

# Nelson Bay River (EL 41/2004) 2010 Resource Drilling Report



For Shree Minerals Ltd.

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October 2010

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## 1.0 Summary

Shree Minerals Ltd. Contracted Comesky Drilling to undertake a diamond drilling program at Nelson Bay River (EL41/2004), aiming to upgrade the existing inferred magnetite resource to indicated resource category and to define potential hematite direct shipping ore (DSO). Work commenced on 10<sup>th</sup> February 2010 and was completed on 16<sup>th</sup> May 2010.

A total of 8 drill holes (including an extension of the previously drilled NBR005) for 820m were completed. Drilling initially focused upon defining grid north (NW) extension of the magnetite resource. This was successful, with drill hole NBR017 intersecting magnetite bearing skarn of lesser width than anticipated. Infill drilling of the magnetite resource followed with a successful extension of the previously drilled NBR005, which previously stopped short, and included further holes NBR018 to 21. NBR018 was a redrill of N401, largely for metallurgical purposes. Holes NBR019, 20, 22 and 23 targeted the near surface gossanous hematite potential, both within the main magnetite zone and extended south to 9300 mN.

The Nelson Bay River Prospect is defined in part by a regionally significant aeromagnetic high. The known magnetite resource corresponds to the central southern part of the strong northern portion of the anomaly, with strong magnetics extending a further 700m north west of the current drilling. Extending south east is an attenuated magnetic extension with a stronger zone in the vicinity of 8200 mN targeted by the final hole of the program; NBR023. Drill hole NBR023 intersected a weakly disseminated magnetite-pyrite mineralised, strongly faulted amphibole skarn.

The Nelson Bay River Prospect was ground magnetic surveyed over a two days period (29<sup>th</sup> and 30<sup>th</sup> April 2010). The ground magnetic survey was undertaken over all accessible / existing tracks, resulting in better determination of the magnetic distribution and character of known magnetite mineralisation at the Nelson Bay River Prospect.

Additionally, compilation of previous and recent drilling data and was undertaken.

A significant upgrading of the access track was undertaken.

## 2.0 Introduction

Exploration at the Nelson Bay River Iron Prospect by Shree Minerals Limited during 2010 targeted both magnetite and hematite – goethite mineralisation. Key aims were to test strike potential to the northwest, as well as infill the known magnetite resource and further identify and delineate the near surface goethitic-hematite; Direct Shipping Ore (DSO) resource potential. The company plans to define and extract DSO for export in the near future. Further drilling is planned to commence in mid January 2011. This program is aimed to address prospective areas for expansion, particularly through investigation of the aeromagnetic anomaly to the west (Western Anomaly) of the known Nelson Bay River magnetic anomaly.

This report details exploration work undertaken between the 10<sup>th</sup> February and 16<sup>th</sup> March, 2010. Work principally entailed 820 m drilling and a ground magnetic survey. Field workers were accommodated at Arthur River within ~30 minutes drive each way, to access the site.

The geology, structure, mineralisation and ground magnetics are discussed along with notes specific to the sections with holes drilled. Both the report and the digital data appended are in a format appropriate for attachment as appendices to the 2011 annual report to Mineral Resources Tasmania.

## 3.0 Location, Tenure, Access and Land Use

EL41/2004 (Nelson Bay River) is located in the north west of Tasmania, near Arthur River, some 70 km south west of Smithton (Figure 1). The tenement covering 50 km<sup>2</sup> was granted on 1<sup>st</sup> March 2005.

The area is accessible via unsealed roads and numerous all-weather Forestry roads with a 4-wheel drive track over the final portion.

Access to the Exploration Licence is from either Smithton to the Kanunnah Bridge then Rebecca Link Road (from the north east) or from Arthur River mouth and township south to Couta Rocks then east along the Rebecca Link Road then (from both directions) to the junction with the (Forestry service) Wuthering Heights road into the eucalypt forest plantation turning left at spur road 10 until its end.



Figure 1: Location of Nelson Bay River, EL41/2004

## 4.0 Geology

The geology of the Nelson Bay Prospect comprises skarn related mineralisation within a generally  $320^{\circ}$  striking and  $-70^{\circ}$  SW dipping fault zone, crosscutting Precambrian aged siltstone and sandstones. Quartz veining and sparse late ill-defined feldspar phyric intrusives are evident on faults. Primary igneous textures are not common, with alteration largely obscuring these.

Laminar bedded grey and cream coloured siltstone to fine grained sandstone is the most abundant lithology within the prospect vicinity. Mostly massive to thin bedded fine to locally medium grained sandstone is volumetrically less abundant. Pervasive silicification of the sandstone units to varying degrees is common. Bedding measurements from orientated core and outcrop are in agreement, highlighting a general strike of  $\sim 135^{\circ}/-60^{\circ}$  E. Bedding is typically relatively uniform in orientation along hole traces, but some variability possibly reflects the influence of weak folding and / or

faulting. For instance, the observed distribution of orientated bedding and core axis angles from NBR017 (Table 1) weakly suggests that the principal mineralisation hosting fault may be localised on the eastern limb of an anticline (Figure 3). Further, bedding in the siltstones appears to steepen across the main faulted magnetite host zone on section 10300 mN, where bedding changes from  $\sim 50^\circ$  NE near surface to  $\sim 70^\circ$  at depth beneath the fault.

Unusual kaki / light brown coloured, variably (weak /moderate to phenocryst crowded) feldspar phyric dykes recognised in drill holes NBR005, 17, 19 and 21 are uncommon. Feldspar phenocryst form is locally euhedral and often as resorbed appearing ovoids to 4mm diameter, in a light brown dirty, very fine grained to aphanitic groundmass. Contacts while often broken are locally sharp with minor intrusive penetration of wall rock fractures (e.g. NBR021 at 70.25 m). There is no apparent wallrock alteration, although disseminated pyrite reaches 3% within the intrusive. An odd potassic intrusive rock mapped by Mineral Resources Tasmania  $\sim 1$ km to the south of the Nelson Bay River Prospect (Ralph Bottrill pers. comm.) is likely similar to the feldspar phyric intrusive reported above.

Weathered / leached undifferentiated rock, unlike the common sandstones, is sometimes seen in little broken form within fault zones and may be a weathered equivalent of feldspar phyric intrusives seen elsewhere.

## 4.1 Structure

Three (or more) principal fault orientations are likely present at the Nelson Bay River Prospect. The main orientation is that of the fault hosted magnetite mineralisation ( $\sim 320^\circ/-70^\circ$ SW), a second  $\sim$ E-W aligned (dextral) fault set possibly dips moderately ( $\sim 50$  to  $-60^\circ$ ) north and a final N-S orientation is reflected as a magnetic lineament of minimal offset in the regional aeromagnetics. These structural orientations require further evaluation with respect to the regional tectonic history.

The principal fault orientation is commonly represented as semi-consolidated brittle fault breccia bearing clay matrix. The strongest faulting of this type is evident in the proximal hanging wall to the magnetite between sections 10000 and 10300 mN and also on section 9300 mN. Lesser faults occur sub-parallel to this main fault zone. The fault orientation is approximately  $320^\circ$  strike and  $-70^\circ$  W dip, with the dip angle varying slightly along strike through the magnetite zone from  $-60^\circ$  to  $-70^\circ$  W. These faults are particularly prevalent at skarn and magnetite mineralisation margins. Foliation and weak magnetite banding developed sub-parallel to faulting in amphibole-magnetite skarn, as well as commonly faulted skarn margins suggest that mineralisation was initially ductile(+/-brittle) fault hosted with quartz veining and semi consolidated fault breccia and clays reflecting a progressively more brittle fault environment with time.

The  $\sim$ E-W aligned fault orientation is weakly defined, but likely occurs as a number of ill-defined sub-parallel minor dextral dislocations spaced along the length of the mineralisation. Strong support comes from observed brittle faulting sub-parallel to the long core axis in NBR019 on section 9700 mN. Here, mineralisation was largely missed in NBR011, whilst a good hematite intersection was enigmatically returned from NBR019 drilled beneath. This is interpreted as an E-W aligned dextral fault of minimal offset (<10m). This observation also helps explain the apparent NBR017 dextral mineralisation offset on 10300 mN. Incised creek topography extending on W and NE orientations from this area (and elsewhere in the nearby region) likely reflects structure orientations. Supporting

evidence from NBR017 is a 280<sup>0</sup>/-53<sup>0</sup> W slickensided fracture measured from orientated core at 236.1 m, as well as pyrite-chlorite-silica veining orientated 275<sup>0</sup>/-50<sup>0</sup> at 236.75m (see Table 1); which possibly define this fault orientation.

Regionally, a significant N-S lineament in the aeromagnetics intersects the Nelson Bay River mineralised fault trend in a ground magnetic attenuated zone between 8750 and 9100 mN. This fault is interpreted to be of little offset, since the main magnetite trend is apparently not offset.

Hole_ID	Depth (m)	Core Angle (LCA)	Comments	Azimuth (True)	Dip
NBR017	146.4	15	thin bedded facing downhole to NE	135	-60
NBR017	236.3	35	bedding	120	-84
NBR017	236.65	30	bedding	113	-75
NBR017	257.2	35	bedding	115	-80
NBR017	146.3	25	fracture	25	-35
NBR017	146.55	75	fracture	350	-50
NBR017	236.1	85	fracture	315	-45
NBR017	236.91	60	fracture with weak slickensides	280	-53
NBR017	257.1	65	fracture	285	-47
NBR017	257.5	80	fracture	315	-38
NBR017	236.8	40	Soft sediment deformation? Fault	175	-60
NBR017	236.2	55	sil-ch-py vein 1mm	215	-40
NBR017	236.45	20	sil-ch-py vein 1mm	175	-35
NBR017	236.75	45	py-ch-sil vein	275	-50

Table 1: Structural readings from NBR017 orientated drill core.

## 4.2 Mineralisation and Alteration

A suggested structural, mineralisation and alteration paragenetic sequence, reflecting progressive depressurisation with time is:-

- Fault hosted chlorite (pyroxene)-garnet skarn with pervasive silica-chlorite grading to distal silica (+/-disseminated pyrite) margins / wall rock alteration; garnet-chlorite possibly associated with disseminated to locally near semi-massive cpy-py
- Overprinting amphibole-magnetite skarn; ductile-brittle shearing
- Late (sparse) semi-pervasive to veined, often grey semi-translucent silica-sulphide veining (+/-Cpy)
- Late quartz veining (+/-pyrite) and associated brittle faulting
- Further relatively recent brittle faulting

Two principal skarn types are evident; being green chlorite-pyroxene+/-garnet and amphibole-magnetite dominated. Overall, wall rock alteration is stronger in the central core magnetite bearing portion of the resource (e.g. 10000 mN; in NBR018). However, wallrock alteration is typically not markedly strong in the vicinity of skarn mineralisation. Exceptions are zones of strong pervasive silica, often exhibiting strongly etched pits after coarse grained disseminated pyrite. These silica zones are commonly in the western hanging wall, near the strongest of the magnetite mineralisation (10000 mN).

The form of the Magnetite Zone varies from moderately SW dipping on 10000 mN to steeper dipping to the north and south (-67° SW on 9800 mN, -75° SW on 9900 mN, -60° to -70° at depth 10000 mN, -80° on 10200 mN). The magnetite body appears to comprise one main body within the central and southern portion of the prospect. Mineralisation in the central magnetite zone (i.e. 10000 mN) possibly represents two coalesced zones, splitting to the immediate north (10100 mN) and south (9900 mN) to lesser mineralised structures. Note that NBR004 likely stopped short of a deeper thin magnetite zone drilled in NBR008. Subsidiary parallel fault hosted skarn and low tenor magnetite could potentially be stronger mineralised at depth.

