311139

Hole No:	TCD1						
Prospect:	Thomas Creek						
Section:	370000mE						
Co-ordinates:	370000	mE	5900	mN	~220	mRL	
Azimuth:	180	^{o}G	167	^{o}M	Inclination	-45^{o}	
EOH:	88.90m						
Logged by:	Robert Reid 27/5/96						
Date commenced:	20/05/96		Date completed:		24/05/96		

0.00 to 14.90m

pale green spotted porphyritic Diorite. This unit is feldspar-augite-phenocryst crowded. Feldspar crystals of 1 to 4mm diameter constitute 40 to 50% of rock mass and have variable anhedral to sub-hedral form. Augite crystals occur as dark green spots (10 to 15%) of 2 to 7 mm diameter, having rounded to anhedral form. Phenocrysts reside in a fine grained pale green groundmass. Locally, a very coarse grained appearance is imparted by weak chlorite -pyrite alteration.(eg 8.5 to 9.5m). Mineralisation typically exists as disseminated pyrite throughout (1% overall) in the form of sub to euhedral crystals of fine to coarse grain size. An intrusive/alteration? induced breccia texture is evident over the lower 60cm. Core is highly broken with maximum core stick of 15cm. Core recovery is very poor due to extent of weathering.

Minor intervals

0.00-1.00m pervasive grey siliceous alteration containing 5 to 8% pyrite, and locally 30 to 40% in small highly silicified (vein?) fragments. Silica alteration varies from locally texture destructive (s) to partially matrix pervasive (w). Chalcopyrite reaches 1 to 2% in some strongly silica altered fragments, but is 0.5% overall. Strongly siliceous fragments are often weakly vuggy where the host diorite has weathered out.

1 - 2.5m py (4%), sil (w), locally strong in pyritic and barren fragments.

2.5 - 8.5m py (2%) ch(w)

8.5 - 8.5m py (4%) ch (w/m) ks(w) at interval end.

9.4-11.5m (5cm core recovered)py (3-4%), cpy(tr), sil(w)pink ks(w), mag(w) but pervasive, ep(w), ch(w)

11.5- 11.6m sil(s)py(3%)

11.6-14.3 py(tr-1%),ser (w?)locally, magnetite replacement of augite.

14.90-15.90m

grey crystal crowded augite-feldspar-phyric Andesite containing fine to medium grain size, often irregular shaped, near close packed phenocrysts. Unit is slightly more mafic than above with augite (20%) as dark grey crystals. Epidote(w/m) exists as matrix/ feldspar? replacing flecks, and also commonly as fracture plane fillings. py(1%), ser?(w), Broken core, mag(w/m) as dark grey flecks.

15.90-17.60m
light green feldspar-augite-Porphyritic Diorite (as for 0-14.m), locally displays fragmental appearing texture with "matrix" infilled by semi-pervasive chlorite alteration with associated disseminated pyrite(1%) and cpy(tr). The matrix appears weakly silicified where cpy is present. Ferromagnesian minerals are preferentially chloritised and pyritic, and are infrequently replaced by magnetite. Where less altered ferromagnesian minerals are pale green in colour, euhedral and well cleaved parallel to their long axis. Groundmass is very fine grained, sandy appearing with black specks of magnetite? Sharp lower contact (intrusive?). Un-foliated.

17.60-19.00m
medium grained pinkish feldspar-augite Micro-monzodiorite(MDI). Very sharp upper and lower contacts, coherent core. mg feldspathic matrix, weakly porphyritic in feldspar (10%) and augite(5%). Augite commonly replaced/pseudomorphed by magnetite. Pink colour may be due to k-feldspar alteration, which is evident in feldspars.
Mineralisation: py(1-2%), mag(w/m) as crystal pseudomorphs and fine grains in the groundmass. Magnetite rims pyrite locally. Epidote(w) has a close spatial association with pyrite, evident both as veinlets on fracture planes and disseminations. Disseminated pyrite forms mg to 7mm crystal aggregates. Magnetite is locally evident as silvery grey augite replacements, differing from the dominant dark grey pervasive magnetite alteration style evident elsewhere. un-foliated.

