QUALITY EXPLORATION CORPORATION
SPA MINES PROJECT
DIAMOND DRILL LOGS.

92H16

COLLAR

North 164 + 00
East 179 + 25
Elevation 5,500' approx.
Azimuth OM 5° - 075°
Dip -45°
Logged By J. F. PAGELLA

S P A P R O J E C T

DIAMOND DRILL RECORD

Hole No. 69 - 1
Commenced 30th NOVEMBER, 1969
Finished 2nd DECEMBER
Purpose Of Hole EXPLORATION, GRANODIORITE
Final Depth 353' ACID TUFF CONTACT

DESCRIPTION			CORE LENGTH				ASSAYS					ACCUMULATIVE AVERAGES				
FROM	TO		FROM	TO	ACC WIDTH	SAMPLE NO.	AU OZ.	AG OZ.	% CU			AU W	AG W	CU W		RECOV.
0'0"	15'0"	No Recovery														—
15"0"	17'5"	Brecciated weathered vuggy siliceous tuffs. Much iron-oxide staining (May be limonite)														
17'5"	22'0"	Grey-green altered crystal tuff. Coarse grained, partially corroded friable material with some vugs. Occasional haematite zones. Frequent traces of sulphides. Mostly pyrites in thin veins at 40° to core and finely disseminated through material.														
22'0"	25'0"	Leucoratic granite; Hornblende lathes appear to be partially lineated. This is a well cemented siliceous feldspathic rock.														
25'0"	29'0"	Partially corroded mottled green altered crystal tuff. Coarse grained feldspars are mostly kaolinized.														
29'0"	31'5"	Coarse grained siliceous feldspathic granite. This could be a better preserved, indurated or re-silicified crystal tuff. Some indication of foliation in ferromags.														

DIAMOND DRILL RECORD

HOLE NO. 69-1 PAGE 2

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU	%ZN	%BI	ACCUMULATIVE AVERAGES AU W	AG W	CU W		RECOV.
31'5"	40'0"	Partially corroded green white mottled siliceous coarse grained crystal tuff. Occasional patches of haematite. Frequent traces of pyrite, usually in thin veins, but some disseminated crystallization.	31'5"	40'0"	8'5"	10276	TR	TR	0.02	0.15	TR					100%
40'0"	47'5"	As above. Frequent thin veins at about 60° to core, heavily pyritized vuggy zone at 44'3" with haematite: recovery 70%.														70%
47'5"	50'0"	Variable green white crystal tuff as above. Includes some finer grained tuff partially banded with haematite veining.														100%
50'0"	54'5"	Variably corroded green white coarse grained siliceous crystal tuff - with some disseminated sulphides.	50'0"	60'0"	10'0"	10277	TR	TR	0.02	0.13	TR					
54'5"	58'0"	More massive solid granite with sulphide in thin veins. Some haematite phenocrysts.														100%
58'0"	59'5"	Corroded coarse-grained, green-white mottled crystal tuff. Sulphide as above.														100%
59'5"	61'0"	Variable zone of partially corroded tuff and very solid re-silicified and recrystallized and indurated tuff.														100%

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS %ZN	ASSAYS %BI	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	RECOV.
61'5"	65'0"	Moderately uniform and homogeneous mottled green and white granite. Phenocrysts of ferromags appear partially orientated. It is difficult to separate this from leucoratic granite gneiss.														
65'0"	66'3"	Friable zone - traces of haematite and some sulphides.														100%
66'3"	68'0"	Massive slightly foliated siliceous material as above.														
68'0"	70'0"	Coarse grained corroded (kaolinized) acid tuffs with some silicified harder zones. Considerable disseminated sulphides - mostly pyrite.														
70'0"	80'0"	Material as above. Occasional thin quartzite lenses. One 1/2" vein at 70'0" composed of pyrite altering to haematite with a vuggy calcite zone in the middle, typical hydrothermal and metasomatic veining. Occasional disseminated sulphide specks.	70'0"	80'0"	10'0"	10280	TR	TR	TR	0.05	TR					100%
80'0"	83'0"	As above. Mostly sound silica rock.														100%
83'0"	89'0"	Mottled green white corroded kaolinized coarse grained possibly brecciated material - tentatively identified as altered crystal tuff.														

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU	%ZN	%BI	ACCUMULATIVE AVERAGES AU W	AG W	CU W		RECOV.
89'0"	94'0"	More massive slightly orientated acid rock described as silicified crystal tuff - almost a granite in places with some quartzite band. Thin pyrite veining and occasional sulphide traces disseminated through the material. Sulphide veining is mostly regularly orientated at about 45° to core.														100%
94'0"	96'0"	Friable and corroded zone in similar material.														80%
96'0"	100'0"	Varied zone of more or less corroded green white, mottled coarse-grained tuff as above.														100%
100'0"	110'0"	Varied zones as above. Fairly frequent - pyrite - often in well formed cubes, but little sign of other mineralization.	100'0"	110'0"	10'0"	10278	TR	TR	0.02	0.15	TR					90%
110'0"	111'0"	Partially fragmented material as above	110'0"	120'0"	10'0"	10279	TR	TR	TR	0.40	TR					100%
111'0"	116'0"	Soft, friable or fragmented crystal tuff. Frequent traces of pyrite in small blebs or veins.														50%
116'0"	120'0"	More solid coarse grained tuff with some disseminated pyrite. Core appears partially brecciated with some irregular veining.														100%

DIAMOND DRILL RECORD

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FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS %ZN	ASSAYS %BI	ACCUMULATIVE AVERAGES AU W	AG W	CU W		RECOV.
120'0"	130'0"	Variable partially corroded acid tuff - partially broken up by veining and micro faulting. Fairly frequent pyrite particularly between 128' and 130'														100%
130'0"	136'0"	Much finer grained darker, particularly altered pyroclastics. Some noticeable variation in grain size with disturbed veining and banding. Some calcite veneers: sulphide (pyrite) appears in most veins and partings.														100%
136'0"	152'0"	Moderately massive, hard fairly fine grained but variably darker pyroclastics with much irregular veining mostly with pyrite. Several zones with considerable haematite staining, which is derived from sulphide veins and disseminated blebs. Particularly siliceous hard fine-grained zone between 150' and 152'.	150'	160'	10'0"	10281	TR	TR	TR	0.05	TR					100%
152'0"	153'0"	Pale fine-grained partially corroded pyroclastics, considerable fine sulphide shows and some pyrite veining.														
153'0"	163'0"	Irregular mostly well cemented coarse-grained siliceous crystal tuffs. Abundant haematite on joints and partings and as replacement material after sulphides. Possibly cinnabar? One thin lense of black plastic clay on joint surface.														

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS %ZN	ASSAYS %BI	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W		RECOV.
163'0"	165'0"	Friable and broken core with high pyrite concentration some large pyrite crystals. Vuggy zones with black clay. Fine pyrite impregnations. Fault breccia with hydrothermal replacements.	160'0"	170'0"	10'0"	10282	TR	TR	0.02	0.08	TR					60%
165'0"	169'0"	Sound zone is still showing high pyrite content, brecciation, corrosion and production of black clay in shears and parting. Host rock is brecciated green pyroclastics.														80%
169'0"	174'0"	Moderately sound variable coarse-grained pyroclastics with some sulphide. Some calcite as veneers on vein surfaces. Rock becomes more competent with depth.														100%
174'0"	183'0"	Massive mostly sound well cemented silicified coarse-grained green - white mottled crystal tuffs. Some ferromag phenocryst. Occasional veins with some pyrite, mostly irregular, some disseminated sulphide.														100%
183'0"	186'0"	As above, but with some traces of haematite and slightly more pyrite.														100%
186'0"	201'0"	Slightly less well cemented and more variable crystal tuffs as above. Fairly frequent thin veins with considerable pyrite plus disseminated sulphide, throughout the rock mass.	190'0"	200'0"	10'0"	10283	TR	TR	0.04	0.18	TR					100%

FROM	TO	DESCRIPTION	CORE LENGTH FROM	TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU	%ZN	%BI	ACCUMULATIVE AVERAGES AU W	AG W	CU W		RECOV.
201'0"	201'8"	Corroded friable and poorly cemented zone. Otherwise as above.														100%
201'8"	214'0"	Variable massive moderately sound pyroclastics as above. Some pyrite at 206'. Occasional well cemented bands.														100%
214'0"	225'0"	Fragmental recovery of friable corroded pyroclastics as above. Below 221' apparently contains considerable pyrite and includes 1" nuggets of solid pyrite. Includes some dark grey plastic clay lenses.														25%
225'0"	232'0"	Corroded and broken coarse-grained crystal tuff as above. Considerable sulphide, both in veins and disseminated through the tuff. Some pyrite nuggets.														100%
232'0"	235'0"	Vuggy corroded crystal tuff. Considerable production of dark plastic clay at 232'3". Occasional traces of haematite.														100%
235'0"	252'5"	Corroded coarse to very coarse-grained mottled green - white acid crystal tuff. Feldspars almost completely kaolinized. With some zones particularly dissolved and vuggy, with black clay at 244'. Sulphide far less common.														100%

FROM	TO	DESCRIPTION	CORE LENGTH FROM	TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU	%ZN	%BI	ACCUMULATIVE AVERAGES AU W	AG W	CU W		RECOV.
252'5"	260'0"	Much sounder well cemented green crystal tuff. Some large phenocrysts or bombs. Rare traces of disseminated sulphide and a little sulphide veining.														40%
260'0"	262'0"	Lost core except for several pyrite nodules and pyritized tuff fragments.														5%
262'0"	274'0"	Mottled green - white crystal or lithic tuff with some agglomerate. Mostly coarse-grained, well cemented rock with minor pyrite and traces of specular iron. No distinguishing featuring or banding.														100%
274'0"	277'0"	As above the finer grained tuff slightly better cemented. Rare traces of iron sulphide.														100%
277'0"	287'0"	Complete recovery of regular green crystal tuff and volcanic agglomerate, moderately well cemented. Irregular veining often accompanied by increased weathering and invariably by pyrite. Towards 287' core becomes brecciated and more corroded.														100%
287'0"	301'0"	Monotonous section of mottled green, white acid crystal tuff with occasional thin quartzite zones. Mostly moderately well cemented. Some sulphides and possibly specular iron in thin veins and disseminations.														100%

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU	%ZN	%BI	ACCUMULATIVE AVERAGES AU W	AG W	CU W		RECOV.
301'0"	315'0"	Crystal tuff as above. Gradually becoming coarser, though variable throughout the zone. Sulphide as dissemination or in thin veins.														100%
315'0"	321'0"	Varied green crystal tuff and some agglomerate. Mostly coarse grained crystal tuff but some fine grained material with phenocrysts. Some thin pyrite-rich veins with pyrite content increasing.														100%
321'0"	328'0"	As above, but more corroded and friable particularly between 321'0" and 323'0".														75%
328'0"	335'0"	As above. Very coarse-grained friable corroded tuff with some agglomerate. Fairly frequent sulphide traces mostly in blebs. Between 333'0" and 335'0" brecciated and corroded material with a single lense of grey plastic clay.														100%
335'0"	345'0"	Green coarse-grained or very coarse grained acid crystal tuff and small scale agglomerate. Pyritized veins common especially at 340'0" to 340'5" and disseminated sulphides are present as small crystals and blebs.														100%

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS %ZN	ASSAYS %BI	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W		RECOV.
345'0"	353'0"	Irregular varied crystal tuff possibly lighter in color and finer grain size than section above. Disseminated pyrite, and small scale pyrite concentration are common. Core is moderately well cemented.														
		E N D O F H O L E Hole Termination = 353'0" Hole Dip Check = 42° at 350'0".														
		SUMMARY														
		ROCK Monotonous section of siliceous calcitic feldspathic crystal tuff with some thin zones of agglomerate. Feldspars are largely altered throughout the length of core.														
		MINERALS Pyrite is common in minor veins disseminated crystals and blebs Minor traces of haematite (specularite) Magnetite, Chalcopyrite. No other noticeable significant mineralization noted.														