Skarn bearing chalcopyrite lies footwall to the main magnetite zone. On 10000 mN, the skarn can be correlated between NBR017, 021 and 001, and whilst chalcopyrite is not mentioned down dip in NBR001, analysis returns 0.21% Cu from 234.3 to 235 m (Newnham, 2000). This zone is evident but weaker in NBR005, located 100m south on 9900 mN. The footwall skarns appear to pinch and swell, locally being faulted out. Notably, in NBR018 chalcopyrite reaches 25% over a 5cm interval from 91.9 m, within an ~1 m garnet-chlorite skarn interval bearing <1% disseminated chalcopyrite, 5% pyrite, 0.5% arsenopyrite and weak quartz-chalcopyrite veining.

Chlorite – pyroxene skarn intensity often appears gradational; being effectively texturally destructive at its strongest but leaving relict sedimentary textures (principally laminar bedding) at its margins/where less intense. Skarn is typically fault hosted with broken margins and in some instances (e.g. in NBR018) replaces relict laminar bedded zones, which are locally contorted and at irregular orientation. Commonly pyrite – chalcopyrite disseminated mineralisation is evident at the margins of the strongest garnet skarn. The primary accessory mineral is chlorite after pyroxene(?), with lesser garnet.

Amphibole dominated skarn is commonly associated with magnetite bearing zones, but little sulphide accompanies this phase. An exception is at the southern end of the grid (8200 mN), where NBR023 drills a significant fault that is host to amphibole-silica-magnetite-hematite-pyrite mineralisation. This represents a more sulphide rich zone relative to further north, likely being more distal to the strongest magnetite development. The amphibole-magnetite skarn generation appears to have been emplaced later than the chlorite- pyroxene skarn, commonly exhibiting straight sharp contacts with the later, but tending to semi-pervasive crosscutting vein form in some instances (eg. NBR005A). In one instance (NBR021; 132.6 to 139.95 m) a strongly broken and faulted zone locally displays fluidised breccias displayed as brown amphibole matrix separating / intruding angular pyroxene dominated clasts. Notably, magnetite is uncommon in chlorite - pyroxene skarn and magnetite-amphibole banding crosscutting this skarn type in NBR018 (72.15 to 73.38 m) supports its later introduction. Minor asbestos-like amphibole(?) is seen in NBR021 in the amphibole rich skarn and radiating fibrous amphibole produces a pseudo coherent intrusive texture locally.

A common theme is to see an increase in skarn intensity immediately adjacent to faults. Silica – chlorite pervasive alteration extends gradationally from the some skarn margins. Pervasive silica – chlorite (e.g. NBR018 32.35 to 36.6 m) is texturally destructive, but noted to crosscut silicified laminar beds within siltstone. It appears that pervasive silica alteration maybe first as zoned alteration ahead of / followed by the silica – chlorite prograde alteration extending away from skarn. Pervasive silica-(pyrite) alteration in the hangingwall on 10000 mN (e.g. 0 to ~40 m in NBR021) is extensively and locally strongly pitted/etched. The latter being relict after disseminated pyrite (+/- chlorite?) seem in less strongly etched examples. Notably interbedded siltstone accepts little silicification, the latter being progressively stronger with increased grain size. Minor chlorite and disseminated pyrite is evident in the darker (grey) siltstone interbeds.

Silica – sulphide veining overprints skarn. Examples include diffuse edged silica pyrite +/- chlorite veining crosscutting skarn in NBR017 (@193.1 m) and quartz – chalcopyrite veining similarly overprinting skarn in NBR018 (~92.3 m). Further, silica-pyrite veining is noted to overprint an earlier shear fabric in NBR021, suggesting its formation is later than the amphibole-magnetite skarn there. An interesting pyrite occurrence in NBR014 @ 23.85 m is a pyritic fault breccia of 5cm width with semi-massive pyrite injected along fractures in the wall rock. Fault fragments suggest this high sulphur fugacity fluid was later than garnet skarn.

Milky Devonian quartz veining is commonly brecciated on the main fault trend. Veining forms a (30 m+?) zone in the 10100 mN immediate hanging wall and appears to diverges from the main fault trend in the 10000 mN hanging wall; reflecting relative extension in a structural (and magnetite) foci? Notably strongest pervasive silica-pyrite alteration is most widespread in this vicinity also.

Several zones of near pure white talc are noted within the intervals 53.2 to 57.6 m in NBR008, 88.6 to 89.5 m in NBR017 and an 11 cm zone @ ~118 m in NBR021. A further isolated occurrence in the latter hole is red (Cinibar-like) mineral accompanying drusy quartz lined veining.

## 5.0 Work Conducted

### 5.1 Drilling

Drilling contractor Comesky commenced mobilisation and setup on the 4<sup>th</sup> February, 2010. Equipment was transported by semi-trailer to a large clearing within several kilometres of the drill sites. Subsequently a ~3tonne crawler dumper carried gear to site, whilst dragging the drill rig base and power pack. Most rig moves were assisted by an excavator. The drill rig utilised was an E30P, capable of HQ to ~300m.

A total of 8 drill holes (including an extension of the previously drilled NBR005) for 820 m was drilled (Table 2 & Figure 2). Drilling initially focused upon defining) extension of the magnetite resource. This was successful, with NBR017 intersecting magnetite bearing skarn of lesser width than the main magnetite zone. Infill drilling of the magnetite resource followed with an extension of the previously drilled drill hole NBR005, which stopped short of the projected magnetite zone, and included further holes NBR018 to 21. NBR018 was a redrill of drill hole N401. Holes NBR019, 20 and 22 targeted the

near surface goethitic-hematite potential above magnetite zone. Drill hole NBR023 tested the Nelson Bay River magnetic anomaly's southern extension at 9300 mN.

Hole_ID	Easting (GDA94)	Northing (GDA94)	RL (m)	Azimuth (True N)	Dip	Depth (m)	Date Commenced	Date Completed
NBR017	310096.3	5442497	77	50	-45	260	10/02/2010	3/03/2010
NBR018	310372.6	5442342	70	50	-45	110.2	9/03/2010	16/03/2010
NBR005 Re- entry	310352.4	5442215	82	74.35	-45	153.55 to 211	18/06/2006	27/03/2010
NBR019	310548.9	5442074	83	50	-45	50.1	30/03/2010	2/04/2010
NBR020	310345.2	5442455	75	50	-45	60	6/04/2010	9/04/2010
NBR021	310300.2	5442289	80	50	-45	188	11/04/2010	24/04/2010
NBR022	310699.3	5441719	99	50	-45	55	28/04/2010	4/05/2010
NBR023	311337.2	5440844	109	50	-45	37.3	10/05/2010	16/05/2010

Table 2: Drilling Summary for 2010

### 5.1.1 Logging

Drill logs for the NBR005A re-entry and NBR017 to 23 are appended in Excel spreadsheet format, as well as within drilling compilation text files. Drill core photos are appended in jpeg format.

### 5.1.2 Sampling

Two drill core sample lots (134 samples each) were collected; being quarter core for XRF analysis determinations (reported herein) and replicated half core with samples retained for "Bulk" compositing for DTR work following the initial results. Select previously unsampled intervals were sampled from drill holes NBR003 and 7. XRF analysis was undertaken at SGS (Malaga, Western Australia); see analysis appended. Weighted averages for significant intersections are shown in Table 3.

### 5.1.3 Bulk Density

Specific gravity determinations were undertaken for all samples, as well as numerous previous drill intersections (No. = 195; see digital data appended). Both mass / volume and water displacement methods were used.

### 5.1.4 Magnetic Susceptibility

A total of 2468 magnetic susceptibility readings was recorded from both new and older core. Readings were taken with an Exploranium Kappameter KT-9 Magnetic Susceptibility Meter. The meter was fitted with a protruding pin for point analysis, enabling readings on quartered and fragmented core. Readings with the pin were cross-checked with readings from the main disk (on larger core) and found to be comparable. Readings were taken every 5cm within strongly mineralised intervals and every 20cm within less intense zones. A scattering of readings were taken outside mineralised intervals for comparison. Over range readings were denoted as >999 (See appended digital data).

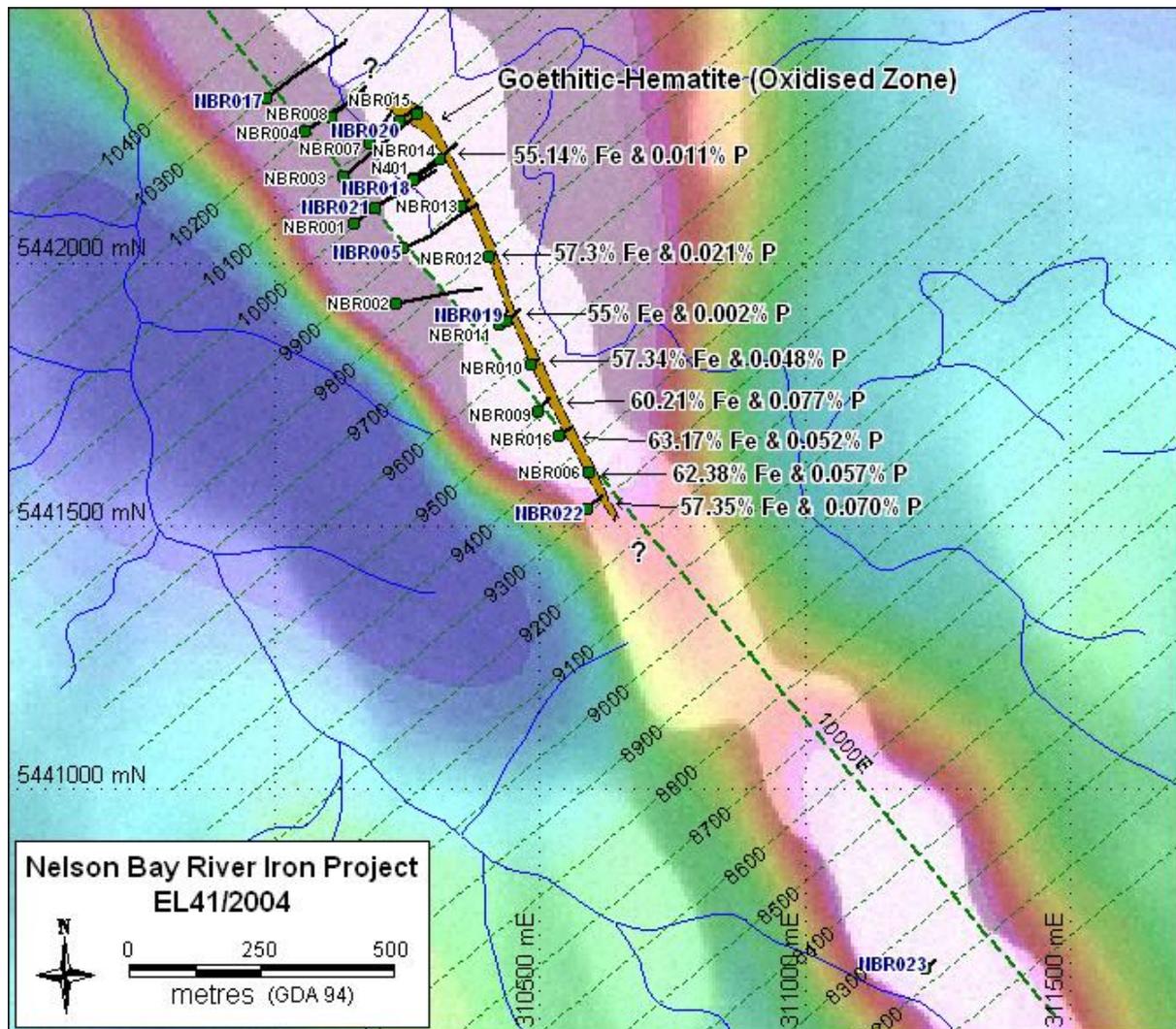


Figure 2: Drill Collar Plan over aeromagnetics for the Nelson Bay River Prospect (EL41/2004); 2010 drill holes are highlighted in blue.

