Report on the 2009 Drill Program Towards Assessment on Portions of the Pearson Claim Group Southwest Vancouver Island

Victoria Mining Division
NTS Mapsheets: 092C/08,09,10,11,14,15,16
Latitude: 48°39' N
Longitude: 124°24' W
UTM: 5389495 N, 396886 E, Zone 10

Owner:
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1.0 SUMMARY

The Pearson Project claim group is located 100 kilometres west-northwest of Victoria on Vancouver Island, British Columbia (Figure 1). The claim group, as of January 1 2010, consists of 513 noncontiguous claims totaling 238177.2 hectares that are held by owner/operator Pacific Iron Ore Corporation. However, this report is remitted only to satisfy submissions of work (SOW) for a contiguous southern group of claims that pertain to event numbers 4457888 and **4623731** (Appendix A). These events include 62 individual claim tenures totaling 73814.29 hectares and are part of the group shown in Figure 2 and listed in Table 1.

Access to the present exploration focus of Pacific Iron Ore, the historic iron deposits (Bugaboo and Reko), is via the Gordon River Main and Granite Main logging roads about 10 kilometres from the community of Port Renfrew, British Columbia. An excellent network of secondary logging roads provides access to much of the property.

The Bugaboo and Reko deposits can be classified as calcic iron skarns or contact metasomatic iron deposits. Massive magnetite mineralization is generally developed near marble and diorite and associated with pyroxene +/- garnet skarn. In 2009, on behalf of Pacific Iron Ore Corp., Wardrop Engineering Inc. estimated that the Bugaboo deposit contains inferred resources of 7.8 million tonnes (Mt) averaging 63% magnetite, at a cut off of 20% magnetite.

In 2009, drilling on the Pearson claims consisted of 8356.85 metres in 37 holes. Of this 4733.70 metres in 16 holes were completed on the Bugaboo deposit to further define and upgrade the resource; 3022.40 metres in 18 holes were drilled on various magnetite skarn targets in the Granite area; and 600.76 metres in 3 holes were drilled on mafic-ultramafic rocks outcropping in the Granite 8000 area in order to test their PGE potential.

2.0 INTRODUCTION

The Pearson Property claim group is an extensive block that stretches some 245 km along the southwest parts of Vancouver Island. Parts of the Pearson Project claims, north of Barclay Sound, are non-contiguous. This report discusses drill work on key areas of the southernmost parts of the property prior and commenced on August 21st, 2009. The company claims where the work occurred and the contiguous claims that the work was applied to are located south of Barclay Sound and are part of the larger Pearson Property claim group (Figure 2 and Table 1). The work was filed as Event number 4457888 on January 16, 2010 and as Event **4623731** recorded on May 7, 2010 (Appendix A). The total expenditures of the 2009 drill program was $727813.22

Figure 1. Location Map, Pearson Project.

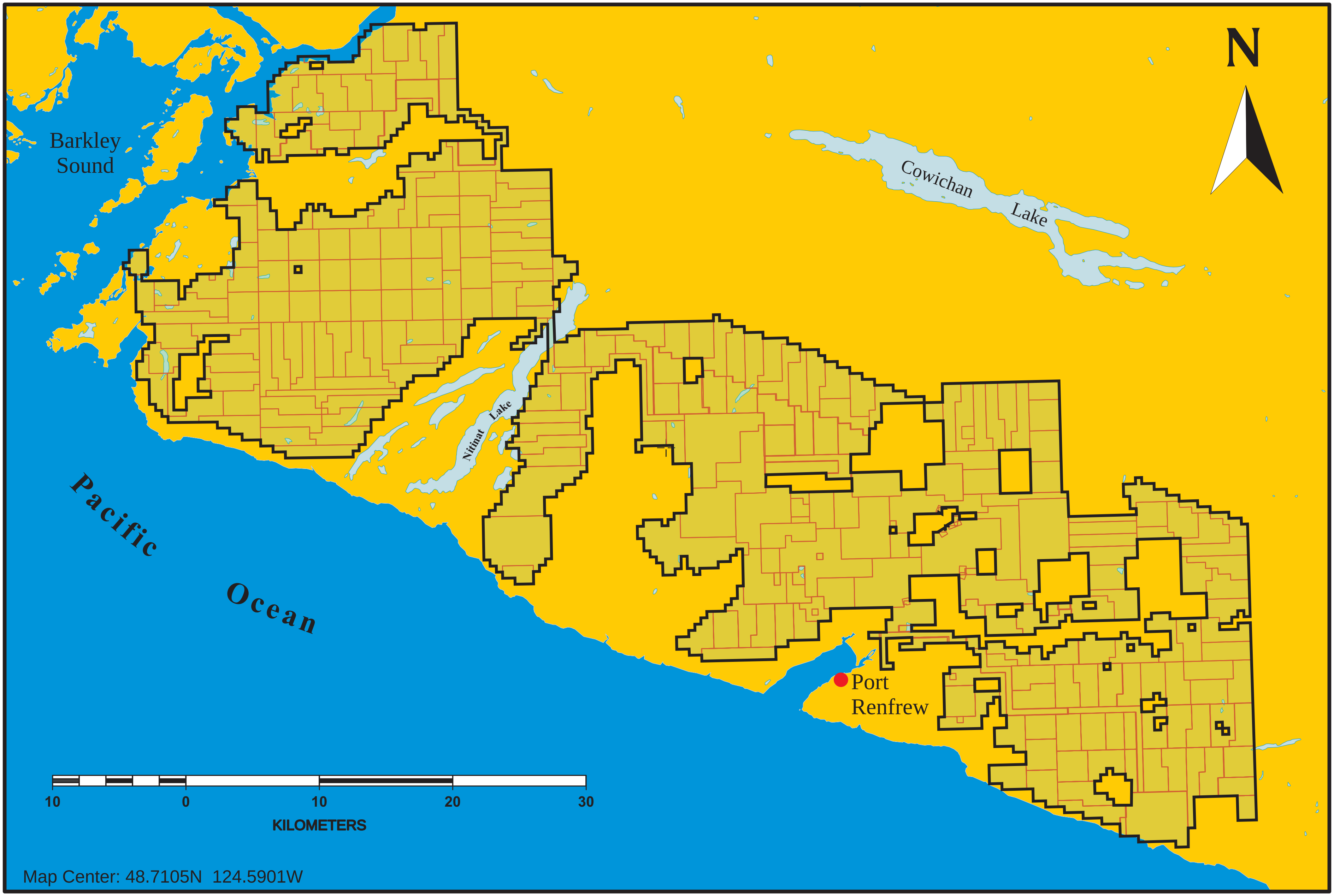


Figure 2. Tenures On Which Assessment is Being Applied

TABLE 1. TENURES THAT ARE THE SUBJECT OF THIS REPORT

370610	512099	532500	556830	557088	590620
373716	512106	532501	556833	557092	590621
375070	515297	532502	556835	557094	590622
408828	515300	532503	556838	557097	590623
508322	515301	532504	556839	557099	590624
508323	515302	532506	556841	557101	590625
508324	519016	532514	556843	557104	590626
508325	519590	532530	556846	557105	590627
508500	520492	532554	556848	557106	590628
508534	520493	532566	556852	557107	590629
508552	520494	532568	556870	557108	590630
508572	520495	532775	556873	557110	590631
508576	520496	533627	556877	557111	590633
508577	520497	540161	556878	557115	590634
508578	520498	540324	556881	557117	595255
508593	520499	556794	556883	557145	597784
508594	520500	556796	556884	557147	597785
508595	520501	556799	556886	557151	597786
508601	520502	556801	556888	557160	598279
508619	520503	556809	556890	557163	598284
508649	520616	556810	557024	574368	598290
508712	532309	556814	557025	580814	598296
508714	532311	556817	557026	580815	598548
508715	532459	556823	557037	580986	601433
508770	532499	556827	557080	590619	601434
					601783

3.0 PROPERTY DESCRIPTION AND LOCATION

The Pearson Project claim group is situated in the Victoria Mining Division on Vancouver Island, with the southern portion of the claims located some 50 kilometres west-northwest of Victoria, British Columbia (Figure 1). The main service community is presently Port Renfrew, about 80 km west-northwest of Victoria. The claim tenures that are the subject of this report are located entirely on NTS mapsheet 092C and have a rough center of 48.7105 north latitude and 124.5901 west longitude. Access to the southern portion of the claims, where the present work focus is, is via Highway 14 to Port Renfrew and thence by a considerable network of active and non-active logging roads. Pacific Iron Ore is the owner/operator of the Pearson property which presently (to date) consists of an irregularly-shaped block of 513 noncontiguous claims stretching from the communities of River Jordan to Tahsis. The tenures that are the subject of this assessment report are located amongst a southern contiguous block that stretches from River Jordan to Barclay Sound (Figure 2). These tenures extend about 90 kilometres in a northwest-southeast direction and 25 km in a northeast direction. Table 1 lists the tenure numbers of all subject 62 claims.

4.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The overall Pearson property is underlain by moderately rugged and steep terrain Topography consists of regions of protruding and steeply sloped bluffs incised by numerous, north and northwest trending creeks and rivers (e.g. Gordon River, Renfrew Creek, Hemmingsen Creek). Elevations range from 200 to 1200 metres above sea level. The property is located within an exceptionally wet and mild rainforest climate region with cool summers and mild winters. In Port Renfrew, the main access community, there is an average of approximately 12 days of snowfall and only 15 days of snow cover over the year but at higher elevations regular winter snow conditions exist. Mean average daily temperatures range from a low of 3.2˚C in January to 14.9˚C in August. The area receives an impressive amount of rain, with a mean total rainfall of 64.1 mm in July, and 561.8 mm in November. The annual average total for rainfall is 3.6 metres. Fieldwork can be performed year round except at higher elevations where winter conditions prevail.

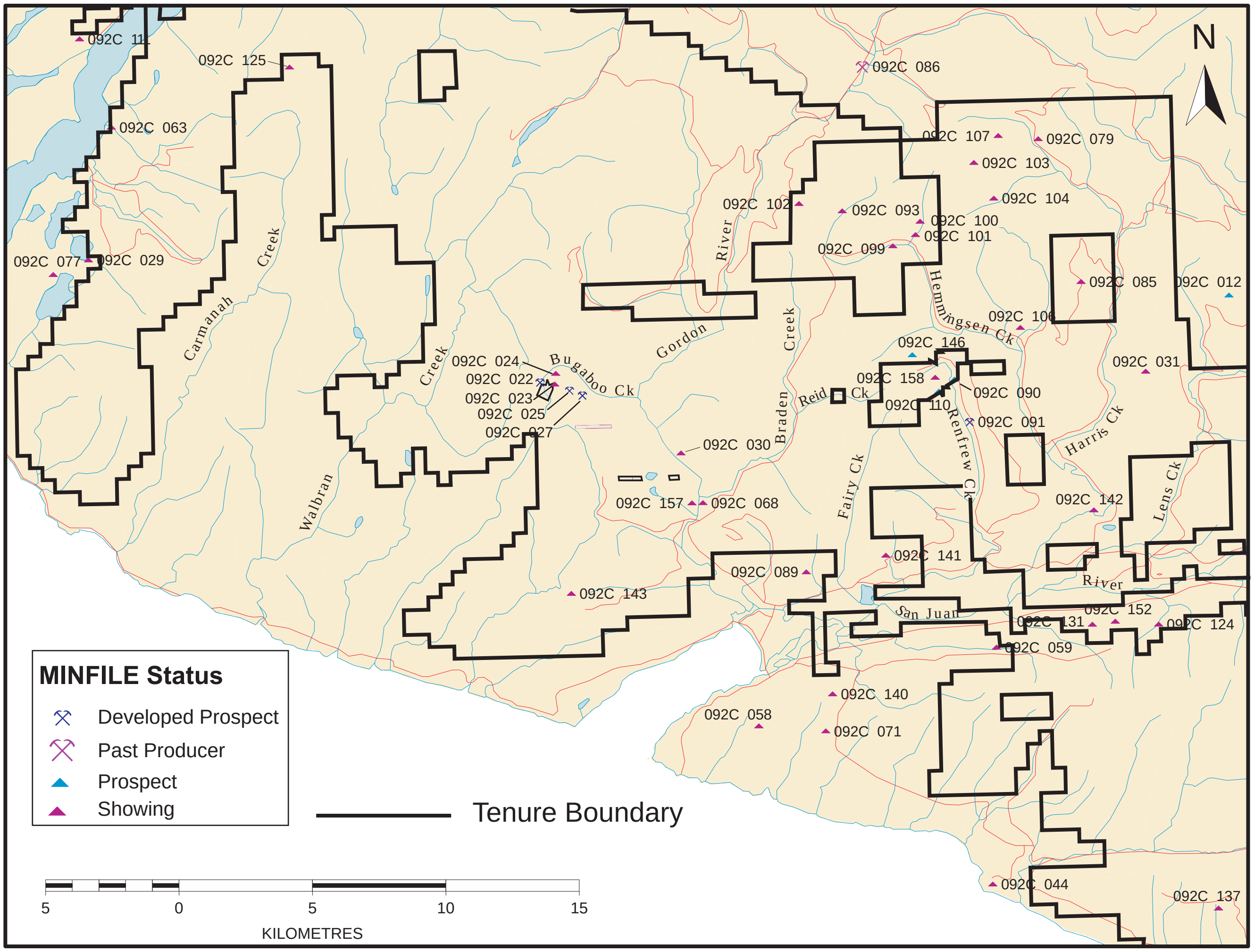
Access to and on the property is excellent using an expansive and well developed network of logging roads. Other than road access, there is no significant infrastructure on the property. The community of Port Renfrew, population 180, is 10 kilometres south of the properties main focus (Bugaboo Creek) and is a source for fuel, groceries, accommodation, etc. Port Renfrew is accessed by a 1¾ hour drive via Highway 14 from Victoria in the southeast or by all-weather logging roads from Lake Cowichan and Duncan in the northeast.

5.0 HISTORY

The larger Pearson Project claim group contains close to 50 mineral occurrences as documented in the British Columbia provincial mineral inventory database, MINFILE, available online at www.em.gov.bc.ca/Mining/Geolsurv/Minfile/default.htm. See Figure 3 for MINFILE locations in the area that is subject of this report.

The most significant of these are the Bugaboo iron (magnetite) skarn deposits in the southwestern portion of the claim block near the headwaters of Bugaboo Creek, and the Reko iron (magnetite) skarn deposits in the eastern portion of the claim block along Renfrew Creek. Both the Bugaboo and Reko deposits contain non 443-101 compliant historic reserves.

The two Bugaboo deposits are called Conqueror and Daniel (MINFILE 092C 022); the David (MINFILE 092C 023) and Elijah (MINFILE 092C 024) magnetite showings occur close by. Other magnetite showings in this area, but not covered by the property claims,



MINFILE OCCURRENCES

092C 012	Red Dog	092C 099	Dore 52
092C 022	Bugaboo	092C 100	Dore 99
092C 023	David	092C 101	Dore 97
092C 024	Elijah	092C 102	TL 5798
092C 025	Sirdar	092C 103	Polly
092C 027	Baden Powell	092C 104	DL
092C 029	Tide	092C 106	Dore 162
092C 030	Rose	092C 107	Harris
092C 031	Tally	092C 110	Reko 38
092C 044	Sombrio Placers	092C 111	Fitinat
092C 058	Kinsley	092C 124	Gad
092C 059	Ox	092C 125	Lori
092C 063	Mal	092C 131	3 x 3
092C 068	Alfreda	092C 137	Ren
092C 071	Spanish	092C 140	Murton
092C 077	Ebb 1-12	092C 141	Ebb
092C 079	Nan	092C 142	Lizard
092C 085	Harris Creek	092C 143	Rat
092C 086	Gordon River	092C 146	Reko North
092C 089	Val	092C 152	New World Slate
092C 090	Reko 3	092C 157	Baird Creek Marble
092C 091	Reko 10	092C 158	Hemm
092C 093	Dore 30		

Figure 3. MINFILE Occurrences.

are the Sirdar (MINFILE 092C 025), Baden Powell (MINFILE 092C 027) and Rose (MINFILE 092C 030). In the eastern portion of the claim block, the main Reko magnetite deposits are the Reko 10 (MINFILE 092C 091) and Reko 3 (MINFILE 092C 090).

The Conqueror showing was originally staked by R. Elliot of Port Renfrew in 1898 but the claims lapsed and four of them were relocated as the Conqueror group in 1899 and Crown granted in 1905. This new group, which also covered the Daniel showing, was owned by Messrs. McGregor, Cathcart and Parsell. The development work, carried out during the period 1900-07, consisted of two opencuts, and a tunnel 4.3 metres long, in solid magnetite, driven from a point 2.4 metres above Bugaboo Creek.

No further work was done on the property until 1957 when two x-ray drillholes (both stopped in overburden) totaling 25.6 metres was completed on the Daniel, and nine x-ray drillholes totaling 273.7 metres completed on the Conqueror. In 1959, Noranda Exploration Company, Limited optioned 7 Crown-granted claims and fractions from H.W. Cathcart of Victoria covering the Conqueror and Daniel showings. A 30-metre grid survey, as well as dip needle and magnetometer surveys were completed. Thirteen EX diamond-drillholes totaling 880.6 metres was completed on the Daniel claim and 15 EX drillholes totaling 1118.3 metres on the Conqueror. In 1960, an additional 15 AX drillholes totaling 987.2 metres was completed on the Daniel and 7 AX drillholes totaling 894.6 metres on the Conqueror to confirm the ore reserves and grades indicated by earlier work and to show sufficient additional tonnage to justify a mining operation. Noranda also completed a report on proposed breakwater requirements adjacent to a deep-sea dock for Port of San Juan and a laboratory test on Conqueror mine run ore at the Noranda Concentrator Experimental Laboratory.

Diamond drilling between 1957 and 1960, primarily by Noranda, indicated that the Conqueror orebody had a northwesterly strike and, on the surface, was divided into ‘West’ and ‘East’ pipe-like orebodies. The Conqueror ‘East’ was interpreted to plunge steeply west while Conqueror ‘West’ appeared to dip steeply to the south. In the early 1960s the structure of the Conqueror was likened to a ‘Y’ lying in a northwesterly striking plane dipping roughly 75 degrees southwesterly. Conqueror ‘East’ was then represented by the easterly striking arm, Conqueror ‘West’ by the northerly striking arm, and the neck, 137 metres in depth, indicating the potential point of junction. The stem represented a possible continuation to still greater depths of the unified orebodies. The primary ore control was thought to be a tightly folded syncline of limestone with its axis striking southwesterly and plunging steeply in the same direction. The emplacement of magnetite in the limbs of the syncline would have been controlled by a cross-cutting structure have the attitude of the ‘Y’ described above (Menzies and Nicolls, 1960). At the time, indicated reserves were 1,069,471 tonnes grading 54.31% iron and 2.21% sulphur. Additional probable reserves of 453,550 tonnes and possible reserves of 798,565 tonnes (grades not given) were also estimated. These reserve estimates are assumed to not comply with Sections 1.3 and 1.4 of National Instrument 43-101.

