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**GEOLOGICAL REPORT**  
on the  
**TURNAGAIN NICKEL PROPERTY**

**Turnagain River Area  
Liard Mining Division  
British Columbia**

**Latitude: 58°27' - 58°30' North  
Longitude: 128°48' - 128°56' West  
NTS Map-Area 104I/07W**

**Prepared for  
CANADIAN METALS EXPLORATION LIMITED**

**By  
N.C. CARTER, Ph.D. P.Eng.  
June 24, 2003**

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## SUMMARY

Canadian Metals Exploration Limited holds a 100% interest in the Turnagain nickel property which is situated 70 kilometres east of Dease Lake in northern British Columbia. The property consists of twenty-three contiguous mineral claims covering an area of 2975 hectares immediately north of the Turnagain River. Access to the property is by helicopter from Dease Lake. A short airstrip of the property has been used in the past for limited access as has a secondary road extending easterly from highway 37 near Dease Lake.

This report, prepared at the request of Canadian Metals Exploration Limited, is based in part on a personal examination of the subject property undertaken between June 16 and 18, 2003, on records of recent exploratory work provided by the company and on information readily available in the public domain.

Initial mineral claims in the area of the current Turnagain property were located in 1956. Exploratory work since 1966, carried out by a number of operators including Canadian Metals Exploration Limited and a predecessor company, has included geological mapping, geophysical and geochemical surveys and more than 13000 metres of diamond drilling.

Nickel mineralization on the Turnagain property is associated with a zoned, Alaskan-type ultramafic complex within Paleozoic metasedimentary and metavolcanic rocks along the faulted terrane boundary between the North America cratonic margin and accreted Quesnel terrane. The ultramafic body hosting mineralization is elongate in a northwesterly direction and measures 8 by 3 kilometres. The complex consists of a central dunite core and an outer, marginal zone of peridotite and clinopyroxenite, all of which represent crystal cumulate sequences. Contacts between the various phases are gradational. Later intrusive events include narrow granitic dykes which are probably related to a small granitic stock in the central part of the ultramafic complex.

Iron and nickel sulphides, of magmatic origin, are hosted by peridotites and clinopyroxenites; the central dunite is devoid of sulphide minerals. Massive, semi-massive and sulphide matrix breccias have been noted in several surface showings and over restricted intervals in drill core. Most of the sulphide mineralization encountered in drill holes consists of between 1% and 5% disseminated blebs which locally coalesce to form net-textured sulphides. Most of the holes drilled contain nickel values of +0.20% over hole lengths of tens of metres to several hundred metres. Nickel is the principal commodity of interest, low cobalt and copper values average 0.015% and 0.05% respectively. Combined platinum and palladium values are generally less than 100 parts per billion. Enhanced nickel values of more than 0.30% occur over hole lengths of tens of metres within the lower grade zones.

Most of the nickel values are associated with sulphides rather than silicates and preliminary metallurgical test work suggests the potential for reasonably good recoveries of nickel and cobalt.

The Turnagain nickel property warrants additional exploratory work. The writer recommends a suspension of the current drilling program to allow for a compilation of all analytical results. A targeted field program, consisting of geological mapping and a soil geochemical survey, is also proposed prior to a resumption of drilling. Estimated costs for the proposed program total \$423,000.00.

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## **INTRODUCTION and TERMS OF REFERENCE**

Canadian Metals Exploration Limited owns the Turnagain nickel property which is situated east of Dease Lake in northern British Columbia. Previous work on this property has disclosed the presence of widespread nickel and associated copper, cobalt and platinum group elements mineralization within an ultramafic complex.

The author of this report has been retained by Canadian Metals Exploration Limited to review and comment on the results of exploratory work completed to date on the subject property, to prepare preliminary comments regarding the potential of the property and to provide recommendations regarding the nature and scope of further exploratory work programs.

This technical report has been prepared in compliance with the requirements of National Instrument 43-101 and Form 43-101F1 and is intended to be used as supporting documentation to be filed with the British Columbia Securities Commission and the TSX Venture Exchange.

Information used in the preparation of this report includes a number of technical reports detailing work on the subject property between 1966 and 1998. These reports, filed in support of assessment work requirements, are readily available in the BC Ministry of Energy and Mines public files. Details of exploratory and related work undertaken from 1998 to present were derived from a May 31, 2003 report prepared by Bruce Downing, M.Sc., P.Geol. Published and unpublished reports and maps also provided useful information and citations for these and the various assessment reports are contained in the Reference section of this report. Results of preliminary metallurgical test work undertaken prior to 2000 are summarized in this report. Available results from a current diamond drilling program, which got underway in late March, are also incorporated. Some of the diagrams accompanying this report have been prepared by the author; other diagrams provided by the Company have been modified as required.

A personal examination of parts of the Turnagain nickel property was carried out between June 16 and 18, 2003 during which time drill core from the current program was examined. The writer, the "qualified person" for purposes of this report, has a good working knowledge of nickel deposits and prospects based on two years of employment in the Sudbury district of Ontario and a more recent involvement with a nickel-copper-cobalt-PGE deposit in Nunavut. Further, the writer is well familiar with the geological settings and styles of mineralization in northern British Columbia derived by way of numerous mineral property examinations, geological mapping programs and supervision of exploration programs over the past 35 years.

Units of measure in this report are metric; monetary amounts referred to are in Canadian dollars.

## **PROPERTY DESCRIPTION and LOCATION**

The Turnagain nickel property consists of twenty-three contiguous mineral claims situated in the Liard Mining Division of northern British Columbia 70 kilometres east of Dease Lake and 1350 kilometres north-northwest of Vancouver (Figure 1). The mineral claims consist of six four-post claims (102 mineral claim units) and seventeen 2-post claims which collectively cover an area of 2975 hectares between latitudes 58°27' and 58°30' North and longitudes 128°48' and 128°56' West in NTS map-area 104I/07W.

The configuration of the various mineral claims is illustrated on Figure 2 (Mineral Titles Reference Map M104I046) and details are as follows:

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Table 1: Turnagain Mineral Claims

<u>Claim Name</u>	<u>Record No.</u>	<u>Units</u>	<u>Record Date</u>	<u>Expiry Date</u>
CUB	345511	20	May 5, 1996	Dec. 1, 2004
CUB 2	347028	15	June 20, 1996	Dec. 1, 2003
CUB 3	347029	1	June 19, 1996	Dec. 1, 2003
CUB 4	347030	1	June 19, 1996	Dec. 1, 2003
CUB 5	347031	1	June 19, 1996	Dec. 1, 2003
CUB 6	347032	1	June 19, 1996	Dec. 1, 2003
MOOSE	347530	1	July 3, 1996	Dec. 1, 2003
CUB 10	347274	20	July 16, 1996	Dec. 1, 2003
CUB 11	348275	20	July 17, 1996	Dec. 1, 2003
CUB 12	348278	1	July 17, 1996	Dec. 1, 2003
CUB 13	348279	1	July 17, 1996	Dec. 1, 2003
CUB 14	348280	1	July 17, 1996	Dec. 1, 2003
CUB 15	348281	1	July 17, 1996	Dec. 1, 2003
CUB 16	348282	1	July 17, 1996	Dec. 1, 2003
CUB 17	396708	12	Sept. 17, 2002	Dec. 1, 2003
CUB 18	396709	15	Sept. 17, 2002	Sept. 17, 2003
PLAT 7	397401	1	Oct. 22, 2002	Dec. 1, 2003
PLAT 1	397402	1	Oct. 22, 2002	Dec. 1, 2003
PLAT 2	397403	1	Oct. 22, 2002	Dec. 1, 2003
PLAT 3	397404	1	Oct. 22, 2002	Dec. 1, 2003
PLAT 4	397405	1	Oct. 22, 2002	Dec. 1, 2003
PLAT 5	397406	1	Oct. 22, 2002	Dec. 1, 2003
PLAT 6	397407	1	Oct. 22, 2002	Dec. 1, 2003

Initial mineral claims were located in 1996 by J. Schussler and E. Hatzl and subsequently optioned to Bren-Mar Resources Limited, the predecessor company of Canadian Metals Exploration Limited. The original option agreement gave Bren-Mar Resources the right to earn a 100% interest in the mineral claims in exchange for the issuance of 200,000 shares and incurring property expenditures of \$1 million within five years of acquisition. The 100% interest has been earned subject to a 4% net smelter royalty on possible future production. Canadian Metals retains the right to purchase all or part of this royalty for \$1 million per 1%.