COLLAR

North 164 + 00
East 182 + 75
Elevation 5,500' approx.
Azimuth 075° T
Dip -45° (End of Hole Check 44°)
Logged By J. F. PAGELLA

S P A P R O J E C T

DIAMOND DRILL RECORD

Hole No. 69 - 2
Commenced 3rd DECEMBER, 1969
Finished 6th DECEMBER
Purpose Of Hole ORE EXPLORATION, GRANODIOR
Final Depth 354' ACID TUFF CONTACT

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU	%PB	%ZN	ACCUMULATIVE AVERAGES AU W	AG W	CU W		RECOV.
0'0"	21'0"	No Recovery														----
												SN				
21'0"	24'5"	Fragmental recovery. Grey moderately homogeneous crystal tuff with some larger fragments. Joints and erosion surfaces are iron stained limonite. Fine grained disseminated pyrite common and plentiful.	22'0"	30'0"	8'0"	10851	TR	0.10		0.31	0.10	0.01				90%
24'5"	34'5"	Variable partially corroded and pitted grey, moderate grained crystal tuff with some larger fragments calcitic. Pyrite common - both disseminated through tuff and concentrated in large crystals on joints (regular sets at 50° to core) Nuggets of pyrite moderately common.	30'0"	40'0"	10'0"	10852	TR	0.1			0.10					100%
34'5"	36'0"	Fairly fine-grained, grey contaminated quartzite with much fine-grained sulphide disseminated through core. Colour slightly darker than rest of core.														

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU	%PB	%ZN	ACCUMULATIVE AVERAGES AU W	AG W	CU W		RECOV.
36'0"	41'0"	Variable crystal and lithic tuff mostly moderately homogeneous grey, medium-grained tuff with some signs of corrosion and pitting. Pyrite in thin regular veins or disseminated throughout tuff.														100%
41'0"	49'0"	Fragmental recovery. Mostly in brecciated and corroded grey tuff often largely reduced to clay. Probably fault brecciated. Often heavily mineralized with pyrite in seams, nuggets and disseminated throughout material. Some brown ~~even~~ iron staining.	40'0"	50'0"	10'0"	10853	TR	TR	0.02							44%
49'0"	63'5"	Variable, slightly more sound, moderately coarse, grey crystal and lithic tuff. Frequent zones of blocky and weathered material. Core is mostly pitted. Occasionally slightly vuggy. Pyrite is disseminated in quantity throughout core, as well as concentrated in moderately coarse-grained veins and nuggets. No signs of any worthwhile ~~other~~ mineralization.	50'0"	60'0"	10'0"	10854	TR	0.10			0.08		~~0.00~~			95%

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS %PB	ASSAYS %ZN	ACCUMULATIVE AVERAGES AU W	AG W	CU W		RECOV.
63'5"	70'0"	Fragmental recovery in heavily pyritized grey pyroclastics with signs of slickensiding. Material has completely altered to black or grey plastic clay along minor shears in several places. Some large pyrite nodules, pyrite crystals, and abundant pyrite throughout material.	60'0"	70'0"	10'0"	10855	TR	TR	0.02							80%
												% Mo				
70'0"	86'0"	Fragmental recovery in heavily pyritized volcanics. Samples of core recovered indicate an extremely corroded loosely cemented pyrite sand and fault breccia. Several hundred pounds of pyrite sand washed out of the casing from this zone. (See Sample.)	(SLUDGE SAMPLE)			10856	TR	0.60	0.47	0.18	0.08	0.004				40%
			(65'0"	85'0"	)				0.07			0.004				
			70'0"	80'0"	16'0"	10857	TR	TR	0.05			0.004				
86'0"	93'0"	Fragmental recovery - mostly in pyrite nuggets or pyrite loosely cemented in calcitic matrix. Almost solid sulphide.	86'0"	98'0"	12'0"	10858	TR	1.3		0.18	0.08					15%
93'0"	95'0"	Slightly better recovery in loosely cemented corroded and pyritized brecciated pyroclastics.														80%

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS %PB	ASSAYS %ZN	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W		RECOV.
95'0"	98'0"	Fragmental recovery. Transition zone of altered pyritized moderately coarse-grained, green crystal tuff metamorphised by contact with basic dark green (dolerite) dyke. Patches of haematite and sulphide, both becoming less common as the dyke is approached.														70%
98'0"	111'0"	Medium grained dark green basic intrusive. This is a hard, heavy, homogeneous, slightly weathered calcitic rock with frequent small traces of disseminated sulphide and some haematite. It appears partially auto brecciated and has occasional xenoliths of presumably pyroclastic material.														100%
111'0"	114'5"	As above, but a zone of more broken and weathered material with considerable haematite staining on joints and partings.														
114'5"	119'0"	Medium grained moderately homogeneous dark green intrusive as above.														
												HG%				
119'0"	121'0"	Zone of prominently auto brecciated flow banded fragments set in a green basic dyke as above.	119'0"	130'0"	11'0"	10859	TR	TR				TR				100%

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS %PB	ASSAYS %ZN	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W		RECOV.
		This material is veined by relatively consistant sulphide replaced calcitic veining at about 65° to core.														
121'0"	134'0"	Core is 100% recoverable moderately homonegeneous green basic dolerite or similar. Material is medium grained, hard, well cemented heavy rock with regular traces of disseminated sulphide, usually with some calcite which also appears on partings - and occasional breccia or auto brecciated zones - though these are completely re-cemented. Occasional thin veinlets cut core at a fine angle and these usually carry pyrite and calcite.														100%
134'0"	136'0"	As above - slightly more prominent re-cemented breccia zone.														100%
136'0"	154'0"	Basic green dolerite as above.	140'0"	150'0"	10'0"	10860	TR	TR			0.20					100%
154'0"	158'5"	Blocky core with some weathered soft lenses. Transition contact probably largely made up of re-cemented and metamorphosed acid crystal tuff - in places a greywacke like material.														

DIAMOND DRILL RECORD

HOLE NO. 69-2 PAGE 6

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS %PB	ASSAYS %ZN	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	RECOV.
158'5"	167'5"	Soft corroded friable green very coarse grained crystal tuff or fine agglomerate - in places reduced to remanent minerals in a clay matrix. Contains some pyrite.	160'0"	170'0"	10'0"	10861	TR	0.01								95%
167'5"	187'0"	Better cemented but still friable very coarse grained tuff or agglomerate consisting largely of feldspar lathes and a finer green ash matrix. Mostly without structure. Some magnetite and traces of pyrite last foot becoming finer grained softer more corroded.	170'0"	180'0"	10'0"	10862	TR	TR	0.03	0.27	0.10					100%
187'0"	216'0"	Grey green fine grained moderately soft friable, partially silicified tuff. Core includes some poorly cemented brecciated zones and recovery is fragmental over much of the length. Grey tuff is pyritized mostly as fine grained disseminated sulphide or thin pyritized veinlets.	190'0"	200'0"	10'0"	10863	TR	TR								50%

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS %PB	ASSAYS %ZN	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W		RECOV.
216'0"	218'0"	Slightly fragmented core. Variable contact zone between fine pyroclastics as described above and green fine grained basic calcic dyke. Dyke includes brecciated and re-cemented fragments with some calcite and haematite and pyrite in veins.														90%
218'0"	230'0"	Mostly homogeneous, hard, green fairly fine grained well cemented basic intrusive with blocky fractures. Includes some zones auto brecciated or broken up by stockwork of fine calcite veining. Signs of haematite on joint surfaces common. Pyrite is common and disseminated throughout the rock mass and on fresh fracture surfaces seem to be concentrated in small blebs, and in minor vein concentrations. Appears to contain partially redissolved xenoliths of crystal tuff wall rocks, which exist as brecciated metamorphised fragments.	220'0"	230'0"	10'0"	10864	TR	TR								100%
230'0"	233'0"	Blocky corroded fragments as above intersected and broken up by complex calcite veining.														100%

DIAMOND DRILL RECORD

HOLE NO. 69-2 PAGE 8

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU	%PB	%ZN	ACCUMULATIVE AVERAGES AU W	AG W	CU W		RECOV.
233'0"	250'0"	Green medium to fine grained hard well cemented reasonably homogeneous calcitic intrusive. Occasionally brecciated; auto brecciated or xenolithic zones. Occasional calcite veining usually associated with brecciation. This dyke material is lightly but regularly mineralized with disseminated pyrite and specular iron ore.	240'0"	250'0"	10'0"	10865	TR	TR	0.03		0.13					100%
250'0"	254'0"	Noticeably irregular coarse-grained, moderately heavily veined phase in above described basic dyke. Consists of brecciated xenoliths with calcite veining. Sulphide mineralization slightly more obvious.														100%
254'0"	262'0"	More homogeneous material as above.														100%
262'0"	265'0"	Large scale distortion accompanied by corrosion and calcite veining. Material is partially decomposed to clay. Large xenoliths of flow banded cemented tuff. Core in general becoming more fractured. Calcite veneer on joint surfaces with some signs of movement.														100%