The Daniel magnetite orebody is located about 250 metres northwest of the Conqueror orebody and in the early 1960s was reported to resemble a flattened cylinder with its axis oriented north-northeast and plunging about 20 degrees to the north. The magnetite is similar to that of the Conqueror with pyrite and pyrrhotite occurring in roughly equal proportions but with no conspicuous actinolite. Late pyrite and chalcopyrite veinlets cut the magnetite. Indicated reserves at the Daniel were 1,537,534 tonnes at an average grade of 55.67% iron and 3.61% sulphur; additional probable reserves of 508,883 tonnes (grades not given) are estimated (Menzies and Nicolls, 1960). The reserve estimates are assumed to not comply with Sections 1.3 and 1.4 of National Instrument 43-101.

In the eastern portion of the claim block bulldozing and blasting by B.C. Forest Products road-building crews during the summer of 1970 uncovered showings of magnetite and sulphides near the upper reaches of Renfrew Creek (Reko showings). The Reko 1-6 claims were staked on these showings in July 1970 by Mr. M. Levasseur. Sampling of the exposed mineralization was subsequently carried out. Levasseur and associates incorporated Reako Explorations Ltd. in July 1971. Further staking in 1971-72 expanded the property to 66 claims. Exploration work during 1971 included x-ray diamond drilling totaling 37 metres in 6 holes and a limited magnetometer survey. During 1972-73, work included geological mapping, magnetometer surveys over 120 line-kilometres, an electromagnetic survey over 80 line-kilometres, an induced potential survey over 19 line-kilometres, trenching, and 5300 metres of diamond drilling in 100 holes on Reko 3, 4, 9, 10 and 42. The adjoining Kestrel 1-15 claims were purchased from M. Dickens of Savona in January 1974. Work during the year included 89 metres of diamond drilling in 6 holes on Reko 37. Drilling in 1972 on the South Pit B zone indicated a magnetite-bearing zone 94 metres long, over 30 metres wide and up to 50 metres deep. The average grade indicated by the core assay was 22.28% iron. In 1973-74, R.L. Roscoe estimated 1,111,242 tonnes in five combined zones (Zone 1, 2, 3, 5, 8) without specifying grades. South Pit B zone (or Zone 2) contains 970,597 tonnes. Emerald Fields Resource Corporation has not been able to obtain enough of the original data and has not done the work necessary to verify the classification of a resource or reserve and is not treating the historical estimates as fulfilling the requirements of Sections 1.3 and 1.4 of National Instrument 43-101.

No further work was reported on until Emerald Fields entered an option agreement with Gary Pearson of Port Renfrew on June 14, 2002 and also began staking claims in the area. In May 2003, Discovery Consultants completed geological, geochemical and geophysical surveys on behalf of Emerald Fields and Gary Pearson over parts of the property. Work comprised geological mapping, rock, heavy mineral and stream sediment sampling, petrographic work, and orientation VLF-EM and magnetometer surveys. In April 2004, Emerald Fields completed 7 BQ diamond-drillholes totaling 326 metres in the eastern portion of the claim block, namely on some of the Reko showings. Emerald Fields staked additional claims in November 2004 and early 2005. Between April-May 2005, a diamond drill program of 7 TWNQ drillholes totaling 711.4 metres was completed on parts of the Reko, Conqueror, Daniel and David magnetite. One drillhole on the Daniel deposit intersected massive magnetite over a core length of 21.9 metres grading 57.55% total iron; a drillhole on the Conqueror intersected massive magnetite over a core length of 25.0 metres grading 61.22% total iron.

In June 2006, Fugro was contracted to fly a low altitude, magnetometer survey with their helicopter-borne, stinger mounted single sensor system over the key areas of interest on the Pearson Project claim group. The airborne magnetometer survey was flown between June 12 and 20, 2006; the grid measured 22 by 7 kilometres and consisted of north-south lines at 100 metres spacing and east-west tie lines at 500 metres spacing for a total distance of 1972 line-kilometres. The aeromagnetic data reveals a great deal of structural variety compared to the widespread high level magnetic response visible on a regional scale. A detailed compilation of at least 19 magnetic anomalies throughout the surveyed area summarized by Owsiacki (2008).

During the summer of 2006 mapping was conducted on the Pearson Project claim group by Jeff Larocque (as part of M.Sc. thesis) and D. Canil (University of Victoria) in a jointly funded Geoscience BC proposal to delineate the occurrence and origin of ultramafic rocks related to anomalous nickel, chromium, copper and PGE (platinum group elements).

In the fall of 2007, Emerald Fields commenced a program of prospecting, soil and rock sampling and ground magnetometer surveying that continued into the summer of 2008. The results of this work are documented in a government assessment report by Payie and Norris (2008). In the summer of 2008, Fugro Airborne Surveys Corp was contracted to fly a detailed DIGHEM airborne magnetic survey. The total amount flown over the claim group was 7780 line-kilometers. The purpose of the survey was to locate magnetite-rich zones, to detect zones of conductive mineralization, and to provide information that could be used to map the geology and structure of the survey area. (Assessment Report 30337

In May 2008, Emerald Fields commenced a drill program that carried on into September of the same year. The main part of the diamond drill program was completed on the Bugaboo magnetite deposits which consist of the adjacent Daniel, Conqueror and David bodies. A total of 7250.02 metres in 51 holes (holes 08-01B to 08-51B) was completed on these three adjacent magnetite bodies. Significant drill intercepts of magnetite were obtained in drill core. A further 622.24 metres of drilling was completed in the Edinburgh area (holes 08-01E to 08-03E) in order to test magnetic anomalies defined from airborne and follow-up ground magnetic surveys. It was concluded that the magnetic anomalies in the Edinburgh area resulted from a dioritic intrusion containing up to 10% magnetite.

After the 2008 program, Pacific Iron Ore requested that Wardrop Engineering Inc estimate resources that make up the Bugaboo deposit and prepare a technical report on the Pearson Project. This resulted in an estimated inferred resource of 7.8 million tonnes (Mt) averaging 63% magnetite, at a cut off of 20% magnetite (Stubens and Arseneau, 2009).

During the spring/summer of 2009, 1:5000 and 1:1000 scale mapping was undertaken by Pacific Iron Ore over a large area of the company’s holdings in an effort to better understand the potential for and controls on mineralization. Previously unrecognized and undocumented ultramafic rocks, recently discovered on the property could be an indicator for the ultramafic-related suite of ore deposits, namely tholeiitic intrusion-hosted nickel-copper that may contain platinum group element mineralization.

Mineralized occurrences examined and/or targeted for drilling during the 2009 exploration program in the 1:2000 Granite map area include the Reko South Pit A Zone, the Reko South Pit B Zone, the Creek Showing, the Popes Nose, the Road Zone (Reko North Pit Zone) and the Pirate Showings. In 2009, 103 rock samples were collected and sent for assay.

A magnetometer surveying program consisted of a Part A program of 56.11 km at 10m spacings conducted on road parallel and other easy access lines that were dispersed over much of the Pearson project area. The purpose was to confirm results from a previous airborne study, and as an exploration tool to discover new magnetite mineralization that the airborne may have missed. Part B consisted 11.62 km at 10m spacing and was conducted on grids that covered prospects already located by mapping and airborne surveys. The purpose of these surveys was to define the zones of magnetite mineralization for later drilling efforts.

6.0 GEOLOGICAL SETTING

Much of the information in this section has been sourced from Geological Survey of Canada Open File 821 (Muller, 1982), Assessment Reports 5029, 25877, 27246, 27280, 27517, and by the author's own observations during the supervision of the drill program on which this report is based. The property is large, extending almost 30 kilometres east-west and 10 kilometres north-south, and encompasses two significantly mineralized areas. Magnetite deposits occur in the Bugaboo Creek area in the west part of the property, and in the Renfrew Creek area 15 kilometres east (Figure 3).

6.1 Regional Geology

The Port Renfrew area and beyond was mapped in 1982 by J.E. Muller of the Geological Survey of Canada. The property lies in the Insular Tectonic Belt where three distinct terranes occur. In the north are Paleozoic to Mesozoic rocks of the Wrangell Terrane consisting of Lower Jurassic Bonanza Group calc-alkaline and volcanic rocks, Middle to Upper Triassic Vancouver Group basaltic volcanic rocks and limestones, Early to Middle Jurassic Island Plutonic Suite quartz monzonitic to granodiorite intrusive rocks, and Paleozoic to Jurassic Westcoast Crystalline Complex dioritic intrusive rocks. Younger sedimentary and volcanic rocks of the Pacific Rim Terrane are thrust beneath the southern and western edges of the Wrangellia rocks along the San Juan and Survey Mountain faults. The San Juan Fault extends from near Port Renfrew to beyond Cobble Hill and for much of its length separates Pacific Rim Terrane from Wrangellia. Pacific Rim Terrane rocks consist of Jurassic to Cretaceous Leech River Complex greenstone, greenschist metamorphic rocks, sedimentary rocks and bimodal volcanic rocks. In the south, just below the property boundary, Crescent Terrane basaltic volcanic rocks belonging to the Paleocene to Eocene Metchosin Igneous Complex are emplaced beside and beneath the Pacific Rim Terrane along the Leech River Fault. Sedimentary rocks of the Upper Eocene to Oligocene Carmanah Group accumulated on the Crescent and Pacific Rim terranes. Numerous north-northwest and east-west faults transect the property (Figure 4).

Previously un-mapped ultramafic rocks have recently been discovered and identified on the property and are variously comprised of peridotite, serpentinized peridotite, gabbro, pyroxenite and hornblendite.

6.2 Property Geology

This section is based mainly on historical work. The reader is referred Section 9 (2009 Exploration Program) which has contributed to the geological database of the area.

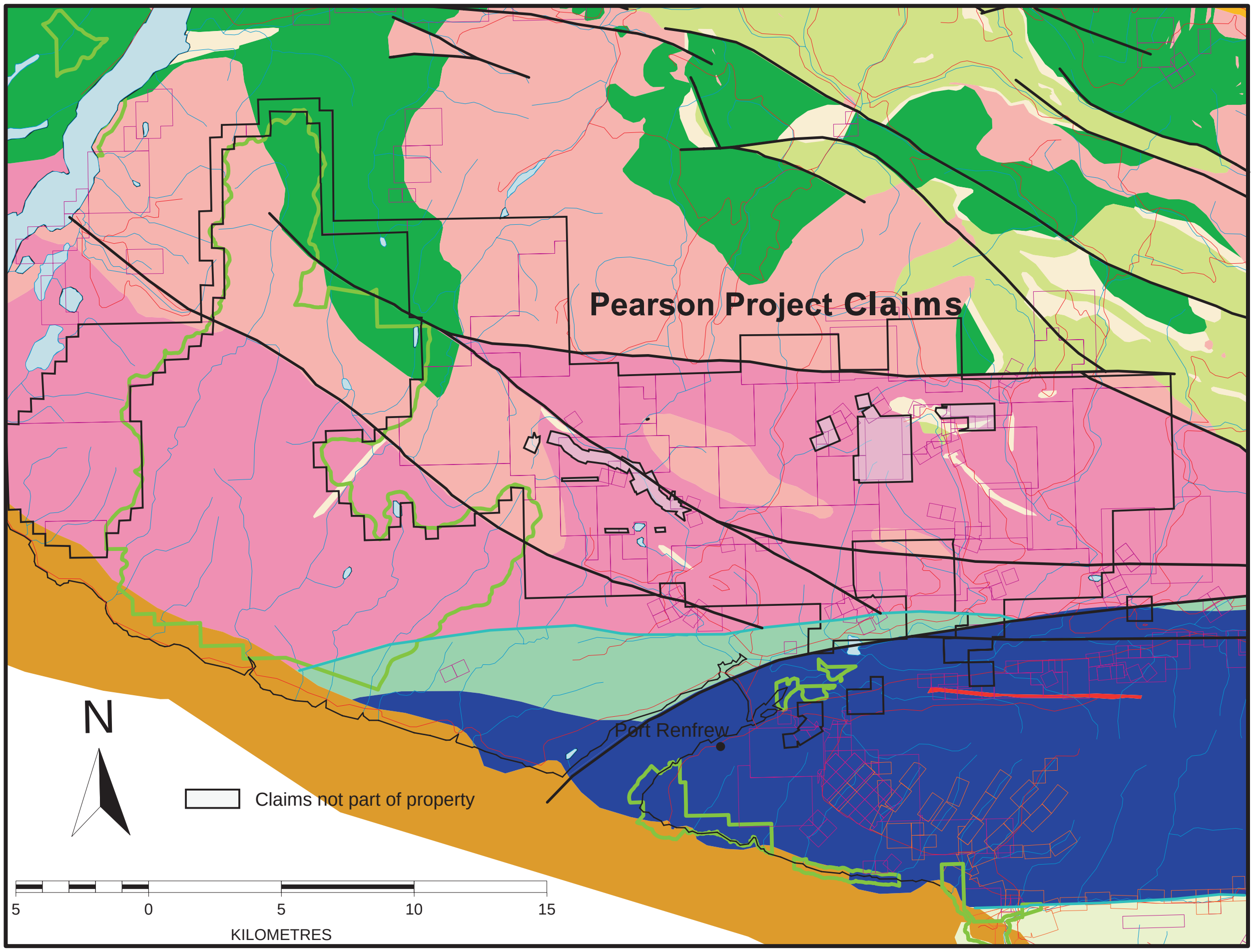
Bugaboo Creek Area

The Bugaboo Creek area in the western portion of the claim block contains four well exposed, partly developed iron (magnetite) skarn deposits: Conqueror-Daniel, David, Sirdar and Baden Powell. The Conqueror-Daniel and David deposits are on the property while the Sirdar and Baden Powell are located 680 metres and 1500 metres southeast, respectively and are not part of the subject property. The Conqueror-Daniel and David area is underlain by a dioritic intrusion possibly of the Westcoast Crystalline Complex and limestone of the Upper Triassic Quatsino Formation (Vancouver Group). The bodies of limestone appear to be completely surrounded by dioritic intrusive rocks and could be considered roof pendants. The magnetite showings are aligned in a northwest-southeast trending line that appears to parallel a regional northwest trending fault structure along Bugaboo Creek.

Generally, the Conqueror, Daniel and David magnetite bodies occur within zones of pyroxene-garnet skarn formed along the contact of fine to medium-grained diorite and limestone. The magnetite occurs as large, irregular, fine grained massive bodies surrounded by recrystallized limestone (marble) and dioritic intrusive rocks cut by plagioclase porphyritic dikes. A detailed description of the mineralization is provided in Section 9.0.

Renfrew Creek Area

The Renfrew Creek area in the eastern portion of the claim block, located about 15 kilometres east of the Bugaboo Creek area, is generally underlain by dioritic rocks of the Westcoast Crystalline Complex in contact along irregular boundaries with limestone probably belonging to the Upper Triassic Quatsino Formation (Vancouver Group). The massive limestone bodies strike in a general north-northwest direction, and where bedding is evident, dip at various angles to the north and south. The limestone varies from dark grey to blue to white and in some localities has been altered to marble. Most limestone bodies have been successively intruded by andesitic (greenstone) and fine-grained diorite dikes. The dioritic rocks include fine grained, mafic rich and leucocratic



GEOLOGICAL LEGEND

TERTIARY
Upper Eocene to Oligocene

EOlc — **CARMANAH GROUP:** Undivided sedimentary rocks

Paleocene to Eocene

PeEMMvb — **METCHOSIN IGNEOUS COMPLEX - METCHOSIN FORMATION:** Basaltic volcanic rocks

JURASSIC TO CRETACEOUS

JKL — **LEECH RIVER COMPLEX:** Greenstone, greenschist metamorphic rocks

JKLS — **LEECH RIVER COMPLEX - SURVEY MOUNTAIN VOLCANICS:** Bimodal volcanic rocks

LOWER JURASSIC

lJBca — **BONANZA GROUP:** Calc-alkaline volcanic rocks

MIDDLE TRIASSIC TO UPPER TRIASSIC

VANCOUVER GROUP

uTrVK — **KARMUTSEN FORMATION:** Basaltic volcanic rocks

muTrVs — Undivided sedimentary rocks

INTRUSIVE ROCKS

TERTIARY
Eocene to Oligocene

EOlM — **MOUNT WASHINGTON PLUTONIC SUITE:** Quartz dioritic intrusive rocks

EARLY JURASSIC TO MIDDLE JURASSIC

EMJlgd — **ISLAND PLUTONIC SUITE:** Granodioritic intrusive rocks

PALEOZOIC TO JURASSIC

PzJWg — **WESTCOAST CRYSTALLINE COMPLEX:** Intrusive rocks, undivided

Fault

Thrust Fault

Geological map and legend compiled from:

MapPlace (2005): Website; *BC Ministry of Energy, Mines and Petroleum Resources*, www.mapplace.ca

Muller, J.E. (1982): Geology, Nitinat Lake, British Columbia, Map and Notes; *Geological Survey of Canada*, Open File 821, scale 1:250 000.

Figure 4. Regional Geology Map.

diorite, medium to coarse-grained quartz diorite, and quartz diorite breccia containing fragments of fine-grained mafic diorite. The breccia locally grades to massive diorite. A set of long, narrow, fine grained grey dikes strike consistently at 020 degrees, transect all other rocks, and probably follow late fractures.

Massive iron (magnetite) skarn deposits are developed near diorite and recrystallized limestone (marble) contacts and along zones of garnet-pyroxene skarn. The magnetite occurs as large fine to coarse grained massive bodies bounded by marble and/or diorite. A detailed description of the mineralization is provided in Section 9.0.

6.3 Detailed Geological Field Mapping

This section was taken from a previous assessment report by Sebert et al., 2010; geological maps referred to in this section can be found in that report.

PEARSON PROJECT BEDROCK GEOLOGY

The Pearson property lies within the Westcoast Crystalline Complex of Wrangellia. During the spring/summer of 2009, 1:5000 and 1:1000 scale mapping was undertaken by Pacific Iron Ore over a large area of the company’s holdings in an effort to better understand the potential for and controls on mineralization.

9.11 1:5000 Scale Mapping – Southern Pearson Property

1:5000 field mapping methodology

Field mapping for the 2009 exploration program began during the first week of May. A base map of the project area was compiled from data obtained from the BC Land and Resource Data Warehouse. 1:5000 scale map sheets were then indexed and printed off as required. Mapping was carried out using hand-held recreation-grade GPS. Outcrops were drawn onto the map sheet, assigned a tentative map unit, and any notable structure and/or comments on the outcrop were recorded. This data was then digitized and/or transcribed into a database. All 1:5000 mapping was conducted by a two-man crew. Areas of interest were accessed by a combination of logging road and foot traverse.