Mineral claims in British Columbia may be kept in good standing by incurring assessment work or by paying cash-in-lieu of assessment work in the amount of \$100 per mineral claim unit per year during the first three years following the location of the mineral claim. This amount increases to \$200 per mineral claim unit in the fourth and succeeding years.

The writer is not aware of any specific environmental liabilities to which the various mineral claims are subject. The Turnagain property is situated in an area where mining-related activities have been underway for more than 75 years.

Exploration work on mineral properties in British Columbia requires the filing of A Notice of Work and Reclamation with the Ministry of Energy and Mines. The issuance of a permit facilitating such work may involve the posting of a reclamation bond. Locations of all completed and planned 2003 drill holes have been permitted by the Ministry of Energy and Mines.

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## **ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE and PHYSIOGRAPHY**

The Turnagain nickel property is situated immediately north of Turnagain River near its confluence with Hard Creek (Figure 3). The community of Dease Lake, on highway 37 some 400 kilometres north of the port of Stewart (Figure 1), is 70 kilometres west of the property. Helicopter access from Dease Lake involves a 20 minute flight. A secondary road extending easterly from Dease Lake has been used by large, articulated 4-wheel drive vehicles to convey large jade boulders from the Kutcho Creek area and to supply placer gold operations at Wheaton Creek over the past number of years. A branch of this road network extends into the Turnagain property; road distance to Dease Lake is about 100 kilometres.

A 700 metres long dirt airstrip, constructed in the 1960s and situated within the claims area on the north side of Turnagain River, can accommodate small aircraft. This airstrip is immediately adjacent to Canadian Metals' current camp facility. Previous exploration programs have made use of camp facilities at Wheaton Creek (Boulder) which is about 15 kilometres by road west of the property.

Dease Lake has three times a week scheduled airline service and offers some supplies and services. The communities of Terrace and Smithers, both several hundred kilometres south, offer the best range of supplies and services which can be trucked to Dease Lake via highway 37.

The Turnagain property is situated in the Stikine Ranges of the Cassiar Mountains. The area between Dease Lake and the property features maturely dissected mountains rising to elevations of between 2000 and 2150 metres above sea level (note that elevations shown on Figure 3 are in Imperial units) and separated by wide, drift-filled valleys in which elevations average 1000 metres. Relief can be described as moderate for this part of British Columbia. Forest cover is present in valley areas up to elevations of about 1500 metres above sea level above which is typical alpine terrain. Bedrock is reasonably well exposed in the areas above tree line and along drainages.

The Turnagain property covers a north-facing slope between the Turnagain River valley and alpine terrain above tree line (Figure 2). Elevations range from about 1000 metres along Turnagain River in the eastern claims area to 1759 metres at the summit near the northern property boundary.

The climate is typical of the northern interior of British Columbia with cold temperatures and moderate snow cover during the winter months and limited precipitation during the remainder of the year. Field work is best carried out between mid-June and late September when daytime temperatures average 10 to 15 degrees Celsius.

## **HISTORY**

As noted, the Turnagain property is situated in the Dease Lake area where placer gold was discovered at the north end of Dease Lake in the late 1800s. Subsequent prospecting resulted in the discovery of additional placer gold in other creeks including Goldpan Creek in the 1920s. The Letain asbestos deposit, 20 kilometres southeast of the Turnagain property (Figure 3) was discovered in 1955 and exploration for porphyry copper deposits in the 1960s resulted in the discovery of the Eaglehead prospect 10 kilometres west of the Turnagain property. The Kutcho Creek massive sulphide deposit, 40 kilometres southeast, was investigated in the 1970s and 1980s. Numerous jade deposits in the area between Wheaton Creek (Figure 3) and Kutcho Creek have been mined over the past 20 years.

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Nickel and copper sulphides were discovered within the current property area in a bedrock exposure along Turnagain River in 1956. Mineral claims covering this showing and other occurrences were acquired by Falconbridge Nickel Mines Limited in 1966 and work completed over the ensuing seven years included surface and airborne geophysical surveys, geological mapping, geochemical surveys and 2895 metres of conventional and packsack diamond drilling in 40 widely spaced drill holes (Crosby and Steele, 1969, McDougall and Clark, 1972, 1973).

During this same time interval, geochemical surveys were carried out on adjacent ground by Union Miniere Exploration and Mining Corporation Ltd. (Burgoyne, 1971). One short diamond drill hole (17 metres) was completed by independent claim owners in 1979 (Cukor, 1980) and Falconbridge drill core was re-sampled for platinum group elements in 1986 (Cukor, 1987). Additional investigation of platinum group elements was also undertaken by way of geochemical surveys conducted on behalf of Equinox Resources Ltd. in 1986 (Page, 1986).

The Turnagain River property was acquired by Bren-Mar Resources Limited (predecessor company of Canadian Metals Exploration Limited) in 1996 and work that year included 400 line kilometres of airborne magnetic surveys and 792.5 metres of diamond drilling in 5 holes (Livgard, 1997). Additional diamond drilling in 1997 and 1998 amounted to 3096 metres in 14 holes (Downing, 1998). Related work included 18 line kilometres of surface magnetic surveys covering two areas of the property, bore hole pulse electromagnetic surveys of four of the 1997-1998 drill holes and preliminary metallurgical test work on drill core composites.

Canadian Metals Exploration Limited undertook work in 2002 consisting of an Induced Polarization survey of part of the claims area and 1687 metres of diamond drilling in 7 holes (Downing, 2003). Some 5000 metres of additional diamond drilling has been completed to date as part of the 2003 program.

## **GEOLOGICAL SETTING**

### **Regional Setting**

The Turnagain nickel property is associated with a late Triassic ultramafic complex situated within Paleozoic metasedimentary and metavolcanic rocks along the faulted terrane boundary between the cratonic margin (ancestral North America) and accreted, Mesozoic Quesnel terrane (Quesnellia - Figure 4).

The age and origin of the layered Paleozoic assemblages marginal to the Turnagain ultramafic complex are not well known and two interpretations have been proposed by Nixon (1998). The first of these suggests that the Paleozoic rocks are autochthonous and range in age from Cambrian to Upper Paleozoic - Triassic ("A" - Figure 4). The second interpretation ("B" - Figure 4), and the one favoured by Nixon, places the ultramafic complex within an imbricated sequence of Late Paleozoic to Triassic sedimentary and volcanic rocks which were thrust eastward onto the margin of the North American craton. This latter interpretation is based in part on the fact that the Turnagain ultramafic body is thought to be a zoned, Alaskan-type complex; other known examples in the northwestern Cordillera occur in accretionary terranes.