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS %PB	ASSAYS %ZN	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W		RECOV.
265'0"	269'0"	Blocky fragmental recovery of partially corroded green basic material as above apparently intermixed with tuff. Grain size becoming coarser - some sign of pyrite.														75%
269'0"	270'5"	Sounder coarse grained light green variable brecciated tuffacious and calcareous material as above.														100%
270'5"	273'5"	As above, but including some extremely corroded sections of friable crystal remnents in green calcitic clay. Some haematite and occasional pyrite crystals.														100%
273'5"	282'0"	Coarse-grained, green, partially corroded but homogeneous intrusive or possibly very regular homogeneous crystal tuff. (See Thin section.) Calcite with some traces of pyrite and some small pyrite concentrations.	280'0"	290'0"	10'0"	10866	TR	TR								90%
282'0"	288'5"	As above, but much more broken recovery with more signs of decomposition and more haematite staining. Grain size becoming smaller and slightly more pyrite appears to be present.														66%

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	RECOV.
288'5"	297'0"	Largely composed of brecciated crystal tuff or flow banded lava fragments in a calcitic green, basic and re-cemented matrix. Presumably enclosed in or marginal to the basic intrusive and metasomatised by it. Pyrite is moderately common in small isolated blebs.											100%
297'0"	304'0"	As above. Rock is particularly well cemented, sound, green re-cemented breccia.	300'0"	310'0"	10'0"	10867	TR	TR					100%
304'0"	313'0"	As above, but includes two particularly brecciated zones at 306'0" and 308'0" and 310'0" to 313'0". These are partially vuggy with prominent calcite veining and some haematite on joints.											100%
313'0"	318'0"	Brecciated re-cemented volcanic fragments in a green matrix as above.											
318'0"	323'0"	Much more homogeneous green basic dyke or lava. Grain size varies from very fine grain to coarse grained. Calcite veining moderately common. Disseminated pyrite concentrations common throughout material.											100%

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	RECOV.
323'0"	341'0"	Hard well cemented green pyroclastics and lava breccia set in a fine green basic calcitic matrix. Very variable grain size. Pyrite shows and concentrations common. Includes some zones of moderately homogeneous material - probably lava flows or less xenolithic dyke material.											100%
341'0"	350'0"	Comparatively homogeneous moderately coarse grained, green, well-cemented hard, calcitic basic dyke or lava. ~~xxxxx~~ Some calcite veining, particularly near 344'. Disseminated sulphides common and regular.	340'0"	350'0"	10'0"	10869	TR	0.01					
350'0"	354'0"	Much coarser grained material, but as above. Probably a dyke rock. Disseminated sulphide as above. END OF HOLE											

COLLAR

North 168 + 00
East 182 + 50
Elevation 5,500' approx.
Azimuth 075° T
Dip -45° (Final Dip -49°)
Logged By J. F. PAGELLA

S P A P R O J E C T

DIAMOND DRILL RECORD

Hole No. 69 - 3
Commenced 7th DECEMBER, 1969
Finished 9th DECEMBER, 1969
Purpose Of Hole EXPLORATION-MINERALIZED
FINAL DEPTH: 398° TUFF / NFAR CONTACT

DESCRIPTION			CORE LENGTH				ASSAYS					ACCUMULATIVE AVERAGES				
FROM	TO		FROM	TO	ACC WIDTH	SAMPLE NO.	AU OZ.	AG OZ.	% CU	%PB	%ZN	AU W	AG W	CU W		RECOV.
0'0"	10'5"	No Recovery														----
10'5"	15'5"	Moderately sound core recovery in pale grey-green fairly well cemented coarse grained crystal tuff. Contains some well jointed shattered zones and considerable haematite staining both on joints and remanent crystals - probably decayed pyrite.														90%
15'5"	19'5"	Coarse-grained moderately sound cemented, grey-green pale crystal tuff and agglomerate. Contains noticeable xenoliths of white tuff and other fragments including metamorphosed intrusives. Less haematite or limonite brown staining, but still noticeable. Traces of iron mineralization.														
19'5"	52'0"	Homogeneous remarkably uniformed grey-green, reasonably well graded, coarse-grained cemented crystal tuff with occasional, usually small, blebs and xenoliths of similar material. Core recovery is often in 3' lengths. Only rare traces of any metallic mineralization. Very little veining	20'0"	30'0"	10'0"	10874	TR	TR								100%

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS %PB	ASSAYS %ZN	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W		RECOV.
		or structural discontinuities.														
52'0"	57'0"	As above, slightly darker green colour, possibly reflecting slightly finer grain size and less agglomerate.														100%
57'0"	62'5"	Coarse grained far more corroded crystal tuff. At 57'6" this is reduced to dark plastic clay. All core is vuggy, pitted or partially washed away. Considerably more pyrite mineralization particuarly in the black clay band.	50'0"	60'0"	10'0"	10875	TR	TR								100%
62'5"	67'3"	Homogeneous coarse-grained moderately sound, grey-green crystal and lithic tuff as described. Little mineralization.														100%
67'3"	70'0"	Zone largely made up of lithic fragments, bombs, xenoliths, etc. in crystal tuff matrix. Little mineralization.														
70'0"	78'0"	Coarse grained crystal tuff as above with some small lithic fragments and bombs.														

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS %PB	ASSAYS %ZN	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W		RECOV.
78'0"	105'0"	Remarkably uniform moderately well cemented grey-green, coarse-grained crystal and lithic tuff with some small xenoliths. Some corroded veins carrying pyrite concentration, and irregular small concentrations of specular iron. Core has very little veining or structural discontinuity and is recovered in long uniform lengths.	90'0"	100'0"	10'0"	10251	TR	TR								
105'0"	111'0"	Essentially as above but with same large partially digested xenoliths of white crystal tuff and some indications of flow concentration at 106'0".														100%
111'0"	116'0"	Coarse-grained moderately homogeneous grey-green tuff and agglomerate as before.														100%
116'0"	119'0"	Coarse grained slightly pitted and vuggy corroded crystal tuff and agglomerate as above. Core is broken by corroded veining now turned to pale clay and at 118'0" to 118'9" a black plastic clay and remanent feldspars and silicious fragments with large pyrite cubes.														100%

DIAMOND DRILL RECORD

HOLE NO. 69-3 PAGE 4

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU	%PB	%ZN	ACCUMULATIVE AVERAGES AU W	AG W	CU W		RECOV.
119'0"	123'0"	Coarse-grained green crystal and lithic tuff as before. Core is slightly pitted and corroded with some joints or partings which may have been slickensided which are invariably coated with clay residue. Occasional traces of pyrite or other iron ores.	120'0"	130'0"	10'0"	10252	TR	TR	0.03	0.27	0.15					100%
123'0"	125'5"	As above, but less corroded.														
125'5"	127'5"	Green homogeneous crystal tuff as before, moderately sound cut by large veins up to ¼ inch wide of pyrite with noticeably more pyrite in tuff matrix.														
127'5"	131'0"	Pitted, corroded, partially dissolved clayey vuggy tuff, with zones reduced to armoured clay and some black clay bands. Some considerable concentration of pyrite and isolated large pyrite crystals.														
131'0"	143'0"	Less corroded core but similar to above. Most of the core is pitted with some corroded zones and occasional pale clay particularly on joints. Less signs of mineralization.														
143'0"	146'0"	Possibly more sound green tuff and small size agglomerate as above. At 146'0" a pale green 1 inch clay band forms a contact with the material below.														

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS % Pb	ASSAYS % Zn	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W		Recovery
146'0"	155'0"	Blocky and fragmental recovery in much harder grey silicious well cemented, well graded, medium grained acid crystal.														60%
155'0"	164'0"	Moderately sound hard silicous, grey well-cemented coarse-grained crystal tuff - not noticeably mineralized, but with some fine pyrite.														100%
164'0"	166'0"	Broken and partially altered, slickensided, brecciated, grey volcanic as above. Large recrystalization zones of massive amorphorus white sulfate. May be gypsum or another metallic sulfate. (Soft-Hardness about 2.)														
166'0"	167'0"	Pyrite appears to be slightly foliated and may be massive replacement zone.	166'0"	170'0"	4'0"	10253	0.10	0.90	0.06	0.25	0.38					
67'0"	169'0"	Grey silicious well cemented tuff carrying considerable pyrite and with sulfate mineral as before on joint surfaces.														
169'0"	176'0"	Moderately homogeneous sound grey, well cemented, medium-grained silicious crystal tuff with some sulfate. Mineralization on occasional partings. May be zinc sulfate. Considerable traces or finely disseminated pyrite.	170'0	175'0	5'0	10254	Tr	0.10		0.18	0.13					

DIAMOND DRILL RECORD

HOLE NO. 69-3 PAGE 6

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS %PB	ASSAYS %ZN	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W		RECOV.
176'0"	188'5"	Grey-green, mottled white coarse-grained moderately sound crystal tuff and volcanic agglomerate. Slight evidence of rare flow. Core becomes increasingly coarse grained towards base. Persistent rare traces of specularite and pyrite.														
188'5"	199'0"	Finer grained more homogeneous grey-green crystal tuff with some agglomerate. Core has a pitted erosion surface which becomes more pronounced. Some small vugs with specularite and disseminated pyrite.														
199'0"	224'0"	Monotonous moderately well cemented grey-green coarse-grained crystal tuff and agglomerate. Finely disseminated pyrite and specular iron, but no other interesting minerals than these.	210'0"	220'0"	10'0"	10255	TR	TR			0.13					
224'0"	231'0"	Green-grey more varied tuff and agglomerate as above. Becomes very coarse grained and agglomeratic towards 231'0". Occasional pink fragments probably silica. Disseminated sulphides but no concentrations.														100%

DIAMOND DRILL RECORD

HOLE NO. 69-3 PAGE 7

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS %CU	ASSAYS %PB	ASSAYS %ZN	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W		RECOV.
231'0"	245'0"	Green-grey crystal tuff and agglomerate as above, but with slightly more homogenity. Surface is moderately pitted. Disseminated sulphide (pyrite) common but no concentration. Some specular iron.	230'0"	240'0"	10'0"	10256	Tr	0.2								100%
245'0"	248'5"	Moderately well cemented grey silicic coarse-grained crystal tuff with disseminated pyrite.														100%
248'0"	250'0"	Fragments as above.														25%
250'0"	251'5"	Heavily pyritized grey silicious tuff as above.	250'0"	260'0"	10'0"	10257	Tr	0.5								100%
251'5"	259'0"	Moderately friable and corroded grey crystal tuff as above, pyrite common.														100%
259'0"	264'0"	Moderately sound grey-green coarse-grained silicic crystal tuff with disseminated pyrite and some pyrite concentrations in thin veins. Traces of specularite.														100%

DIAMOND DRILL RECORD

HOLE NO. 69-3 PAGE 8

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS %PB	ASSAYS %ZN	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W		RECOV.
264'0"	278'0"	Moderately well cemented pale green coarse grained variable crystal tuff and agglomerate. Little structural phenomena. Some more weathered zones contain pyrite and specularite in fine disseminations.														
278'0"	292'0"	Green cemented crystal tuff and agglomerate showing zones of distinctive flow. Some thin dendritic minerals in mineralized veinlets, with pyrite probably manganese. Some heavily pyritized xenoliths at 283'0". Disseminated pyrite and occasional specularite.	280'0"	290'0"	10'0"	10258	Tr	0.2								
292'0"	292'5"	Zone of above material cut by permanent corroded black clay material.														
292'5"	302'0"	Variable cemented green coarse-grained crystal tuff with occasional joints. These are vuggy corroded and carry recrystallized specularite and pyrite.														