The areas which received the most intensive mapping were those in which historical magnetite showings were located. Mapping in an area began on the logging roads, and depending on the pattern which emerged, targeted traverses through the bush were then undertaken. In addition to historical showings, recent airborne geophysical data commissioned by Pacific Iron Ore Corp. was used to locate potential new magnetite showings. Overall, an effort was made to map the areas in which marble occurs, as this unit is intimately associated with magnetite deposits.

General Stratigraphy

SUPRACRUSTAL

Marble and mafic volcanics comprise the main supracrustal sequences in the map area, although minor exposures of chert, metasiltstone and volcaniclastic rocks are to be found locally. West of Harris Creek, marble bands strike NW-SE and behave in a predictable manner for up to 15 km (Geological Map, Appendix B). The limestone unit is regionally metamorphosed to marble throughout the project area, and the mafic volcanics commonly show strong foliations. Given the thickness, overall purity, and lack of bioclastic remnants, the marble is thought to be the Quatsino equivalent. Pending whole-rock geochemical results, mafic volcanics are thought to be Karmutsen equivalents. Along Harris Creek, foliated basalt and pillow basalt is abundant; east of Maid Lake relatively unfoliated basalt flows(?) and pillow breccia are present in large quantities. There is little doubt that these sequences (flows, breccia, pillows) represent the Karmutsen stratigraphy. Insufficient mapping in areas east of Harris Creek, however, make it difficult to determine the overall orientation of the sequence. Thin slivers of marble occur northeast of Lizard Lake and south of Maid Lake, and are similar to the thicker sequences to the west of Harris Creek Creek, marble bands strike NW-SE and behave in a predictable manner for up to 15 km (Geological Map, Appendix B).

INTRUSIVE

The majority of exposed bedrock in the map area consists of massive and complex poly-phase intrusions, ranging in composition from gabbro to granodiorite. Early massive plutons are generally cut by younger dykes of varying compositions, with textures ranging from diabasic to porphyritic. Contacts between intrusion and country rock may be concordant or discordant. In the Gordon River area in particular, intrusive contacts tend to be concordant, with marginal foliations well-developed. Generally the interiors of large intrusions are unfoliated. Terrain and poor exposure limits the ability to properly constrain the extent of most plutons; some contacts have been interpreted based on airborne geophysical data.

Pending whole-rock analyses, the majority of intrusions in the map area are interpreted to belong to the Jurassic calc-alkaline Bonanza Group. Lenses of recently-identified layered ultramafic rocks are described below.

General Structure

The mapped area is bounded to the north and south by major structures – the San Juan Fault to the south, which separates Wrangellia from the Pacific Rim Terrane, and an unnamed fault which strikes approximately parallel to the SJF, and can be seen in topographical lineations Creek, marble bands strike NW-SE and behave in a predictable manner for up to 15 km (Geological Map, Appendix B). This unnamed fault also appears to correspond to a distinct change in deformation – marble and strongly foliated volcanics in the mapped area south of the fault, and micritic Quatsino limestone and unfoliated

Karmutsen basalt north of the fault. The nature of the fault is unknown, but a south-verging thrust seems most likely. A third conspicuous structure follows the lower Harris-Hemingson Creek valleys, and truncates the Renfrew Creek marble bands Creek, marble bands strike NW-SE and behave in a predictable manner for up to 15 km (Geological Map, Appendix B). The nature of the fault is uncertain, though foliation measurements dip moderately to the southwest, while the map pattern implies a significant strike-slip component to the fault motion.

West of Harris Creek, the map pattern shows two main marble bands, one crossing the Gordon River, and one crossing Renfrew Creek (Geological Map, Appendix B). Within these greater bands there are secondary repetitions of marble as well, as can be seen from the map pattern. The vast majority of bedding and foliation measurements from the Gordon River marble band dip steeply to the southwest. Whether the marble bands there have been fault-repeated, or represent a regional fold-pattern or some combination of the two remains uncertain. In the Renfrew Creek marble band, there is an appreciable subset of northeasterly-dipping orientations and the presence of folding with west-northwest oriented axes is likely.

Overall, the 2009 mapping efforts on the Pearson property reveal the deformed equivalents of upper Triassic Wrangellian stratigraphy, in keeping with much of the west coast of Vancouver Island.

9.12 1: 1000 Scale Geological Mapping – Granite – Renfrew Creek Area

GEOLOGY OF THE GRANITE – RENFREW CREEK AREA

1:1000 Outcrop Mapping Programme Overview

Outcrop mapping of the Granite (Renfrew Creek) Area was performed at 1:1000 scale. The area covered by 1:1000 geologic mapping lies between 5388500 and 5390350 N (UTM), and 0404000 and 0405000 E (UTM). It includes the historical Reko South Pit A and B Zones in the south and extends northward to include the Pope’s Nose, Road Zone (or Reko North Pit zone) and Pirate magnetite showings.

The degree of rock exposure in the Granite Area is highly variable and is related to topographic relief and to differing degrees of resistance to weathering by various rock types. Good exposures of marble and intrusive rock are found on the moderate slopes and steeper hillsides flanking Renfrew Creek. Mafic volcanic and ultramafic rocks tend to be more recessive and consistent outcroppings are restricted to steep slopes and road cuts. The same is true of skarn and chert. Areas of low relief, at lower elevations tend to be generally poor in outcrop. There, most consistent sources of bedrock exposure are creek drainages and logging road cuts.

Outcrop data was digitized and interpreted using *ArcVIEW* ©, and a geological summary map was generated at 1:2000 scale (Appendix C). This summary of the geology also makes use of field data collected from adjacent and overlapping 1:5000 property-scale mapping, summarized in this report at 1:20,000 (Appendix B)). The geologic map presented in Appendix C for the Granite Area covers an area of approximately 3.6 km^2. Structural strike and dip measurements were compiled and plotted on stereo net using *Stereowin* (Allmendinger, 2002 – 2003).

The rock types in the Granite Area are generally similar to those described for the 1:5000 mapping and are based on those established by Muller (1982), Massey and Friday (1987), and others. The dominant lithologies outcropping in the Granite Area consist of the following.

- Felsic to intermediate intrusive rocks belonging to the Early to Middle-Jurassic-age Island Plutonic Suite.

- Intermediate to mafic intrusive and metamorphosed-migmatitic rocks of the Westcoast Crystalline Complex; representing the lower, plutonic to migmatitic levels of the Late-Triassic to Middle-Jurassic-age Bonanza Arc (Bonanza Group).

- Hypabyssal intrusive rocks - dikes, sills, and small plugs of fine-grained to porphyritic, intermediate and massive fine-grained mafic volcanic rock belonging to the Bonanza (Group) volcanic rocks.

- Metamorphically re-crystallized limestone (marble) probably of the Late Triassic-age Quatsino Formation. The potential presence of older Buttle Lake Formation limestone has not been ruled out in the map area.

- Mafic volcanic rocks, which are variably metamorphosed and include basaltic flow and volcaniclastic rocks of the Triassic-age Karmutsen Formation and potentially other older mafic volcanic members from the Paleozoic to Early-Jurassic-age Sicker Group. These may grade into the migmatitic rocks included in the intrusive-dominated Westcoast Complex. Massive fine-grained to weakly porphyritic mafic sub-volcanic intrusive rock and more minor occurrences of reworked, banded to bedded mafic tuffaceous, epiclastic rocks and volcanic sandstone were also encountered.

In addition to these previously well-documented lithologies, other minor lithologies found in the Granite map area include chert, which forms pale weakly banded layers within mafic volcanic rocks presently-interpreted as Karmutsen Formation. Examples of weathered ultramafic olivine-pyroxene-dominated intrusive rocks occurring as pods in intermediate (dioritic) intrusive, or as dikes, were found in rare outcrops. These rocks are part of a recently-recognized, mafic-ultramafic-dominated, magmatic event that intruded the Westcoast Complex. Relatively fresh-looking, euhedral feldspar-hornblende-porphyritic intermediate dike rocks were found as minor occurrences and may represent apophyses of the Eocene-age Catface Intrusions.

The lithologic units used for the 1:1000 geology mapping and 1:2000 geology summary map are based on previously established regional units discussed briefly above. However, due to practical necessity, the field mapping requires the use of more general unit classifications that may include volcanic or intrusive rocks belonging to several formations. This is a necessary simplification because (for example) it is not possible to consistently separate volcanic outcrops in the field between those belonging to the Sicker Group versus Karmutsen or even the Bonanza Group. The degree of deformation and metamorphism present in these rocks has in many cases obscured primary textures and even modified their composition. A somewhat similar problem is present with mapping intrusive lithologies, which are the products of several magmatic events successively intruding one another, and which contain almost wholly re-crystallized - absorbed, older country rock.

The section below provides the reader a summary and description of map units employed for the 1:1000 outcrop mapping and 1:2000 summary map presented in (Appendix C). It describes the rock-types included in each map unit and seeks to interpret their affinity with respect to the regional units and formations established in the published literature.

Summary of Lithologic Units for the 1:2000 Geology Map

Sulphide-Rich Skarn or Altered Rock

Scattered sulphide-rich mineralization is found within propylitic to calc-silicate, epidote-rich, altered dikes and sills, and narrow skarn zones developed adjacent to the dike rocks and/or in faults. The sulphide may be composed of variable combinations of heavily disseminated, banded, or breccia infillings of pyrite, pyrrhotite, and chalcopyrite. Magnetite accompanies the sulphide in some occurrences. Most examples of this type of mineralization are narrow, <1 m wide, and are located in the southern portion of the map area, which includes the Reko South Pit A Zone and the Creek Showing. The Pope's Nose located along the Granite Mainline logging road is an example of pyrrhotite-chalcopyrite-rich mineralization which also contains significant quantities of magnetite.

Massive Magnetite

Massive magnetite layers and veins are generally associated with garnet-pyroxene-bearing skarn. The magnetite is generally fine-grained, less often medium-grained. Pyrite, pyrrhotite, with minor chalcopyrite may form bands, patches and veinlets in the magnetite.

Semi massive Magnetite Skarn

A unit that constitutes less than 50% fine-grained magnetite as patches, bands, or infillings in skarn-altered rock or hornfels.

Skarn

Marble, volcanic, or intrusive rock that is partially or wholly replaced by calc-silicate minerals various combinations of garnet, epidote, pyroxene and amphibole. The calc-silicate minerals may be accompanied by silicification, sericitization, chloritization, and in places by disseminated sulphide.

Hornfels

For mapping purposes a term loosely applied to volcanic or intrusive rock altered by combinations of calc-silicate minerals and other alteration types that grades into, or preserves vestiges of the rock's original texture and mineralogy.

Ultramafic Intrusive Rocks

Ultramafic rocks encountered on the Pearson Project property are of two main types, olivine-bearing and non-olivine bearing. Both are characterized by poikilitic hornblende and/or pyroxene. Olivine, where present, is rounded and black. Non-olivine bearing rocks are usually gabbroic, consisting of ~50% plagioclase. Both can be strongly magnetic, but are not universally so. The ultramafic rocks encountered during 1:1000 outcrop mapping in the Granite Area tend to be isolated metre-scale pods caught up in dioritic intrusive rocks. Minor dike-like bodies are also present. These rocks are strongly weathered and original phases have been replaced by serpentine and chlorite. This suggests that potential exists for additional recessive occurrences of ultramafic rocks in drift-covered, outcrop-poor sections included in the 1:2000 summary map area. Equivalents of these ultramafic rocks have been mapped within the Westcoast Complex of the Bonanza Arc by previous workers (e.g. Muller, 1981, and Isachsen, 1987) in the western part of Vancouver Island. More recent work, by Fecova et al. (2008), Marshal et al. (2006), and Laroque and Canil (2007) on ultramafic rocks found in the Nootka Sound area and on the Pearson Project property, indicates that these rocks constitute a mafic-ultramafic intrusive event of Upper-Jurassic-age and were part of the magmatism that formed the Bonanza Arc.

Intermediate or Mafic Dike Rocks

This map unit encompasses several different compositional and textural varieties of mafic and intermediate dike and sill rocks. Included are green, generally epidote-chlorite-altered, fine-to medium-grained, variably feldspar- (+/-) hornblende-porphyritic, green mafic to intermediate dike rocks. Dark-grey, generally weakly-altered, very-fine-grained to weakly feldspar-porphyritic mafic dikes are a second variety. Fine-grained, more equigranular-textured, feldspar-hornblende- (+/-) pyroxene-phyric dioritic or diabase (mafic) dikes are also included. These dike rocks are commonly observed cutting marble/limestone outcrops or older volcanic lithologies. At present they are interpreted to be the product of several magmatic events. A portion may be hypabyssal members of the Lower-Jurassic volcanic rocks erupted as part of the Bonanza Group; others may represent dikes related to the deeper-seated Westcoast Complex or Island Plutonic Suite intrusive rocks. Minor examples of fresh-looking, euhedral feldspar-hornblende-porphyritic intermediate dike rocks interpreted as belonging to the Eocene-age Catface Intrusions are also included in this map unit.

Marble/Limestone

Former micritic limestone is typically massive to weakly banded and re-crystallized to marble. Grain size is usually in the medium range (~0.25-0.5 cm), but may become coarser near contacts with intrusive rocks. Most outcroppings range from white to light grey in colour, and may display a mottled appearance in places. Banding is defined by slightly more grey layers containing graphitic wisps or stipples after included organic detritus. Less metamorphosed examples may be fine-grained and contain better defined bedding including thin to metre-scale, gritty, silty or sandy layers. This map unit likely corresponds to the Quatsino Formation but leaves allowance for inclusion of any Buttle Lake Formation limestone if present.

Massive Mafic Sub-Volcanic Intrusive or Gabbroic Rock

A map unit that includes massive, melanocratic, variably amphibolitized rocks, that are relatively weakly-foliated, fine-grained, and generally equigranular. Some of these rocks may be massive members of the Karmutsen Formation, but a portion may constitute fine-grained massive, sub-volcanic mafic intrusive rocks related to the Bonanza Group volcanic rocks, or are fine-grained gabbroic intrusive rocks associated with the Westcoast Complex.

Chert

Massive to weakly banded, white to pale green chert is locally present in the map area. The matrix is very fine-grained to aphanitic and metamorphic re-crystallization has obliterated any original sedimentary textures or outlines of radiolaria. Fine networks of black graphitic hairline fractures are common. Generally strongly fractured, the chert tends to be nearly completely recessive. Chert occurrences in the northern part of the map area are contained within mafic volcanic and volcaniclastic rocks and because of their recessive nature were initially recognized in drill core rather than outcrop.

Mafic Volcaniclastic or Epiclastic Tuffaceous Rock

Dark brown to dark grey, light weathering, banded, well foliated mafic volcaniclastic rocks. Both fine-grained homogeneous-looking and more heterogeneous reworked, epiclastic varieties are present; the latter type may contain notable volumes of lithic grains and pebbles and/or flattened vitric lapilli. The matrix is generally silt- to sand-size ash. These clastic rocks are generally metamorphically re-crystallized like the mafic volcanic flow rocks described previously. Both matrix and fragments display a fine mosaic of feldspar and amphibole. Brownish coloured examples rich in biotite may contain fine bluish cordierite crystals; this suggests metamorphism of weakly argillaceous tuffaceous sediment.

Mafic Volcanic Flow Rocks

Includes fine grained mafic lava rocks, flows and relatively uncommon brecciated flow rock. The unit weathers to a brownish-black colour; fresh surfaces are black to dark green. These rocks are often amygdaloidal and/or plagioclase porphyritic to glomeroporphyritic. Volumes of plagioclase phenocrysts may reach 40% and crystals may be up to 1.5 cm in length. There is a notable paucity of volcanic textures that are recognizable in the field (i.e. flow tops, pillows, or flow breccias), which are generally not seen in outcrop. This is at least in part due to the strongly foliated, deformed nature of many of these rocks; and due to metamorphic re-crystallization and amphibolitization related to the emplacement of younger plutonic rocks that has overprinted original volcanic texture. A sizeable portion of the mafic volcanic rocks mapped in the northern portion of the Granite map area are likely Karmutsen basalt. Less metamorphosed and deformed, massive fine-grained mafic volcanic rocks encountered and may belong to the younger Bonanza Group volcanic rocks. The more metamorphosed, amphibolitized examples of this map unit are gradational into the migmatitic rocks that are characteristic of the Westcoast Complex and may conceivably include older mafic or intermediate volcanic members of the Sicker Group.

Felsic Intrusive Rocks

Felsic intrusive rocks for mapping purposes were defined by the presence of quartz and the dominance of feldspar over mafic phases. Rock-types included in this unit range in composition from quartz diorite, monzodiorite, through granodiorite to tonalite. Grain size and texture is generally medium to coarse grained, subhedral to euhedral granitic. Mafic phases are typically hornblende with lesser biotite, and typically make-up from 25% down to less than 5% volume in some examples of tonalite. K-feldspar is present in monzodioritic rocks and in other generally minor occurrences of more anhedral textured leucogranitoids. Minor medium-grained, feldspar-porphyritic rocks have also been included in this unit. Outcrops of mixed felsic intrusive and amphibolitized volcanic, where the volume of intrusive exceeds 50% are also assigned to this unit. Some of the constituents of this map unit, especially any K-feldspar-bearing quartz-diorite or monzodioritic intrusive rocks, are probably part of the Island Plutonic Suite. The feldspar-porphyritic rocks may be hypabyssal volcanic members of the Bonanza Group. A minority of the feldspar-dominated tonalitic intrusive rocks may be older and associated with emplacement of the intrusions of the Westcoast Coast Complex.

Intermediate Intrusive Rocks

This map unit is dominantly composed of fine to medium-grained, sub- to euhedral, granitic-textured diorite. Modal quartz may be a minor constituent and mafic phases – typically hornblende and lesser biotite – tend to make-up 25% to 40% of the rock. Plagioclase is the dominant feldspar. Also included in this unit are fine to medium-grained gabbroic rocks (with 50% or more mafic phases) and mixed, migmatitic units composed of diorite with significant volumes of dark, gabbroic or re-crystallized, amphibolitized mafic volcanic bands and xenoliths. These rocks may display a weak foliation and most are likely part of the regionally-defined Westcoast Complex.

GEOLOGIC SUMMARY OF THE GRANITE MAP SHEET

General Stratigraphic Overview of Exposed Rock Units

Overall the dominant rock-types exposed in the Granite Area are medium-grained, intermediate and felsic intrusive rocks, followed by mafic volcanic rocks and marble. The majority of the mapped bodies of marble and volcanic rocks tend to form west-northwest and northwest trending outcrop patterns. The dominant strike direction of bedding and banding orientations in marble and volcanic rocks is generally west-northwest, with local exceptions.