Hole ID	From (m)	To (m)	Interval (m)	Fe %	P ppm	S ppm	Mn %	SiO2 %	Al2O3 %	MgO %	CaO %	K2O %	Na2O %	TiO2 %	LOI %	Recovery %	Ore Type
NBR003	188.75	192.35	3.60	18.25	540	1618	2.72	34.96	5.07	2.26	1.58	0.64	0.04	0.21	3.08		Magnetite
NBR007	93.00	94.90	1.90	34.20	55	7092	2.27	40.89	1.40	4.10	0.26	0.14	0.07	0.03	1.20	95.00	Magnetite
NBR017	242.10	245.47	3.37	28.53	254	7785	3.52	35.37	7.09	3.61	1.88	0.36	0.02	0.27	5.51	100.00	Magnetite
Incl.	243.00	244.90	1.90	34.35	185	12349	1.58	32.61	3.67	4.31	1.39	0.19	0.02	0.18	5.82	100.00	Magnetite
NBR018	51.60	57.00	5.40	29.42	172	284	3.22	30.41	8.18	2.27	0.45	0.11	0.01	0.36	11.75	86.17	Magnetite
Incl.	53.00	55.10	2.10	40.61	276	121	3.20	17.79	0.20	0.83	0.19	0.01	0.01	0.02	18.51	100.00	Magnetite
NBR018	60.95	77.45	16.50	40.43	138	1204	2.50	29.50	2.64	4.59	0.24	0.08	0.04	0.13	1.51	100.00	Magnetite
Incl.	60.95	76.85	15.90	41.20	108	1238	2.27	29.36	2.18	4.66	0.18	0.08	0.04	0.10	1.36	100.00	Magnetite
NBR005A	158.79	168.14	9.35	36.25	174	13459	2.47	25.84	3.62	2.88	0.33	0.29	0.02	0.16	11.57	89.01	Magnetite
Incl.	163.26	168.14	4.88	46.73	119	9532	1.62	19.62	0.14	2.34	0.18	0.02	0.02	0.01	8.74	93.81	Magnetite
NBR019	14.70	25.90	11.20	51.86	275	149	0.03	20.45	0.28	0.01	0.02	0.01	0.01	0.01	5.04	96.88	Hematite
NBR020	7.65	15.60	7.95	36.44	197	1466	0.51	30.23	5.19	0.31	0.03	0.09	0.02	0.22	4.59	70.28	Hematite
Incl.	8.40	12.10	3.70	44.49	222	441	0.28	26.34	4.70	0.55	0.02	0.01	0.02	0.20	3.93	64.19	Hematite
NBR020	25.85	29.75	3.90	29.11	511	1471	1.19	39.36	9.37	0.66	0.31	0.26	0.01	0.35	6.15	79.12	Hematite
NBR021	132.85	140.05	7.20	27.64	182	8576	2.45	25.16	9.59	2.87	0.45	0.23	0.02	0.37	12.15	73.13	Magnetite
NBR021	144.40	167.00	22.60	43.03	166	6015	2.05	24.89	1.23	3.41	0.24	0.06	0.05	0.07	5.65	99.00	Magnetite
NBR022	31.15	42.70	11.55	57.35	718	111	0.16	7.95	1.81	0.05	0.01	0.26	0.01	0.06	7.56	58.44	Hematite
Incl.	31.15	37.10	5.95	60.91	840	113	0.21	3.28	0.45	0.03	0.01	0.01	0.01	0.01	8.79	100.00	Hematite
NBR023	9.30	18.90	9.60	31.88	130	9004	2.28	9.51	0.49	12.87	0.19	0.06	0.01	0.02	28.29	48.70	Magnetite

Table 3: Significant drill hole intersections from 2010 drilling and sampling.

## 5.2 Cross sections

Simplified ore body cross sections from the Nelson Bay River Iron Prospect are presented below.

### 5.2.1 10300 mN

NBR017 hole targeted the NW extension of the Nelson Bay River magnetite mineralisation. Two narrow skarn (about 3.37 m @ 28.5% Fe) zones were intersected (Figure 3). These zones were located significantly further down hole than expected. The apparent offset of the mineralisation can be explained by a fault aligned W or NE, extending along a well defined gully immediately south east of drill section 10300 mN. The distribution of these intersections suggests that the mineralisation is dextrally offset from the main magnetite mineralisation trend. Another possibility is that the main magnetite zone pinches out towards drill hole NBR017's upper zone; possibly "en echelon" with footwall magnetite zone intersected deeper in the hole.

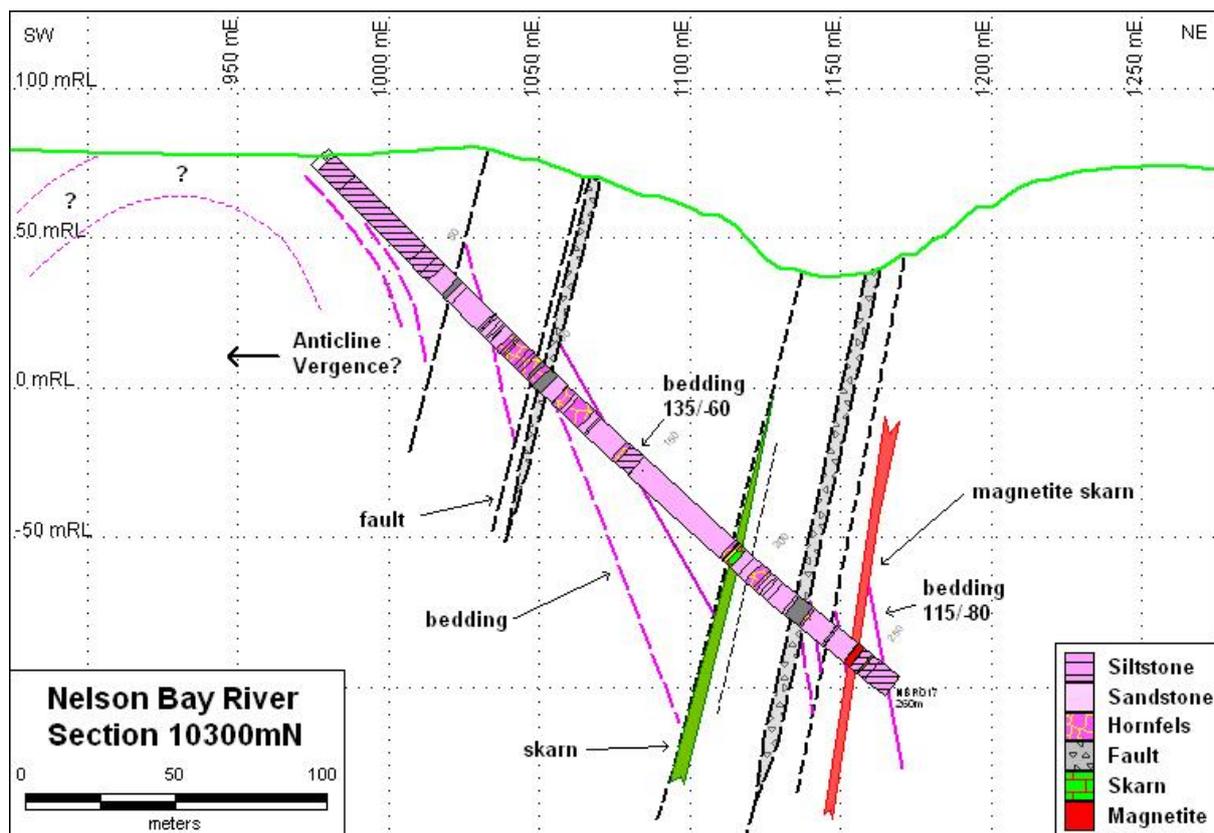


Figure 3: Drill Section 10300 mN showing basic geology and interpretation.

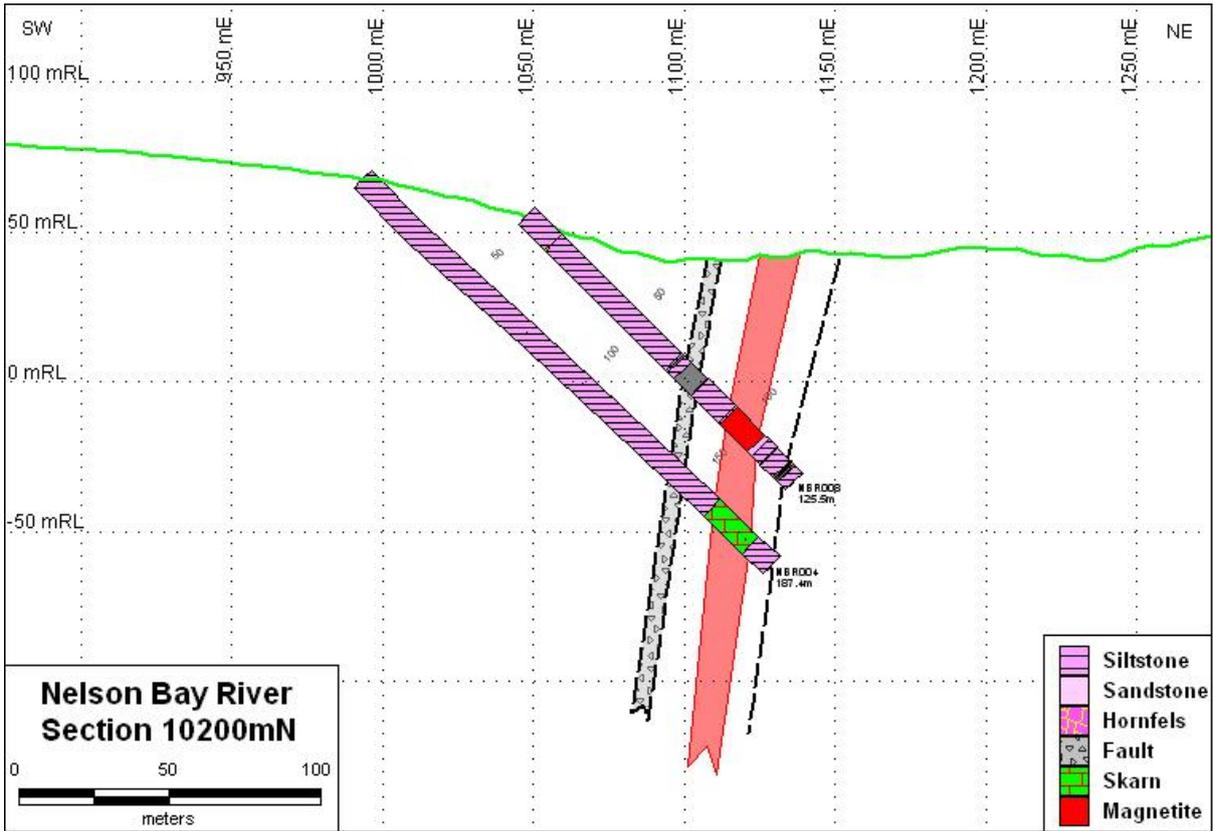


Figure 4: Drill Section 10200 mN showing basic geology and interpretation.