19.00-19.70m
Dark grey/green fragmental/altered strongly feldspar-augite-phyric Diorite. Contains fragments to 8cm, including grey sub-rounded silicified fragments. (diatreme breccia?) Py(1-2%) as disseminations and veinlets. Py veinlets <1% often with silicified margins. Pink ks alteration is evident locally (tr) at py aggregate and vein margins. ep(w), ser?(w) as feldspar replacements and scattered flecks. Matrix:- locally (10-15%) pervaded by dark grey (magnetite) alteration. Feldspar crystals appear little altered by these fluids. cpy(tr), 0.5% over basal 10cm. Lower contact marked by an 8mm py-silica-cpy vein at ~80 degrees to the core axis. Other veins occur at 45 degrees. Un-foliated.

19.70-22.20m
grey fg/mg feldspar-augite Micro-monzodiorite(similar to 17.6 to 19.0m), broken core, variable crystal size, very weakly porphyritic in both feldspar and augite with crystals <2mm. Disseminated py(2%), cpy(tr-0.5%), py veinlets on fracture planes (<0.5%) often evident as 1mm coating on fracture planes. ep(w) as flecks, mag(w,1%) as dark grey alteration patches with replacements of augite being common.
Minor interval
20.95-21.15m py locally 3-4% with cpy 1%

22.2-25.18m
mg/cg porphyritic Diorite (similar to 0-14m). Displays a distinctive spotty augite-phyric texture with chlorite altered crystals up to 6mm diameter. mg feldspar crystals are close packed, but not interlocking. py(1%), cpy(tr), disseminated, ch(w), ser(w) in groundmass, mag(w) as spots. Sharp lower contact.

25.18-26.55m
pinkish grey fg/mg augite-phyric Micro-monzodiorite. py(2%), cpy(tr-0.5%) dss, ep(w) as flecks in groundmass and locally strong as fracture coatings. Pink silicification/k-feldspar is evident on some fracture planes. Magnetite(w) as spots and flecks. Lower contact is faulted with sinistral displacement indicated by poorly developed slickensides and ramps formed on an epidote/chlorite coating.

26.55-38.80m
light green/grey porphyritic Diorite with local weakly developed breccia textures. The diorite is phenocryst/crystal crowded containing feldspar(50%) and augite(25%) within a dark grey magnetite altered aphanitic groundmass. Feldspars are of sub to euhedral form and often display concentric reaction rims. Feldspars appear little changed by the moderate intensity magnetite alteration which is dominant throughout in matrix pervasive form. Where variable, magnetite alteration induces a fragmental appearance, eg. @28.2 and 32.0-32.5m, and where weak, magnetite occurs as replacements of chloritic ferromags. Sulphide mineralisation occurs as m/cg and blebby disseminations and also as fracture plane filling veinlets to 5mm in diameter(< 0.5%). Overall this interval contains py(1-2%), cpy(tr) and patchy pink ks alteration of weak intensity. Broken core at end of interval.
Minor Intervals
@25.65m 6mm grey quartz vein with py-cpy(1%).
26.55-28.00m grey quartz zones/irregular veinlets from 0.5 to 1.5cm are patchy (< 1%). sil(w), py(2-3%), cpy(0.5%).
36.65-37.80m matrix pervasive grey silicification (w/m), py(3%), cpy(0.5-1.0%), dss, mag(w). Interval contains a 12cm weakly magnetic fg/mg micro-monzodiorite? dyke hosting py(7%) and cpy(1.0%).

