CASAC EXPLORATION LTD.

DIAMOND DRILL RECORD

Length	72.24 m	Contractor	Kluane Drilling Ltd.	Hole No.	HA-89-4
Bearing	GRID WEST	Core Size	BQ Casing	Project	Hop-Acme Claims
Dip	-60°	Started	11:00 am, Oct.02'89		
Lat.	3200 N.	Completed	08:00 pm, Oct.03'89	NTS Map	115 H/7
Dep.	2698 E.	Logged by	S. Feulgen, J.C. Stephen	Claim	
Elev.	1166	Stored	Geoff Lattin	# Pages	5
C.B. Thickness	2.94 m		WHITEHORSE	Purpose	to test geophysical anomaly

Footage (m) From	To	DESCRIPTION	Sample#	From	To	Length(m)	Assays Au(g/t)	Ag(g/t)	Cu(%)	MoS_2(%)
0.00	2.94	overburden, no fragments in core box								
2.94	11.86	very dark, thinly bedded mica schist with minor quartz veins parallel to bedding, slightly fractured and oxidized; (4.53-6.17) fragmented; (5.00-5.22) light green dyke with black phenocrysts								
11.86	12.24	fault zone, fragments and gouge material								
12.24	18.29	mica schist with minor quartz veins parallel to bedding, slight fracturing, lightly oxidized, some fragments; (16.70-16.96), light grey quartzite with minor thin fractures; (18.11-18.13) fault? (fragmented, gouge-like) quite oxidized								
18.29	19.28	light grey-green mottled calc silicate skarn with thin light fracturing (fractures often infilled with chalcopyrite), some micaceous beds, minor splashes of disseminated chalcopyrite, pyrite (<0.5%), and pyrrhotite; (18.61-19.28) heavily oxidized; (19.00-19.03) mica schist	30032	18.29	19.28	0.99	0.103	0.34	0.04	
19.28	20.61	speckled actinolite-diopside calc silicate skarn with finely disseminated chalcopyrite (1%) and pyrrhotite (2%) throughout section, lightly oxidized on fractures, some serpentine	30030	19.28	20.61	1.33	0.137	3.43	0.40	
20.61	21.57	dark green actinolite-rich skarn, some diopside, chalcopyrite evident throughout section as disseminated particles, a few carbonate filled fractures, some serpentine; (20.61-20.81) heavy chalcopyrite mineralization (10%) with pyrrhotite (10-15%) particles appearing to form alternating bands with chalcopyrite mineralization; (20.81-21.01) chalcopyrite (2%), pyrrhotite (2%)	30031	20.61	21.57	0.96	0.652	20.24	2.52	
21.57	24.95	magnetite-pyrrhotite skarn, dark black fine grained non-carbonaceous material (chlorite?) as parent rock, extremely heavy magnetite mineralization (35%), some minor carbonate filled fractures, some veins of epidote?, splashes of calc silicate skarn intermixed with black parent material at times, magnetite present as globular bunches, some in	30033	21.57	22.74	1.17	0.034	0.69	0.10	
			30034	22.74	23.85	1.11	0.034	0.34	0.01	
			30035	23.85	24.95	1.10	0.034	1.02	0.13	