Regardless of which interpretation is correct, it is worthy of note that the Turnagain ultramafic body is situated along a major terrane boundary, or in a geological setting not dissimilar to many of the major nickel-bearing mafic intrusions of the Canadian Shield.

Numerous other ultramafic bodies in this area are non-zoned Alpine-type bodies which

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cut sedimentary rocks of Cache Creek terrane. Most of these are serpentinized and an example is the Letain asbestos deposit southeast of the Turnagain property (Figure 3) which hosts some 15 million tonnes grading 4.7% asbestos fibre,

The area east of Dease Lake features diverse geology and a number of mineral deposits and occurrences. The best known of these include the Kutcho Creek massive sulphide deposit (Figure 3) which has a resource of 17 million tonnes grading 1.62% copper, 2.32% zinc, 29.2 grams/tonne silver and 0.39 gram/tonne gold developed in late Triassic felsic volcanic rocks. The Eaglehead porphyry deposit, west of the Turnagain property (Figure 3) and hosted by Cretaceous granitic rocks, includes some 30 million tonnes grading 0.41% copper, 0.01% molybdenum, 2.71 grams/tonne silver and 0.20 gram/tonne gold. (Note that all of the foregoing resources are from BC Minfile and are not in accordance with Section 1.3 of National Instrument 43-101).

### Property Geology

The generalized geological setting of the Turnagain property is illustrated on Figure 5. The property covers the known limits of the zoned, Alaskan-type ultramafic intrusion which measures 8 kilometres by 3 kilometres and is elongate in a northwest direction or conformable to the regional structural grain. The ultramafic body is separated from graphitic Paleozoic sedimentary rocks along its northern and eastern margins by thrust or reverse faulting (Figure 5); the poorly exposed southwestern margin is in intrusive contact with metasedimentary rocks as indicated by previous drilling.

The complex consists of a central dunite and an outer zone of peridotite (wehrlite), clinopyroxenite and rare hornblendite, all of which represent crystal cumulate sequences (Clark, 1980, Nixon, 1998). Gabbros and diorites, common to many Alaskan-type complexes, have not been recognized (Nixon, 1998). As indicated on Figure 5, variably serpentinized dunite is the most widespread unit and is flanked by peridotite and clinopyroxenite along the northern and eastern margins of the complex. Contacts between the ultramafic phases are gradational although dunite was seen to intrude pyroxene-bearing phases in the northern margins of the complex (Clark, 1980).

In detail, the central dunite is massive and consists solely of olivine with minor chromite, peridotite is composed of nearly equal proportions of olivine and clinopyroxene while the pyroxenites consist mainly of clinopyroxene with lesser olivine and alteration minerals. Dunite weathers to a light brown colour which is particularly evident in the higher (northern) parts of the property. On fresh surfaces, this unit is dark green to black as are the other units except where serpentinized. Layering on a small scale has been noted in a few localities.

Metasedimentary rocks marginal to the ultramafic rocks are locally graphitic and those bordering the southwestern margin of the complex show evidence of thermal or contact metamorphism.

A small granodiorite plug intrudes dunite in at least two localities in the central claims area (Figure 5). Narrow porphyritic granitic dykes, usually in the order of 1 to 2 metres in width, were noted cutting peridotites and clinopyroxenites in drill core; these may have lateral extents of several hundred metres. These dykes, which are clearly post-mineral, are probably related to the exposed granitic plug which is thought to be of Jurassic or Cretaceous age.



## MINERALIZATION

It has been noted that the Turnagain ultramafic intrusion is unusual in that it hosts relatively abundant sulphide minerals for an Alaskan-type complex (Clark, 1980; Nixon, 1998). A number of showings of semi-massive and massive sulphides have been identified by work to date and the locations of these mineralized zones are shown on Figures 5 and 6. These semi-massive and massive zones, plus broad zones of disseminated sulphides, are invariably hosted by peridotites and clinopyroxenites near the southern and northern margins of the ultramafic complex (Figure 5). The central dunite is essentially devoid of sulphide minerals although it is worthy of note that the highly magnesian olivine is more enriched in nickel than the olivines in the peridotites and clinopyroxenites which in fact are depleted in nickel in areas of sulphide mineralization. Nixon (1998) suggests that these features are further evidence of fractional crystallization of the ultramafic magma.

The association of sulphide minerals with clinopyroxenites and to a lesser degree with peridotites was recognized during earliest exploratory work on the property. McDougall and Clark (1972) state that contacts between pyroxenites and peridotites appear to be the most prospective zones in which to prospect for nickel.

Primary sulphide minerals consist mainly of pyrrhotite with lesser pentlandite (iron-nickel sulphide) and minor chalcopyrite. Some bornite has been reported. The writer concurs with other investigators that these are magmatic sulphides. Intercumulus and blebby sulphides, with grain sizes ranging from 1 to 4 millimetres, are evident in widespread disseminated zones seen in drill cores. With increasing concentrations, these intercumulus sulphide grains coalesce to form net-textured sulphides. Semi-massive and massive sulphides, and rare sulphide matrix breccias, were also noted in drill cores over intervals not exceeding a few tens of centimeters.

Narrow fracture-filling sulphide lenses, commonly featuring chalcopyrite along with the more prevalent pyrrhotite and pentlandite, are products of remobilization of primary sulphides adjacent to granitic dykes and serpentized areas.

Secondary nickel and copper sulphides, including violarite and valleriite, have been noted in serpentized zones and both primary and secondary sulphides are associated with graphite (Nixon, 1998).

Documented mineral showings are shown on Figure 5 and these have been described by Livgard (1997) as follows. The original Discovery Zone, exposed along Turnagain River contains nickel-copper values plus anomalous platinum. The Fishing Rock Zone, also adjacent to Turnagain River southwest of the Discovery Zone, consists of disseminated sulphides in peridotite. The Cliff Zone, 1.5 kilometres east of Turnagain River, features pyrrhotite, pentlandite and chalcopyrite within a 100 x 75 metres area.

The Horsetrail Zone, which has been the focus of most of the previous and current drilling, includes broadly dispersed disseminated sulphide mineralization and may be continuous with the Northwest Zone which includes nickel-copper values in what has been described as layered dunite-peridotite-clinopyroxenite.

The Davis showing, situated near the northern margin of the ultramafic complex (Figure 5), consists of interstitial pyrrhotite and minor chalcopyrite in clinopyroxenite.

## EXPLORATION

This section includes a brief discussion of the results of geophysical and geochemical surveys conducted within the boundaries of the current Turnagain property over the past 35 years.

Airborne geophysical surveys include a 1969 helicopter-borne magnetic and electromagnetic survey (Crosby and Steele, 1969) and a fixed-wing high resolution magnetic survey undertaken in 1996 (Livgard, 1997). Both magnetic surveys delineated the extent of the ultramafic complex and identified several areas of increased magnetic susceptibility within the complex. The 1969 airborne electromagnetic survey identified numerous conductive zones, some of which correlated with areas of higher magnetic response. The best concentrations of conductive zones were noted east of Turnagain River in the area of the Cliff Zone and near the northwestern margins of the ultramafic complex.

A surface magnetometer survey, while successful in defining the boundaries of the intrusion, did not identify any diagnostic magnetic signatures associated with the various mineralized zones. Similarly, an Induced Polarization survey undertaken in 2002 produced highly variable chargeability and resistivity results, none of which appeared to correlate with the known mineralized zones (Downing, 2003).