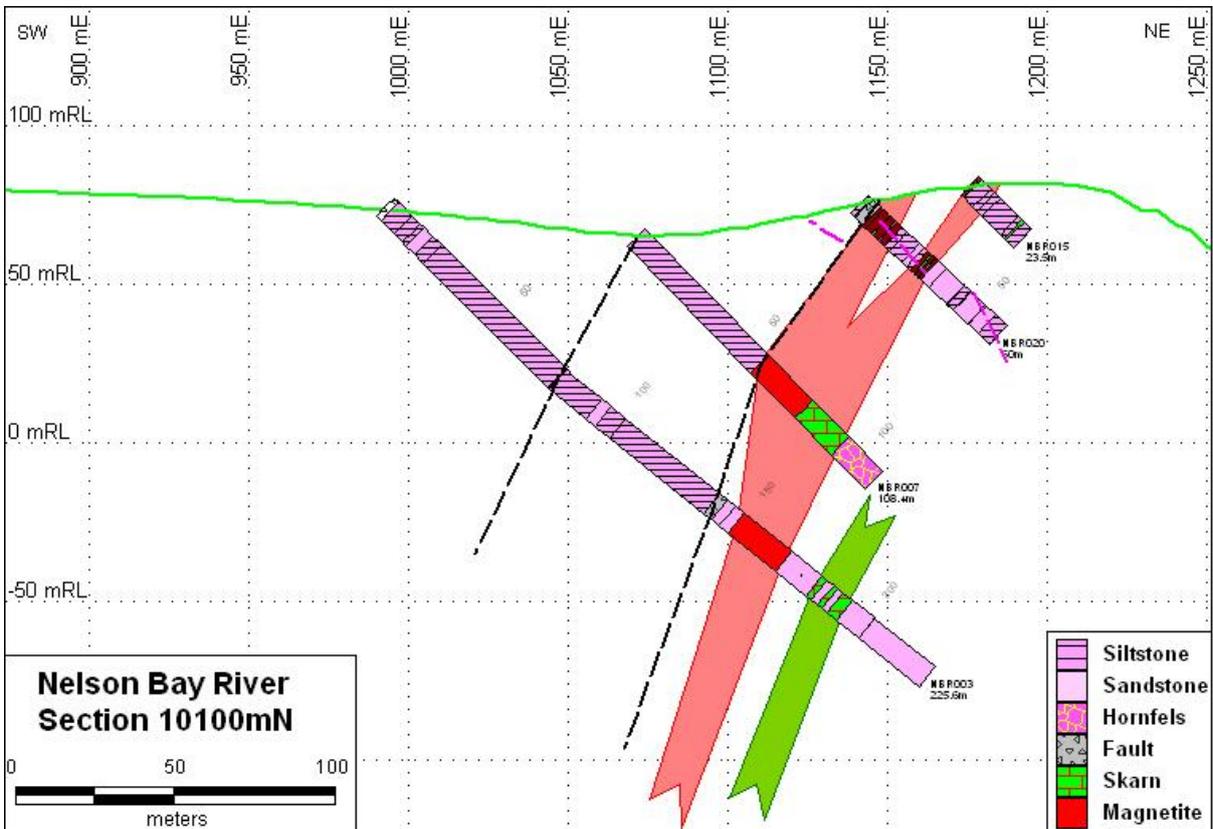


Figure 5: Drill Section 10100 mN showing basic geology and interpretation.

### 5.2.2 10100 mN

NBR020 tested surface hematitic-goethite mineralisation on section 10100 mN (Figure 5), where previously NBR015 was interpreted to have clipped the NW edge of the mineralisation, failing to test the body's full thickness. Track construction for drill pad access revealed an approximately 30 m horizontal / surface width for the body; shown as deep red-brown soils, abundant gossanous float and weathered gossan outcrop at south western hanging wall side (Photo 1). The drill pad was constructed ~12 m grid west (SW) of the outcropping gossan. This hole was collared on 6/4/2010 and completed 9/4/2010 at 57.7m. See Table 3 for intersection details.



Photo 1: Comeski drill rig on site at NBR020; note the red brown oxidised soil including abundant gossanous elluvium / kanga.

### 5.2.3 10000 mN

NBR018 (50/-45, EOH 110.2m; Figure 6) was a redrill of the original N401 drill hole, targeting the core of the Nelson Bay River magnetic anomaly. Significant magnetite mineralisation was intersected as expected between 51.6 and 77.5m (Table 3).

NBR021 (50/-45, with EOH 188m) was drilled as a resource category upgrade infill between existing holes on section; NBR001 and N401 (/NBR018). The collar was conveniently located at the 10000E, 10000N baseline track intersection. Strong magnetite mineralisation was intersected between 133 and 167m. Within the main intersection there is zonation from amphibole – magnetite skarn to near massive magnetite then pyroxene skarn and then zoned out again to the opposite margin.

Extensive zones of leached and pitted strong pervasive silicification - disseminated sulphide are logged in the upper ~40 m of NBR021. The pits appear to be relict after leaching of sulphide and chlorite. This alteration and faulting sub parallel to LCA in the upper portion of the hole possibly help explain the difficulty in drilling here. Numerous short runs were required to get through this zone.

The apparent magnetite body thickening from ~13m to ~31m down dip on 10000 mN appears to result from truncation of the hangingwall side of the lode closer to surface. Regardless, potential exists for further thickening to depth to the SW. The magnetite zone dip varies from ~-60° near surface to -70° at depth.

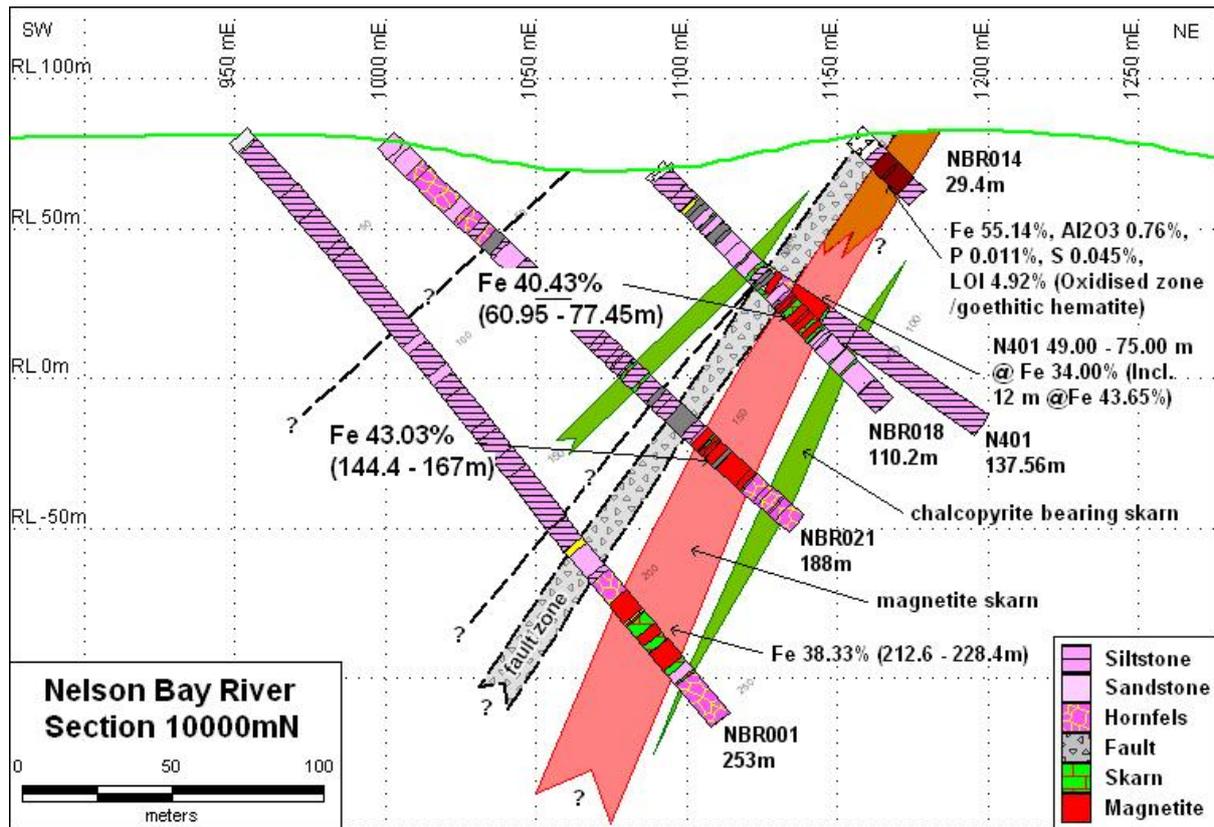


Figure 6: Drill Section 10000 mN showing basic geology and interpretation.

Skarn bearing chalcopyrite lies footwall to the main magnetite zone. On 10000N, the skarn can be correlated between NBR017, 021 and 001 (Figure 6), and whilst chalcopyrite is not mentioned down dip in NBR001, analysis returns 0.21% Cu from 234.3 to 235m (Newnham, 2000). This zone is evident but weaker in NBR005, located 100m south on 9900N. Chalcopyrite bearing skarn is also evident in the magnetite hangingwall on this section. For example 0.4% Cu was returned from ~85m depth in N401, whilst NBR001 returned significant copper analysis from immediately in the hangingwall to the magnetite lode in NBR001 (incl. 2m @ 0.9% from 192.7m). In NBR018 and N401 an upper skarn horizon is intersected. However this is missed in NBR014, which collars slightly too far north east, initially drilling elluvium above the upper skarn's surface projection. Both the footwall and hangingwall skarns appear to pinch and swell, locally being faulted out.

A significant quartz veined zone lies in the hangingwall to the magnetite zone. Quartz veining is intense within this zone in NBR001 and attenuates significantly up dip through NBR021, finally becoming weak within a fault zone in NBR018, closer to surface.

### 5.2.4 9900 mN

NBR005 was re-entered and drilled from 153.55m, since the previous hole was interpreted to have stopped immediately short of the intersection predicted from drill section analysis. Approximately 9m of magnetite mineralised zone was intersected from ~159 to 168m (Table 3). The hole extended beyond this depth to 211m, testing the footwall to ensure all mineralisation was accounted for (Figure 7).