DIAMOND DRILL RECORD

HOLE NO. 69 - 3 PAGE 9

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU	%PB	%ZN	ACCUMULATIVE AVERAGES AU W	AG W	CU W		RECOV.
302'0"	303'0"	Zone of prominently veined mineralized dark green or black agglomerate. Considerable specularite, pyrite and haematite.														100%
303'0"	305'0"	Green coarse grained pyritized crystal tuff as previous 20'.										% Mo				100%
305'0"	316'0"	Completely chaotic, irregular, varied breccia and volcanic agglomerate cemented in a dark matrix. Some vuggy and corroded zones. Iron mineralization often heavy with specularite and haematite particularly, with some magnetite and pyrrohite. This is a metamorphised contact zone with the dark auto-brecciated dyke or lava recorded below.	310'0"	320'0"	10'0"	10259	Tr	0.1				Tr				100%
316'0"	327'5"	Well cemented moderately fresh looking agglomerate breccia and auto brecciated material set in a fine-grained dark green matrix. Probably marginal to dyke or lava flow. Origin may be partially metasamatic, partially xenoliths and sloping effects. Fresh disseminated pyrite, some specularite, and traces of haematite.														100%

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU	%PB	%ZN	ACCUMULATIVE AVERAGES AU W	AG W	CU W		RECOV.
327'5"	331'0"	Homogeneous, hard, sound dark green rock fine-grained auto brecciated dyke or lava flow. Fresh pyrite and some specularite.														100%
331'0"	332'0"	Breccia zone with possible slickensided joints. Well cemented. Iron rich specularite zone disseminated and in thin veins.														100%
332'0"	340'0"	Auto brecciated hard, well cemented green material as above. Fresh pyrite usually in small concentration and some haematite.										% Ni				100%
340'0"	346'0"	Brecciated and auto brecciated material as above. Some of the fragments illustrate flow banding. Occasional thin mineralized seams with pyrite, specularite, and possibly sphalerite.	340'0"	350'0"	10'	10260	Tr	Tr		0.11	0.43	Tr				100%
346'0"	382'0"	Uniform recovery in fine-grained green matrix, cementing auto brecciated fragments. Traces of fresh pyrite are common with some specular iron and minor traces of magnetite and other iron minerals. Some variation in intensity of auto-brecciation and some variations in the grain size of the minerals in the matrix can be identified.	370'0"	380'0"	10'	10261	Tr	0.1								100%

FROM	TO	DESCRIPTION	CORE LENGTH FROM	TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU	%PB	%ZN	ACCUMULATIVE AVERAGES AU W	AG W	CU W		RECOV.
382'0"	383'0"	As above, but cut by a contorted ½ inch seam of white clay, with minor pyrite. Thisis inthe form of a tiny intrusive seam and content indicates flow movement.	380'0	390'0	10'0	10262	Tr	0.4								
383'0"	398'0"	Monotonous auto brecciated, green well-cemented basic material as described above.														100%
		END OF HOLE														

COLLAR

North 148 + 00
East 171 + 00
Elevation 5,400' approx.
Azimuth VERTICAL
Dip 88°
Logged By J. F. PAGELLA and J. G. SIMPSON

S P A P R O J E C T

DIAMOND DRILL RECORD

Hole No. 69 - 4
Commenced 11th DECEMBER, 1969
Finished 14th DECEMBER, 1969
Purpose Of Hole EXPLORATION I.P. ANOMALY
FINAL DEPTH 402°

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS %PB	ASSAYS %ZN	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W		RECOV.
0'0"	6'0"	Overburden														-
6'0"	9'0"	Fragmental Recovery in material described														66%
		below														
'0"	17'0"	Very hard well cemented white-grey quartz -														100%
		biotite granite. Rock is coarse grained, and														
		is speckled with biotite (or chlorite occasion-														
		ally) in small crystals, concentrations, etc,														
		often pseudo-morphing hornblende or augite.														
		Some magnetite (presumed) is present as rock														
		is faintly magnetic. Occasionally some faint														
		trace of foliation can be detected in the														
		biotite phenocrysts.														
		Metallic mineralization is in trace quantities.														
17'0"	20'0"	As above, but core is broken by blocky joint														85%
		system, all of which are heavily iron-stained.														
		At 17'-18' some prominent veining with calcite.														
20'0"	26'0"	More complex leucocratic slightly less hard														92%
		green-white coarse grained granite grading into														
		quartz rock (described above) in places.														
		Quartz has a rose colour.														
		Metallic mineralization in trace quantities.														
26'0"	33'0"	As above. Slightly more regular green coarse														100%
		grained, hard, well cemented granite or														
		granodiorite.														

DIAMOND DRILL RECORD

HOLE NO. 69-4 PAGE 2

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	Recovery
33'0"	40'0"	Variable leucocratic silicious white or pale green														100%
		coarse grained, hard, well cemented granite														
		with occasional quartzite concentrations.														
		Some phenocrysts of biotite pseudomorphing														
		hornblende.														
		A faint orientation of the mafic fragments may be														
		discernable with rare very thin veneers of calcite on joints.														
		A little metallic mineralization.								% Hg						
40'0"	45'0"	Core recovery more blocky in material as above.	40'0"	50'0"	10'0"	10263	Tr	0.4		Tr						100%
		Some isolated occurrences of hematite (or														
		cinnebar) and similar material in veining at 42'.														
		At 43' coarse grained granite is loosely cemented														
		friable, fault brecciated.														
45'0"	51'0"	More homogenous, less fractured pale grey														
		silicious hard granite with much quartz and														
		biotite phenocrysts as before.														
51'0"	52'0"	Quartzite - composed of recemented green and														100%
		pink quartz crystals.														
52'0"	56'0"	Variable hard well cemented silicious pale green														100%
		or white coarse grained granite as previously														
		described.														
56'0"	58'0"	Silicious quartzite, grey and pink quartz with														100%
		some ferromagnesian minerals.														
58'0"	61'0"	Variable grey green granite as above														100%
61'0"	62'0"	Silicious quartzite zone as before.														100%
62'0"	79'0"	Grey green pale variable very hard granite as														100%
		previously described. More quartz zones and														
		variable ferromag content. Some small xenoliths														
		appearing near 72'. Calcite is occasionally														

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	Recovery
		present in small veins and some of the quartz											
		is pink.											
79'0"	96'0"	Variable hard well cemented rocks as above.											100%
		Recovery is 100%. No distinctive markers or											
		structural phenomena noted. Joint surfaces											
		may show signs of movement and thin veneers of											
		serpentine-like material.											
96'0"	102'0"	Paler more silicious zone with noticeably less											100%
		ferromagnesian minerals, otherwise as above.											
102'0"	103'0"	Blocky fragmental zone in silicic granite as above.											100%
		Veins are filled with chocolate coloured loosely											
		cemented hematitic sand.											
103'0"	105'0"	Hard well cemented grey green granite as											100%
		previously described.											
105'0"	107'0"	Green pale granite zone of completed corroded	105'0"	110'0"	5.0'	10264	Tr	0.1					75%
		green-white clay armoured with quartz fragment.											
		Solid part of core recovered has some showings											
		of disseminated pyrite.											
107'0"	111'0"	Variable grey green granite as previously											100%
		described. Core has some prominent joint											
		surfaces. Finely disseminated isolated crystals											
		and tiny concentrations of pyrite are seen.											
111'0"	126'0"	Variable grey pale, green, silicious well cemented,											
		very hard coarse-grained granite as previously											
		described. None or very minute traces of											
		sulphides. Fine-grained, grey-green felspar.											

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS Pb%	ASSAYS Zn%	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W		Recovery
126'0"	127'1"	Porphyrytic rhyolite, probably xenolith														
127'1"	135'5"	Fresh grey biotite, granodiorite, no foliation visable.														
135'5"	140'0"	Slightly kaolinized granodiorite, biotite slightly chloritized. Small patch of Fe discoloration plus pyrite 1" diameter at 137'5".														
'0"	151'0"	As above slightly less altered, some minor shearing and slickenside formation.														
151'0"	160'0"	More altered and kaolinized granodiorite, biotite gone to chlorite, some very soft patches with disseminated pyrite cubes and black grains non-magnetic - specularite or tiny biotite clots.														
160'0"	162'0"	Very altered granitic material, grey-green, highly chloritized and kaolinized. Disseminated pyrite and prominent red mineral, possibly spinel -? NB Specimen for thin-section	160'0"	165'0"	5'0"	10265	Tr	Tr	0.03		1.06					100%
			165'0"	175'6"	10'6"	10266	Tr	Tr								
'0"	163'0"	Highly altered granite, heavy pyritization gives pudding effect, > 10% sulphide, close association pyrite & Fe-oxide.														100%
163'0"	175'5"	Slightly altered leuco-granodiorite with decreasing pyrite after 165'0". Evidence of minor shearing and alteration. Narrow 3" zones of pyrite enrichment occur sporadically. Increase in pyrite content definitely associated with increase in alteration.														
175'5"	180'0"	Slightly fresher granodiorite but still good deal of plagioclase alteration, with minor disseminated pyrite throughout.														

DIAMOND DRILL RECORD

HOLE NO. 69-4 PAGE 5

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS Pb%	ASSAYS Zn%	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W		Recovery
180'0"	220'0"	Fresh biotite granodiorite, with a little pyrite														
		and possibly sphalerite in veinlets which are														
		clearly late at 201'5" and 205'. Rest of section														
		pyrite disseminated accessory.														
220'0"	225'0"	Increasing felspar alteration and pyrite content.														
225'0"	231'0"	Very altered, granodiorite with much pyrite,	224'0"	231'0"	7'0"	10267	Tr	Tr								
		little Fe oxide, possibly minor sphalerite and														
		secondary manganese in veinlets.														
231'0"	234'0"	Fresh biotite granodiorite, slight biotite														100%
		foliation 45° to core axis 233' - 235'														
237'0"	252'0"	Slightly altered granodiorite with disseminated														
		pyrite and later blebs and veinlets occurring														
		rarely.														
252'0"	256'0"	Fresh biotite granodiorite														
256'0"	260'0"	Altered kaolinized granitic rock with increase	260'0"	265'0"	5'0"	10268	0.06	Tr			0.86					
		in pyrite content and possibly minor sphalerite.														
260'0"	276'0"	Very altered granodiorite highly kaolinized,														
		biotite over to chlorite, second any veins of pyrite														
		and sphalerite up to 1/2"														
		NB Specimen sample at 273'														
276'0"	291'0"	Fresh biotite granodiorite														
291'0"	301'0"	Slightly altered granodiorite, biotite largely														
		over to chlorite, disseminated pyrite.														
301'0"	308'0"	Very altered granodiorite, kaolinized - soft,	301'0"	306'0"	5'0"	10269	Tr	Tr								
		with increase in pyrite.														
308'0"	328'0"	Fresh biotite granodiorite with biotite foliation														
		at 45° to core axis. Dark patch probably														
		xenolith from 309'5" - 309'8".														