Borehole pulse electromagnetic surveys were undertaken of four drill holes (97-9, 98-1, -4 and -5) in 1998. All of these holes were drilled to test the southern part of the Horsetrail Zone (Figure 6) and major in-hole anomalies were interpreted as being caused by two sheet-like, shallowly south-dipping conductive horizons which are in part correlative with zones of sulphide mineralization containing enhanced (+0.30%) nickel values and with talc/serpentine zones (Downing, 2003).

Of particular interest are the results of a 1971 soil geochemical survey conducted by Union Miniere over mineral claims contiguous with Falconbridge claims and covering the northeastern margin of the ultramafic complex and the Cliff Zone east of Turnagain River (Burgoyne, 1971). More than 800 samples were collected from B and C soil horizons at 200 ft. intervals along grid lines spaced 400 ft. apart and samples were analyzed for nickel, copper and cobalt. Values of greater than 650 ppm nickel and 300 ppm copper were considered to be distinctly anomalous; cobalt values were erratic. Best results were obtained from a 900 x 450 metres area west of the Discovery Zone where anomalous nickel values ranged from 800 to 2000 ppm.

Four representative rock samples of dunite, peridotite and pyroxenite were analyzed for total nickel and copper and sulphide nickel and copper. The highest ratio of total nickel to sulphide nickel was obtained from the dunite sample providing further evidence that nickel values in this rock type are associated with silicate (olivine) minerals. By contrast total nickel values for the peridotite and two pyroxenite samples were only 10 to 15% higher than the sulphide nickel values. Analyses of total nickel versus sulphide nickel for the soil samples provided similar results.

The platinum group element potential of the Turnagain ultramafic complex was investigated by Equinox Resources in 1986 and by the BC Geological Survey Branch in 1988. Best results (461 ppb platinum, 266 ppb palladium) obtained by Equinox were from rock and soil samples collected from the area of the Cliff Zone east of Turnagain River (Page, 1986). Geological Survey Branch work consisted of bedrock sampling of the various ultramafic phases and the several sulphide showings. The latter areas yielded the best results with values ranging from 1 to 423 ppb platinum and 4 to 427 ppb palladium (Nixon et al, 1989).

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## DRILLING

The Turnagain ultramafic complex has been tested by more than 13000 metres of diamond drilling in 79 holes since 1966. Table 2 lists drill hole locations, hole lengths, etc. while significant results are contained in Table 3. Locations of most drill holes are shown on Figure 6 and Figure 7 is a drill section which includes a graphic representation of nickel values.

Virtually all of the holes drilled to date have been inclined. Initial drilling by Falconbridge between 1966 and 1970 recovered QXT and AQ core; BQ size (36.4 mm diameter) core has been recovered since 1996 by drill contractor DJ Drilling. Core recoveries are excellent, averaging 95%, and individual hole deviations are minimal. Most drill holes have been sampled over their entire lengths; sample intervals do not exceed 2 metres in length.

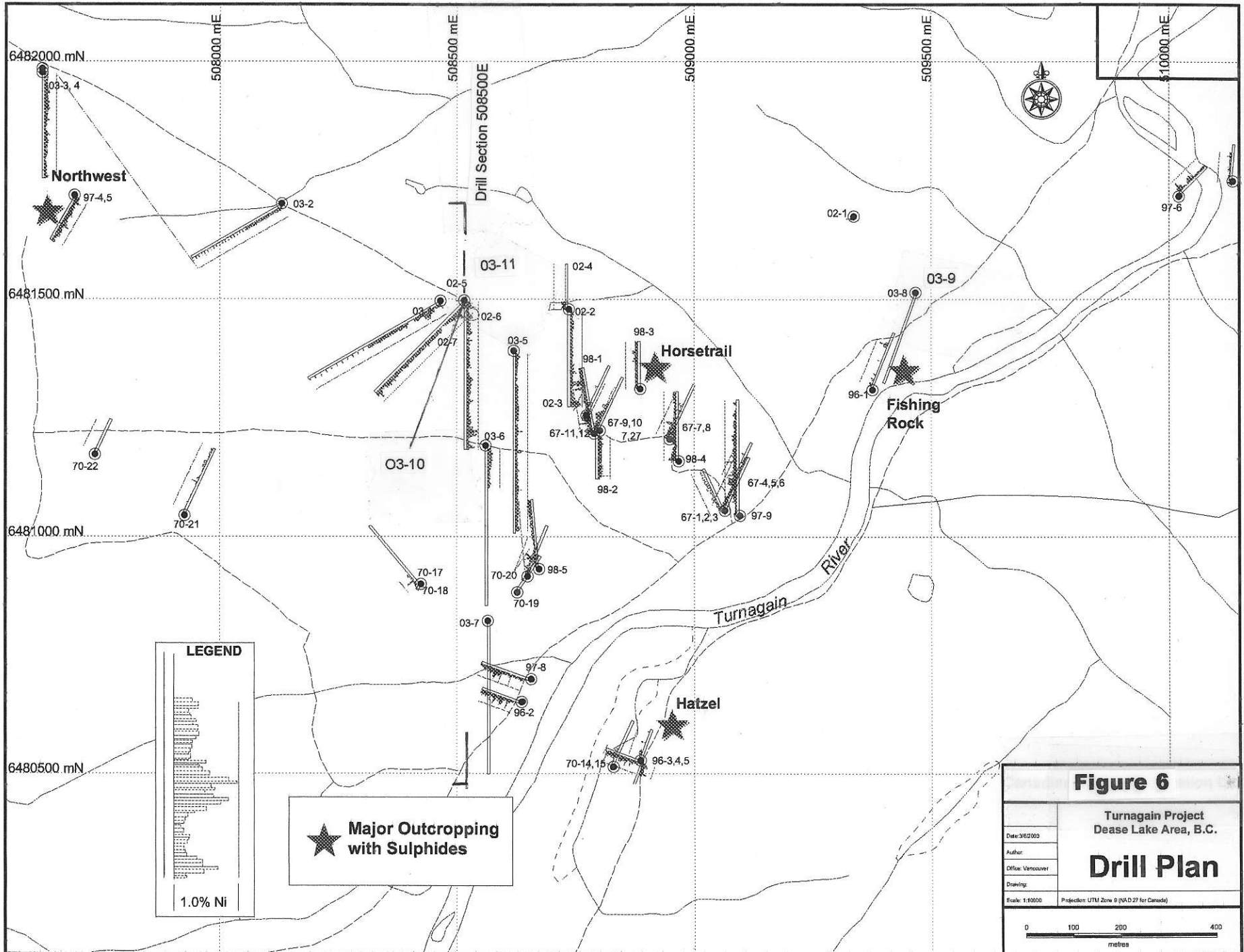
Drill core from holes drilled between 1996 and 2002 is stored in racks at the Boulder camp on Wheaton Creek 15 kilometres west of the property. Most of the core recovered from the current program is stored at the new camp on the property.

As indicated on Table 2 and illustrated on Figure 6, most of the past and current drilling has been directed to the Horsetrail Zone in the south-central property area.

