Black, organic-rich min- grater than 15cm (do not sample) BF. Red-brown, igor-rich horizon which is water- saturated most ôf the year, identified by ged brown mottles BM. Brown horizon which is only slightly different in appearance from under- lying parent material for soil CA. White calcium carbonate precipitate in C horizon SL 2, 21, etc. Bog sample at various depths | 57 58-60 61-66 67 68-69 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is anly B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only LU (maybe) and C horizon diagnostic G. Gleysol-BC horizon diagnostic G. Organic soil-bog vedeta- tion-no mineral matter LUCAL BEDROCK COMPOSITION Estimate-use Lists 1-4 COLOUR Munsell notation or abbrevation CONTAMINATION Slank - none L - logging C - culvert M - mine F - faming R - road G - garbage T - trench H - house Ø - other - spec. I - industry NAPE OF COARSE FRACHENTS A. Angular R. Rounded | $\begin{array}{c} -1-\\1\\2\\3\\4\\5\\6\\ -2-\\1\\2\\1\\2\\3\\1\\2\\3\\6\\6\\6\\6\\6\\6\\6$ | SEDIMENTARY ROCKS SILISTONE ARENACEOUS SILISTONE ANDATION Greywake Sandstone Quartzite Conglomerate ARGILLACEOUS Shale Argillite CALCAREOUS Limestone Oulomite CHEMICAL PRECIPITATE Chert Arable Iron Formation LIST 4 METAMORPHIC ROCKS FINE GRAINED CONTACT PRAMERITIC Mata Quartzite Mata Serpontine Starn Amphibolite Eclogite MECHANICAL Mylonite SLATE |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentie slope 3. Steep slope > 20° 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-Nummocky 2. Tundra-Nummocky 2. Tundra-dry 3. Tundra-dry 3. Tundra-dry 3. Tundra-dry 3. Tundra-dry 3. Forest-deciduous 3. Porest-deciduous 3. Porest-mixed 4. Alder or willows 4. Cultivated land 5. Deart, semi-arid 6. Barren 6. Bank soil-stream 7. Boist 7. Dotit top 7. | 52 if stream ? 10m wide! 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Aluvium-stream deposit Peat-bog Colluvium Lake sediment-clay Talus Residual Frost bouls* Sepage boils* Boepage boils* Coluder field* Gravel* Use only if former origin cannot be identified. 46 BEDROCK Mineralized Present within 100m upslope Present within 100m downslope Dersent within 100m downslope Redicactivity 47-48 pH 49 SAMPLE TEXTURE Sand-silt Sand-silt-clay Sand-silt-clay Salt | | 5 SOIL HORIZON LH. Leaf, humus layer, unde- composed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic -rich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occassionally brown) leached minerail horizon near ground sur- face, usually sandy; accompanied by BF or BT horizon at depth BH. Black, organic-rich min- eral horizon at depth BF. Red-brown, iton-rich horizon which is water- saturated most of the year, identified by red brown mottles BM. Brown horizon which is only slightly different in appearance from under- lying parent material for soil CA. White calcium carbonate precipitate in C horizon SI, Ø3, 2, 31, etc. Bog sample at various depths | 57 58-60 61-66 67 68-69 70 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is anny B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only LU (maybe) and C horizon diagnostic G. Gleysol-BC horizon diagnostic B. Organic soil-bog vegeta- tion-no mineral matter LOCAL BEDROCK COMPOSITION Estimate-use Lists 1-4 COLOUR Munsell notation or abbrevation CONTAMINATION Blank - none L - logging C - culvert M - mine F - farming R - road G - garbage T - trench H - house Ø - other - spec. I - industry A COARSE FRACMENTS A. Angular R. Rounded S. Subrounded M. Mixed above types SCINTILLOMETER NUMBER GAMMA COUNT AT SAMPLE SITE | $\begin{array}{c} -1-\\1\\2\\3\\4\\1\\2\\1\\2\\1\\2\\1\\1$ | SEDIMENTARY ROCKS SILISTONE ARENACEOUS SILISTONE Mudatone Greyvake Sandstone Quartzite Complomerate ARGILLACECUS Shale Argillite CALCAREOUS Limestone Dolomite CHEMICAL PRECIPITATE Chert Marble Iron Formation LIST 4 MethodPhile ROCKS FINE GRAINED CONTACT PHANERITIC Metha quartzite Marble Soapstone Soapstone Sharn Amphibolite Eclogite MECHANICAL Mylonite Flaser Augen Ultramylonite SLATE PHYLLITE |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-dry 3. Tundra-dry 4. Grassland, meadows 5. Peat mounds 6. Bog in depression 7. Forest-coniferous 8. Forest-deciduous 9. Forest-deciduous 9. Forest-deciduous 8. Corest-deciduous 9. Forest-deciduous 9. Forest-d | 52 if stream ? 10m wide) 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Aluvium-stream deposit Peat-boq Colluvium Lake sediment-clay Talus Residual Frost boils* Bearel* Use only if former origin cannot be identified. 46 BEDRCK Mineralized Present within 100m upsiope Present within 100m downslope Deresent within 100m downslope Underlies sample site Gossan Pre surface stains Readicactivity 47-48 pH Sandy alit Sandy alit-clay Silt clay | 55-54 | 5 SOIL HORIZON LH. Leaf, humus layer, unde- composed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic -rich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occasionally brown) leached mineral horizon near ground sur- face, usually sandy; accompanied by BF or BT horizon at depth (do not sample) BH. Black, organic-rich min- eral horizon at depths greater than 15cm (do not sample) BF. Brown, clay-rich horizon BG. Horizon which is water- saturate most of the year, identified by red brown mottles BH. Brown horizon which is only slightly different in appearance from under- lying parent material for soil CA. White calcium carbonate precipitate in C horizon gl. (27,0); etc. By sample at various depths TF. Taivs fines SOIL TYPE | 57 58-60 61-66 67 68-69 70 71 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regozol-little or no soil development. No B soil horizon, only LH (maybe) and C horizon diagnostic D. Organic soil-bog vegeta- tion-no mineral matter LOCAL BEDROCK COMPOSITION Estimate-use Lists 1-4 COLOUR Hunsell notation or abbrevation CONTAMINATION Blank - none L - logging C - culvert M - mine F - farming R - road G - gatbage T - trench H - house Ø - other - spec. I - industry <u>COARSE FRACMENTS</u> SHAPE OF COARSE FRAGMENTS A. Angular R. Bounded S. Subrounded M. Mixed above types <u>SCINTILLOMETER NUMBER</u> | $\begin{array}{c} -1-\\1\\2\\3\\4\\5\\2\\1\\2\\1\\2\\2\\1\\2\\3\\4\\4\\1\\2\\3\\1\\2\\3\\3\\4\\4\\5\\6\\7\\8\\3\\1\\2\\3\\4\\4\\6\\5\\ 0\\60\\60\\60\\60\\60\\1\\1\\2\\2\\3\\4\\4\\6\\60\\60\\60\\60\\60\\60\\60\\60\\60\\60\\60\\60\\60\\60\\60\\60\\7\\1\\2\\2\\3\\4\\4\\4\\60\\$ | SEDIMENTARY ROCKS SILISTONE MUSICION SILISTONE MUSICION Greyvake Sandstone Quartzite Conglomerate ARGILLACEOUS Shale Argillite CALCAREOUS Limestone Olomite CALCAREOUS Limestone CALCAREOUS Limestone CALCAREOUS Limestone CALCAREOUS LIMESTONE CALCAREOUS Shale Argillite CALCAREOUS LIMESTONE CALCAREOUS Shale ARGILLACEOUS FINE GRAINED CONTACT PHANERITIC Mathe Sospitone Sharn Amphibolite Eclogite Kaupan Ultramylonite SLATE PHYLITE SCHIST |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Centle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression 7. Lavel 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-bummocky 2. Tundra-dry 1. Tundra-swampy 4. Grassland, meadows 5. Peat mounds 6. Bog in depression 7. Forest-decidous 8. Porest-decidous 9. Barren 1. Talus fan 7. Bank soil-stream 1. Bank soil-stream 1. Bank soil-stream 1. Dry 2. Moist 3. Wet 4. Saturated 4. Saturat | 52 if stream ? 10m wide! 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Aluvium-stream deposit Peat-bog Colluvium Lake sediment-clay Talus Residual Frost bouls* Sepage boils* Boepage boils* Coluder field* Gravel* Use only if former origin cannot be identified. 46 BEDROCK Mineralized Present within 100m upslope Present within 100m downslope Dersent within 100m downslope Redicactivity 47-48 pH 49 SAMPLE TEXTURE Sand-silt Sand-silt-clay Sand-silt-clay Salt 51 Column (Column) 52 Context (Column) 53 Context (Column) 54 Context (Column) 64 Column) 64 Column) 65 Silt | | <u>SOIL HORIZON</u> LH. Leaf, humus layer, unde- composed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic -rich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occassionally brown) leached minerail horizon near ground sur- face, usually sandy; accompanied by BF or BT horizon at depth BH. Black, organic-rich min- eral horizon at depths greater than 15cm (do not sample) BF. Red-brown, icon-rich horizon BF. Brown, clay-rich horizon SG. Horizon which is water- saturated most of the year, identified by red brown mottles BM. Brown horizon which is only slightly different in appearance from under- lying parent material for soil CA. White calcium carbonate precipitate in C horizon SI, 62,031, etc. Bog sample at warious depths TF. Talus fines SOIL TYPE C. Hornozem-prarie soil usually under grassland | 57 58-60 61-66 67 68-69 70 71 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon of profile R. Regosol-little or no soil development. No B soil horizon, only Li (maybe) and C horizon diagnostic G. Gleysol-BC horizon diagnostic G. Organic soil-bog vegeta- tion-no mineral matter LOCAL BEDROCK COMPOSITION ESTIMATE-use Lists 1-4 COLOUR Munsell notation or abbrevation CONTAMINATION Blank - none L - logging C - culvert M - mine F - farming R - road C - garbage T - trench H - house Ø - other - spec. I - industry MARSE FRACHENTS SHAPE OF CORSE FRACHENTS A. Angular R. Rounded S. Subrounded M. Mixed above types SCINTILLOMETER NUMBER GAMMA COUNT AT SAMPLE SITE Scint reading at ground level over hole | -1- 1 2 3 4 5 6 1 2 1 1 2 1 1 2 1 1 | SEDIMENTARY ROCKS SILISTONE ARENACEOUS SILISTONE Mudatone Greyvake Sandstone Quartzite Complomerate ARGILLACEOUS Shale Argillite CALCAREOUS Limestone Dolomite CALCAREOUS Limestone CALCAREOUS LIMESTON CALCAREOUS FINE GRAINED CONTACT PHANERITIC Meta quartzite Marble Soapstone Hornfels Serpentine Skarn Amphibolite Eclogite HCCHANICAL Mylonite SLATE PHYLLITE SCHIST GREISS • MIGMATTE • |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-dry 3. Tundra-dry 4. Grassland, meadows 5. Peat mounds 6. Bog in depression 7. Forest-coniferous 8. Forest-deciduous 9. Forest-deciduous 9. Forest-deciduous 8. Corest-deciduous 9. Forest-deciduous 9. Forest-d | 52 if stream ? 10m wide) 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Aluvium-stream deposit Peat-boug Colluvium Lake sediment-clay Talus Residual Frost boils* Boepage boils* Govel* Use only if former origin cannot be identified. 46 BEDROCK M. Mineralized P. Fresent within 100m upsilope D. Gravel* Bodge D. Fresent within 100m downslope D. Fresent within 100m downslope B. Underlies sample site Gossan F. Pe surface stains R. Radioactivity 47-48 pH 49 SAMPLE TEXTURE Ø. Organic muck Fibrous, peaty organic matter Vary aandy Sandy Sand-silt Silt-clay Glay | 57 | 5 SOIL HORIZON LH. Leaf, humus layer, unde- composed veyetation lying on the ground surface | 57 58-60 61-66 67 68-69 70 71 72-75 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only LH (maybel) and C horizon diagnostic O. Organic soil-bog vegeta- tion-no mineral matter LOCAL BEDROCK COMPOSITION Estimate-use Lists 1-4 COLOUR Munsell notation or abbrevation CONTAMINATION Blank - none L - logging C - culvert M - mine F - farming R - road G - gatbage T - trench H - house Ø - other - spec. I - industry X. COARSE FRACHENTS SHAPE OF COARSE FRACMENTS A. Angular R. Rounded S. Subrounded M. Mixed above types SCINTILLOMETER NUMBER CANNA COUNT AT SAMPLE SITE SCINT rein of the constant of the comparison CONTAMINATION Blank - none L - logging C - culvert M - mine F - farming R - road G - gatbage T - trench H - house Ø - other - spec. I - industry SIAPE OF COARSE FRACMENTS A. Angular R. Rounded S. Subrounded M. Mixed above types | -1- 1 2 3 4 5 6 1 1 2 3 1 1 2 3 1 1 2 3 1 1 2 3 1 1 2 3 1 1 2 3 1 1 2 3 1 1 2 3 1 1 2 3 3 1 2 3 1 2 3 3 1 2 3 1 2 3 1 2 3 1 2 3 3 1 2 3 3 1 2 3 1 2 3 3 1 2 3 3 1 2 3 3 1 2 3 3 1 1 2 3 3 1 1 2 3 1 1 2 3 1 1 2 3 3 1 1 2 3 1 1 2 3 3 1 1 2 3 3 1 1 2 3 3 1 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 6 6 7 6 7 2 3 | SEDIMENTARY ROCKS SILISTONE ARENACEOUS SILISTONE Mudatone Greyvake Sandstone Quartzite Complomerate ARGILLACEOUS Shale Argillite CALCAREOUS Limestone Dolomite CHEMICAL PRECIPITATE Chert Marble Iron Formation LIST 4 Methadopplic Rocks FINE GRAINED CONTACT PHANERITIC Metha quartzite Marble Soapstone Hornfels Serpentine Skarn Amphibolite Eclogite Methadopite SLATE PHYLLITE SCHIST GNEISS • MIGMATTE • |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-dry 1. Tundra-dry 1. Tundra-dry 2. Tundra-swampy 4. Grassland, meadows 5. Peat mounds 6. Bog in depression 7. Forest-decidous 9. Forest-mixed 1. Alder or willows 8. Cultivated land C. Desert, semi-arid D. Barren F. Bank soll-stream G. Bank soll hake H. Road cut | 52 if stream > 10m wide) 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Aluvium-stream deposit Peat-boq Colluvium Lake sediment-clay Peat-boq Colluvium Lake sediment-clay Fraits Peat-boq Colluvium Lake sediment-clay Fraits Peat-boq Colluvium Lake sediment-clay Talus Freat-boq Colluvium Lake sediment-clay Talus Freat-boq Colluvium Lake sediment-clay Talus Freated within 100 up-slope Depresent within 100m down-slope Duderlies sample site Gossan Freated stains R Radioactivity 47-48 pH 49 SAMPLE TEXTURE Ø. Organic muck Fibrous, peaty organic matter Very sandy Sand-silt Sand-silt Silt-clay Clay Gravel 50-51 THICKNESS OF SOLL SAMPLE INTERVAL | 57 | 5 SOIL HORIZON LH. Leaf, humus layer, unde- composed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic -rich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occassionally brown) leached mineral horizon near ground sur- face, usually sandy; accompanied by BF or BT horizon at depth (do not sample) BH. Black, organic-rich min- eral horizon at depth greater than 15cm (do not sample) BF. Red-brown, iron-rich horizon which is water- saturated most of the year, identified by red brown mottles BH. Brown horizon which is only slightly different in appearance from under- lying parent material C1.C2,C3, etc. Parent material for soil CA. White calcium carbonate precipitate in C horizon J1.92,93, etc. BG sample at warious depths TF. Taius fines SOL TYPE C. Chernozem-prairie soil usually under grassland or meadow, thick AH > 10cm, CA horizon at depth | 57 58-60 61-66 67 68-69 70 71 72-75 76 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-little or no soil horizon, only LH (maybe) and C horizon G. Gleysol-BC horizon diagnostic D. Organic soil-bog vegeta- tion-no mineral matter LOCAL BEDROCK COMPOSITION Estimate-use Lists 1-4 COLOUR Munsell notation or abbrevation CONTAMINATION Blank - none L - logging C - culvert M - mine F - farming R - road G - gatbage T - trench H - house Ø - other - spec. I - industry <u>L COARSE FRACMENTS</u> A. Angular R. Bounded S. Subrounded M. Mixed above types <u>SCINTILIOMETER NUMBER</u> GAMMA COUNT AT SAMPLE SITE <u>SCINT red bodrock</u> is in- | $\begin{array}{c} -1-\\1\\2\\3\\4\\5\\6\\7\\1\\2\\2\\1\\2\\3\\1\\2\\3\\4\\5\\6\\7\\8\\6\\7\\8\\6\\7\\8\\6\\7\\8\\6\\7\\8\\6\\7\\8\\6\\7\\8\\6\\7\\8\\6\\7\\8\\6\\7\\8\\6\\7\\8\\6\\7\\8\\6\\7\\8\\6\\7\\8\\6\\7\\8\\6\\7\\8\\6\\7\\8\\7\\7$ | SEDIMENTARY ROCKS ARENACEOUS Silistone Mudstone Greywake Sandstone Quattite Conglomerate ARGILLACEOUS Shale Argillite CALCAREOUS Limestone Dolomite CHEMICAL PRECIPITATE Chert Marble Iron Formation LIST 4 Methode Constant FINE GRAINED CONTACT PHANERITIC Meta quartzite Marble Soaptone Hornfels Serpentine Skarn Amphibolite Eclegite Metholite Eclegite Metholite Eclegite Metholite Slawer Augen Ultramylonite SLITE PHYLITE SCHIST GMEISS • MIGMATITE • "Cranite Mongnelite |
| 6. Colluvium* SOILS 40 SITE TOPOGRAPHY 1. Hill top 2. Gentle slope 3. Steep slope > 200 4. Base of slope 5. Valley floor 6. Depression 7. Level 8. Rolling 9. Bog 41 SAMPLE ENVIRONMENT 1. Tundra-dry 3. Tundra-dry 4. Grassland, meadows 5. Peat mounds 6. Bog in depression 7. Forest-coniferous 8. Porest-deciduous 9. Forest-deciduous 9. Forest-d | 52 if stream ? 10m wide! 45 OVERBURDEN ORIGIN Till-angular boulders Outwash-sandy, rounded boulders Lake sediment-sand/silt Alluvium-stream deposit Feat-bog Colluvium Lake sediment-clay Talus Residual Frost boils* B. Seepage boils* C. Boulder field* D. Gravel* Use only if former origin cannot be identified. 46 BEDROCK M. Mineralized P. Fresent within 100m up-slope D. Fresent within 100m down-slope B. Underlies sample site Gossan F. P surface stains R. Radioactivity 47-48 pH 49 SAMPLE TEXTURE Organic muck Fibrous, peaty organic matter Sand-silt-clay Sand-silt Sand-silt-clay Clay Clay Gravel | 57 | 5 SOIL HORIZON LH. Leaf, humus layer, unde- composed vegetation lying on the ground surface (do not sample) AH. Dark grey to black, organic -rich mineral horizon usually no deeper than 15cm from the surface (do not sample) AE. Grey to white (occassionally brown) leached mineral horizon near ground sur- face, usually sandy; accompanied by BF or BT horizon at depth BH. Black, organic-rich min- eral horizon at depths greater than 15cm (do not sample) BF. Red-brown, iron-rich horizon which is water- saturated most of the year, identified by red brown mottles BM. Brown horizon which is only slightly different in appearance from under- lying parent material for soil CA. White calcium carbonate precipitate in C horizon SI, Ø2, Ø3, etc. Bog sample at various depths TF. Taius fines SOIL TYPE C. Chernozem-pratie soil usually under grassland or meadow, thick AH > 10cm. CA horizon at depth | 57 58-60 61-66 67 68-69 70 71 72-75 76 77-78 | SOIL TYPE Cont. L. Luvisol-BT horizon diagnostic P. Podzol-BF horizon diagnostic B. Brunisol-BM horizon is only B horizon of profile R. Regosol-little or no soil development. No B soil horizon, only LH (maybel) and C horizon diagnostic O. Organic soil-bog vegeta- tion-no mineral matter LOCAL BEDROCK COMPOSITION Estimate-use Lists 1-4 COLOUR Munsell notation or abbrevation CONTAMINATION Blank - none L - logging C - culvert M - mine F - farming R - road G - gatbage T - trench H - house Ø - other - spec. I - industry X. COARSE FRACHENTS SHAPE OF COARSE FRACHENTS A. Angular R. Rounded S. Subrounded M. Mixed above types SCINTILLOMETER NUMBER CANNA COUNT AT SAMPLE SITE SCINT reing acint counts APPROXIMATE SLOPE ANGLE | -1- 1 2 3 4 5 6 1 1 1 1 1 1 2 3 1 1 2 3 1 1 2 3 1 1 2 3 1 1 1 2 3 1 1 1 2 3 1 1 2 3 1 1 2 3 1 1 2 3 1 1 2 3 1 1 1 2 2 2 2 1 1 2 2 | SEDIMENTARY ROCKS ARENACEOUS Silistone Mudstone Greywake Sandstone Quatzite Conglomerate ARGILLACEOUS Shale Argillite CALCAREOUS Limestone Dolonite CHEMICAL PRECIPITATE Chert Marble Iron Formation LIST 4 METAMOBHIC ROCKS FINE GRAINED CONTACT PHANERITIC Meta quartzite Marble Soapstone Skarn Amphibolite Eclegite MeCHANICAL Mylonite Flaser Augen Ultramylonite SLATE PHYLITE SCHIST GREISS • MIGMATITE • CGranie Mongolite Chanice Chanice Chanice Chanice Conglomerate Conglomer |
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Form 5/84