Southern Portion of Map Sheet

Considerable marble is present in the southern half of the map sheet that contains the magnetite-skarn mineralization of the Reko South Pit A and B Zones, and the Creek Showing. Marble outcroppings extend in a west-northwest direction from the west-facing slopes of the ridge to the east of the Granite Main Line logging road downward towards and across the valley of Renfrew Creek. Overall, the marble forms a distended body, or pendant, that rests on intermediate and felsic dioritic intrusive rock, which in places, also cuts, or stopes the marble.

Bedding in the marble is folded and orientations are variable: dips vary from shallow (~10°) to steep (~70°); the strike direction in most cases is east-west to west-northwest at an average of ~107° with dips both to the south and north. Locally, bedding has also been observed to strike northwest (~316°) and east-northeast (~071°) in marble. Minor, discontinuous exposures of volcanic rocks, some skarn-altered or hornfelsed occur along the marble-intrusive contact in a position stratigraphically below the marble. Even hydrothermally unaltered mafic volcanic rocks in this part of the Granite Area are strongly re-crystallized by metamorphism, which has largely obliterated primary texture.

In the area of the Creek Showing and the Reko South Pit Zones, intermediate to mafic dike rocks, which may be hypabyssal members of the Bonanza volcanic rocks, cut the marble; some are accompanied by skarn and sulphide alteration. The dikes are most notably exposed in the banks of the Granite Main Line logging road and tend to strike east-west to west-northwestward, dip sub-vertically, and are locally paralleled by steep faults. Medium-grained, felsic and intermediate dioritic intrusive rocks display both steep, cross cutting, and less often shallow contacts to marble; the shallow contacts may sub-parallel bedding in the marble.

Northern Portion of Map Sheet

Large outcroppings of marble are present at the higher elevations in the northern part of the Granite map sheet – on the ridge to the east of the Granite Mainline logging road and along the northern and northwestern boundary of the map area. However, marble is relatively uncommon at lower elevations in the northern section of the map. Instead more extensive exposures of mafic volcanic rocks are present. This part of the Granite Area contains the Pope's Nose sulphide-magnetite, Road Pit magnetite, and Pirate magnetite showings. The volcanic rocks are strongly re-crystallized; many are well foliated and contain amphibole-albite or epidote-rich veinlets. However, primary feldspar-porphyritic and glomeroporphyritic textures are still visible in most. The majority appears to have been massive flow rock and is interpreted as belonging to the Karmutsen Formation based on the glomeroporphyritic textures present. Glomeroporphyritic texture is characteristic of Karmutsen basalts mapped in the Cowichan Lake area by Massey and Friday (1987).

Minor mafic volcaniclastic to epiclastic tuffaceous layers are present in the volcanic stratigraphy located to the north of the Pope's Nose in the area of the Road Pit and Pirate magnetite showings. These clastic rocks are interpreted to form discontinuous layers up to about 50 m wide. As is the case with most of the volcanic lithologies their full lateral extent is difficult to determine given their tendency to be recessive and a general lack of continuous outcrop especially at lower elevations. At least one chert layer has been identified in a drill hole in the area of the Pirate magnetite showings. It occurs together with several, intercalated beds of mafic tuffaceous sandstone.

Massive mafic sub-volcanic or gabbroic bodies are present in the stratigraphy. The contact geometries of these rocks to their volcanic and sedimentary hosts are uncertain and remain interpretive.

Several minor outcroppings of marble, individually on the scale of 5 m less across, are present adjacent to the Road Pit Showing and in and near the Pirate magnetite showings. A portion of these marble occurrences exhibit steep (rarely faulted) banding parallel contacts with mafic volcanic rocks and appear to have been semi-conformable lenses of limestone contained within volcanic-dominated stratigraphy.

Most banding in the mafic volcanic and volcaniclastic rocks is taken to approximate bedding and tends to strike west-northwest (average 112° azimuth) and dip moderately steeply (~66°) southward. Local exceptions of north-dipping banding occur. Also there appears to be a slight swing to more east-west oriented banding in the mafic volcanic rocks found to the west of the Granite Mainline logging road near the Pirate magnetite showings and toward Renfrew Creek to the west.

Structural Geology

Rocks in the Granite Area have been subjected to several episodes of deformation related to successive cycles of magmatism and emplacement of hypabyssal and plutonic rocks as well as regional folding, faulting, and probably thrust faulting.

Contacts between the various successive phases of felsic and intermediate intrusive rocks, with each other, and with older sedimentary and volcanic rocks, tend to occur along two main strike directions: west-northwest (range 095° to 120°), and northwest (range 130° to 150°). Less prevalent contact directions for intrusive rock are northeast (range 020° to 070°), and northward (350° to 005°). Dip angles of the majority of intrusive contacts encountered tend to be steep (60° to 90°). However, a sizeable minority of shallow dipping intrusive contacts are also present.

Most faults mapped in the Granite area are steeply-dipping (60° or more). The same set of strike orientations observed amongst intrusive contacts is also that found for faults in the Granite Area and it is strongly suspected that older faulting, especially structures oriented northwest and west-northwest partially controlled the emplacement of the various successive phases of intrusive rock. Thrust faults remain poorly documented in the Granite Area. Several shallow-dipping thrust faults have been encountered north of the present mapped area, which are oriented northwest and more east-west. More thrust faults are likely present.

Major fault structures, which have noticeably offset or juxtaposed differing lithologies, include several east-northeast and west-northwest striking examples. A strong 075° striking steeply south-dipping fault cuts through Renfrew Creek at about 5389550 N

(UTM) in the northern-middle part of the 1:2000 map sheet (Appendix C). It forms a well-foliated, sheared, veined zone in outcrop, and has produced an abrupt change from mafic volcanic rocks in the south to dioritic intrusive rocks in the north. Its true slip direction (or directions) has not been determined. Near the northern boundary of the 1:2000 map, a large west-northwest trending steeply south-dipping fault roughly bounds mafic volcanic rocks lying to the south and marble lying to the north. This structure is largely recessive and inferred from foliated, sheared volcanic outcrops mapped in Renfrew Creek and from a west-northwest flowing drainage on the east side of the Granite Mainline logging road.

Many northeast and north-striking striking faults tend to produce mild dextral displacements (from several metres to 10's of metres) of lithologic contacts and older faults in outcrop. They also appear to have offset the folding observed in marble described below.

A weakly developed west-northwest oriented tectonic foliation, or spaced cleavage, is discernible in dioritic intrusive rocks and mafic volcanic rocks in the Granite Area. Dips tend to be oriented steeply southward to northward fanning between 65° to 90°. Contouring the poles of planes on a stereonet plot reveals that there is a variation in strike attitude among the data between about 095° and 135°. It is conceivable that two different populations of foliation may be present related to two successive stress directions (i.e. a north-northeast-directed one versus a more northeast-directed one). More mapping and measurements are required to prove such a scenario.

Bedding orientations in the marble located in the southern portion of the mapped area, which includes the Reko South Pit A and B Zones, and the Creek Showing; define a series of west-northwest-oriented (~108° azimuth) folds with sub-horizontal axes. The folding appears to be cylindrical but not quite regular with respect to the contact outlines of marble and volcanic rock produced on the geology map. This is due to the naturally somewhat irregular nature of intrusive to marble (and volcanic) contacts that are prevalent in this area. Also, stoping by intrusive rocks occurred at least in part along steep contacts, probably partially controlled by older fault structures. Bedding in the marble is often cross cut by younger intrusive rock and any volcanic rocks underlying the marble in synclinal structures may not be exposed along the steep intrusive-fault controlled contacts.

The west-northwest orientation of fold axes in the southern portion of the map area is parallel to a sizeable portion of the foliation orientations measured in outcrop. They are also similar to those described by England and Calon (1991) in the Cowichan Fold and Thrust System that deformed sediments of the Late-Cretaceous-age Nanaimo Group, and older Wrangelian basement rocks including the Karmutsen Formation, Quatsino Formation, and Westcoast Complex. The folding observed in the Granite Area marble outcrops may be in part or largely be the product of the same stress regime as that which produced the Cowichan Fold and Thrust System.

7.0 DEPOSIT TYPES

The Bugaboo and Reko deposits can be classified as calcic iron skarns or contact metasomatic iron deposits. Commodities and byproducts related to this type of deposit are magnetite (iron), copper, silver, gold and cobalt. Typically magnetite-dominant mineralization is genetically associated with a skarn gangue. The tectonic setting of calcic iron skarns are intra and non-intraoceanic island arcs and rifted continental margins. The age of mineralization can be of any age, mainly Mesozoic to Cenozoic and are typically Early to mid-Jurassic in British Columbia. Deposit-type classification description is taken from G.E. Ray (1995) in '*Fe Skarns, in Selected British Columbia Mineral Deposit Profiles, Volume 1 - Metallics and Coal, Open File 1995-20*' and is reproduced below.

The host and associated rock types are iron-rich, silica-poor intrusions derived from primitive oceanic crust. Typically, large to small stocks and dikes of gabbro to syenite (mostly gabbro-diorite) intrudes limestone, calcareous clastic sedimentary rocks, tuffs or mafic volcanics at a high to intermediate structural level. The deposit form is variable and includes stratiform orebodies, vertical pipes, fault-controlled sheets, massive lenses or veins, and irregular ore zones along intrusive margins.

Igneous textures prevail in endoskarn (skarn formed by replacement of intrusive or other aluminous silicate rock). Coarse to fine grained, massive granoblastic to mineralogically layered textures are evident in exoskarn (skarn formed by replacement of limestone or dolomite). Some hornfelsic textures may also be developed. Magnetite varies from massive to disseminated to veins. Exoskarn alteration is high iron, low manganese, diopside-hedenbergite clinopyroxene and grossular-andradite garnet, ± epidote ± apatite. Late stage amphibole ± chlorite ± ilvaite ± epidote ± scapolite ± albite ± K-feldspar. Endoskarn alteration comprises sodium silicates ± garnet ± pyroxene ± epidote ± scapolite.

Principal and subordinate ore mineralogy can comprise magnetite ± chalcopyrite ± pyrite ± cobaltite ± pyrrhotite ± arsenopyrite ± sphalerite ± galena ± molybdenite ± bornite ± hematite ± martite ± gold. Rarely, can contain tellurobismuthite ± fluorite ± scheelite.

Ore controls are stratigraphic and structural: close proximity to contacts between intrusions and carbonate sequences, volcanics or calcareous tuffs and sediments. Fracture zones near igneous contacts can also be important. Some associated deposit types can be copper porphyries, copper and lead-zinc skarns or small lead-zinc veins.

In calcic iron skarns, early magnetite is locally intergrown with, or cut by, garnet and magnesian silicates. Some of these skarns contain relatively small pockets of pyrrhotite-pyrite mineralization that postdate the magnetite; this mineralization can be gold-rich. Over 90% of the 146 iron skarn occurrences in British Columbia lie within the Wrangell

Terrane of the Insular Belt. The majority of these form where Early to mid-Jurassic dioritic plutons intrude Late Triassic limestones.

Exploration guides for calcic iron skarns are geochemical signatures exhibiting enrichment in iron, copper, cobalt, gold, nickel, arsenic and chromium. Overall copper and gold grades are low (<0.2% Cu and 0.5 g/t Au). Geophysical signatures are strong positive magnetic, electromagnetic and induced polarization anomalies. Other exploration guides for iron skarn development are magnetite-rich float, and exploration in the Wrangell Terrane near the upper and lower contacts of the Upper Triassic Quatsino Formation limestone (or equivalent units).

Economic factors are grade and tonnage where grades are typically 40% to 50% iron. Worldwide, calcic iron skarns range from 3 to 150 million tonnes. In British Columbia, they reach 20 million tonnes and average approximately 4 million tonnes mined ore. Nearly 90% of British Columbia's historic iron production was from skarns.

Previously unrecognized and undocumented ultramafic rocks have been recently discovered (McKinley, 2003) on the Pearson property and could be a significant indicator for the ultramafic-related suite of ore deposits, namely tholeiitic intrusion-hosted nickel-copper that may contain platinum group elements (PGE). Gabbro and hornblende gabbro with significant copper, nickel, cobalt, platinum and palladium values were identified on the Ebb showing in the eastern part of the property in the vicinity of Fairy Creek, north of Fairy Lake (Tavela, 1980).

8.0 MINERALIZATION

This section is based mainly on historical work. Some additional information is found in Section 9 (2009 Work Program). Data from the 2009 drill program report that may be pertinent to the discussion is undergoing review and will be discussed in a subsequent drill report.

The Conqueror, Daniel, David and Reko iron (magnetite) skarn deposit areas have been variously described by Menzies and Nicolls (1960), Young and Uglow (1926), Roscoe (1973), Eastwood (1974) and McKinley (2003) where the following information has been taken. The British Columbia mineral inventory database, MINFILE, documents the showings as follows: Bugaboo, 092C 022; David, 092C 023; and Reko, 092C 090, 91, 110, 146 (Figure 3). These reports can be viewed on the government website at http://www.em.gov.bc.ca/Mining/Geolsurv/Minfile/default.htm.

8.1 Bugaboo Creek – Gordon River Area

The Conqueror, Daniel and David magnetite bodies occur within zones of pyroxene-garnet skarn formed along the contact of fine to medium-grained diorite and limestone. The magnetite occurs as large, irregular, fine grained massive bodies surrounded by recrystallized limestone (marble) and dioritic intrusive rocks cut by plagioclase porphyritic dikes. The Daniel orebody is located about 250 metres northwest of the Conqueror orebody and is a tabular, elliptical body with its long axis oriented north-northeast and has a broad antiform shape. The Daniel subcrops under approximately 20 metres of overburden. The David magnetite showing is about 300 metres southeast of the Conqueror orebody. All three showings (Daniel, Conqueror, and David) are on the same northwest- southeast trend. The Sirdar and Baden Powell showings are also on the same trend.

The original Conqueror discovery showing is a solid mass of magnetite about 10 metres thick exposed in the canyon of Bugaboo Creek, over which the creek forms a waterfall. The massive magnetite occurs within and near zones of pyroxene-garnet skarn formed along the contact of fine-grained diorite and limestone. The magnetite occurs as large, irregular massive bodies surrounded by recrystallized limestone (marble) and dioritic intrusive rocks cut by plagioclase porphyritic dikes.

The skarn appears to be of two phases. The first is an older garnet-epidote assemblage found only as a remnant within the massive magnetite; the second is the later pyroxene skarn that surrounds the magnetite body. Actinolite is a minor constituent in the zone of alteration. The magnetite is fine grained and massive with pyrrhotite finely disseminated throughout and may have formed contemporaneously. Actinolite is also a minor accessory mineral within the magnetite. Late sulphide veinlets, mainly pyrite and chalcopyrite, cut the magnetite body.

The Daniel deposit does not outcrop on surface. Drill results indicate that it is similar to that of the Conqueror with pyrite and pyrrhotite occurring in roughly equal proportions but with no conspicuous actinolite. Late pyrite and chalcopyrite veinlets cut the magnetite.

The David is a massive, irregular body of fine to medium grained magnetite bounded by pyroxene-garnet skarn, marble and altered diorite. The magnetite is relatively free of sulphides and appears sheeted in the roadcut exposure. This southern margin of the magnetite body is exposed along a roadcut at an elevation of 551 meter (at UTM 389289 east, 5390574 north). G.E. Ray (2008) visited the showing and describes the deposit at this location as follows:

> "*Here I saw the southern margin of the massive magnetite body, which is in contact with a sheared, chloritized and skarn-altered mafic igneous rock. The latter contains remnant feldspar phenocrysts and it probably represents a sub-vertical dike. It is strongly overprinted by epidote-pyroxene alteration indicating the ?dike predates the skarn. The partly faulted contact trends SE (130 degrees azimuth) and dips 70 to 80 degrees northwards. Within the magnetite body there are several fractures and thin faults with slickenslide lineations indicating multiphase sub-horizontal movements.*
>
> *The David magnetite body can be traced on surface for more than 20 meters. The magnetite contains several skarn-altered mafic dikes (Photos 5 and 6) that closely resemble the igneous rock seen in Photo 4. These sub-vertical dikes trend SE (140 degrees azimuth) and are between 0.5 and 2 meters thick. The dikes were*

probably related to the main diorite body; they are believed to have been intruded along a series of steep, SE trending faults, prior to the mineralizing event. Thus, the subsequent skarn and Fe-rich fluids were probably partly controlled by the pluton margin and the early faults and dikes. Locally, the magnetite in the David prospect contains a weak layering (Photo 6) which has a similar SE trending, gently SW-dipping orientation as bedding in the nearly Quatsino marble (Photo 7). The layering in the magnetite is believed to represent remnant bedding that remained after the magnetite had replaced the marble. Where seen in outcrop or drill core, such layering can provide useful structural data.

Based on drill results to the end of 2008, Wardrop Engineering determined that the Conqueror deposit is made up of parallel upper and lower zones that strike northwesterly, and plunge steeply to the southwest. The Conqueror was modelled as two distinct bodies dipping steeply at surface to the southwest with the lower Conqueror flattening out at depth in the southeastern portion of the deposit. Both zones are open down dip. Magnetite intersections, approximately 30 metres in length from two drill holes, were intersected below the lower Conqueror and may indicate the presence of another zone, however Wardrop did not include these intersections in the resource estimate based on the lack of adequate drill definition.

In 2009, on behalf of Pacific Iron Ore Corp., Wardrop Engineering Inc. estimated that the Bugaboo deposits contain inferred resources of 7.8 million tonnes (Mt) averaging 63% magnetite, at a cut off of 20% magnetite (Stubens and Arseneau, 2009). The table below gives a breakdown of the Wardrop resource estimates by zone.

Mineralized Zone	Cutoff	Density T per M^3	Tonnage 1000's	Magnetite % Fe_3O_4	Contained Magnetite 1000's
DANIEL	20% Magnetics	3.88	2,666	67	1,798
UPPER CONQUEROR	20% Magnetics	3.59	2,288	56	1,292
LOWER CONQUEROR	20% Magnetics	3.77	2,871	63	1,822
Total		3.75	7,824	63	4,912

Examination of 2008 drillcore shows magnetite layers frequently occur within white Quatsino marble, presumably having replaced the marble, and is also frequently bound by “gabbroic” bodies that appear to be intimately involved with the skarn-mineralization event. Some of the rock that was logged as gabbro may include mafic to intermediate, dark to pale greenish volcanic or subvolcanic bodies some of which have been skarn altered, their original lithology being impossible to distinguish. Some may also be related to the lithology described by Ray (2008) as having its origin in “*retrograde* *alteration of the early skarn minerals with the garnet and pyroxene being replaced by chlorite-epidote".* Further study, including petrographic study, of these 'gabbros' may be necessary to determine their original nature. Intervals of garnet-pyroxene skarn occur in many of the drillholes, varying in thickness up to 25 metres. Layers of skarn are often found within magnetite or bounding the magnetite.

The following excerpt (indented and italicized) was taken from an internal company report completed by skarn expert G.E. Ray (2008) after a brief property examination and review of the core from drillhole 08-29B (from the Conqueror zone) in the summer of 2008. Photo references have been removed from this excerpt. Payie and Norris (2008) provide additional information for some references by Ray.