		bands up to 15cm thick, talc observed on some fractures; (21.57-21.72 pyrrhotite (1-2%), chalcopyrite (0.5%), pyrite (1%)						
24.95	25.25	light green diopside calc silicate skarn, minor chalcopyrite and pyrrhotite seen as splashes in primarily dark green actinolite-rich mixture, core very crumbly and soft (serpentine minerals, some alteration?)	30036	24.95	25.25	[illegible]	[illegible]	[illegible]
25.25	26.01	light green-pinkish tinge, fine grained calc silicate skarn? (K-feldspar dyke?) with serpentine (soft) on fractures, small elongate pockets of actinolite? parallel to bedding plane, at times: these appear to be the only areas with mineralization, minor splashes of pyrrhotite and chalcopyrite	30037	25.25	26.03	0.78	0.034	2.40	0.18
26.01	26.54	light green diopside calc silicate skarn, fine grained; (26.03-26.16) fault? zone (gouge)	30038	26.03	26.52	0.49	0.034	1.71	0.16
26.54	26.94	magnetite-pyrrhotite skarn with disseminated chalcopyrite (3%) throughout, magnetite (30%); (26.54-26.64) more siliceous, light grey-blue, less magnetite	30039	26.52	26.94	0.42	0.514	10.63	1.00
26.94	28.33	diopside skarn with some actinolite-rich bands, chalcopyrite (0.5%) in splashes throughout section, lower contact at 45 to the core	30040	26.94	28.33	1.39	0.034	2.74	0.24
28.33	28.75	magnetite-rich skarn intermixed with light grey-blue calc silicate skarn, some minor pyrrhotite (2%) and chalcopyrite (2%), some serpentine, magnetite (50%)	30041	28.33	28.75	0.42	0.249	6.17	0.71
28.75	29.20	dull green (medium to dark) actinolite-rich skarn, lightly fractured, carbonaceous, massive disseminated chalcopyrite (3-5%) throughout section	30042	28.75	29.20	0.45	2.504	29.15	3.38
29.20	29.96	magnetite-pyrrhotite skarn, some splashes of chalcopyrite (1%), magnetite (20%), pyrrhotite (15%)	30043	29.20	29.96	0.76	0.171	2.06	0.30
29.96	30.53	grass green feldspar porphyry dyke, scattered grey phenocrysts, fractured and fragmented, slightly oxidized (appears altered)							
30.53	31.20	pyrrhotite-magnetite skarn with splashes of chalcopyrite (2%), pyrrhotite (15-20%), magnetite (10%)	30044	30.53	31.20	0.67	0.069	1.03	0.45
31.20	32.00	speckled light grey-green to white limestone mixed with calc silicate skarn, minor pyrrhotite in bands (disseminated), specks of chalcopyrite, lightly fractured, oxidized on fractures; (31.65-32.00) more fractured, fractures filled with black (carbonaceous? chlorite?) material	30045	31.20	32.00	0.80	0.103	1.03	0.14
32.00	32.90	light grey-green mottled diopside calc silicate skarn with small patches of disseminated pyrrhotite and chalcopyrite, pyrite seen as a coating on fracture planes; (at 32.61) calc silicate skarn becomes more actinolite-rich, oxidized on fractures, bedding planes more evident, some light fracturing, less mottled, grading into quartzite	30046	32.00	33.40	1.40	0.034	0.34	0.07
32.90	33.40	quartzite							
33.40	37.54	dark, thinly bedded schist, primarily micaceous (biotite-rich, some							

		garnet?), some sections oxidized especially along fracture planes; (32.40-33.85) interbedded with calc silicate skarn; (37.04-37.54) more siliceous, some interbedded calc silicate skarn								
37.54	38.19	intermixed diopside/actinolite calc silicate skarn (altered), speckled to swirly in appearance, minor fractures and oxidation								
38.19	38.82	white marble with sections of light grey material, many fractures (40 to core) filled with black material (chlorite?); (38.56-38.81) heavy pyrrhotite (5-10%) and magnetite (10%) mineralization, some minor pyrite (0.5%)	30047	38.12	38.82	0.70	0.377	0.34	0.12	
38.82	39.50	dark grey feldspar porphyry dyke, white-grey-green-black phenocrysts (appears granitic), contact between marble and dyke is fragmented and oxidized, complex lower contact with calc silicate skarn								
39.50	42.00	calc silicate skarn interbedded with zones of mica schist; (39.50-39.80) convoluted swirly mixture of diopside, actinolite, and mica schist beds; (39.62-39.65) granitic-type dyke as at 38.82; (39.80-40.30) mottled yellowish-green (tremolite-rich) calc silicate skarn mixed with mica schist (biotite-rich) beds, swirly appearance, thin fractures; (40.85-41.75) becoming more schistose, rock slightly fragmented and oxidized; (41.75-42.00) actinolite-rich calc silicate skarn (dark green); (41.90-42.00) swirly appearance								
42.00	50.96	mica schist (light-dark grey, black, reddish brown) with some interbedded thin calc silicate skarn beds, some zones of fracturing, light oxidation, some quartzite zones, bedding 70 to core; (44.16-44.41), small zone of primarily actinolite-rich calc silicate skarn, minor chalcopyrite, pyrite, pyrrhotite; (44.42-44.92) nodules (garnet?) in mica schist; (48.17-48.94) calc silicate skarn-rich zone with interbedded schist (gradiation in colour: yellowish-green to light grey to light green-dark green), minor pyrrhotite splashes in actinolite-rich area, slight oxidation; (49.85-49.90) light greyish-green calc silicate skarn, pyrrhotite infilling thin fractures; (50.44-50.64) thin fractures in mixed calc silicate skarn and schist, infilled with pyrite and pyrrhotite; (50.74-50.81) actinolite-rich calc silicate skarn with pyrrhotite								
50.96	52.25	calc silicate skarn with bands and splashes of heavy pyrrhotite mineralization, some areas of concentrated chalcopyrite (<1%), some minor magnetite?; (50.96-51.05) lightly banded diopside/actinolite calc silicate skarn with splashes of chalcopyrite, some serpentine; (51.05-51.12) fractured, massive diopside calc silicate skarn; (51.12-51.19) dark black material (chlorite?) with heavy pyrrhotite mineralization in bands, splashes of chalcopyrite, serpentine evident; (51.11-51.12) band of translucent blue-white mineral; (51.19-51.89) calc silicate skarn, light grey to creamy green-pink (garnetiferous?), speckled with	30048	50.96	52.25	1.29	1.063	13.72	1.52	