| SAMPLE TYPE(S) | ALL | | | | | |
|-------------------------------------|-----------|------------------|------------------|-----------|-----------------|-------------|
| BEDROCK TYPE(S) | ALL | | | | | |
| SOIL HORIZON(S) | ALL | | | | | |
| SAMPLE TEXTURE(S) | ALL | | | | | |
| OVERBURDEN ORIGIN(S) | ALL | | | | | |
| LABORATORY-SIZE FRACTION-EXTRACTION | S) ALL | | | | | |
| PAIR STATUS | ALL | | | | | |
| RECH SMPLH UTM-E UTM-N | | | | MO CU PB | IN - NI U | MN FE AS |
| 71 1076505P 180550V8A6768306283910 | 94009 1 | 154 443 | 1 10 S | 4 134 12 | 51 501 5 | 903 4.77 .1 |
| 72 1076505P 180555V8A6768706284160 | | 104 443 | 185 | 4 64 10 | 47 797 5 | 754 5.3 .1 |
| 73 1076505P 180561V8A6775406284610 | | 104 443 | 145 | 2 87 8 | 50 897 5 | 947 5.44 .1 |
| 74 1075505P 1805669866771606284110 | | 5 63 442 | 1 4 5 | 10 102 12 | 57 544 5 | 657 5.26 .1 |
| 75 1076505P 180567V8A6771906284150 | | 103 444 | 1 454 | 3 70 | 68 | 007 0725 11 |
| 77 1075505P 180580V8A6767906282910 | | . 154 412 | 1 135% | 15 378 | 62 | |
| 78 1076505P 180586V8A6770006283240 | | 5 73 412 | 1 7 5 | 11 81 15 | 91 158 5 | 538 4.3 .1 |
| 79 1075505P 180589V8A6770805293350 | | 53 412 | 1 | 7 303 9 | 53 329 5 | 783 4.3 .1 |
| 90 1075505P 180691V8A6758706283190 | | | 165 | 8 210 | 55 | 100 410 11 |
| 91 1076505P 180741V865770806284440 | | 4373443 | 185 | 1 54 8 | 75 1266 5 | 894 7.58 .1 |
| 92 1076505P 180744V8A6775106284270 | | 5 8372442 | 185 | 4 105 | 83 | 074 7.30 11 |
| 93 1076505P 180750V865775006285170 | | 3 30473443 | 1 8SE | 1 86 | 63 | |
| 94 1076505P 180752V8A5776706284260 | | 5 8372443 | 1 7NE | 4 100 | 112 | |
| 95 1076505P 180754V8A6770406285360 | | 10475443 | 1 6NE | 1 15 | 51 | |
| 96 1076505P 180770V8A6773006285790 | | 2 15474443 | 1 6NE | .5 44 | 40 | |
| 98 1076505P 180790V866772606285460 | | 10370443 | 1 2NE | 2 50 7 | 56 1065 5 | י דרי הוד |
| 100 10765052 1807704048775206285540 | | 15475344 | 1 146 | 10 89 | 36 1963 J 75 | 768 6.93 .1 |
| 101 1074505P 180836V8R6778306285370 | | 7370443 | 1 7NE | 2 134 | 51 51 | |
| 112 1076505F 181001V846767406285260 | | 2 15487442 | 1 7 ME 1 4 ME | 1 15 | 39 | |
| 116 1076505P 181154V846751906284830 | | | 1 7110 | 4 172 | 70 | |
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SELECTION # 1 SAMPLE TYPE(S)