> *(a) The hole cuts significant intersections of massive magnetite; for example the 74 feet-long section drilled between 741 feet and 815 feet depth. The magnetite is fine to medium grained with blebs, disseminations and veinlets of pyrrhotite ± pyrite and trace chalcopyrite. Some trace cobaltite may also be present.*
>
> *(b) The magnetite is cut by thin veins and small pods of garnet-rich skarn. Based on cross-cutting relationships, the mineral paragenesis is (1) early massive magnetite, (2) garnet veins, (3) late sulfides.*
>
> *(c) In addition to the garnet veins, the magnetite contains patches and zones with abundant garnet-clinopyroxene-chlorite-actinolite-sulfide alteration. Much of the garnet is medium to dark red suggesting it is Fe-rich andradite. However, in some localities close to the marble host rocks the garnet is paler colored indicating it is probably grossularitic.*
>
> *(d) There is widespread retrograde alteration of the early skarn minerals with the garnet and pyroxene being replaced by chlorite-epidote (this is a common feature of Fe skarns). Much of the chlorite is black suggesting it is Fe-rich.*
>
> *(e) The Quatsino Formation marble cut in the drill-hole often contains irregular dendritic veinlets that contain chlorite and organic material. This is a common feature adjacent to many skarns. When the original dark organic-bearing limestone is thermally bleached during the skarning process, much of the organic material is destroyed or vaporized but small amounts remain.*
>
> *(f) Both the magnetite and marble contain what are believed to be skarn-altered (endoskarn) andesite dikes (a 25 cm thick dike is seen at 620 feet). These have sharp margins and some (but not all) are highly altered to chlorite, epidote and clinopyroxene. Some dikes contain small xenoliths of marble. There are probably several different types that were intruded both*

pre and post the skarn. The early dikes were likely related to the main diorite body responsible for the Fe skarns.

Sulfide-rich pods and lenses with pyrrhotite-pyrite, trace chalcopyrite and chlorite-actinolite are commonly developed along the margins of the magnetite zones, where they are in contact with either the altered dikes or the marble.

The recently exposed Lorimer Creek showing is located about 4 kilometres southeast of, and on trend with, the Conqueror-Daniel deposits. The showing is located on the southwest flanks of the Gordon River valley, just north of Lorimer Creek, which flows into Gordon River. The showing is exposed in a logging roadcut and is about 10 metres long and consists of a massive, fine to medium grained magnetite body lying beneath marble and locally developed pyroxene skarn. The overlying marble has an undulating and abrupt contact with the magnetite. In 2004, a grab sample of the massive magnetite mineralization taken by Emerald Fields assayed 45.6% iron, 0.6% copper and 192 ppb gold. A fine grained, dark mafic rock (diabase) occurs nearby and hosts two parallel magnetite-pyrite-pyrrhotite veins from 15 to 40 centimetres wide. In 2004, a grab sample taken from one of the veins by Emerald Fields assayed 44.3% iron, 1.01% copper and 177 ppb gold.

The Mai showing occurs another 3 kilometres southeast of the Lorimer Creek showing but on the northeast side of the Gordon River, about 500 meters to the east where the valley walls steepen dramatically. Here, a body of medium to fine grained massive magnetite is exposed at the base of a steep cliff. The magnetite appears continuous for ~30m. Adjacent to the Magnetite is a Garnet-pyroxene skarn which appears to have a mafic-volcanic protolith. The host rock is an altered mafic-volcanic. The showing is close to the contact with the Intrusive diorite that underlies most of the area. Although no marble was seen in outcrop, the map pattern suggests it should be in close proximity. Another outcrop ~4x4m of massive magnetite is present in a small creek ~25 m to the Northwest. An adit that was apparently targeting this outcrop is directly beneath it in the creek. ~50m further to the North West a few smaller pods of massive pyrrhotite are present in another set of cliffs.

8.2 Granite (Renfrew Creek, Reko) Area

A total of 11 magnetite skarn zones have been described by Roscoe (1973) in the Renfrew Creek area and documented in the British Columbia provincial mineral inventory database, MINFILE, as Reko 10 (092C 091), Reko 3 (092C 090), Reko 38 (092C 110) and Reko North (092C 146). See Figure 3 for MINFILE locations. Only those zones containing historic reserves or which have been tested by the 2005 drill program are discussed below.

The Reko South Pit A and B Zones lie in an area with limited to no outcrop. They were first explored (by Reako Explorations Ltd.) in the early 1970s by trenching and limited diamond drilling. Follow-up diamond drilling in the area of both zones was done by Emerald Fields Corporation in 2004 and 2005.

The Reko South Pit A Zone or Zone 1 (092C 091) resides in a ditch beside a logging spur road about 150 metres east of the Granite Mainline logging road. It is composed of massive fine to medium-grained magnetite in shallow-dipping discontinuous patches up to about 4.5 metres across and about 1 metres thick. Pyrrhotite-rich sulphide, with disseminations, fine patches, and veinlets of pyrite and chalcopyrite occurs with the magnetite. The mineralization is developed with garnet-pyroxene skarn close to the contact between marble and underlying dioritic intrusive. Chalcopyrite is also present. The attitude of the magnetite zone and marble-intrusive contact appears to be shallow in the area of the exposure: strike is about 330° and dip is about 20° SW essentially down slope along topography. Another road ditch exposure located just 45 metres west contains discontinuous massive magnetite layers of similar attitude. The shallow contact attitudes of the mineralization are interpreted to conform to a shallow southwestward dipping limb of an anticlinal structure with axis striking west-northwest located about 20 to 30 metres north of the showing. Roscoe (1973) estimated 41,046 tonnes of magnetite without specifying grades. The reserve estimates are assumed to not comply with Sections 1.3 and 1.4 of National Instrument 43-101. In a 1975 George Cross News Letter, reference is made to this showing where magnetite is exposed in two areas 61 metres apart and when checked by magnetometer indicated an anomaly enclosing both exposures. The showing was partially tested in the 2005 drill program. A drill hole (DDH001–2005) collared about 12 metres to the northeast (up-slope) from the original exposed showing encountered marble to about 10 metres depth and then about 4.1 metres of massive magnetite before passing into dioritic intrusive rock (Owsiacki, 2008). This intersection is much thicker than that observed in the exposed showing and is interpreted to be a thicker lens that was developed along a northwest-trending contact or fault zone - similar to structures observed in the road bank north of the showing. A second drill hole (DDH002 – 2005) was located 75 metres south of the showing encountered skarn, with a narrow (0.6 metres) zone of magnetite, and then dioritic intrusive rock (Owsiacki, 2008).

A ground magnetometer survey (Sebert et al., 2010) done during June of 2009 indicated the presence of several weak to moderately strong magnetic anomalies over and near the exposed showings, and over the area of the magnetite intersection in DDH001-2005. However, the anomalies detected do not have significant areal extent, and this suggests that the magnetite mineralization is discontinuous and/or semi-massive in nature. Alternately, a more massive magnetite blanket may have been originally developed along the shallow southwest-dipping contact between marble and intrusive rock but was subsequently partially eroded. Given the limited magnetic response and the discontinuous, thin nature of the magnetite in the available exposures it was decided that no further exploration was warranted.

The South Pit B zone or Zone 2 (092C 091) is located 215 metres southwest of Zone 1 near a bridge crossing Renfrew Creek. The zone is located 40 m to the east of Renfrew Creek, just north of the Granite 6000 logging road. The showing originally showed only a few outcrops of garnetite and silicified rock. It is a completely recessive showing and with the exception of the creek bed only very limited dioritic and skarn outcrops are present on its periphery.

The South Pit B zone originally produced a strong magnetic anomaly and was systematically drilled; a trench was bulldozed 76 metres northeast of the bridge, exposing magnetite in garnetite. Drilling by Reako Explorations Ltd. and Emerald Fields Resources Corporation intersected mostly semi-massive magnetite in mafic volcanic rock that was variably skarnified, by epidote, pyroxene, and garnet. A drillhole in the centre of the zone intersected thinly to thickly disseminated magnetite in epidote-pyroxene-garnet skarn from 2.4 to 20.4 metres depth and sporadically from 20.4 to 25.3 metres. Pyrite and chalcopyrite occur locally (Eastwood, 1974). Roscoe (1973) estimates 970,597 tonnes of ore without specifying grades. The reserve estimates are assumed to not comply with Sections 1.3 and 1.4 of National Instrument 43-101. Two drillholes were put down in this zone in 2004 by Emerald Fields Resource Corporation (Mowat, 2004).

A hand magnetometer survey done in June of 2009 identified a strong magnetic anomaly that is present over the showing covering an extent of about 90 by 40 metres. Given limited outcrop, the zone is interpreted to represent the remnant keel of a synclinal structure composed of a pocket of altered-mineralized mafic volcanic and potentially limited remnants of marble enclosed in quartz-diorite intrusive rock.

South Pit C zone or Zone 3 (092C 091) is located about 425 metres northwest of Zone 2. The zone is not exposed and is known only from the drilling of a magnetic anomaly. A drillhole inclined 45 degrees to the west put down on the centre of the zone intersected magnetite, pyrrhotite and pyrite as disseminations, veins and veinlets in skarn from 18.9 to 23.8 metres. Below 24 metres the rock is predominantly diorite (Eastwood, 1974). Roscoe (1973) estimated 31,839 tonnes of ore without specifying grades. The reserve estimates are assumed to not comply with Sections 1.3 and 1.4 of National Instrument 43-101.

Zone 7 or Pope's Nose zone (092C 090) is located located along the east bank of the Granite Mainline logging road about 1.5 kilometres north of Zone 1 (South Pit A zone). The Pope's Nose showing originally consisted of two small exposures of massive pyrrhotite containing networks of chalcopyrite.

In 2009, Pacific Iron ore examined the Pope's Nose occurrence (Sebert *et al*., 2010). The showing was described as consisting of a discontinuous lens of massive sulphide and magnetite, up to several metres in thickness. Attitude of the lens, as best can be estimated from its basal contact, is about 125°/50° SW. As presently exposed in a road side trench it is about 17.5 m long and 3 m across, resting on brecciated mafic feldspar-porphyritic volcanic intruded by up to 50% volume of quartz diorite. This basal host rock is exposed on its up-slope side to the northeast in the road bank. The hanging wall rock, formerly above it, has been eroded. Skarn alteration or hornfels with epidote, pyroxene, and minor garnet is present at the zone's base but is narrow (about 1 metre or less). Pyrrhotite is the main sulphide and significant chalcopyrite occurs as infillings and veinlets. Pyrite is also present as included patches in pyrrhotite. Petrographic work on sulphide-rich samples of the mineralization by Leitch (2004) show it to be strongly deformed, with "durchbewegung" fabric. Pyrite forms fractured balls within well foliated and elongated pyrrhotite. Minor silicate and oxide phases (garnet, actinolite, and magnetite) hosted in sulphide are also fractured. The presence of garnet suggests the mineralization is skarn-related. Several narrow ~300° fault traces are present about 10 m south of the Pope's Nose and a stronger, recessive fault structure is suspected to be present in proximity to the showing given the deformation present in the mineralization.

Emerald Fields Resources Corporation drilled 4 fanned diamond drill holes collared along the west side of the Granite Mainline logging road oriented variably from 080° to 160° azimuth and inclined -45° to -70°. Two holes cored minor chalcopyrite-rich sulphide near the collar and then passed into mafic volcanic and intrusive rocks (Mowat, 2004). Ground-based magnetometer work done in 2009 did not identify any significant magnetic anomalies on strike or laterally with the pyrrhotite mineralization in the existing exposure. These results suggest the Pope's Nose mineralization is discontinuous down-dip as well as along strike.

The Road Pit showing also known as Reko North Pit zone, Zone 8 and Road zone (092C 090) is located 190 metres north of Zone 7 or Pope's Nose zone. The mineralization consists of several small to larger (up to 4 by 7 m) lenses of fine to medium-grained massive magnetite ranging from 0.5 to more than 2 m thick. Locally developed garnet-pyroxene-epidote skarn and hornfels accompanies the massive magnetite lenses. The mineralization is located along a 330° oriented faulted contact between massive fine-grained gabbroic rock to the east and mafic volcanic and sedimentary rocks – chert and minor limestone to the west. Quartz dioritic intrusive rock and other feldspar porphyritic dike rocks are also present in the contact area. The strike and dip of individual magnetite lenses is sub-parallel to the faulted contact; dips are moderately to steeply southwestward between 50° and 80° and strike is between ~300° and 340°. However, minor examples of narrow magnetite veins display strike directions that are different from the main structure. Northeast striking, steeply dipping cross faults produce successive dextral offsets of the northwest striking fault/contact zone.

Drilling in 1973 was not extended far enough to delimit the Road Pit zone. A vertical drillhole toward the southwest side of the zone intersected massive and near-massive magnetite from 2.7 to 9.7 metres cut by 2.4 metres of very weakly mineralized skarn. Pyrite occurs in minor amounts. Roscoe (1973) estimated 33,063 tonnes of ore without specifying grades. The reserve estimates are assumed to not comply with Sections 1.3 and 1.4 of National Instrument 43-101. This zone was partially tested during the 2005 drill program.

One shallow inclined hole oriented 190° azimuth and at -60° inclination was completed from a site on the east side of the Road Pit Showing in 2005. The hole intersected a large zone of garnet-pyroxene skarn and diorite but did not intersect magnetite. As with the Pope's Nose no significant magnetic anomalies were detected, either across strike or along strike of the Road Pit showing in 2009 ground magnetometer survey work done in the area and it was concluded that the extent of the magnetite mineralization is limited and/or discontinuous.

Zone 5 or Northwest zone (092C 110) is located about 715 metres west-southwest of Zone 7 (Pope's Nose zone). The original showing was partly exposed in bulldozer strippings and one small outcrop and consists of a mixture of magnetite and sulphide minerals in skarn. A 1973 drillhole inclined 45 degrees to the west near the north end of the zone intersected abundant magnetite with lesser amounts of chalcopyrite, pyrrhotite and pyrite from 0.6 to 7.9 metres cut by a 1.5 metre diorite dike. From 20.4 to 26.5 metres the core is mostly massive pyrrhotite, containing lenses and blebs of chalcopyrite (Eastwood, 1974). Roscoe (1973) estimated 34,696 tonnes of ore without specifying grades. The reserve estimates are assumed to not comply with Sections 1.3 and 1.4 of National Instrument 43-101.

<u>The Creek Showing</u> was discovered during the 2009 exploration season in a west flowing drainage about 40 metres to the east of the Granite Mainline logging road (Sebert *et al.*, 2010). Exposed in the creek bed, in a 3 by 3 m area is a massive magnetite layer associated with skarn that is greater than 2 m thick. The magnetite layer is developed parallel to the marble and dioritic intrusive contact with an attitude of about $140^{\circ}/48^{\circ}$ SW. As with the Reko South Pit A Zone the magnetite contains significant pyrrhotite-rich sulphide. Also it appears to be situated on a southwest-dipping contact between marble and intrusive, which is interpreted as part of an anticlinal structure. The mineralization appears to free air up slope toward the northeast, but extends southward and southwestward downhill along the contact between marble and dioritic intrusive rock. Ground-based magnetometer data has defined a strong, about 40 by 40 metre overlapping anomaly centered 15 metres south of the showing.

In addition, several narrow, sub-vertical, skarn zones, containing significant heavily disseminated to banded pyrrhotite, pyrite and chalcopyrite-rich sulphide occur in the immediate area of the Creek Showing. These sulphide-rich zones are in part developed along altered intermediate or mafic dikes that are faulted along contact, and strike west-northwest.

The Pirate Showings are a group of several magnetite and garnetite skarn occurrences located approximately 120 m west-northwest of the Road Pit Showing. These exceed 1 metre in thickness and are up to about 6 metres long as exposed on surface. The magnetite and skarn are in part developed parallel and sub-parallel to steeply-dipping banding and contacts within a sequence of mafic volcanic and volcaniclastic rocks, which typically strike from west-northwest to east-west in the area of the mineralized showings. More shallow-dipping magnetite lenses are also present, however. One example of magnetite mineralization occurs adjacent to a marble pod included in mafic volcanic but displays a gently dip of $\sim 20^{\circ}$ to the southwest with a strike of $\sim 130^{\circ}$. This attitude is somewhat similar to the orientation of a portion of later dikes of feldspar-rich, felsic intrusive (tonalite) noted in proximity to the mineralization.

In summary, magnetite-sulphide skarn mineralization in the Granite Area is developed along several structural trends, and geologic features (Sebert et al., 2010). These include the following:

- The marble to dioritic intrusive contact. This is the case for the Reko South Pit A and B Zones and for the magnetite-rich lens at the Creek Showing. Mineralization and skarn is developed on southwestward shallow- to moderately steep-dipping contacts between marble and intermediate dioritic, or felsic diorite intrusive rock. In the case of the South Pit B Zone it is located in what may be along the remnant of a synclinal axis, or pocket of mainly mafic volcanic hosted within intrusive rock. Mineralization in these three zones is developed in marble and/or mafic volcanic rock. Additional sites of magnetite-sulphide mineralization may conceivably be located along steeply-dipping marble intrusive contacts or at depth beneath larger marble bodies stoped by intermediate or felsic intrusive rock.

- Parallel to and within steeply-dipping faults and/or dike rocks cutting marble or mafic volcanic. Examples are the narrow sub-vertical, west-northwest-striking sulphide-rich zones near the Creek Showing.

- Within bedded sequences of mafic volcanic and volcaniclastic rocks. The Pirate Showings are developed both parallel to east-west and west-northwest-striking bedding in mafic volcanic and volcaniclastic rocks, and along crosscutting fractures or intrusive dike contacts within the stratigraphy oriented northwestward. Local marble lenses in the volcanic-sedimentary stratigraphy may also have provided sites for skarn and magnetite mineralization.

- As pods and lenses adjacent to but not necessarily confined to faults and faulted contacts. The Road Pit Showing appears to be composed of several lenses of magnetite mineralization that are developed in along a faulted contact striking northwest but not wholly parallel to it. Magnetite mineralization may have originally formed along a lithologic contact where it is cut by sub-parallel faulting. Deposition of mineralization may also have been guided by other fractures, or cross faults. The Pope’s Nose may have been deposited along a contact in somewhat similar fashion and it may have had marble lying above it (to the southwest), which was subsequently eroded.

9.0 2009 DRILL PROGRAM

In 2009, drilling on the Pearson claims consisted of 8356.85 metres in 37 holes. Of this 4733.70 metres in 16 holes were completed on the Bugaboo deposit to further define and upgrade the resource; 3022.40 metres in 18 holes were drilled on various magnetite skarn targets in the Granite area; and 600.76 metres in 3 holes were drilled on mafic-ultramafic rocks outcropping in the Granite 8000 area in order to test their PGE potential. Table 2 below summarizes general drill hole data.