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	Recovery
328'0"	353'0"	Aplite vein 328'0" - 328'3" with 1/2" diameter											100%
		bleb of chalcopyrite followed by biotite - rich											
		band 6" probably altered by aplite. Otherwise											
		fresh looking granodiorite with disseminated											
		pyrite - small pyrite 1/8" vein at 347'0"											
		NB Section sample 328 - 328'5"											
3'0"	354'0"	Coarse-grained granodiorite secondary											
		silicification apparent.											
354'0"	376'5"	Strongly foliated biotite granodiorite.											
376'5"	378'5"	Darker rock increase in pyrite and chlorite	376'0"	378'5"	2'5"	10270	Tr	0.4	0.12				
		at 378'0" 1/2" vein pyrite and chalcopyrite											
		NB Sample specimen 378'0". More mafic											
		appearance, probably represents contaminated											
		xenolith.											
378'5"	390'5"	Fresh coarse-grained granodiorite.											
390'5"	391'0"	Minor 6" long shear, sub-parallel to core axis											
		with manganese and pyrite, fine grained											
		myl$_o$nitic band 1/2" width.											
391'0"	402'0"	Fresh strongly foliated biotite granodiorite,											100%
		3" xenolith of dark, fine-grained rock at 397'0"											
		" END OF HOLE "											

North 164 + 00 N
East 182 + 75 E
Elevation Approx. 5000 ft.
Azimuth 075° True
Dip 75°
Logged By: Ian Turnbull

SPA MINES PROJECT

DIAMOND DRILL RECORD

HOLE NO. 5 PAGE 1
Commenced May 25, 1970 -- Finished May 27, 1970 @ 368'
To intersect anticipated sulphide zone shown by DDH 69-2

			CORE LENGTH				ASSAYS					ACCUMULATIVE AVERAGES				
FROM	TO	DESCRIPTION	FROM	TO	ACC WIDTH	SAMPLE NO.	AU OZ.	AG OZ.	% CU			AU W	AG W	CU W		o/o recovery
0	15'	No recovery														--
15'	18' 6"	Fragmental recovery. Brittle pale grey green homogeneous crystal tuff. Largely pitted. Finely disseminated pyrite throughout the core and within the "clayey" weathered material on fracture faces.														90
18' 6"	20'	Fragmental recovery in a decomposed zone of moderate grained crystal tuff carrying a high concentration of pyrite veinlets. Widespread associated limonite staining.														90
20'	27'	Pale grey green homogeneous moderate grained crystal tuff. Core is fairly brittle and slightly corroded to give a pockmarked appearance. Occasional xenoliths of feldspar lathes. Pyrite is weakly disseminated through the core. Narrow bands of gouge material at 20' 6", 22' 6", 25' 6" and 27'.														100

SPA MINES PROJECT

HOLE NO. 5 PAGE 2

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	o/o recovery
27'	27' 6"	Fine grained dark grey quartzite with a high percentage of fine grained pyrite. Contact with previous unit marked by dark grey plastic clay.														100
27' 6"	30' 6"	Pale grey green hard competent medium grained crystal tuff. Evenly disseminated pyrite throughout the core. Four fracture faces, approx. 90° to the core, show limonite staining.														100
30' 6"	32'	Fragmental recovery of dark grey tuffaceous rock carrying concentrations of pyrite both as disseminations and in veinlets. The latter subparallel the core. Some coarse pyrite crystals.	30	40	10	201		.22	.01							80
32'	36' 6"	Slightly brittle moderate to coarse grained pale grey to grey green tuff. Core generally pitted. Possibly some agglomeritic material as inclusions. Evenly disseminated fine grained pyrite.														100

SPA MINES PROJECT

HOLE NO. 5 PAGE 3

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
36'6"	37'6"	Fragmented recovery of coarsely brecciated tuff, altered along a fracture or shear subparalleling the core to gouge material and dark grey plastic clay. This carries fine and coarse pyrite crystals. Possible slicken siding.														90
37'6"	49'	Fairly competent moderately coarse crystal and lithic tuff; inclusions of pyroclastic material within pale grey matrix. 1/8" wide pyrite veinlet subparalleling the core. Disseminated pyrite appears visually to be higher per cent than previous core section. Hematite on fracture faces.														100
49'	53'	Hard competent pale grey green fine grained crystal tuff showing autobrecciation. Weakly disseminated pyrite. Trace amounts specularite and hematite.														100

SPA MINES PROJECT

HOLE NO. 5 PAGE 4

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU			ACCUMULATIVE AVERAGES AU W	AG W	CU W		% recovery
53'	57'	Fine grained bottle green calcic intrusive dolerite dyke. Inclusions of partly digested tuffaceous material. Flow banding evident at 53'. Pyrite weakly disseminated.														100
57'	59' 6"	Fine grained mottled pale grey green brecciated and hornfelsed crystal tuff.														100
59' 6"	60' 6"	Fine grained dark green dense intrusive dyke rock, slightly banded and noticeably calcic Pyrite mineralization very weak.														100
60' 6"	66'	Fine to coarsely brecciated and well cemented pale grey green hornfelsed tuff. Matrix generally a dark grey. Transitional unit resulting for intrusion of dyke or dyke swarm.														100
66'	73'	Hard competent dark green calcic dyke rock. Autobrecciated and carrying some altered inclusions of acid tuff.														100

SPA MINES PROJECT

HOLE NO. 5 PAGE 5

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
73'	78'6"	As before, a brecciated and well cemented														100
		complex and chaotic mixture of tuffaceous														
		blocks and calcic doleritic material.														
78'6"	86'	Very competent dark green calcic intrusive														100
		dyke. Thin calcite veins, and minor fractures														
		carrying pyrite and associated specularite														
		and iron oxide staining. Otherwise pyrite														
		very weakly disseminated.														
86'	91'	Transitional unit bordering dyke. Hornfelsed														100
		and brecciated crystal tuff within slightly calcic dark														
		green matrix. corroded and pitted in parts.														
		Fairly dense concentration of hairline veinlets														
		carrying pyrite. Chalcopyrite noted.														
91'	110'	Hard fine grained dark green highly calcic														
		doleritic dyke. Frequent calcite veins cutting the														
		core at 60°. Pyrite mineralization is weak to														
		absent.														

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU			ACCUMULATIVE AVERAGES AU W	AG W	CU W		% recovery
110'	134'	As above, intrusive calcic dyke rock. Coarse auto-brecciation noticeable in parts, with attendant admission of pyrite. Greater degree of mineralization. Pyrite occurring in hairline fractures and minor disseminations. Chalco-pyrite noted at 129'.														100
																80
134'	135'	Gouge material in shear zone subparalleling the core. Pyrite concentrated in veinlet.														
135'	141'6"	Dark grey green homogeneous fine grained dolerite dyke. Very calcic with numerous calcite veinlets. These may carry pyrite.														100
141'6"	151'	Dark green medium to fine grained calcitic matrix cementing numerous fine to coarse altered breccia blocks of paler tuffaceous material. Regular calcite veinlets, and regular pyrite occurring with or replacing calcite. Chalco-pyrite noted at 151'.														100

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
151'6"	152'6"	Fragmented recovery in sheared zone. This														90
		comprises gouge material, extensive pyrite,														
		minor specularite and associated iron oxide														
		staining.														
152'6"	163'6"	Basic dark grey green intrusive dyke, as before.														100
		Possible inclusions of pyroclasts. Noticeable														
		decrease in pyrite mineralization.														
163'6"	168'6"	Pale grey fine grained crystal and lithic tuff.														100
		Auto (?) brecciated and well recemented.														
		Pyrite occurs extensively along the breccia														
		blocks, forming a network of hairline veinlets.														
		Molybdenite (?) trace.														
168'6"	171'	As above, but limited brecciation and hence														100
		mineralization. Minor magnetite with pyrite.														
171'	174'	Dark green fine grained, moderately calcic														100
		basic rock, brecciated and carrying altered														
		inclusions of acid tuffaceous rock. Gouge material along partings. Weakly disseminated pyrite.														

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
174'	185'	Basic green doleritic dyke as before. Weak mineralization.														100
185'	197'	Wholly competent pale to dark chaotic unit. Colours vary from pale to dark green and large partly dissolved inclusions of a hard dense fine grained rock are a deep brown. There may be several narrow (3" - 6") sections of unmixed doleritic material. Other inclusions of large blocks of acid tuffaceous material are evident, in part silicified. The unit is non calcic; a metamorphosed transitional stage bordering the dyke above. Pyrite occurs within fractures, accompanied by dark red iron staining.														100

SPA MINES PROJECT

HOLE NO. 5 PAGE 9

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	% recovery
197'	213'	Pale grey, slightly altered fine crystal and lithic tuff. Limited autobrecciation with placement of pyrite alongside breccia blocks. Pyrite is liberally disseminated through the core, and there are numerous veinlets of pyrite cutting the core at 45°. At 210'- 211' there are almost solid sulphides. Minor sphalerite was noted.	200	210	10	202		.16	TR				100
213'	220'	Similar to above, but a more altered "clayey" tuffaceous rock. Disseminated pyrite appears weaker than previous section. Fragmented recovery of 6" of sulphides at 218'.											95
220'	228'	A slightly altered complex volcanic rock showing autobrecciation and sections of gouge in minor shears, or faults. Displacement (?), Inclusions of dark brown fragments (bombs?) are evident. Pyrite is weak to absent. Minor specularite and attendant iron staining occur erratically.											100

SPA MINES PROJECT

HOLE NO. 5 PAGE 10

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU			ACCUMULATIVE AVERAGES AU W	AG W	CU W		% recovery
228'	248' 6"	Hard to friable pale grey well cemented brec-	236' 6"	241' 6"	5	203		.40	.06							100
		ciated tuffaceous rock, with blocky xenoliths														
		of pyroclasts. One minor section of possibly														
		agglomeritic material. Partial silicification of														
		unit. Numerous minor bands of alteration														
		(at shears (?)) to talc, accompanied by														
		extensive sulphides together with strong														
		disseminated pyrite through the core.														
		Especially noted at 237' - 241'. Two 6"														
		sections of core showing a soft altered matrix														
		but no mineralization.														
248' 6"	251'	Soft Corroded chloritised clayey material,														75
		orginally a fine agglomerate or coarse tuff.														
		Unmineralized.														
251'	271' 6"	A hard to brittle pale grey coarse crystal														100
		tuffaceous unit. Partially silicified. Some														
		limited autobrecciation. Highly pyritized, both														
		in veinlets and disseminations. Fragmented														
		recovery of wholly pyritized sections at 259' 6"														
		to 261' 6" and 265' 6" to 267' 6".														