38.80-41.10m
pale green/grey mg poorly augite-phyric Microdiorite with a fuzzy equigranular groundmass. This unit is dissimilar to the micro-monzodiorites, principally upon the basis of lack of k-feldspar. Core occurs as relatively coherent sticks to 30cm, with broken core at the up-hole contact. Epidote (w) forms veinlets on fracture planes, but mostly exists as replacements(?) of augite crystals. mag(w, grains), ch?(m), py(1.0%), cpy(tr).

41.10-50.90m
light green and grey variably altered mg porphyritic Diorite and breccia. The diorite is composed of greenish (sericitised) anhedral to subhedral feldspars having even but crowded distribution(50%, <3mm dia). Weakly chloritised euhedral augite phenocrysts constitute 15 to 20% (< 5mm dia). Phenocrysts reside in a fine grained cream/light green and black (magnetite/ilmenite?) speckled groundmass.
Breccia textures are locally evident as zones of irregularly shaped variable composition(?) clasts. Clasts include medium grained monzodiorite and varieties of dark grey porphyritic andesite, having aphanitic groundmass. The breccia may be intrusion (mg monzodiorite?) and magnetite alteration related. Broken core precludes adequate study.
Alteration and mineralisation is variable. Lowest intensity alteration comprises 30% of interval as sericitisation (w/m) of feldspars and chloritisation (w) of augite phenocrysts.

Veins of very coarse grained fibrous actinolite(70%) with pink/brick red ks(< 25%) +/- py constitute < 5% and range up to 4cm width. They are commonly enclosed by dark grey groundmass pervasive magnetite(s). Magnetite alteration intensity appears to decrease away from vein margins. Py and cpy commonly occur within the most intense magnetite alteration. The form of py and cpy mineralisation is typically as dss and irregular veins up to 1.5cm in diameter. True vein widths are hard to characterise as numerous vein tongues and high intensity dss are evident proximal to vein margins. Epidote(w) often forms fracture plane filling veins and some instances are spatially associated with k-feldspar. Overall py(2%), cpy(tr-locally 1% over 5 to 15cm intervals)

50.90-52.50m
pinkish green mg weakly augite-phyric Micro-monzodiorite. Pink k-feldspar is evident within the equigranular groundmass along with evenly disseminated cpy(tr-0.5%).

52.50-74.70m
mg/cg porphyritic Diorite (feldspar-augite-phenocryst crowded) with minor intercalated feldspar-phyric Dacitic intrusives in the vicinity of 67m. Magnetite(m) as zones of matrix pervasive and augite destructive alteration. py locally 1%, cpy(tr).
Minor Interval
52.50-54.20m light green Acid Andesite/Dacite breccia. Contains clasts of feldspar-rich "dacite". Feldspars within clasts are cream and pale green, sericitised, sub-hedral to tabular euhedral, constituting ~60%. Clast groundmass is pale green, fine grained and displays abundant fg black (magnetite/rutile?) specks. Contact with unit above is marked by broken core with matrix pervasive magnetite alteration and breccia texture decreasing away from the contact. Overall mag(s), py(2%), cpy(0.5%) dss and sulphidic veinlets(tr).

74.70-81.70m
grey fg/mg Microdiorite, Weakly augite-phyric with granular appearing groundmass containing weakly sericitised feldspar. ep(tr) as stringers on fracture planes. magnetite(w), sil(w), evenly disseminated py(3%), cpy(tr).
Minor interval
79.50-80.70m py(7%), cpy(tr)

81.70-83.70m
light green Diorite/porphyritic Diorite(feldspar-augite-phyric). Displays a mg/cg groundmass containing fg magnetite grains. Augite phenocrysts reach 6mm. Both upper and lower margins are distinct, marked by a grain size increase relative to the adjacent units. py(tr), mag(w).

83.70-88.90m
light green fg/mg MDI. equigranular, weakly altered/mineralised, leucoxene 1%. Epidote forms fracture filling veinlets (<1%), sil(w), ch(w) as flecks, py(1%).

EOH @ 88.90m