TABLE 2: DRILLHOLE DATA SUMMARY 2009 DRILLING

Drillhole	Easting	Northing	Elevation	Total Depth	Azimuth	Dip
09-01G	404630	5388585	350	85.344	0	-90
09-02G	404656	5388560	350	121.92	0	-90
09-03G	404683	5388535	350	64.008	45	-60
09-04G	404674	5388510	349	106.3752	50	-45
09-05G	404584	5389082	423	112.776	15	-46
09-06G	404584	5389082	423	87.1728	352	-50
09-07G	404587	5389020	403	143.256	28	-46
09-08G	404547	5389071	408	115.824	35	-50
09-09G	404547	5389071	408	138.9888	6	-50
09-10G	404202	5390055	457	207.264	12	-46
09-11G	403193	5391153	727	420.624	255	-45
09-12G	403193	5391153	727	121.92	255	-58
09-13G	403031	5390834	681	326.136	354	-45
09-14G	402992	5390782	681	414.528	345	-45
09-15G	404357	5389827	430	127.1016	46	-45
09-16G	404327	5390056	452	109.728	52	-46
09-17G	404634	5388870	395	188.3664	40	-45
09-18G	404649	5389116	471	131.064	278	-51
09-19G	404165	5386606	531	237.744	170	-60
09-20G	404194	5386667	541	224.3328	168	-55
09-21G	404127	5386887	570	138.684	169	-50

9.1 Drilling – Bugaboo Area

Table 3 summarizes the total cumulative magnetite per hole. See Appendix B for a table that indicates all magnetite intersections in a given drillhole.

TABLE 3. CUMULATIVE INTERCEPTS OF SIGNIFICANT MAGNETITE

Drillhole Number	Magnetite* cumulative intercept thickness (meters)	Top of first magnetite intercept (meters)	Bottom of last magnetite intercept (meters)	Average Total Fe (%)	Average Total S (%)	Average Total Cu (ppm)
09-01B	49.53	25.00	86.60	58.32	1.80	924.94
09-02B	86.68	32.08	346.70	52.08	2.13	988.79
09-03B	4.57	44.80	175.65	36.37	4.70	415.39
09-05B	16.93	119.50	138.88	46.95	0.70	175.26
09-06B	83.10	13.72	322.70	48.49	2.32	995.74
09-07B	24.98	17.20	218.83	47.12	1.71	801.34
09-08B	73.28	12.80	280.00	51.53	2.72	1206.41
09-09B	16.36	188.26	260.53	40.89	1.92	1259.07
09-10B	23.91	203.87	290.53	51.21	1.24	894.68
09-11B	17.31	56.23	158.50	57.12	1.77	607.65
09-15B	3.82	142.30	146.12	64.65	1.76	471.46
09-16B	14.98	146.50	165.85	59.77	2.13	477.63

*See Appendix B for a breakdown of all magnetite intercepts for each hole

9.2 Drilling – Granite/Renfrew Creek Area

DRILLING SUMMARY – GRANITE/RENFREW creek Area

Creek Showing Area Drill Targets, General Geology, and Hole Locations

The Creek Showing was discovered during the 2009 exploration season in a west flowing drainage about 40 m to the east of the Granite Mainline logging road. Exposed in the creek bed, in a 3 by 3 m area is a massive magnetite layer associated with skarn that is greater than 2 m thick. The magnetite layer is developed parallel to the marble and dioritic intrusive contact with an attitude of about 140°/48° SW. As with the Reko South

Pit A Zone the magnetite contains significant pyrrhotite-rich sulphide. Also it appears to be situated on a southwest-dipping contact between marble and intrusive, which is interpreted as the southwest limb of a west northwest striking anticlinal structure. The mineralization appears to free air up slope toward the northeast, but extends southward and southwestward downhill along the contact between marble and dioritic intrusive rock. Ground-based magnetometer data has defined a strong ~ 40 by 40 m overlapping anomaly centered 15 m south of the showing.

In the area of the Creek Showing intermediate to mafic dike rocks, which may be hypabyssal members of the Bonanza volcanic rocks, cut marble. Some of these are accompanied by skarn alteration and sulphide. The dikes are most notably exposed in the banks of the Granite Main Line logging road and tend to strike east-west to west-northwestward, dip sub-vertically, and are locally paralleled by steep faults. Medium-grained, felsic quartz dioritic and intermediate dioritic intrusive rocks display both steep, cross cutting, and less often shallow contacts to marble; the shallow contacts may sub-parallel bedding in the marble.

Of additional interest, the area from the Creek Showing to ~200 m southward also contained two airborne geophysical (7200 Hz EM) point anomalies located at 404540E 5389100N, and at 404755E 538910N potentially related to buried sulphide mineralization. The centre of the first EM anomaly is located on the Granite mainline logging road ~50 m to the southwest of the Creek Showing.

Seven holes were drilled in the area of the Creek Showing in the 2009 exploration season (Figure_ *drill hole location map*). Five drill holes (09-05-G to 09-09-G) targeted the potential southward and down-dip extension of the magnetite-sulphide-rich mineralization outcropping at 0404580E; and 5389130N (UTM) on the east side of the Granite mainline logging road. Also targeted were several, narrow (metre-scale) sulphide-rich, west northwest-striking, skarn zones. These are partially developed along intermediate to mafic dike rocks outcropping in proximity to the Creek Showing mineralization. A sixth hole (09-17-G) targeted the north edge of the EM point anomaly at 404755E 538910N, and was oriented to crosscut any potentially northwest striking sulphide-bearing conductors. A seventh hole (09-18-G) was collared above and to the east of the Creek Zone and drilled west northwestward, down slope to test the alternate hypothesis that the Creek Zone dips eastward rather than westward.

Table _ summarizes the hole locations, lengths, and attitudes of drill holes emplaced in the Creek Showing area.

Table . Summary of DDH: Creek Showing Area

DDH	N	E	Elev.	Dip	Azimuth	Length
	m	m	m	deg.	deg.	m
09-05-G	5389082	404584	423	-46	015	112.78
09-06-G	5389082	404584	423	-50	352	87.17

09-07-G	5389020	404587	403	-46	028	143.26
09-08-G	5389071	404547	408	-50	035	115.82
09-09-G	5389071	404547	408	-50	006	138.99
09-17-G	5388870	404634	395	-45	040	188.37
09-18-G	5389116	404649	471	-51	278	131.06

The geology and sampling results of the individual drill holes is described below. Strip logs depicting the lithologies, alteration, and sample locations are provided for each drill hole (*Appendix or Figure reference*).

Hole 09-05-G

Hole 09-05-G was specifically targeted to test for a southern and down-dip extension of the Creek Showing.

The upper part of the hole from the collar to 52.1 m depth consists of marble with several sub-metre to metre-scale length intervals of mafic dike rocks. Local narrow intervals of cherty volcaniclastic and variably chlorite+/- sericite- or calc-silicate-altered porphyritic intermediate dike rock were also noted. Garnet-pyroxene skarn and minor epidote-rich skarn is also present between 4.89 to 9.8 m, 10.43 to 14.95 m, 31.43 to 33.5 m, and 45 to 45.3 m depth. Garnet pyroxene skarn is also developed between 52.1 and 53.8 m at the contact of marble to dioritic intrusive rock.

The lower portion of the hole from 53.8 to 112.78 m depth is dominated by fine to medium grained hornblende-diorite. Other more minor intrusive rock types present include intervals of composite intrusive, composed of leucocratic, felsic, quartz-hornblende-dioritic rock hosting xenoliths and bands of more mafic dioritic intrusive. Local intervals of more homogeneous quartz-hornblende-diorite are also present in the lower portion of the hole.

No magnetite mineralization equivalent to that observed in the Creek Showing was intersected in marble, skarn intervals, or at the marble-intrusive contact.

Several sulphide-bearing sections are present, which consist of semi-massive to disseminated pyrite with variable subordinate pyrrhotite. One is developed in altered cherty sediment near the contact with a narrow mafic dike between 29.25 and 29.85 m and consists of a patchy band of semi-massive pyrite, and pyrrhotite. A second example consists of garnet-pyroxene-skarn, which contains intergrown, patchy pyrite, pyrrhotite and chalcopyrite between 31.43 and 32.4 m depth.

Low level propylitic alteration consisting of local bands of epidote alteration, and selective chloritization and sericitization of mafic phases is present in large sections of the dioritic intrusive rock in the bottom portion of the hole. Trace to 1% volume fine-grained pyrite and rare chalcopyrite accompany the alteration.

Sampling Results

Sample G985232 (29.25 to 29.85 m) tested the semi massive sulphide at the contact between altered cherty sediment. Geochemical analysis reported 1.44 ppm Ag, 27.4 ppm As, 2210 ppm Cu, and 316 ppm Ni. Low levels of Au (7 ppb) are present.

Sample G985233 (31.43 to 32.4 m) was taken of garnet-pyroxene-skarn containing patchy pyrite, pyrrhotite, and chalcopyrite. It contains 2.12 ppm Ag, 37ppm As, 5310 ppm Cu. Au was not detected.

Three contiguous samples G985235 to G985237 were taken of propylitic-altered dioritic rock lying below the marble intrusive contact. These samples contain negligible precious or base metals.

Hole 09-06-G

This was a follow-up hole to 09-06-G. It was drilled from the same collar location, but the azimuth was turned to slightly east of north to test the geology lying more directly under the magnetic anomaly above the Creek Showing.

Green, altered, formerly feldspar-porphyritic intrusive rock partially replaced by garnet-pyroxene skarn was cored just below the casing from 3.66 to 11.34 m depth. Moderately soft chlorite and sericite alteration has affected the feldspar-porphyritic intrusive rock. The very upper interval from 3.66 to 5.0 m of altered intrusive contains ~10% fine-grained pyrite and pyrrhotite in veinlets and patches.

Below 11.34 m to 24.68 m marble was encountered. From 24.68 to 49.65 m the core is dominantly made-up of several varieties of intermediate intrusive and dike rocks. Feldspar-porphyritic intermediate, mafic diabase, and hornblende-feldspar-porphyritic intermediate dikes are present. Both the feldspar-porphyritic and mafic diabase dikes display variable alteration. Green chlorite and sericite alteration affects the former variety and disseminated to patchy or fracture-controlled pyrite and pyrrhotite is present in select members of the latter variety. Garnet-pyroxene-skarn wedges and bands ranging from <1 to 3 m length occur between the dike and intrusive rocks. The skarn is generally barren of magnetite or sulphide mineralization. Some of these skarn intervals likely represent former marble screens.

A zone of garnet-pyroxene-skarn was encountered between 49.65 and 60.6 m. It contained a marble screen but only trace disseminated pyrite. This skarn layer lies above mafic volcanic and intrusive rock cored below 60.6 m. However, no significant magnetite mineralization was encountered.

Below 60.6 m to 67.0 m amphibolitized, formerly feldspar-porphyritic mafic volcanic was cored. The volcanic rock is brecciated and intruded by fingers of a leucocratic, feldspar-rich intrusive phase loosely labeled as tonalite. Below 67.0 m hornblende-diorite is the dominant rock type and is affected by weak propylitic alteration consisting of chlorite and minor epidote. Disseminated fine-grained pyrite in volumes from 1 to 3% is present in the weakly altered dioritic rocks and mafic volcanic rock. One metre-scale interval of garnet-pyroxene-endoskarn occurs at 75.65 to 79.17 m. The skarn is un-mineralized excepting trace quantities of disseminated pyrite.

Sampling Results

Sample G985234 (3.66 to 5.0 m) was taken of altered, sulphide-bearing, intrusive in the very upper part of the hole. It contains 3.83 ppm Ag, 109 ppm As, 5360 ppm Cu, and 340 ppm Ni. Au is anomalous at 10 ppb.

Sample G985238 (13.67 to 13.73 m) was taken of a narrow weathered, band of semi massive magnetite in marble. Pyrite and pyrrhotite occur with the magnetite. Analysis reports 2.05 ppm Ag, 5880 ppm Cu, 212 ppm Ni. Au concentration is 17 ppb.

Three contiguous samples (39.4 to 41.95 m), G985239 to G985241, from a pyritic and pyrrhotite-bearing diabase dike individually contain up to 1.5 ppm Ag, 3780 ppm Cu, and 199 ppm Ni. Au is slightly anomalous at 7 ppb.

A series of contiguous samples (69.25 to 74.3 m), G985242 to G985246, were taken from weakly altered, weakly pyritic dioritic intrusive rock. Au is slightly anomalous in one sample at 6 ppb. No significant Ag or base metal values are present.

Two adjacent samples (76.05 to 79.17 m), G985247 and G985248, are from weakly pyritic garnet-pyroxene-endoskarn. No significant precious or base metal concentrations are present.

Hole 09-07-G

Hole 09-07-G was collared to the immediate west of the Granite mainline logging road. It was drilled north northwest and targeted the potential south and down-dip extension of the Creek Showing. Its orientation also allowed it to intersect any sulphide-rich mineralization paralleling altered dikes as observed on the east bank of the logging road.

Medium-grained, holocrystalline diorite was encountered just below the collar between 3.05 and 6 m. Marble makes-up the bulk of the core between 6 and 98.45 m downward to the contact with dioritic intrusive rock. Narrow wedge of marble located at 6 to 6.23 m between diorite above and a chlorite-epidote altered porphyritic intermediate/mafic dike or sill contains cm-scale bands of magnetite. The dike contains fine pyritic fracture fillings.

Several varieties of intermediate and mafic dike or sill rocks are hosted in the marble-dominated upper portion of the hole. Feldspar-porphyritic intermediate, hornblende-feldspar-porphyritic intermediate, and fine-grained weakly feldspar-porphyritic mafic dikes are present. The porphyritic intermediate dikes are affected by variable degrees of chlorite +/- sericite and also calc-silicate alteration. However, most of the mafic dikes encountered here are relatively unaltered. Minor feldspar-dominated, tonalite (?) fingers were also observed.

Several sub metre to metre-scale intervals of garnet-pyroxene-skarn were cored in the section from 50.5 to 98.45 m. These are barren or contain only trace quantities of disseminated pyrite and/or magnetite.

Below 98.45 m the hole passed into dioritic intrusive rock. Composite intrusive, composed of an intimate mixture of relatively more versus less-mafic diorite phases, was cored below the contact with marble. Minor felsic fingers of quartz-hornblende-diorite are present. Hornblende gabbro is present in the bottom portion of the hole. This appears to be metamorphosed, mafic volcanic given the presence of partially re-crystallized feldspar phenocrysts.

No massive magnetite or significant sulphide mineralization was intersected in this hole.

Sampling Results

Sample G985277 (6.95 to 7.6 m) is of a chlorite-epidote altered, porphyritic mafic or intermediate sill/dike, which contains pyrite with calcite in fracture fillings. Analysis reports 0.31 ppm Ag and 675 ppm Cu.

Samples G985451 and G985452 (61.3 to 64.24 m) are both of garnet-pyroxene skarn. No sulphide or magnetite was noted. Base and precious metal content is negligible.

Samples G985453 and G985454 (64.24 to 67.42 m) are of marble and chlorite, sericite, and silica-altered intermediate dike rock. Local calc-silicate alteration is also present. Traces of fine-grained pyrite were noted. Negligible concentrations of precious and base metals are present.

Sample G985455 (88.25 to 88.97 m) is of weakly calc-silicate-altered intermediate intrusive - may be dike equivalent to hornblende-diorite plutonic rocks. Base and precious metal content is negligible.

Four contiguous samples G985456 to G985459 (88.97 to 95.02 m) taken of garnet-pyroxene-skarn. Minor disseminations of magnetite were noted. No significant concentrations of precious and base metals are present.

Sample G985460 (95.02 to 96.30 m) is of a marble interval with ~1% band-parallel disseminations of magnetite. Base and precious metal content is negligible.

Sample G985461 (96.3 to 97.9 m) was taken from a garnet-pyroxene-skarn zone. Traces of disseminated magnetite and pyrite are present. No significant base or precious metal values are present.

Three contiguous samples G985462 to G985464 are of composite dioritic intrusive rock composed of diorite with bands of a relatively more felsic phase of diorite. Traces of disseminated magnetite and pyrite were observed. One sample of three contains anomalous Au (6ppb), Ag (0.1 ppm), and 154 ppm Cu.

Hole 09-08-G

This hole was also collared from the immediate west side of the Granite mainline logging road about 50 m north northwest of the collar of 09-07-G. Located down slope from the Creek Showing it was drilled north northeastward in an attempt to locate a down-dip extension of the magnetite mineralization.

Over a metre of quartz-hornblende-diorite was cored at the very top of the hole between 7.62 and 8.8 m. Below this, the hole entered an alternating sequence of intermediate to mafic dike or sills in marble to 17.07 m depth. One narrow occurrence of massive magnetite and skarn rich in sulphide was cored between 13.76 and 14.15 m depth. It is located in a faulted section between relatively unaltered fine-grained, feldspar-porphyritic mafic dikes.

Marble is the dominant rock type encountered below 17.07 m to 79.9 m depth. It contains several sub-metre to metre-scale wide feldspar-porphyritic intermediate dikes, which display varying levels of chlorite +/- epidote and calc-silicate alteration.

Several intervals of skarn were intersected. One zone between 61.05 and 62.2 m appears to be largely composed of wollastonite with scapolite. It contained ~10% pyrite and pyrrhotite as bands and infillings. A second wider zone of garnet-pyroxene-skarn was cored between 75.29 and 79.9 m just above the marble to volcanic-intrusive contact. No magnetite or sulphide was observed in this skarn interval.

Below 79.9 m the hole intersected dioritic intrusive rocks. Composite diorite as described previously, hornblende-diorite, and more felsic quartz-hornblende-diorite are present. Minor metamorphosed layers and xenoliths of mafic volcanic rock were also noted. The interval between 87.68 and 107.7 m is weakly to strongly altered by calc-silicates with narrow garnet-pyroxene skarn zones in places. Weak propylitic alteration with traces of disseminated pyrite is also present.

No economically significant magnetite or sulphide mineralization was encountered in the hole.

Sampling Results

Sample G985470 (13.76 to 14.15 m) taken of a massive magnetite band with attendant skarn in a fault zone. The band also contains ~10% pyrite and pyrrhotite-rich sulphide. Analysis reports 2.26 ppm Ag, 4780 ppm Cu, and 24.9% Fe. Anomalous Au (20 ppb) is present.

Sample G985471 (61.05 to 62.22 m) is of a grey to pink wollastonite and scapolite(?) -rich skarn zone. Sulphide, ~10% pyrite and pyrrhotite as bands and infillings, is present. Very low but anomalous concentrations of Au (5 ppb) and Cu (104 ppm) are present.

Sample G985472 (79.9 to 80.19 m) was taken of calc-silicate-altered mafic volcanic or dike (?). Traces of pyrite were noted. It contains 0.36 ppm Ag, 721 ppm Cu, and 451 ppm Ni. Au is present at 26 ppb.