Table 2: Drill Hole Locations

<u>Hole No.</u>	<u>Year</u>	<u>Operator</u>	<u>Location</u>	<u>Azimuth</u>	<u>Dip</u>	<u>Total Depth (m)</u>
03-01	2003	Canadian Metals	508500E 6481510N	240	-50	501.7
03-02	2003	" "	508116E 6481653N	225	-50	532.2
03-03	2003	" "	507603E 6481901N	180	-50	462.1
03-04	2003	" "	507603E 6481901N	180	-70	334.4
03-05	2003	" "	508653E 6481467N	180	-50	590.1
03-06	2003	" "	508566E 6481205N	180	-50	523.0
03-07	2003	" "	508584E 6480855N	180	-50	434.3
03-08	2003	" "	509441E 6481501N	202	-50	477.3
03-09	2003	" "	509441E 6481501N	202	-85	252.1
03-10	2003	" "	509441E 6481501N	200	-50	577.9
03-11	2003	" "	509441E 6481501N	000	-50	243.8
02-01	2002	" "	509326E 6481649N	N/A	-90	203.3
02-02	2002	" "	508735E 6481500N	000	-85	213.1
02-03	2002	" "	508735E 6481500N	180	-50	318.2
02-04	2002	" "	508735E 6481500N	000	-50	148.8
02-05	2002	" "	508506E 6481519N	N/A	-90	152.4
02-06	2002	" "	508506E 6481519N	180	-50	232.6
02-07	2002	" "	508500E 648510N	225	-50	416.4
98-1	1998	Bren-Mar	Horsetrail Zone	350	-60	288.0
98-2	1998	" "	" "	180	-60	184.7
98-3	1998	" "	" "	000	-60	203.0
98-4	1998	" "	" "	000	-60	296.2
98-5	1998	Bren-Mar	Horsetrail Zone	355	-60	295.7
97-1	1997	Bren-Mar	Cliff Zone	045	-60	160.0
97-2	1997	" "	Davis 1	000	-60	190.5
97-3	1997	" "	Davis 1	000	-50	133.2
97-4	1997	" "	Northwest	210	-50	163.7
97-5	1997	" "	Northwest	210	-60	130.1

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★ Major Outcropping with Sulphides

**LEGEND**

1.0% Ni

**Figure 6**

Turnagain Project  
Dease Lake Area, B.C.

**Drill Plan**

Date: 3/02/2003  
 Author:  
 Office: Vancouver  
 Drawing:  
 Scale: 1:10000 Projection: UTM Zone 8 (NAD 27 for Canada)

0 100 200 400  
metres

<u>Hole No.</u>	<u>Year</u>	<u>Operator</u>	<u>Location</u>	<u>Azimuth</u>	<u>Dip</u>	<u>Total Depth (m)</u>
97-6	1997	" "	Discovery (north side)	045	-65	197.2
97-7	1997	" "	Discovery (south side)	005	-60	166.7
97-8	1997	" "	50 m east of 96-2	290	-60	220.7
97-9	1997	" "	500 m east of 96-2	290	-60	493.0
96-1	1996	" "	Fishing Rock Zone	022	-45	184.4
96-2	1996	" "	Horseshoe Zone	290	-60	178.1
96-3	1996	" "	Hatzl Zone	020	-60	137.5
96-4	1996	" "	" "	200	-60	137.5
96-5	1996	" "	" "	290	-60	157.5
70-19	1970	Falconbridge	Horseshoe Zone	034	-40	118.9
70-20	1970	"	" "	022	-41	106.1
70-23	1970	"	" "	025	-40	201.5
70-24	1970	"	" "	025	-34	60.6
70-26	1970	"	" "	025	-38	77.1
70-27	1970	"	" "	025	-38	61.9
70-28	1970	"	" "	025	-38	93.3
67-1	1967	Falconbridge	Horseshoe Zone	025	-35	152.4
67-2	1967	"	" "	025	-60	121.9
67-3	1967	"	" "	335	-35	123.4
67-7	1967	"	" "	025	-35	157.0
67-8	1967	"	" "	025	-60	136.7
67-9	1967	"	" "	025	-35	154.5
67-10	1967	"	" "	025	-60	152.4
67-12	1967	"	" "	025	-35	38.1
66-TG-1	1966	"	Discovery Zone	025	-52	9.1

Table 3: Results of Diamond Drilling

<u>Hole No.</u>	<u>Interval(m)</u>	<u>Length(m)</u>	<u>Ni(%)</u>	<u>Cu(%)</u>	<u>Co(%)</u>	<u>Pt(ppb)</u>	<u>Pd(ppb)</u>
03-01	34.0-75.0	41.0	0.367	0.117	0.020	78	97
	including 42.0-71.0	29.0	0.423	0.135	0.022	76	94
	90.0-106.0	16.0	0.231	0.030	0.014	100	44
	135.0-191.0	56.0	0.228	0.013	0.013	25	26
	205.0-280.0	75.0	0.226	0.002	0.010	N/A	N/A
03-02	4.0-26.0	22.0	0.222	0.024	0.013	30	34
	92.0-132.0	40.0	0.219	0.004	0.011	N/A	N/A
	Including 92.0-102.0	10.0	0.215	0.049	0.013	170	124
*Complete results through 132 metres only							
03-03	No Results Available						
03-04	Partial Results Only						
03-05	15.0-33.0	18.0	0.244	0.030	0.015	16	19
	117.0-135.0	18.0	0.214	0.004	0.011	9	9
	175.0-229.1	54.1	0.225	0.003	0.010	9	10
	253.0-277.0	24.0	0.244	0.032	0.014	17	24
	326.0-333.8	7.8	0.431	0.139	0.023	38	47
	422.0-430.0	8.0	0.231	0.022	0.014	18	16
	444.0-464.0	20.0	0.245	0.027	0.016	18	21
	500.0-536.0	36.0	0.218	0.017	0.014	27	32
	576.0-590.7	14.7	0.259	0.055	0.023	15	17

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<u>Hole No.</u>	<u>Interval(m)</u>	<u>Length(m)</u>	<u>Ni(%)</u>	<u>Cu(%)</u>	<u>Co(%)</u>	<u>Pt(ppb)</u>	<u>Pd(ppb)</u>
03-06	6.72-80.0	73.28	0.286	0.028	0.014	28	35
	including 13.0-66.0	53.0	0.313	0.024	0.014	30	37
	259.0-265.0	6.0	0.241	0.051	0.015	22	10
	454.0-520.0	66.0	0.239	0.036	0.015	25	31
03-07	192.1-200.0	7.9	0.258	0.109	0.013	27	63

\* Note – results available for 162.4-214.0 interval only

<u>Hole No.</u>	<u>Interval(m)</u>	<u>Length(m)</u>	<u>Ni(%)</u>	<u>Cu(%)</u>	<u>Co(%)</u>	<u>Pt+Pd</u>
02-01	Not sampled					
02-02	3.9-122.0	118.0	0.200	0.020	0.025	82
02-03	6.22-318.22	312.0	0.230	0.030	0.013	22
02-04	Not sampled					
02-05	3.0-120.0	117.0	0.260	0.020	0.013	78
02-06	4.0-485.2	481.2	0.278	0.030	0.015	102
	including 4.0-16.0	12.0	0.310	0.060	0.015	98
	including 19.0-20.0	1.0	0.740	0.180	0.068	266
	including 46.0-60.0	14.0	0.340	0.070	0.021	76
	including 92.0-111.0	19.0	0.350	0.060	0.017	338
	including 206.0-209.0	3.0	0.270	0.020	0.016	59
	including 218.0-219.0	1.0	0.360	0.050	0.027	921
	including 248.0-268.0	20.0	0.350	0.050	0.018	106
	including 270.0-280.0	10.0	0.340	0.040	0.015	108
	including 282.0-286.0	4.0	0.320	0.020	0.014	42
	including 292.0-306.0	14.0	0.300	0.034	0.016	99
	including 320.0-334.0	14.0	0.340	0.030	0.015	88
	including 376.0-382.0	6.0	0.350	0.030	0.014	74
	including 386.0-400.0	14.0	0.340	0.030	0.015	69
	including 414.0-446.0	32.0	0.570	0.050	0.017	454
	including 472.0-482.0	10.0	0.480	0.080	0.022	114
02-07	2.37-416.37	414.0	0.260	0.030	0.000	39
	including 34.0-46.0	12.0	0.550	0.240	0.028	260
	60.0-78.0	18.0	0.350	0.090	0.022	112
	326.0-378.0	52.0	0.350	0.020	0.016	101
	398.0-418.0	20.0	0.440	0.020	0.016	200

