NOTES ON AN IRON DEPOSIT NEAR HIGHCLERE.

INTRODUCTION:

As instructed on 29th October last, I made a brief examination of the Highclere iron deposit in the vicinity of the Pet River, situated on Subdivision lots Nos. 419 - 98 acres, and 420 - 89 acres, of the V.D.L. Company's 50,000 acres, Emu Bay Block and charted in the names of C.L. Rockliff and Cohen respectively. L.J. Smith holds a permit to enter on these properties.

As no prospecting or developmental work has been carried out on this property the opportunity was taken to inspect recent prospecting operations carried out by L.J. Smith, in the vicinity of the Hampshire railway station, with the object of obtaining detailed information regarding structure which could quite reasonably be regarded as applicable to the almost analogous deposit at Highclere.

SITUATION AND ACCESS:

The Highclere deposit is situated one and a half miles east of the Highclere railway station which is on the Burnie-Zeehan line, about 15 miles from Burnie. The railway and a main motor road pass within a mile and a half of the deposit, while a branch road runs to Cohen's homestead approximately a quarter of a mile from it.

GEOLOGY: The area in which these deposits occur is portion of the northern part of a deeply dissected, elevated peneplain known as the Waratah peneplain.

The only rocks exposed are granites and basic dykes (at Hampshire) of Devonian age, with a thin covering of Tertiary basalt. The granite is generally of medium grain size, Holocrystalline, and consisting essentially of quartz and felspar, with extremely variable amounts of biotite and muscovite. The basalt has weathered to a dark chocolate soil and only "kernels" of fresh rock remain. These contain all the characteristics of the Tertiary basalts so well developed in north-western Tasmania.

No geological structure could be determined owing to the presence of the thin covering of basalt; granite outcrops to the north approximately a quarter of a mile from the main outcrop. Therefore it was assumed tentatively that conditions were analogous to the deposits in the vicinity of Hampshire, where the iron ore is associated with basic dykes which, owing to their extremely weathered condition, it was impossible to determine the original rock type. At Hampshire, the iron occurs as residual masses in basic dykes which contain crystals of magnetite freely disseminated through the decomposed rock. A number of relatively shallow trenches have been cut across iron ore outcrops and in each case has penetrated the ironstone into the containing basic igneous rock.

ORE DEPOSITS: Two outcrops of iron-ore occur but the northern most one is of very limited extent and may be only a loose boulder. The other occupies a low residual prominence some three hundred feet south; it rises more steeply from the north and east and slopes away to the south and west by gentle undulations. The outcrop, roughly oval in shape, with the apparent axis striking north-east,

has an exposed length of approximately 150 feet, with a width of about 60 to 80 feet; it rises two or three feet above ground level. Although numerous boulders of hematite can be traced to the south-east for at least 10 to 15 chains, there is no evidence beyond their existence to suggest that massive iron-ore exists below the basalt covering.

As no attempt has been made to prove the extent of the deposit, no data relating to the quantity of ore available could be obtained.

The following analyses of grab samples serve to indicate the relative quality of the ore exposed:-

Reg.No.1440 - No.1 North end of main outcrop - Highclere.

Moisture at 105 deg. C.	0.14 per cent
Loss on ignition	2.72 " "
SiO_2 . . .	2.60 " "
Al_2O_3 . . .	0.59 " "
Fe_2O_3 . . .	91.38 " "
FeO . . .	2.59 " "
Cr_2O_3 . . .	Nil
MnO_2 . . .	0.10 " "
P_2O_5 . . .	0.18 " "
TiO_2 . . .	0.07 " "
CaO . . .	0.02 " "
MgO . . .	0.06 " "
S . . .	0.16 " "

Metallic iron = 66.075 per cent.

Reg. No.1442 - No.2. North end, eastern side - main outcrop.

Moisture at 105 deg. C.	0.26 per cent
Loss on ignition . . .	2.26 " "
SiO_2 . . .	3.68 " "
Al_2O_3 . . .	1.73 " "
Fe_2O_3 . . .	87.59 " "
FeO . . .	3.95 " "
Cr_2O_3 . . .	Nil
MnO . . .	0.13 " "
P_2O_5 . . .	0.26 " "
TiO_2 . . .	0.07 " "
CaO . . .	0.18 " "

Reg. No.1442 - No.2. North end, eastern side - main outcrop. cont.

MgO	. . .	0.09	" "
S	. . .	0.31	" "

Metallic iron = 64.325 per cent.

Reg.No.1441. - No.3. 4 chains south of No. 1.

Moisture at 105 deg. C.		0.22	per cent
Loss on ignition	. . .	2.38	" "
SiO_2	. . .	5.64	" "
Al_2O_3	. . .	0.45	" "
Fe_2O_3	. . .	87.5	" "
FeO	. . .	3.49	" "
Cr_2O_3	. . .	Nil	"
MnO	. . .	0.13	" "
P_2O_5	. . .	0.26	" "
TiO_2	. . .	0.18	" "
CaO	. . .	0.06	" "
MgO	. . .	0.10	" "
S	. . .	0.19	" "

Metallic iron = 63.72 per cent.

From these analyses it will be seen that although the iron content is of fair average grade, the presence of excessive amounts of the deleterious elements, sulphur and phosphorous, will render it unfit for use. Sulphur should not exceed 0.05% and phosphorous 0.1%. Silica is also rather high.

Therefore, in view of the probable nature of the occurrence it is extremely doubtful whether large quantities of iron-ore can be proved to exist, and if they do exist, unless the quality of the ore improves by a reduction in amount of the deleterious substances, the ore would be unfit for use under present day furnace practice.

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