Sample G985473 (80.19 to 81.47 m) is of weakly chloritized and calc-silicate-altered quartz-hornblende-diorite. Trace to 1% disseminated pyrite is present. Negligible base and precious metals were found to be present.

Sample G985474 (87.0 to 87.68 m) is a shoulder sample to skarn below of composite diorite. Weak chloritization and traces of pyrite were noted. Analysis reports that negligible values of base or precious metals are present.

Sample G985475 (87.68 to 88.48 m) is of garnet-pyroxene-skarn with traces of disseminated pyrite. The sample contains negligible base and precious metal concentrations.

Sample G985476 (88.48 to 89.07 m) is of a marble wedge. It contains no base and precious metal values of significance.

Samples G985477 to G985490 (89.07 to 95 m) are 14 contiguous samples taken of variably garnet-pyroxene-skarn-altered quartz-hornblende-diorite intrusive rock. The analyses report insignificant levels of base and precious metals.

Hole 09-09-G

Hole 09-09-G was collared at the same site as 09-08-G. It was drilled northward to make a final attempt at locating economic magnetite or sulphide mineralization along the northwest striking marble-intrusive contact down-slope from the Creek Showing.

Marble is the dominant lithology in the upper portion of the drill hole from 7.62 to 111.55 m. Several varieties of intermediate and mafic dike or sill rocks are hosted in the marble-dominated upper portion of the hole. Feldspar-porphyritic intermediate, hornblende-feldspar-porphyritic intermediate, and fine-grained mafic dikes are present. The porphyritic intermediate dikes are affected by variable degrees of chlorite +/- epidote, minor sericite and quartz, and in places by minor calc-silicate alteration.

Skarn zones are uncommon and tend to be narrow. One weakly developed wollastonite and scapolite (?) skarn zone occurs between 64.61 and 67.92 m and contains minor pyrrhotite and pyrite patches. A narrow garnet-pyroxene-skarn band occurs between 94.49 and 94.9 m. It is barren of magnetite and sulphide. Another narrow, pyrrhotite-rich garnet-pyroxene-skarn band was cored just above the marble-intrusive contact between 111.55 to 111.63 m.

Below 112.76 m the drill hole encountered hornblende-gabbro and then hornblende-diorite. An interval of quartz-hornblende diorite was cored as well. The intrusive rocks were only weakly altered by chlorite +/- epidote. Trace disseminated pyrite accompanies the weak propylitic alteration.

No significant magnetite or sulphide mineralization was intersected in this hole.

Sampling Results

Three contiguous samples G985465 to G985467 (64.61 to 67.92 m) were taken of weakly developed wollastonite-scapolite (?) skarn in marble. Trace to 1% pyrrhotite and pyrite are present in patches. Negligible base or precious metal values are present.

Sample G985469 (77.24 to 78.90 m) is of a calc-silicate and chlorite-epidote-altered porphyritic intermediate dike. Up to 1% patchy and disseminated pyrite is present. Only negligible base or precious metal values were detected.

Sample G985468 (111.55 to 111.63 m) was taken from a narrow, pyrrhotite-rich skarn band near the marble-intrusive contact. It contains 1.8 ppm Ag, and 7270 ppm Cu. Au is anomalous at 53 ppb.

Hole 09-17-G

This hole targeted the north edge of the EM point anomaly at 404755E 538910N, and was drilled toward the northeast to crosscut any potentially northwest striking sulphide-bearing conductors lying parallel to the trend of the folded marble intrusive contact.

Marble was encountered in the upper portion of the hole from 3.66 to 10.32 m. The hole then passed into medium-grained monzodioritic intrusive rock displaying minor pinkish patches after K-feldspar. Intervals of amphibolitized mafic volcanic rock occur within the monzodiorite and represent the remnants of older stratigraphy intruded by later felsic and intermediate intrusive rocks of the Island Plutonic Suite. Garnet-pyroxene-skarn zones are present at the marble intrusive contact and locally within the monzodiorite intrusive.

Marble was again encountered at 97.72 m depth and contains several metre-scale intervals of garnet-pyroxene skarn zones and altered feldspar-porphyritic felsic or intermediate dike rock. A faulted contact between marble and amphibolitized mafic volcanic rock was intersected at 113.04 m depth. A mixture of lithologies was cored from 119.03 m to 131.30 m including repeated intervals of monzodiorite, green, chlorite-epidote-altered mafic dikes, garnet-pyroxene-skarn zones, and a wedge of marble from 129.9 to 131.3 m depth. This section may conceivably have contained more marble but was intruded and replaced by skarn. Skarn-rich intervals in this portion of the hole located between 119.65 and 120.75 m and 122.92 and 124.98 m contain from 2 to 10% magnetite patches and bands. Up to 2% patchy pyrite is also present locally.

A diabase dike is situated between 131.3 and 140.17 m depth and contains a marble screen. Medium-grained monzodiorite intrusive rock was encountered below 140.17 m. Calc-silicate alteration and skarn bands occur locally. Weak propylitic alteration, and local silicification and possibly albitization are also present. Trace disseminated fine-grained pyrite is distributed throughout. Minor sections of intrusive rock such as between 158.95 and 167.3 m are composite in character with early more leucocratic, feldspar-rich phases intruded by later monzodiorite. A zone of skarn surrounding a shear is located between 170.28 and 174.89 m depth. No significant sulphide or magnetite occurs with the skarn.

Below 175.32 m to the end of the hole composite diorite made-up of interbanded relatively more felsic versus more mafic intrusive phases. Diabase dikes and quartz-hornblende diorite occurs in the bottom of the hole.

No significant sulphide-rich, or massive magnetite mineralization was encountered in hole 09-17-G.

Sampling Results

Sample G985523 (42.10 to 43.41 m) was of mafic amphibolite with pyritic fracture fillings. Minor chalcopyrite occurs with the pyrite. It contains slightly anomalous Au at 9 ppb but negligible Ag.

Sample G985524 (119.65 to 120.75 m) is a sample of garnet-pyroxene skarn with ~10% fine-grained magnetite and 1 to 2% patchy pyritic sulphide. Analysis reports 0.27 ppm Ag, 1030 ppm Cu, and 44.7% Fe.

Hole 09-18-G

Hole 09-18-G was collared above and to the east of the Creek Zone and drilled west northwestward, down slope to test the alternate hypothesis that the Creek Zone dips eastward rather than westward (Figure_ *drill hole location map*).

Marble is the dominant lithology cored in this drill hole. It is cream to white in colour and displays variable grain-size ranging from fine to medium-grained. Local sections are coarse-grained. Slightly grayish darker bands (after graphite) may be the vestiges of original bedding.

Various varieties of dike rocks were encountered in the hole. The most common are narrow (<1 to 2 m wide) variably chlorite and calc-silicate-altered, formerly fine-grained, weakly porphyritic intermediate dikes. Select examples are strongly calc-silicate altered and almost wholly replaced by skarn. Other dikes consist of weakly to moderately altered, relatively equigranular dioritic intrusive, likely fingers from the intermediate intrusive rocks of the Island Plutonic Suite lying below the marble. Single examples of leucocratic feldspar-rich, felsic dikes and mafic diabase dikes are also present in the hole.
Four intervals of garnet-pyroxene skarn ranging from 1 to >2 m width were encountered below 74 m depth. These skarn zones appear to have formed in marble but a portion are flanked by altered intermediate dikes. Both the larger skarn intervals just described and the calc-silicate alteration found within and attendant to the altered intermediate dikes is largely barren of sulphide or magnetite. Only, rare to trace disseminated pyrite is present in select examples of skarn and calc-silicate-altered dike rock.

No economic magnetite or sulphide mineralization was intersected. Neither was the marble intrusive contact. Therefore the interpretation of a southwest dipping marble-intrusive contact based on field mapping is likely correct.

Sampling Results

Sample G985674 (73.99 to 76.30 m) was taken of garnet-pyroxene-skarn. Accessory wollastonite and scapolite may be present. Rare disseminated pyrite was noted. Analysis reports negligible precious or base metal content.
Sample G985675 (112.40 to 114.73 m) is of garnet-pyroxene-skarn with rare disseminated pyrite. Negligible precious and base metals are present.

Sample G985676 (119.62 to 120.8 m) was taken of garnet pyroxene skarn. Trace disseminated pyrite is present. Analysis reports negligible precious or base metal content.

Summary of Creek Zone Drilling Results

No down-dip or southward extension of the massive magnetite mineralization found in the Creek Showing was intersected in holes 09-05-G to 09-09-G, or 09-17-G. Hole 09-18-G also failed to intersect massive magnetite, or dioritic intrusive rock. This result indicates that the magnetite layer found in the creek is of limited extent; this is commensurate with the limited 40 by 40 m magnetometer high detected over the showing. However, the garnet pyroxene skarn intersected at the marble-diorite contact (e.g. in 09-05-G) may be the extension of the garnet-pyroxene-skarn observed near the magnetite showing.

The seven holes drilled in the Creek Showing area also failed to intersect any sulphide-rich layers of sufficient grade and/or width that merit follow-up work. The cause of the two EM point anomalies remains uncertain.

The Pope's Nose

General Geology and Drill Targeting

The Pope's Nose is located in the east bank of the Granite Mainline logging road about 1.5 km north of the Reko South Pit A Zone. It consists of a discontinuous lens of massive sulphide and magnetite, up to several metres in thickness. Attitude of the lens, as best can be estimated from its basal contact, is about 125°/50° SW. Shallower contact attitudes are present locally. As presently exposed in a road side trench it is about 17.5 m long and 3 m across, resting on brecciated mafic feldspar-porphyritic volcanic intruded by up to 50% volume of quartz diorite. This basal host rock is exposed on its up-slope side to the northeast in the road bank. The hanging wall rock, formerly above it, has been eroded. Skarn alteration or hornfels with epidote, pyroxene, and minor garnet is present at the zone's base but is narrow (~ 1 m or less). Pyrrhotite is the main sulphide and significant chalcopyrite occurs as infillings and veinlets. Pyrite is also present as included patches in pyrrhotite. Several narrow ~300° fault traces are present about 10 m south of the Pope's Nose and a stronger, recessive fault structure is suspected to be present in proximity to the showing.

Ground-based magnetometer work done in 2009 did not identify any significant magnetic anomalies on strike or laterally with the pyrrhotite mineralization in the existing exposure. These results suggest the Pope's Nose mineralization is discontinuous along strike. Magnetic response over the sulphide-rich showing was also low but nevertheless it was decided to drill one hole to test for a possible down-dip extension.

Hole 09-15-G

One diamond drill hole was collared down slope, to the west of the Granite mainline logging road. It was oriented 046/-45° and drilled to a length of 127.1 m. Collar location is 5389827 N and 404357 E UTM (Figure_ *drill hole location map*).

The core is composed of alternating intervals of metre to >10 metres length of variably amygdular basaltic volcanic rocks – probably of the Karmutsen Formation, and intrusive fingers made-up of quartz-hornblende-diorite and hornblende diorite of the Island Plutonic Suite. Minor porphyritic gabbro and hornblende gabbro was also encountered. The former lithology may represent sub-volcanic basaltic intrusive rock, whilst the latter is likely a mafic member of the Island Plutonic Suite. Dark, mafic, biotite schist is also present in the lower third of the hole. It is moderately foliated and is interpreted to be metamorphosed and strained mafic volcaniclastic.

No sulphide or magnetite mineralization was cored in the hole, which confirms that the mineralization does not extend to depth. No samples of core were taken for assay. The rock in the upper 40 m of the hole is strongly faulted and a slim possibility exists that a down-dip extension of the sulphide mineralization exists but is offset.

The Road Zone or Reko North Pit Zone

General Geology and Drill Targeting

The Road Pit Showing or Reko North Pit Zone is located about 200 m north of the Pope's Nose sulphide showing. The mineralization consists of several small to larger (up to 4 by 7 m) lenses of fine to medium-grained massive magnetite ranging from 0.5 to more than 2 m thick. Locally developed garnet-pyroxene-epidote skarn and hornfels accompanies the massive magnetite lenses.

Surface geologic mapping indicates that the mineralization is located along a 330° oriented faulted contact between massive fine-grained gabbroic rock to the east and mafic volcanic and sedimentary rocks – chert and minor limestone to the west. Quartz dioritic intrusive rock and other feldspar porphyritic dike rocks are also present in the contact area. The strike and dip of individual magnetite lenses is sub-parallel to the faulted contact; dips are moderately to steeply southwestward between 50° and 80° and strike is between ~300° and 340°. However, minor examples of narrow magnetite veins display strike directions that are different from the main structure. Northeast striking, steeply dipping cross faults produce successive dextral offsets of the northwest striking fault/contact zone.

As with the Pope's Nose no significant magnetic anomalies were detected, either across strike or along strike of the Road Pit Showing in a 2009 ground magnetometer survey. It was concluded that the extent of the magnetite mineralization is limited and/or discontinuous, however, one drill hole was attempted in order to test the down-dip continuity of the mineralization.

Hole 09-16-G

This diamond drill hole was collared on the west side of the Granite mainline logging road and drilled under the road toward the northeast. The attitude of the hole is 052/-46° and its total length is 109.73 m. Collar location is 5390056 N and 404327 E UTM (Figure_ *drill hole location map*).

The very upper portion of the hole (to 18.2 m) contains felsic, feldspar-rich intrusive and a length (~ 6.6 m) of non mineralized garnet-pyroxene-skarn (Figure_ *strip log*). From 18.2 to 49 m the core is dominated by pale, weakly banded chert. Minor, thin layers of grey-green, mafic tuffaceous sandstone are present within the chert. Several narrow (<1 m) mafic dikes and one thin layer of non mineralized garnet-pyroxene-skarn were also cored in the chert-rich upper section of the hole. Below 49 m to the end of the hole at 109.73 m mafic volcanic and volcaniclastic rocks are the dominant lithologies. Examples of feldspar-porphyritic and amygdular flow rocks and autoclastic breccia are present. Minor intervals of marble were encountered between 87.67 and 91.39 m. These may represent lenses of limestone caught up within a volcanic-dominated stratigraphy.

No significant sulphide or magnetite mineralization was encountered in the drill hole and no samples of core were taken for assay.

P-12 Anomaly Area

General Geology and Drill Targeting

Four holes were drilled targeting the P-12 magnetic anomaly, which consists of a large airborne magnetometer high located over a prominent east northeast-trending ridge. Geologic mapping indicates a substantial mass of marble forms the northeastern portion of the ridge. The marble is bounded by dioritic intrusive rocks to the southeast along a steeply southwest-dipping contact that transects the ridge top and can be traced into the valleys on either side. Minor sandy beds and laminations occur in the marble. These are steep to sub vertical in attitude and generally dip southwestward, however, local bedding displays northeasterly dips. Several varieties of sill rocks occur parallel and sub parallel to bedding in the marble, including fine-grained to weakly porphyritic intermediate, fine-grained to weakly porphyritic mafic, and fine-grained but more equigranular dioritic ones. These varieties of intrusive rocks are also found as dikes, which cut bedding in the marble locally. Rare aplitic and fine-grained quartz-hornblende-diorite sills and dikes were also observed. Variable intensities of epidote-chlorite and calc-silicate alteration affect the sill and dike rocks. Local metre-scale skarn zones are found along or partially replace sills.

Several steeply-dipping, metre-scale layers of massive magnetite were identified on the ridge top hosted in marble. These zones tend to be sub parallel to bedding and sill rocks. Magnetite was also seen to occur near the marble intrusive contact on the north-facing slope below the ridge crest.

A ground magnetometer survey was performed on flagged lines at higher elevation on the ridge and detected two separate magnetic anomalies, which trend east southeast to southeast. One is located adjacent to the marble intrusive contact and the other lies about 100 to 150 m further northeast. These magnetic anomalies are thought to correspond to two potential magnetite-bearing zones.
Initial drill planning targeted the more northeasterly of the two magnetic anomalies. Proposals to drill near the crest of the ridge top were abandoned due to inadequate road access and drill holes were by necessity located on or just off existing logging roads.

Table _ summarizes the hole locations, lengths, and attitudes of drill holes emplaced in the P-12 anomaly area.

Table . Summary of DDH: P-12 Anomaly Area

DDH	N	E	Elev.	Dip	Azimuth	Length
	M	m	M	deg.	deg.	M
09-11-G	5391153	403193	727	-45	255	420.67
09-12-G	5391153	403193	727	-58	255	121.92
09-13-G	5390834	403031	681	-45	354	326.14
09-14-G	5390782	402992	675	-45	345	414.53

Hole 09-11-G

Hole 09-11-G was collared to the west of both ground magnetic anomalies on the ridge axis and oriented west southwestward (Figure_ *drill hole location map*). Its location was not an ideal choice but was adopted after access to an upper drill site nearer the ridge crest proved impossible.

A green, propylitically-altered, feldspar-porphyritic dike or sill was cored at the top of the hole from 3.05 to 6.33 m, after which the hole passed into weakly banded, locally bedded, medium- to locally coarse-grained, white marble. Marble was the dominant rock-type cored to the end of the hole at 420.67 m.

Numerous sub-metre to metre-scale sills are contained in the marble. These include variably altered fine-grained to weakly feldspar- or hornblende-porphyritic intermediate and fine-grained to weakly feldspar-porphyritic, locally amygdular mafic varieties. Most mafic sills are unaltered or weakly altered, displaying minor bands of epidote, garnet, and/or scapolite rinds at and near their contact with marble. Weak chloritization affects the core of some mafic sills. The intermediate sills tend to stronger more pervasive epidote +/- chlorite alteration and also display calc-silicate-rich bands and rinds at their contacts. Very coarsely re-crystallized calcite is developed in the marble host adjacent to a portion of the sill rocks.

Minor examples of fine-grained, weakly feldspar-hornblende-porphyritic, but more holocrystalline, diabase sills and weakly hornblende-feldspar-porphyritic, holocrystalline diorite sills were also intersected.

Skarn zones occur only locally. Several narrow, up to metre-scale, epidote-diopside-garnet skarn intervals occur within marble between 17.1 to 24.33 m. One at 17.10 to 17.73 m contains ~20% pyrrhotite and lesser pyrite in patches and bands. Sub-metre to metre-scale intervals of epidote, garnet, and diopside-bearing skarn and skarn-altered sill rock were intersected between 79.7 and 95.1 m. One interval of skarn-altered sill (at

83.84 to 84.26 m) contained about 35% chalcopyrite rich sulphide is present in patches, bands and minor veinlets.

With the exception of the intervals noted in the paragraph above no significant magnetite or sulphide-rich intervals were cored in Hole 09-11-G.