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| 536 5076505P 180751V866776306284240 | D1000 001110 000 0500M | GY 201 8NE 3 203 10 | 35 7/6 5 1111 5 75 1 |
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| 689 5075505P 190930V8A5754505283400 | 94009 221116 330 358BM | RBR 7114 S | 11 125 14 | 66 293 5 | 603 4.57 .1 |
| 690 5076505F 180931V8A6764006283320 | 94009 321 16 230 358BM | NBR 712154 | 11 220 12 | 53 304 5 | 661 4.37 .1 |
| 691 5075505P 180932V8A6763505283250 | | MBR 121 6 S | 4 115 17 | 69 250 5 | 807 4.45 1 |
| 692 5076505P 180933V8A6762906283180 | | RBR 381 6 G | 7 237 14 | 29 56 5 | 363 3.06 .1 |
| 693 5076505P 180934V9A6762406283110 | | RBR 51 2 S | 8 182 11 | 57 900 5 | 769 5.87 .1 |
| 694 5076505P 180935V8A6761806283040 | | RBR 301 4NE | 3 157 12 | 37 64 5 | 487 3.16 .1 |
| 695 5076505P 180937V8A6762306282830 | | RBR 201 85W | 4 71 14 | 62 32 5 | 604 3.47 .1 |
| 695 5076505P 180938V8A6752906282950 | | DBR 201 8 5 | 4 58 12 | 34 29 5 | 500 2.5 .1 |
| 697 5076505P 180939V8A6763506283020 | | RBR 151 65E | 5 190 11 | 31 51 5 | 322 3.12 .1 |
| 678 5076505P 180740V8A6764006283100 | | RBR 101 7 5 | 3 111 12 | 44 40 5 | |
| 679 5076505P 180941V8A6764606283170 | | DBR 511554 | | | 413 3.04 .1 |
| 700 5076505P 180741V5A6765206283240 | | | | | 597 3.13 .1 |
| 700 50765052 1807427886765806283210 | | DBR 201135W | 15 94 11 | 39 55 5 | 892 2.99 .2 |
| | | RBR 5112SW | 10 129 13 | 61 143 5 | 764 5 .1 |
| 702 5076505P 180947V8A6768706283420 | | RBR 5118 S | 7 145 11 | 57 193 5 | 548 4.14 .1 |
| 703 5076505P 180948V8A6768106293360 | | RBR 151 95¥ | 5 193 10 | 53 263 5 | 806 4.47 .1 |
| 704 5075505P 190949V8A5757505283280 | | RBR 61 75W | 4 184 10 | 47 184 5 | 425 4.17 .1 |
| 705 5076505P 180950V8A6766806283210 | | MBR 101 55W | 8 202 11 | 39 92 5 | 405 3.13 .1 |
| 706 5078505P 180951V8A6765206283130 | | RBR 101 5 S | 21 147 12 | 54, 247 5 | 556 3.97 .1 |
| 707 5076505P 180952V8A6765506283060 | | M9R 101 4 S | 17 181 14 | 39 49 5 | 309 3.65 .1 |
| 708 5076505P 180953VBA6764906282980 | 94009 521 11 51220 308BM | DBR 8145 | 16 269 10 | 62 451 5 | 589 4.58 1 |
| 709 5076505P 180954V8A6764406282910 | 94009 521311 66210 208BM | RBR 8145 | 4 88 13 | 45 47 5 | 523 3.47 .1 |
| 710 5074505P 180955V8A6763806282830 | 94009 521 11 50220 308BM | RER 101 4 S | 5 77 12 | 47 43 5 | 405 3.4 .1 |
| 711 5076505P 180956V8A6763406282770 | 94D09 521 11 49230 35BBM | DBR 201 4 S | 3 75 13 | 42 23 5 | 357 2.67 .2 |
| 722 5076505P 180982V8A6760706283130 | 94D09 521 11 57215 20R | MBR 201 3 5 | 7 153 11 | 52 52 5 | 555 3.41.1 |
| 723 5076505P 180983V8A6761406283190 | 94809 521 11 58220 3088M | RBR 101 | 9 152 12 | 42 94 5 | 484 3.35 .1 |
| 724 5076505P 180984V8A6761906283270 | 94009 421 11 68215 258BM | MBR 151 6SW | 1 102 8 | 38 736 5 | 656 4.44 .1 |
| 725 5076505P 180787V8A6764706283640 | 94009 321 16 64215 2088M | MBR 201215W | 2 83 9 | 53 358 5 | 975 4.74 .1 |
| 726 5076505P 181036V8A6757906284440 | 94D09 421 16 72210 20R | MER 4011654 | 1 43 14 | 35 1043 5 | 882 5.37 .1 |
| 727 5076505P 181037V8A6756806284530 | 94009 421 15 71210 20R | MBR 401 854 | 1 41 | 51 | |
| 731 5074505P 181047V8A6753806284860 | 94B09 421 16 67720 25R | MER 501 8 N | 1 118 13 | 37 962 5 | 772 4.95 .1 |
| 732 5076505P 181080V8A6759906285560 | 94009 421 16 67330 3588M | MBR 101 2 N | 1 43 7 | 33 1840 5 | 1430 6.94 .1 |
| 746 5076505P 181137V8A6764756286610 | 94D09 821 16 220 25R | MBR 10126SE | 2 50 | 74 | |
| 747 5076505P 181138V8A6765506286680 | 94009 821111 220 2588F | RER 151 95E | 2 30 | 77 | |
| 748 5076505P 181139V8A6766306286750 | 94D09 821111 315 2088F | R8R 151 3SE | 2 26 | 84 | |
| 752 5076505P 181151V8A6752906284960 | 94009 421 16 220 25BBM | HBR 351 4NW | 5 247 17 | 59 746 5 | 822 5.73 .1 |
| 753 5076505P 181153V8A6751806284830 | 74D07 521 11 230 358 B | MBR 401 6NW | 9 312 | 96 | |
| 754 5076505P 181155V8A6751206284760 | | MBR 201 7NW | 9 169 17 | 57 627 5 | 940 5.94 .1 |
| 891 5076505P 181363V8A6780806281520 | 94009 221111 220 30PBF | R38 15114NW | 2 18 19 | 29 11 5 | 210 3.67 .5 |
| 895 5076505P 18136778A6783406281820 | | RBR 201 6NW | 19 207 15 | 30 23 5 | 241 3.29 .6 |
| 876 5076505P 181368V8A6783956281900 | | MBR 101 7NW | 20 177 14 | 29 13 5 | 286 2.5 .3 |
| 917 5076505P 181391V8865784006282150 | | RBR 401 2 N | | - | 113 3.5 .1 |
| 918 5076505P 181392V8A6783356282070 | | RBR 101 Z N | 8 24 24 | | 159 4.76 .6 |
| 919 5076505P 181393VBA6782706281995 | | MBR 51 3 N | 36 590 | 42 | 100 1110 |
| 920 5076505P 181394V886782206281920 | | RBR 201 3 N | 5 37 16 | 72 27 14 5 | 196 7 8 L |
| 921 5075505P 191395V8A5782505281940 | | RER 501 4NH | 25 58 22 | 20 14 5 | 196 3.5 .6 |
| 922 5076505P 181396V8A6780906281760 | | RBR 251 4N4 | | | 190 4.25 .6 |
| 923 5076505P 18139789848780706281780 | | | | 25 | |
| 1570 5075505P 1805349586770505281780 | | RBR 251 4NW | 15 14 | 25 7/ 1100 F | 1174 5 61 1 |
| | | 21 S | 1 42 9 | 36 1120 5 | 1134 5.94 .1 |
| 1577 6076505P 180655V8A6771406283640 | 19007 321 102 / V 3 1P | 32 5 | 1 68 11 | 80 478 5 | 1157 6.85 .1 |
| | | | | | |