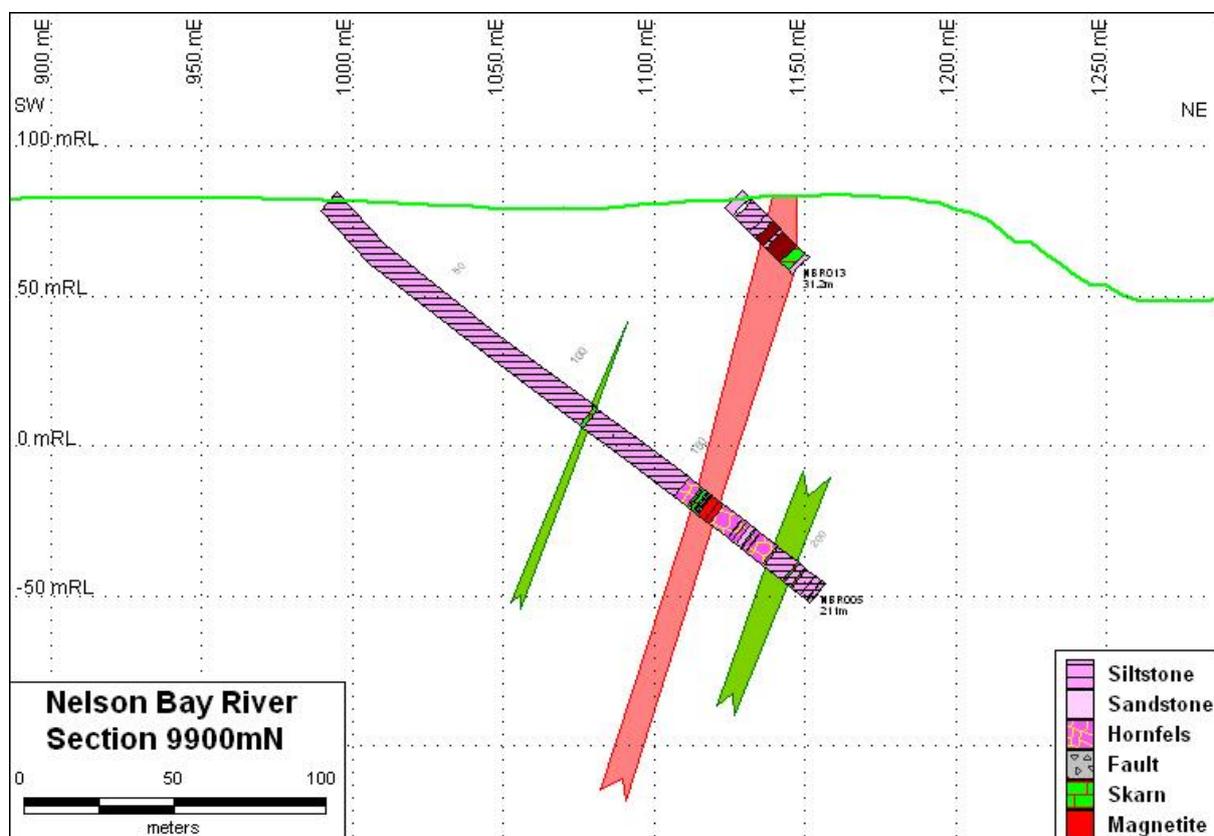


Figure 7: Drill Section 9900 mN showing basic geology and interpretation.

### 5.2.5 9700 mN

NBR019 hole aimed to obtain an intersection on section 9700 mN (Figure 9), where the previous NBR011 had failed to intersect significant mineralisation. The hole was collared on 30/3/2010 and terminated on 1/4/2010 at 50.1m. Hematite – magnetite mineralisation was intersected from ~15 to 28.7m, providing a down hole intersection of 13.7m. In the top of the hole typical medium grained sandstone is silicified and pitted after pyrite, similar to the hangingwall elsewhere.

Puzzlingly, mineralisation was largely missed in NBR011, whilst a good hematite intersection was returned from NBR019. This is explained by a low angle to long core axis faulted and brecciated zone deep in NBR019. This is likely an E-W aligned dextral offset fault; helping explain the NBR017 mineralisation offset. The extent of offset on the fault appears minimal (<10m) and need not significantly influence initial resource model wireframes.

### 5.2.6 9300 mN

A significant surface expression of gossan covering ~18m horizontal was located on the excavator track on section 9300 mN. This was drilled by NBR022 with puggy clays after laminated bedded siltstone intersected in the top of hole. Following is a zone of puggy fault breccias, with finer breccia of mostly sub centimetre clasts interpreted as interstitial to a number of variable lithology large clasts to 40cm plus in diameter. The latter include laminated bedded siltstone, hornfels, silica altered hornfels and weathered hematite. This fault zone is in contact with massive hematitic mineralisation, which extends from 30.7 to 43m down hole.

The HQ drill string was bogged in the hole at ~37m and could not be freed. Subsequently, NQ was drilled through the bit to finish the hole at 54m. The rod string was cut above the barrel for retrieval. The use of NQ was not ideal, resulting in some core loss with short drill runs being used in an attempt to minimise loss. The core is highly broken and weathered throughout the mineralised zone and as such logged intervals are approximate only.

A further 100m SE, a significant gossan of ~8m+ horizontal width remains untested and represents the southernmost extensions of obvious at surface gossan.

### 5.2.7 8200 mN

NBR023 targeted scattered gossan exposed on 8200N, coincident with a magnetic high anomaly. The original hole was planned to test the magnetite at depth, however subsequently plans changed and the collar was stepped up closer to the gossan to test for hematite nearer surface.

This hole drills a significant hangingwall fault with strongly broken and weathered core evident through the mineralised zone. Amphibole (+/-silica?) – magnetite – pyrite mineralisation is strong throughout the main fault interval, with local fault breccia textures evident but hard to quantify given the high degree of core fragmentation.

Drilling was very difficult with significant core loss and often short runs, particularly through the hangingwall faulted zone. The hole required cementing and in one instance a significant redrill from ~16 to 18.9m resulted after cementing.

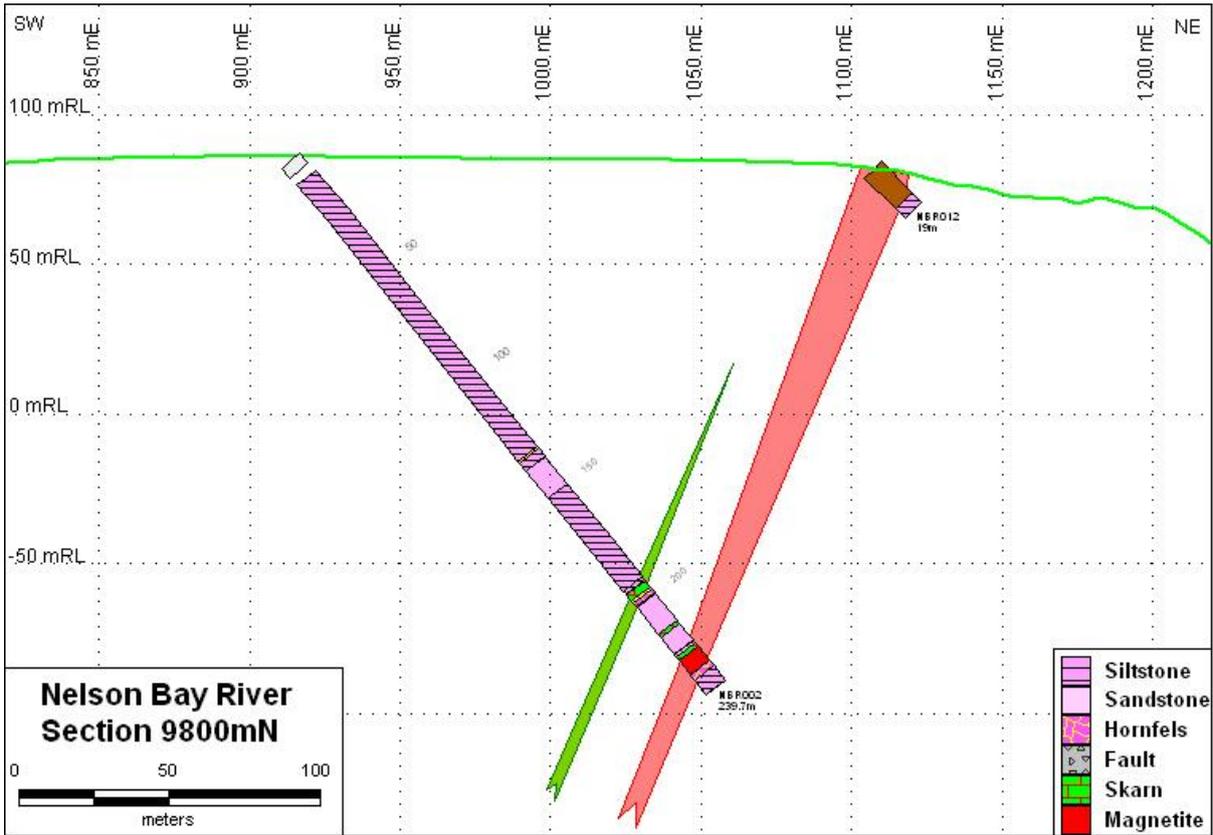


Figure 8: Drill Section 9800 mN showing basic geology and interpretation.

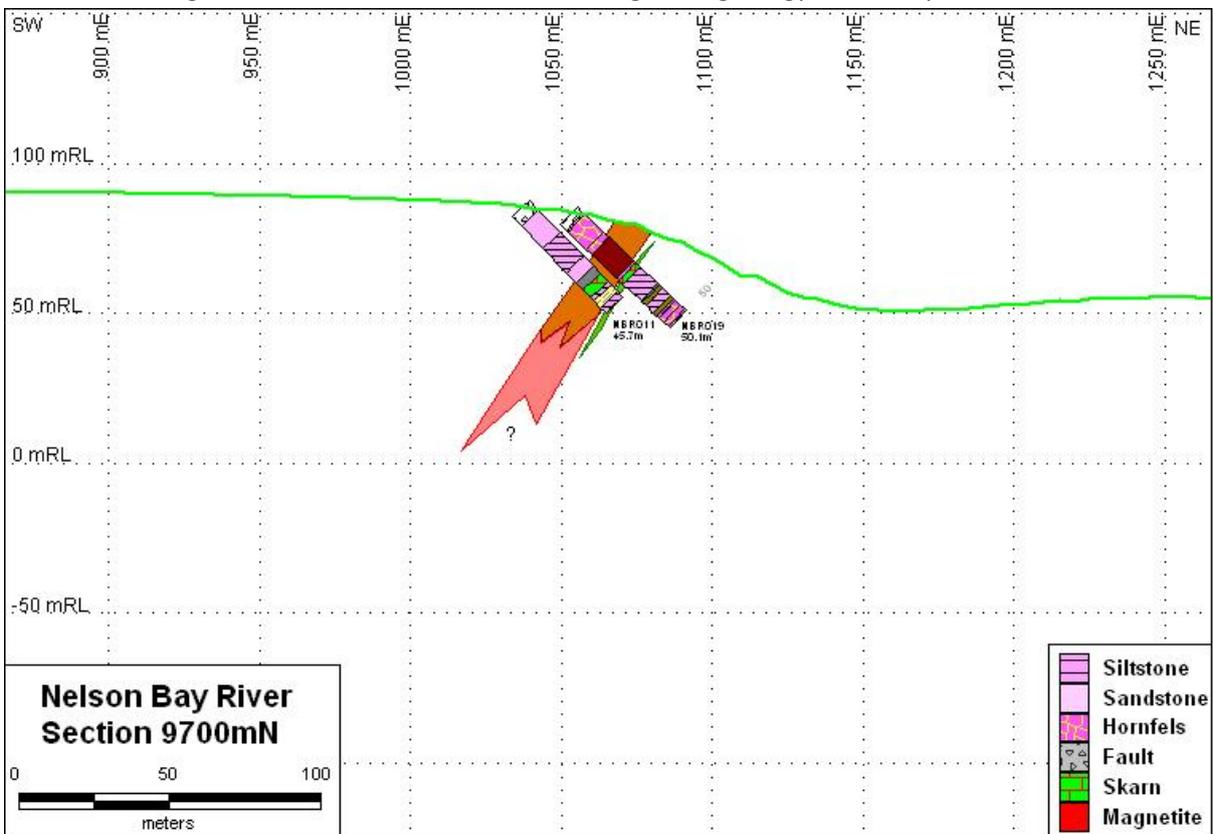


Figure 9: Drill Section 9700N showing basic geology and interpretation.