<u>Hole No.</u>	<u>Interval(m)</u>	<u>Length(m)</u>	<u>Ni(%)</u>	<u>Co(ppm)</u>
98-1	6.7-288.0	281.3	0.27	145
	including 6.7 – 73.5	66.8	0.30	182
	including 6.7-8.0	1.3	0.45	140
	including 18.0-19.0	1.0	0.55	382
	including 32.3-33.6	1.3	0.41	352
	including 55.0-58.0	3.0	0.85	471
	including 56.0-57.0	1.0	1.32	693
	including 54.0-73.5	19.5	0.49	281
	including 73.5 – 148.0	74.5	0.18	119
	including 148.0-236.0	88.0	0.35	161
	including 202.0-206.0	4.0	0.93	315
	including 218.0-236.0	18.0	0.67	289
	including 234.0-236.0	2.0	1.23	741
	including 236.0– 288.0	52.0	0.22	107

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<u>Hole No.</u>	<u>Interval(m)</u>	<u>Length(m)</u>	<u>Ni(%)</u>	<u>Co(ppm)</u>
98-2	6.1-184.7	178.6	0.25	131
	including 6.1-50.0	43.9	0.30	146
	including 125.3-144.0	18.7	0.30	129
	including 170.0-175.0	5.0	0.45	207
98-3	4.0-233.0	199.0	0.22	118
	including 120.0-132.0	12.0	0.30	128
	including 148.0-164.0	16.0	0.31	137
98-4	6.1 – 142.0	135.9	0.28	154
	(including 6.1-23.0	15.9	0.38	206
	including 28.0-34.0	6.0	0.31	228
	including 84.0-90.0	6.0	0.47	223
	including 98.0-128.0	30.0	0.42	184
	including 276.0-282.0	6.0	0.22	114
98-5	46.6-54.0	7.4	0.55	242
	including 49.0-50.0	1.0	1.09	398
	220.0-248.0	28.0	0.22	95
	264.0-272.0	8.0	0.25	121
	284.0-288.0	4.0	0.22	106
97-1	3.0 –52.0	49.0	0.24	133
97-2	no significant results			
97-3	46.0 – 92.0	46.0	0.074	107
97-4	3.0 – 163.7	160.7	0.28	139
	including 94.0 – 104.0	10.0	0.44	
97-5	17.0 – 29.0	12.0	0.23	135
	29.0 – 53.0	24.0	0.11	145
	53.0 – 110.0	57.0	0.26	150
97-6	15.8 –46.0	30.2	0.38	169
	including 26.0 – 30.0	4.0	0.70	
	80.0 – 112.0	32.0	0.25	140
97-7	3.0 – 132.0	129.0	0.085	116
97-8	83.0 – 93.0	10.0	0.36	184
	including 85.0-86.0	1.0	1.39	651
	127.0 – 216.0	89.0	0.31	155
	including 128.0-129.0	1.0	1.39	515
	148.0-159.0	11.0	0.55	184
97-9	60.0-404.0	344.0	0.23	172
	including 82.0-94.0	12.0	0.38	146
	including 174.5-189.0	14.5	0.32	159
	including 230.0-231.0	1.0	1.13	708
	including 256.5-258.0	1.5	0.45	591
	including 277.4-284.0	6.6	0.31	180
	including 318.7-328.0	9.3	0.32	146
	including 340.0-342.0	2.0	0.41	156
	including 404.0-493.0	89.0	0.11	116
96-1	136.0 – 150.0	14.0	0.28	124
96-2	37.0 – 178.6	141.6	0.28	130
	including 81.5-92.2	10.7	0.53	120
	including 112.5-120.5	8.0	0.38	183
96-3	74.9 – 76.9	2.0	0.33	140

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<u>Hole No.</u>	<u>Interval(m)</u>	<u>Length(m)</u>	<u>Ni(%)</u>	<u>Co(ppm)</u>
96-4	9.1 – 60	50.9	0.26	124
	including 9.1-27.1	18.0	0.31	130
	53.1-54.6	1.5	0.57	186
96-5	11.5 - 154.6	143.1	0.24	129
	including 31.3-44.4	3.1	0.29	132
	including 63.7-93.9	30.2	0.30	147
	including 63.7-64.7	1.0	0.64	190
	including 107.0-116.0	9.0	0.31	154
	including 142.0-144.0	2.0	0.35	175
<u>Hole No.</u>	<u>Interval(m)</u>	<u>Length(m)</u>	<u>Ni(%)</u>	<u>Cu(%)</u>
70-19	96.0– 104.4	8.4	0.61	0.10
70-20	22.9 – 25.9	3.0	0.30	0.13
70-21	98.1– 98.5	0.4	0.45	0.07
70-23	78.3 – 83.8	5.5	0.36	
	86.0 – 92.7	6.7	0.30	
70-24	18.3 – 21.3	3.0	0.27	
70-26	3.0 – 7.6	4.6	0.32	
70-27	29.0 – 34.4	5.4	0.26	
	57.9 – 61.0	3.1	0.22	
70-28	15.2 – 16.8	1.4	0.25	
	68.9 – 69.0	0.1	1.12	
	79.2 – 82.3	3.1	0.26	
67-1	4.0 – 152.4	148.4	0.17	0.035
	including 76.2-91.4	15.2	0.23	
67-2	2.4 – 121.9	119.5	0.17	0.042
	including 9.1-12.2	3.1	0.27	
67-3	5.6 – 123.4	117.8	0.22	0.036
	including 39.6-45.7	6.1	0.35	
	including 67.1-73.2	6.1	0.38	
67-7	1.8 – 46.9	45.1	0.20	
	including 38.4-42.7	4.3	0.54	
	93.9 – 98.4	4.5	0.29	
67-8	128.6 – 132.0	3.4	0.56	0.07
67-9	2.4 – 16.8	14.4	0.34	0.06
	67.0 – 73.2	6.2	0.38	
67-10	5.5 – 91.4	85.9	0.31	0.08
	including 61.0-70.0	9.0	0.60	0.11
67-12	3.0 – 6.1	3.1	0.27	
66-TG-1	0 – 9.1	9.1	0.78	0.10
	including 0-5.0	5.0	1.10	0.16

Note that samples from holes drilled in 2002 and 2003 have been analyzed for nickel, copper, cobalt, platinum and palladium; core from the 1996 - 1998 programs was analyzed for nickel and cobalt. Samples from the earlier Falconbridge drilling were analyzed for nickel and copper.

Weighted average grades for available results from 2003 drilling were calculated by the writer; averages for the 2002 and previous drill holes are as provided by Canadian Metals Exploration Limited.