SPA MINES PROJECT

HOLE NO. 5 PAGE 11

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
271' 6"	275'	Pale green sandy material, derived from a wholly corroded agglomerate. Pyrite very weak.														
.75'	281'	Friable brittle core of more competent unit than above. Agglomerate of fine green ash matrix and pale feldspar lathes.														95
281'	306'	Fragmented recovery of a pale, partly silicified grey hard but brittle unit of fine to coarse crystal tuff. Brecciation is accompanied by pyrite mineralization along the breccia blocks.														80
306'	307'	Transitional rock type, of fine grained tuff intermixed with calcic dyke material.														100
307'	310' 6"	Fine grained dark green calcic basic dyke rock Some thin calcite veins.														100

SPA MINES PROJECT

HOLE NO. 5 PAGE 12

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
310' 6"	311' 6"	Transition, intermixed unit as before.														100
311' 6"	316'	Pale grey hard competent unit of fine to moderately coarse crystal tuffaceous rock. carrying brecciated blocky xenoliths of green basic material. Pyrite concentrated along fractures.														100
316'	318'	Green sandy material, product of a moderately coarse crystal tuff, showing remnants of xenoliths. Last 3" as a green clay.														50
318'	330'	Slightly fragmented recovery of well fractured core. A pale grey green tuffaceous rock, brecciated but well cemented, with attendant veinlets of pyrite. One shear zone carrying dark grey clay subparalleling the core at 320'.														90

SPA MINES PROJECT

HOLE NO. 5 PAGE 13

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	% recovery
330'	342'	A hard dense coarsely brecciated rock, com-											100
		prising fine grained calcic intrusive material											
		cementing large angular blocks and fragments											
		of fine crystal tuff. An intrusive breccia.											
		Noticeable lack of pyrite.											
342'	353' 6"	A pale green grey silicified fine crystal tuff											100
		carrying plentiful partially dissolved and/or											
		altered inclusions of pyroclastic material.											
		Weakly disseminated pyrite in the core but											
		some veinlets or parting strongly pyritized at											
		45° to the core. Core very strong and competent.											
353' 6"	368'	Hard competant rock comprising brecciated											
		fine crystal tuff cemented and altered by											
		invading dark green basic calcic material.											
		Size of breccia blocks decreasing towards the											
		apparent centre of the unit - 363'. Invading											
		material also autobrecciated. Disseminated											
		mineralization noticeably absent. Pyrite											
		veinlets cutting through two sections of											
		tuffaceous but not through the intrusive	0	368	---	204		.26	.06	May not be representative			
		cementing material.											
		368' end of hole.											

North 168 + 00N
East 178 + 20E
Elevation Approx. 5000'
Azimuth 255° True
Dip 60°
Logged By Ian Turnbull

SPA MINES PROJECT

DIAMOND DRILL RECORD

HOLE NO. 6 PAGE 1

Commenced May 28, 1970 -- Finished May 29, 1970 at 198'
To test vertical extension of rusty weathered zone in granodiorite.

DESCRIPTION			CORE LENGTH				ASSAYS					ACCUMULATIVE AVERAGES				
FROM	TO		FROM	TO	ACC WIDTH	SAMPLE NO.	AU OZ.	AG OZ.	% CU			AU W	AG W	CU W		% recovery
0	11'	No recovery, overburden														--
11'	19'	Complete recovery of well fractured core. A	11	20	9	205		.06	TR							100
		hard but brittle altered medium grained pale														
		green mottled granodiorite. Chloritization is														
		extensive but not complete. Very fine fractures														
		carry calcite and minor pyrite. Faces of														
		joints are stained by limonite. At 17' there is														
		a band of dark grey plastic clay.														
19'	23'	A hard competent medium grained homogeneous														100
		but slightly altered biotite granodiorite.														
		Numerous fracture faces have a veneer of														
		calcite, with trace amounts of pyrite and														
		specularite.														

SPA MINES PROJECT

HOLE NO. 6 PAGE 2

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU			ACCUMULATIVE AVERAGES AU W	AG W	CU W		% recovery
23'	25'	Pale green extremely chloritized granodiorite														100
		Network of dark fine veinlets crisscross the														
		core. These carry specularite and minor pyrite.														
		Calcite is absent.														
25'	33'	Slightly altered pale grey granodiorite. Some														100
		pink quartz and remnants of partially altered														
		biotite. Fine magnetite is disseminated														
		through the core. Infrequent calcite veinlets														
		have associated pyrite.														
33'	40' 6"	Fresh biotite granodiorite. Some lineation of														100
		biotite paralleling the core.														
40' 6"	47'	Sharp transition into hard medium grained														100
		siliceous well altered granodiorite. Competent														
		unfractured core. Pyrite weakly disseminated.														

SPA MINES PROJECT

HOLE NO. 6 PAGE 3

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	% recovery
47'	52' 6"	Section of altered granodiorite as above. 1/2"											100
		to 1" wide veins of quartz and sulphides, with	47	52	5	206		.15	.19				
		later calcite, subparalleling the core. Coarse											
		pyrite predominant, with minor chalcopyrite											
		and bornite. Pyrite is also disseminated											
		within the host rock.											
52' 6"	59'	Hard homogeneous altered granodiorite as											100
		above. The several fracture openings have a											
		veneer of calcite. Small section of gouge at 54'.											
59'	66'	Relatively fresh granodiorite, feldspar and											100
		biotite only slightly altered. Magnetite											
		occurs associated with the biotite. Very tight											
		fractures carry calcite and there is local											
		chloritic alterations along these fractures.											

SPA MINES PROJECT

HOLE NO. 6 PAGE 4

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH				ASSAYS					ACCUMULATIVE AVERAGES				
			FROM	TO	ACC WIDTH	SAMPLE NO.	AU OZ.	AG OZ.	% CU			AU W	AG W	CU W		% recovery
66'	70'	Altered chloritized granodiorite as before.														100
		Frequent thin veinlets with specularite and														
		minor pyrite, cut the core.														
70'	73'	Well jointed relatively fresh granodiorite	70	80	10	207		.05	.01							100
73'	80'	Complete recovery of highly fractured core.														100
		Pale green chloritized granodiorite. Fracture														
		faces showing a veneer of calcite with														
		specularite and minor pyrite. Iron oxide														
		staining common.														
80'	86'	Well jointed slightly altered granodiorite.														100
		Unmineralized. Inclusion of highly altered														
		material at 82' to 82' 6".														
86'	92'	Section of extremely corroded soft to friable														80
		well chloritized and kaolinized granodiorite.														

SPA MINES PROJECT

HOLE NO. 6 PAGE 5

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU			ACCUMULATIVE AVERAGES AU W	AG W	CU W		% recovery
92'	104'6"	Uniformly well altered siliceous granodiorite	100	110	10	208		.05	.01							100
		Infrequent thin dark veinlets of pyrite and														
		hematite staining. Well fractured and														
		kaolinized section at 95' to 97' which is more														
		liberally pyritized.														
104' 6"	110'6"	Altered granodiorite, as above. Variably														90
		corroded to soft and friable material, well														
		mineralized with pyrite. Chalcopyrite noted														
		at 108'. Dark grey plastic clay in minor														
		shear (?) subparalleling the core.														
110' 6"	112'	Fragmental recovery of extremely corroded soft	110	120	10	209		.11	.03							80
		section of grey and white speckled siliceous														
		rock. Well kaolinized granodiorite (?) Talc														
		or similar material on fracture faces. Section														
		heavily pyritized.														

SPA MINES PROJECT

HOLE NO. 6 PAGE 6

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
112'	125'6"	As above, an extremely fractured core of variable but mainly hard fragments of a well altered granodiorite. Pyrite occurs on the numerous fracture faces. These cut the core at 45°														90
125' 6"	132'	Variably hard and soft green and white speckled chloritized granodiorite. Again talc (?) localized along fracture faces. No mineralization.														90
132'	139'	Competent unfractured slightly altered granodiorite.														100

SPA MINES PROJECT

HOLE NO. 6 PAGE 7

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS % Mo.	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	% recovery
139'	143'	Sharp silicified contact with kaolinized fine to medium grained acidic rock. Presumably as before an altered granodiorite. Liberal pyritization both disseminated in the core and localized in fractures.	140	145	5	210		.06	.01	.003				100
143'	145'6"	Slightly altered granodiorite as before. Weakly mineralized with pyrite, specularite and possibly bornite.												100
145'6"	148'	Relatively fresh granodiorite as before.												100
148'	163'	Altered chloritized granodiorite. Pale "clayey" altered material on fracture faces. Fragmental recovery of final two feet of section												90

SPA MINES PROJECT

HOLE NO. 6 PAGE 8

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
163'	176'6"	Hard competent fresh granodiorite. Biotite pseudomorphing hornblende.														100
176'6"	189'6"	Pale green to grey altered granodiorite. Weakly disseminated pyrite throughout the core, and pyrite associated with 1/4" quartz veins cutting the core.														100
189'6"	198'	Fresh unaltered hard medium grained biotite granodiorite. No evident mineralization.														100
		198' end of hole.														

North 168 + 00N
East 178 + 30E
Elevation Approx. 5000'
Azimuth 075° True
Dip 45°
Logged By Ian Turnbull

SPA MINES PROJECT

DIAMOND DRILL RECORD

HOLE NO. 7 PAGE 1

Commenced May 29, 1970 -- Finished May 31, 1970 at 377'
To check extension of intrusive dykes for localization of sulphides along hanging wall.