Sampling Results

Sample G985501 (17.10 to 17.73 m) is of garnet-pyroxene skarn developed within a mafic sill. It contains ~20% pyrrhotite and lesser pyrite in patches and bands. Analysis reports 7 ppb Au, 0.63 ppm Ag, 45 ppm As, and 3390 ppm Cu.
Sample G985502 (83.84 to 84.26 m) was taken of skarn-altered dike rock with epidote, garnet, pyroxene, and vesuvianite (?). About 35% chalcopyrite rich sulphide is present in patches, bands and minor veinlets. It contains 23 ppb Au, 15 ppm Ag, 497 ppm As, 87400 ppm (~8.7%) Cu, and 877 ppm Zn.

Hole 09-12-G

This hole was drilled from the same collar location and at the same azimuth as 09-11-G. It was drilled at a steeper angle to test the potential down-dip extension of the chalcopyrite-rich skarn interval at 83.84 to 84.26 m in Hole 09-11-G. The rock types encountered in this hole were basically similar to those in the previous hole composed of marble hosting various intermediate and mafic sill rocks. The chalcopyrite-rich skarn was not intersected.

Sampling Results

No samples were taken in this hole.

Hole 09-13-G

This hole was drilled in a northward direction from the Granite 800 logging road and was designed to intersect potential magnetite mineralization lying at depth, beneath the ridge crest and the northeast-trending magnetic anomaly described above (Figure_ *drill hole location map*).

An unaltered diabase dike was encountered at the collar to 9.6 m depth. Banded to patchy semi massive magnetite, located in an interval of strongly chloritized dike rock was cored between 10.75 and 13.2 m depth.

Marble was encountered between 13.2 and 19.5 m. Minor gritty sections occur in the upper part of the interval. A strong fault was intersected at 19.5 to 20.03 m after which the hole passed into medium-grained quartz-hornblende-diorite to 33.8 m depth. Quartz-sericite and weakly chlorite-altered feldspar-rich felsic intrusive, with relatively minor mafic phases, was encountered from 33.8 to 45.17 m. This intrusive rock is texturally and compositionally different from the quartz-hornblende-diorite located above and is interpreted to be an earlier intrusive phase. Examples of aplitic dikes, relatively unaltered weakly porphyritic and amygdular mafic, and green variably epidote-chlorite-altered fine-grained intermediate dikes cut the medium-grained altered intrusive in this section.

An epidote-diopside-garnet-bearing skarn zone, developed in intrusive protolith was intersected between from 45.17 to 50.46 m. It contains minor fingers of quartz-hornblende-diorite intrusive and <1% disseminated to veinlet-hosted pyrite. A combination of altered intermediate dike or sill rocks and semi massive to massive magnetite bands are present between 50.46 and 57.34 m. Up to 8% sulphide consisting of pyrite and pyrrhotite occurs locally as bands and disseminations. Fault planes cut the interval.

A skarn zone was cored between 57.34 and 63.82 m depth. Epidote, diopside, and possibly some wollastonite and scapolite are present. Garnet-rich bands occur in places. Only trace disseminated sulphide was noted.

Below 68.32 m the core is marble dominated to 231.27 m. Various varieties of sub-metre to metre-scale-sills including altered fine-grained to weakly porphyritic intermediate and minor mafic ones cut the marble. Alteration tends to consist of local to pervasive epidote +/- chlorite and localized calc-silicate alteration including garnet, diopside, and others less well identified. Epidote and calc-silicate alteration are often found as rinds at the sill edges as a result of emplacement in the marble host.

An interval of massive to weakly banded, fine-grained, magnetite was cored between 231.27 and 236.07 m. An altered intermediate sill occurs at its upper contact a fault at its lower contact. Up to 5% sulphide composed of pyrite, pyrrhotite, and minor chalcopyrite is present in the magnetite. This zone is located roughly below the ground magnetometer anomaly described previously.

A marble dominated section containing various varieties of sub-metre to metre-scale-sills was intersected between 236.01 and 326.14 m to the end of the hole. The type of sills encountered and alteration styles are generally similar to that described for the section between 68.32 and 231.27 m depth. Minor examples of fine-grained to feldspar-hornblende-porphyritic but more holocrystalline intermediate sills may represent fingers of dioritic plutonic rocks. Minor unaltered fine-grained mafic sills or dikes are also present.

Sampling Results

Samples G985516 and G985517 (10.75 to 12.47 m) are contiguous samples of a strongly chlorite, serpentine-altered section of mafic (?) sill rock. Semi massive magnetite is present as bands and patches. Up to 5% sulphide made-up of pyrrhotite, pyrite, and lesser chalcopyrite occurs in disseminations and bands. Analyses report a maximum of 8 ppb Au, 0.24 ppm Ag, 348 ppm Cu, and 32.7% Fe in either of these two samples.

Sample G985504 (49.0 to 50.62 m) is a shoulder sample to a magnetite-rich section below. It consists of epidote-diopside-bearing, calc-silicate-altered felsic intrusive rock. Pink rhodonite is also present. About 1% disseminated and veinlet-hosted pyrite was noted. It contained negligible precious metals and 337 ppm Cu.

Samples G985505 to G985507 (50.62 to 53.75 m) are three contiguous samples of chlorite, epidote, and amphibole-altered sill rock. Banded, semi massive magnetite is present. Up to 8% sulphide consisting of pyrite and pyrrhotite occurs as bands and disseminations. Negligible precious metals were reported in these three samples. A maximum of 765 ppm Cu and up to 36.4% Fe were reported amongst these three samples.

Sample G985508 (53.75 to 55.2 m) is of an epidote, diopside, and garnet-altered sill. Minor magnetite is present. About 5% combined pyrite and pyrrhotite occurs as bands and disseminations. Analysis reports 202 ppm Cu. Negligible precious metals are present. Sample G985509 (55.2 to 56.5 m) was taken of banded fine-grained magnetite, which contains ~5% pyrite and pyrrhotite in bands and as disseminations. Analysis reports 401 ppm Cu and 46.6% Fe. Negligible precious metals are present.

Sample G985510 (56.5 to 57.34 m) is of epidote, and lesser garnet and chlorite-altered sill rock. Local magnetite infillings and trace pyritic sulphide is present. The sample contains 370 ppm Cu and 19.6% Fe. Precious metal concentrations are insignificant. Sample G985511 (230.53 to 231.27 m) is a shoulder sample of epidote-altered sill rock lying immediately above massive magnetite. No sulphide or magnetite was noted in this interval. Negligible base and precious metals are present.

Samples G985512 to G985514 (231.27 to 236.07) are three contiguous samples of weakly banded fine-grained magnetite, which contains minor chlorite, amphibole, and local carbonate patches and bands. Up to 5% sulphide composed of pyrite, pyrrhotite, and minor chalcopyrite is present. The sulphide is disseminated or occurs in veinlets. Up to 69 ppb Au, 0.47 ppm Ag, 1520 ppm Cu was reported amongst these three samples. Fe ranged between 58.9 and 61.9%.
Sample G985515 is a shoulder sample to the magnetite above sample of a fault. No sulphide of magnetite was noted. Analysis reports 8 ppb Au, negligible Ag, and insignificant base metal concentrations.

Hole 09-14-G

Hole 09-14-G was drilled north northwestward in an effort to follow up the intersection of massive magnetite at depth obtained between 231.27 and 236.07 m in hole 09-13-G (Figure_ *drill hole location map*). Its attitude also allowed it to test the southwestern extension of the intrusive-marble contact and coincident magnetometer anomaly just north and down-dip from where it crosses the Granite 800 logging road.

The upper portion of the hole to 103.6 m depth is dominated by quartz-hornblende-diorite intrusive rock, which is cut by several porphyritic intermediate and mafic dikes. Epidote-rich skarn with scapolite and diopside was intersected between 103.63 and 105.59 m. No sulphide or magnetite was noted in the skarn.

Below 105.59 m to 137.17 m is a section composed of alternating intervals of marble and sill or dike rocks. The intrusive rocks here are composed of several types. Variably epidote +/- chlorite, and locally garnet-diopside-scapolite(?)- altered intermediate sills may reach width in core of up to about 4 m. Relatively less or unaltered fine-grained, variably porphyritic mafic sills tend to be narrower. Also present are more medium grained fingers of quartz-hornblende-diorite. Alteration is composed of localized bands and patches of calc-silicates and epidote +/- chlorite, which affects the sill rocks and marble.

From 137.17 m depth to the end of the hole at 414.53 m marble is the dominant rock type. It is host to numerous sub-metre to metre-scale intermediate and mafic sills, which are similar to those described in holes 09-11-G and 09-13-G. Minor examples of diabase-textured mafic sills and late quartz-feldspar-hornblende dacitic sills or dikes were also noted.

Minor, narrow, barren, epidote-rich skarn intervals were intersected in the lower two thirds of the hole.

Between 234.63 and 296.45 m magnetite mineralization becomes evident. It is localized in cm-scale to up to 1 m wide layers occurring in marble and in larger part adjacent to altered intermediate and relatively unaltered mafic sill rock. Most of the larger layers of magnetite are located in the interval between 277.22 to 296.45 m, however, total magnetite in this section is well below 10% volume. This interval contains numerous intermediate and mafic sills. The mafic sills are generally less altered and may have intruded and split earlier magnetite bands. Two strong faults occur at 278.13 and 288.01 m and this suggests that the magnetite and sills were emplaced along a structural corridor.

Sampling Results

Sample G985518 (234.63 to 235.15 m) is of a section of marble, which hosts cm-scale magnetite bands. Later sulphide composed of pyrrhotite and pyrite occurs in veinlets and as disseminations. Insignificant base and precious metal concentrations were reported.

Sample G985519 (277.22 to 277.56 m) was taken of a marble wedge located between dike rocks, which contains bands of massive magnetite. Calc-silicate alteration is largely absent. Traces of disseminated pyrite were noted. Analysis reports 48.2% Fe, but negligible base and precious metals.

Sample G985520 (282.38 to 282.62 m) is of massive fine-grained magnetite that hosts minor marble patches and traces of disseminated pyrite. The sample contains 9 ppb Au, 0.1 ppm Ag, 51.7% Fe, and negligible base metals.

Sample G985521 (292.32 to 293.48 m) was taken of garnet-rich skarn developed adjacent to and within a mafic dike finger. Patches and fracture-fillings of pyrrhotite, pyrite, and lesser chalcopyrite are present. Total sulphide is about 20% volume. Analysis reports 7 ppb Au, 1.18 ppm Ag, 57 ppm As, and 9670 ppm Cu.

Sample G985522 (295.5 to 296.45 m) is of massive fine-grained magnetite with minor dike screens or fingers. Minor marble inclusions and trace sulphide is also present. It contains 8 ppb Au, 0.16 ppm Ag, 226 ppm Cu, and 58.5% Fe.

Summary of P-12 Anomaly Drilling Results

Holes 09-11-G and 09-12-G failed to intersect any economic magnetite mineralization. The chalcopyrite-rich section at 83.84 to 84.26 m in hole 09-11-G is was not intersected in hole 09-12-G. although it contains good copper grade it is less than 0.5 m wide in core and therefore not of economic value.

Two of the four drill holes, 09-13-G and 09-14-G, intersected a magnetite-bearing horizon at depth. The magnetite occurrence intersected in both holes is accompanied by altered intermediate sills and sectional projections suggest that the magnetite zone in each hole is likely the same and strikes roughly southeast, which is parallel to the northeastern hand magnetometer anomaly described above. However, the magnetite intersected in hole 09-14-G is not continuous in core and diluted by dike rock, and both intersections are relatively narrow (e.g. <5 m wide in core in hole 09-13-G). Also, the magnetite intersected in these two drill holes lies about 250 to 300 m below the ridge crest and is out of reach of surface mining.

Follow-up of the P-12 anomaly can be attempted but should involve drilling of additional holes targeting the down-dip and southeastern extension of the magnetite mapped on the north-facing slope of the ridge. If warranted, this drilling should be from drill pads located to the west of the intrusive marble contact and the holes designed to provide intersections of magnetite at higher elevation.

10.0 CONCLUSIONS AND RECOMMENDATIONS

A combination of 1:5000 and 1:1000 outcrop mapping, and localized, ground-based magnetometer surveys was performed during the first half of the 2009 exploration season. This mapping and geophysical work was part of a focused effort in the exploration for iron skarn-type mineralization on the Pearson Project and served the following purposes.

- To systematically locate, define the extent of, and understand the contact relationships of marble on the property. Most of the magnetite-skarn iron found to date occurs along or in proximity to contacts between marble and felsic or intermediate intrusive rock.
- To identify other potential controls on skarn mineralization such as specific fault structures, or fracture sets, and if there is a genetic link between certain phases of intrusive rock and iron mineralization.
- For drill target evaluation. To define the extent, continuity, and size-potential of existing zones of iron-rich skarn mineralization. This served as the basis for decisions if drilling was warranted, and if so, how many holes at what attitudes were necessary in order to prove a target.

Of the three points cited above, the first and third were generally realized. The size, location of contacts, and contact geometries of major marble bodies with intrusive rocks in the Bugaboo and Granite Areas are now better understood. Also, integration was begun, and will continue, of 1:5000 and more detailed geological mapping with the *Fugro* airborne magnetometer and electromagnetic surveys. This aims at better definition of anomalies potentially related to iron skarn mineralization versus those related to other magnetic or conductive lithologies.

Subsequent drilling in the Granite Area, performed in August and September 2009, was guided by the 1:1000 outcrop mapping and the local, ground-based magnetometer surveys performed in June, July, and early August. In areas with outcrop, geological mapping provided good control and provided structural and geometric information to adequately gauge the size-potential, continuity, and attitude of mineralized targets. Ground-based, local magnetometer work was an excellent complement to the mapping and vital in assessing overburden-dominated areas.

With regard to the second point – of relating skarn mineralization to certain specific fault structures, fractures and/or intrusive phases – more mapping work will be required. In the Granite Area a portion of west-northwest and northwest striking faults and dike rocks contain, or are proximally associated with, magnetite and sulphide-rich mineralization. However, the actual significance of this co-incidence and its applicability, or usefulness, to predictive exploration is yet to be fully worked out. Similarly, the role of various intrusive phases in generating magnetite-rich or sulphide-rich mineralization is still poorly understood. Several intrusive rock types could conceivably have been involved in providing the metals and fluids to generate magnetite ore bodies. Likely candidates range from intermediate dioritic, quartz-dioritic to monzodioritic intrusions. Older hypabyssal, variably porphyritic rocks and mafic volcanic rocks appear to have made good host rocks for magnetite mineralization in places, providing permeable sites via contacts or breccias formed by competency contrast. Potential exists for solving some of these outstanding questions through careful mapping and core logging, combined with detailed documentation of cross cutting relationships, alteration styles, and lithogeochemical work.

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12.0 STATEMENT OF COSTS

Pacific Iron Ore Corp.	**Drilling Cost Statement 2009**	**Pearson Project**	
	Description	Costs	Total Costs
Field Personel			
Tim Norris	$350 per day * 59 days	$20,650.00	
Alexis Eapan	$200 per day * 19 days	$3,800.00	
	$250 per day * 22 days	$5,500.00	
Jeff Laroque	$300 per day * 49 days	$14,700.00	$44,650.00
Consultant			
Port San Juan	$250 per day * approx 9 days	$2,340.00	
David Seymour	$650 per day * approx 2 days	$1,431.62	
Gary Payie	$575 per day * approx 2 days	$1,027.50	
Chris Sebert	$450 per day * approx 16 days	$7,526.25	
			$12,325.37
Food & Accomodation			
	Meals (approx. $85 per day*216 man days)	$18,386.00	
	Accomodations (approx. $140 per day * 338 man days)	$47,374.31	
Vechicle Rentals			
Port San Juan		$675.00	
			$675.00
Equipment and Supplies			
Lower Island - excavator rental		$18,588.16	
Wayne Smith Excavating		$4,420.00	
B&D Lift Truck		$1,391.00	
Misc.		$0.00	
Travel - Fuel		$1,849.12	
			$26,248.28
Laboratory Analysis			
ALS Chemex	sample type: drill core		$24,677.39
Contract Jobs* - unit costs	drilling		$521,794.00
Report preparation			$5000
Total Costs			$745,780.35

13.0 STATEMENTS OF QUALIFICATIONS

I, Christopher Sebert, residing at 19616-80th Ave, Langley, British Columbia declare:

1) I am a registered Geological Engineer (License No. 21088) in the province of British Columbia.

2) I hold a Bachelors and Masters degree in Geological Engineering (Mineral Exploration) obtained at the University of British Columbia in 1987 and 1998 respectively.

3) I have worked in the mining industry as an exploration and mine geologist for 23 years.

4) I am an independent geological contractor and hold no stock options, or shares of Pacific Iron Ore Corporation.

Dated this 20th day of May 2010.

____

Christopher Sebert

TIMOTHY NORRIS
381 Keith Road East
North Vancouver B.C. V7L 1V8
Cell: 604-351-8255

I, Timothy Norris, am a geologist employed by Pacific Iron Ore Corporation residing in the city of North Vancouver, British Columbia and do hereby certify that:

1. I graduated in 2008 with a Bachelor of Science degree in Earth and Ocean Sciences from the University of British Columbia, Vancouver, British Columbia.

2. I have worked as a Geologist in British Columbia since my graduation in May 2008, being a contract employee of Pacific Iron Ore Corporation.

3. I had oversight over significant parts of the drill program described herein.

4. I have a direct interest in Pacific Iron Ore and its claims that are the subject of this report through an option agreement for shares in Pacific Iron Ore Corporation.

5. This report is also based upon an examination of all available company and government reports pertinent to the subject property.

Dated this 20th day of May 2010.

____

Timothy Norris

GARRY PAYIE
80 Regina Avenue, Victoria, British Columbia V8Z 1J1
Tel: 250.479.2299 Cell: 250.891.0983
Email: gpayie@hotmail.com

I, Garry Payie, am a self-employed Professional Geoscientist residing in the city of Victoria, British Columbia and do hereby certify that:

1. I graduated with a Bachelor of Science degree in Geological Sciences from the University of British Columbia, Vancouver, British Columbia in 1983.
2. I am registered as a Professional Geoscientist with the Association of Professional Engineers and Geoscientists of the Province of British Columbia.
3. I have worked as a geologist in British Columbia for twenty-five years since my graduation in 1983 to present, having been employed by the BC Geological Survey Branch and several junior to senior resource companies as both a contract employee and as a consultant.
4. I maintain no interest in Pacific Iron Ore or its claims that are the subject of this report.
5. In 2009, my involvement in the Pearson projected was limited to several property visits and inspections and the compilation of this report which involved data review.

Dated this 20th day of May 2010.

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Garry Payie, P.Geo.

APPENDIX A

TENURE EVENT DATA

APPENDIX B

PEARSON PROJECT BEDROCK GEOLOGY MAP, 1:20 000 SCALE

APPENDIX C

GEOLOGICAL MAP OF THE GRANITE AREA, 1:2000 SCALE

APPENDIX D

SAMPLE LOCATIONS MAP

APPENDIX E

ANALYTICAL CERTIFICATES

APPENDIX F

MAGNETOMETER SURVEY

MAPS AND DATA