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Most of the holes drilled on the Turnagain property contain nickel values of more than 0.20% over hole lengths of several tens of metres and many of the recent holes average plus 0.20% over entire hole lengths of several hundred metres. These are accompanied by lower cobalt values, generally not exceeding 0.015%. Copper values, with a few exceptions, are also low, averaging less than 0.05%. Platinum and palladium values, available only for holes drilled in 2002 and 2003, are generally less than 100 ppb combined Pt+Pd. The Pt:Pd ratio is very close to 1:1.

Results to date confirm that nickel is the principal element of interest. Elevated nickel grades (+0.30%) over hole lengths of less than 10 metres to more than 80 metres are present in many of the holes drilled on the Horsetrail Zone. Some of the more recent holes include several intervals grading more than 0.30% nickel; examples include holes 02-06, 02-07, 98-1, -2, -3 and -4, 97-8 and -9, and 96-2, all of which were drilled in the central and southern parts of the zone (Figure 6).

The assessment of the continuity of these elevated nickel values between drill holes, both on section and between sections, is the focus of the current drilling program. Figure 7 illustrates the range of nickel values contained in a number of drill holes along a section line in the eastern part of the Horsetrail Zone. Of particular interest is the consistency of 0.30% nickel values in the lower part of hole 02-06. This hole was extended at the beginning of the current drilling program and additional holes (03-01, -06, -07, -10 and -11) have been drilled to test the continuity of these enhanced values with some success.

Core from drill holes 03-03, -04, -05, -06, -07 and -10 was examined by the writer during the recent property examination. Most of the core seen contained at least 1-2% sulphides and significant intervals containing up to 5% sulphides were noted. Much of the sulphide is pyrrhotite but pentlandite is also visible. A perusal of recent analytical results for some of the holes examined indicates that higher sulphide content does not always reflect enhanced nickel values; conversely, areas of lower sulphide content sometimes return good nickel grades. Consequently, it appears that it is difficult to visually estimate grades and the sampling of the entire core is a worthwhile undertaking.

## **SAMPLING METHODS AND ANALYSES**

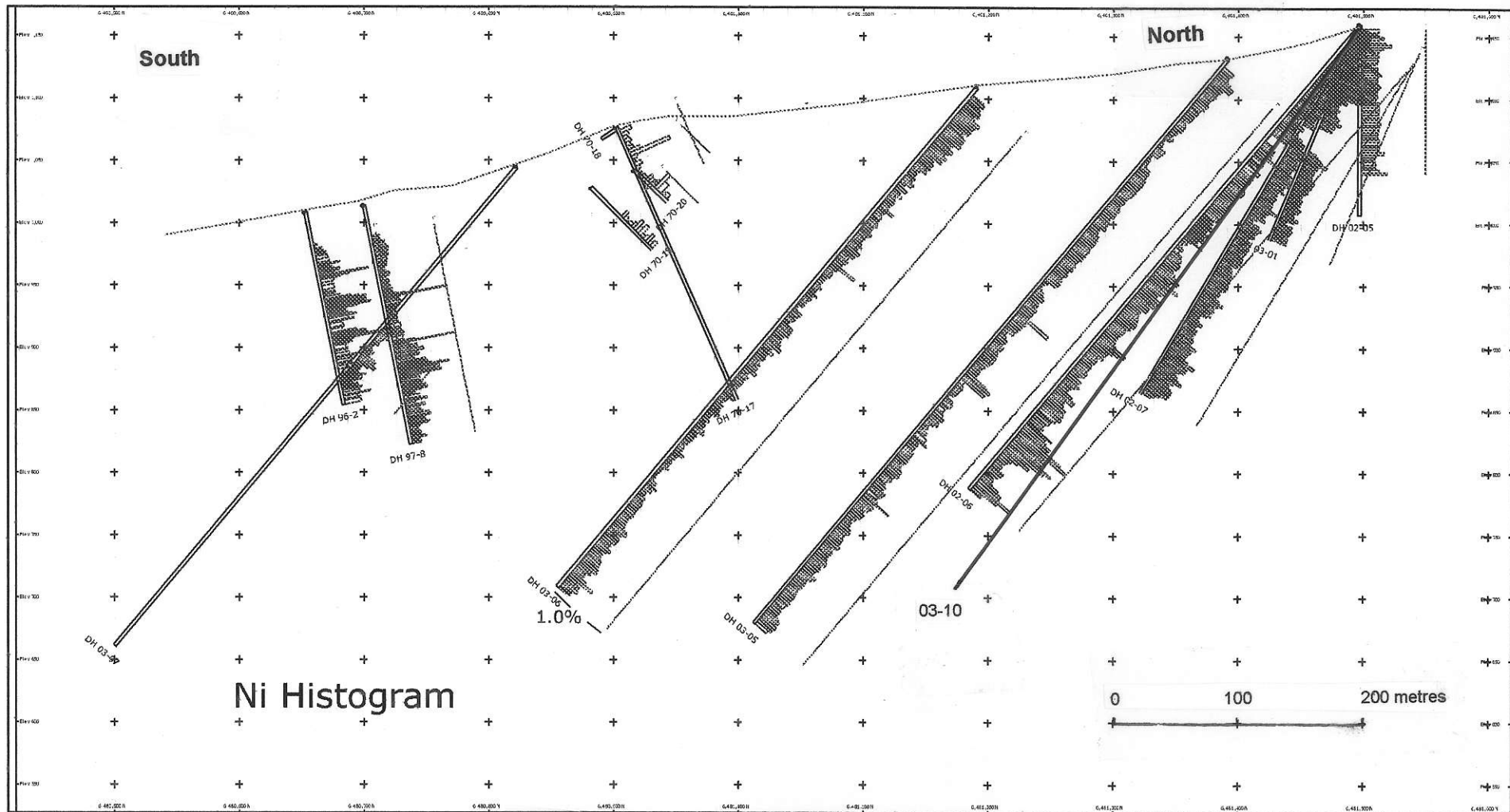
Drill cores recovered in 2002 and 2003 were sampled at 2 metres intervals or less and samples were halved by use of a core splitter. Most of the half core from the 1996-1998 and 2002 and 2003 programs is stored on or near the property.

Logging of core from the current program is being undertaken by A. Hitchins and C. Baldys, P.Eng. Samples for analyses are transported from the site by helicopter to Dease Lake and shipped by commercial transport to Acme Analytical Laboratories, a certified ISO 9002 facility, in Vancouver.

Drill core samples received by Acme Analytical Laboratories are crushed, split and pulverized prior to aqua regia digestion and subsequent analyses for 36 major and trace elements (including copper, nickel and cobalt) by ICP techniques. Precise nickel, copper and cobalt values are determined by atomic absorption spectrometry and reported as percent. Platinum and palladium values are determined by fire assay and reported as parts per billion.

Laboratory quality control is maintained by routinely analyzing a number of sample blanks, standards and duplicate samples. Additional quality control in the field involves the insertion of control samples obtained from CANMET as part of all sample batches sent to the laboratory.

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**Figure 7 - Drill Section 508500E**

## **DATA VERIFICATION**

Interlaboratory checks, undertaken using other laboratory facilities including ALS Chemex, have provided analyses that are in good agreement with initial results (Downing, 2003).

Much of the information used in the preparation of this report is on public record in the form of assessment reports filed with the BC Ministry of Energy and Mines. The writer has no reason to doubt the quality or veracity of these data. All of the exploration work conducted since 1996 and subsequent reporting was performed by competent, qualified persons.