### 5.3 Drill Hole Data Compilation

A Nelson Bay River drill core was relogged resulting in a consistent logging code system. Recent drilling from NBR017 to 023 was logged by Robert Reid, with the remainder logged by Sam Maloney. Basic down hole geology logs for N401, NBR002, NBR004 and NBR010 were added from the original logs and have not been re-logged. All compiled drilling data is presented as text files within the attached digital data. This includes recent magnetic susceptibility, specific gravity and core recovery. Geotechnical / recovery data is not captured for NBR003 & 4.

An Excel drill log template was adapted to best facilitate digital data capture and enable digital display. The template attempts to capture the characters of the mineralisation pertinent to iron ore resources, detailing magnetite versus hematite and oxidised ores and skarn character. The Lithology code was split into 4 fields. Lithbasic is a simplified geology display field, the same as Lith1, except that all sedimentary rocks are denoted with an undifferentiated SSAND code. Lith1 provides a basic listing, denoting all skarn related intervals as skarn. These are expanded in Lith2 where skarn is logged according to the dominant mineralogy, intending to highlight magnetite skarn as compared to hematitic gossan. A third Lith3 describes lithologies additional to Lith1. E.g. Lith1 may list a siltstone (SSILT) with lesser / minor included intervals of fine grained sandstone (SFSAND) reflected in Lith3.

Principal alteration types are categorised according to style with quantity reflected on a 1 to 5 (weak to strong) scale. Alteration is also reflected qualitatively in three fields; Primary\_Alt, 2<sup>nd</sup>\_Alt & 3<sup>rd</sup>\_Alt. These reflect approximate intensity and to some extent relative quantity. E.g. weak silicification might be reflected in 3<sup>rd</sup>\_Alt. Of note is the GOSSAN code which encompasses hematite, goethite, jarosite and other iron oxides. Vein types are coded according to mineral abundance and overall quantity (%). E.g. a quartz – carbonate vein is coded QCbVN. Lookup codes for geology etc are appended and listed in the excel spreadsheet for each drill hole.

Spurious down hole surveys were compared to magnetite intersections with any resulting modifications noted in the survey table. The collar azimuth survey for NBR005 is spurious at 74.35, but down hole surveys then ranged to 64<sup>0</sup> (48m) and 54<sup>0</sup> (100m) over subsequent 50m spaced surveys, suggesting the original azimuth is correct. The spurious 45<sup>0</sup> azimuth at 260m in NBR017 may indicate that magnetite mineralisation exists nearby. There is no significant faulting/structure or lithology change up hole (to the magnetite intersection) to explain a significant azimuth deviation. Significant azimuth deviations were apparent for surveys at depth in NBR018 (40 and 110m), where most magnetite extended from 50 to 76m; in the magnetic core of the deposit. Notably, NC401 surveys highlighted an apparent significant dip lift from -54<sup>0</sup> to -34.5<sup>0</sup>, from the same area as NBR018.

## 5.4 Geophysics

The Nelson Bay River Prospect and its southern extension were ground magnetic surveyed on the 29<sup>th</sup> and 30<sup>th</sup> April 2010. Survey instruments comprised a G859 field magnetometer and G856 base magnetometer; both hired from Fugro Instruments.

The ground magnetic survey was undertaken over all accessible / existing tracks during the drilling program. A similar survey was undertaken during the previous reporting year, but data was poorly recorded and the survey extent was minimal. The aim of the extended recent survey was to better determine the magnetic distribution and character of known magnetite mineralisation at the Nelson Bay River Prospect, aiding drill targeting and deposit modelling. Known mineralisation is located within an aeromagnetic anomaly of 3.5km strike length, with a further outcome being to test the southern extension of the mineralisation, allowing better drill targeting within this zone. Scope exists to extend the survey following planned gridding to be undertaken during the 2010 / 11 tenure year.

The G859 field magnetometer was operated in simple survey mode, allowing a GPS fix for all recordings. The G859 was operated on a reading frequency of 0.2hertz, resulting in sample spacing in the order of ~20 to 30cm. The existing grid and drill pad access tracks provided survey cover over approximately 100m spaced grids. Additional lines were surveyed through untracked vegetation between grid lines where possible. These grids were surveyed on an approximately 50degree orientation; orthogonal to the known mineralisation trend. Informal grids were placed at approximately 33m intervals between grids between 9000 and 8600N. Grid cutting is required for any further ground magnetic surveys in the area.

### 5.4.1 Data Processing

Unfortunately the G856 base magnetometer, whilst it operated properly during the survey, failed with data unable to be downloaded. Regardless, the field survey data still provided a good representation of the areas magnetic field, particularly given the wide range in survey data recorded.

Drop outs were removed from field survey data, as were extreme spikes of 5000nT over 1 reading. Note that numerous large spikes were recorded but these genuine anomalies typically span a number of readings and were unaffected by the spike filter. The entire data range was examined in detail with a number of additional small drop outs being manually removed. Data was then plotted and further data in areas where anomalous highs were recorded near known metal objects was deleted (An anomaly near NBR001 remains and is likely due to buried metal). Where possible field survey lines were stopped short of metal bearing areas; metallic sources included vehicles, the drill rig, drill rods and drill rig anchor rods left in the ground at most drill sites. The latter were readily detected by the magnetometer within a range of influence of ~5m.

Gridded located data is presented in Figure 10, with digital data being appended.

## 5.4.2 Results

Overall, the ground magnetic survey demonstrates that magnetite mineralisation continues along strike for >2300m between 8000N and 10300 mN (Figure 10). A strong magnetic high zone (~66000 to 70000nT) is coincident with the known resource in the north of the grid between 9800 and 10200 mN. Magnetite drill intersections are widest beneath this zone. From 9500 to 9800N, a broad moderately high magnetic response is evident with minimal response from the mineralisation at surface. Hematite bearing drill intersections were obtained beneath this zone, but no deep drilling has been undertaken.

The magnetite mineralisation's response is strongly attenuated in a central zone between 8800 and 8900N, within a generally lower magnetic zone from 8750 to 9100N. Re-gridding data for the southern central area reveals that a discrete magnetic anomaly passes through this area without any apparent offset. This zone corresponds with the intersection of a regionally continuous N-S aligned magnetic lineament. Strong weathering of magnetite to hematite-goethite (DSO) through enhanced structure-related permeability is a possibility in this area.

A linear 500m strike length of moderate magnetic high (~63000 to 65000nT) is returned from the southern zone, which is open to the south east. NBR023 drilled a magnetite intersection in the central portion of this anomaly.

Elsewhere apparently depleted zones in the magnetic anomaly are a relict of too wide spacing between surveyed lines; eg. 8500 to 8600 and 9200 to 9300 mN.

## 5.5 Environmental

A significant upgrade of the access track was undertaken by local contractor Jim Hervey, utilising two dump trucks and an excavator to construct a gravel 4WD road surface across an ~300m long peat bog area, with a further ~150m of track construction being undertaken along the base line in potentially boggy areas. A difficult 100m bog section developed on the baseline and wheel ruts on this section were gravel filled on an incremental daily basis by the drilling contractor, ensuring this problematic track section remained navigable to 4WD vehicles. The low lying nature of this track section means that effective drainage cannot be constructed. A sump pump was occasionally used to drain excess water after rain. Further gravel surfacing is planned and recommended to maintain access.

A footbath was maintained at the staging area at the end of the forestry access road to reduce the risk of Phytophthora root rot transmission. To a similar end, all drilling equipment was washed prior to arrival on site.

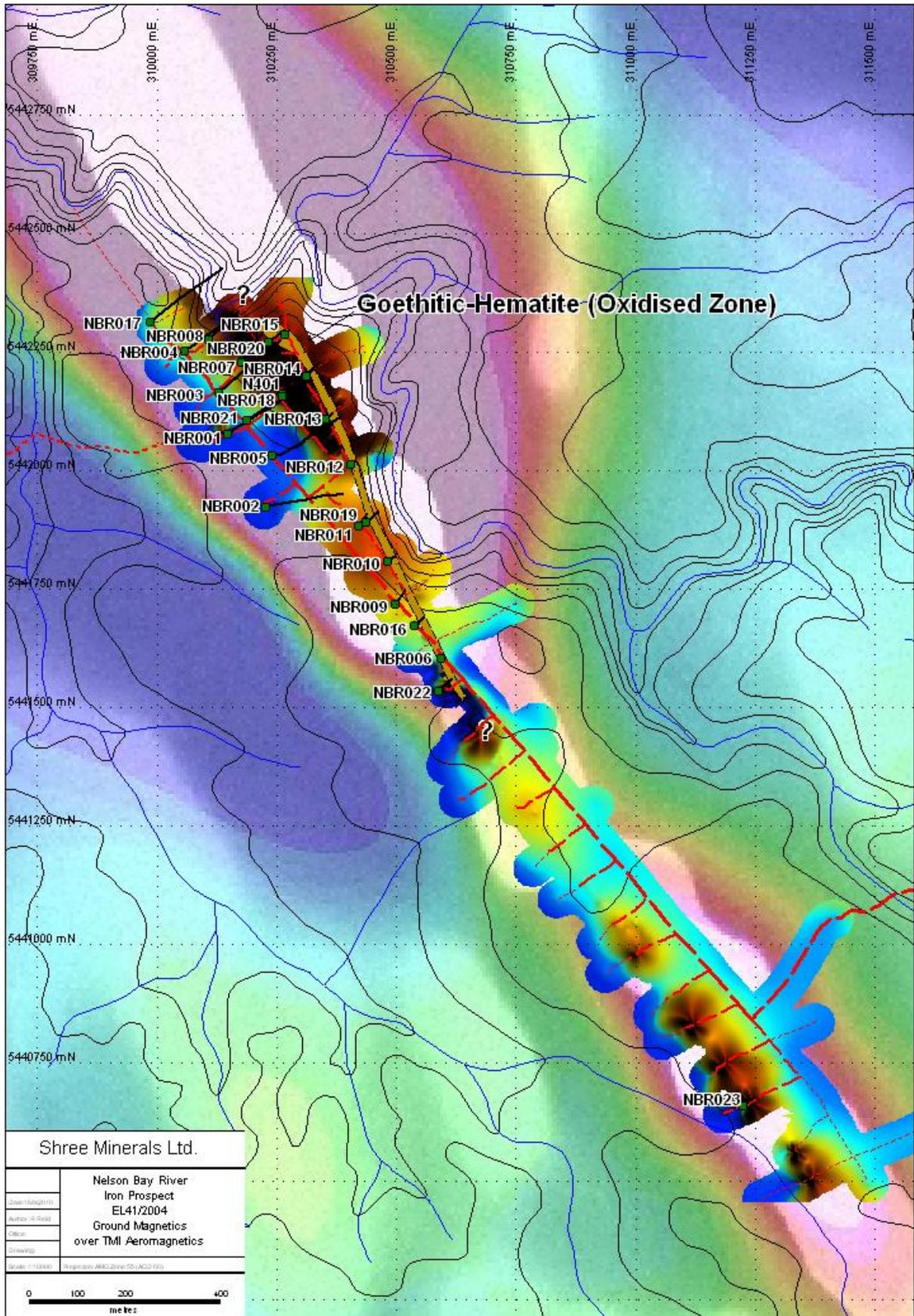


Figure 10: Nelson Bay River TMI Ground Magnetics over TMI Aeromagnetics

## 6.0 References

Newnham, L., 2000. Report on Nelson Bay River Drilling Program – June to July 2000. EL15/1997 – Arthur River. Tasmanian Company Report by Newnham Exploration and Mining Services: Pacific Nevada.