		actinolite, disseminated chalcopyrite (<0.5%) throughout section, fine pyrite (1%); (51.89-52.11) pyrrhotite-rich (15%) skarn, light grey (calc silicate skarn) to black (carbonaceous?) background material, some heavier chalcopyrite (<1%) mineralization, some pyrite (1-2%); (52.15-52.25) light green massive diopside calc silicate skarn, splashes of pyrrhotite							
52.25	53.57	white marble with light thin fractures, some filled with epidote? (seaweed green) and/or serpentine; (52.70-52.98) intermixed with calc silicate skarn beds (partly finely brecciated?), some pyrrhotite mineralization (2cm band) with pyrite as well as very minor splashes of pyrrhotite (occasional) throughout section, usually observed in association with dark bands (actinolite? chlorite?)							
53.57	53.95	pyrrhotite-rich skarn, pyrrhotite (50%) mineralization massive, slightly fractured and oxidized, fine pyrite, some magnetite?	30049	53.57	53.95	0.38	0.171	0.69	0.44
53.95	54.82	very fine grained, dark green actinolite calc silicate skarn, splashes of pyrrhotite, disseminated chalcopyrite intergrown for the most part with pyrrhotite, some fine pyrite (<1%), indistinct small remnants (schist?), 80% core recovery	30050	53.95	54.82	0.87	0.034	0.34	0.09
54.82	55.95	massive pyrrhotite-rich skarn, parent material dark grey to black, pyrrhotite (40-50%), chalcopyrite (<1%), fine pyrite; (55.70-55.95) less heavy mineralization	30051	54.82	55.96	1.14	0.034	0.34	0.38
55.95	59.86	very pure white to light grey marble with small zones of light fracturing, fractures filled with dark material sometimes bearing pyrrhotite, also some serpentine filled fractures; (59.38-59.78) orangy-red mineral (garnetiferous?) within dark grey-black material in marble, as well as within marble only							
59.86	61.14	fine grained, green-grey green actinolite-rich skarn; (59.86-60.16) irregular upper contact, convoluted mixture of marble, actinolite, diopside, and pale green mineral, serpentinized fractures (alteration zone), some minor pyrrhotite along fractures in actinolite beds; (60.17-60.37) pocket? of pure limestone, actinolite calc silicate skarn appears serpentinized; (60.37-61.14) calc silicate skarn becomes distinctively fine grained; (60.48-60.78) fragmented, serpentinized, fractures filled with calcite mineral, also evidence of soft black mineral with vitreous lustre (chlorite?) as vein							
61.14	63.23	white to light grey marble with occasional fractures filled with chlorite?, epidote? (seaweed green), and calcite, serpentinized							
63.23	66.10	fine grained, lightly banded, dark green actinolite skarn with traces of chalcopyrite and pyrite (pyrite primarily on fracture planes), bedding at 70 to core; (63.60-64.30) fragmented, crumbly, quite oxidized; (64.60-66.10) calc silicate skarn lighter green in colour, diopside-rich; (64.66-64.84) intermittent 1cm bands of garnet;							

(65.79-65.90) highly silicified, white and grey banded calc silicate skarn

66.10	66.20	well banded, light coloured quartzite, bedding 70 to core
66.20	72.24	fairly siliceous white, light grey, dark grey, banded calc silicate skarn; (66.75-66.85) thin bands of garnets in pale green calc silicate skarn zone; (68.11-68.66) medium green actinolite calc silicate schist, fine grained with frequent bands of garnet

END OF HOLE