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| 1583 607650 | 5P 180683V8A6762806283700 | 94D09 321 | 183647 0 | 5 TF |
|-------------|--|------------------------|----------|-------|
| 1584 607650 | 5P 180684V8A6762306283620 | 94009 321 | 183697 0 | 5 TF |
| 1588 607650 | 5P 180695V8A6757806293540 | 94009 321 | 18 677 0 | 5 TF |
| 1599 607650 | 5P 180596V8A6758406283620 | 94007 321 | 183707 0 | 5 TF |
| 1590 607650 | 5P 180697V8A6758906283690 | 94D09 321 | 183707 0 | 5 TF |
| 1591 607650 | 5P 180698V8A6759606283760 | 74009 321 | 182707 0 | 5 TF |
| 1592 607650 | 5P 180699V8A6761106283720 | 94009 121 | 18 727 0 | 5 TF |
| 1593 607650 | 5P 180700V8A6760506283650 | 94009 321 | 18 727 0 | 5 TF |
| 1594 607650 | 5P 180701VSA6750006283580 | 94009 321 | 183717 0 | 5 TF |
| 1595 607650 | 5P 180702V8A6759406283510 | 94009 321 | 183717 0 | 5 TF |
| 1596 607650 | 5P 180703V8A6758906283440 | 94009 321 | 18 687 0 | -5 TF |
| 1597 607650 | 5P 180704V8A6758306283370 | 94009 221 | 181637 0 | 5 TF |
| 1598 607650 | SP 180706V8A5760505283890 | 94D09 321 | 182697 0 | 5 TF |
| 1599 607650 | SP 180707V8A6761206283960 | 94009 321 | 182717 0 | 5 TF |
| 1600 607650 | SP 180708V8A6761806284030 | 94009 321 | 18 717 0 | 5 TF |
| 1501 507550 | 5P 180710V8A5752805284160 | 74D09 221 | 183737 0 | 5 TF |
| 1602 607650 | 5P 180711V8A6753305284210 | 94D09 221 | 183727 0 | 5 TF |
| | 5P 180712V8A6763806284280 | 94009 321 | | |
| | 5P 180713V8A6764306284340 | 94009 321 | | |
| | 5P 180714V8A6764906284420 | 94007 321 | | |
| | P 180715V8A6765406284480 | 94D09 321 | | |
| 1607 607650 | 5P 180716V8A6765906284560 | 94009 221 | | |
| | P 180717V8A6766605284620 | 94D09 221 | | |
| | 5P 180718V8A5757005284590 | 94009 221 | | |
| | P 180719V8A6757605284770 | 94D09 221 | | |
| | 5P 180720V8A5758105284830 | 94D09 321 | | |
| | F 180724V8A6769205284740 | 94D09 221 | | |
| | SP 180725V8A6764006284080 | 94009 321 | | |
| | 5P 180726V9A5754705284150 | 94D09 321 | | |
| | 5P 180727V8A6765206284230 | 94D09 321 | | |
| | 5P 180728V8A6765706284300 | 94009 321 | | |
| | 5F 180729V8A6766406284370 | 94009 321 | | |
| | P 180730V9A5765805284440 | | 183577 0 | |
| | SP 180731V8A6767506284520 | 94009 321 | | |
| | SP 180732V8A6768006284590 | 94D09 321 | | |
| | 5P 180734V8A5771205265000 | | 183707 0 | |
| | SP 180752V8A5759305285200 | 94009 321 | | |
| | 5P 180795V8A6771506285050 | 94D09 321 | | |
| | 5P 180826V8A6773506285110 | 94D09 321 | | |
| | 5P 180827V8A5773005285020 | 94009 221 | | |
| | 5P 180897V8A6779406284840 | 74D07 221 | | |
| | 5P 180925VSA5757006283650 | 94D09 321 | | |
| | 5P 180927V8A6766506283680 | 94009 321 | 183 7 0 | |
| | 5P 180928V8A6765806283530 | 94009 321 | | |
| | P 180728V8A6761306282960 | | | |
| | | 94009 221 94009 221 | | |
| | 5P 180944V8A6766406283380 | | | |
| | SP 180945V8A6766906283460 | 94D09 221 | | |
| | SP 180946V8A6767406233520 | | | |
| | SP 180985V8A6762606283350 SP 180986V8A6763206283430 | | | |
| | SP 1809850865763205283430 SP 1809870865763806283490 | | | |
| 1001 00/000 | и токта/уене/соскоссоряуу | 74007 OZ1 | 1 110 GI | 5 TF |
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| ALIEL . | | | ¥ | | 07 | | | | |
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| 2954 | 1 | 54 | 9 | 47 | 991 | 5 | | 5,62 | |
| 295₩ | 2 | 146 | 11 | 43 | 991 370 | 5 | 794 | 5.37 | .1 |
| 25SW | 8 | 471 | 10 | 37 | 776 | 5 | | 6.83 | |
| 215₩ | 7 | 332 | | 41 | | 5 | | 5.74 | |
| 2454 | 3 | 301 | | 37 | | | | 6.87 | |
| | | | | | | | | | |
| 10 5 | 2 | 153 | | 46 | | | | 6.41 | |
| 26 S | 1 | 139 | | 41 | | 5 | 1405 | 6.93 | .1 |
| 28 S | | 1 16 | 5 | | 58 | | | | |
| 30 S | 3 | 236 | 9 | 41 | 731 | 5 | 1186 | 6.17 | .1 |
| 30 S | 3 | 324 | 11 | 34 | | 5 | 754 | 4.17 | .1 |
| 15 S | 7 | 514 | | 44 | | | | 4.14 | |
| 40 N | 2 | 200 | 12 | | 467 | 5 | E01 | 4.09 | |
| 35 N | 1 | | | | | 5 | 001 | 4+97 | ذ ه |
| | | 4 - 13 | | | 85 | | | | |
| 35 N | | 2 33 | | | 68 | | | | |
| 24 N | | 9 18 | | | 44 | | | | |
| 105₩ | | 9 8 | 4 | | 60 | | | | |
| 30 S | 2 | 56 | 6 | 46 | 1245 | 5 | 1508 | 6.1 | .1 |
| 25 S | 1 | | | 33 | 1141 | | | 5.62 | |
| 22 3 | 1 | 85 56 | 15 | 33 37 | 1255 | | | 6.45 | |
| 26 5 | • | 1 5 | | | 65 | • | 1000 | 0170 | • • |
| | | | | 75 | | F | | | |
| 18 5 | 1 | | 13 | | 1163 | | | | |
| 19 S | 2 | | 13 | | 1167 | 5 | 1300 | 5.83 | .1 |
| 5 S | | 1 4 | | | 45 | | | | |
| 8 S | 1 | 15 | | | 1115 | 5 | 1294 | 6.59 | .1 |
| 30 S | 1 | 24 | 9 | 38 | 947 | 5 | 1348 | 5.33 | .1 |
| 15NE | 1 | 36 | 11 | 55 | 1345 | 5 | 1002 | 7.5 | .1 |
| 24 S | 4 | 135 | 13 | 65 | | | | 6.33 | |
| | 4 | 103 | | 51 | | 5 | | 7.49 | |
| | 4 | 102 | | 43 | | | | 6.69 | |
| 22 5 | 1 | 99 | | 38 | | ປ 5 | | | |
| | | | | | | | | 7.25 | |
| 24 S | 2 | 82 | 12 | 37 | 1304 | 2 | | 6.43 | |
| 22 S | 1 | | | | 1248 | | | 6.5 | |
| 24 S | 1 | 67 | 11 | 40 | 1411 | 5 | 1347 | 6.8 | .1 |
| 24 5 | 1 | 47 | 10 | 44 | 1372 | 5 | 1463 | 7.15 | .1 |
| 24 N | | 1 2 | 2 | | 40 | | | | |
| 21 3 | 1 | 103 | 19 | 74 | 1175 | 5 | 1365 | 7.34 | .1 |
| 21 5 | 1 | 30 | 7 | 44 | 1052 | 5 | 1204 | 6.94 | 1 |
| 22 N | 1 | 54 | | 37 | 1074 | | | 5.4 | |
| | | | | | | | | | |
| 12 N | 1 | | 9 | 44 | | | | 5.95 | |
| 16HE | 1 | | 12 | 64 | 604 | 5 | | 5.49 | |
| 32SW | 3 | | 12 | 46 | 441 | 5 | 983 | 4.69 | .1 |
| 28 S | | 2 84 | 0 | | 50 | | | | |
| 2854 | | 2 5 | 3 | | 60 | | | | |
| 10 S | 3 | 165 | 12 | 40 | 48 | 5 | 473 | 3.02 | .1 |
| | 4 | 119 | 10 | 70 | 48 752 | 5 | | 7.3 | |
| 2454 | 7 | 2 14 | | 74 | 702 50 | 0 | 1000 | 1.0 | * 1 |
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| 25 S | | 1 9 | | | 50 | _ | | | |
| 1054 | 1 | 103 | 5 | 46 | 1086 825 | 5 | | 5,97 | |
| 245₩ | 1 | 129 | | | | | 1110 | 6.05 | .1 |
| 2754 | 4 | 112 | 10 | 54 | 483 | 5 | 908 | 5.24 | .1 |
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| 1652 | 6076505P | 180788VSA6764306283560 | 94009 | 321 | 18 647 | 05 | TF |
|------|----------|-------------------------|---------|-----|----------|-----|----|
| 1658 | 6076505P | 180995V8A6756006284770 | 94D09 | | 183687 | 05 | TF |
| | 6076505P | 180996486755505284850 | 94009 | | 183707 | 05 | TF |
| | 6076505P | 180997V8A6757105284920 | 94D09 | 321 | | 05 | TF |
| | 6076205P | 130998V8A6767606284990 | 94D09 | | 183697 | 05 | TF |
| 1552 | 6076505P | 18099978846768206285060 | 94D09 | 221 | 183687 (| 05 | TF |
| 1663 | 6076505P | 181000V8A6768706285120 | 74007 | 221 | 183717 | 05 | TF |
| 1664 | 6076202b | 18100298A6766606285220 | 94D09 | 221 | 18 687 (| 05 | TF |
| 1665 | 6076505P | 181003VBA5766106285160 | 94009 | 221 | 18 707 | 05 | TF |
| 1666 | 6076505P | 181004V8A6765506285100 | 94009 | 221 | 18 687 (| 05 | TF |
| 1667 | 6076505P | 181005V8A6764906285040 | 94009 | 321 | 18 697 9 | 05 | TF |
| 1669 | 6076505P | 181005V8A6763806284910 | 94009 | 221 | 183687 | 05 | TF |
| 1669 | 6076205P | 181007V8A6763306284840 | 74007 | 221 | 183 7 | 05 | TF |
| 1670 | 6076505P | 181008V8A6762406284740 | 94D09 : | 321 | 183 7 (|) 5 | TF |
| 1671 | 6076505P | 181009V8A6762105284710 | 94009 | 321 | 183 7 | 05 | TF |
| 1675 | 6076202b | 181013V8A6760006284460 | 94D09 | 321 | 183 7 (|) 5 | TF |
| 1686 | 6076505P | 181024V8A5754205284769 | 94009 | 221 | 183 7 | 05 | TF |
| 1687 | 6076505P | 191025V8A6754606284930 | 94D09 | 221 | 183 7 (|) 5 | TF |
| 1683 | 6076505P | 181026V8A6765206284900 | 94009 | 321 | 183717 | 05 | TF |
| 1689 | 6076205P | 181027V8A6765506284930 | 94D09 | 321 | 183727 (|) 5 | TF |
| 1690 | 6076505P | 181028V8A6766506285060 | 94009 | 221 | 183707 | 05 | TF |
| 1691 | 6076505P | 1810297886766906285090 | 94D09 | 421 | 183687 (|) 5 | TF |
| 1672 | 6076505P | 181030V8A6761006284800 | 94007 | 321 | 183687 (|) 5 | TF |
| 1693 | 6076505P | 181031V8A5750505284740 | 94D09 | 321 | 183727 (|) 5 | TF |
| 1694 | 6076505P | 181032V8A6760006284680 | 94D09 | 321 | 183737 | 05 | TF |
| 1695 | 6076505P | 181033V8A6759506284620 | 94009 | 521 | 183777 |) 5 | TF |
| 1676 | 6076505P | 181034V8A6759006284570 | 94D07 | 321 | 183797 | 05 | TF |
| 1697 | 6076202b | 181035V8A6758506284500 | 94009 | 321 | 183737 (|) 5 | TF |
| 1698 | 6076505P | 181038V8A6757306284590 | 94D07 | 321 | 183707 | 05 | TF |
| 1699 | 6076505P | 131039V8A6757806284660 | 94D09 3 | | 183717 (|) 5 | TF |