## Appendix

## Appendix 1: List of Digital Data

List of appended digital data files

EL412004\_201102\_01\_Digital\_Files.txt

EL412004\_201102\_02\_Drilling\_Report.pdf

EL412004\_201102\_03\_AssayResults.txt

EL412004\_201102\_04\_DH\_Collar.txt

EL412004\_201102\_05\_DH\_Analysis.txt

EL412004\_201102\_06\_DH\_Survey.txt

EL412004\_201102\_07\_DH\_Geology.txt

EL412004\_201102\_08\_DH\_Structure.txt

EL412004\_201102\_09\_DH\_Geotech.txt

EL412004\_201102\_10\_DH\_SpecificGravity.txt

EL412004\_201102\_11\_DH\_MagSus.txt

EL412004\_201102\_12\_DH\_Lookups.txt

EL412004\_201102\_13\_GroundMagnetics.zip

EL412004\_201102\_14\_DrillCorePhotos (jpeg)

## Appendix 2: Drill Core Analysis



**Shree Minerals**  
**JOB NUMBER: 10638**  
**Head Assays**

Hole	Sample #	From	To	Fe	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	P	CaO	MgO	S	Mn	TiO <sub>2</sub>	Na <sub>2</sub> O	K <sub>2</sub> O	LOI
NBR17	366485	221.70	223.15	40.40	29.20	1.03	0.01	0.19	2.69	1.30	1.81	0.05	0.02	0.18	6.35
	366486	242.10	243.00	20.50	38.40	13.50	0.03	2.14	2.62	0.26	5.96	0.49	0.01	0.34	5.10
	366487	243.00	244.00	35.20	31.90	2.99	0.02	1.01	4.02	2.07	1.67	0.15	<0.01	0.15	6.60
	366488	244.00	244.90	33.40	33.40	4.43	0.02	1.82	4.64	0.31	1.49	0.21	0.03	0.23	4.96
	366489	244.90	245.47	21.80	39.80	8.39	0.04	3.11	2.80	0.08	6.11	0.22	0.03	0.94	5.09
	366490	245.47	246.50	9.80	62.10	14.00	0.05	0.41	1.45	0.03	0.48	0.68	0.06	3.60	2.66
	366491	246.50	247.50	10.70	60.80	14.20	0.06	0.22	1.71	0.17	0.24	0.64	0.06	3.40	2.94
	366492	247.50	248.10	5.08	66.00	16.20	0.05	0.28	1.09	0.02	0.12	0.65	0.40	4.90	2.58
	366493	248.10	248.65	9.09	32.20	5.92	0.48	12.40	11.50	0.24	0.22	2.74	0.24	3.26	16.80
	366484	189.70	191.90	7.73	75.80	3.15	0.01	0.28	1.52	3.15	0.24	0.12	0.06	0.91	6.52

Hole	Sample #	From	To	Fe	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	P	CaO	MgO	S	Mn	TiO <sub>2</sub>	Na <sub>2</sub> O	K <sub>2</sub> O	LOI
NBR18	366533	20.10	21.00	8.61	73.20	7.56	0.03	0.06	1.71	0.07	0.07	0.24	<0.01	0.07	4.44
	366534	21.00	21.60	15.50	48.30	15.80	0.04	0.04	2.54	2.15	0.10	0.65	<0.01	0.04	9.73
	366535	51.60	53.00	21.10	45.60	13.10	0.01	0.02	4.44	0.02	0.39	0.59	<0.01	0.06	5.47
	366536	53.00	54.00	44.80	13.70	0.12	0.04	0.17	0.43	0.01	2.96	<0.01	<0.01	<0.01	17.10
	366537	54.00	55.10	36.80	21.50	0.27	0.02	0.20	1.19	0.01	3.42	0.02	<0.01	0.01	19.80
	366538	55.10	56.00	26.60	26.60	11.00	0.01	0.89	2.24	0.04	5.34	0.57	<0.01	0.10	13.20
	366539	56.00	57.00	20.10	39.10	15.50	0.01	1.19	2.26	0.06	5.32	0.56	<0.01	0.38	5.01
	366540	60.95	61.90	41.50	12.60	0.12	0.02	0.15	1.05	0.03	3.41	0.01	<0.01	<0.01	22.10
	366541	61.90	62.90	33.30	41.60	0.22	<0.01	0.10	6.11	0.02	2.20	<0.01	<0.01	0.04	1.51
	366542	62.90	63.90	43.20	31.40	0.14	<0.01	0.09	4.76	0.04	1.68	0.01	0.02	0.04	-0.20
	366543	63.90	64.90	42.40	22.80	7.33	0.02	0.07	4.88	0.03	1.12	0.32	0.01	0.11	2.54
	366544	64.90	65.40	46.90	20.30	6.05	0.01	0.07	4.42	0.08	0.93	0.30	<0.01	0.06	0.75

	366545	65.40	66.30	41.30	22.60	8.81	0.02	0.07	5.46	0.03	0.98	0.41	<0.01	0.08	2.46
	366546	66.30	67.30	51.90	22.00	0.19	0.01	0.06	3.77	0.06	1.16	0.03	0.05	0.03	-2.03
	366547	67.30	68.30	49.80	23.80	0.10	<0.01	0.07	4.12	0.08	1.35	<0.01	0.06	0.03	-1.59
	366548	68.30	69.30	38.90	34.70	0.06	<0.01	0.09	6.14	0.62	2.20	<0.01	0.06	0.03	-0.20
	366549	69.30	70.30	39.30	34.30	0.07	<0.01	0.09	6.02	0.57	2.16	<0.01	0.07	0.03	-0.36
	366550	70.30	71.30	46.00	26.70	1.38	0.01	0.14	4.19	0.17	1.88	0.06	0.08	0.08	-1.62
	366551	71.30	72.30	47.80	25.40	0.17	<0.01	0.06	4.37	0.04	1.37	<0.01	0.07	0.03	0.03
	366552	72.30	73.30	22.80	39.40	10.40	0.02	1.40	3.52	0.05	8.64	0.44	0.04	0.54	-0.20
	366553	73.30	74.20	41.60	32.40	1.05	<0.01	0.18	4.77	0.05	2.42	0.06	0.05	0.07	-1.48
	366554	74.20	74.90	41.70	33.70	0.17	<0.01	0.09	5.11	0.12	2.05	<0.01	0.04	0.04	-1.25
	366555	74.90	75.80	45.60	26.50	2.34	0.01	0.06	4.34	0.04	1.50	0.13	0.06	0.08	-0.46
	366556	75.80	76.85	30.40	43.50	0.30	<0.01	0.11	5.94	0.04	2.66	0.02	0.03	0.04	2.70
	366557	76.85	77.45	20.00	33.20	14.90	0.09	1.96	2.88	0.03	8.67	0.79	0.02	0.15	5.47
	366558	91.80	93.00	17.30	50.80	10.00	0.02	0.62	2.31	2.09	2.20	0.48	0.14	2.06	5.42

Hole	Sample #	From	To	Fe	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	P	CaO	MgO	S	Mn	TiO <sub>2</sub>	Na <sub>2</sub> O	K <sub>2</sub> O	LOI
<b>NBR19</b>	366506	14.70	15.70	48.40	24.20	0.55	0.03	0.01	<0.01	0.03	0.04	0.02	<0.01	0.01	5.63
	366507	15.70	16.70	53.40	18.40	0.17	0.01	0.02	0.01	0.01	0.02	<0.01	<0.01	<0.01	4.73
	366508	16.70	17.70	53.70	17.70	0.30	0.02	0.02	0.03	0.04	0.03	<0.01	<0.01	<0.01	5.41
	366509	17.70	18.70	54.00	16.10	0.39	0.04	0.01	<0.01	0.02	0.03	<0.01	<0.01	<0.01	5.84
	366510	18.70	19.70	53.70	18.30	0.32	0.02	0.02	<0.01	0.01	0.03	<0.01	<0.01	<0.01	4.85
	366511	19.70	20.70	57.60	13.30	0.25	0.03	<0.01	<0.01	0.01	0.02	<0.01	<0.01	<0.01	3.88
	366512	20.70	21.70	56.00	14.40	0.11	0.01	0.01	<0.01	0.01	0.02	<0.01	<0.01	<0.01	5.77
	366513	21.70	22.70	48.80	23.90	0.09	0.01	<0.01	<0.01	0.01	0.02	<0.01	<0.01	<0.01	6.01
	366514	22.70	23.70	52.10	21.20	0.21	0.03	0.02	0.01	<0.01	0.03	<0.01	0.01	<0.01	4.45
	366515	23.70	24.70	51.90	21.60	0.13	0.03	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	3.78
	366516	24.70	25.90	42.70	33.30	0.49	0.07	0.03	<0.01	<0.01	0.05	0.01	<0.01	0.01	5.05
	366517	25.90	27.10	6.17	86.70	1.73	0.02	0.03	0.03	0.42	0.02	0.09	<0.01	0.25	1.98
	366518	27.10	28.00	18.60	40.30	16.70	0.02	0.49	0.58	0.04	2.34	0.78	0.03	4.32	7.23
	366519	28.00	28.80	15.00	40.90	17.30	0.03	2.02	0.32	0.25	10.00	0.71	<0.01	0.90	2.81
	366520	46.90	47.80	2.32	93.90	1.30	0.01	0.07	0.15	0.79	0.24	0.06	<0.01	0.13	0.94
	366521	47.80	48.60	2.24	93.10	1.95	0.01	0.04	0.21	0.08	0.13	0.09	<0.01	0.37	0.60
	366522	48.60	49.75	3.39	90.60	1.67	0.01	0.09	0.18	1.83	0.26	0.09	<0.01	0.12	1.79

Hole	Sample #	From	To	Fe	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	P	CaO	MgO	S	Mn	TiO <sub>2</sub>	Na <sub>2</sub> O	K <sub>2</sub> O	LOI
NBR20	366600	7.65	8.40	41.70	35.00	0.62	0.02	0.03	0.03	0.04	0.07	<0.01	0.04	0.02	4.51
	366601	8.40	9.40	50.10	24.20	1.17	0.02	0.02	0.02	0.03	0.19	0.05	0.03	0.01	2.62
	366602	9.40	11.00	43.60	20.90	8.57	0.03	0.02	1.25	0.06	0.16	0.36	0.02	0.01	5.80
	366603	11.00	12.10	40.70	36.20	2.27	0.01	<0.01	<0.01	0.03	0.52	0.10	0.02	0.02	2.39
	366604	12.60	13.60	36.00	45.10	0.96	0.01	<0.01	0.04	0.02	0.35	0.03	0.03	0.02	1.72
	366605	13.60	14.60	34.70	39.20	3.82	0.02	<0.01	0.02	0.87	0.26	0.27	0.02	0.12	5.62
	366606	14.60	15.60	23.10	32.30	18.60	0.03	0.12	0.39	0.08	2.34	0.74	0.02	0.48	11.20
	366607	25.85	27.35	39.20	32.10	3.72	0.06	0.09	0.05	0.08	0.55	0.17	0.02	0.02	6.77
	366608	27.35	29.75	22.80	43.90	12.90	0.04	0.44	1.04	0.19	1.59	0.47	0.01	0.41	5.77

Hole	Sample #	From	To	Fe	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	P	CaO	MgO	S	Mn	TiO <sub>2</sub>	Na <sub>2</sub> O	K <sub>2</sub> O	LOI
NBR7	366609	93.00	94.00	36.00	39.90	0.32	0.01	0.12	4.24	1.18	1.67	0.01	0.06	0.05	1.59
	366610	94.00	94.90	32.20	42.00	2.61	0.01	0.41	3.94	0.19	2.94	0.05	0.08	0.23	0.78
	366611	99.00	99.65	17.40	62.80	4.28	0.01	0.24	2.06	1.17	1.46	0.17	0.05	0.57	2.14
	366612	99.65	100.55	31.40	41.30	2.37	0.01	0.32	3.25	0.15	2.46	0.10	0.09	0.35	4.14