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU			ACCUMULATIVE AVERAGES AU W	AG W	CU W		% recovery
0'	20'	No recovery. Overburden.														--
20'	24'	Hard green and white mottled altered granodiorite. Medium grained and siliceous. The rock has been chloritized and kaolinized. Fracture faces show some limonite.														100
24'	24'6"	Extremely kaolinized section of soft altered intrusive rock. Well pyritized with coarse crystals and associated hematite.														80
24'6"	39'6"	Hard well fractured altered granodiorite as above. Slightly calcic. Pyrite weakly disseminated and localized in fractures. Occasional dark grey thin veinlets with specularite and red iron oxide staining. Fragmented recovery at 36' to 37' 6".														95

SPA MINES PROJECT

HOLE NO. 7 PAGE 2

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
39' 6"	46'	Fairly fresh hard competent medium grained biotite granodiorite; quartz + 75%. Weakly disseminated pyrite in the core, fractures have a fine veneer of calcite.														100
46'	48'6"	Altered granodiorite, as before														100
48'6"	53'6"	Unaltered granodiorite, as above. Minor sections of locally (?) chloritized material at 50'6" to 51' and 52' to 52'6".														100
53'6"	73'6"	Well silicified and regularly fractured altered medium grained granodiorite, as before. Thin Veinlets of calcite cut the core, some carrying pyrite. Section from 65' to 69'6" reduced to a soft corroded or friable material with associated well pyritized grey plastic clay.	60	65	5	211		.16	.02							95

SPA MINES PROJECT

HOLE NO. 7 PAGE 3

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
73'6"	76'	Section of coarsely brecciated and poorly cemented rock. Matrix is decomposed to a relatively soft grey clay. Breccia blocks are medium to coarse grained well altered intrusive acidic rock. Fault breccia (?).														100
76'	98'	Well silicified altered green and white mottled granodiorite as before. Uniformly well fractured and well pyritized 2" wide zones at 84'6" and 89'6". Frequent veinlets with specularite and attendant iron oxide staining.														100
98'	102' 6"	Fairly fresh granodiorite as before. Biotite fresh but feldspars slightly chloritized. Occasional calcite veinlets are accompanied by a 2" to 3" wide halo of more intense alteration. No mineralization.														100

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
102'6"	109'	Silicified altered granodiorite as before. Pyrite along with quartz veinlets from 103'6" to 104'6". Otherwise no evident mineralization.														100
109'	117'	Fairly fresh compet nt granodiorite. In frequent tight calcitic fractures.														100
117'	136'	Uniformly altered granodiorite, as above. Weak pyrite concentrated on fracture faces.														100
136'	138'6"	Fairly fresh quartz rich biotite granodiorite. From here to 178' there is a regular sequence of fresh granodiorite banded with a well chloritized and kaolinized granodiorite. Gradational contacts are sharp. Core is competent and hard. Pyritization is weak to absent.														100

SPA MINES PROJECT

HOLE NO. 7 PAGE 5

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH				ASSAYS					ACCUMULATIVE AVERAGES				
			FROM	TO	ACC WIDTH	SAMPLE NO.	AU OZ.	AG OZ.	% CU			AU W	AG W	CU W		% recovery
138'6"	140'	Altered granodiorite														100
140'	141'6"	Fairly fresh granodiorite														100
141'6"	142'6"	Altered granodiorite														100
142'6"	143'	Fairly fresh granodiorite														100
143'	144'6"	Altered granodiorite														100
144'6"	145'6"	Fairly fresh granodiorite														100
145'6"	146'	Altered granodiorite														100
146'	147'	Fairly fresh granodiorite														100
147'	152'	Altered granodiorite														100
152'	159'6"	Fairly fresh granodiorite														100
159'6"	164'	Altered granodiorite														100
164'	165'6"	Fairly fresh granodiorite														100

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU			ACCUMULATIVE AVERAGES AU W	AG W	CU W		% recovery
165'6"	178'	Altered granodiorite. Numerous fractures carry fine pyrite.														100
178'	205'	Fragmental recovery of extremely corroded and kaolinized siliceous rock. Probably derived from the above granodiorite. Variable material from hard fragments to friable "sand" and grey clay. Dark grey clay with liberal pyrite from 185' to 187'. Pyritization relatively strong. Contact zone.	200	205	5	212										80
205'	210'	Pitted fine crystal and lithic tuff. Partially silicified. Darkish grey matrix with paler xenoliths of pyroclastic fragments. Pyrite is disseminated throughout the core, though weaker than in previous section.														100
210'	220'6"	Similar fine crystal and lithic tuff as above. Noticeably paler and less siliceous. Minor chalcopyrite occurs within gouge material at 218' 6".	210	220	10	213										100

SPA MINES PROJECT

HOLE NO. 7 PAGE 7

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
220'6"	226'6"	Hard brittle well cemented agglomerate. Fine grey ash matrix cementing pale green to grey altered pyroclastic material and coarse feldspar lathes. Pyrite disseminated in the core and localized within fractures.														100
226'6"	241'6"	Pitted competent grey unaltered fine crystal and lithic tuff.														100
241'6"	258'	Competent hard tuff as above, but slightly silicified. Variable inclusions of pyroclastic material. These vary from numerous small fragments to larger brecciated blocks of tuffaceous rock. Weakly disseminated pyrite, unit slightly calcic.	240	245	5	214		.10	.15							100
258'	259'	As previous unit, but more siliceous and calcic Metamorphosed tuff.														100

SPA MINES PROJECT

HOLE NO. 7 PAGE 8

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
259'	271'	Dark green-grey calcic fine grained doleritic intrusive dyke. Thin calcite veins cut the rock regularly. Margins of the dyke; i.e., within 2' of contacts with top and bottom units, have mottled appearance due to partially dissolved fine to coarse inclusions of pale tuffaceous material. Very fine pyrite mineralization in these marginal areas.														100
271'	297'	Pitted pale grey fine crystal tuff, as before. Some minor inclusions of altered pyroclastic material.														100
297'	306'	Similar unit as above. Tuff has a slightly green tinge.														100
306'	310'6"	Mottled brittle grey altered coarse tuff or agglomerate. Large coarse blocks of pyroclastic and possibly bombs have been kaolinized.														

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
310'6"	314'	Pitted pale grey fine crystal tuff.														100
314'	317'	Transitional contact between tuff and intrusive														100
		dyke. Brecciated and well cemented blocks of														
		tuff within a calcic dark green matrix. Pyrite														
		weakly disseminated.														
317'	337'	Hard well fractured dark green intrusive dyke.														100
		Very calcic and cut by many calcite veinlets.														
		Complete recovery of fractured section 330-332,														
		where calcite veins subparallel the core. No														
		visible sulphides.														
337'	350'	Dark green intrusive dyke as above. Rock														100
		varies from a holocrystalline texture to a														
		porphyritic one, with phenocrysts of augite.														
		No mineralization.														

SPA MINES PROJECT

HOLE NO. 7 PAGE 10

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
350'	355'	Dyke rock as above, but noticeably non calcic	350	355	5	215										100
		Also well mineralized with pyrite and minor chalco-														
		pyrite within a late quartz vein 1/4" wide.														
		Pyrite also disseminated through core.														
355'	357'6"	Pale grey to green hard partially silicified fine														100
		crystal tuff.														
357'6"	361'	Calcic intrusive dyke rock, as before. Frequent														100
		inclusions of partially dissolved volcanic														
		material.														
361'	362'	Hard competant silicified fine crystal tuff.														
		Probably a large inclusion.														
362'	367'	Variable green mottled basic dyke. Coarsely														
		brecciated and partially silicified. Calcic														
		but no sign of mineralization.														

SPA MINES PROJECT

HOLE NO. 7 PAGE 11

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
367'	377'	Hard basic doleritic dyke, augite porphyritic texture. Slightly calcic with calcite veinlets. Pyrite very weakly disseminated through the core. Infrequent partially digested xenoliths of volcanic material.														100
		377' End of Hole.														

North 184 + 00N
East 194 + 50E
Elevation Approx. 4800'
Azimuth 262° True
Dip 65°
Logged By Ian Turnbull

SPA MINES PROJECT

DIAMOND DRILL RECORD

HOLE NO. 8 PAGE 1

Commenced June 2, 1970 -- Finished June 4, 1970
To test strong I.P. anomaly as indicated by McPhar survey.

			CORE LENGTH				ASSAYS					ACCUMULATIVE AVERAGES				
FROM	TO	DESCRIPTION	FROM	TO	ACC WIDTH	SAMPLE NO.	AU OZ.	AG OZ.	% CU			AU W	AG W	CU W		% recovery
0	15'6"	Overburden. Recovery of boulder fragments														--
15'6"	36'	Complete recovery of extremely fractured core. This is a pale pink to white kaolinized fine crystal and lithic tuff. This rock has a "vesicular" habit due to the complete leaching out of the originally well disseminated sulphides (pyrite). The vesicles are for the most part barren, but in zones associated with fractures or original pyrite veinlets, they are infilled with orange to dark brown powdery limonite. The frequent fracture faces--approximately every 2"--are also heavily stained by limonite. At 20' there is a 2" section of unoxidized disseminated medium crystal pyrite.														100

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
36'	61'	As above, except that the core is slightly less fractured. These stained with brick red to orange limonite; the fracture faces are also coated with a dark brown to black manganese product.														100
61'	63'	Fairly unaltered fine crystal tuff, well silicified Mineralization relatively weak but also unleached. Approx. end of oxidation zone.														100
63'	84'	Pale grey to white, hard and brittle, mainly fresh homogeneous fine crystal tuff. Pink tinge to some feldspars. Coarse crystal pyrite disseminated regularly through the core; approximately 25% of this was been leached out. At 77' to 77'6" there is a limonite stained siliceous boxwork, remnant of a heavily pyritized vein structure. Manganese oxide staining common in fractures.														100

SPA MINES PROJECT

HOLE NO. 8 PAGE 3

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% RECOVER
84'	116'	Competent hard, mainly fresh fine crystal and lithic tuff as above. Minor kaolinization localized around fractures. Coarse crystal pyrite and crystal clusters regularly disseminated through the core. Visual estimate of sulphide content is 1.0% to 2.0%.														100
116'	124'	Pitted, relatively more kaolinized tuff. Infrequent fractures with associated limonite and manganese staining. Weaker mineralization.	120	130	10	3201	TR	.02								100
124'	139'6"	Well mineralized section. Host is, as above, a pitted kaolinized acid tuff. Shattered 1' sections of extremely kaolinized tuff appear to precede the mineralized zones, which are locally resilicified and brecciated. These zones are intersected at 125' to 126'6", 128' to 129', 138' to 139'6". Pyrite is estimated at 30% by volume. It is the only visible sulphide.	130	140	10	3202	TR	.10								100

SPA MINES PROJECT

HOLE NO. 8 PAGE 4

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
139'6"	148'6"	Pitted acid tuff, as before. Fine crystal pyrite	140	150	10	3203	TR	.08								100
		disseminated through the core.														
48'6"	167'6"	Competent core of kaotinized tuff, as above.	150	160	10	3204	TR	.14								100
		Heavily pyritized sections 148'6" to 150'6",														
		155'6" to 156' and 164'6" to 167'6". Each of														
		these mineralized zones runs an estimated	160	170	10	3205	.005	.16								
		30% to 40% sulphide. These zones comprise														
		a 1/2" seam of solid sulphide, cutting the core														
		at a shallow angle, with a surrounding halo of														
		heavy pyritization invading the wall rock, to a														
		depth of 3" to 9".														
167'6"	195'	Pale grey fine crystal and lithic acid tuff.														100
		Feldspars tinged with pink colouration.														
		Possibly an alteration product associated with														
		the presence of manganese. Pyrite regularly														
		but weakly disseminated through the core.														
		Infrequent thin veinlets carry pyrite.														