The writer did not collect any samples for analyses during the course of the recent field examination. Enough drilling has been done over the past 35 years to provide a reasonable assessment of average grades and, in the view of the writer, the collection of a few surface samples for analyses would not provide any meaningful results.

## **MINERAL PROCESSING AND METALLURGICAL TESTING**

Metallurgical test work on drill cores and drill core sample rejects from the Turnagain property was undertaken by several laboratories in 1997 and 1998 (Wright,2000).

Composites of coarse drill core sample rejects from holes 96-2, 97-4 (2 intervals), 97-8 and 97-9 were prepared with the first three composite samples submitted to Process Research Associates Ltd. in Vancouver and the remaining two to Lakefield Research Inc. Head grades of the five composite samples ranged from 0.26% to 0.58% nickel and 130 to 170 ppm cobalt.

Note that holes 96-2, 97-8 and -9 were drilled in the southern part of the Horsetrail Zone; hole 96-4 was drilled to test the Northwest Zone. All sample intervals selected for composites contained enhanced nickel grades of +0.30% and as such these may not be representative of typical style and nature of Turnagain mineralization.

Scoping flotation work at Process research Laboratories and at Lakefield Research resulted in nickel recoveries of between 53% and 83%. Best results were obtained from Lakefield work which incorporated more stages of bulk flotation and longer retention times.

Flotation work was also undertaken by Billiten Process Research on split (half) core samples from the same drill hole intervals used to prepare the initial composite samples. This program was intended to determine if a suitable concentrate could be produced for use with a proprietary bioleaching process. Recovery rates were similar to those obtained by Process Research and Lakefield but the concentrate grade was considered to be insufficient for the bioleach process.

Additional chemical test work in 1998 was performed on composites of drill core sample rejects from various intervals in holes 98-1, 98-2 and 98-4. Head grades of the six composite samples ranged from 0.27% to 0.70% nickel and 143 to 264 ppm cobalt (Wright,2000). Results from three laboratories confirmed that nickel, and to a lesser degree, cobalt are the principal elements of interest. Platinum and palladium represent potential by-products.

Process Research Laboratories undertook further flotation testing of several of the 1998 composite samples. Recoveries ranged from 65% to 71% for nickel and 62% to 65% for cobalt. These recovery rates were improved somewhat in a large batch flotation test.

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A mineralogical study of head samples used in this flotation test indicated that sulphide contents ranged from 6% to 10% and consisted mainly of pyrrhotite and lesser pentlandite. The sulphides were described as being relatively coarse-grained with liberated grains of 500 microns or more being not uncommon. It was reported (Wright,2000) that liberation of sulphides from silicates should be attainable without excessively fine grinding.

Concentrates produced from this 1998 flotation test work were subjected to pressure leach technology by Cominco Engineering Services Ltd. in 1999. This work demonstrated the applicability of this technology to Turnagain concentrates (Wright,2000).

## **MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES**

No mineral resource estimates have been undertaken for the Turnagain property. Results from the current drilling program may permit a preliminary mineral resource estimate for part of the Horsetrail Zone.

## **INTERPRETATION AND CONCLUSIONS**

The Turnagain property represents a unique style of mineralization associated with a zoned, Alaskan-type ultramafic complex. Iron and nickel sulphides of magmatic origin are widespread in clinopyroxenites and peridotites bordering a non-mineralized dunite core.

Diamond drilling to date, undertaken mainly near the southern limits of the 8 x 3 kilometre ultramafic body, has disclosed the presence of broad zones of +0.20% nickel and associated cobalt and lesser copper and platinum group element values. Enhanced nickel values (+0.30%) are present over hole lengths of tens of metres within the more widely dispersed lower grade zones.

Most of the nickel values are associated with the nickel sulphide mineral pentlandite and preliminary metallurgical test work suggests the potential for reasonably good recoveries of both nickel and cobalt.

Other than the fact that iron and nickel sulphides are preferentially hosted by border phases of the ultramafic intrusion, controls for the distribution of higher sulphide concentrations are not readily apparent. A variety of geophysical surveys have been of limited use in delineating sulphide mineralization. Results obtained from limited soil geochemical surveys suggests that this method could be of use in determining the distribution of mineralization in overburden covered areas, specifically the lower, forested parts of the property where geological mapping is impractical.

## **RECOMMENDATIONS**

The writer is of the opinion that the Turnagain property is of sufficient merit to warrant further investigation. It is recommended that the current phase of diamond drilling be suspended on completion of the next two or three holes in order to allow for an orderly compilation of analytical results.

Prior to additional drilling, a limited field program is recommended to consist of geological

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mapping and a soil geochemical survey within an area including the western part of the Horsetrail Zone and the poorly exposed southwestern margin of the ultramafic body. Some remobilization and concentration of sulphides has been noted marginal to granitic dykes in drill core. In this context, the margins of the younger granitic plug in the central part of the ultramafic complex warrant surface investigation.

The field program would be followed by a short hole diamond drilling program designed to test for areas of near surface, enhanced nickel grades. Locations of these holes will be predicated on the results obtained from current drilling program coupled with information derived from the proposed surface work.

Total costs for the proposed program are estimated to be in the order of \$425,000.00

#### **COST ESTIMATE**

Surface exploration program – geological mapping, soil geochemistry (all-inclusive)	\$50,000.00
Diamond drilling – 3000 metres @ \$100/metre (all-inclusive including camp costs)	\$300,000.00
Helicopter transport – 20 hours @ \$900/hour	\$18,000.00
Contingencies @ 15%	\$55,000.00
<b>Total</b>	<b>\$423,000.00</b>

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**CERTIFICATE of AUTHOR**

I, NICHOLAS C. CARTER, Ph.D., P.Eng., do hereby certify that:

1. I am a Consulting Geologist, with residence and business address at 1410 Wende Road, Victoria, British Columbia.
2. I graduated with a B.Sc. degree in geology from the University of New Brunswick in 1960. In addition, I obtained a M.S. degree in geology from Michigan Technological University in 1962 and a Ph.D. degree in geology from the University of British Columbia in 1974.
3. I have been registered with the Association of Professional Engineers and Geoscientists of British Columbia since 1966. I am a Fellow of both the Canadian Institute of Mining, Metallurgy and Petroleum and the Geological Association of Canada and am a past director of The Prospectors and Developers Association of Canada and a past president of the British Columbia and Yukon Chamber of Mines.
4. I have practiced my profession as a geologist, both within government and the private sector, in eastern and western Canada and in parts of the United States, Mexico and Latin America for more than 35 years. Work has included detailed geological investigations of mineral districts, examination and reporting on a broad spectrum of mineral prospects and producing mines, supervision of mineral exploration projects and comprehensive mineral property evaluations.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirement to be a "qualified person" for the purposes of NI 43-101.
6. I am responsible for the preparation of all sections of the technical report titled Geological Report on the Tumagain Nickel Property, Tumagain River Area, Liard Mining Division, British Columbia, dated June 24, 2003. I personally examined the Tumagain property between June 16 and 18, 2003.
7. I have not had prior involvement with the property that is the subject of the Technical Report.
8. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.

N.C. Carter, Ph.D. P.Eng.  
 Consulting Geologist

9. I am independent of the issuer applying all of the tests in Section 1.5 of National Instrument 43-101.
10. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
11. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 24th day of June, 2003

N.C. Carter, Ph.D. P.Eng.

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