Hole	Sample #	From	To	Fe	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	P	CaO	MgO	S	Mn	TiO <sub>2</sub>	Na <sub>2</sub> O	K <sub>2</sub> O	LOI
NBR21	366559	132.85	133.65	35.90	20.10	4.93	0.03	0.37	2.03	2.54	2.45	0.21	0.02	0.01	17.80
	366560	134.10	134.90	34.10	20.30	4.52	0.02	0.60	2.01	1.64	3.23	0.18	0.02	0.04	19.20
	366561	134.90	135.90	26.20	29.60	15.90	0.02	0.54	4.36	0.31	2.36	0.63	0.01	0.21	7.87
	366562	135.90	136.90	28.20	27.60	15.50	0.03	0.19	4.67	0.05	1.22	0.73	0.02	0.53	8.79
	366563	136.90	137.55	32.60	19.10	6.55	0.02	0.33	3.16	1.58	2.57	0.30	0.02	0.06	20.30
	366564	137.55	139.05	30.90	23.40	7.07	0.01	1.01	2.07	0.95	4.83	0.21	0.02	0.07	15.30
	366565	139.05	140.05	21.10	44.10	15.20	0.01	0.04	3.23	0.03	0.63	0.48	0.02	0.76	5.08
	366566	144.40	144.90	38.70	20.20	0.95	0.01	0.35	2.07	1.69	2.48	0.04	0.02	0.01	16.80
	366567	144.90	145.90	42.40	29.40	0.29	0.01	0.09	3.80	0.03	1.65	0.01	0.05	0.03	3.77
	366568	145.90	146.90	39.10	33.80	0.15	0.01	0.09	4.80	0.07	1.73	0.01	0.08	0.03	2.85
	366569	146.90	147.90	45.10	21.20	2.10	0.01	0.19	2.76	0.08	1.29	0.08	0.03	0.02	7.50
	366570	147.90	148.90	53.00	10.60	1.39	0.01	0.31	1.72	1.06	1.11	0.07	0.04	<0.01	8.85

366571	148.90	149.90	41.90	14.40	0.08	0.01	0.53	2.73	0.02	4.32	<0.01	0.02	<0.01	16.10
366572	149.90	150.90	39.30	20.30	0.09	0.01	0.42	2.46	0.15	4.25	<0.01	0.02	<0.01	15.00
366573	150.90	151.90	43.20	23.50	0.09	0.01	0.20	2.35	0.10	2.15	<0.01	0.02	0.02	9.47
366574	151.90	152.90	49.20	21.50	0.07	0.01	0.13	1.00	0.01	1.64	<0.01	0.03	0.01	4.71
366575	152.90	153.90	47.80	22.50	0.10	0.01	0.16	1.19	0.04	1.30	0.02	0.04	0.01	6.05
366576	153.90	155.20	38.80	24.00	0.27	0.01	0.23	1.62	7.02	1.56	0.02	0.05	<0.01	16.40
366577	155.20	156.20	33.60	32.70	0.17	0.01	0.21	4.41	0.07	2.40	0.01	0.03	0.03	11.00
366578	156.20	157.20	53.30	19.00	0.07	<0.01	0.06	3.20	0.09	1.15	<0.01	0.05	0.03	-0.51
366579	157.20	158.20	44.10	30.00	0.07	<0.01	0.07	5.27	0.12	1.59	<0.01	0.07	0.03	-0.82
366580	158.20	159.20	45.60	28.60	0.07	<0.01	0.07	5.04	0.05	1.51	<0.01	0.07	0.03	-1.12
366581	159.20	160.20	50.10	22.40	0.08	<0.01	0.15	4.06	0.02	1.50	<0.01	0.08	0.03	-0.44
366582	160.20	161.20	50.10	22.10	0.83	<0.01	0.07	3.96	0.04	1.30	0.03	0.08	0.04	-0.72
366583	161.20	162.20	46.00	22.30	4.64	<0.01	0.05	4.86	0.12	1.14	0.20	0.05	0.04	0.69
366584	162.20	163.20	47.00	27.00	0.12	<0.01	0.08	4.71	0.15	1.48	<0.01	0.07	0.02	-1.25
366585	163.20	164.20	47.30	22.60	2.87	0.01	0.05	4.24	0.54	1.13	0.13	0.07	0.14	-0.34
366586	164.20	165.20	39.50	26.80	2.01	0.01	0.17	3.97	0.39	1.96	0.08	0.06	0.06	7.17
366587	165.20	166.20	26.10	40.30	6.83	0.02	0.90	4.24	0.05	5.79	0.20	0.06	0.46	1.57
366588	166.20	167.00	23.80	37.70	6.16	0.23	1.17	4.02	0.54	3.36	0.72	0.03	0.46	10.50
366589	171.95	172.45	19.60	43.50	13.50	0.02	1.04	1.91	0.82	2.92	0.52	0.04	2.40	4.98
366590	172.45	173.40	30.00	41.10	4.59	0.01	0.61	3.66	1.03	2.81	0.20	0.07	0.64	2.48
366591	173.40	174.40	10.70	66.00	10.40	0.03	0.12	1.32	0.73	0.30	0.47	0.12	2.71	2.70
366592	177.20	178.20	4.77	74.40	11.40	0.02	0.07	0.74	0.02	0.13	0.55	0.08	3.39	1.94
366593	178.20	179.10	22.10	47.20	7.06	0.01	0.56	2.37	4.37	2.22	0.26	0.04	1.06	5.93
366594	179.10	180.10	9.38	71.90	8.37	0.02	0.11	1.27	0.11	0.39	0.28	0.04	1.62	2.03

Hole	Sample #	From	To	Fe	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	P	CaO	MgO	S	Mn	TiO <sub>2</sub>	Na <sub>2</sub> O	K <sub>2</sub> O	LOI
NBR22	366523	30.65	31.15	24.40	36.60	17.20	0.11	0.01	0.02	0.02	0.04	0.74	<0.01	0.03	10.00
	366524	31.15	32.15	62.40	1.99	0.30	0.08	<0.01	0.03	0.01	0.15	<0.01	<0.01	<0.01	8.50
	366525	32.15	33.15	60.30	3.59	0.55	0.10	<0.01	0.09	0.01	0.14	<0.01	<0.01	<0.01	9.43
	366526	33.15	34.15	60.10	4.98	0.90	0.13	<0.01	<0.01	0.01	0.13	0.03	<0.01	<0.01	8.14
	366527	34.15	35.15	60.60	3.13	0.40	0.08	<0.01	<0.01	0.01	0.27	<0.01	<0.01	<0.01	9.17
	366528	35.15	36.15	60.40	4.16	0.26	0.06	<0.01	<0.01	0.01	0.27	<0.01	<0.01	<0.01	8.63
	366529	36.15	37.10	61.70	1.77	0.27	0.06	0.02	0.02	0.02	0.28	<0.01	0.03	<0.01	8.90

	366530	37.10	39.70	61.50	3.93	1.09	0.06	<0.01	<0.01	0.01	0.17	0.03	<0.01	<0.01	7.01
	366531	39.70	42.70	46.70	20.70	5.15	0.06	<0.01	0.13	<0.01	0.06	0.18	<0.01	0.97	5.57
	366532	46.70	49.05	11.60	62.20	9.96	0.01	0.25	4.21	3.20	0.14	0.32	0.05	0.86	5.33

Hole	Sample #	From	To	Fe	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	P	CaO	MgO	S	Mn	TiO <sub>2</sub>	Na <sub>2</sub> O	K <sub>2</sub> O	LOI
NBR23	366595	9.30	11.40	33.20	11.20	0.43	0.01	0.14	13.60	0.61	1.56	0.02	0.01	0.02	25.20
	366596	11.40	13.00	37.60	7.64	1.80	0.01	0.14	10.60	0.35	1.33	0.08	0.02	0.27	24.10
	366597	13.00	15.50	32.10	6.30	0.32	0.01	0.17	13.80	1.51	2.28	<0.01	0.02	0.01	30.70
	366598	15.50	18.90	28.20	11.70	0.03	0.02	0.25	12.80	0.89	3.17	<0.01	0.01	0.01	30.40
	366599	18.90	20.20	7.67	69.90	10.80	0.05	0.15	2.43	0.31	0.15	0.47	0.45	1.35	3.45

Hole	Sample #	From	To	Fe	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	P	CaO	MgO	S	Mn	TiO <sub>2</sub>	Na <sub>2</sub> O	K <sub>2</sub> O	LOI
NBR5A	366494	158.79	159.30	30.90	13.40	0.41	0.01	0.57	2.88	5.58	6.41	0.01	<0.01	0.08	28.00
	366495	159.30	160.30	18.20	50.70	8.05	0.03	0.30	2.88	0.21	1.78	0.32	<0.01	0.56	8.34
	366496	160.30	161.20	25.40	33.00	11.40	0.04	0.41	4.23	1.15	2.69	0.57	0.09	0.85	8.94
	366497	161.20	161.80	20.60	29.80	11.80	0.02	1.06	2.77	2.15	7.34	0.37	<0.01	1.33	13.50
	366498	161.80	162.90	27.00	31.10	3.20	0.01	0.44	3.44	1.57	2.63	0.14	<0.01	0.37	19.20
	366499	162.90	163.26	33.30	18.10	11.10	0.02	0.27	5.35	2.28	1.16	0.55	<0.01	0.05	15.60
	366500	163.26	164.26	45.70	16.10	0.24	0.02	0.30	1.76	3.84	1.38	<0.01	0.01	0.01	14.40
	366501	164.26	165.26	51.00	13.80	0.10	0.01	0.15	0.89	0.16	1.64	<0.01	0.02	0.02	9.81
	366502	165.26	166.26	47.40	17.10	0.08	0.02	0.21	0.98	0.32	1.77	<0.01	<0.01	0.01	11.30
	366503	166.26	167.26	46.00	26.40	0.17	<0.01	0.11	4.52	0.23	1.51	0.01	0.05	0.05	1.14
	366504	167.26	168.14	43.10	25.40	0.11	0.01	0.12	3.74	0.11	1.85	<0.01	0.02	0.03	6.80
	366505	209.40	209.73	28.70	41.00	5.44	0.03	0.63	3.61	1.12	3.10	0.17	0.01	0.45	3.32

Hole	Sample #	From	To	Fe	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	P	CaO	MgO	S	Mn	TiO <sub>2</sub>	Na <sub>2</sub> O	K <sub>2</sub> O	LOI
NBR3	366613	180.55	181.45	28.80	42.50	4.58	0.04	0.70	3.59	1.36	3.15	0.16	0.04	0.54	2.32
	366614	184.90	186.10	31.60	35.70	2.22	0.04	0.55	2.49	0.96	2.76	0.07	0.06	0.20	9.36
	366615	188.75	189.85	21.70	50.80	7.28	0.05	0.68	2.89	0.20	2.56	0.40	0.06	1.42	1.75
	366616	189.85	191.10	25.10	41.90	4.79	0.11	3.49	3.35	0.26	3.86	0.17	0.05	0.42	4.43
	366617	191.90	192.35	23.20	39.10	9.46	0.02	1.27	1.73	0.07	4.82	0.20	0.03	0.52	8.07