| 1700 | 6076205P | 181040V8A6758406284720 | 94009 | 321 | 183757 | 05 | TF |
| 1701 | 6076505P | 181041V8A6759006284780 | 94D09 3 | 321 | 183717 (|) 5 | TF |
| 1702 | 6076505P | 181042V8A6759506284850 | 94D09 | 321 | 183727 | 05 | TF |
| 1703 | 6076505P | 181043V8A6760006284910 | 94D09 (| 521 | 183727 (|) 5 | TF |
| 1704 | 6076505P | 181044V8A5750505284950 | 94009 | 121 | 183717 | 05 | TF |
| 1705 | 6076505P | 181045V8A6761106285030 | 94D09 3 | 321 | 19 677 (|) 5 | TF |
| 1705 | 6076505P | 131046V8A6761706285100 | 74009 | 321 | 183717 | 3 5 | TF |
| 1707 | 6076505P | 181047VBA5762306285150 | 94D09 1 | 221 | 183707 (|) 5 | TF |
| 1708 | 6076505P | 181048V8A6763005285240 | 94D09 | 321 | 183727 | 05 | TF |
| 1709 | 6076202b | 181049V8A6763706285310 | 94D09 | 3 | 71 | | |
| 1710 | 5076505P | 181050V8A6764306285390 | 94009 | 321 | 193727 |) 5 | TF |
| 1711 | 6076505P | 181051V8A6765006285460 | 94D09 3 | 321 | 183 7 (|) 5 | T۶ |
| | 6076505P | | 94009 | 221 | 183 7 (|) 5 | TF |
| 1713 | 6076202b | 191053V8A6764806285210 | 94D09 | 421 | 183 7 (|) 5 | TF |
| | | 181054V8A6754306285160 | 94D09 | 321 | 183 7 (| | TF |
| 1715 | 6076505P | 181055V8A6762906285010 | | | 183727 (| | TF |
| | | 181056V8A6762706284980 | | | 183687 (| | TF |
| 1717 | 6076505P | 181057V8A6762206284920 | 94D09 3 | 521 | 183697 (| | TF |
| 1718 | 6076505P | 181058V8A6761606284850 | 94D09 | | | | TF |
| | | 181059V8A6758806285000 | 94D09 3 | | | | TF |
| 1720 | 6076505P | 181060VBA6758406284940 | 94009 | 321 | 18 697 0 |) 5 | TF |
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| 3050 | 3 | | 10 | 60 | | | | 5.41 | |
|-------|---|-----|----|----|------|--------|------|------|-----|
| INE | 1 | 52 | 7 | 45 | | 5 | 1464 | 7.33 | .1 |
| 4SE | | 1 | 10 | | 35 | | | | |
| 20NE | 1 | 27 | 5 | 29 | 1083 | 5 | 1170 | 4.7 | .1 |
| 21 NE | | í | 10 | | 40 | | | | |
| 10NE | 1 | 35 | 7 | 40 | 1100 | 5 | 1197 | 5.25 | .1 |
| 15NE | 1 | 54 | 13 | 54 | | | | 5.67 | |
| 18 S | 1 | 17 | 12 | 37 | | | | 5.94 | .1 |
| 10 E | • | | 10 | | 35 | - | •••• | | •• |
| 14 E | 1 | 27 | 11 | 33 | | 5 | 1116 | F. Q | .i |
| 24NE | • | | 12 | | 35 | 5 | 1110 | 0.0 | • 1 |
| 6 5 | i | | 13 | 45 | 1572 | s | 1107 | 6.93 | , |
| 10SE | 1 | 23 | 13 | 35 | | | | 5.55 | |
| | ĩ | | | | | 5 | 1025 | 0.00 | . 1 |
| 22NE | | | 55 | | 59 | - | | | |
| 23NE | 1 | 22 | 14 | 36 | | 5 | | 5.98 | |
| 365₩ | 1 | 78 | 16 | 39 | 447 | 5 | 1009 | | |
| 4NE | 1 | 31 | 13 | 43 | 1439 | | | 5.7 | |
| 3SE | 1 | 19 | 14 | 47 | 1471 | 5 | 1100 | 6.68 | |
| 32NE | 1 | 12 | 13 | 34 | 1380 | | 1151 | 5.94 | |
| 38NE | 1 | 13 | 13 | 28 | 1080 | 5 | 912 | 4.75 | .1 |
| 12NE | i | 14 | 11 | 33 | 1270 | 5 | 1055 | 5.64 | .1 |
| 6NE | 1 | 29 | 8 | 34 | 1324 | 5 | 1218 | 6 | .1 |
| 4554 | 1 | 40 | 15 | 23 | 804 | 5 | 916 | 3.99 | .1 |
| 405¥ | 1 | 29 | 15 | 23 | 699 | 5 | 809 | 4.17 | .1 |
| 3654 | 1 | 27 | 13 | 24 | 931 | 5 | 868 | 4.62 | .1 |
| 305₩ | i | 18 | 11 | 27 | 1291 | | | 5.14 | |
| 265¥ | 1 | 22 | 15 | 31 | 801 | 5 | 993 | | |
| 2154 | 1 | 4 | 11 | 28 | 1230 | | | 5.08 | |
| 2551 | • | | 50 | | 50 | - | •••• | | •• |
| 3354 | | | 37 | | 28 | | | | |
| 405¥ | 1 | 56 | 14 | 20 | | 5 | 923 | 4.67 | , |
| 4539 | 1 | 120 | 12 | 43 | 1110 | 5 | 1284 | | |
| 4759 | 1 | 15 | 7 | 30 | 1251 | | | 5.14 | |
| 4054 | 1 | 23 | 10 | 27 | | ы 5 | | | .1 |
| | 1 | | | | | ل. | 972 | 4.7 | .1 |
| 10 N | | | 49 | | 49 | - | | | |
| 28NE | 1 | | 7 | 31 | | | | 4.91 | .1 |
| ZENE | 1 | 35 | 9 | 30 | | | | 5.39 | |
| 12 N | 1 | 17 | 4 | 38 | | 5 | 1249 | 5.17 | •1 |
| 35NE | | | 16 | | 55 | | | | |
| 35NE | 1 | 18 | 8 | 30 | | 5 | | 5.3 | .1 |
| 22NE | 1 | 32 | 10 | 33 | | | 1165 | 5.84 | .1 |
| 28NE | 1 | 30 | 7 | 36 | | 5 | 1190 | 6.37 | .1 |
| 13NE | | 0 1 | 20 | | 54 | | | | |
| 3NE | 1 | 21 | 7 | 31 | 1307 | 5 | 1124 | 5,66 | .1 |
| 28NE | 1 | 27 | 9 | 37 | 1497 | | | 6.14 | |
| 40NE | 1 | 34 | 11 | 32 | 1085 | 5 | | 5,73 | |
| 12NE | 1 | 13 | 6 | 37 | 1366 | | | 5.91 | |
| 28NE | 1 | 31 | 6 | 37 | 1457 | | | 6,33 | |
| 32NE | 1 | 19 | 10 | 34 | 1148 | | | 5.25 | |
| 4050 | 1 | 31 | 8 | 27 | 1215 | | 791 | 4.54 | |
| 3250 | 1 | 35 | 5 | 38 | 1139 | | 1361 | 5.55 | .1 |
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| 1721 6076505P 181061V886757806284880 | 94009 371 183707 0 5 TE | 3384 1 | 65 10 | 40 1018 5 | 1141 5.51 .1 |
|--------------------------------------|--|-------------|--------|-----------|--------------|
| 1722 6076505P 181062V8A6757406284830 | 94009 321 18 697 0 5 TF | | | 37 831 5 | 889 4.75 .1 |
| 1723 6075505P 181063V8A6756806284760 | 94009 321 18 687 0 5 TF | 2554 1 | 74 15 | 36 792 5 | 890 4.41 .1 |
| 1725 6076505P 181070V8A6754506284920 | 94009 321 13 577 0 5 TF | 355W | 1 85 | 62 | |
| 1726 6076505P 181071V8A6754956284990 | 94D09 321 18 587 0 5 TF | 30SH 1 | 64 12 | 48 1014 5 | 1280 5.74 .1 |
| 1727 6076505P 181072V8A5755506285055 | 94009 321 13 697 0 5 TF | 2554 | 2 142 | 53 | |
| 1728 6076505P 181073V8A6756106285120 | 94009 321 18 697 | 235# | 3 200 | 47 | |
| 1729 6076505P 181074V8A6756806285210 | 94009 321 18 797 0 5 TF | 3659 1 | 43 23 | 42 1008 5 | 1430 4.8 .1 |
| 1730 6076505F 181075V8A6757206285245 | 94009 321 18 737 0 5 TF | 379# 1 | 181 13 | 37 645 5 | 1070 4.94 .1 |
| 1731 6076505P 181076V8A6757656285310 | 94009 321 182757 0 5 TF | 405₩ 1 | 22 10 | 30 1451 5 | 1233 5.23 .1 |
| 1732 6076505P 181077V8A6758206285370 | 94009 321 18 727 0 5 TF | 29ME | 0 23 | 55 | |
| 1733 6076505P 181078V8A6758706285445 | 94D09 321 18 697 0 5 TF | 21NE 1 | 27 6 | 34 1577 5 | 1135 5.8 .1 |
| 1734 6076505P 181079V8A6759206285510 | 94D09 421 18 697 0 5 TF | 3NE 1 | 42 10 | 47 1716 5 | 1145 6.59 .1 |
| 1735 6076505P 181081V8A6760456285645 | 94D09 221 182687 0 5 TF | 7NE 1 | 53 7 | 40 1747 5 | 1199 5.37 .1 |
| 1736 6076505P 181082V8A6760956285710 | 94D09 221 192687 0 5 TF | 4NE 1 | 31 6 | 29 1498 5 | 1099 5.19 .1 |
| 1737 6076505P 181083V8A6761556285745 | 94D09 321 182 7 0 5 TF | 30NE 1 | 142 7 | 23 1200 5 | 872 4.41 .1 |
| 1738 6076505P 191094V8A6762406285830 | 94D09 321 182637 0 5 TF | 30NE 1 | 88 9 | 30 1298 5 | 1080 5.41 .1 |
| 1749 6076505P 181100V8A6757306285455 | 94D09 121 18 677 0 5 TF | 15NE 1 | | 33 1486 5 | 1144 5.48 .1 |
| 1750 6076505P 181101V8A6757806285520 | 94009 221 18 717 0 5 TF | | 52 10 | 35 1551 5 | 1105 5.75 .1 |
| 1751 6076505P 181102V8A6758306285580 | 94D09 221 18 657 0 5 TF | 711E 1 | 33 5 | 37 1705 5 | 1276 6.17 .1 |
| 1752 6076505P 181103V8A6758806285655 | 94009 221 18 667 0 5 TF | 9NE 1 | 26 7 | 33 1409 5 | 1093 5.57 .1 |
| 1753 6076505P 181104V8A6759406285715 | 94009 221 19 677 0 5 TF | | 32 4 | 36 1575 5 | 1195 5.87 .1 |
| 1754 6076505P 181105V8A6759906285770 | 94009 221 18 587 0 5 TF | 15NE 1 | 32 5 | 32 1419 5 | 1083 5.47 .1 |
| 1755 6076505P 181106V8A6760606285830 | 74007 221 18 2 0 5 TF | | 24 8 | 34 1424 5 | 1185 5.58 .1 |
| 1772 6076505P 181135V8A6763406286460 | 94D09 221 18 7 0 5 TF | 1 55 | 1 22 | 59 | |
| 1773 5076505P 181135V8A5764006287260 | 94D09 221 18 7 0 5 TF | | 1 36 | 81 | |
| 1775 6076505P 181146V8A6755606285280 | 94D09 321 18 7 0 5 TF | 2554 1 | | 34 1490 5 | 1173 5.16 .1 |
| 1777 6076505P 181147V8A6755106285220 | 94D09 321 18 7 0 5 TF | | | 34 1197 5 | 1223 5.42 .1 |
| 1781 6076505P 181152V8A6752356284890 | 94D09 421 18 7 0 5 TF | 4NQ 3 | | 66 762 5 | 973 6.81 .1 |
| 1836 5075505P 181398V8A6759206285260 | 94009 221 18 7 0 5 TF | | | 31 1295 5 | 1049 5.41 .1 |
| 1837 4074505P 181399V8A6759756285335 | 94009 321 18 7 0 5 TF | | 24 12 | 26 1123 5 | 970 4.55 .1 |
| 1838 6076505P 181400V8A6760306285390 | 94D09 321 18 7 0 5 TF | | | 43 1826 5 | 1846 7.05 .1 |
| 1839 5075505P 181401V8A6760906285450 | 94009 221 18 7 0 5 TF | | 58 20 | 37 1648 5 | 1350 6.44 .1 |
| 1640 6076505P 181402V8A6761306286010 | 94009 421 18 7 0 5 TF | | | 47 1886 5 | 1520 7.1 .1 |
| 1641 6076505P 181403V866762006285535 | 94D09 321 18 7 0 5 TF | 32NE 1 | | 41 1626 5 | 1428 6.83 .1 |
| 1842 6076505P 181404V8A6762656285660 | 94009 321 18 7 0 5 TF | | | 42 1773 5 | 1515 7.18 .1 |
| 1843 6076505P 181405V886763306285745 | 94009 221 18 7 0 5 TF | | | 41 1665 5 | 1417 6.84 .1 |
| 1844 6076505P 181406V866763956285810 | 94009 321 18 7 0 5 TF 94009 471 18 7 0 5 TF | | 101 14 | 45 1771 5 | 1528 7.44 .1 |
| 1845 6076505P 181407V8A6764656285880 | 94009 471 18 7 A 5 TE | writ, | 1 57 | 57 | |