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
195'	213'6"	Altered acid tuff as before. There is an increase in percentage of "pink" alteration to the pyroclasts. Thin veinlets of coarse crystal pyrite (1/4" wide) cut the core at 197'6", 207" and 213'6".														100
213'6"	254'	Homogeneous pink fine crystal and lithic tuff. Consistent disseminated pyrite, approximately 1 to 2% by volume.														100
254'	258'	Pale 6" wide bands of mineralized partially silicified tuff are intersected at 254', 256' and 258'.														100
258'	310'	Monotonous sections of pale grey and pink acid tuff as before. Core recovered in long unbroken lengths. Pyrite regularly disseminated throughout. Tight fractures at approximately 5' intervals carry small concentrations of fine pyrite.														100

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	% recovery
310'	328'	Incomplete recovery and fragmented core of altered acid tuff, as before. Poor recovery result of bad drilling technique. Core lost at 314' to 318' and 324' to 328'.											50
328'	359'	Pale grey and pink homogeneous acid tuff, with disseminated pyrite.											100
			350	355	5	215		0.17	0.23				
359'	360'	1" wide vein of coarse crystal pyrite cuts the core at 60°. There is no increase in locally disseminated pyrite, or halo of pyritization, as with earlier well mineralized sections.	355	360	5	216	0.005	0.10	0.02				100
360'	438'	Lengthy pieces of core recovered of monotonous homogeneous kaolinized fine crystal and lithic acid tuff, pyrite regularly disseminated, very fine fractures carrying pyrite cut the core at 365', 381' and 403'. In the latter case, associated with soft waxy material--steatite (?) Pyroclasts have a pink tinge, as before.											100

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W		
438'	518'	Similar monotonous fine crystal tuff as above.														
		There is possibly an increase to the intensity														
		of kaolinization with depth, this being grad-														
		ational. Fractures carry a fine concentration	495	500	5	217	Tr	0.10	0.01							
		of pyrite, as before. These cut the core at														
		445', 462', 481'6" and 496'. The last cuts the														
		core at a sharp angle. At 462' there is a														
		veneer of a waxy soft white mineral, which is														
		probably steatite.														
		518' End of Hole														

North 116 + 20N
East 253 + 75E
Elevation Approx. 4100'
Aximuth 262° True
Dip 58°
Logged By Ian Turnbull

SPA MINES PROJECT

DIAMOND DRILL RECORD

HOLE NO. 9 PAGE 1

Commenced June 7, 1970 -- Finished June 9, 1970
To test I.P. anomaly on Line 116N as indicated by McPhar Survey

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
0'	30'	No recovery. Overburden														100
30'	38'3"	Fragmented recovery of hard brown and white mottled core. This is a weathered slightly calcic quartz rich intrusive rock, originally a granite (?) Alteration is extensive. Minor limonitic staining coats fracture faces. At 34' to 34'9" and 38' to 38'3" there are inclusions (?) of dark basic fine grained volcanic material usually with epidote alteration.														80
38'3"	47'6"	Well fractured core of very chloritized medium grained quartz rich granite or similar intrusive igneous rock. From 39'9" to 40' there are several fine fractures infilled with fine crystal pyrite chalcopyrite and galena. A fragmented stained section at 43' to 43'6" of siliceous fine grained altered material may be an inclusion. Dark dendritic growths of manganese oxide occur along crystal boundaries.														100

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
47'6"	67'	Contact with intermediate to basic dark green highly calcic fine grained volcanic material--an andesite. A network of fine calcite veins at the contact carry (3" wide) fine crystals of galena. Other calcite veinlets frequently cut the core at shallow angles. Some are associated with epidotic alteration. The veinlets show subsequent small displacements due to faulting. Fracture faces are normally coated with limonite. Pyrite occurs in the quartz and calcite in a 1" wide band at 63'6".														100
67'	74'	An andesitic rock as above. There are several non calcic xenoliths of partly digested pyroclasts within the core. As above, a quartz, with minor calcite and pyrite, vein cuts the core at 68'3".														100

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS Pb%	ASSAYS Zn%	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
74'	80'6"	A paler green, slightly chloritized and kaolinized andesitic rock. Pyrite is very weakly disseminated through the core.														100
80'6"	84'6"	Very fragmented recovery of well mineralized siliceous and calcic zone. Galena, pyrite and minor sphalerite occur in a hard fine grained fractured host. Visual estimate of sulphide content of core is 10 to 15% by volume. Non magnetic.	80	85	5	218	0.01	0.60	0.09	2.30	3.65					60
84'6"	86'	Pale extremely siliceous fine grained, slightly chloritized rock. Possibly an aplite dyke. This is weakly mineralized by several hairline veinlets carrying galena.														100
86'	86'6"	Quartzite, and partially calcic host to a banded mineralized section carrying galena, sphalerite and pyrite. As before, sulphides are approximately 10 to 15% of the core.														70

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU	Pb%	Zn%	ACCUMULATIVE AVERAGES AU W	AG W	CU W		% recovery
86'6"	87'6"	Pale siliceous fine grained dyke (?) as before	85	91	6	219	0.01	0.40	0.02	0.23	0.85					100
87'6"	88'9"	Siliceous and calcic chloritized fine grained volcanic rock mineralized with disseminated pyrite and minor galena, localized in fractures or veinlets, sulphides are weaker, approximately 5% by volume.														80
88'9"	91'	Very fragmented recovery of a friable well altered fine grained andesitic rock. The core is chloritized and slightly sericitized: Frequent thin quartz veins cut the core, these are mineralized with pyrite, minor galena and specularite (?).														80
91'	93'	Silicious fine grained andesitic rock cut in two places by hairline veinlets carrying pyrite and minor galena.														100

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
93'	96'6"	Pale green chloritized hard and competent siliceous andesite; containsrare xenoliths of pyroclasts. Core is slightly calcic.														100
96'6"	111'	Dark green fine grained calcic andesite, with evident porphyritic augite-hornblende character. Core is weakly chloritized and sericitized with infrequent epidotic alteration. Pyrite crystals are very sparsely disseminated through the core.														100
110'	115'	Coarse pale green and pink pyroclasts occur in a fine green ash matrix. The agglomerate is partially silicified. Pyrite is very weakly disseminated.														100
115'	122'	Dark green andesitic material as before														100

SPA MINES PROJECT

HOLE NO. 9 PAGE 6

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
122'	141'6"	Hard competent siliceous fine grained andesite, slightly calcic, inclusions of pyroclastic fragments give the core a mottled aspect.														100
141'6"	151'	Paler green siliceous andesite as above, weakly altered occasional calcite veins cut the core. Clusters of pyrite crystal occur in thin seams of quartz which band the core at 143'6", 149' and 151'.														100
151'	167'	Mottled altered competent andesite, with some inclusions of pyroclastic material. Pyrite is very weakly disseminated; but more concentrated in a brecciated (?) zone at 162' to 162' 3".														100
167'	181'	Agglomeritic textured core. Hard and competent core which comprises mainly pyroclastic blocks and fragments within a calcic dark green fine fine grained andesite.														

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
181'	221'	Lengthy sections of hard core of siliceous calcic coarse blocks of pyroclastic material within fine grained andesitic material, as above. However calcite veinlets cut the core regularly. Pyrite is weakly disseminated throughout. A 1" wide siliceous band at 198' carries pyrite and minor galena, together with a halo of epidotic alterations.														100
221'	226'	Dark green fine grained andesite. Pyrite mineralization is relatively stronger.														100
226'	228'	Pale green chloritized and slightly kaolinized andesite.														100
228'	229'6"	Unaltered andesite as before with 1" wide quartz and pyrite vein cutting the core.														100

DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH	SAMPLE NO.	ASSAYS AU OZ.	AG OZ.	% CU	%Pb	%Zn	ACCUMULATIVE AVERAGES AU W	AG W	CU W		% recovery
229'6"	253'	Hard competent porphyritic andesite and pyroclastic rock as before. 3" wide siliceous bands at 233', 246' and 253', which are well pyritized.														100
253'	289'	Homogeneous siliceous and calcic paler green fine grained andesite, without inclusions of pyroclasts. Core weakly chloritized.														100
289'	314'	Chloritized and siliceous medium grained pale green volcanic rock, with a tuffaceous texture. Minor sections have a coarser agglomeritic character. Pyrite is very weakly disseminated through the core. A 3" zone of gouge material occurs at 294'.														100
314'	320'	Slightly fractured and hornfelsed (?) siliceous medium grained lithic tuff. Frequent fine and coarse quartz veinlets carry pyrite and minor galena.	314	320	6	220		0.15		0.35	0.55					100

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DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recover
320'	323'6"	Competent and hard core of pale green mottled chloritized and kaolinized fine to medium grained acid tuff. There are also rare xenoliths of blocks of pyroclasts.														100
323'6"	325'	Pale grey microcrystalline hard aplite dyke														100
325'	346'	Monotonous sections of mottled chloritized medium and coarse lithic acid tuff, as before. Core is slightly calcic, and irregularly kaolinized.														100
346'	348'6"	Darker green tuffaceous rock, relatively more liberally pyritized.														100
348'6"	380'	Variable green medium and coarse grained acid tuff, with minor agglomeritic sections. With depth there is a gradational change to a more siliceous and metamorphosed homogeneous unit, the tuffaceous character becoming less evident.														100

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DIAMOND DRILL RECORD

FROM	TO	DESCRIPTION	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH	CORE LENGTH SAMPLE NO.	ASSAYS AU OZ.	ASSAYS AG OZ.	ASSAYS % CU	ASSAYS	ASSAYS	ACCUMULATIVE AVERAGES AU W	ACCUMULATIVE AVERAGES AG W	ACCUMULATIVE AVERAGES CU W	ACCUMULATIVE AVERAGES	% recovery
380'	408'	Core shows the reverse of the above section														
		grading with depth back into a speckled														
		medium and coarse grained acid lithic tuff,														
		chloritized and slightly calcic. Pyritization														
		is very weak or absent.														
		408' End of Hole.														