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Part 2 - page 1

SE SW W F TH CD BI V RA SR SJ AL CA MG NA K PT PD TI REC: SHPLE CO AU AU? AS អទ .1 5 64 37 1.85.34 6.53.01 .02 50 50 7 71 180550 56 10 6 2 2 22 12 1 .12 9.48 .01 .01 50 50 .1 3 2 3 7 2 72 180555 68 5 .1 3 15 10 1.05.13 11.92.01 .01 50 50 3 2 15 2 2 2 3 73 180561 76 5 40 30 1.87.24 5.8 .01 .01 50 50 .1 5 74 180555 50 5 5 75 180567 77 180580 39 2.15 .58 2.75 .01 .05 50 50 23 .4 3 38 11 3 78 180586 24 5 35 26 1.43 .35 6 .01 .01 50 50 11 .2 3 79 180589 61 5 10 2 2 90 180591 10 2 2 3 .1 3 26 12 1.33 .17 12.32.01 .01 50 50 91 180741 75 5 72 180744

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105 20 1.51 .13 7.5 .01 .01 50 50

| 100 | 180655 | | | | | | | | | | | | | | |
|-----|-----------|---------|--------|--------|---|--------|----------|--------|----------|----------|----------|-------------------|------------|----------|-----|
| | 180657 58 | 10 | 11 | 2 | 2 | 9 | .2 | 4 | 31 | 27 | 1.73.3 | 5.64 .01 | .01 | 50 | 50 |
| | 180681 55 | | 7 | 4 | 2 | 11 | .3 | 5 | 154 | 17 | | 7.24 .01 | .01 | 50 | 5 |
| | 180682 70 | | 5 | 6 | 2 | 9 | .1 | 3 | 84 | 13 | 2.75.2 | 9.35 .01 | .01 | 50 | 5(|
| | 180683 87 | | 10 | 5 | 2 | 5 | .1 | 2 | 16 | 7 | .94 .1 | 9.71 .01 | .01 | 50 | 50 |
| | 180689 21 | | 4 | 5 | 2 | 3 | .4 | 5 | 50 | 41 | | 1.64 .01 | .03 | 50 | 5(|
| | 180690 27 | | 4 | 4 | 2 | 3 | .2 | 3 | 28 | 59 | | 1.48 .01 | .04 | 50 | 50 |
| | 180672 | 5 | 7 | 7 | 1 | 5 | .2 | 5 | 20 | 21 | 001 100 | 1.49 .01 | 104 | 50 | -14 |
| | 180673 23 | 5 | 6 | 2 | 2 | 3 | .4 | 3 | 54 | 80 | 2.61.41 | 1.31 .01 | .03 | 50 | 5(|
| | 180594 29 | | 3 | 2 | 2 | 8 | .1 | 3 | 54 | 110 | | 1.58.01 | .03 | 50 | 5 |
| | 180705 25 | - | 7 | 3 | 2 | 3 | .5 | 4 | 28 | 54 | | 1,99 .01 | .02 | 50 | 5 |
| | 180709 63 | | 8 | 4 | 2 | 8 | .2 | 5 | 117 | 19 | 4.32.41 | 6.41 .01 | .05 | 50 | 5 |
| | 180721 71 | 5 | 6 | 3 | 2 | 6 | .3 | 5 | 29 | 15 | 1.25.17 | | .01 | 50 | 5 |
| | 180722 55 | | 7 | 5 | 2 | 6 | .4 | 5 | 65 | 15 | 1.52 .17 | | .01 | 50 | 5 |
| | 180723 78 | | 4 | 3 | 2 | 3 | .1 | 3 | 28 | 11 | 1.16 .07 | | .01 | 50 | 5 |
| | 180735 | - | • | • | - | · | •• | ÷. | | •• | | 111110101 | 101 | 50 | |
| | 180735 14 | 55 | 9 | 3 | 2 | 9 | .3 | 3 | 52 | 13 | 1 91 17 | 10.5 .01 | .01 | 50 | 5 |
| | 180737 76 | 5 | g | 3 | 2 | 3 | .1 | 3 | 21 | 7 | | 12.92.01 | .01 | 50 50 | 5 |
| | 180738 13 | - | 4 | 4 | 2 | 3 | .1 | 3 | 35 | 7 | .88 .11 | | .01 | 50 | 5 |
| | 150739 83 | | 7 | 3 | 2 | 3 | .1 | 3 | 25 | , 8 | | 14.23.01 | .01 | 50 | 5 |
| | 180740 87 | | 3 | 2 | 2 | 3 | .1 | 3 | 22 | 12 | 1.5 .15 | | .01 | 50 | 5 |
| | 180742 54 | | 4 | 3 | 2 | 10 | .1 | 3 | 71 | 22 | | 9.57 .01 | .01 | 50 | 5 |
| | 180743 41 | 5 | 3 | 2 | 2 | 10 | .8 | 4 | 51 | 35 | 4.19.48 | 3.64 .01 | .01 | 50 | 5 |
| | 180745 | 2 | | * | 1 | 10 | • • | ٦ | 11 | 20 | 4.17 .49 | 0.07 .01 | 101 | 70 | J |
| | 180745 39 | 5 | 5 | 2 | 2 | 8 | L | 5 | 65 | 43 | 4.01.44 | 3.25 .01 | A 1 | ΕA | 5 |
| | 180747 17 | | 3 | 2 | 2 | 3 | .6 .1 | 3 | 58 | 45 34 | | 1.2 .01 | .01 .01 | 50 50 | |
| | 180748 | 5 | | 1 | 2 | 5 | • 7 | 5 | 00 | 57 | L+/7 +L7 | 1.7 .01 | •41 | 30 | |
| | 180749 | | | | | | | | | | | | | | |
| | 180751 78 | 5 | 4 | 2 | 2 | 3 | .1 | 7 | 29 | 18 | 1 45 17 | 8.35 .01 | A 1 | 50 | £ |
| | 180753 75 | 5 | 12 | 2 | 2 | 8 | . 9 | 3 5 | 27 34 | 23 | | 5.5 .01 | .01 | 50 50 | 5 |
| | 180754 22 | 5 | 3 | 2 | 2 | 3 | .8 | 9 | | | 2.2 .29 | | .01 | 50 50 | _ |
| | 180755 27 | | 3 3 | 2 | 2 | ა ვ | .8 | | 47 74 | 32 | | | .01 | 50 50 | 5 |
| | 180755 41 | ч 5 | 7 | 2 | 2 | 8 | .4 | 6 3 | 50 | 56 29 | | 2.36 .01 3.59 .01 | .01 | 50 50 | 5 |
| | 180757 | J | i | 4 | 4 | ō | • 7 | 2 | av | 27 | 1.72 .20 | 3.37 .01 | .01 | 50 | |
| | 180759 | | | | | | | | | | | | | | |
| | 180758 | | | | | | | | | | | | | | |
| | 180760 | | | | | | | | | | | | | | |
| | 180751 | | | | | | | | | | | | | | |
| | 180763 11 | 75 | 3 | 2 | 2 | 3 | .1 | 7 | 21 | 3 | 12 07 | 18.57.01 | A + | 50 | 5 |
| | 180765 54 | | 13 | 3 | 2 | 5 | .5 | 3 8 | 44 | 18 | | 4.08.01 | .01 | 50 | 5 |
| | 180783 34 | 15 | 15 | 3 3 | 2 | 8 | | 5 | | | 2.07 .32 | | .01 | | |
| | 180767 54 | | 20 | 2 | 2 | 3 | .2 .6 | и 5 | 17 | 4 | | 6.55.01 | .01 | 50 E0 | 5 |
| | 180767 54 | 5 10 | 21 | 3 3 | 2 | ა q | | 3 4 | 68 22 | 43 | 1.45.24 | | .01 | 50 50 | 5 |
| | | | | - | _ | | .4 | | 22 | 10 7 | | 6.75 .01 | .01 | 50 50 | 5 |
| | 180759 55 | 5 | 5 | 4 | 2 | 5 | .1 | 4 | 18 | 7 | | 9.57 .01 | .01 | 50 50 | 5 |
| | 180771 99 | 5 | 3 | 6 | 2 | 3 | .1 | 2 | 16 | 4 | .6 .08 | | .01 | 50 | 5 |
| | 180786 55 | 5 | 5 | 5 | 2 | 9 | .1 | 7 | 12 | 10 | | 8.75 .01 | .01 | 50 | 5 |
| | 190797 51 | 5 | 9 | 6 | 2 | 3 | •1 | 4 | 72 | 14 | | 8.11 .01 | .01 | 50 | 5 |
| | 180788 55 | | 11 | 3 | 2 | 8 | .1 | 3 | 6 | 11 | | 8.48 .01 | .01 | 50 | 5 |
| | 180787 22 | 5 | 7 | 2 | 2 | 11 | .1 | 8 | 20 | 12 | 1.54 .4 | 4.97 .01 | .01 | 50 | 5 |
| | 180791 85 | 5 | 3 | 5 | 2 | 2 | .1 | 3 | 23 | 6 | .85 .17 | 15.8 .01 | .01 | 50 | 5 |
| | 180792 | | | | | | | | | | | | | | |

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43.

| 710 | 180955 14 | 5 | 5 | 5 | 2 | 3 | .4 | 3 | 45 | 36 | 3.39.26 | 1.2 .01 | .01 | 50 | 50 |
|------|------------|---------|--------|--------|--------|--------|-----|---|----------|----|----------|----------|-----|------------|----------|
| 711 | 180955 10 | 5 | 3 | 2 | 2 | 3 | .3 | 3 | 51 | 33 | 3.08.24 | .81 .01 | .01 | 50 | 50 |
| 722 | 180982 20 | 5 | 3 | 2 | 2 | 3 | .1 | 3 | 72 | 47 | 3.29.43 | 1.31 .01 | .01 | 50 | 50 |
| 723 | 180983 22 | 15 | 3 | 4 | 2 | 3 | .4 | 3 | 56 | 57 | 4 .43 | 1.35 .01 | .03 | 50 | 50 |
| 724 | 180984 49 | 5 | 4 | 3 | 2 | 11 | .1 | 3 | 22 | 6 | 1.02 .06 | 8.08 .01 | .01 | 50 | 50 |
| 725 | 180989 45 | 5 | 6 | 2 | 2 | 11 | .1 | 3 | 190 | 31 | 1.92.28 | 3.87 .01 | .01 | 50 | 50 |
| 725 | 181036 64 | 5 | 5 | 4 | 2 | 7 | .1 | 3 | 29 | 9 | 2.18 .25 | 13.25.01 | .01 | 50 | 50 |
| 727 | 181037 | | | | | | | | | | | | | | |
| 731 | 181069 59 | 5 | 12 | 5 | 2 | 11 | .1 | 3 | 18 | 11 | 1.31.15 | 13.46.01 | .01 | 50 | 50 |
| | 181060 142 | | 4 | 4 | 2 | 3 | .1 | 3 | 9 | 1 | | | .01 | | 50 |
| | 191137 | - | | | - | - | | - | | - | | | ••• | | |
| | 181138 | | | | | | | | | | | | | | |
| | 191139 | | | | | | | | | | | | | | |
| | 181151 54 | 5 | 15 | 4 | 2 | 22 | .1 | 3 | 44 | 20 | 2.75 .2 | 9.57 .01 | .01 | 50 | 50 |
| | 181153 | - | | • | - | | •• | Ū | •• | | | | | | |
| | 181155 65 | 5 | 9 | 4 | 2 | 13 | .1 | 3 | 38 | 21 | 1.4315 | 10.94.01 | .01 | 50 | 50 |
| | 181363 9 | 5 | , 9 | 2 | 2 | 5 | .1 | 3 | 30 | 19 | 2.45 .24 | | .05 | 50 | 50 |
| | 181367 14 | 5 | 6 | 2 | 2 | 3 | .1 | 3 | 28 | 35 | 1.76.43 | | .06 | 50 | 50 |
| | 181368 10 | 5 | 4 | 2 | 2 | 3 | .1 | 3 | 43 | 46 | 1.85 .55 | .68 .01 | .06 | 50 | 50 |
| | 181388 10 | 5 | 5 | 3 | 2 | 3 | .1 | 3 | 70 31 | 27 | 5.7 .27 | .44 .01 | .04 | 50 | 50 |
| | 181371 B | 40 | 7 | 5 | 2 | 3 | .1 | 3 | 31 | 14 | 3.83.14 | .4 .01 | .04 | 50 | 50 50 |
| | 181372 8 | 44 | ' | J | 4 | 5 | • 1 | J | 01 | 14 | 0.00 .19 | *7 •V1 | .00 | 40 | 30 |
| | 181373 | 20 | ~ | 2 | • | 7 | | , | 70 | 7. | 2.92.22 | / t A t | Δ. | F۸ | E 4 |
| | 181374 11 | 20 5 | 7 8 | 2 4 | 2 2 | 3 3 | .1 | 3 | 32 71 | 31 | | .61 .01 | .06 | | 50 50 |
| | | 3 | 8 | 4 | 2 | 3 | .1 | 3 | 31 | 21 | 2.17 .17 | .46 .01 | .05 | 20 | 50 |
| | 181395 | | | | | | | | | | | | | | |
| | 181397 | - | - | - | • | - | | - | | - | 70 | 17 10 04 | | F A | |
| | 180534 97 | 5 | 2 | 2 | 2 | 3 | .1 | 3 | 18 | 3 | | 13.69.01 | | | 50 |
| | 180655 74 | 5 | 7 | 4 | 2 | 8 | .1 | 3 | 32 | 16 | 1.00.24 | 8.91 .01 | .01 | 50 | 50 |
| | 180683 | _ | _ | | _ | _ | | _ | | | | | | | |
| | 180684 91 | 5 | 5 | 4 | 2 | 3 | .1 | 3 | 25 | 4 | | 13.76.01 | .01 | 50 | 50 |
| | 180695 43 | 5 | 12 | 4 | 2 | 10 | .5 | 9 | 21 | 24 | | 5.44 .01 | .01 | 50 | 50 |
| | 180595 101 | 5 | 13 | 3 | 2 | 3 | .1 | 3 | 21 | 6 | | 9.36 .01 | .01 | 50 | 50 |
| | 180697 95 | 5 | 7 | 4 | 2 | 6 | .1 | 3 | 14 | 2 | .85 .04 | 10.13.01 | .01 | 50 | 50 |
| | 180698 113 | 5 | 3 | 4 | 2 | 3 | .1 | 3 | 16 | 2 | .61 .03 | | .01 | 50 | 50 |
| | 130699 107 | | 3 | 3 | 2 | 3 | .1 | 3 | 17 | 2 | | 15.83.01 | .01 | 50 | 50 |
| | 180700 114 | 80 | 2 | 3 | 2 | 3 | .1 | 3 | 13 | 2 | .26 .03 | 17,25,01 | .01 | 50 | 50 |
| | 180701 | | | | | | | | | | | | | | |
| | 180702 102 | | 10 | 3 | 2 | 4 | . 1 | 3 | 14 | 7 | | 9.55 .01 | .01 | 50 | 50 |
| | 180703 59 | 5 | 13 | 4 | 2 | 3 | .3 | 5 | 15 | 12 | .86 .17 | 5.73 .01 | .01 | 50 | 50 |
| 1597 | 180704 53 | 5 | 17 | 3 | 2 | 4 | .8 | 7 | 41 | 86 | 1.83.44 | 3.37 .01 | .04 | 50 | 50 |
| 1578 | 180705 51 | 5 | 4 | 3 | 2 | 3 | .1 | 3 | 175 | 19 | 4.05 .52 | 8.71 .01 | ,05 | 50 | 50 |
| 1599 | 180707 | | | | | | | | | | | | | | |
| | 180708 | | | | | | | | | | | | | | |
| 1601 | 190710 | | | | | | | | | | | | | | |
| 1602 | 130711 | | | | | | | | | | | | | | |
| 1603 | 180712 115 | 5 | 5 | 2 | 2 | 3 | .1 | 3 | 24 | 5 | .55 .06 | 10.14.01 | .01 | 50 | 50 |
| 1504 | 190713 106 | 5 | 7 | 2 | 2 | 5 | . 1 | 3 | 37 | 10 | .91 .11 | 11.85.01 | .01 | 50 | 50 |
| 1605 | 180714 124 | 10 | 10 | 3 | 2 | 3 | .1 | 3 | 27 | 8 | .91 .1 | 13.66.01 | .01 | 50 | 50 |
| 1605 | 180715 | | | | | | | | | | | | | | |
| 1607 | 180715 94 | 5 | 6 | 3 | 2 | 3 | .3 | 3 | 15 | 4 | .4 .04 | 14.41.01 | .01 | 50 | 50 |
| 1408 | 180717 108 | 5 | 5 | 2 | 2 | 5 | .1 | 3 | 23 | 4 | | 12.71.01 | | 50 | 50 |
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| 1609 180713 | | | | | | | | | | | | | | |
|-----------------|--------|----|--------|---|----|----|--------|----|------------|----------|----------|-----|----------|----------|
| 1610 180719 106 | 5 | 3 | 4 | 2 | 3 | .1 | 3 | 21 | 3 | .29 .05 | 20.46.01 | .01 | 50 | 50 |
| 1511 180720 97 | 5 | 3 | 4 | 2 | 3 | .1 | 3 | 20 | 3 | .44 .06 | 17,78,01 | .01 | 50 | 50 |
| 1612 180724 91 | 5 | 3 | 4 | 2 | 3 | ,1 | 3 | ទេ | 4 | .53 .05 | 16.87.01 | .01 | 50 | 50 |
| 1613 180725 80 | 5 | 14 | 4 | 2 | 13 | .3 | 6 | 98 | 21 | 2.04 .19 | 8,33.01 | .01 | 50 | 50 |
| 1614 180725 95 | 5 | 27 | 3 | 2 | 6 | .1 | 3 | 49 | 11 | 1.03 .11 | | .01 | 50 | 50 |
| 1615 180727 98 | 5 | 38 | 4 | 2 | 3 | .1 | 3 | 35 | 8 | 1.02 .08 | | .01 | 50 | 50 |
| 1616 180723 150 | 5 | 11 | 2 | 2 | 6 | ,1 | 3 | 28 | 6 | .78 .05 | | .01 | 50 | 50 |
| 1617 180727 114 | 5 | 9 | 2 | 2 | 3 | .1 | 4 | 28 | 7 | .35 .07 | | | | |
| | - | • | - | | | | | | | | | .01 | 50 | 50 |
| 1518 180730 102 | 5 | 4 | 3 | 2 | 3. | .1 | 3 | 29 | 20 | .77 .05 | | .01 | 50 | 50 |
| 1519 180731 111 | 5 | 5 | 3 | 2 | 3 | .1 | 3 | 25 | 6 | .68 .05 | | .01 | 50 | 50 |
| 1620 180732 120 | 5 | 3 | 3 | 2 | 3 | .1 | 3 | 24 | 5 | .54 .05 | 16.72.01 | .01 | 50 | 50 |
| 1621 180734 | | | | | | | | | | | | | | |
| 1622 180762 88 | 5 | 9 | 2 | 2 | 3 | .2 | 3 | 28 | 9 | .81 .07 | 10.25.01 | .01 | 50 | 50 |
| 1623 180795 103 | 5 | 3 | 5 | 2 | 3 | .1 | 3 | 14 | 3 | .44 .08 | 20.38.01 | .01 | 50 | 50 |
| 1624 180825 113 | 5 | 3 | 2 | 2 | 3 | .1 | 3 | 28 | 5 | .72 .07 | 14.51.01 | .01 | 50 | 50 |
| 1625 190827 71 | 5 | 3 | 2 | 2 | 3 | .1 | 3 | 23 | 6 | .73 .07 | 12.35.01 | .01 | 50 | 50 |
| 1626 180897 76 | 5 | 3 | 2 | 2 | 6 | .1 | 3 | 49 | 14 | 1.88.15 | 7.65 .01 | .01 | 50 | 50 |
| 1627 180926 62 | 5 | 10 | 2 | 2 | 17 | .4 | 5 | 37 | 25 | 1.37.2 | 6.65 .01 | .01 | 50 | 50 |
| 1628 180927 | | | | | | | | | | | | | | |
| 1629 180928 | | | | | | | | | | | | | | |
| 1530 190935 21 | 5 | 4 | 2 | 2 | 3 | .1 | 3 | 63 | 56 | 2.93 .48 | 1.28 .01 | .02 | 50 | 50 |
| 1631 180944 104 | 5 | 3 | 3 | 2 | 5 | .1 | 3 | 46 | 19 | 1.45 .15 | | .01 | 50 | 50 |
| 1632 180945 | U | v | e | - | U | •• | • | 70 | 1 / | 1170 110 | 11,00,01 | | 20 | av |
| 1633 180946 | | | | | | | | | | | | | | |
| 1647 180985 100 | 5 | 3 | 2 | 2 | 3 | .1 | 3 | 25 | 11 | | 12 /2 01 | | ΕA | EA |
| | | | | | | | | | | .55 .05 | | .01 | 50 | 50 |
| 1650 180986 78 | 5 | 4 | 2 | 2 | 3 | .1 | 3 | 29 | 17 | 1.37 .13 | | .01 | 50 | 50 |
| 1651 180987 54 | 5 | 13 | 2 | 2 | 9 | •1 | 2 | 43 | 22 | 1.64 .16 | | 01 | 50 | 50 |
| 1652 180988 67 | 5 | 7 | 2 | 2 | 9 | .1 | 3 | 40 | 22 | 1.63.16 | | .01 | 50 | 50 |
| 1658 180995 118 | 5 | 7 | 2 | 2 | 2 | .1 | 3 | 26 | 7 | .69 .07 | 11.73.01 | .01 | 50 | 50 |
| 1659 180995 | | | | | | | | | | | | | | |
| 1660 180997 79 | 5 | 3 | 2 | 2 | 3 | .1 | 3 | 9 | 3 | .26 .06 | 13.03.01 | .01 | 50 | 50 |
| 1661 180998 | | | | | | | | | | | | | | |
| 1662 180999 93 | 5 | 3 | 2 | 2 | 3 | .1 | 3 | 17 | 3 | .44 .04 | 12.5 .01 | .01 | 50 | 50 |
| 1663 181000 91 | 5 | 12 | 2 | 2 | 3 | .1 | 3 | 19 | 5 | .45 .05 | 10.46.01 | .01 | 50 | 50 |
| 1664 181002 103 | 5 | 3 | 2 | 2 | 3 | .1 | 3 | 7 | 1 | .07 .03 | 23 .01 | .01 | 50 | 50 |
| 1665 181003 | | | | | | | | | | | | | | |
| 1666 181004 79 | 5 | 3 | 2 | 2 | 3 | .1 | 3 | 6 | 1 | .17 .04 | 23.25.01 | .01 | 50 | 50 |
| 1667 131005 | | | | | | | | | | | | | | |
| 1668 191005 104 | 5 | 3 | 3 | 2 | 3 | .1 | 3 | 13 | 2 | .38 .05 | 22,28,01 | .01 | 50 | 50 |
| 1669 181007 83 | 5 | 3 | 3 | 2 | 3 | .1 | 3 | 12 | 5 | .55 .12 | | .01 | 50 | 50 |
| 1670 181005 | - | - | - | - | • | •• | · | | - | 100 111 | | ••• | | 00 |
| 1671 181009 87 | 5 | 3 | 3 | 2 | 3 | .1 | 3 | 13 | 5 | .77 .13 | 20.04.01 | .01 | 50 | 50 |
| 1675 181013 48 | 5 | 9 | 2 | 2 | 15 | .1 | 3 | 55 | 21 | 3.12.54 | | | | |
| 1686 181024 102 | 5 | 7 | | 2 | 3 | .1 | а 3 | 15 | | | | .03 | 50 50 | 50 50 |
| | 5 5 | | 2 2 | 2 | 2 | | | | 3 | .48 .04 | | .01 | 50 EA | 50 50 |
| 1687 181025 96 | | 4 | | | | .1 | 3 | 17 | 3 | .4 .05 | | .01 | 50 | 50 |
| 1688 181025 99 | 5 | 3 | 3 | 2 | 3 | -1 | 3 | 12 | 2 | .3 .03 | | .01 | 50 | 50 |
| 1689 181027 77 | 5 | 3 | 2 | 2 | 3 | .1 | 3 | 7 | 1 | .27 .03 | | .01 | 50 | 50 |
| 1690 181028 94 | 5 | 3 | 2 | 2 | 3 | .1 | 3 | 5 | 1 | .12 .02 | | .01 | 50 | 50 |
| 1671 181029 107 | 5 | 3 | 2 | 2 | 3 | .1 | 3 | 7 | 1 | .1 .02 | | .01 | 50 | 50 |
| 1692 181030 60 | 5 | 12 | 2 | 2 | 15 | .1 | 7 | 21 | 7 | 1.04 .2 | 11.21.01 | .01 | 50 | 50 |
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1755 181106 106 5 3 2 2 3 .1 3 11 1 .14 .01 23.2 .01 .01 50 50 1772 181135 1773 181136 1775 181145 102 5 .22 .04 22.51.01 .01 50 3 3 2 3 .1 3 23 3 50 1777 181147 88 5 .1 3 27 10 4 3 2 3 .96 .2 17.45.01 .01 50 50.1 1781 181152 73 5 14 2 2 21 4 37 19 1.39 .22 9.08 .01 .01 50 50 1836 181378 90 5 2 2 3 .41 .04 15.92.01 .01 50 - 5 .1 3 11 2 50 .1 3 1837 181399 84 5 3 2 2 3 9 .3 .02 16.23.01 .01 50 50 1 1838 181400 142 5 21 8 2 3 .1 3 33 7 .65 .08 25.62.01 .01 50 50 1837 181401 122 5 12 11 2 3 .1 3 12 2 .48 .06 26.7 .01 .01 50 50 1840 181402 133 5 10 2 6 3 .1 3 13 1 .17 .01 29.54.01 .01 50 50 1841 181403 125 5 9 7 3 2 .1 3 7 1 .32 .02 27.17.01 .01 50 50 1842 181404 130 5 9 2 3 3 .1 3 6 i .2 .01 23.97.01 .01 50 50 1943 181405 122 5 7 7 2 3 .1 3 9 1 .2 .01 26.42.01 .01 50 50 1844 181406 132 5 3 5 2 3 .1 3 10 1 .24 .01 25.87.01 .01 50 50 1845 181407

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| 77 | 180580 | | | | | | | | |
| 78 | 180585 .1 | 12 | 210 | | | | | | |
| 79 | 180587 .0 |)6 | 282 | | | | | | |
| 90 | 180691 | | | | | | | | |
| 91 | 180741 .0 |)5 | 195 | | | | | | |
| 92 | 180744 | | | | | | | | |
| 93 | 180750 | | | | | | | | |
| 94 | 180752 | | | | | | | | |
| 95 | 190764 | | | | | | | | |
| 36 | 180770 | | | | | | | | |
| 99 | 180790 .0 |)2 | 391 | | | | | | |
| 100 | 180820 | | | | | | | | |
| 101 | 180936 | | | | | | | | |
| 112 | 181001 | | | | | | | | |
| 115 | 181154 | | | | | | | | |
| 229 | 140013 .(| 02 | 1340 |) | | | | | |
| 230 | 140014 .0 |)5 | 1235 | 5 | | | | | |
| 231 | 140015 .(|)5 | 59 | | | | | | |
| 232 | 140015 | | | | | | | | |
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| 710 180755 .04 711 180756 .05 722 180782 .05 723 180783 .08 | 59 42 65 85 |
| 710 180755 .04 711 180756 .05 722 180782 .05 723 180783 .08 724 180784 .04 | 59 42 65 85 172 |
| 710 180755 .04 711 180956 .05 722 180782 .05 723 180783 .08 724 180784 .04 725 180789 .07 | 59 42 65 85 172 126 |
| 710 180755 .04 711 180756 .05 722 180782 .05 723 180783 .08 724 180784 .04 725 180784 .07 725 180787 .07 | 59 42 65 85 172 |
| 710 180755 .04 711 180756 .05 722 180782 .05 723 180783 .08 724 180784 .04 725 180784 .04 725 180789 .07 726 181036 .03 727 181037 | 59 42 65 85 172 126 112 |
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| 710 180755 .04 711 180756 .05 722 180782 .05 723 180783 .08 724 180784 .04 725 180787 .07 726 181036 .03 727 181037 731 181069 .01 732 131080 .01 | 59 42 65 85 172 126 112 |
| 710 180755 .04 711 180756 .05 722 180782 .05 723 180783 .08 724 180784 .04 725 180784 .04 725 180787 .07 726 181036 .03 727 181037 731 181069 .01 732 131080 .01 745 181137 | 59 42 65 85 172 126 112 107 |
| 710 180755 .04 711 180756 .05 722 180782 .05 723 180783 .08 724 180784 .04 725 180787 .07 726 181036 .03 727 181037 731 181069 .01 732 131080 .01 745 181137 747 181138 | 59 42 65 85 172 126 112 107 |
| 710 180755 .04 711 180756 .05 722 180782 .05 723 180783 .08 724 180784 .04 725 180784 .04 725 180787 .07 726 181036 .03 727 181037 731 181069 .01 732 131080 .01 745 181137 | 59 42 65 85 172 126 112 107 |
| 710 180755 .04 711 180756 .05 722 180782 .05 723 180783 .08 724 180784 .04 725 180787 .07 726 181036 .03 727 181037 731 181069 .01 732 131080 .01 736 181137 747 181138 748 181139 | 59 42 65 85 172 126 112 107 187 |
| 710 180755 .04 711 180755 .04 712 180782 .05 723 180783 .08 724 180784 .04 725 180787 .07 726 181036 .03 727 181037 731 181069 .01 732 131080 .01 735 181137 747 181138 748 181139 752 181151 .03 753 181153 754 181155 .04 | 59 42 65 85 172 126 112 107 187 |
| 710 180755 .04 711 180755 .04 712 180782 .05 723 180783 .08 724 160784 .04 725 180787 .07 726 181036 .03 727 181037 731 181069 .01 732 131080 .01 735 181137 747 181138 748 181137 752 181151 .03 753 191153 754 181155 .04 871 181363 .05 | 59 42 65 85 172 126 112 107 187 186 147 37 |
| 710 180755 .04 711 180755 .04 712 180782 .05 723 180783 .08 724 180784 .04 725 180787 .07 726 181036 .03 727 181037 731 181069 .01 732 131080 .01 735 181137 747 181138 748 181137 752 181151 .03 753 181153 754 181155 .04 871 181363 .05 875 181367 .01 | 59 42 65 85 172 126 112 107 187 186 147 37 44 |
| 710 180755 .04 711 180755 .04 712 180782 .05 723 180783 .08 724 180784 .04 725 180784 .04 725 180787 .07 726 181036 .03 727 181037 731 181069 .01 732 131080 .01 735 181137 747 181138 748 181137 752 181151 .03 753 181153 754 181155 .04 871 181363 .05 875 181367 .01 876 181368 .05 | 59 42 65 85 172 126 112 109 187 186 147 37 44 33 |
| 710 180755 .04 711 180755 .04 711 180756 .05 722 180782 .05 723 180783 .08 724 180784 .04 725 180787 .07 726 181036 .03 727 181037 731 181069 .01 732 131080 .01 735 181137 747 181138 748 181137 752 181151 .03 753 181153 754 181155 .04 871 181363 .05 875 181367 .01 876 181368 .05 917 181391 .06 | 59 42 65 85 172 126 112 109 187 186 147 37 44 33 43 |
| 710 180755 .04 711 180755 .04 711 180756 .05 722 180782 .05 723 180783 .08 724 160784 .04 725 180787 .07 726 181036 .03 727 181037 731 181069 .01 732 131080 .01 735 181137 747 181138 748 181137 752 181151 .03 753 191153 754 181155 .04 871 181363 .05 875 181367 .01 876 181368 .05 917 131391 .06 919 191372 .04 | 59 42 65 85 172 126 112 109 187 186 147 37 44 33 |
| 710 180755 .04 711 180755 .04 711 180756 .05 722 180782 .05 723 180783 .08 724 180784 .04 725 180787 .07 726 181036 .03 727 181037 731 181069 .01 732 131080 .01 735 181137 747 181138 748 181137 752 181151 .03 753 181153 754 181155 .04 871 181363 .05 875 181367 .01 876 181368 .05 917 181391 .06 | 59 42 65 85 172 126 112 109 187 186 147 37 44 33 43 |

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APPENDIX 3

Method of Histogram Interpretation

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Rules for choice of size coding or contouring intervals

(1) Examine both arithmetic and logarithmic histograms for each type of survey data. Choose the histogram which most closely approximates a normal (or lognormal) distribution. If there are several populations exhibited on the histogram, subjectively divide the data into a series of normal or lognormal distributions. Avoid interpreting histograms which are strongly skewed. Portions of the arithmetic or logaritmic histograms may be chosen for data interpretation over specific metal concentration intervals, if this allows for the best portrayal of the data in graphical form.

(2) Choose, as two of the coding intervals, points which represent between 90% and 95%, and 95% and 97.5% of the data, two different numbers. These choices highlight 1 in 10 and 1 in 20 samples which are considered slightly anomalous and definately anomalous, respectively. These limits are optimistic in that the two categories are defined to be anomalous regardless of the distribution of values on the remainder of the histogram. A rigorous statistical approach would suggest that only the 97.5% value be considered the anomaly threshold.

Divide the remaining portion of the histogram into recognizable populations. The dividing point of each of these populations is chosen as a coding interval. Minimums caused by the failure of a laboratory to record specific concentration values are ignored. These artificial breaks in the histogram can be recognized by scanning the laboratory reports.

- (4) For each population, choose one or two numbers which correspond to the 90% and 95% cumulative frequencies for that population (1 in 10 and 1 in 20 samples for that population respectively). These will also be used to represent anomalous conditions for each population.
- (5) A maximum of six numbers can be chosen to plot symbol maps. This number is dictated by the ability to present data in graphical form with sufficiently different symbol sizes to be easily distinguishable, particularly if maps are to be reduced. The seven defined concentration classes are normally sufficient to represent geochemical data on a map. More intervals can be chosen if: data are to be controured. Avoid choosing arithmetic intervals without considering rules (1) and (4).
- (6) Maps plotted using the preceeding instructions might result in two areas being distinguished from each other by a relatively uniform density of symbol sizes, yet only poor contrast anomalies are indicated. Differences between the two areas, A and B, might be due to underlying geology, overburden character, soils etc. Whatever the cause, the data are not well displayed. If the underlying control distinguishing A and B can be recognized, the data must be divided and re-interpreted following steps (1) to

(5). Two sets of maps can be drawn, or both sets of interpreted data can be plotted on a single map. For such superimposed geochemical maps the symbol sizes lose their absolute meaning but assume a more important stance, that of reflecting anomalous conditions regardless of the underlying control. To illustrate, consider the case where A and B are areas underlain by very different geology. Anomalous conditions for low background rock types might be concentrations which are much lower than average values for the high background rock types. Nevertheless, anomalies defined in each area are to be considered significant. Reliance on absolute concentrations can be misleading in such cases.

APPENDIX 4

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List of Qualifications

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STATEMENT OF QUALIFICATIONS

I, Russell H. Wong of #700 - 890 West Pender Street, in Vancouver, in the Province of British Columbia, do hereby state:

- That I am a graduate of the University of British Columbia, Vancouver, B.C., where I obtained a B.Sc., in Geology in 1975.
- 2. That I have been active in mineral exploration since 1973.
- 3. That I am a member, in good standing, of the Northwest Mining Association and Association of Exploration Geochemists.
- 4. That I have practiced my profession continuously as a staff geologist for BP Minerals Limited, since 1979.

Russell H. Wong

Russell H. Wong BP Geologist

Vancouver, B.C.

60.

Abbreviated List of Qualifications - S. J. Hoffman BSc 1969 - McGill University (Hons., Geology and Chemistry) 1972 - The University of British Columbia (Geochemistry) MSc 1976 - The University of British Columbia (Geochemistry) PhD Publication History (to September, 1985) 9. Papers published in referred journals (2 in the last 3 years). Unpublished theses. 2. Paper published in a referred symposium special volume (0 in 1. the last 3 years). 5. Papers submitted for publication, awaiting print. 2. Manuals awaiting publication decision. List of Memberships Geological Association of Canada, since 1967. 1. 2. Canadian Institute of Mining and Metallurgy, since 1973. Association of Exploration Geochemists, since 1973. з. American Society of Agronomy, since 1973. 4. Geochemical Society, since 1983. 5. Other Qualifications Instructor - B.C. Department of Mines, Northwest Mining 1. Association, University of British Columbia, McGill University, B.C. and Yukon Chamber of Mines. Speaker, CIM (Prince George), Geoscience Council 2. (Yellowknife), Quebec Department of Natural Resources (Quebec City). External Examiner, University of Calgary. 3. Chairman, GOLD-81 symposium (1981 - Vancouver), GEOEXPO/86 4. symposium (1986 - Vancouver.) Council Member, AEG, 1980 - 1984. 5. Vice president, AEG, 1985 - 1986. 6. Business editor, GOLD-81 proceedings. 7. Member, committee to determine P. Geol. qualifications. 8.

APPENDIX 5

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STATEMENT OF COSTS

STATEMENT OF COSTS

| 1. | Chemical analysis | |
|----|-------------------------------------|-----------|
| | 320 samples @ \$19.00/sample | \$6080.00 |
| | | |
| 2. | Computer processing | |
| | 320 samples @ \$1.00/sample | 320.00 |
| | | |
| 3. | Labour | |
| | S.J. Hoffman, Senior Geochemist, | |
| | 2 days July 17, 18 | |
| | 2 days @ \$300./day | 600.00 |
| | | |
| 4. | Drafting - preparation of base maps | |
| | to be used in report | 100.00 |
| | | \$7100.00 |
| | | 3232323 |

63.

APPORTIONMENT OF ASSESSMENT WORK

NIK PROPERTY, B.C.

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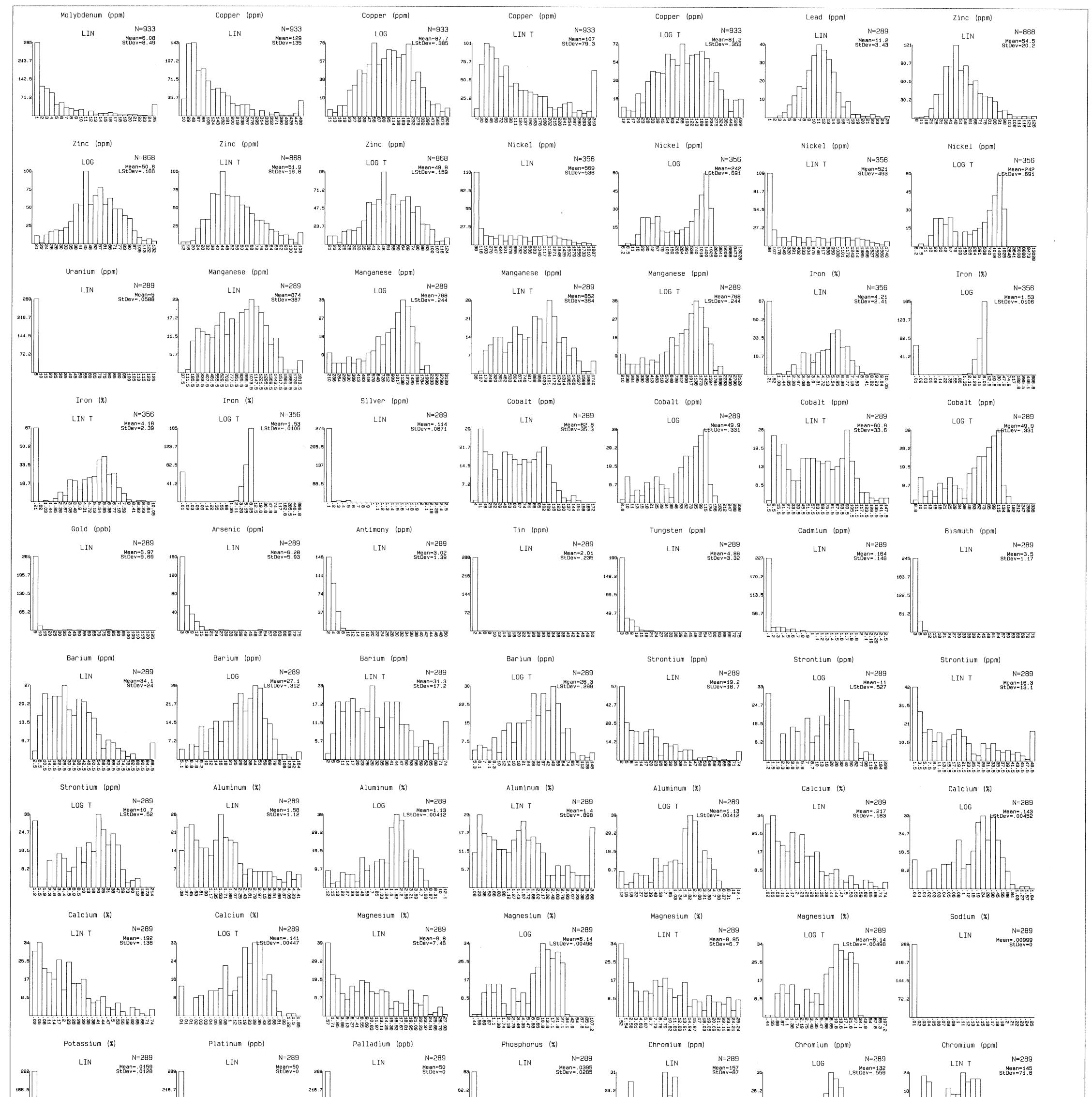
Group: NIK Group 86-7(NIK 1-4) 60 units

Value of Work: \$7,100 - B.C. Mining Receipt #234714

Application of Work:

| NIK 3 361 (18 units) Apply - 1 year assessment work | \$3600 |
|---|------------------|
| NIK 4 362 (12 units) Apply - 1 year assessment work | \$2400 |
| Value of Work Applied: Claims Balance to BP Minerals Limited PAC | \$6000 \$1100 |
| | \$7100 ===== |





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|--|-------|---|---|--|------------------|-------------------------------|-----|
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| Distribution Histograms Distribution Histogra | | | NORTH LIMIT | 6286000.0 | DATE: OCT/86 | PROJECT#: 50 | 5 |
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